Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
0.0768 *5*		^{235}Pa(24.5 m)	652.053, 659.3, 645.896
• 0.0768 *5*		^{239}Pu(24110 y)	51.624(0.007100), 38.661(0.000500), 129.297(0.00631)
0.22 *5*		^{229}U(58 m)	122.51(†100), 88.43(†88), 198.83(†88)
0.57 *3*		^{255}Fm(20.07 h)	81.477(0.81), 58.477(0.67), 80.92(0.27)
• 1.11 *70*		^{254}Es(275.7 d)	63.0(2.0), 316(0.15), 304(0.07)
• 1.11 *70*		^{254}Es(39.3 h)	211.80(0.096), 177.30(0.056), 71.30(0.043)
1.565 *6*		^{201}Au(26 m)	542.6(1.2), 517.0(0.83), 613.2(0.77)
• 1.565 *6*		^{201}Tl(72.912 h)	167.43(10), 135.34(2.565), 32.19(0.258)
1.58 *4*		^{141}Eu(40.0 s)	394.0(9), 384.5(5.6), 382.9(2.97)
1.642 *2*		^{193}Au(17.65 h)	186.17(10.1), 255.57(6.7), 268.22(3.9)
1.7 *3*		^{171}Hf(12.1 h)	122.0(†100), 662.2(†83), 347.18(†47)
• 1.77 *6*		^{153}Tb(2.34 d)	212.038(31.0), 170.504(6.8), 109.758(6.4)
• 2.1726 *4*		^{99}Mo(65.94 h)	739.50(12.1), 181.063(6.08), 140.511(4.52)
2.3 *4*		^{90}Mo(5.67 h)	257.34(78), 122.370(64.2), 203.13(6.4)
• 2.3		^{237}U(6.75 d)	59.537(34.5), 208.00(21.14), 26.345(2.43)
• 2.329 *7*		^{205}Bi(15.31 d)	1764.36(1.368), 703.44(31), 987.62(0.585)
2.46 *20*	0.115 *14*	^{173}Er(1.4 m)	895.2(54), 199.2(48), 192.8(47)
2.70 *10*		^{103}Tc(54.2 s)	346.380(17.5), 136.079(16.6), 562.90(7.0)
3.1 *1*		^{143}Ba(14.33 s)	211.475(25), 798.79(15.6), 980.45(11.55)
• 3.84 *4*		^{181}Hf(42.39 d)	482.182(80.50), 133.024(43.3), 345.916(15.12)
4.0		^{146}Ba(2.22 s)	140.7(20.2), 251.2(19.6), 121.2(14.2)
4.02 *3*		^{208}At(1.63 h)	686.527(98), 660.040(89), 177.595(48.6)
4.2		^{163}Lu(238 s)	163.08(†100), 54.00(†88), 396.34(†63)
4.25 *2*		^{167}Lu(51.5 m)	29.66(14.4), 239.22(8.6), 213.19(3.6)
• 4.4 *10*		^{223}Ra(11.435 d)	269.459(13.7), 154.21(5.62), 323.871(3.93)
4.670 *8*	2.65×10^{-5} *18*	^{173}Hf(23.6 h)	123.672(83), 296.974(33.9), 139.634(12.7)
4.71 *11*		^{204}Po(3.53 h)	883.984(29.9), 270.068(27.8), 1016.31(24.1)
• 4.821 *3*	0.061 *16*	^{151}Pm(28.40 h)	340.08(23), 167.75(8.3), 275.21(6.8)
4.85 *5*	0.19 *3*	^{138}Xe(14.08 m)	258.411(31.5), 434.562(20.3), 1768.26(16.7)
4.9		^{185}Ir(14.4 h)	254.4(13.3), 1828.8(10), 60.0(5.7)
4.9 *2*	2.2×10^{-10}	^{203}Bi(11.76 h)	820.3(30), 825.2(14.6), 896.9(13)
5 *5*		^{199}Bi(27 m)	560.1(22.0), 424.85(22), 841.7(11)
5.025 *6*		^{171}Er(7.516 h)	308.31(64.4), 295.901(28.9), 111.621(20.5)
5.1		^{86}Se(15.3 s)	2441.1(43.0), 2660.0(21.6), 48.3(15.4)
5.2		^{224}Ac(2.9 h)	156.4(†100), 140.8(†55), 261.6(†28)
• 5.23 *9*		^{83}Sr(32.41 h)	762.65(30), 381.53(14.1), 418.37(4.41)
5.472 *7*		^{182}Os(22.10 h)	510.056(52), 180.230(33.5), 263.285(6.71)
• 5.5		^{237}Np(2.14×10^{6} y)	29.374(15.0), 86.477(12.4), 94.66(0.6)
• 5.5		^{245}Bk(4.94 d)	252.80(29.1), 380.8(2.40), 385.0(0.57)
5.55 *5*		^{204}Po(3.53 h)	883.984(29.9), 270.068(27.8), 1016.31(24.1)
5.72		^{165}Lu(10.74 m)	132.49(†100), 120.60(†100), 174.25(†47.0)
5.8 *1*		^{185}Pt(33.0 m)	229.60(†100), 135.3(†80), 197.4(†74)
• 5.87 *3*		^{201}Tl(72.912 h)	167.43(10), 135.34(2.565), 32.19(0.258)
6.22 *4*		^{189}Au(28.7 m)	713.17(†100), 812.68(†63), 447.65(†55)
6.22 *4*		^{189}Au(4.59 m)	166.40(59), 320.2(11.8), 19.0
• 6.238 *20*	0.0115 *4*	^{181}Hf(42.39 d)	482.182(80.50), 133.024(43.3), 345.916(15.12)
• 6.238 *20*	1.03 *3*	^{181}W(121.2 d)	136.266(0.0311), 152.315(0.0083)
• 6.28 *3*		^{228}Ra(5.75 y)	13.52(†100), 16.18(†45), 12.76(†19)
6.281 *7*	0.6	^{101}Mo(14.61 m)	191.92(19), 590.91(16.4), 1012.47(12.8)
6.29 *8*		^{121}In(23.1 s)	925.57(87), 261.96(7.9), 657.32(7.1)
• 6.3 *3*		^{227}Th(18.72 d)	235.971(†813), 50.13(†528), 256.25(†463)
6.31 *4*		^{204}Bi(11.22 h)	899.15(98), 374.72(82), 984.02(59)
6.469 *50*	0.162 *14*	^{141}Cs(24.94 s)	48.53(7.90), 561.63(4.7), 1194.02(3.95)
6.5 *4*		^{75}Br(96.7 m)	286.572(88), 141.3147(6.6), 427.883(4.4)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
6.5 *1*	0.40 *13*	^{75}Kr(4.3 m)	132.43(67), 154.66(20.8), 153.15(8.0)
6.5 *30*		^{201}At(89 s)	571.0, 417.9
6.545 *1*	23.7 *6*	^{129}Ba(2.23 h)	214.30(13.4), 220.83(8.54), 129.14(5.51)
6.545 *1*		^{129}Ba(2.17 h)	182.30(†100), 1459.1(†50.0), 202.38(†33.7)
• 6.67 *2*		^{228}Ra(5.75 y)	13.52(†100), 16.18(†45), 12.76(†19)
6.68 *5*	0.016	^{233}Th(22.3 m)	86.477(2.7), 29.374(2.5), 459.222(1.4)
• 6.68 *5*		^{237}Np(2.14×10^6 y)	29.374(15.0), 86.477(12.4), 94.66(0.6)
6.77		^{159}Er(36 m)	624.5(33), 649.1(23.4), 205.92(9.7)
6.9 *4*		^{104}Cd(57.7 m)	83.7(47), 709.6(19.5), 559.1(6.3)
6.93 *4*		^{167}Yb(17.5 m)	113.34(55.3), 106.18(22.5), 176.25(21)
6.96 *6*		^{85}Y(2.68 h)	231.67(84), 504.45(60), 913.93(9.0)
6.96 *6*		^{85}Y(4.86 h)	231.67(22.8), 2123.8(5.0), 767.40(3.6)
7.0		^{224}Ac(2.9 h)	156.4(†100), 140.8(†55), 261.6(†28)
• 7.133 *10*	4.95 *15*	^{160}Er(28.58 h)	59.98(0.069)
7.150 *14*	0.0034 *6*	^{187}W(23.72 h)	685.774(27.3), 479.531(21.8), 72.001(11.14)
7.3		^{161}Yb(4.2 m)	78.20(34), 599.88(25.9), 631.45(13.9)
7.30 *23*		^{179}W(6.40 m)	238.61(0.218), 281.70(0.186), 222.5(0.057)
7.45	0.035	^{121}Ag(0.78 s)	314.55(32.1), 353.43(19.9), 500.61(9.3)
7.535		^{153}Pm(5.4 m)	35.842(†100), 127.298(†75), 28.309(†34.6)
7.68 *3*	0.0064 *21*	^{163}Yb(11.05 m)	860.28(10.1), 63.62(6.5), 123.21(1.98)
• 7.861 *2*		^{239}Np(2.3565 d)	106.125(27.2), 277.599(14.38), 228.183(10.76)
7.861 *2*	0.011	^{239}Am(11.9 h)	277.599(15.0), 228.183(11.3), 209.753(3.50)
• 7.861 *2*	0.0130 *10*	^{243}Cm(29.1 y)	277.599(14.0), 228.183(10.6), 209.753(3.29)
8.0	0.007	^{227}Pa(38.3 m)	64.62(6), 110.05(1.24), 84.8(0.86)
• 8.1 *2*		^{254}Es(275.7 d)	63.0(2.0), 316(0.15), 304(0.07)
• 8.2 *1*		^{227}Th(18.72 d)	235.971(†813), 50.13(†528), 256.25(†463)
8.22 *5*		^{233}Th(22.3 m)	86.477(2.7), 29.374(2.5), 459.222(1.4)
• 8.22 *5*		^{237}Np(2.14×10^6 y)	29.374(15.0), 86.477(12.4), 94.66(0.6)
• 8.41031 *19*	0.158 *18*	^{169}Er(9.40 d)	109.77987(0.0013), 118.19018(0.00014)
• 8.41031 *19*	0.333 *14*	^{169}Yb(32.026 d)	63.12077(44.2), 197.95788(35.8), 177.21402(22.16)
8.42 *5*		^{129}La(11.6 m)	278.6(25), 110.5(16.9), 457.0(8.0)
8.7 *2*		^{104}Zr(1.2 s)	100.9(6), 504.7(5), 445.0(5)
8.7		^{142}Ba(10.6 m)	255.300(20.5), 1204.3(14.23), 895.2(13.9)
8.7 *6*		^{179}W(6.40 m)	238.61(0.218), 281.70(0.186), 222.5(0.057)
8.78 *7*	3.0×10^{-5}	^{249}Cm(64.15 m)	634.31(1.5), 560.45(0.84), 368.76(0.35)
• 8.78 *7*		^{253}Es(20.47 d)	41.79(0.050), 389.11(0.0264), 387.1(0.00810)
8.9		^{144}Ba(11.5 s)	103.855(23.30), 430.48(18.3), 172.828(15.4)
8.9		^{185}Hg(21.6 s)	222.8(†100.0), 258.7(†98), 212.5(†58)
9.0		^{230}Ra(93 m)	72.0(†100), 63.0(†35.4), 202.8(†27.3)
• 9.0		^{237}Np(2.14×10^6 y)	29.374(15.0), 86.477(12.4), 94.66(0.6)
9.1 *1*	0.00032 *4*	^{155}Ho(48 m)	240.19(12.5), 136.30(5.00), 45.38(5)
• 9.156 *10*	0.151 *14*	^{171}Lu(8.24 d)	739.78(47.8), 19.394(13.7), 667.404(11.04)
• 9.21 *3*		^{231}Th(25.52 h)	25.646(14.5), 84.216(6.6), 89.944(0.94)
• 9.21 *3*		^{231}U(4.2 d)	25.646(12), 84.216(7), 217.940(0.8)
• 9.21 *3*		^{235}Np(396.1 d)	25.646(†600000), 84.216(†265000), 81.227(†58000)
9.27 *7*		^{187}Au(8.4 m)	1331.81(7.0), 1408.23(3.06), 914.73(3.02)
• 9.3 *1*		^{227}Ac(21.773 y)	24.5, 15.2
9.317 *10*	2.2	^{101}Mo(14.61 m)	191.92(19), 590.91(16.4), 1012.47(12.8)
9.365 *12*	1.64 *24*	^{157}Eu(15.18 h)	63.929(23.0), 410.723(17.5), 370.509(11.0)
9.396 *7*		^{83}Br(2.40 h)	529.635(1.200), 520.39(0.0576), 552.63(0.0200)
• 9.396 *7*		^{83}Rb(86.2 d)	520.39(44.7), 529.635(29.3), 552.63(16.0)
9.4	>0.14	^{140}Xe(13.60 s)	805.52(20), 1413.66(12.2), 1315.05(8.2)
9.52 *5*		^{204}Po(3.53 h)	883.984(29.9), 270.068(27.8), 1016.31(24.1)
9.56		^{191}Au(3.18 h)	586.45(17), 277.88(7.2), 674.19(6.8)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
9.595 *9*	0.026 *3*	^{173}Hf(23.6 h)	123.672(83), 296.974(33.9), 139.634(12.7)
9.74 *5*	0.000119 *5*	^{163}Yb(11.05 m)	860.28(10.1), 63.62(6.5), 123.21(1.98)
9.746 *24*	0.22	^{187}Ir(10.5 h)	912.95(4.79), 427.12(4.12), 400.89(3.94)
9.8		^{163}Er(75.0 m)	1113.5(0.0490), 436.1(0.0285), 439.94(0.0276)
9.8		^{177}W(135 m)	115.65(50), 426.98(13.2), 1036.4(10.3)
9.82 *8*		^{81}Y(72.4 s)	124.16(41.1), 79.23(24.67), 408.36(15.3)
9.85 *4*	4.3 *12*	^{74}Kr(11.50 m)	89.65(31), 203.0(18.0), 296.67(9.9)
9.89 *13*		^{189}Hg(7.6 m)	320.99(†100), 78.21(†63), 565.42(†48)
9.903 *16*		^{237}Am(73.0 m)	280.23(47.3), 438.4(8.3), 473.5(4.3)
10	0.49 *2*	^{148}Ho(9.59 s)	1687.5(82.47), 660.8(58.94), 504.3(18.62)
• 10 *1*	0.0137 *14*	^{223}Ra(11.435 d)	269.459(13.7), 154.21(5.62), 323.871(3.93)
10.1 *1*		^{169}Ho(4.7 m)	788.4(21.2), 853.0(11.2), 760.8(10)
• 10.25		^{231}Th(25.52 h)	25.646(14.5), 84.216(6.6), 89.944(0.94)
• 10.25		^{235}Np(396.1 d)	25.646(†600000), 84.216(†265000), 81.227(†58000)
10.3		^{157}Tm(3.63 m)	455.00(9.3), 385.5(8.8), 348.40(8.4)
10.4 *2*		^{199}Tl(7.42 h)	455.46(12.4), 208.20597(12.3), 247.26(9.3)
10.48 *5*	0.18 *6*	^{167}Yb(17.5 m)	113.34(55.3), 106.18(22.5), 176.25(21)
• 10.49 *4*	0.0049 *5*	^{155}Eu(4.7611 y)	86.545(30.7), 105.305(21.2), 45.2972(1.326)
• 10.49 *4*	0.015 *5*	^{155}Tb(5.32 d)	86.545(32.0), 105.305(25), 180.103(7.45)
10.53 *9*		^{205}Po(1.66 h)	872.39(37), 1001.21(28.8), 849.83(25.5)
10.54 *6*		^{107}Ru(3.75 m)	194.05(9.9), 847.93(5.3), 462.61(3.66)
10.6 *5*	0.8	^{137}Ce(9.0 h)	447.15(1.8), 436.59(0.265), 433.22(0.0518)
• 10.6 *5*		^{137}Ce(34.4 h)	824.82(0.44), 169.26(0.44), 762.3(0.192)
10.6		^{221}Rn(25 m)	186.38(21.6), 150.04(4.5), 216.90(2.6)
• 10.6		^{225}Ac(10.0 d)	99.91(1.01), 150.04(0.80), 99.63(0.62)
10.68 *3*	9.7 *9*	^{100}Sr(202 ms)	963.85(22.0), 898.50(18.9), 65.46(15.2)
• 10.7		^{237}Np(2.14×10^6 y)	29.374(15.0), 86.477(12.4), 94.66(0.6)
• 10.836 *22*	0.263 *9*	^{206}Po(8.8 d)	1032.26(32.9), 511.36(24.1), 286.410(23.8)
10.836 *22*		^{210}At(8.1 h)	82.802(†480000), 106(†170000), 167(†110000)
10.85 *5*	0.7	^{138}Xe(14.08 m)	258.411(31.5), 434.562(20.3), 1768.26(16.7)
• 10.9 *5*		^{231}Pa(32760 y)	27.36(10.3), 300.07(2.46), 302.65(2.2)
10.9		^{247}Cf(3.11 h)	294.1(0.98), 447.8(0.55), 417.9(0.34)
11		^{205}At(26.2 m)	719.30(31), 669.41(8.6), 628.88(5.6)
11		^{209}Rn(28.5 m)	143.166(0.0102), 154.198(0.0073), 384.61(0.0024)
11.1 *3*		^{181}Au(11.4 s)	198.60(4.4), 2022.4(4.2), 79.40(4.2)
11.1 *1*		^{225}Fr(4.0 m)	182.3(†100), 31.50(†91), 225.1(†55)
• 11.1 *1*		^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
11.2		^{191}Hg(50.8 m)	252.5(57), 420.1(18.6), 578.6(17.6)
11.2		^{191}Hg(49 m)	252.5(†100), 196.3(†65), 224.7(†60)
11.21		^{225}Fr(4.0 m)	182.3(†100), 31.50(†91), 225.1(†55)
• 11.39 *2*		^{241}Pu(14.35 y)	148.567(†309000), 103.680(†69400), 77.10(†35100)
11.4 *1*	0.07	^{161}Er(3.21 h)	826.6(3.0), 211.15(12.2), 592.6(3.7)
11.44 *6*		^{183}Au(42.0 s)	161.18(9.4), 214.13(5.9), 313.08(5.0)
11.51 *20*		^{184}Pt(17.3 m)	154.90(31), 191.97(27), 548.36(23.1)
• 11.60 *2*		^{165}Tm(30.06 h)	242.917(35.5), 47.155(16.9), 297.369(12.71)
11.6 *1*		^{165}Yb(9.9 m)	80.11(49), 68.86(9.1), 1090.28(4.4)
11.6 *3*		^{184}Pt(17.3 m)	154.90(31), 191.97(27), 548.36(23.1)
• 11.8	>0.045	^{172}Hf(1.87 y)	23.9331(20.3), 125.812(11.3), 67.35(5.3)
11.90 *10*		^{153}Dy(6.4 h)	80.723(11.10), 213.754(10.90), 99.659(10.51)
11.9 *2*		^{173}Ta(3.14 h)	172.2(18), 69.70(5.9), 90.3(5.0)
12.12 *6*		^{204}At(9.2 m)	684.341(95), 516.318(90), 426.253(67.5)
12.2 *2*		^{200}At(43 s)	665.9(†100), 611.1(†85.0), 484.5(†49.8)
12.23 *2*	0.174 *11*	^{146}Ce(13.52 m)	316.74(56), 218.23(20.8), 264.56(9.0)
12.3		^{224}Ac(2.9 h)	156.4(†100), 140.8(†55), 261.6(†28)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
• 12.31 *2*	0.018 *4*	^{169}Lu(34.06 h)	960.622(23.4), 191.2137(20.6), 1449.74(9.92)
12.327 *6*		^{133}La(3.912 h)	278.835(2.50), 302.353(1.648), 290.06(1.413)
12.385 *8*	0.0305 *18*	^{171}Er(7.516 h)	308.31(64.4), 295.901(28.9), 111.621(20.5)
• 12.4	3.0×10^{-6}	^{45}Ca(163.8 d)	
12.4	2.8×10^{-5} *3*	^{45}Ti(184.8 m)	720.22(0.154), 1408.6(0.085), 1662.4(0.041)
12.4 *4*		^{183}Hg(9.4 s)	60.5(†100), 159.91(†21), 172.70(†17)
• 12.4 *5*		^{231}Pa(32760 y)	27.36(10.3), 300.07(2.46), 302.65(2.2)
• 12.41 *20*	0.011	^{172}Hf(1.87 y)	23.9331(20.3), 125.812(11.3), 67.35(5.3)
12.5	†0.3	^{148}Er(4.6 s)	1653.4(†100), 387.7(†88), 197.1(†71)
12.5		^{171}Hf(12.1 h)	122.0(†100), 662.2(†83), 347.18(†47)
12.5		^{227}Pa(38.3 m)	64.62(6), 110.05(1.24), 84.8(0.86)
12.634 *8*	0.24 *3*	^{193}Au(17.65 h)	186.17(10.1), 255.57(6.7), 268.22(3.9)
• 12.70 *25*	0.010 *6*	^{155}Eu(4.7611 y)	86.545(30.7), 105.305(21.2), 45.2972(1.326)
• 12.7		^{227}Ac(21.773 y)	100(†110000), 69.21(†78000), 160.26(†70000)
• 12.76 *3*	†19 *4*	^{228}Ra(5.75 y)	13.52(†100), 16.18(†45), 18.8(†13)
12.79 *17*		^{183}Hg(9.4 s)	60.5(†100), 159.91(†21), 172.70(†17)
12.9	†>0.15	^{142}Xe(1.22 s)	571.83(†100), 657.05(†79), 538.24(†77)
12.963 *2*		^{235}Pa(24.5 m)	652.053, 659.3, 645.896
• 12.963 *2*		^{239}Pu(24110 y)	51.624(0.007100), 38.661(0.000500), 129.297(0.00631)
13.271 *18*		^{73}Ga(4.86 h)	297.32(79.8), 325.70(11.17), 739.42(4.23)
• 13.271 *18*	0.089	^{73}As(80.30 d)	53.440(10.34)
13.5 *7*	†32 *10*	^{101}Nb(7.1 s)	276.10(†100), 157.466(†32), 441.01(†22)
13.5		^{154}Nd(25.9 s)	151.703(†800), 799.55(†600), 180.693(†510)
• 13.52 *2*	†100	^{228}Ra(5.75 y)	16.18(†45), 12.76(†19), 18.8(†13)
13.53 *3*	0.23	^{163}Yb(11.05 m)	860.28(10.1), 63.62(6.5), 123.21(1.98)
13.7 *5*		^{191}Hg(50.8 m)	252.5(57), 420.1(18.6), 578.6(17.6)
13.7 *5*		^{191}Hg(49 m)	252.5(†100), 196.3(†65), 224.7(†60)
13.8		^{144}Gd(4.5 m)	333.3(†100), 2432.6(†94.8), 629.5(†32.4)
• 13.80 *25*	0.020 *6*	^{155}Eu(4.7611 y)	86.545(30.7), 105.305(21.2), 45.2972(1.326)
• 13.81 *2*	0.099 *4*	^{237}U(6.75 d)	59.537(34.5), 208.00(21.14), 26.345(2.43)
• 13.81 *2*		^{241}Am(432.2 y)	59.537(†60), 26.345(†1000×10^9), 33.195(†6000×10^8)
• 13.846 *15*	1.22 *17*	^{140}Ba(12.752 d)	537.261(24.39), 29.9640(14.1), 162.660(6.21)
13.9 *4*		^{169}Hf(3.24 m)	492.86(84), 369.5(9.7), 123.5(3.9)
13.9	0.15 *4*	^{177}W(135 m)	115.65(50), 426.98(13.2), 1036.4(10.3)
13.9		^{179}Ir(79 s)	97.5(†1849), 86.31(†1370), 45.20(†1329)
13.93 *5*	0.88 *8*	^{140}Xe(13.60 s)	805.52(20), 1413.66(12.2), 1315.05(8.2)
• 14.1	0.030	^{153}Gd(241.6 d)	97.4316(30), 103.1807(21.4), 69.67340(2.54)
• 14.1 *1*		^{231}Pa(32760 y)	27.36(10.3), 300.07(2.46), 302.65(2.2)
• 14.16		^{177}Lu(160.4 d)	208.3664(57.7), 228.4838(37.0), 378.5029(29.7)
• 14.22 *4*		^{169}Lu(34.06 h)	960.622(23.4), 191.2137(20.6), 1449.74(9.92)
14.23 *5*	†2.2×10^3 *3*	^{157}Ho(12.6 m)	279.97(†47600), 341.16(†37000), 193.41(†15200)
14.3	>0.12	^{119}Ag(2.1 s)	626.4(13), 366.2(12.1), 399.1(10.9)
14.3		^{166}Hf(6.77 m)	78.76(41), 341.82(4.7), 407.91(4.5)
• 14.4 *10*	0.0164 *14*	^{223}Ra(11.435 d)	269.459(13.7), 154.21(5.62), 323.871(3.93)
14.41300 *15*	10.56 *17*	^{57}Mn(87.2 s)	122.0614(13.9), 692.03(5.50), 352.36(2.09)
• 14.41300 *15*	9.16 *15*	^{57}Co(271.79 d)	122.0614(85.60), 136.4743(10.68), 692.03(0.157)
14.5		^{177}Ir(30 s)	183.6(†1010), 148.3(†929), 75.6(†>900)
14.5 *3*		^{181}Au(11.4 s)	198.60(4.4), 2022.4(4.2), 79.40(4.2)
14.5 *3*		^{185}Hg(49.1 s)	94.00, 79.40
• 14.56 *2*		^{165}Tm(30.06 h)	242.917(35.5), 47.155(16.9), 297.369(12.71)
14.6		^{108}Ru(4.55 m)	164.95(28.0), 150.46(7.8), 91.33(2.38)
14.7		^{157}Eu(15.18 h)	63.929(23.0), 410.723(17.5), 370.509(11.0)
14.70 *6*		^{183}Ir(58 m)	392.52(10.4), 228.70(6.9), 87.67(5.6)
14.72 *2*		^{163}Tm(1.810 h)	104.320(18.6), 69.229(11.6), 241.305(10.9)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
• 14.91 *1*	0.0012 *6*	^{75}Se(119.779 d)	264.6584(58.50), 136.0008(58.3), 279.5441(24.79)
14.97 *2*		^{175}W(35.2 m)	270.25(12.6), 166.69(9.0), 149.17(3.6)
15.0	0.00248 *20*	^{223}Ac(2.10 m)	98.58(0.891), 191.3(0.58), 83.55(0.57)
15 *3*		^{223}Fr(21.8 m)	50.13(36.0), 79.72(9.1), 234.81(3.0)
• 15.15 *2*		^{228}Ra(5.75 y)	13.52(†100), 16.18(†45), 12.76(†19)
15.2		^{185}Ir(14.4 h)	254.4(13.3), 1828.8(10), 60.0(5.7)
• 15.2 *1*		^{227}Ac(21.773 y)	24.5, 9.3
• 15.228 *2*	0.054 *3*	^{241}Cm(32.8 d)	471.805(71), 430.634(4.06), 132.413(3.86)
15.3		^{177}Re(14 m)	196.85(†1200), 79.65(†1010), 84.3(†890)
• 15.4		^{159}Dy(144.4 d)	58.00(2.22), 348.16(0.00095), 79.45(0.00048)
15.4		^{161}Yb(4.2 m)	78.20(34), 599.88(25.9), 631.45(13.9)
• 15.5 *5*		^{231}Pa(32760 y)	27.36(10.3), 300.07(2.46), 302.65(2.2)
• 15.5 *2*	†10 *2*	^{228}Ra(5.75 y)	13.52(†100), 16.18(†45), 12.76(†19)
• 15.512 *10*		^{165}Tm(30.06 h)	242.917(35.5), 47.155(16.9), 297.369(12.71)
15.6 *3*		^{122}Ba(1.95 m)	550.7, 388.7, 231.0
15.6		^{224}Ac(2.9 h)	156.4(†100), 140.8(†55), 261.6(†28)
15.606 *15*	0.0014	^{101}Mo(14.61 m)	191.92(19), 590.91(16.4), 1012.47(12.8)
16.0 *5*	8.0 *19*	^{152}Nd(11.4 m)	278.5(32), 250.1(21.8), 294.6(3.8)
16.0 *1*	0.268 *13*	^{188}Hg(3.25 m)	66.7(63), 190.1(4.40), 82.7(2.6)
• 16.18 *3*	†45 *5*	^{228}Ra(5.75 y)	13.52(†100), 12.76(†19), 18.8(†13)
16.2 *4*		^{183}Pt(43 s)	629.3(†100), 316.7(†53), 328.8(†36)
16.21 *3*	0.032 *4*	^{195}Tl(1.16 h)	563.52(10.5), 884.47(10.0), 1363.88(8.4)
• 16.23 *3*		^{246}Pu(10.84 d)	43.81(25.0), 223.75(23.5), 179.94(9.7)
16.263 *3*		^{182}Hf(61.5 m)	942.80(18.8), 799.64(9.4), 114.3152(6.2)
16.33 *5*	0.538 *16*	^{144}Ba(11.5 s)	103.855(23.30), 430.48(18.3), 172.828(15.4)
16.39 *10*		^{170}Hf(16.01 h)	164.78(33), 620.7(23), 120.17(19)
• 16.4 *3*	8.3 *17*	^{72}Zn(46.5 h)	145.04(83), 191.96(9.37), 103.14(2.32)
• 16.4	0.007	^{153}Tb(2.34 d)	212.038(31.0), 170.504(6.8), 109.758(6.4)
16.4 *3*		^{169}Hf(3.24 m)	492.86(84), 369.5(9.7), 123.5(3.9)
16.45 *16*	0.0063 *6*	^{187}W(23.72 h)	685.774(27.3), 479.531(21.8), 72.001(11.14)
16.5 *1*	0.23	^{227}Ra(42.2 m)	27.36(16), 300.07(4.6), 302.65(4.3)
• 16.5 *1*	0.31 *9*	^{231}Pa(32760 y)	27.36(10.3), 300.07(2.46), 302.65(2.2)
16.70 *5*		^{161}Tm(33 m)	45.54(5.00), 1648.1(9.50), 84.40(9.4)
16.7 *3*	>0.012	^{167}Ho(3.1 h)	346.547(56), 321.336(23.5), 237.873(5.0)
• 16.7 *3*		^{167}Tm(9.25 d)	207.801(41), 57.0723(4.6), 531.54(1.6)
16.8 *1*		^{159}Er(36 m)	624.5(33), 649.1(23.4), 205.92(9.7)
16.8		^{233}Ac(145 s)	522.757(56), 539.599(38)
17.0 *3*	18 *6*	^{52}Ti(1.7 m)	124.453(98.6)
17.1	1.59 *16*	^{159}Eu(18.1 m)	67.8(19), 78.6(9.1), 95.7(7.0)
17.17 *3*		^{185}Hg(21.6 s)	222.8(†100.0), 258.7(†98), 212.5(†58)
• 17.193 *4*		^{231}Th(25.52 h)	25.646(14.5), 84.216(6.6), 89.944(0.94)
• 17.193 *4*		^{231}U(4.2 d)	25.646(12), 84.216(7), 217.940(0.8)
• 17.193 *4*		^{235}Np(396.1 d)	25.646(†600000), 84.216(†265000), 81.227(†58000)
• 17.26	0.004	^{233}Pa(26.967 d)	312.17(38.6), 300.34(6.62), 340.81(4.47)
17.3 *1*	0.231 *23*	^{79}Rb(22.9 m)	688.1(23), 182.77(19.2), 143.41(13.9)
17.3		^{154}Nd(25.9 s)	151.703(†800), 799.55(†600), 180.693(†510)
17.3 *3*		^{169}Ho(4.7 m)	788.4(21.2), 853.0(11.2), 760.8(10)
17.36 *3*	†5.3 *29*	^{225}Fr(4.0 m)	182.3(†100), 31.50(†91), 225.1(†55)
• 17.36 *3*	0.18 *9*	^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
17.40 *5*		^{233}Th(22.3 m)	86.477(2.7), 29.374(2.5), 459.222(1.4)
• 17.40 *5*		^{237}Np(2.14×10^6 y)	29.374(15.0), 86.477(12.4), 94.66(0.6)
17.62 *10*	0.32 *13*	^{121}Ag(0.78 s)	314.55(32.1), 353.43(19.9), 500.61(9.3)
17.7 *2*	0.042 *5*	^{113}Ag(5.37 h)	298.58(10), 258.8(1.64), 316.3(1.343)
17.7 *2*		^{113}Ag(68.7 s)	316.3(18), 392.3(11), 298.58(10)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
• 17.7 *3*	4.4×10^{-5}	^{126}Sn(1×10^5 y)	87.57(37), 64.28(9.6), 86.94(8.9)
• 18.04 *3*	0.12 *3*	^{182}Re(64.0 h)	229.3220(26), 67.75001(22.2), 1121.3007(22.0)
• 18.053 *4*	<0.33	^{231}Th(25.52 h)	25.646(14.5), 84.216(6.6), 89.944(0.94)
• 18.053 *4*		^{231}U(4.2 d)	25.646(12), 84.216(7), 217.940(0.8)
• 18.053 *4*		^{235}Np(396.1 d)	25.646(†600000), 84.216(†265000), 81.227(†58000)
18.09		^{133}Te(55.4 m)	912.671(55.28), 647.51(19.4), 863.955(15.6)
• 18.15 *5*		^{161}Tb(6.88 d)	25.65150(23.2), 48.91562(17.0), 74.56711(10.2)
18.15 *5*		^{161}Ho(2.48 h)	25.65150(27), 103.062(3.9), 77.414(1.91)
18.18 *3*	0.0079 *18*	^{197}Tl(2.84 h)	425.84(12.9), 152.22(7.2), 1411.34(4.5)
18.20 *5*	0.156	^{67}As(42.5 s)	122.7(19.2), 120.8(9.3), 243.6(7.8)
• 18.2 *5*		^{231}Pa(32760 y)	27.36(10.3), 300.07(2.46), 302.65(2.2)
18.4 *1*	>0.4	^{105}Mo(35.6 s)	85.4(25.0), 76.50(19.3), 147.8(14.8)
18.4 *3*		^{184}Pt(17.3 m)	154.90(31), 191.97(27), 548.36(23.1)
• 18.430 *2*		^{239}Np(2.3565 d)	106.125(27.2), 277.599(14.38), 228.183(10.76)
18.430 *2*	0.020	^{239}Am(11.9 h)	277.599(15.0), 228.183(11.3), 209.753(3.50)
• 18.430 *2*		^{243}Cm(29.1 y)	277.599(14.0), 228.183(10.6), 209.753(3.29)
18.5 *5*	27.2 *6*	^{112}Pd(21.03 h)	
18.6		^{235}Th(7.1 m)	417.0(2), 727.2(0.87), 696.1(0.64)
18.7		^{177}Re(14 m)	196.85(†1200), 79.65(†1010), 84.3(†890)
• 18.764 *2*	0.049 *12*	^{155}Eu(4.7611 y)	86.545(30.7), 105.305(21.2), 45.2972(1.326)
• 18.764 *2*	0.063 *4*	^{155}Tb(5.32 d)	86.545(32.0), 105.305(25), 180.103(7.45)
• 18.8 *4*	†13 *3*	^{228}Ra(5.75 y)	13.52(†100), 16.18(†45), 12.76(†19)
18.90 *12*		^{161}Yb(4.2 m)	78.20(34), 599.88(25.9), 631.45(13.9)
19.0 *4*		^{189}Au(4.59 m)	166.40(59), 320.2(11.8), 6.22
19	0.29	^{227}Ra(42.2 m)	27.36(16), 300.07(4.6), 302.65(4.3)
• 19	0.37 *12*	^{231}Pa(32760 y)	27.36(10.3), 300.07(2.46), 302.65(2.2)
19.1	0.162 *14*	^{79}Rb(22.9 m)	688.1(23), 182.77(19.2), 143.41(13.9)
• 19.1		^{231}Th(25.52 h)	25.646(14.5), 84.216(6.6), 89.944(0.94)
• 19.1		^{231}U(4.2 d)	25.646(12), 84.216(7), 217.940(0.8)
19.102 *15*	0.111 *18*	^{223}Fr(21.8 m)	50.13(36.0), 79.72(9.1), 234.81(3.0)
• 19.36	0.00099 *22*	^{153}Tb(2.34 d)	212.038(31.0), 170.504(6.8), 109.758(6.4)
• 19.394 *2*	13.7 *7*	^{171}Lu(8.24 d)	739.78(47.8), 667.404(11.04), 75.878(6.08)
19.4 *1*		^{167}Lu(51.5 m)	29.66(14.4), 239.22(8.6), 213.19(3.6)
• 19.4 *4*	†0.9 *5*	^{228}Ra(5.75 y)	13.52(†100), 16.18(†45), 12.76(†19)
19.47 *13*		^{187}Hg(1.9 m)	233.38(†100), 376.34(†38), 240.26(†33)
19.595 *2*		^{231}Ac(7.5 m)	282.471(39.0), 307.063(30.4), 221.399(16.8)
• 19.595 *2*		^{235}U(7.038×10^8 y)	185.712(57.2), 143.764(10.96), 163.358(5.08)
19.6 *2*	†6.0 *2*	^{181}Ir(4.90 m)	107.64(†100), 1639.6(†52), 318.9(†46)
• 19.6		^{231}Pa(32760 y)	27.36(10.3), 300.07(2.46), 302.65(2.2)
19.62 *11*	0.0024	^{181}Re(19.9 h)	365.57(56), 360.70(20), 639.30(6.4)
19.68 *2*		^{167}Lu(51.5 m)	29.66(14.4), 239.22(8.6), 213.19(3.6)
19.7 *3*	0.25 *8*	^{181}Au(11.4 s)	198.60(4.4), 2022.4(4.2), 79.40(4.2)
19.77 *13*	†3.2 *9*	^{142}Xe(1.22 s)	571.83(†100), 657.05(†79), 538.24(†77)
19.8 *4*	0.13	^{185}Au(4.25 m)	310.6(13), 243.1(6.6), 77.7(6)
• 19.82 *2*		^{153}Sm(46.27 h)	103.1807(31.4), 69.67340(4.85), 97.4316(0.847)
• 19.82 *2*		^{153}Gd(241.6 d)	97.4316(30), 103.1807(21.4), 69.67340(2.54)
• 19.86 *3*	0.036 *13*	^{182}Re(64.0 h)	229.3220(26), 67.75001(22.2), 1121.3007(22.0)
• 19.88 *15*	0.0201 *6*	^{125}Sb(2.7582 y)	427.875(30), 600.600(17.86), 635.954(11.31)
• 19.94 *10*	0.045 *23*	^{172}Hf(1.87 y)	23.9331(20.3), 125.812(11.3), 67.35(5.3)
20.0		^{107}Mo(3.5 s)	400.3(†100), 65.7(†>92), 384.4(†57.6)
20.00 *5*	0.0085 *23*	^{132}Ce(3.51 h)	182.11(77), 155.37(10.5), 216.83(4.95)
• 20.02 *2*	0.010 *3*	^{234}Th(24.10 d)	63.29(4.8), 92.38(2.81), 92.80(2.77)
20.03 *8*		^{195}Ir(3.8 h)	98.85(10), 684.88(9.4), 432.86(9)
20.1	†100	^{180}Os(21.5 m)	717.4, 667.0, 48.2

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
20.19 *3*	0.21 *4*	^{167}Lu(51.5 m)	29.66(14.4), 239.22(8.6), 213.19(3.6)
20.26 *9*	0.36	^{183}Os(13.0 h)	381.768(89.6), 114.463(20.63), 167.844(8.81)
20.3 *1*		^{173}Ta(3.14 h)	172.2(18), 69.70(5.9), 90.3(5.0)
20.30 *5*	0.8 *3*	^{223}Fr(21.8 m)	50.13(36.0), 79.72(9.1), 234.81(3.0)
• 20.30 *5*	†12 *4*	^{227}Th(18.72 d)	235.971(†813), 50.13(†528), 256.25(†463)
20.34 *2*		^{163}Tm(1.810 h)	104.320(18.6), 69.229(11.6), 241.305(10.9)
• 20.44 *2*	0.0082 *14*	^{169}Lu(34.06 h)	960.622(23.4), 191.2137(20.6), 1449.74(9.92)
20.50 *10*	1.8 *4*	^{102}Zr(2.9 s)	599.60(13.9), 535.30(10.6), 64.50(8.9)
20.559 *19*	1.6 *8*	^{105}Tc(7.6 m)	143.26(16), 107.945(14.1), 321.50(11.1)
• 20.71 *2*		^{165}Tm(30.06 h)	242.917(35.5), 47.155(16.9), 297.369(12.71)
• 20.752 *9*	0.190 *14*	^{169}Yb(32.026 d)	63.12077(44.2), 197.95788(35.8), 177.21402(22.16)
20.80 *8*	†13.5 *12*	^{142}Xe(1.22 s)	571.83(†100), 657.05(†79), 538.24(†77)
20.86 *1*	0.404 *22*	^{133}Te(55.4 m)	912.671(55.28), 647.51(19.4), 863.955(15.6)
• 20.95 *5*		^{227}Th(18.72 d)	235.971(†813), 50.13(†528), 256.25(†463)
21.005 *5*	0.014 *6*	^{155}Dy(9.9 h)	226.918(68.4), 184.564(3.37), 1089.8(>2.8)
• 21.036 *4*	0.00047 *4*	^{155}Eu(4.7611 y)	86.545(30.7), 105.305(21.2), 45.2972(1.326)
• 21.036 *4*	0.0016	^{155}Tb(5.32 d)	86.545(32.0), 105.305(25), 180.103(7.45)
21.1 *1*	0.067 *24*	^{227}Pa(38.3 m)	64.62(6), 110.05(1.24), 84.8(0.86)
21.16 *3*	0.0032 *14*	^{167}Lu(51.5 m)	29.66(14.4), 239.22(8.6), 213.19(3.6)
21.36 *4*		^{195}Tl(1.16 h)	563.52(10.5), 884.47(10.0), 1363.88(8.4)
21.5	†3.3 *4*	^{148}Er(4.6 s)	1653.4(†100), 387.7(†88), 197.1(†71)
• 21.531 *7*	0.031	^{151}Sm(90 y)	
• 21.531 *7*	2.85 *12*	^{151}Gd(124 d)	153.56(6.20), 243.28(5.60), 174.70(2.96)
• 21.58 *2*	<0.017	^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
21.6 *1*		^{117}I(2.22 m)	325.9(75), 274.4(20.4), 661.5(5.1)
• 21.65 *1*	1.26 *11*	^{126}Sn(1×10^5 y)	87.57(37), 64.28(9.6), 86.94(8.9)
• 21.87		^{237}Pu(45.2 d)	280.40(†870000), 298.89(†7.85×10^6), 320.75(†6.48×10^6)
22.1 *2*	1.76 *10*	^{75}Kr(4.3 m)	132.43(67), 154.66(20.8), 153.15(8.0)
22.15 *5*	5.1×10^{-5} *10*	^{155}Ho(48 m)	240.19(12.5), 136.30(5.00), 45.38(5)
22.15 *5*	0.0109 *21*	^{155}Ho(48 m)	240.19(12.5), 136.30(5.00), 45.38(5)
22.2		^{171}Ta(23.3 m)	49.6(†100), 506.4(†54), 501.8(†22.6)
22.2 *1*	0.035 *9*	^{173}Ta(3.14 h)	172.2(18), 69.70(5.9), 90.3(5.0)
22.3 *1*	0.13 *4*	^{227}Pa(38.3 m)	64.62(6), 110.05(1.24), 84.8(0.86)
22.32 *2*		^{163}Tm(1.810 h)	104.320(18.6), 69.229(11.6), 241.305(10.9)
22.43 *6*	1.56 *11*	^{66}Ge(2.26 h)	43.89(28.7), 381.85(28), 272.97(10.4)
22.48 *10*		^{162}Hf(37.6 s)	173.90(†100), 196.34(†25), 410.12(†16.8)
22.5 *5*	0.43 *14*	^{75}Zn(10.2 s)	228.67(28.9), 432.29(20.2), 155.94(17.2)
22.5		^{165}Ta(31.0 s)	311.0, 199.4, 162.8
• 22.510 *8*	>0.050	^{149}Pm(53.08 h)	285.95(3.1), 859.46(0.109), 590.88(0.069)
• 22.510 *8*	2.32 *6*	^{149}Eu(93.1 d)	327.526(4.03), 277.089(3.56), 254.566(0.636)
22.51 *10*	1.4	^{151}Pr(18.90 s)	880.19(13), 189.057(11.8), 484.501(11.3)
22.525 *6*	2.6 *5*	^{156}Sm(9.4 h)	87.4897(24), 203.818(20.6), 165.8452(12.7)
22.56 *8*	0.024	^{205}Po(1.66 h)	872.39(37), 1001.21(28.8), 849.83(25.5)
• 22.6		^{237}Np(2.14×10^6 y)	29.374(15.0), 86.477(12.4), 94.66(0.6)
• 22.70 *7*	0.100 *11*	^{126}Sn(1×10^5 y)	87.57(37), 64.28(9.6), 86.94(8.9)
• 22.7	†>2.2×10^4	^{134}Ce(75.9 h)	162.306(†230000), 130.414(†209000), 39.08(†>150000)
22.7	0.0054 *16*	^{149}Nd(1.728 h)	211.309(25.9), 114.314(19.2), 270.166(10.7)
• 22.7		^{231}Pa(32760 y)	27.36(10.3), 300.07(2.46), 302.65(2.2)
22.78 *7*		^{165}Yb(9.9 m)	80.11(49), 68.86(9.1), 1090.28(4.4)
22.8 *2*	†<0.45	^{139}I(2.29 s)	527.7(†100), 571.2(†98), 536.6(†67)
22.8 *3*	0.39 *13*	^{181}Au(11.4 s)	198.60(4.4), 2022.4(4.2), 79.40(4.2)
22.85		^{166}Hf(6.77 m)	78.76(41), 341.82(4.7), 407.91(4.5)
22.88 *5*	0.011 *6*	^{146}Ce(13.52 m)	316.74(56), 218.23(20.8), 264.56(9.0)
22.92 *2*	3.00 *4*	^{151}Dy(17.9 m)	386.10(19.4), 49.46(18.0), 546.31(14.3)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
23.0 *5*	†<2.6	^{106}Mo(8.4 s)	465.70(†100), 54.00(†54), 618.60(†25)
• 23.001 *17*		^{251}Es(33 h)	177.7(2.4), 152.8(0.91), 163.8(0.10)
23.001 *17*	0.15 *3*	^{255}Fm(20.07 h)	81.477(0.81), 58.477(0.67), 80.92(0.27)
23.11 *5*		^{157}Ho(12.6 m)	279.97(†47600), 341.16(†37000), 193.41(†15200)
23.132 *29*	0.026 *7*	^{155}Dy(9.9 h)	226.918(68.4), 184.564(3.37), 1089.8(>2.8)
• 23.28 *1*	6.4 *6*	^{126}Sn(1×10^5 y)	87.57(37), 64.28(9.6), 86.94(8.9)
23.40 *5*		^{143}La(14.2 m)	620.3(2.34), 643.75(1.55), 621.4(1.52)
• 23.4		^{172}Hf(1.87 y)	23.9331(20.3), 125.812(11.3), 67.35(5.3)
• 23.438 *15*	0.0185 *11*	^{71}As(65.28 h)	174.954(82.00), 1095.490(4.08), 499.876(3.624)
23.49 *2*		^{161}Tm(33 m)	45.54(5.00), 1648.1(9.50), 84.40(9.4)
23.53 *2*	0.24 *7*	^{208}Rn(24.35 m)	426.78(7.07), 251.05(5.02), 350.026(3.34)
23.53 *2*	0.16 *8*	^{212}Fr(20.0 m)	124.2(1.77), 84.1(0.63), 71.7(0.55)
23.54 *5*	0.13 *4*	^{185}Ta(49.4 m)	177.59(25.7), 173.68(22.6), 65.86(3.9)
23.6 *1*	†0.06	^{185}Hg(21.6 s)	222.8(†100.0), 258.7(†98), 212.5(†58)
23.6	†1.1 *4*	^{225}Fr(4.0 m)	182.3(†100), 31.50(†91), 225.1(†55)
• 23.6	0.00123 *10*	^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
• 23.6	0.0048 *10*	^{231}Pa(32760 y)	27.36(10.3), 300.07(2.46), 302.65(2.2)
23.8 *2*		^{116}Pd(12.4 s)	569, 279.3, 178.3
23.870 *8*	16.0 *5*	^{119}In(2.4 m)	763.14(99), 697.47(0.49), 1214.86(0.46)
23.870 *8*		^{119}In(18.0 m)	1065.55(†80000), 1249.71(†44000), 1163.85(†32000)
• 23.870 *8*	16.1 *5*	^{119}Sb(38.19 h)	
• 23.9331 *2*	20.3 *11*	^{172}Hf(1.87 y)	125.812(11.3), 67.35(5.3), 81.7515(4.52)
23.95 *4*	†4.0 *12*	^{142}Xe(1.22 s)	571.83(†100), 657.05(†79), 538.24(†77)
23.96 *5*		^{155}Dy(9.9 h)	226.918(68.4), 184.564(3.37), 1089.8(>2.8)
23.96 *9*	0.47	^{204}At(9.2 m)	684.341(95), 516.318(90), 426.253(67.5)
24.0 *5*	†0.7 *2*	^{185}Pt(33.0 m)	229.60(†100), 135.3(†80), 197.4(†74)
24.1 *3*		^{142}Eu(1.22 m)	768.1(100), 1023.3(92.0), 556.6(86.6)
24.136 *23*	0.29 *5*	^{223}Fr(21.8 m)	50.13(36.0), 79.72(9.1), 234.81(3.0)
• 24.14 *10*		^{237}Np(2.14×10^6 y)	29.374(15.0), 86.477(12.4), 94.66(0.6)
24.2 *5*	0.036 *6*	^{77}Kr(74.4 m)	129.64(81), 146.59(37.3), 312.0(3.7)
• 24.20 *2*		^{169}Lu(34.06 h)	960.622(23.4), 191.2137(20.6), 1449.74(9.92)
24.20 *4*	0.018 *8*	^{185}Ir(14.4 h)	254.4(13.3), 1828.8(10), 60.0(5.7)
24.28 *4*	>0.11	^{179}Re(19.5 m)	430.221(28), 289.968(26.9), 1680.244(13.0)
24.30 *5*		^{83}Nb(4.1 s)	52.70
24.3		^{168}Hf(25.95 m)	183.8(†100), 157.2(†68), 324.1
24.31 *3*	†2.1×10^3 *7*	^{158}Er(2.29 h)	71.91(†23300), 386.84(†111000), 248.58(†42000)
24.39 *1*	0.032 *9*	^{191}Au(3.18 h)	586.45(17), 277.88(7.2), 674.19(6.8)
24.46 *1*	3.90 *15*	^{101}Pd(8.47 h)	296.29(19), 590.44(12.06), 269.67(6.43)
24.5	0.050 *25*	^{147}Cs(0.225 s)	85.2(7.3), 245.8(4.5), 109.7(4.5)
• 24.5 *2*		^{227}Ac(21.773 y)	15.2, 9.3
• 24.56 *30*	0.008 *8*	^{155}Eu(4.7611 y)	86.545(30.7), 105.305(21.2), 45.2972(1.326)
• 24.595 *4*	>0.0029	^{140}La(1.6781 d)	1596.210(95), 487.021(45.5), 815.772(23.28)
• 24.6 *8*	0.0363 *23*	^{75}Se(119.779 d)	264.6584(58.50), 136.0008(58.3), 279.5441(24.79)
• 24.61		^{229}Pa(1.50 d)	40.09(0.104), 64.70(0.045), 75.12(0.035)
24.63 *1*	0.09	^{167}Lu(51.5 m)	29.66(14.4), 239.22(8.6), 213.19(3.6)
24.7 *2*	0.034	^{227}Ra(42.2 m)	27.36(16), 300.07(4.6), 302.65(4.3)
• 24.7 *2*	0.005	^{231}Pa(32760 y)	27.36(10.3), 300.07(2.46), 302.65(2.2)
24.78 *15*		^{181}Pt(51 s)	289.29(†100), 111.97(†100), 230.15(†92)
• 24.824 *15*		^{251}Es(33 h)	177.7(2.4), 152.8(0.91), 163.8(0.10)
24.824 *15*	0.09 *2*	^{255}Fm(20.07 h)	81.477(0.81), 58.477(0.67), 80.92(0.27)
24.97 *11*	0.26 *6*	^{205}Po(1.66 h)	872.39(37), 1001.21(28.8), 849.83(25.5)
25.0 *5*	†24 *5*	^{127}La(3.8 m)	56.2(†100)
25	†1.1	^{224}Ac(2.9 h)	156.4(†100), 140.8(†55), 261.6(†28)
25.1	0.03 *3*	^{109}Rh(80 s)	326.868(54), 426.135(7.7), 178.034(7.6)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
25.1 *2*	30 *3*	^{120}Xe(40 m)	72.6(9), 178.1(6.8), 762.5(4.5)
25.1550 *5*		^{156}Sm(9.4 h)	87.4897(24), 203.818(20.6), 165.8452(12.7)
25.2 *3*		^{243}Pu(4.956 h)	84.0(23), 41.8(0.76), 381.7(0.56)
25.21 *6*	0.137 *13*	^{200}Pt(12.5 h)	76.21(13), 135.90(3.24), 243.71(2.49)
• 25.318 *4*	0.00111 *17*	^{233}U(1.592×10^5 y)	42.44(0.0862), 97.134(0.020), 54.699(0.0182)
25.39 *2*		^{225}Fr(4.0 m)	182.3(†100), 31.50(†91), 225.1(†55)
• 25.39 *2*	0.008 *4*	^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
25.4		^{147}Ce(56.4 s)	268.80(7), 92.9(4.7), 374.23(3.5)
• 25.4		^{233}U(1.592×10^5 y)	42.44(0.0862), 97.134(0.020), 54.699(0.0182)
25.48 *2*	0.0036	^{105}Cd(55.5 m)	961.84(4.69), 346.870(4.20), 1302.459(3.98)
25.5		^{157}Tm(3.63 m)	455.00(9.3), 385.5(8.8), 348.40(8.4)
25.5 *2*	†1.9×10^3 *3*	^{158}Er(2.29 h)	71.91(†23300), 386.84(†111000), 248.58(†42000)
• 25.51 *6*	0.117 *17*	^{231}Pa(32760 y)	27.36(10.3), 300.07(2.46), 302.65(2.2)
25.52 *7*	0.18	^{187}Ir(10.5 h)	912.95(4.79), 427.12(4.12), 400.89(3.94)
25.54 *11*		^{187}Au(8.4 m)	1331.81(7.0), 1408.23(3.06), 914.73(3.02)
25.64 *6*	0.52 *8*	^{155}Sm(22.3 m)	104.3346(74.6), 245.771(3.7), 141.4428(1.98)
• 25.646 *4*	14.5 *3*	^{231}Th(25.52 h)	84.216(6.6), 89.944(0.94), 81.227(0.89)
• 25.646 *4*	12	^{231}U(4.2 d)	84.216(7), 217.940(0.8), 58.570(0.44)
• 25.646 *4*	600000 *8*	^{235}Np(396.1 d)	84.216(†265000), 81.227(†58000), 58.570(†23000)
• 25.65150 *7*	23.2 *10*	^{161}Tb(6.88 d)	48.91562(17.0), 74.56711(10.2), 57.196(1.79)
25.65150 *7*	27 *3*	^{161}Ho(2.48 h)	103.062(3.9), 77.414(1.91), 59.235(0.60)
25.70 *5*	0.14 *4*	^{173}Ta(3.14 h)	172.2(18), 69.70(5.9), 90.3(5.0)
25.71 *4*		^{73}Br(3.4 m)	64.9(37.0), 336.0(10.4), 699.8(9.1)
• 25.71 *1*	0.97 *7*	^{151}Pm(28.40 h)	340.08(23), 167.75(8.3), 275.21(6.8)
25.71 *12*		^{187}Au(8.4 m)	1331.81(7.0), 1408.23(3.06), 914.73(3.02)
• 25.717 *20*	0.0019 *7*	^{189}Re(24.3 h)	216.663(5.50), 219.395(4.54), 245.09(3.5)
• 25.717 *20*	0.024 *3*	^{189}Ir(13.2 d)	245.09(6), 69.537(3.5), 59.053(1.20)
25.83 *2*	0.045 *14*	^{167}Yb(17.5 m)	113.34(55.3), 106.18(22.5), 176.25(21)
25.98 *2*	0.0076 *25*	^{167}Lu(51.5 m)	29.66(14.4), 239.22(8.6), 213.19(3.6)
26		^{223}Th(0.60 s)	151.98, 97.10, 88.00
26.0 *1*		^{221}Rn(25 m)	186.38(21.6), 150.04(4.5), 216.90(2.6)
• 26.0 *1*	0.00163 *22*	^{225}Ac(10.0 d)	99.91(1.01), 150.04(0.80), 99.63(0.62)
26.0		^{231}Ac(7.5 m)	282.471(39.0), 307.063(30.4), 221.399(16.8)
26.04 *8*	0.034 *5*	^{183}Ir(58 m)	392.52(10.4), 228.70(6.9), 87.67(5.6)
26.07 *4*		^{157}Ho(12.6 m)	279.97(†47600), 341.16(†37000), 193.41(†15200)
26.1		^{166}Hf(6.77 m)	78.76(41), 341.82(4.7), 407.91(4.5)
26.2	†43 *9*	^{131}Ce(10.3 m)	169.42(†100), 414.25(†68), 119.18(†44)
26.2		^{131}Ce(5.0 m)	230.43(†100), 436.85(†7.3), 462.9(†6.9)
• 26.220 *10*	0.00137 *12*	^{205}Bi(15.31 d)	1764.36(1.368), 703.44(31), 987.62(0.585)
26.23 *2*	0.050 *11*	^{167}Lu(51.5 m)	29.66(14.4), 239.22(8.6), 213.19(3.6)
26.34 *7*		^{201}Au(26 m)	542.6(1.2), 517.0(0.83), 613.2(0.77)
• 26.34 *7*	0.0086 *9*	^{201}Tl(72.912 h)	167.43(10), 135.34(2.565), 32.19(0.258)
• 26.345 *1*	2.43 *6*	^{237}U(6.75 d)	59.537(34.5), 208.00(21.14), 164.61(1.852)
• 26.345 *1*	0.221 *7*	^{237}Pu(45.2 d)	59.537(3.28), 33.195(0.0745), 43.423(0.0039)
• 26.345 *1*	†1000×10^9 *5*	^{241}Am(432.2 y)	59.537(†60), 33.195(†6000×10^8), 43.423(†3.00×10^7)
26.40 *15*	0.15 *6*	^{74}Kr(11.50 m)	89.65(31), 203.0(18.0), 296.67(9.9)
• 26.41 *3*		^{228}Ra(5.75 y)	13.52(†100), 16.18(†45), 12.76(†19)
• 26.533 *6*	0.316 *12*	^{155}Eu(4.7611 y)	86.545(30.7), 105.305(21.2), 45.2972(1.326)
• 26.533 *6*	0.394 *13*	^{155}Tb(5.32 d)	86.545(32.0), 105.305(25), 180.103(7.45)
• 26.55 *5*	0.54 *3*	^{231}Th(25.52 h)	25.646(14.5), 84.216(6.6), 89.944(0.94)
26.6		^{104}Cd(57.7 m)	83.7(47), 709.6(19.5), 559.1(6.3)
• 26.6		^{241}Pu(14.35 y)	148.567(†309000), 103.680(†69400), 77.10(†35100)
26.6043 *14*	44.6 *5*	^{56}Cr(5.94 m)	83.8990(95.3)
26.65 *5*	0.217 *23*	^{132}Ce(3.51 h)	182.11(77), 155.37(10.5), 216.83(4.95)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
26.9 *1*	2.48 *9*	^{119}Ag(2.1 s)	626.4(13), 366.2(12.1), 399.1(10.9)
26.9 *2*	32	^{154}Er(3.73 m)	
• 27.0		^{231}Pa(32760 y)	27.36(10.3), 300.07(2.46), 302.65(2.2)
• 27.03		^{237}Pu(45.2 d)	59.537(3.28), 26.345(0.221), 33.195(0.0745)
• 27.03		^{241}Am(432.2 y)	59.537(†60), 26.345(†1000×10^9), 33.195(†6000×10^8)
27.1 *1*		^{151}Dy(17.9 m)	386.10(19.4), 49.46(18.0), 546.31(14.3)
• 27.137 *10*	0.774 *14*	^{171}Lu(8.24 d)	739.78(47.8), 19.394(13.7), 667.404(11.04)
• 27.2		^{233}U(1.592×10^5 y)	42.44(0.0862), 97.134(0.020), 54.699(0.0182)
27.268 *30*	0.066 *12*	^{223}Fr(21.8 m)	50.13(36.0), 79.72(9.1), 234.81(3.0)
27.3 *1*		^{145}Tb(29.5 s)	257.8(39), 987.8(37), 537.0(23)
27.3 *6*		^{192}Hg(4.85 h)	274.8(50.4), 157.2(7), 306.5(5.4)
27.36 *1*	16	^{227}Ra(42.2 m)	300.07(4.6), 302.65(4.3), 283.69(3.1)
• 27.36 *1*	10.3 *4*	^{231}Pa(32760 y)	300.07(2.46), 302.65(2.2), 283.69(1.7)
27.43 *5*	0.039 *12*	^{200}Pt(12.5 h)	76.21(13), 135.90(3.24), 243.71(2.49)
• 27.50 *2*	0.035 *17*	^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
27.513 *14*	1.94 *14*	^{88}Kr(2.84 h)	2392.11(34.6), 196.301(25.98), 2195.842(13.18)
27.549 *9*	0.63 *13*	^{182}Os(22.10 h)	510.056(52), 180.230(33.5), 263.285(6.71)
27.56 *4*	1.29 *25*	^{103}Cd(7.3 m)	1461.81(12), 1448.70(5.55), 1079.90(5.44)
• 27.58 *2*	3.5 *4*	^{246}Pu(10.84 d)	43.81(25.0), 223.75(23.5), 179.94(9.7)
27.6 *2*		^{169}Ho(4.7 m)	788.4(21.2), 853.0(11.2), 760.8(10)
27.67 *1*	0.211 *23*	^{105}Cd(55.5 m)	961.84(4.69), 346.870(4.20), 1302.459(3.98)
27.8 *4*		^{185}Au(4.25 m)	310.6(13), 243.1(6.6), 77.7(6)
27.8 *4*	0.23 *5*	^{195}Ir(3.8 h)	98.85(10), 684.88(9.4), 432.86(9)
27.81 *5*	16.3 *16*	^{129}Te(69.6 m)	459.60(7.70), 487.39(1.42), 278.43(0.567)
• 27.81 *5*	0.02724 *5*	^{129}Te(33.6 d)	695.88(2.988), 729.57(0.70), 556.65(0.118)
• 27.879 *15*		^{165}Tm(30.06 h)	242.917(35.5), 47.155(16.9), 297.369(12.71)
27.92 *3*		^{161}Tm(33 m)	45.54(5.00), 1648.1(9.50), 84.40(9.4)
28 *1*	0.7 *3*	^{245}Pu(10.5 h)	327.428(25.4), 560.13(5.4), 308.222(4.9)
28.18 *3*		^{161}Tm(33 m)	45.54(5.00), 1648.1(9.50), 84.40(9.4)
28.2		^{161}Er(3.21 h)	826.6(3.0), 211.15(12.2), 592.6(3.7)
• 28.242 *9*	1.13 *8*	^{166}Dy(81.6 h)	82.471(14), 54.2400(0.81), 426.00(0.58)
28.26 *11*	0.028 *10*	^{88}Kr(2.84 h)	2392.11(34.6), 196.301(25.98), 2195.842(13.18)
28.309 *5*	†34.6 *17*	^{153}Pm(5.4 m)	35.842(†100), 127.298(†75), 119.763(†32.9)
• 28.375 *5*	0.11 *4*	^{233}Pa(26.967 d)	312.17(38.6), 300.34(6.62), 340.81(4.47)
28.375 *5*	0.0013 *5*	^{233}Np(36.2 m)	312.17(0.7), 298.89(0.44), 546.9(0.280)
28.38 *10*	0.25	^{170}Hf(16.01 h)	164.78(33), 620.7(23), 120.17(19)
28.40 *20*	1.7	^{99}Zr(2.1 s)	469.140(55), 546.13(48.6), 593.990(27.4)
28.4		^{118}Pd(1.9 s)	125.4(34), 125.4(34), 224.2(20.1)
28.5 *1*	7.0 *4*	^{117}Xe(61 s)	221.3(10.0), 32.3(7.6), 519.1(6.2)
28.5		^{225}Rn(4.5 m)	207.2, 178.7, 169.7
28.51 *7*		^{89}Br(4.40 s)	1097.82(6.00), 997.93(4.26), 953.53(4.26)
28.51 *7*		^{90}Br(1.92 s)	411.49(3.88), 962.71(1.25), 1097.82(0.91)
28.6 *2*	1.3 *6*	^{152}Nd(11.4 m)	278.5(32), 250.1(21.8), 16.0(8.0)
28.7 *3*	†20	^{154}Nd(25.9 s)	151.703(†800), 799.55(†600), 180.693(†510)
28.7 *2*	†222 *67*	^{158}Er(2.29 h)	71.91(†23300), 386.84(†111000), 248.58(†42000)
• 28.701 *12*	0.0365 *22*	^{161}Tb(6.88 d)	25.65150(23.2), 48.91562(17.0), 74.56711(10.2)
28.701 *12*		^{161}Ho(2.48 h)	25.65150(27), 103.062(3.9), 77.414(1.91)
28.80 *4*	†18.3 *18*	^{169}Ta(4.9 m)	511.0(†20.6), 192.4(†8), 153.5(†6.3)
28.81 *3*		^{163}Tm(1.810 h)	104.320(18.6), 69.229(11.6), 241.305(10.9)
28.871 *9*		^{195}Ir(3.8 h)	98.85(10), 684.88(9.4), 432.86(9)
28.88 *2*	0.007	^{167}Lu(51.5 m)	29.66(14.4), 239.22(8.6), 213.19(3.6)
28.9 *2*		^{104}Zr(1.2 s)	100.9(6), 504.7(5), 445.0(5)
28.9	0.25 *13*	^{147}Cs(0.225 s)	85.2(7.3), 245.8(4.5), 109.7(4.5)
28.9	1.0	^{190}Hg(20.0 m)	142.6(68), 171.5(4.8), 154.7(2.5)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
28.99 *6*		^{204}Bi(11.22 h)	899.15(98), 374.72(82), 984.02(59)
29.0 *5*		^{169}Hf(3.24 m)	492.86(84), 369.5(9.7), 123.5(3.9)
29.0 *3*		^{187}Au(8.4 m)	1331.81(7.0), 1408.23(3.06), 914.73(3.02)
• 29.02 *5*	0.030 *6*	^{241}Cm(32.8 d)	471.805(71), 430.634(4.06), 132.413(3.86)
29.10 *10*	21.6 *15*	^{86}Zr(16.5 h)	242.80(96), 612.00(5.7), 135.6(0.47)
29.192 *1*	†2.0 *10*	^{229}Ac(62.7 m)	164.522(†100), 569.1(†91), 261.92(†39)
• 29.192 *1*	0.006 *3*	^{229}Pa(1.50 d)	118.968(0.130), 146.345(0.098), 117.159(0.047)
• 29.192 *1*	0.0120 *3*	^{233}U(1.592×10^5 y)	42.44(0.0862), 97.134(0.020), 54.699(0.0182)
29.226 *19*	0.0060 *8*	^{187}W(23.72 h)	685.774(27.3), 479.531(21.8), 72.001(11.14)
29.26 *2*	0.057 *7*	^{161}Tm(33 m)	45.54(5.00), 1648.1(9.50), 84.40(9.4)
• 29.30 *5*	0.035 *2*	^{231}Th(25.52 h)	25.646(14.5), 84.216(6.6), 89.944(0.94)
29.31 *5*		^{165}Yb(9.9 m)	80.11(49), 68.86(9.1), 1090.28(4.4)
• 29.36		^{233}U(1.592×10^5 y)	42.44(0.0862), 97.134(0.020), 54.699(0.0182)
• 29.37 *5*	0.0076 *21*	^{172}Er(49.3 h)	610.062(44.2), 407.338(42.1), 68.107(3.29)
29.374 *20*	2.5	^{233}Th(22.3 m)	86.477(2.7), 459.222(1.4), 94.66(0.8)
• 29.374 *20*	15.0 *10*	^{237}Np(2.14×10^6 y)	86.477(12.4), 94.66(0.6), 143.249(0.43)
29.49 *5*	0.224 *9*	^{144}Ba(11.5 s)	103.855(23.30), 430.48(18.3), 172.828(15.4)
• 29.49 *2*	0.00158 *13*	^{234}Th(24.10 d)	63.29(4.8), 92.38(2.81), 92.80(2.77)
29.5 *10*		^{200}Bi(36.4 m)	1026.5(100), 462.34(98), 419.70(91)
29.585	>0.029	^{134}Te(41.8 m)	767.20(29.0), 210.465(22.3), 277.951(20.9)
29.60 *3*	0.024	^{223}Fr(21.8 m)	50.13(36.0), 79.72(9.1), 234.81(3.0)
• 29.60 *3*	†0.33	^{227}Th(18.72 d)	235.971(†813), 50.13(†528), 256.25(†463)
• 29.6		^{237}Np(2.14×10^6 y)	29.374(15.0), 86.477(12.4), 94.66(0.6)
29.66 *1*	14.4 *10*	^{167}Lu(51.5 m)	239.22(8.6), 213.19(3.6), 1267.26(3.25)
29.7 *1*	9.9 *11*	^{117}Cs(8.4 s)	204.8(15.0), 205.6(6.8), 159.9(5.0)
29.715 *3*	0.0042 *21*	^{165}Dy(2.334 h)	94.700(3.58), 361.68(0.84), 633.415(0.568)
29.715 *3*	>0.006	^{165}Dy(1.257 m)	515.467(1.53), 361.68(0.534), 153.803(0.242)
29.8 *2*	1.09 *20*	^{118}Pd(1.9 s)	125.4(34), 125.4(34), 224.2(20.1)
29.85 *5*	0.100 *25*	^{143}Ba(14.33 s)	211.475(25), 798.79(15.6), 980.45(11.55)
29.86 *1*	0.054 *12*	^{223}Fr(21.8 m)	50.13(36.0), 79.72(9.1), 234.81(3.0)
• 29.86 *1*	†6.3 *20*	^{227}Th(18.72 d)	235.971(†813), 50.13(†528), 256.25(†463)
29.9 *1*	3.1 *3*	^{156}Er(19.5 m)	35.3(18), 133.6(0.8), 352.0(0.29)
29.9 *2*		^{247}Cf(3.11 h)	294.1(0.98), 447.8(0.55), 417.9(0.34)
29.96 *2*	0.032	^{227}Ra(42.2 m)	27.36(16), 300.07(4.6), 302.65(4.3)
• 29.96 *2*	0.109 *7*	^{231}Pa(32760 y)	27.36(10.3), 300.07(2.46), 302.65(2.2)
• 29.9640 *7*	14.1 *4*	^{140}Ba(12.752 d)	537.261(24.39), 162.660(6.21), 304.849(4.30)
30.00 *3*	0.017 *4*	^{149}Nd(1.728 h)	211.309(25.9), 114.314(19.2), 270.166(10.7)
• 30.0 *2*		^{229}Pa(1.50 d)	40.09(0.104), 64.70(0.045), 75.12(0.035)
• 30.037 *3*	0.000217 *6*	^{239}Pu(24110 y)	51.624(0.007100), 38.661(0.000500), 129.297(0.00631)
30.1 *5*	0.07 *8*	^{117}I(2.22 m)	325.9(75), 274.4(20.4), 661.5(5.1)
• 30.106 *8*		^{165}Tm(30.06 h)	242.917(35.5), 47.155(16.9), 297.369(12.71)
30.2		^{161}Er(3.21 h)	826.6(3.0), 211.15(12.2), 592.6(3.7)
30.3 *1*		^{121}Cs(122 s)	179.4(30.2), 196.0(24.1), 459.7(12.0)
30.3 *1*	†<0.28	^{225}Fr(4.0 m)	182.3(†100), 31.50(†91), 225.1(†55)
• 30.3 *1*	>0.041	^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
• 30.3		^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
30.4 *1*	0.021 *9*	^{185}Ir(14.4 h)	254.4(13.3), 1828.8(10), 60.0(5.7)
30.40 *1*	0.27	^{191}Au(3.18 h)	586.45(17), 277.88(7.2), 674.19(6.8)
30.427 *13*	0.133 *5*	^{159}Ho(33.05 m)	121.012(36.2), 131.973(23.6), 309.594(17.2)
30.45 *5*	0.063 *7*	^{177}W(135 m)	115.65(50), 426.98(13.2), 1036.4(10.3)
30.5 *5*	0.56 *4*	^{155}Sm(22.3 m)	104.3346(74.6), 245.771(3.7), 141.4428(1.98)
• 30.56 *3*		^{228}Ra(5.75 y)	13.52(†100), 16.18(†45), 12.76(†19)
30.6 *5*	†56 *6*	^{123}Ba(2.7 m)	94.6(†100), 123.5(†69), 116.1(†54)
30.6 *3*	0.029 *5*	^{181}Au(11.4 s)	198.60(4.4), 2022.4(4.2), 79.40(4.2)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
30.60 *3*	0.08	^{201}Au(26 m)	542.6(1.2), 517.0(0.83), 613.2(0.77)
• 30.60 *3*	0.253 *5*	^{201}Tl(72.912 h)	167.43(10), 135.34(2.565), 32.19(0.258)
30.6383 *11*	95 *1*	^{28}Mg(20.91 h)	1342.27(52.6), 941.72(38.3), 400.56(36.6)
30.7 *2*	†100 *21*	^{114}Cs(0.57 s)	121.6(†82)
30.70 *9*	19	^{179}W(37.05 m)	133.84(0.111)
• 30.77 *2*		^{93}Zr(1.53×10^{6} y)	
• 30.77 *2*		^{93}Mo(4.0×10^{3} y)	
30.8 *3*	†2	^{154}Nd(25.9 s)	151.703(†800), 799.55(†600), 180.693(†510)
30.8 *2*	†>3.3×10^{2}	^{158}Er(2.29 h)	71.91(†23300), 386.84(†111000), 248.58(†42000)
30.80 *10*	1.5 *3*	^{165}Yb(9.9 m)	80.11(49), 68.86(9.1), 1090.28(4.4)
30.8 *2*	†4.3 *7*	^{181}Hg(3.6 s)	147.8(†100), 42.5(†25), 1986.7(†17)
30.8 *1*	0.076 *18*	^{198}Pb(2.40 h)	290.3(36), 365.4(19), 173.4(18)
• 30.814 *18*		^{189}Re(24.3 h)	216.663(5.50), 219.395(4.54), 245.09(3.5)
• 30.814 *18*		^{189}Ir(13.2 d)	245.09(6), 69.537(3.5), 59.053(1.20)
30.84 *5*		^{249}Cm(64.15 m)	634.31(1.5), 560.45(0.84), 368.76(0.35)
• 30.84 *5*	0.007	^{253}Es(20.47 d)	41.79(0.050), 389.11(0.0264), 387.1(0.00810)
30.898 *4*	1.3	^{195}Ir(2.5 h)	98.85(10), 211.407(2.4), 129.70(1.2)
30.898 *4*	1.8	^{195}Ir(3.8 h)	98.85(10), 684.88(9.4), 432.86(9)
• 30.898 *4*	0.75 *3*	^{195}Au(186.09 d)	98.85(10.9), 129.70(0.817), 211.407(0.0109)
• 31.00 *5*	0.010 *3*	^{231}Pa(32760 y)	27.36(10.3), 300.07(2.46), 302.65(2.2)
31.04 *11*	0.017 *7*	^{181}Re(19.9 h)	365.57(56), 360.70(20), 639.30(6.4)
31.07 *7*	0.16 *4*	^{157}Sm(482 s)	197.870(56.00), 196.461(16.8), 394.351(11.93)
31.10 *5*		^{225}Fr(4.0 m)	182.3(†100), 31.50(†91), 225.1(†55)
• 31.10 *5*	0.84 *8*	^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
31.131 *2*	0.065 *7*	^{239}U(23.45 m)	74.664(48), 43.533(4.14), 662.24(0.18)
• 31.131 *2*	0.072 *5*	^{243}Am(7370 y)	74.664(68), 43.533(5.93), 117.84(0.57)
31.2 *2*		^{171}Hf(12.1 h)	122.0(†100), 662.2(†83), 347.18(†47)
31.3		^{231}Ac(7.5 m)	282.471(39.0), 307.063(30.4), 221.399(16.8)
31.378 *8*	0.500 *11*	^{159}Ho(33.05 m)	121.012(36.2), 131.973(23.6), 309.594(17.2)
31.4 *4*	†12 *3*	^{164}Hf(111 s)	122.1(†100), 153.3(†47), 313.7(†22)
• 31.4		^{241}Am(432.2 y)	59.537(†60), 26.345(†1000×10^{9}), 33.195(†6000×10^{8})
• 31.444 *7*	0.0071 *15*	^{155}Eu(4.7611 y)	86.545(30.7), 105.305(21.2), 45.2972(1.326)
• 31.444 *7*	0.022 *5*	^{155}Tb(5.32 d)	86.545(32.0), 105.305(25), 180.103(7.45)
31.5 *1*	†5.3 *7*	^{155}Tm(21.6 s)	226.8(†100), 531.7(†20), 88.1(†17)
31.50 *5*	†91 *16*	^{225}Fr(4.0 m)	182.3(†100), 225.1(†55), 75.1(†45)
• 31.50 *5*	1.19 *4*	^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
31.5		^{236}Th(37.5 m)	110.8(4.2), 646.6(0.72), 196.0(0.69)
31.52 *4*		^{107}Ru(3.75 m)	194.05(9.9), 847.93(5.3), 462.61(3.66)
• 31.52 *4*	0.00025 *4*	^{233}U(1.592×10^{5} y)	42.44(0.0862), 97.134(0.020), 54.699(0.0182)
• 31.54 *5*	0.0070 *24*	^{231}Pa(32760 y)	27.36(10.3), 300.07(2.46), 302.65(2.2)
31.58 *14*		^{187}Au(8.4 m)	1331.81(7.0), 1408.23(3.06), 914.73(3.02)
31.58 *1*		^{223}Fr(21.8 m)	50.13(36.0), 79.72(9.1), 234.81(3.0)
• 31.58 *1*	†5.0 *12*	^{227}Th(18.72 d)	235.971(†813), 50.13(†528), 256.25(†463)
31.6 *2*		^{171}Hf(12.1 h)	122.0(†100), 662.2(†83), 347.18(†47)
31.6		^{180}Os(21.5 m)	20.1(†100), 717.4, 667.0
• 31.60 *5*	0.016 *5*	^{235}U(7.038×10^{8} y)	185.712(57.2), 143.764(10.96), 163.358(5.08)
31.61 *5*	1.8 *4*	^{192}Hg(4.85 h)	274.8(50.4), 157.2(7), 306.5(5.4)
31.67 *3*	0.50 *6*	^{151}Nd(12.44 m)	116.80(43.4), 255.68(16.4), 1180.89(14.8)
31.7 *2*	†8 *1*	^{139}I(2.29 s)	527.7(†100), 571.2(†98), 536.6(†67)
31.7 *1*	†0.17 *5*	^{155}Er(5.3 m)	110.12(†100), 241.5(†65), 234.0(†40.0)
• 31.7378 *5*	0.486 *7*	^{182}Ta(114.43 d)	67.75001(41.2), 1121.3007(34.9), 1221.4066(26.98)
31.7378 *5*	0.452 *10*	^{182}Re(12.7 h)	67.75001(38.2), 1121.3007(32), 1221.4066(24.8)
• 31.7378 *5*	0.26 *5*	^{182}Re(64.0 h)	229.3220(26), 67.75001(22.2), 1121.3007(22.0)
31.78 *5*	0.22 *4*	^{157}Sm(482 s)	197.870(56.00), 196.461(16.8), 394.351(11.93)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
31.80 *3*	0.46 *3*	^{109}Ru(34.5 s)	206.29(22.0), 225.98(19.6), 1929.05(13.7)
• 31.8 *1*		^{208}Po(2.898 y)	291.7(†9×10^{06}), 570.4(†5×10^{06}), 601.6(†4.1×10^{6})
31.85 *13*	0.0125 *21*	^{183}Ir(58 m)	392.52(10.4), 228.70(6.9), 87.67(5.6)
• 31.89	†>5.0×10^{4}	^{134}Ce(75.9 h)	162.306(†230000), 130.414(†209000), 39.08(†>150000)
• 31.99 *3*	1.0×10^{-4}	^{223}Ra(11.435 d)	269.459(13.7), 154.21(5.62), 323.871(3.93)
32.05 *3*	1.92 *9*	^{70}Se(41.1 m)	49.51(35.8), 426.15(29), 376.65(9.43)
32.1 *2*	4.01 *24*	^{128}Sn(59.07 m)	482.3(59), 75.1(27.7), 557.3(16.5)
32.1473 *16*		^{83}Br(2.40 h)	529.635(1.200), 520.39(0.0576), 552.63(0.0200)
• 32.1473 *16*		^{83}Rb(86.2 d)	520.39(44.7), 529.635(29.3), 552.63(16.0)
• 32.183	†7.40×10^{7} *18*	^{241}Am(432.2 y)	59.537(†60), 26.345(†1000×10^{9}), 33.195(†6000×10^{8})
32.19 *3*	0.09	^{201}Au(26 m)	542.6(1.2), 517.0(0.83), 613.2(0.77)
• 32.19 *3*	0.258 *5*	^{201}Tl(72.912 h)	167.43(10), 135.34(2.565), 30.60(0.253)
32.2 *3*		^{153}Nd(28.9 s)	418.3(†100), 105.4(†36), 475.2(†33)
32.2	>0.11	^{179}Re(19.5 m)	430.221(28), 289.968(26.9), 1680.244(13.0)
32.21 *3*		^{193}Hg(3.80 h)	861.11(†100), 1118.84(†64), 789.21(†36)
32.21 *3*	0.00096 *10*	^{193}Hg(11.8 h)	257.97(61), 407.63(25), 573.25(14.2)
32.3 *1*	7.6 *8*	^{117}Xe(61 s)	28.5(7.0), 221.3(10.0), 519.1(6.2)
32.3 *3*	†17	^{179}Os(6.5 m)	65.39(†100), 218.6(†17), 593.8(†16)
32.35 *10*	0.08	^{170}Hf(16.01 h)	164.78(33), 620.7(23), 120.17(19)
32.4 *2*	†1.6 *4*	^{229}Ac(62.7 m)	164.522(†100), 569.1(†91), 261.92(†39)
• 32.4 *2*	0.00091 *14*	^{233}U(1.592×10^{5} y)	42.44(0.0862), 97.134(0.020), 54.699(0.0182)
32.46 *2*	0.0048 *5*	^{107}Cd(6.50 h)	93.124(1.45), 828.93(0.17), 796.462(0.0665)
• 32.46		^{237}Np(2.14×10^{6} y)	29.374(15.0), 86.477(12.4), 94.66(0.6)
• 32.532 *19*	0.0095 *5*	^{206}Po(8.8 d)	1032.26(32.9), 511.36(24.1), 286.410(23.8)
32.6		^{251}Cm(16.8 m)	542.7(10.9), 530.0(1.62), 389.7(1.28)
• 32.639 *3*	0.21 *3*	^{241}Cm(32.8 d)	471.805(71), 430.634(4.06), 132.413(3.86)
• 32.639 *3*		^{245}Bk(4.94 d)	205.879(0.040), 471.805(0.026), 164.8(0.0084)
• 32.70 *2*	3.87 *10*	^{100}Pd(3.63 d)	84.02(45), 74.78(36.5), 126.05(8.10)
• 32.73 *5*	0.073 *4*	^{231}Th(25.52 h)	25.646(14.5), 84.216(6.6), 89.944(0.94)
32.75 *2*		^{200}Pb(21.5 h)	147.63(37.7), 257.17(4.46), 235.63(4.30)
• 32.9		^{237}Pu(45.2 d)	280.40(†870000), 298.89(†7.85×10^{6}), 320.75(†6.48×10^{6})
33.0 *1*		^{139}Sm(2.57 m)	273.7(37), 306.7(28.5), 596.3(8.0)
33.0	†>0.030	^{142}Xe(1.22 s)	571.83(†100), 657.05(†79), 538.24(†77)
33.1		^{235}Th(7.1 m)	417.0(2), 727.2(0.87), 696.1(0.64)
• 33.195 *11*	0.130 *5*	^{237}U(6.75 d)	59.537(34.5), 208.00(21.14), 26.345(2.43)
• 33.195 *11*	0.0745 *23*	^{237}Pu(45.2 d)	59.537(3.28), 26.345(0.221), 43.423(0.0039)
• 33.195 *11*	†6000×10^{8} *10*	^{241}Am(432.2 y)	59.537(†60), 26.345(†1000×10^{9}), 43.423(†3.00×10^{7})
• 33.32 *5*	0.030 *2*	^{231}Th(25.52 h)	25.646(14.5), 84.216(6.6), 89.944(0.94)
• 33.335 *19*	0.000149 *16*	^{189}Re(24.3 h)	216.663(5.50), 219.395(4.54), 245.09(3.5)
• 33.335 *19*	0.0068 *8*	^{189}Ir(13.2 d)	245.09(6), 69.537(3.5), 59.053(1.20)
• 33.40 *8*	†0.8	^{227}Th(18.72 d)	235.971(†813), 50.13(†528), 256.25(†463)
33.46	0.290 *25*	^{143}Cs(1.78 s)	195.554(13), 232.421(8.32), 306.424(6.80)
33.50 *3*	0.013 *9*	^{167}Lu(51.5 m)	29.66(14.4), 239.22(8.6), 213.19(3.6)
33.54		^{133}Ce(4.9 h)	477.22(39), 510.36(20.7), 58.39(19.2)
• 33.568 *10*	0.200 *22*	^{144}Ce(284.893 d)	133.515(11.09), 80.120(1.36), 40.98(0.257)
33.58	†0.037	^{176}W(2.5 h)	100.20(†100), 94.86(†8), 61.29(†8)
33.6		^{192}Bi(39.6 s)	268.8, 103.1
• 33.6 *5*	0.10 *3*	^{223}Ra(11.435 d)	269.459(13.7), 154.21(5.62), 323.871(3.93)
33.7 *1*	2.3 *5*	^{117}Cs(8.4 s)	204.8(15.0), 29.7(9.9), 205.6(6.8)
33.8 *2*	†19	^{154}Nd(25.9 s)	151.703(†800), 799.55(†600), 180.693(†510)
33.8 *3*	0.0011 *4*	^{181}Os(105 m)	238.75(44), 826.77(20), 118.03(12.9)
33.85 *5*	0.013 *6*	^{185}Ir(14.4 h)	254.4(13.3), 1828.8(10), 60.0(5.7)
33.9 *2*		^{177}Re(14 m)	196.85(†1200), 79.65(†1010), 84.3(†890)
33.91 *2*	3.2 *3*	^{167}Lu(51.5 m)	29.66(14.4), 239.22(8.6), 213.19(3.6)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
34.0 *4*	†6.4 *4*	^{172}W(6.6 m)	38.9(†100), 423.3(†44), 89.8(†33.0)
• 34.0		^{231}Pa(32760 y)	27.36(10.3), 300.07(2.46), 302.65(2.2)
• 34		^{232}Pa(1.31 d)	969.315(41.6), 894.351(19.8), 150.059(10.8)
34		^{243}Pu(4.956 h)	84.0(23), 41.8(0.76), 381.7(0.56)
34.0		^{251}Bk(55.6 m)	177.7(6), 130.1(3.4), 152.8(2.23)
• 34.0		^{251}Es(33 h)	177.7(2.4), 152.8(0.91), 163.8(0.10)
34.0		^{255}Fm(20.07 h)	81.477(0.81), 58.477(0.67), 80.92(0.27)
34.18 *10*	1.30 *21*	^{160}Yb(4.8 m)	173.74(42.0), 215.78(20.2), 140.35(9.3)
34.23 *10*	0.23 *4*	^{235}Pu(25.3 m)	49.10(2.36), 756.4(0.479), 910.1(0.164)
34.30 *4*		^{234}Pa(6.70 h)	131.30(18), 946.00(13.4), 883.24(9.6)
34.325 *5*		^{250}Bk(3.217 h)	989.12(45), 1031.85(35.6), 1028.65(4.91)
34.325 *5*	0.06	^{250}Es(8.6 h)	828.82(72), 303.41(21.6), 349.4(19.8)
34.37		^{166}Hf(6.77 m)	78.76(41), 341.82(4.7), 407.91(4.5)
34.4		^{233}Pu(20.9 m)	235.4(†100), 534.8(†90.2), 500.3(†38.6)
• 34.4 *1*		^{254}Es(275.7 d)	63.0(2.0), 316(0.15), 304(0.07)
• 34.4 *1*		^{254}Es(39.3 h)	211.80(0.096), 177.30(0.056), 71.30(0.043)
34.52 *3*	1.63 *13*	^{135}Ce(17.7 h)	265.56(41.8), 300.07(23.5), 606.76(18.8)
34.6 *3*	†32.7 *12*	^{117}Rh(0.44 s)	131.8(†100), 97.1(†33), 481.6
• 34.6	>0.011	^{172}Hf(1.87 y)	23.9331(20.3), 125.812(11.3), 67.35(5.3)
• 34.7 *1*	0.037	^{235}U(7.038×10^{8} y)	185.712(57.2), 143.764(10.96), 163.358(5.08)
34.71 *5*	0.36 *4*	^{132}Ce(3.51 h)	182.11(77), 155.37(10.5), 216.83(4.95)
34.76		^{246}Am(25.0 m)	1078.86(27.7), 798.80(25), 1062.04(17.1)
• 34.76		^{246}Bk(1.80 d)	798.80(61), 1081.40(5.8), 833.60(5.0)
• 34.79 *4*		^{169}Lu(34.06 h)	960.622(23.4), 191.2137(20.6), 1449.74(9.92)
• 34.8 *1*	0.0024	^{229}Pa(1.50 d)	40.09(0.104), 64.70(0.045), 75.12(0.035)
• 34.8	0.0024	^{229}Pa(1.50 d)	40.09(0.104), 64.70(0.045), 75.12(0.035)
34.9 *3*	0.45 *8*	^{113}Rh(2.72 s)	189.7(17.0), 409.3(15.9), 219.6(3.88)
34.9 *3*	0.039 *8*	^{127}Sn(2.10 h)	1114.3(39), 1095.6(20), 823.1(10.9)
34.9		^{161}Er(3.21 h)	826.6(3.0), 211.15(12.2), 592.6(3.7)
• 34.954 *18*	0.0168 *10*	^{206}Bi(6.243 d)	803.10(99), 881.01(66.2), 516.18(40.7)
34.991 *55*	0.0045 *21*	^{223}Fr(21.8 m)	50.13(36.0), 79.72(9.1), 234.81(3.0)
35 *7*		^{187}Pb(18.3 s)	393.4(†100), 331.4(†75), 343.5(†75)
35.05 *8*	1.12 *6*	^{146}Ce(13.52 m)	316.74(56), 218.23(20.8), 264.56(9.0)
35.05 *3*		^{163}Tm(1.810 h)	104.320(18.6), 69.229(11.6), 241.305(10.9)
35.05	>0.11	^{179}Re(19.5 m)	430.221(28), 289.968(26.9), 1680.244(13.0)
35.1	0.25 *13*	^{147}Cs(0.225 s)	85.2(7.3), 245.8(4.5), 109.7(4.5)
• 35.13 *1*	0.034 *25*	^{151}Pm(28.40 h)	340.08(23), 167.75(8.3), 275.21(6.8)
35.2 *3*		^{129}In(0.61 s)	2118.0(45), 1865.0(32), 769.3(9.1)
35.2 *2*	0.045 *15*	^{140}Sm(14.82 m)	225.5(>10), 225.4(10), 140.0(5.0)
35.2		^{157}Lu(5.0 s)	967.5, 949.8, 880.5
• 35.280 *18*		^{165}Tm(30.06 h)	242.917(35.5), 47.155(16.9), 297.369(12.71)
35.3 *1*	18	^{156}Er(19.5 m)	29.9(3.1), 133.6(0.8), 352.0(0.29)
35.34 *10*	1.30 *16*	^{109}Rh(80 s)	326.868(54), 426.135(7.7), 178.034(7.6)
35.42 *8*	14.1 *11*	^{174}W(31 m)	428.83(12.7), 328.68(9.5), 378.54(8.3)
• 35.4919 *5*	4.29 *12*	^{125}Sb(2.7582 y)	427.875(30), 600.600(17.86), 635.954(11.31)
• 35.4919 *5*	6.68 *13*	^{125}I(59.408 d)	
35.50 *10*	0.44 *13*	^{83}Y(7.08 m)	882.1(6.30), 489.90(5.53), 858.70(3.21)
• 35.5 *1*		^{254}Es(275.7 d)	63.0(2.0), 316(0.15), 304(0.07)
• 35.5 *1*		^{254}Es(39.3 h)	211.80(0.096), 177.30(0.056), 71.30(0.043)
35.56 *3*		^{163}Tm(1.810 h)	104.320(18.6), 69.229(11.6), 241.305(10.9)
• 35.57 *6*	0.421 *3*	^{115}Cd(53.46 h)	336.240(45.9), 527.900(27.45), 492.3(8.03)
35.58 *18*	0.53 *21*	^{102}Sr(69 ms)	243.80(53), 150.15(18.0), 93.89(13.4)
35.6 *2*	0.086 *19*	^{76}Kr(14.8 h)	315.7(39), 270.2(21.1), 45.48(19.5)
35.66 *4*	†21.8 *11*	^{173}W(7.5 m)	457.68(†100), 130.19(†31.5), 174.8(†29.1)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
35.7 *1*	0.028 *4*	^{223}Ac(2.10 m)	98.58(0.891), 191.3(0.58), 83.55(0.57)
35.7 *3*		^{251}Cm(16.8 m)	542.7(10.9), 530.0(1.62), 389.7(1.28)
• 35.7 *3*		^{255}Es(39.8 d)	269.1, 233.6
35.75 *5*	†5	^{185}Hg(21.6 s)	222.8(†100.0), 258.7(†98), 212.5(†58)
• 35.8	0.0007	^{153}Tb(2.34 d)	212.038(31.0), 170.504(6.8), 109.758(6.4)
35.8	>0.028	^{157}Tm(3.63 m)	455.00(9.3), 385.5(8.8), 348.40(8.4)
35.8 *1*		^{175}Ta(10.5 h)	207.4(14.0), 348.5(12.0), 266.9(10.8)
• 35.83 *3*	0.0161 *9*	^{231}Pa(32760 y)	27.36(10.3), 300.07(2.46), 302.65(2.2)
35.842 *5*	†100 *5*	^{153}Pm(5.4 m)	127.298(†75), 28.309(†34.6), 119.763(†32.9)
36.1 *1*	0.28 *3*	^{186}Hg(1.38 m)	112.1(63), 251.5(55), 191.6(3.7)
• 36.202 *16*	0.24 *7*	^{189}Re(24.3 h)	216.663(5.50), 219.395(4.54), 245.09(3.5)
• 36.202 *16*	0.67 *6*	^{189}Ir(13.2 d)	245.09(6), 69.537(3.5), 59.053(1.20)
• 36.24 *10*		^{237}Np(2.14×10^6 y)	29.374(15.0), 86.477(12.4), 94.66(0.6)
36.3 *2*	14 *2*	^{104}Mo(60 s)	68.8(55), 69.7(17.8), 55.0(8.6)
36.38 *3*	0.0074 *8*	^{187}W(23.72 h)	685.774(27.3), 479.531(21.8), 72.001(11.14)
36.40 *2*		^{175}W(35.2 m)	270.25(12.6), 166.69(9.0), 149.17(3.6)
• 36.4		^{254}Es(39.3 h)	211.80(0.096), 177.30(0.056), 71.30(0.043)
36.423 *5*	†0.75 *22*	^{153}Pm(5.4 m)	35.842(†100), 127.298(†75), 28.309(†34.6)
36.5 *1*	20.4 *22*	^{98}Sr(0.653 s)	119.353(73), 444.628(39), 428.4(31)
36.5 *1*	0.061 *5*	^{107}In(32.4 m)	204.97(47), 505.51(11.9), 320.92(10.2)
36.50 *5*	4.6 *6*	^{124}Cd(0.9 s)	179.91(49.9), 62.80(22.7), 143.33(12.9)
36.52 *8*	0.43 *11*	^{108}Sn(10.30 m)	396.44(64.3), 272.75(45.5), 669.08(22.6)
36.65 *3*		^{221}Rn(25 m)	186.38(21.6), 150.04(4.5), 216.90(2.6)
• 36.65 *3*	0.0174 *22*	^{225}Ac(10.0 d)	99.91(1.01), 150.04(0.80), 99.63(0.62)
36.7	0.018 *8*	^{149}Nd(1.728 h)	211.309(25.9), 114.314(19.2), 270.166(10.7)
36.7		^{161}Er(3.21 h)	826.6(3.0), 211.15(12.2), 592.6(3.7)
36.7 *2*		^{187}Hg(1.9 m)	233.38(†100), 376.34(†38), 240.26(†33)
36.7	†0.38	^{224}Ac(2.9 h)	156.4(†100), 140.8(†55), 261.6(†28)
36.79 *3*	0.007	^{167}Lu(51.5 m)	29.66(14.4), 239.22(8.6), 213.19(3.6)
36.8 *3*	†3.3	^{179}Os(6.5 m)	65.39(†100), 218.6(†17), 32.3(†17)
• 36.83 *3*	0.0157 *20*	^{131}Te(30 h)	773.67(49.9), 852.21(27.0), 793.75(18.10)
36.83 *3*	0.0112 *25*	^{199}Tl(7.42 h)	455.46(12.4), 208.20597(12.3), 247.26(9.3)
36.9	†43 *2*	^{178}Pt(21.1 s)	84.6(†100), 90.4(†80), 101.3(†76)
37 *1*		^{141}Xe(1.73 s)	909.23(24.0), 118.705(16.1), 105.937(9.8)
37.05 *2*	0.19 *7*	^{167}Yb(17.5 m)	113.34(55.3), 106.18(22.5), 176.25(21)
37.09 *3*	2.6 *3*	^{195}Tl(1.16 h)	563.52(10.5), 884.47(10.0), 1363.88(8.4)
37.1 *4*	†1.3 *2*	^{168}W(51 s)	178.5(†100), 145.5(†<2), 352.2(†1.8)
• 37.138 *10*	1.9	^{121}Sn(55 y)	
• 37.138 *10*	0.117 *4*	^{121}Te(16.78 d)	573.139(80.3), 507.591(17.7), 470.472(1.41)
• 37.138 *10*	0.94 *10*	^{121}Te(154 d)	1102.149(2.54), 998.291(0.0796), 909.847(0.0703)
37.30 *8*	0.48 *3*	^{157}Sm(482 s)	197.870(56.00), 196.461(16.8), 394.351(11.93)
37.343 *5*	†2.7 *7*	^{153}Pm(5.4 m)	35.842(†100), 127.298(†75), 28.309(†34.6)
37.36 *8*	†>4.8×10^2	^{157}Ho(12.6 m)	279.97(†47600), 341.16(†37000), 193.41(†15200)
37.4 *2*	1.7	^{104}Zr(1.2 s)	100.9(6), 504.7(5), 445.0(5)
37.40 *5*	1.24 *14*	^{173}Ta(3.14 h)	172.2(18), 69.70(5.9), 90.3(5.0)
37.4 *1*	3.4 *7*	^{185}Ir(14.4 h)	254.4(13.3), 1828.8(10), 60.0(5.7)
• 37.54 *3*	0.0148 *7*	^{249}Cf(351 y)	388.16(66), 333.37(14.6), 252.80(2.50)
37.573 *13*	0.120 *13*	^{164}Yb(75.8 m)	40.928(1.147), 675.41(0.38), 390.6(0.31)
37.63 *6*	†58	^{154}Nd(25.9 s)	151.703(†800), 799.55(†600), 180.693(†510)
37.65 *3*	0.0223 *23*	^{193}Au(17.65 h)	186.17(10.1), 255.57(6.7), 268.22(3.9)
37.7 *3*	0.21 *11*	^{164}Tb(3.0 m)	168.838(25.4), 754.80(23.3), 215.07(21)
37.70 *3*	>0.025	^{167}Lu(51.5 m)	29.66(14.4), 239.22(8.6), 213.19(3.6)
• 37.80 *15*	0.00038 *7*	^{149}Gd(9.28 d)	149.735(48.2), 298.634(28.6), 346.651(23.9)
37.80 *4*	1.34 *25*	^{155}Ho(48 m)	240.19(12.5), 136.30(5.00), 45.38(5)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
37.8 *1*	†0.13 *7*	^{225}Fr(4.0 m)	182.3(†100), 31.50(†91), 225.1(†55)
• 37.8 *1*	0.0033 *16*	^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
37.90 *2*	0.0075 *18*	^{223}Fr(21.8 m)	50.13(36.0), 79.72(9.1), 234.81(3.0)
37.9 *1*	0.65 *15*	^{227}Fr(2.47 m)	90.035(39), 585.804(29.5), 64.267(14.5)
37.9227 *16*	0.0045 *22*	^{163}Tb(19.5 m)	351.138(26), 389.734(24.3), 494.534(23)
37.9681 *7*	>2.9	^{156}Sm(9.4 h)	87.4897(24), 203.818(20.6), 165.8452(12.7)
• 37.98 *12*	0.00033 *5*	^{233}U(1.592×10^5 y)	42.44(0.0862), 97.134(0.020), 54.699(0.0182)
38.0 *5*	0.14 *4*	^{76}Kr(14.8 h)	315.7(39), 270.2(21.1), 45.48(19.5)
38.0		^{168}Hf(25.95 m)	183.8(†100), 157.2(†68), 324.1
38.18 *4*	†4.5 *5*	^{169}Ta(4.9 m)	511.0(†20.6), 28.80(†18.3), 192.4(†8)
38.19 *1*	>0.018	^{227}Ra(42.2 m)	27.36(16), 300.07(4.6), 302.65(4.3)
• 38.19 *1*	0.160 *9*	^{231}Pa(32760 y)	27.36(10.3), 300.07(2.46), 302.65(2.2)
38.20 *13*	0.059 *15*	^{181}Re(19.9 h)	365.57(56), 360.70(20), 639.30(6.4)
38.22 *2*		^{193}Hg(3.80 h)	861.11(†100), 1118.84(†64), 789.21(†36)
38.22 *2*	0.034 *6*	^{193}Hg(11.8 h)	257.97(61), 407.63(25), 573.25(14.2)
38.24 *6*	0.36 *8*	^{145}Cs(0.594 s)	175.36(20), 198.93(10.9), 112.46(10.71)
38.3	>0.11	^{179}Re(19.5 m)	430.221(28), 289.968(26.9), 1680.244(13.0)
38.33 *3*	0.04 *2*	^{140}Xe(13.60 s)	805.52(20), 1413.66(12.2), 1315.05(8.2)
38.34 *3*	0.18 *4*	^{140}Xe(13.60 s)	805.52(20), 1413.66(12.2), 1315.05(8.2)
38.35 *7*	5.8 *14*	^{159}Tm(9.13 m)	84.8(5.8), 271.30(5.1), 220.18(4.60)
38.38 *2*	0.68 *3*	^{121}Cs(122 s)	179.4(30.2), 196.0(24.1), 459.7(12.0)
38.4 *2*	0.037 *18*	^{227}Pa(38.3 m)	64.62(6), 110.05(1.24), 84.8(0.86)
• 38.43 *20*	0.00042	^{99}Mo(65.94 h)	739.50(12.1), 181.063(6.08), 140.511(4.52)
38.53 *3*	<0.010	^{221}Rn(25 m)	186.38(21.6), 150.04(4.5), 216.90(2.6)
• 38.53 *3*	0.0131 *11*	^{225}Ac(10.0 d)	99.91(1.01), 150.04(0.80), 99.63(0.62)
• 38.54 *3*		^{237}U(6.75 d)	59.537(34.5), 208.00(21.14), 26.345(2.43)
• 38.54 *3*		^{241}Am(432.2 y)	59.537(†60), 26.345(†1000×10^9), 33.195(†6000×10^8)
38.58 *10*	0.08 *8*	^{66}Ge(2.26 h)	43.89(28.7), 381.85(28), 272.97(10.4)
38.6 *3*	†16 *5*	^{112}Te(2.0 m)	372.70(†100), 296.20(†86), 418.9(†57)
38.6 *3*	†4.9	^{177}Os(2.8 m)	84.7(†100), 125.4(†63), 195.8(†61)
38.6011 *16*	0.029 *14*	^{163}Tb(19.5 m)	351.138(26), 389.734(24.3), 494.534(23)
• 38.66 *5*	0.0072 *21*	^{172}Er(49.3 h)	610.062(44.2), 407.338(42.1), 68.107(3.29)
38.661 *2*		^{235}Pa(24.5 m)	652.053, 659.3, 645.896
• 38.661 *2*	0.000500 *2*	^{239}Pu(24110 y)	51.624(0.007100), 129.297(0.00631), 375.045(0.001554)
• 38.720 *17*	0.023 *4*	^{105}Rh(35.36 h)	319.14(19), 306.25(5.1), 280.41(0.167)
• 38.720 *17*	0.0054 *12*	^{105}Ag(41.29 d)	344.520(41), 280.41(30.2), 644.55(11.1)
38.720 *17*	†75 *19*	^{105}Ag(7.23 m)	319.14(†63000), 306.25(†12800), 442.37(†5900)
38.83 *7*	†2.2 *3*	^{142}Xe(1.22 s)	571.83(†100), 657.05(†79), 538.24(†77)
38.83 *7*	†23.3 *17*	^{142}Xe(1.22 s)	571.83(†100), 657.05(†79), 538.24(†77)
38.9 *4*	†100	^{172}W(6.6 m)	423.3(†44), 89.8(†33.0), 221.3(†29)
38.9 *1*	0.076 *3*	^{190}Ir(3.25 h)	616.08(93.10), 502.53(92.31), 361.136(89.57)
• 38.90 *5*	0.110 *6*	^{231}Th(25.52 h)	25.646(14.5), 84.216(6.6), 89.944(0.94)
39 *1*		^{122}Ba(1.95 m)	550.7, 388.7, 231.0
39.0 *2*	†6 *2*	^{129}Sb(17.7 m)	759.8(†100.0), 657.78(†92), 433.76(†73)
39.0 *2*	5.1 *10*	^{162}Gd(8.4 m)	442.12(51), 403.00(43.3), 341.42(2.70)
39.0 *3*		^{187}Au(8.4 m)	1331.81(7.0), 1408.23(3.06), 914.73(3.02)
39.06 *10*		^{170}Hf(16.01 h)	164.78(33), 620.7(23), 120.17(19)
• 39.08	>150000	^{134}Ce(75.9 h)	162.306(†230000), 130.414(†209000), 300.884(†88000)
• 39.110 *25*	0.26 *5*	^{182}Re(64.0 h)	229.3220(26), 67.75001(22.2), 1121.3007(22.0)
39.156 *9*	0.009 *3*	^{163}Tb(19.5 m)	351.138(26), 389.734(24.3), 494.534(23)
39.2 *4*	0.29 *11*	^{77}Rb(3.75 m)	66.52(57), 178.99(22.2), 393.37(9.7)
39.23 *8*	†35.7 *30*	^{165}Lu(10.74 m)	132.49(†100), 120.60(†100), 174.25(†47.0)
39.3	0.25 *13*	^{147}Cs(0.225 s)	85.2(7.3), 245.8(4.5), 109.7(4.5)
39.33 *4*		^{167}Lu(51.5 m)	29.66(14.4), 239.22(8.6), 213.19(3.6)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
39.39 *2*	3.31 *16*	^{155}Ho(48 m)	240.19(12.5), 136.30(5.00), 45.38(5)
39.41 *7*	28	^{79}Sr(2.25 m)	105.00(21.8), 413.8(7.6), 218.98(5.9)
39.44 *3*	0.35 *7*	^{107}Tc(21.2 s)	102.70(21.0), 177.00(9.2), 106.31(7.6)
39.47 *3*	†0.13 *2*	^{189}Au(28.7 m)	713.17(†100), 812.68(†63), 447.65(†55)
39.51 *3*		^{193}Tl(21.6 m)	324.37(†100), 1044.7(†59), 676.10(†48)
• 39.578 *4*	7.45 *30*	^{129}I(1.57×10^{7} y)	
• 39.578 *4*	2.97 *9*	^{129}Cs(32.06 h)	371.918(30.60), 411.490(22.31), 548.945(3.40)
39.59 *5*	0.41 *6*	^{70}Se(41.1 m)	49.51(35.8), 426.15(29), 376.65(9.43)
39.7		^{145}Dy(13.6 s)	578.2(13), 639.6(12), 804.3(10)
39.7		^{157}Eu(15.18 h)	63.929(23.0), 410.723(17.5), 370.509(11.0)
• 39.73 *3*	0.0024 *17*	^{231}Pa(32760 y)	27.36(10.3), 300.07(2.46), 302.65(2.2)
• 39.757 *6*	0.089 *8*	^{103}Ru(39.26 d)	497.080(90.9), 610.33(5.75), 443.799(3.27)
• 39.757 *6*	0.07	^{103}Pd(16.991 d)	357.47(0.0221), 497.080(0.00396), 294.978(0.00280)
• 39.8		^{155}Tb(5.32 d)	86.545(32.0), 105.305(25), 180.103(7.45)
39.858 *4*	1.091 *25*	^{212}Bi(60.55 m)	452.83(0.31), 288.07(0.31), 327.96(0.139)
• 39.881 *10*		^{254}Es(39.3 h)	648.80(28.4), 693.79(24.3), 688.68(12.3)
• 39.89		^{229}Pa(1.50 d)	40.09(0.104), 64.70(0.045), 75.12(0.035)
39.9 *3*	0.0029 *10*	^{123}Xe(2.08 h)	148.9(49), 178.1(14.9), 330.2(8.6)
39.9 *1*	0.182 *22*	^{133}Te(55.4 m)	912.671(55.28), 647.51(19.4), 863.955(15.6)
39.9 *1*	0.111 *22*	^{133}Te(55.4 m)	912.671(55.28), 647.51(19.4), 863.955(15.6)
39.9		^{151}Ho(35.2 s)	527.4(63), 775.53(9.2), 209.5(5.69)
39.9 *3*	0.21 *11*	^{164}Tb(3.0 m)	168.838(25.4), 754.80(23.3), 215.07(21)
39.9 *1*	†9 *2*	^{227}Rn(22.5 s)	162.14(†100), 739.2(†65), 686.2(†62)
39.95 *5*	0.120 *6*	^{119}I(19.1 m)	257.52(87), 635.86(2.69), 320.53(2.17)
39.97 *10*	0.36 *20*	^{66}Ge(2.26 h)	43.89(28.7), 381.85(28), 272.97(10.4)
• 39.97 *2*	0.013 *3*	^{231}Pa(32760 y)	27.36(10.3), 300.07(2.46), 302.65(2.2)
40.0 *5*	0.055 *12*	^{76}Kr(14.8 h)	315.7(39), 270.2(21.1), 45.48(19.5)
40.0 *1*	6.3×10^{-5} *8*	^{159}Er(36 m)	624.5(33), 649.1(23.4), 205.92(9.7)
40.0 *1*		^{159}Er(36 m)	624.5(33), 649.1(23.4), 205.92(9.7)
• 40.09 *5*	30	^{225}Ra(14.9 d)	
• 40.09 *5*	0.104 *9*	^{229}Pa(1.50 d)	64.70(0.045), 75.12(0.035), 115.55(0.0182)
• 40.09		^{229}Pa(1.50 d)	40.09(0.104), 64.70(0.045), 75.12(0.035)
40.1 *3*	3.5	^{45}V(547 ms)	
40.17 *1*	1.04 *7*	^{208}Rn(24.35 m)	426.78(7.07), 251.05(5.02), 350.026(3.34)
40.17 *1*	0.25 *3*	^{212}Fr(20.0 m)	124.2(1.77), 84.1(0.63), 71.7(0.55)
40.2 *1*	18.9 *16*	^{136}Nd(50.65 m)	108.90(32), 574.8(10.4), 149.1(6.9)
40.2		^{168}Hf(25.95 m)	183.8(†100), 157.2(†68), 324.1
• 40.2 *1*	†1.6	^{227}Th(18.72 d)	235.971(†813), 50.13(†528), 256.25(†463)
40.3 *4*	4.8 *8*	^{58}Cu(3.204 s)	1454.45(16.0), 1448.2(11.5), 1321.2(1.17)
• 40.35 *1*	0.039 *8*	^{233}Pa(26.967 d)	312.17(38.6), 300.34(6.62), 340.81(4.47)
40.35 *1*		^{233}Np(36.2 m)	312.17(0.7), 298.89(0.44), 546.9(0.280)
• 40.35 *1*		^{237}Pu(45.2 d)	280.40(†870000), 298.89(†7.85×10^{6}), 320.75(†6.48×10^{6})
• 40.41 *5*	0.000162 *16*	^{239}Pu(24110 y)	51.624(0.007100), 38.661(0.000500), 129.297(0.00631)
40.5 *1*	1.12 *17*	^{181}Au(11.4 s)	198.60(4.4), 2022.4(4.2), 79.40(4.2)
• 40.5845 *16*	1.05 *3*	^{99}Mo(65.94 h)	739.50(12.1), 181.063(6.08), 140.511(4.52)
40.6		^{238}Pa(2.3 m)	1015.3(†<100), 1014.6(†<100), 635.18(†88)
40.7 *1*	0.08 *3*	^{97}Rb(169.9 ms)	167.1(26), 585.2(21.0), 600.5(10.6)
• 40.7		^{155}Tb(5.32 d)	86.545(32.0), 105.305(25), 180.103(7.45)
40.7 *2*		^{255}Fm(20.07 h)	81.477(0.81), 58.477(0.67), 80.92(0.27)
40.748 *6*		^{237}Am(73.0 m)	280.23(47.3), 438.4(8.3), 473.5(4.3)
40.748		^{237}Am(73.0 m)	280.23(47.3), 438.4(8.3), 473.5(4.3)
• 40.75 *20*	0.026 *3*	^{155}Eu(4.7611 y)	86.545(30.7), 105.305(21.2), 45.2972(1.326)
40.76 *12*	0.0020 *6*	^{187}W(23.72 h)	685.774(27.3), 479.531(21.8), 72.001(11.14)
40.8 *3*	0.0017 *4*	^{247}Cf(3.11 h)	294.1(0.98), 447.8(0.55), 417.9(0.34)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
40.84 *3*	25.5 *13*	^{62}Zn(9.186 h)	596.56(26), 548.35(15.3), 507.60(14.8)
40.86 *3*		^{161}Tm(33 m)	45.54(5.00), 1648.1(9.50), 84.40(9.4)
40.9 *2*	0.67 *20*	^{120}Xe(40 m)	25.1(30), 72.6(9), 178.1(6.8)
40.9 *2*	0.14 *5*	^{120}Xe(40 m)	25.1(30), 72.6(9), 178.1(6.8)
40.9 *3*		^{192}Hg(4.85 h)	274.8(50.4), 157.2(7), 306.5(5.4)
40.928 *4*	1.147 *16*	^{164}Yb(75.8 m)	675.41(0.38), 390.6(0.31), 446.74(0.28)
• 40.9755 *5*	0.47 *5*	^{183}Ta(5.1 d)	246.0591(27), 353.9912(11.2), 107.9322(11.0)
• 40.9755 *5*	0.026 *7*	^{183}Re(70.0 d)	162.3219(23.3), 46.4839(7.97), 291.7238(3.05)
• 40.98 *10*	0.257 *16*	^{144}Ce(284.893 d)	133.515(11.09), 80.120(1.36), 33.568(0.200)
41.0 *5*	0.25 *3*	^{118}In(8.5 s)	1229.68(1.4), 1050.69(1.37), 253.68(1.30)
41.0 *5*	30.0 *20*	^{118}Sb(5.00 h)	1229.68(100), 253.68(99), 1050.69(97)
41		^{239}Cm(2.9 h)	187.1, 146.4
41	0.006	^{243}Bk(4.5 h)	187.1(0.060), 536(>0.015), 146.4(0.012)
• 41.06 *5*	0.0061 *7*	^{47}Ca(4.536 d)	1297.09(74), 489.23(6.5), 807.86(6.5)
41.1 *2*	†37 *4*	^{84}Zr(25.9 m)	112.5(†100), 44.9(†48), 372.9(†41)
41.1 *2*		^{115}Pd(25 s)	342.71(8), 303.87(7), 396.56(6)
• 41.13 *10*	0.268 *23*	^{172}Hf(1.87 y)	23.9331(20.3), 125.812(11.3), 67.35(5.3)
41.15 *10*	0.024 *4*	^{223}Ac(2.10 m)	98.58(0.891), 191.3(0.58), 83.55(0.57)
• 41.176 *3*	0.017 *4*	^{241}Cm(32.8 d)	471.805(71), 430.634(4.06), 132.413(3.86)
• 41.176 *3*		^{245}Bk(4.94 d)	205.879(0.040), 471.805(0.026), 164.8(0.0084)
• 41.18 *7*	>0.00039	^{193}Os(30.5 h)	139.03(4.27), 460.50(3.95), 73.039(3.2)
41.182 *4*	1.15 *7*	^{159}Ho(33.05 m)	121.012(36.2), 131.973(23.6), 309.594(17.2)
41.2 *2*	†60 *4*	^{202}Po(44.7 m)	688.6(†1000), 316.0(†286), 165.7(†174)
41.2 *2*	0.032	^{206}At(30.0 m)	68(0.12)
41.2179 *15*		^{175}Tm(15.2 m)	514.868(65), 941.23(15), 363.942(12.7)
41.4 *2*	9.2 *9*	^{184}Hf(4.12 h)	139.1(44.6), 344.9(35.2), 181.0(13.8)
• 41.4 *3*	0.03 *2*	^{235}U(7.038×10^{8} y)	185.712(57.2), 143.764(10.96), 163.358(5.08)
41.43 *8*	23 *5*	^{135}Nd(12.4 m)	204.02(52), 441.2(14.9), 501.7(10.0)
41.46	0.42	^{160}Yb(4.8 m)	173.74(42.0), 215.78(20.2), 140.35(9.3)
41.53 *6*		^{248}Bk(23.7 h)	550.7(5.0), 592.2(>0.015)
• 41.53 *6*	0.011	^{252}Fm(25.39 h)	96.28(0.036)
• 41.55 *5*	0.016 *1*	^{231}Th(25.52 h)	25.646(14.5), 84.216(6.6), 89.944(0.94)
• 41.56 *2*	4.3 *5*	^{153}Tb(2.34 d)	212.038(31.0), 170.504(6.8), 109.758(6.4)
41.6 *3*		^{191}Tl(5.22 m)	452.6(†100), 470.1(†98), 391.6(†96)
• 41.65 *2*	0.013 *4*	^{233}Pa(26.967 d)	312.17(38.6), 300.34(6.62), 340.81(4.47)
41.65 *2*	0.00017 *6*	^{233}Np(36.2 m)	312.17(0.7), 298.89(0.44), 546.9(0.280)
41.7		^{247}Cf(3.11 h)	294.1(0.98), 447.8(0.55), 417.9(0.34)
41.775 *5*	0.28 *3*	^{250}Es(8.6 h)	828.82(72), 303.41(21.6), 349.4(19.8)
• 41.79 *5*	0.050	^{253}Es(20.47 d)	389.11(0.0264), 387.1(0.00810), 42.98(0.009)
41.8 *2*	0.76 *7*	^{243}Pu(4.956 h)	84.0(23), 381.7(0.56), 67(0.23)
41.82 *11*		^{234}Pa(6.70 h)	131.30(18), 946.00(13.4), 883.24(9.6)
41.82 *11*		^{234}Pa(1.17 m)	1001.03(†837000), 766.38(†294000), 742.81(†80000)
41.84 *10*	0.14 *11*	^{66}Ge(2.26 h)	43.89(28.7), 381.85(28), 272.97(10.4)
• 41.86 *4*	0.0038 *3*	^{172}Hf(1.87 y)	23.9331(20.3), 125.812(11.3), 67.35(5.3)
• 41.86 *2*	0.00513 *23*	^{191}Os(15.4 d)	129.419(29.0), 82.407(0.0255), 47.05(0.00270)
• 41.86 *2*	6.4×10^{-5} *8*	^{191}Pt(2.9 d)	538.90(13.7), 409.44(8.0), 359.90(6.0)
• 41.9 *2*	0.83 *8*	^{72}Zn(46.5 h)	145.04(83), 191.96(9.37), 16.4(8.3)
• 41.94 *3*		^{182}Re(64.0 h)	229.3220(26), 67.75001(22.2), 1121.3007(22.0)
41.95 *2*		^{231}Ac(7.5 m)	282.471(39.0), 307.063(30.4), 221.399(16.8)
• 41.95 *2*	0.06 *1*	^{235}U(7.038×10^{8} y)	185.712(57.2), 143.764(10.96), 163.358(5.08)
41.95 *3*	0.10 *3*	^{241}Np(13.9 m)	174.94(3.1), 132.99(0.86), 518.8(0.40)
• 41.95 *3*	0.350 *17*	^{245}Cm(8500 y)	174.94(10), 132.99(2.77), 189.82(0.193)
• 41.98 *5*	0.52 *6*	^{188}Pt(10.2 d)	187.59(19.4), 195.05(18.6), 381.43(7.5)
• 42		^{242}Am(141 y)	49.367(0.19), 86.68(0.037), 109.69(0.024)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
42.0 *2*		^{247}Cf(3.11 h)	294.1(0.98), 447.8(0.55), 417.9(0.34)
42.02 *10*	3.07 *25*	^{160}Yb(4.8 m)	173.74(42.0), 215.78(20.2), 140.35(9.3)
• 42.088 *4*	0.000165 *5*	^{239}Pu(24110 y)	51.624(0.007100), 38.661(0.000500), 129.297(0.00631)
42.1		^{73}Zn(5.8 s)	
• 42.10 *2*	7.7 *14*	^{100}Pd(3.63 d)	84.02(45), 74.78(36.5), 126.05(8.10)
42.11		^{212}Pb(10.64 h)	238.632(43.3), 300.087(3.28), 115.183(0.592)
42.13 *1*		^{242}Am(16.02 h)	
• 42.13 *1*	0.014	^{246}Cf(35.7 h)	96(0.012), 146(0.0035)
• 42.16 *20*	†2.6 *10*	^{227}Th(18.72 d)	235.971(†813), 50.13(†528), 256.25(†463)
42.2 *5*	0.08	^{243}Pu(4.956 h)	84.0(23), 41.8(0.76), 381.7(0.56)
• 42.22 *5*	0.052 *3*	^{231}Th(25.52 h)	25.646(14.5), 84.216(6.6), 89.944(0.94)
42.27 *4*	1.39 *4*	^{144}Ba(11.5 s)	103.855(23.30), 430.48(18.3), 172.828(15.4)
42.28 *7*		^{143}La(14.2 m)	620.3(2.34), 643.75(1.55), 621.4(1.52)
42.29 *5*	0.051 *15*	^{185}Ta(49.4 m)	177.59(25.7), 173.68(22.6), 65.86(3.9)
42.3 *1*		^{225}Fr(4.0 m)	182.3(†100), 31.50(†91), 225.1(†55)
• 42.3 *1*	0.082 *8*	^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
• 42.33 *15*	1.59 *15*	^{83}Sr(32.41 h)	762.65(30), 381.53(14.1), 418.37(4.41)
42.4 *1*	0.05 *3*	^{97}Rb(169.9 ms)	167.1(26), 585.2(21.0), 600.5(10.6)
42.4	†6.7	^{178}Yb(74 m)	390.8(†100), 348.4(†64)
42.4 *1*	0.013 *3*	^{223}Ac(2.10 m)	98.58(0.891), 191.3(0.58), 83.55(0.57)
42.4 *1*	0.13 *3*	^{227}Pa(38.3 m)	64.62(6), 110.05(1.24), 84.8(0.86)
42.44 *2*		^{229}Ac(62.7 m)	164.522(†100), 569.1(†91), 261.92(†39)
• 42.44 *2*	0.044 *3*	^{229}Pa(1.50 d)	118.968(0.130), 146.345(0.098), 117.159(0.047)
• 42.44 *2*	0.0862 *13*	^{233}U(1.592×10^5 y)	97.134(0.020), 54.699(0.0182), 29.192(0.0120)
42.46 *5*	0.009 *3*	^{228}Ac(6.15 h)	911.205(26.6), 968.971(16.2), 338.322(11.3)
• 42.48 *5*	0.0059 *12*	^{231}Pa(32760 y)	27.36(10.3), 300.07(2.46), 302.65(2.2)
42.5 *2*	†25 *4*	^{181}Hg(3.6 s)	147.8(†100), 1986.7(†17), 185.0(†11)
• 42.6 *1*		^{254}Es(275.7 d)	63.0(2.0), 316(0.15), 304(0.07)
• 42.6 *1*		^{254}Es(39.3 h)	211.80(0.096), 177.30(0.056), 71.30(0.043)
• 42.62		^{233}U(1.592×10^5 y)	42.44(0.0862), 97.134(0.020), 54.699(0.0182)
• 42.63 *4*	0.0052 *6*	^{103}Ru(39.26 d)	497.080(90.9), 610.33(5.75), 443.799(3.27)
• 42.64	0.50 *5*	^{126}Sn(1×10^5 y)	87.57(37), 64.28(9.6), 86.94(8.9)
42.70 *4*	2.18 *23*	^{90}Mo(5.67 h)	257.34(78), 122.370(64.2), 203.13(6.4)
42.7 *1*	0.078 *12*	^{133}Ce(4.9 h)	477.22(39), 510.36(20.7), 58.39(19.2)
• 42.71512 *23*	0.277 *4*	^{182}Ta(114.43 d)	67.75001(41.2), 1121.3007(34.9), 1221.4066(26.98)
42.71512 *23*	0.28 *3*	^{182}Re(12.7 h)	67.75001(38.2), 1121.3007(32), 1221.4066(24.8)
• 42.71512 *23*	0.46 *10*	^{182}Re(64.0 h)	229.3220(26), 67.75001(22.2), 1121.3007(22.0)
42.723 *5*	0.038 *3*	^{250}Bk(3.217 h)	989.12(45), 1031.85(35.6), 1028.65(4.91)
42.723 *5*		^{250}Es(2.22 h)	989.12(13.3), 1031.85(10.6), 828.82(5.5)
42.723 *5*	0.087 *10*	^{250}Es(8.6 h)	828.82(72), 303.41(21.6), 349.4(19.8)
42.723 *5*	0.0130 *10*	^{254}Fm(3.240 h)	99.163(0.031), 154.35(0.0010)
42.73 *3*		^{189}Au(28.7 m)	713.17(†100), 812.68(†63), 447.65(†55)
• 42.73 *5*		^{237}U(6.75 d)	59.537(34.5), 208.00(21.14), 26.345(2.43)
• 42.73 *5*	0.0030	^{237}Pu(45.2 d)	59.537(3.28), 26.345(0.221), 33.195(0.0745)
• 42.73 *5*	†5.0×10^6 *11*	^{241}Am(432.2 y)	59.537(†60), 26.345(†1000×10^9), 33.195(†6000×10^8)
• 42.760	>0.25	^{169}Yb(32.026 d)	63.12077(44.2), 197.95788(35.8), 177.21402(22.16)
42.82 *5*	†4.7 *9*	^{225}Fr(4.0 m)	182.3(†100), 31.50(†91), 225.1(†55)
• 42.82 *5*	0.164 *10*	^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
42.824 *8*	0.11 *4*	^{240}Np(61.9 m)	566.34(25.3), 973.9(23.8), 600.57(18.4)
42.824 *8*	0.074 *16*	^{240}Np(7.22 m)	554.60(20.9), 597.40(11.7), 1496.9(1.33)
• 42.824 *8*	0.09 *1*	^{240}Am(50.8 h)	987.76(73.2), 888.80(25.1), 98.860(1.5)
• 42.824 *8*	0.0044100 *24*	^{244}Cm(18.10 y)	98.860(.0001470), 152.63(<4.9×10^{-7}), 554.60(0.000079)
42.83 *20*	1.1 *3*	^{66}Ge(2.26 h)	43.89(28.7), 381.85(28), 272.97(10.4)
• 42.838 *5*	0.058 *4*	^{231}Th(25.52 h)	25.646(14.5), 84.216(6.6), 89.944(0.94)

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
42.85 *8*	0.025 *6*	^{102}Mo(11.3 m)	211.66(3.8), 148.19(3.76), 223.83(1.44)
42.852 *5*	0.049	^{246}Am(25.0 m)	1078.86(27.7), 798.80(25), 1062.04(17.1)
42.852 *5*		^{246}Am(39 m)	679.0(53), 205.0(36), 152.9(25)
• 42.852 *5*		^{246}Bk(1.80 d)	798.80(61), 1081.40(5.8), 833.60(5.0)
• 42.852 *5*	0.014	^{250}Cf(13.08 y)	
42.88 *2*	0.06	^{245}Am(2.05 h)	252.80(6), 240.86(0.34), 295.72(0.22)
• 42.88 *2*		^{245}Bk(4.94 d)	252.80(29.1), 380.8(2.40), 385.0(0.57)
• 42.88 *2*	0.0363 *20*	^{249}Cf(351 y)	388.16(66), 333.37(14.6), 252.80(2.50)
42.89 *10*	0.7 *3*	^{64}Ge(63.7 s)	427.03(37.4), 666.94(16.9), 128.2(10.7)
42.964 *18*	0.082 *14*	^{155}Dy(9.9 h)	226.918(68.4), 184.564(3.37), 1089.8(>2.8)
42.965 *10*	0.09	^{244}Am(10.1 h)	743.971(66), 897.848(28), 153.863(16)
42.965 *10*	0.031	^{244}Am(26 m)	1084.181(0.37), 941.95(0.36), 1062.953(0.28)
42.98 *3*		^{249}Cm(64.15 m)	634.31(1.5), 560.45(0.84), 368.76(0.35)
• 42.98 *3*	0.009	^{253}Es(20.47 d)	41.79(0.050), 389.11(0.0264), 387.1(0.00810)
43		^{224}Ac(2.9 h)	156.4(†100), 140.8(†55), 261.6(†28)
• 43 *6*		^{247}Cm(1.56×10^7 y)	402.6(72), 278.0(3.4), 287.4(2.0)
43.00 *5*	0.033 *7*	^{249}Es(102.2 m)	379.5(40.4), 813.2(9.2), 375.1(3.3)
• 43.00 *5*	0.02	^{253}Fm(3.00 d)	271.8(2.6), 144.99(0.192), 62.47(0.16)
• 43.05 *5*	0.0070 *3*	^{231}Pa(32760 y)	27.36(10.3), 300.07(2.46), 302.65(2.2)
• 43.119 *1*	5	^{194}Os(6.0 y)	82.339(>0.011)
43.18 *2*		^{239}U(23.45 m)	74.664(48), 43.533(4.14), 662.24(0.18)
• 43.18 *2*	0.07	^{243}Am(7370 y)	74.664(68), 43.533(5.93), 117.84(0.57)
• 43.2		^{237}Np(2.14×10^6 y)	29.374(15.0), 86.477(12.4), 94.66(0.6)
43.38 *3*	0.007	^{248}Bk(23.7 h)	
• 43.38 *3*	0.0148 *9*	^{252}Cf(2.645 y)	100.4(0.013), 155.0(0.0019)
• 43.423 *10*	0.0240 *20*	^{237}U(6.75 d)	59.537(34.5), 208.00(21.14), 26.345(2.43)
• 43.423 *10*	0.0039	^{237}Pu(45.2 d)	59.537(3.28), 26.345(0.221), 33.195(0.0745)
• 43.423 *10*	†3.00×10^7 *8*	^{241}Am(432.2 y)	59.537(†60), 26.345(†1000×10^9), 33.195(†6000×10^8)
43.498 *1*	0.12 *3*	^{234}Pa(6.70 h)	131.30(18), 946.00(13.4), 883.24(9.6)
43.498 *1*		^{234}Pa(1.17 m)	1001.03(†837000), 766.38(†294000), 742.81(†80000)
• 43.498 *1*	0.065 *1*	^{234}Np(4.4 d)	1558.31(18.72), 1527.21(11.2), 1601.80(9.1)
• 43.498 *1*	0.0395 *8*	^{238}Pu(87.74 y)	99.853(0.00735), 152.720(0.000937), 766.38(0.000022)
43.5 *1*	†5.6×10^3 *11*	^{158}Er(2.29 h)	71.91(†23300), 386.84(†111000), 248.58(†42000)
43.515 *5*	†4 *1*	^{101}Nb(7.1 s)	276.10(†100), 157.466(†32), 13.5(†32)
43.533 *1*	4.14 *10*	^{239}U(23.45 m)	74.664(48), 662.24(0.18), 844.10(0.16)
• 43.533 *1*	5.93 *13*	^{243}Am(7370 y)	74.664(68), 117.84(0.57), 86.71(0.338)
43.6 *2*	0.08	^{113}Pd(93 s)	95.74(3.3), 643.7(3.0), 739.63(2.4)
43.6 *5*	3.5 *7*	^{125}La(76 s)	67.6(34), 985.2, 1240.6
43.66 *14*	0.46 *9*	^{181}Re(19.9 h)	365.57(56), 360.70(20), 639.30(6.4)
43.67 *4*	0.0020 *6*	^{187}W(23.72 h)	685.774(27.3), 479.531(21.8), 72.001(11.14)
43.67 *4*	0.80 *5*	^{200}Pt(12.5 h)	76.21(13), 135.90(3.24), 243.71(2.49)
43.7 *2*	0.25 *3*	^{117}Xe(61 s)	28.5(7.0), 221.3(10.0), 32.3(7.6)
43.7 *3*	†70	^{161}Lu(77 s)	110.78(†100), 100.32(†95), 256.24(†49)
43.7 *1*		^{207}At(1.80 h)	814.41(44.5), 588.33(19.2), 300.654(12.8)
• 43.7		^{237}Pu(45.2 d)	280.40(†870000), 298.89(†7.85×10^6), 320.75(†6.48×10^6)
43.7		^{249}Cm(64.15 m)	634.31(1.5), 560.45(0.84), 368.76(0.35)
• 43.7		^{253}Es(20.47 d)	41.79(0.050), 389.11(0.0264), 387.1(0.00810)
43.8 *1*	†9 *2*	^{130}Sn(1.7 m)	144.9(†100), 899.2(†49), 84.7(†42)
43.8 *1*		^{139}Eu(17.9 s)	267.3(31), 155.3(31), 190.1(25)
• 43.8	>0.0020	^{140}Ba(12.752 d)	537.261(24.39), 29.9640(14.1), 162.660(6.21)
43.8 *2*	4.4 *4*	^{168}Dy(8.7 m)	192.5(32.8), 487.0(22.5), 443.3(15.5)
• 43.80 *19*	†3.3 *8*	^{227}Th(18.72 d)	235.971(†813), 50.13(†528), 256.25(†463)
• 43.80 *5*	†14.4 *19*	^{227}Th(18.72 d)	235.971(†813), 50.13(†528), 256.25(†463)
• 43.81 *2*	25.0 *13*	^{246}Pu(10.84 d)	223.75(23.5), 179.94(9.7), 27.58(3.5)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
• 43.821 *1*	0.060 *6*	^{161}Tb(6.88 d)	25.65150(23.2), 48.91562(17.0), 74.56711(10.2)
43.821 *1*	0.39 *8*	^{161}Ho(2.48 h)	25.65150(27), 103.062(3.9), 77.414(1.91)
43.89 *7*	28.7 *8*	^{66}Ge(2.26 h)	381.85(28), 272.97(10.4), 108.85(10.4)
43.9	0.038 *4*	^{135}Ce(17.7 h)	265.56(41.8), 300.07(23.5), 606.76(18.8)
43.9 *2*	5.7 *7*	^{184}Hf(4.12 h)	139.1(44.6), 344.9(35.2), 181.0(13.8)
43.990 *10*	†26 *5*	^{225}Fr(4.0 m)	182.3(†100), 31.50(†91), 225.1(†55)
• 43.990 *10*	0.66 *3*	^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
44 *1*		^{122}Ba(1.95 m)	550.7, 388.7, 231.0
44.0 *4*		^{251}Fm(5.30 h)	425.4(0.95), 480.4(0.392), 358.3(0.315)
• 44.080 *13*	0.0007 *2*	^{231}Th(25.52 h)	25.646(14.5), 84.216(6.6), 89.944(0.94)
• 44.08 *3*	0.09 *1*	^{238}Np(2.117 d)	984.45(27.8), 1028.54(20.3), 1025.87(9.6)
44.08 *3*	0.064 *8*	^{238}Am(98 m)	962.77(28), 918.69(23.0), 561.11(10.9)
• 44.08 *3*	0.0325 *12*	^{242}Cm(162.8 d)	101.90(0.0025), 157.42(0.0014), 561.11(0.00015)
• 44.10 *5*	†0.49 *16*	^{227}Th(18.72 d)	235.971(†813), 50.13(†528), 256.25(†463)
44.10 *7*	1.05 *5*	^{240}U(14.1 h)	189.7(0.24), 66.5(0.154), 169.2(0.115)
• 44.110 *18*	0.0071 *9*	^{206}Bi(6.243 d)	803.10(99), 881.01(66.2), 516.18(40.7)
44.15 *1*	>0.24	^{227}Ra(42.2 m)	27.36(16), 300.07(4.6), 302.65(4.3)
• 44.15 *1*	0.065 *5*	^{231}Pa(32760 y)	27.36(10.3), 300.07(2.46), 302.65(2.2)
• 44.17 *10*	0.32 *6*	^{172}Hf(1.87 y)	23.9331(20.3), 125.812(11.3), 67.35(5.3)
• 44.2 *4*	0.216 *25*	^{79}Kr(35.04 h)	261.29(13), 397.54(9.3), 606.09(8.12)
• 44.20		^{229}Pa(1.50 d)	40.09(0.104), 64.70(0.045), 75.12(0.035)
• 44.20 *10*	†6.94×10^3 *24*	^{241}Pu(14.35 y)	148.567(†309000), 103.680(†69400), 77.10(†35100)
44.3 *1*	0.73 *8*	^{97}Rb(169.9 ms)	167.1(26), 585.2(21.0), 600.5(10.6)
44.33 *3*	0.064 *6*	^{193}Au(17.65 h)	186.17(10.1), 255.57(6.7), 268.22(3.9)
• 44.40 *5*	†0.24 *24*	^{227}Th(18.72 d)	235.971(†813), 50.13(†528), 256.25(†463)
• 44.40 *5*	†0.8 *6*	^{227}Th(18.72 d)	235.971(†813), 50.13(†528), 256.25(†463)
44.43 *6*	0.20 *3*	^{148}Ba(0.607 s)	56.08(29.20), 133.53(3.88), 415.78(3.59)
44.5 *5*	†10	^{177}Tm(85 s)	104.5(†11.1), 517.5(†22.2), 589.0(†8.9)
44.52 *10*	0.32	^{170}Hf(16.01 h)	164.78(33), 620.7(23), 120.17(19)
44.54 *2*		^{242}Np(2.2 m)	735.93(5), 780.44(2.76), 1473.1(2.34)
44.54 *2*		^{242}Np(5.5 m)	785.7(60), 944.8(37.8), 159.0(19.2)
44.54 *2*		^{242}Am(16.02 h)	
• 44.54 *2*		^{246}Cm(4730 y)	
44.63 *10*	0.011	^{236}Np(22.5 h)	
• 44.63 *10*	0.0167 *6*	^{236}Np(1.54×10^5 y)	158.35(4.0), 102.82(0.85)
44.65 *2*	3.04 *12*	^{162}Yb(18.87 m)	163.35(40.0), 118.70(33.6), 576.10(3.24)
• 44.665 *2*	0.13 *1*	^{239}Np(2.3565 d)	106.125(27.2), 277.599(14.38), 228.183(10.76)
44.665 *2*	0.090 *10*	^{239}Am(11.9 h)	277.599(15.0), 228.183(11.3), 209.753(3.50)
• 44.665 *2*	0.130 *20*	^{243}Cm(29.1 y)	277.599(14.0), 228.183(10.6), 209.753(3.29)
44.69 *15*		^{189}Hg(7.6 m)	320.99(†100), 78.21(†63), 565.42(†48)
44.7 *2*	0.00110 *12*	^{109}Pd(13.7012 h)	88.04(1.171), 311.4(0.032), 647.3(0.024)
44.7		^{235}Pu(25.3 m)	49.10(2.36), 756.4(0.479), 34.23(0.23)
44.77 *2*	1.2 *3*	^{167}Lu(51.5 m)	29.66(14.4), 239.22(8.6), 213.19(3.6)
44.8 *2*	†0.14 *4*	^{111}Rh(11 s)	275.4(†100.0), 411.8(†9.42), 230.0(†8.9)
44.8		^{231}Np(48.8 m)	370.9(10), 348.4(3.63), 263.8(2.84)
44.86 *10*		^{237}Pa(8.7 m)	853.6(34), 865.1(15.5), 529.26(14.9)
• 44.86 *10*	†1.39×10^3 *16*	^{241}Pu(14.35 y)	148.567(†309000), 103.680(†69400), 77.10(†35100)
44.9 *2*	†48 *5*	^{84}Zr(25.9 m)	112.5(†100), 372.9(†41), 666.7(†39)
44.915 *13*		^{238}Pa(2.3 m)	1015.3(†<100), 1014.6(†<100), 635.18(†88)
• 44.915 *13*	0.036	^{242}Pu(3.733×10^5 y)	103.50(0.0078), 158.80(0.00045)
• 44.988 *10*	0.048 *5*	^{254}Es(39.3 h)	648.80(28.4), 693.79(24.3), 688.68(12.3)
45.0 *5*	†3 *2*	^{125}Ba(3.5 m)	77.6(†100), 140.9(†86), 85.4(†82)
45.0	†100	^{220}Fr(27.4 s)	106.0(†72), 161.5(†65), 154.0(†43)
45.00 *10*		^{233}Th(22.3 m)	86.477(2.7), 29.374(2.5), 459.222(1.4)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
45.05 *5*	†0.23 *9*	^{189}Au(28.7 m)	713.17(†100), 812.68(†63), 447.65(†55)
45.1 *3*	†100	^{143}Tb(12 s)	686.1(†48), 462.8(†45), 380.3(†43)
45.2 *1*		^{132}La(24.3 m)	464.55(22), 663.07(11.6), 285.6(7)
45.20 *8*	†1329 *68*	^{179}Ir(79 s)	97.5(†1849), 86.31(†1370), 100.21(†1055)
45.2 *6*		^{192}Hg(4.85 h)	274.8(50.4), 157.2(7), 306.5(5.4)
45.2 *2*	†5.6 *10*	^{225}Fr(4.0 m)	182.3(†100), 31.50(†91), 225.1(†55)
45.242 *3*	0.113	^{236}Pa(9.1 m)	642.35(37.0), 687.59(9.9), 1762.7(6.0)
45.242 *3*		^{236}Np(22.5 h)	642.35(0.9), 687.59(0.250), 538.11(0.0110)
• 45.242 *3*	0.13 *3*	^{236}Np(1.54×10^5 y)	160.308(32), 104.234(7.2), 104.1
• 45.242 *3*	0.0450 *8*	^{240}Pu(6563 y)	104.234(0.00708), 160.308(0.000402), 212.46(0.000029)
• 45.2972 *13*	1.326 *25*	^{155}Eu(4.7611 y)	86.545(30.7), 105.305(21.2), 60.0086(1.13)
• 45.2972 *13*	1.604 *20*	^{155}Tb(5.32 d)	86.545(32.0), 105.305(25), 180.103(7.45)
• 45.34 *5*	0.034 *2*	^{231}Th(25.52 h)	25.646(14.5), 84.216(6.6), 89.944(0.94)
45.35 *10*		^{167}Lu(51.5 m)	29.66(14.4), 239.22(8.6), 213.19(3.6)
45.38 *5*	5 *3*	^{155}Ho(48 m)	240.19(12.5), 136.30(5.00), 39.39(3.31)
45.39 *8*	†48 *2*	^{163}Hf(40.0 s)	70.98(†100), 62.14(†64), 688.25(†33)
45.45 *5*	0.027 *8*	^{234}Pa(6.70 h)	131.30(18), 946.00(13.4), 883.24(9.6)
45.48 *2*	19.5 *20*	^{76}Kr(14.8 h)	315.7(39), 270.2(21.1), 406.5(12.1)
45.5		^{154}Pm(2.68 m)	184.810(32), 81.99(15.4), 546.66(14.5)
45.5 *2*	†3.58×10^4 *12*	^{158}Er(2.29 h)	71.91(†23300), 386.84(†111000), 248.58(†42000)
45.5 *10*	0.029	^{194}Pb(12.0 m)	581.82(18.8), 1519.45(16.4), 203.82(16.2)
45.54 *3*	5.00 *25*	^{161}Tm(33 m)	1648.1(9.50), 84.40(9.4), 59.51(5.4)
45.6		^{107}Mo(3.5 s)	400.3(†100), 65.7(†>92), 384.4(†57.6)
45.6 *5*	0.23 *8*	^{117}I(2.22 m)	325.9(75), 274.4(20.4), 661.5(5.1)
45.6 *2*	0.13	^{227}Pa(38.3 m)	64.62(6), 110.05(1.24), 84.8(0.86)
45.6 *2*	0.031	^{227}Pa(38.3 m)	64.62(6), 110.05(1.24), 84.8(0.86)
45.69 *3*	†0.90 *22*	^{189}Au(28.7 m)	713.17(†100), 812.68(†63), 447.65(†55)
45.7 *2*	13.0 *6*	^{128}Sn(59.07 m)	482.3(59), 75.1(27.7), 557.3(16.5)
• 45.72 *5*	0.026 *3*	^{252}Es(471.7 d)	785.09(18.3), 139.03(13.9), 924.12(2.41)
45.724 *8*		^{237}Am(73.0 m)	280.23(47.3), 438.4(8.3), 473.5(4.3)
45.8 *2*	†57 *12*	^{103}Mo(67.5 s)	83.4(†100), 423.91(†69), 687.6(†31)
45.8 *1*	8.7 *7*	^{118}Pd(1.9 s)	125.4(34), 125.4(34), 224.2(20.1)
45.8 *4*	†4.3 *12*	^{166}W(18.8 s)	125.8(†310), 224.6(†24.0), 172.5(†17.8)
45.8 *1*		^{207}At(1.80 h)	814.41(44.5), 588.33(19.2), 300.654(12.8)
45.8		^{243}Pu(4.956 h)	84.0(23), 41.8(0.76), 381.7(0.56)
• 45.85 *9*	58	^{72}Se(8.40 d)	
45.85 *15*		^{122}Ba(1.95 m)	550.7, 388.7, 231.0
45.86 *6*	†15 *5*	^{114}Te(15.2 m)	90.28(†100), 83.8(†67), 1417.6(†32)
45.88 *20*	6.6 *11*	^{181}Lu(3.5 m)	652.5(22.0), 205.94(16.1), 574.9(15.4)
45.89 *10*	0.016 *6*	^{140}Xe(13.60 s)	805.52(20), 1413.66(12.2), 1315.05(8.2)
45.99 *4*	†90	^{154}Nd(25.9 s)	151.703(†800), 799.55(†600), 180.693(†510)
45.996 *5*	†1.04 *22*	^{153}Pm(5.4 m)	35.842(†100), 127.298(†75), 28.309(†34.6)
46.0 *2*	8 *1*	^{104}Mo(60 s)	68.8(55), 69.7(17.8), 36.3(14)
46.03 *9*	0.071 *12*	^{183}Au(42.0 s)	161.18(9.4), 214.13(5.9), 313.08(5.0)
46.093 *5*		^{250}Bk(3.217 h)	989.12(45), 1031.85(35.6), 1028.65(4.91)
46.093 *5*	0.184 *19*	^{250}Es(8.6 h)	828.82(72), 303.41(21.6), 349.4(19.8)
46.13 *9*	†5.0 *8*	^{142}Xe(1.22 s)	571.83(†100), 657.05(†79), 538.24(†77)
46.2	3.25 *25*	^{147}Cs(0.225 s)	85.2(7.3), 245.8(4.5), 109.7(4.5)
46.2 *4*	†1.6 *4*	^{164}Hf(111 s)	122.1(†100), 153.3(†47), 313.7(†22)
• 46.204 *6*	0.00074 *7*	^{239}Pu(24110 y)	51.624(0.007100), 38.661(0.000500), 129.297(0.00631)
• 46.24 *5*	0.0044 *22*	^{225}Ac(10.0 d)	99.91(1.01), 150.04(0.80), 99.63(0.62)
46.30 *6*	0.06 *3*	^{148}Ba(0.607 s)	56.08(29.20), 133.53(3.88), 415.78(3.59)
• 46.3 *2*	†100	^{253}Cf(17.81 d)	
46.36 *2*	0.17	^{227}Ra(42.2 m)	27.36(16), 300.07(4.6), 302.65(4.3)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
• 46.36 *2*	0.223 *9*	^{231}Pa(32760 y)	27.36(10.3), 300.07(2.46), 302.65(2.2)
46.4 *2*	1.4 *5*	^{103}Zr(1.3 s)	248(100), 164.05(94), 126.30(84)
• 46.45 *5*		^{227}Th(18.72 d)	235.971(†813), 50.13(†528), 256.25(†463)
• 46.4839 *4*	5.8 *4*	^{183}Ta(5.1 d)	246.0591(27), 353.9912(11.2), 107.9322(11.0)
• 46.4839 *4*	7.97 *12*	^{183}Re(70.0 d)	162.3219(23.3), 291.7238(3.05), 208.8057(2.95)
• 46.52 *4*	0.0205 *21*	^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
46.53 *6*		^{233}Th(22.3 m)	86.477(2.7), 29.374(2.5), 459.222(1.4)
• 46.53 *6*	0.11 *1*	^{237}Np(2.14×10^{6} y)	29.374(15.0), 86.477(12.4), 94.66(0.6)
• 46.539 *1*	4.25 *4*	^{210}Pb(22.3 y)	
• 46.543 *5*	0.168 *7*	^{171}Lu(8.24 d)	739.78(47.8), 19.394(13.7), 667.404(11.04)
46.6	0.11	^{147}Ba(0.893 s)	167.4(11), 105.2(4.8), 196.1(4.8)
46.6	0.6	^{147}Ba(0.893 s)	167.4(11), 105.2(4.8), 196.1(4.8)
46.6 *2*	0.092 *24*	^{227}Pa(38.3 m)	64.62(6), 110.05(1.24), 84.8(0.86)
• 46.625 *20*	5.8×10^{-5} *4*	^{239}Pu(24110 y)	51.624(0.007100), 38.661(0.000500), 129.297(0.00631)
46.7 *2*		^{255}Fm(20.07 h)	81.477(0.81), 58.477(0.67), 80.92(0.27)
46.7512 *17*	0.9 *4*	^{175}Tm(15.2 m)	514.868(65), 941.23(15), 363.942(12.7)
• 46.8 *2*	0.58 *8*	^{72}Zn(46.5 h)	145.04(83), 191.96(9.37), 16.4(8.3)
46.85 *5*	0.13	^{210}At(8.1 h)	1181.39(99.3), 245.31(79), 1483.39(46.5)
46.86 *5*		^{161}Tm(33 m)	45.54(5.00), 1648.1(9.50), 84.40(9.4)
46.87		^{246}Am(25.0 m)	1078.86(27.7), 798.80(25), 1062.04(17.1)
46.9 *3*	0.081 *16*	^{127}Sn(2.10 h)	1114.3(39), 1095.6(20), 823.1(10.9)
47.0 *3*	5.1	^{101}Cd(1.2 m)	98.0(47), 1722.5(11), 1259.3(8)
47.0 *3*	†0.041 *10*	^{194}Bi(92 s)	965.4(†100.0), 575.1(†98.0), 280.1(†73.7)
• 47.05 *3*	0.00270 *20*	^{191}Os(15.4 d)	129.419(29.0), 82.407(0.0255), 41.86(0.00513)
47.10 *8*		^{78}Rb(5.74 m)	454.97(81), 664.44(38.3), 1109.72(13.12)
• 47.155 *6*	16.9 *4*	^{165}Tm(30.06 h)	242.917(35.5), 297.369(12.71), 806.372(9.5)
• 47.18		^{229}Pa(1.50 d)	40.09(0.104), 64.70(0.045), 75.12(0.035)
47.2 *5*		^{115}Pd(25 s)	342.71(8), 303.87(7), 396.56(6)
47.22 *4*	0.93 *3*	^{148}Ba(0.607 s)	56.08(29.20), 133.53(3.88), 415.78(3.59)
47.3 *3*	0.054 *9*	^{120}Xe(40 m)	25.1(30), 72.6(9), 178.1(6.8)
47.37 *2*	2.25 *25*	^{155}Ho(48 m)	240.19(12.5), 136.30(5.00), 45.38(5)
• 47.4		^{185}Os(93.6 d)	646.116(78.0), 874.813(6.29), 880.523(5.17)
47.4 *4*		^{185}Au(4.25 m)	310.6(13), 243.1(6.6), 77.7(6)
47.4 *6*		^{192}Hg(4.85 h)	274.8(50.4), 157.2(7), 306.5(5.4)
47.4 *5*		^{257}Rf(4.7 s)	117.0, 296, 63.2
47.46 *3*	28 *3*	^{92}Ru(3.65 m)	213.81(96), 259.32(92), 134.57(65.5)
47.47 *1*	0.221 *17*	^{133}Te(55.4 m)	912.671(55.28), 647.51(19.4), 863.955(15.6)
47.48 *6*	0.118 *10*	^{251}Fm(5.30 h)	880.8(2.19), 453.1(1.45), 405.6(0.99)
• 47.560 *3*	6.0×10^{-5}	^{239}Pu(24110 y)	51.624(0.007100), 38.661(0.000500), 129.297(0.00631)
• 47.574 *9*	0.21 *4*	^{232}Pa(1.31 d)	969.315(41.6), 894.351(19.8), 150.059(10.8)
47.574 *9*	0.16	^{232}Np(14.7 m)	327.3(52), 819.187(33.3), 866.760(24.4)
• 47.574 *9*	0.066	^{236}Pu(2.858 y)	108.96(0.012), 166.0(0.00066), 643.5(0.00024)
47.7 *3*		^{192}Hg(4.85 h)	274.8(50.4), 157.2(7), 306.5(5.4)
47.7102 *14*	0.020 *3*	^{163}Tb(19.5 m)	351.138(26), 389.734(24.3), 494.534(23)
47.71 *4*		^{237}Am(73.0 m)	280.23(47.3), 438.4(8.3), 473.5(4.3)
47.73 *6*	0.077 *8*	^{132}Ce(3.51 h)	182.11(77), 155.37(10.5), 216.83(4.95)
47.74 *5*	†0.9 *3*	^{198}Tl(1.87 h)	636.4(†202), 411.8044(†202), 587.2(†185)
47.75	0.048 *8*	^{140}Xe(13.60 s)	805.52(20), 1413.66(12.2), 1315.05(8.2)
47.78 *5*	0.17 *5*	^{141}Xe(1.73 s)	909.23(24.0), 118.705(16.1), 105.937(9.8)
47.79 *12*	0.129 *18*	^{183}Au(42.0 s)	161.18(9.4), 214.13(5.9), 313.08(5.0)
47.80 *10*	3.7	^{170}Hf(16.01 h)	164.78(33), 620.7(23), 120.17(19)
• 47.830 *15*		^{251}Es(33 h)	177.7(2.4), 152.8(0.91), 163.8(0.10)
47.830 *15*	0.019 *2*	^{255}Fm(20.07 h)	81.477(0.81), 58.477(0.67), 80.92(0.27)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
47.9 *2*	1.1 *3*	^{184}Hf(4.12 h)	139.1(44.6), 344.9(35.2), 181.0(13.8)
47.91		^{212}Pb(10.64 h)	238.632(43.3), 300.087(3.28), 115.183(0.592)
48.1		^{256}Es(7.6 h)	861.8(†100), 231.1(†61), 172.6(†49)
• 48.17 *20*	0.09	^{172}Hf(1.87 y)	23.9331(20.3), 125.812(11.3), 67.35(5.3)
48.2 *5*	1.5 *3*	^{145}La(24.8 s)	70.0(11), 355.8(3.8), 118.2(3.6)
48.2		^{180}Os(21.5 m)	20.1(†100), 717.4, 667.0
48.2	†4.0	^{224}Ac(2.9 h)	156.4(†100), 140.8(†55), 261.6(†28)
48.28 *4*	0.016 *3*	^{207}At(1.80 h)	814.41(44.5), 588.33(19.2), 300.654(12.8)
48.3 *3*	15.4 *8*	^{86}Se(15.3 s)	2441.1(43.0), 2660.0(21.6), 2010.6(10.2)
48.3 *3*	†1.9 *12*	^{105}Nb(2.95 s)	94.8(†100), 246.9(†79), 309.9(†41.9)
48.3 *2*	0.11	^{115}Pd(25 s)	342.71(8), 303.87(7), 396.56(6)
• 48.30 *3*	†0.63 *7*	^{227}Th(18.72 d)	235.971(†813), 50.13(†528), 256.25(†463)
48.3 *1*	0.09 *3*	^{227}Pa(38.3 m)	64.62(6), 110.05(1.24), 84.8(0.86)
48.37 *1*	0.0148 *10*	^{191}Au(3.18 h)	586.45(17), 277.88(7.2), 674.19(6.8)
48.4	0.22	^{147}Ce(56.4 s)	268.80(7), 92.9(4.7), 374.23(3.5)
48.42 *10*		^{170}Hf(16.01 h)	164.78(33), 620.7(23), 120.17(19)
48.44 *4*	1.66 *3*	^{148}Ba(0.607 s)	56.08(29.20), 133.53(3.88), 415.78(3.59)
48.5 *5*		^{164}Hf(111 s)	122.1(†100), 153.3(†47), 313.7(†22)
48.5	0.27	^{190}Hg(20.0 m)	142.6(68), 171.5(4.8), 154.7(2.5)
• 48.5 *5*	†3.2 *8*	^{227}Th(18.72 d)	235.971(†813), 50.13(†528), 256.25(†463)
48.53 *2*	7.90 *24*	^{141}Cs(24.94 s)	561.63(4.7), 1194.02(3.95), 588.79(3.79)
48.56		^{212}Pb(10.64 h)	238.632(43.3), 300.087(3.28), 115.183(0.592)
48.78 *5*	1.36 *24*	^{71}Br(21.4 s)	260.5(8.0), 233.7(6.5), 171.6(6.2)
• 48.91562 *14*	17.0 *4*	^{161}Tb(6.88 d)	25.65150(23.2), 74.56711(10.2), 57.196(1.79)
48.91562 *14*	0.12 *4*	^{161}Ho(2.48 h)	25.65150(27), 103.062(3.9), 77.414(1.91)
48.94 *15*	0.039 *20*	^{105}Tc(7.6 m)	143.26(16), 107.945(14.1), 321.50(11.1)
• 48.96 *10*		^{237}Np(2.14×10^6 y)	29.374(15.0), 86.477(12.4), 94.66(0.6)
49.0 *5*	†0.8 *5*	^{106}Mo(8.4 s)	465.70(†100), 54.00(†54), 618.60(†25)
49.0		^{168}Hf(25.95 m)	183.8(†100), 157.2(†68), 324.1
49.01 *2*	1.5	^{167}Lu(51.5 m)	29.66(14.4), 239.22(8.6), 213.19(3.6)
49.03 *11*	0.35 *5*	^{187}Au(8.4 m)	1331.81(7.0), 1408.23(3.06), 914.73(3.02)
49.09 *5*	0.076 *11*	^{221}Rn(25 m)	186.38(21.6), 150.04(4.5), 216.90(2.6)
• 49.09 *5*	0.0076 *22*	^{225}Ac(10.0 d)	99.91(1.01), 150.04(0.80), 99.63(0.62)
49.1 *2*		^{191}Tl(5.22 m)	452.6(†100), 470.1(†98), 391.6(†96)
49.10 *10*	2.36 *6*	^{235}Pu(25.3 m)	756.4(0.479), 34.23(0.23), 910.1(0.164)
49.10 *10*	0.005 *1*	^{239}Am(11.9 h)	
49.1 *2*	0.007 *2*	^{240}U(14.1 h)	44.10(1.05), 189.7(0.24), 66.5(0.154)
49.14 *3*	0.0130 *15*	^{193}Au(17.65 h)	186.17(10.1), 255.57(6.7), 268.22(3.9)
49.15 *4*	†1.7×10^3 *4*	^{157}Ho(12.6 m)	279.97(†47600), 341.16(†37000), 193.41(†15200)
49.2 *1*	†2.3 *4*	^{230}Ra(93 m)	72.0(†100), 63.0(†35.4), 202.8(†27.3)
49.30 *10*	†4.2 *6*	^{106}Sn(115 s)	386.8(†100), 477.5(†62), 253.30(†57)
• 49.367 *4*	0.19	^{242}Am(141 y)	86.68(0.037), 109.69(0.024), 163.24(0.024)
49.369 *9*		^{232}Ac(119 s)	665.0(15.3), 1899(8.9), 1959(5.4)
• 49.369 *9*	0.078	^{236}U(2.342×10^7 y)	112.75(0.019)
49.4 *2*	33.4 *17*	^{74}Zn(96 s)	56.7(70), 143.5(21.7)
49.4 *3*	0.081 *18*	^{120}Xe(40 m)	25.1(30), 72.6(9), 178.1(6.8)
• 49.415 *2*	0.13 *2*	^{239}Np(2.3565 d)	106.125(27.2), 277.599(14.38), 228.183(10.76)
49.415 *2*	0.110 *10*	^{239}Am(11.9 h)	277.599(15.0), 228.183(11.3), 209.753(3.50)
• 49.415 *2*	0.081 *8*	^{243}Cm(29.1 y)	277.599(14.0), 228.183(10.6), 209.753(3.29)
49.44 *5*	0.85 *8*	^{184}Pt(17.3 m)	154.90(31), 191.97(27), 548.36(23.1)
49.46 *2*	18.0 *3*	^{151}Dy(17.9 m)	386.10(19.4), 546.31(14.3), 176.40(10.60)
49.5 *11*	†10.5 *50*	^{193}Tl(21.6 m)	324.37(†100), 1044.7(†59), 676.10(†48)
49.51 *3*	35.8 *6*	^{70}Se(41.1 m)	426.15(29), 376.65(9.43), 202.73(4.89)
49.52 *5*	0.075 *15*	^{155}Ho(48 m)	240.19(12.5), 136.30(5.00), 45.38(5)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
49.55 *6*		^{234}Ac(44 s)	1847(†100), 1912(†91), 688.5(†87)
• 49.55 *6*	0.064 *8*	^{238}U(4.468×10^9 y)	113.5(0.0102)
49.56 *4*	0.067 *16*	^{81}Rb(4.576 h)	190.38(64.0), 446.15(23.2), 510.31(5.3)
49.56 *4*	0.78 *4*	^{81}Rb(30.5 m)	643.6(0.115), 1194.9(0.112), 549.02(0.106)
• 49.59 *3*	0.040 *8*	^{191}Pt(2.9 d)	538.90(13.7), 409.44(8.0), 359.90(6.0)
49.6 *2*	0.02	^{113}Pd(93 s)	95.74(3.3), 643.7(3.0), 739.63(2.4)
49.6 *1*	†100 *10*	^{171}Ta(23.3 m)	506.4(†54), 501.8(†22.6), 166.2(†19.2)
49.6 *2*	†100	^{173}Ir(2.20 s)	285.0(†76), 296.4(†48), 147.7(†48)
49.6 *2*	†100	^{173}Ir(9.8 s)	285.0(†37), 91.6(†30), 147.7(†24)
49.65 *8*	0.15 *3*	^{148}Ba(0.607 s)	56.08(29.20), 133.53(3.88), 415.78(3.59)
• 49.65 *10*	0.024 *7*	^{194}Au(38.02 h)	328.455(60), 293.545(10.2), 1468.91(6.3)
49.7 *1*	0.31 *3*	^{186}Hg(1.38 m)	112.1(63), 251.5(55), 191.6(3.7)
• 49.72 *1*	15.0 *3*	^{132}Te(3.204 d)	228.16(88.0), 116.30(1.96), 111.76(1.74)
• 49.75 *8*	0.0215 *21*	^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
49.8 *2*	9.4 *7*	^{118}Pd(1.9 s)	125.4(34), 125.4(34), 224.2(20.1)
49.8 *2*		^{177}Re(14 m)	196.85(†1200), 79.65(†1010), 84.3(†890)
49.8		^{180}Os(21.5 m)	20.1(†100), 717.4, 667.0
• 49.82680 *16*	0.360 *9*	^{199}Au(3.139 d)	158.37947(40.0), 208.20597(8.732)
49.82680 *16*	0.508 *25*	^{199}Tl(7.42 h)	455.46(12.4), 208.20597(12.3), 247.26(9.3)
49.83		^{131}Sn(58.4 s)	367.40, 285.0, 62.9
49.83		^{131}Sn(56.0 s)	1226.03(†100), 450.03(†90), 798.50(†86)
49.84 *8*	2.57 *18*	^{174}W(31 m)	35.42(14.1), 428.83(12.7), 328.68(9.5)
49.89 *7*	2.7 *9*	^{223}Fr(21.8 m)	50.13(36.0), 79.72(9.1), 234.81(3.0)
• 49.89 *7*	†37 *12*	^{227}Th(18.72 d)	235.971(†813), 50.13(†528), 256.25(†463)
49.9 *2*	0.5	^{104}Zr(1.2 s)	100.9(6), 504.7(5), 445.0(5)
49.927 *1*	5.9 *3*	^{147}Pr(13.4 m)	77.9921(15), 314.675(13.2), 641.380(10.0)
49.96 *15*		^{193}Tl(21.6 m)	324.37(†100), 1044.7(†59), 676.10(†48)
50.0 *2*	3.9 *4*	^{104}Mo(60 s)	68.8(55), 69.7(17.8), 36.3(14)
50.0 *2*	0.08 *6*	^{133}Te(55.4 m)	912.671(55.28), 647.51(19.4), 863.955(15.6)
50.0 *1*	1.54 *23*	^{181}Au(11.4 s)	198.60(4.4), 2022.4(4.2), 79.40(4.2)
• 50.07 *5*	0.0092 *10*	^{254}Es(39.3 h)	211.80(0.096), 177.30(0.056), 71.30(0.043)
50.09 *10*		^{133}Ce(4.9 h)	477.22(39), 510.36(20.7), 58.39(19.2)
50.09 *1*	1.77 *13*	^{208}Rn(24.35 m)	426.78(7.07), 251.05(5.02), 350.026(3.34)
50.12 *4*		^{85}Nb(20.9 s)	
50.13 *1*	36.0 *21*	^{223}Fr(21.8 m)	79.72(9.1), 234.81(3.0), 49.89(2.7)
• 50.13 *1*	†528 *24*	^{227}Th(18.72 d)	235.971(†813), 256.25(†463), 329.851(†178)
50.2 *1*	0.36 *3*	^{119}Cd(2.69 m)	292.9(36.8), 343.0(16.9), 1609.7(10.9)
50.2 *1*	0.00203 *12*	^{119}Cd(2.20 m)	1025.0(24.8), 2021.3(22.6), 720.7(17.9)
50.2 *1*	6 *3*	^{129}Sn(6.9 m)	1161.31(56.0), 1128.44(50), 760.8(16.8)
50.3 *2*	0.005 *1*	^{240}U(14.1 h)	44.10(1.05), 189.7(0.24), 66.5(0.154)
50.431 *2*	5.6 *10*	^{165}Tb(2.11 m)	1178.53(13.2), 538.51(7.2), 1292.05(7.0)
50.5 *1*	0.37	^{175}Ta(10.5 h)	207.4(14.0), 348.5(12.0), 266.9(10.8)
50.5 *2*	0.12 *4*	^{225}Th(8.72 m)	321.4(23), 246.0(5.06), 359.0(4.1)
• 50.5		^{233}U(1.592×10^5 y)	42.44(0.0862), 97.134(0.020), 54.699(0.0182)
50.5		^{231}Ac(7.5 m)	282.471(39.0), 307.063(30.4), 221.399(16.8)
50.55	†0.6	^{176}W(2.5 h)	100.20(†100), 94.86(†8), 61.29(†8)
• 50.59		^{229}Pa(1.50 d)	40.09(0.104), 64.70(0.045), 75.12(0.035)
50.6 *3*	0.032 *11*	^{109}Rh(80 s)	326.868(54), 426.135(7.7), 178.034(7.6)
50.6 *1*	†1.4×10^3 *3*	^{158}Er(2.29 h)	71.91(†23300), 386.84(†111000), 248.58(†42000)
50.6 *10*		^{239}U(23.45 m)	74.664(48), 43.533(4.14), 662.24(0.18)
• 50.6 *10*	0.0030	^{243}Am(7370 y)	74.664(68), 43.533(5.93), 117.84(0.57)
50.691 *22*	†65	^{154}Nd(25.9 s)	151.703(†800), 799.55(†600), 180.693(†510)
50.7 *4*		^{159}Eu(18.1 m)	67.8(19), 78.6(9.1), 95.7(7.0)
50.7 *1*	0.12 *3*	^{227}Pa(38.3 m)	64.62(6), 110.05(1.24), 84.8(0.86)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
50.7 *1*		^{227}Pa(38.3 m)	64.62(6), 110.05(1.24), 84.8(0.86)
• 50.77 *2*		^{165}Tm(30.06 h)	242.917(35.5), 47.155(16.9), 297.369(12.71)
50.8		^{256}Es(7.6 h)	861.8(†100), 231.1(†61), 172.6(†49)
50.82 *3*	1.66 *10*	^{140}Xe(13.60 s)	805.52(20), 1413.66(12.2), 1315.05(8.2)
• 50.84 *5*		^{227}Th(18.72 d)	235.971(†813), 50.13(†528), 256.25(†463)
50.88 *4*	0.0100 *14*	^{72}Ga(14.10 h)	834.01(96), 2201.69(25.9), 629.95(24.8)
• 50.9 *1*	0.00155 *7*	^{231}Pa(32760 y)	27.36(10.3), 300.07(2.46), 302.65(2.2)
50.99 *4*	†3.4 *3*	^{225}Fr(4.0 m)	182.3(†100), 31.50(†91), 225.1(†55)
• 50.99 *4*	0.017 *4*	^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
51.0 *2*	1.0	^{118}Pd(1.9 s)	125.4(34), 125.4(34), 224.2(20.1)
51 *3*		^{120}Ba(32 s)	182
• 51.00 *5*	0.0081 *20*	^{131}Te(30 h)	773.67(49.9), 852.21(27.0), 793.75(18.10)
51		^{159}Eu(18.1 m)	67.8(19), 78.6(9.1), 95.7(7.0)
• 51 *7*		^{247}Cm(1.56×10^{7} y)	402.6(72), 278.0(3.4), 287.4(2.0)
• 51.01 *3*	0.340 *10*	^{237}U(6.75 d)	59.537(34.5), 208.00(21.14), 26.345(2.43)
• 51.01 *3*	†2.6×10^{5} *12*	^{241}Am(432.2 y)	59.537(†60), 26.345(†1000×10^{9}), 33.195(†6000×10^{8})
51.2 *4*	0.08 *3*	^{105}Tc(7.6 m)	143.26(16), 107.945(14.1), 321.50(11.1)
• 51.22 *10*	0.020 *15*	^{235}U(7.038×10^{8} y)	185.712(57.2), 143.764(10.96), 163.358(5.08)
51.25 *10*	0.84 *14*	^{187}Au(8.4 m)	1331.81(7.0), 1408.23(3.06), 914.73(3.02)
51.3 *1*	2.51 *18*	^{170}Ho(2.76 m)	258.2(37.0), 931.3(36.1), 181.6(23.8)
• 51.3		^{177}Ta(56.56 h)	112.9498(7.2), 208.3664(0.94), 1057.8(0.29)
51.3 *5*		^{227}U(1.1 m)	247(20), 310(3.6), 259(3.0)
• 51.362 *1*	0.00072 *8*	^{77}As(38.83 h)	238.996(1.6), 520.639(0.558), 249.786(0.394)
51.38 *2*		^{175}W(35.2 m)	270.25(12.6), 166.69(9.0), 149.17(3.6)
51.4 *3*	†16.1 *22*	^{172}W(6.6 m)	38.9(†100), 423.3(†44), 89.8(†33.0)
51.4 *4*		^{251}Fm(5.30 h)	425.4(0.95), 480.4(0.392), 358.3(0.315)
51.5 *5*	0.51 *15*	^{98}Sr(0.653 s)	119.353(73), 444.628(39), 428.4(31)
51.5 *2*	0.0050	^{113}Pd(93 s)	95.74(3.3), 643.7(3.0), 739.63(2.4)
51.5 *2*	0.43 *5*	^{120}Xe(40 m)	25.1(30), 72.6(9), 178.1(6.8)
51.5 *3*	0.019 *4*	^{127}Sn(2.10 h)	1114.3(39), 1095.6(20), 823.1(10.9)
51.5 *3*		^{187}Hg(1.9 m)	233.38(†100), 376.34(†38), 240.26(†33)
• 51.5 *5*	<0.0008	^{233}Pa(26.967 d)	312.17(38.6), 300.34(6.62), 340.81(4.47)
51.5 *5*		^{233}Np(36.2 m)	312.17(0.7), 298.89(0.44), 546.9(0.280)
• 51.5 *5*		^{237}Pu(45.2 d)	280.40(†870000), 298.89(†7.85×10^{6}), 320.75(†6.48×10^{6})
• 51.51	>0.018	^{169}Yb(32.026 d)	63.12077(44.2), 197.95788(35.8), 177.21402(22.16)
51.624 *1*		^{235}Pa(24.5 m)	652.053, 659.3, 645.896
• 51.624 *1*	0.007100 *5*	^{239}Pu(24110 y)	38.661(0.000500), 129.297(0.00631), 375.045(0.001554)
51.70 *20*	0.019 *9*	^{105}Cd(55.5 m)	961.84(4.69), 346.870(4.20), 1302.459(3.98)
51.7 *1*		^{157}Ho(12.6 m)	279.97(†47600), 341.16(†37000), 193.41(†15200)
• 51.72 *4*	0.026 *3*	^{230}Pa(17.4 d)	314.8(0.094), 366.56(0.076), 383.6(0.036)
• 51.80 *5*	0.375 *25*	^{153}Tb(2.34 d)	212.038(31.0), 170.504(6.8), 109.758(6.4)
51.834 *14*	0.75 *8*	^{157}Eu(15.18 h)	63.929(23.0), 410.723(17.5), 370.509(11.0)
51.93 *6*	0.024 *7*	^{199}Tl(7.42 h)	455.46(12.4), 208.20597(12.3), 247.26(9.3)
• 51.95 *3*	0.0048	^{253}Es(20.47 d)	41.79(0.050), 389.11(0.0264), 387.1(0.00810)
52.1 *5*	†5 *2*	^{112}Te(2.0 m)	372.70(†100), 296.20(†86), 418.9(†57)
52.10 *7*		^{165}Yb(9.9 m)	80.11(49), 68.86(9.1), 1090.28(4.4)
52.1 *4*	†51 *15*	^{171}W(2.38 m)	184.2(†100), 294.5(†89), 478.7(†83)
52.18 *2*	0.016 *3*	^{193}Au(17.65 h)	186.17(10.1), 255.57(6.7), 268.22(3.9)
52.19 *10*	0.53 *3*	^{146}Ce(13.52 m)	316.74(56), 218.23(20.8), 264.56(9.0)
52.2 *5*		^{117}I(2.22 m)	325.9(75), 274.4(20.4), 661.5(5.1)
52.2 *1*		^{156}Er(19.5 m)	35.3(18), 29.9(3.1), 133.6(0.8)
• 52.33 *5*	0.55 *5*	^{252}Es(471.7 d)	64.42(0.274), 418.5(0.220), 377.4(0.122)
52.395 *11*	1.74 *3*	^{157}Pm(10.56 s)	160.61(35), 188.052(13.5), 571.27(5.39)
52.41 *10*	>0.45	^{184}Pt(17.3 m)	154.90(31), 191.97(27), 548.36(23.1)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
52.42 *10*	0.291 *9*	^{79}Rb(22.9 m)	688.1(23), 182.77(19.2), 143.41(13.9)
52.45	>0.6	^{179}Re(19.5 m)	430.221(28), 289.968(26.9), 1680.244(13.0)
• 52.47		^{241}Cm(32.8 d)	471.805(71), 430.634(4.06), 132.413(3.86)
52.5 *3*	5.8 *6*	^{98}Sr(0.653 s)	119.353(73), 444.628(39), 428.4(31)
52.5 *3*	0.017 *11*	^{133}Te(55.4 m)	912.671(55.28), 647.51(19.4), 863.955(15.6)
• 52.59 *6*	0.0071 *20*	^{131}Te(30 h)	773.67(49.9), 852.21(27.0), 793.75(18.10)
• 52.5954 *3*	5.8 *3*	^{183}Ta(5.1 d)	246.0591(27), 353.9912(11.2), 107.9322(11.0)
• 52.5954 *3*	2.21 *6*	^{183}Re(70.0 d)	162.3219(23.3), 46.4839(7.97), 291.7238(3.05)
52.6 *2*	9.7 *6*	^{74}Zn(96 s)	56.7(70), 49.4(33.4), 143.5(21.7)
52.60 *10*	†4.8 *7*	^{106}Sn(115 s)	386.8(†100), 477.5(†62), 253.30(†57)
52.6 *2*		^{151}Ce(1.02 s)	96.8, 118.57, 84.79
• 52.62 *10*	0.00023 *4*	^{233}U(1.592×10^5 y)	42.44(0.0862), 97.134(0.020), 54.699(0.0182)
52.70 *5*		^{83}Nb(4.1 s)	24.30
52.72 *21*	4.0 *9*	^{181}Lu(3.5 m)	652.5(22.0), 205.94(16.1), 574.9(15.4)
• 52.73 *2*	0.085 *5*	^{231}Pa(32760 y)	27.36(10.3), 300.07(2.46), 302.65(2.2)
52.74 *10*		^{163}Er(75.0 m)	1113.5(0.0490), 436.1(0.0285), 439.94(0.0276)
52.8 *3*	0.039 *8*	^{127}Sn(2.10 h)	1114.3(39), 1095.6(20), 823.1(10.9)
52.9 *3*	1.7 *3*	^{118}Cs(14 s)	337.4(100), 472.8(37.4), 586.6(15.4)
52.91		^{212}Pb(10.64 h)	238.632(43.3), 300.087(3.28), 115.183(0.592)
53.0 *2*	†2.5 *10*	^{155}Nd(8.9 s)	180.574(†100), 418.99(†75), 955.08(†50)
53		^{159}Yb(1.58 m)	166.16(†500), 177.12(†159), 390.20(†113)
53.0 *4*		^{185}Au(4.25 m)	310.6(13), 243.1(6.6), 77.7(6)
53.033 *2*	0.94 *16*	^{155}Pm(41.5 s)	778.156(8), 725.123(5.30), 409.873(2.18)
53.05 *2*	24	^{157}Er(18.65 m)	391.32(14.2), 121.57(10.1), 150.4(3.0)
53.080 *18*	0.0289 *22*	^{122}Xe(20.1 h)	350.065(7.80), 148.612(2.62), 416.633(1.87)
53.1 *4*	0.015 *6*	^{155}Sm(22.3 m)	104.3346(74.6), 245.771(3.7), 141.4428(1.98)
53.1 *3*	†15 *1*	^{171}W(2.38 m)	184.2(†100), 294.5(†89), 478.7(†83)
53.10 *2*	†9	^{197}Ir(5.8 m)	469.72(†100), 430.56(†61), 815.92(†45)
• 53.161 *1*	2.199 *22*	^{133}Ba(10.52 y)	356.017(62.05), 80.997(34.06), 302.853(18.33)
• 53.182 *15*	0.57 *4*	^{165}Tm(30.06 h)	242.917(35.5), 47.155(16.9), 297.369(12.71)
53.2 *1*	†0.23 *2*	^{129}Ba(2.17 h)	182.30(†100), 1459.1(†50.0), 202.38(†33.7)
53.2 *2*	0.99 *9*	^{225}Th(8.72 m)	321.4(23), 246.0(5.06), 359.0(4.1)
• 53.2 *1*		^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
53.20 *2*	0.20 *5*	^{230}Ac(122 s)	454.95(8), 508.20(5.15), 1243.9(3.50)
• 53.20 *2*	0.242 *22*	^{230}Pa(17.4 d)	951.95(1.65), 918.48(8.2), 454.95(6.27)
• 53.20 *2*	0.123 *2*	^{234}U(2.455×10^5 y)	120.90(0.0342), 454.95(0.000025), 508.20(0.000015)
53.226 *2*	1.11 *5*	^{214}Pb(26.8 m)	351.921(35.8), 295.213(18.5), 241.981(7.50)
• 53.285 *7*	0.443 *10*	^{103}Ru(39.26 d)	497.080(90.9), 610.33(5.75), 443.799(3.27)
• 53.285 *7*	3.0×10^{-5} *3*	^{103}Pd(16.991 d)	39.757(0.07), 357.47(0.0221), 497.080(0.00396)
53.29 *3*	0.00157 *10*	^{195}Tl(1.16 h)	563.52(10.5), 884.47(10.0), 1363.88(8.4)
53.3 *3*	1.1 *3*	^{99}Y(1.470 s)	121.761(33), 724.30(14.9), 536.2(6.6)
53.3 *3*	†1.7	^{179}Os(6.5 m)	65.39(†100), 218.6(†17), 32.3(†17)
53.3 *7*	0.95 *10*	^{200}Po(11.5 m)	671.0(34.0), 617.7(19.7), 434.4(9.3)
53.39 *20*	>0.31	^{66}Ge(2.26 h)	43.89(28.7), 381.85(28), 272.97(10.4)
• 53.395 *5*	0.100 *8*	^{144}Ce(284.893 d)	133.515(11.09), 80.120(1.36), 40.98(0.257)
53.4 *3*	0.072 *18*	^{120}Xe(40 m)	25.1(30), 72.6(9), 178.1(6.8)
53.440 *9*		^{73}Ga(4.86 h)	297.32(79.8), 325.70(11.17), 739.42(4.23)
• 53.440 *9*	10.34	^{73}As(80.30 d)	13.271(0.089)
53.5 *6*	†100	^{118}Xe(6 m)	60.0(†82), 119.9(†76), 150.5(†44)
53.512 *18*	>0.6	^{179}Re(19.5 m)	430.221(28), 289.968(26.9), 1680.244(13.0)
53.534 *5*	†0.224 *22*	^{153}Pm(5.4 m)	35.842(†100), 127.298(†75), 28.309(†34.6)
53.6		^{138}Sm(3.1 m)	74.7
• 53.608 *2*	0.0041 *3*	^{233}U(1.592×10^5 y)	42.44(0.0862), 97.134(0.020), 54.699(0.0182)
• 53.61 *4*		^{206}Po(8.8 d)	1032.26(32.9), 511.36(24.1), 286.410(23.8)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
53.66 *18*	†6.1 *7*	^{165}Lu(10.74 m)	132.49(†100), 120.60(†100), 174.25(†47.0)
53.7	†3.7	^{107}Mo(3.5 s)	400.3(†100), 65.7(†>92), 384.4(†57.6)
• 53.7		^{242}Am(141 y)	49.367(0.19), 86.68(0.037), 109.69(0.024)
53.74 *6*	0.013	^{241}Np(13.9 m)	174.94(3.1), 132.99(0.86), 518.8(0.40)
• 53.74 *6*	0.067 *4*	^{245}Cm(8500 y)	174.94(10), 132.99(2.77), 41.95(0.350)
• 53.75 *20*	0.011 *3*	^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
53.81 *4*	2.86 *6*	^{148}Ba(0.607 s)	56.08(29.20), 133.53(3.88), 415.78(3.59)
53.9		^{225}Rn(4.5 m)	207.2, 178.7, 169.7
53.9		^{247}Cf(3.11 h)	294.1(0.98), 447.8(0.55), 417.9(0.34)
53.93 *1*	4.9 *5*	^{65}Ga(15.2 m)	115.09(54), 61.20(11.4), 153.0(8.9)
54.00 *20*	†54 *10*	^{106}Mo(8.4 s)	465.70(†100), 618.60(†25), 595.40(†17.9)
54.0 *2*	0.40 *8*	^{110}Ru(14.6 s)	112.2(25.00), 166.1(0.65), 116.1(0.45)
54.0 *3*		^{122}Ba(1.95 m)	550.7, 388.7, 231.0
• 54		^{137}Ce(34.4 h)	824.82(0.44), 169.26(0.44), 762.3(0.192)
54.00 *10*	†88 *8*	^{163}Lu(238 s)	163.08(†100), 396.34(†63), 371.73(†62)
54 *1*	>0.023	^{243}Pu(4.956 h)	84.0(23), 41.8(0.76), 381.7(0.56)
54.03 *10*	1.4	^{170}Hf(16.01 h)	164.78(33), 620.7(23), 120.17(19)
• 54.030 *4*	0.000197 *3*	^{239}Pu(24110 y)	51.624(0.007100), 38.661(0.000500), 129.297(0.00631)
• 54.1 *1*	0.0015 *10*	^{131}Te(30 h)	773.67(49.9), 852.21(27.0), 793.75(18.10)
• 54.1 *1*	<0.03	^{235}U(7.038×10^{8} y)	185.712(57.2), 143.764(10.96), 163.358(5.08)
• 54.1		^{241}Am(432.2 y)	59.537(†60), 26.345(†1000×10^{9}), 33.195(†6000×10^{8})
• 54.19	0.0017 *4*	^{153}Sm(46.27 h)	103.1807(31.4), 69.67340(4.85), 97.4316(0.847)
• 54.19	>0.030	^{153}Gd(241.6 d)	97.4316(30), 103.1807(21.4), 69.67340(2.54)
54.2		^{148}La(1.05 s)	158.468(55.6), 989.85(9.3), 760.30(8.6)
• 54.20 *4*		^{227}Th(18.72 d)	235.971(†813), 50.13(†528), 256.25(†463)
• 54.2 *10*		^{227}Th(18.72 d)	235.971(†813), 50.13(†528), 256.25(†463)
• 54.2400 *7*	0.81 *12*	^{166}Dy(81.6 h)	82.471(14), 28.242(1.13), 426.00(0.58)
• 54.25 *5*	<0.03	^{235}U(7.038×10^{8} y)	185.712(57.2), 143.764(10.96), 163.358(5.08)
• 54.28 *8*	0.093 *16*	^{153}Tb(2.34 d)	212.038(31.0), 170.504(6.8), 109.758(6.4)
54.3 *1*	0.147 *24*	^{227}Pa(38.3 m)	64.62(6), 110.05(1.24), 84.8(0.86)
54.35		^{131}Sn(56.0 s)	3267.5, 2470.5, 2039.25
54.35	†3.7	^{131}Sn(56.0 s)	1226.03(†100), 450.03(†90), 798.50(†86)
54.4		^{180}Os(21.5 m)	20.1(†100), 717.4, 667.0
• 54.40 *10*		^{237}Np(2.14×10^{6} y)	29.374(15.0), 86.477(12.4), 94.66(0.6)
• 54.415 *11*	7.21 *18*	^{165}Tm(30.06 h)	242.917(35.5), 47.155(16.9), 297.369(12.71)
54.548 *9*	3.7 *3*	^{157}Eu(15.18 h)	63.929(23.0), 410.723(17.5), 370.509(11.0)
• 54.548 *9*	0.0084 *8*	^{157}Tb(99 y)	
54.6 *1*	<41	^{29}Na(44.9 ms)	2560(36), 1638.0(5.9), 1585.6(5.6)
54.6 *2*	†11 *1*	^{94}Pd(9.0 s)	558.2(†100), 723.9(†12.1), 797.8(†7.1)
54.6 *2*	†27 *5*	^{114}Te(15.2 m)	90.28(†100), 83.8(†67), 1417.6(†32)
54.60 *2*	>0.009	^{227}Ra(42.2 m)	27.36(16), 300.07(4.6), 302.65(4.3)
• 54.60 *2*	0.076 *5*	^{231}Pa(32760 y)	27.36(10.3), 300.07(2.46), 302.65(2.2)
• 54.65 *6*	†1.69×10^{4} *24*	^{134}Ce(75.9 h)	162.306(†230000), 130.414(†209000), 39.08(†>150000)
• 54.699 *1*	0.0182 *3*	^{233}U(1.592×10^{5} y)	42.44(0.0862), 97.134(0.020), 29.192(0.0120)
• 54.8		^{237}Pu(45.2 d)	280.40(†870000), 298.89(†7.85×10^{6}), 320.75(†6.48×10^{6})
• 54.8		^{249}Cf(351 y)	388.16(66), 333.37(14.6), 252.80(2.50)
• 54.8	0.035 *8*	^{249}Cf(351 y)	388.16(66), 333.37(14.6), 252.80(2.50)
54.81 *5*		^{245}Am(2.05 h)	252.80(6), 240.86(0.34), 295.72(0.22)
• 54.81 *5*		^{245}Bk(4.94 d)	252.80(29.1), 380.8(2.40), 385.0(0.57)
• 54.81 *5*	0.163 *12*	^{249}Cf(351 y)	388.16(66), 333.37(14.6), 252.80(2.50)
• 54.85 *5*	0.76 *8*	^{188}Pt(10.2 d)	187.59(19.4), 195.05(18.6), 381.43(7.5)
• 54.88	>0.00019	^{95}Tc(61 d)	204.117(63.25), 582.082(29.96), 835.149(26.63)
• 54.889 *5*	0.102 *3*	^{131}Ba(11.50 d)	496.326(47), 123.805(28.97), 216.078(19.66)
54.9 *1*	0.0026	^{188}Hg(3.25 m)	66.7(63), 190.1(4.40), 82.7(2.6)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
• 54.90		^{229}Pa(1.50 d)	40.09(0.104), 64.70(0.045), 75.12(0.035)
54.96 *10*	>0.009	^{234}Pa(6.70 h)	131.30(18), 946.00(13.4), 883.24(9.6)
54.968 *4*	6.81 *17*	^{125}Xe(16.9 h)	188.418(54), 243.378(30.1), 453.796(4.69)
54.997 *23*	0.148 *12*	^{141}Cs(24.94 s)	48.53(7.90), 561.63(4.7), 1194.02(3.95)
55.0 *2*	8.6 *9*	^{104}Mo(60 s)	68.8(55), 69.7(17.8), 36.3(14)
55.0 *2*	†32 *2*	^{113}I(6.6 s)	462.5(†100), 622.4(†74), 351.5(†43)
55.0 *5*	†48 *4*	^{125}Ba(3.5 m)	77.6(†100), 140.9(†86), 85.4(†82)
55.0		^{168}Hf(25.95 m)	183.8(†100), 157.2(†68), 324.1
55 *1*	†39 *2*	^{178}Pt(21.1 s)	84.6(†100), 90.4(†80), 101.3(†76)
55 *1*		^{182}Au(21 s)	
55	†1.5	^{224}Ac(2.9 h)	156.4(†100), 140.8(†55), 261.6(†28)
55 *1*	†44 *9*	^{231}Ra(103 s)	409.92(†100), 204.98(†93), 469.3(†75)
55.0 *2*	0.0104 *14*	^{251}Fm(5.30 h)	425.4(0.95), 480.4(0.392), 358.3(0.315)
55.01 *3*	0.187 *15*	^{109}Ru(34.5 s)	206.29(22.0), 225.98(19.6), 1929.05(13.7)
• 55.03	†1.2×10^4	^{227}Ac(21.773 y)	100(†110000), 69.21(†78000), 160.26(†70000)
55.031 *8*	†0.95 *5*	^{153}Pm(5.4 m)	35.842(†100), 127.298(†75), 28.309(†34.6)
55.04 *3*		^{223}Rn(23.2 m)	591.8(†100), 635.2(†76), 416.0(†55)
55.1 *2*	1.97 *8*	^{77}Zn(2.08 s)	189.49(28.1), 473.94(19.7), 1832.0(12.4)
55.11 *3*	†2.3 *6*	^{225}Fr(4.0 m)	182.3(†100), 31.50(†91), 225.1(†55)
• 55.11 *3*	0.0027 *4*	^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
• 55.11 *5*	0.0019	^{253}Es(20.47 d)	41.79(0.050), 389.11(0.0264), 387.1(0.00810)
55.14 *5*	0.032 *7*	^{249}Es(102.2 m)	379.5(40.4), 813.2(9.2), 375.1(3.3)
• 55.14 *5*	0.019	^{253}Fm(3.00 d)	271.8(2.6), 144.99(0.192), 62.47(0.16)
• 55.15 *2*	1.78 *10*	^{177}Lu(160.4 d)	208.3664(57.7), 228.4838(37.0), 378.5029(29.7)
55.150 *19*		^{199}Pt(30.80 m)	542.993(15), 493.772(5.59), 317.056(4.95)
55.18 *4*	8.0×10^{-5}	^{239}U(23.45 m)	74.664(48), 43.533(4.14), 662.24(0.18)
• 55.18 *4*	0.011	^{243}Am(7370 y)	74.664(68), 43.533(5.93), 117.84(0.57)
55.19 *10*	1.4	^{170}Hf(16.01 h)	164.78(33), 620.7(23), 120.17(19)
55.2 *2*	0.08 *5*	^{121}Cs(122 s)	179.4(30.2), 196.0(24.1), 459.7(12.0)
55.279 *5*	0.41 *10*	^{184}Ta(8.7 h)	414.03(72), 252.848(43), 920.932(32.0)
• 55.279 *5*	2.31 *23*	^{184}Re(169 d)	252.848(10.7), 216.548(9.43), 920.932(8.14)
55.4 *5*	0.08 *6*	^{66}Ge(2.26 h)	43.89(28.7), 381.85(28), 272.97(10.4)
55.4 *4*	0.16 *6*	^{105}Tc(7.6 m)	143.26(16), 107.945(14.1), 321.50(11.1)
55.45 *5*	0.027 *8*	^{234}Pa(6.70 h)	131.30(18), 946.00(13.4), 883.24(9.6)
55.5 *3*		^{122}Ba(1.95 m)	550.7, 388.7, 231.0
55.506 *8*	5.8 *3*	^{182}Os(22.10 h)	510.056(52), 180.230(33.5), 263.285(6.71)
55.55 *4*	8	^{83}Zr(44 s)	104.97(5.70), 475.1(5.1), 254.76(4.72)
• 55.56 *2*	>0.0016	^{237}Pu(45.2 d)	59.537(3.28), 26.345(0.221), 33.195(0.0745)
• 55.56 *2*	†8.10×10^7 *18*	^{241}Am(432.2 y)	59.537(†60), 26.345(†1000×10^9), 33.195(†6000×10^8)
55.58 *6*	3.90 *16*	^{242}U(16.8 m)	67.60(9.6), 585.0(1.92), 572.9(1.87)
55.6		^{157}Ho(12.6 m)	279.97(†47600), 341.16(†37000), 193.41(†15200)
55.602 *5*	0.194 *19*	^{250}Es(8.6 h)	828.82(72), 303.41(21.6), 349.4(19.8)
55.638 *11*		^{237}Am(73.0 m)	280.23(47.3), 438.4(8.3), 473.5(4.3)
• 55.650 *8*	0.0020 *15*	^{155}Tb(5.32 d)	86.545(32.0), 105.305(25), 180.103(7.45)
• 55.698 *10*	1.219 *19*	^{171}Lu(8.24 d)	739.78(47.8), 19.394(13.7), 667.404(11.04)
55.7 *3*	0.11 *3*	^{139}Xe(39.68 s)	218.59(56), 296.53(21.7), 174.97(11.3)
55.80 *20*	2.2 *11*	^{99}Zr(2.1 s)	469.140(55), 546.13(48.6), 593.990(27.4)
• 55.8 *1*	0.0035 *15*	^{131}Te(30 h)	773.67(49.9), 852.21(27.0), 793.75(18.10)
• 55.82 *14*	>0.7	^{100}Pd(3.63 d)	84.02(45), 74.78(36.5), 126.05(8.10)
55.83 *4*	0.88 *14*	^{105}Tc(7.6 m)	143.26(16), 107.945(14.1), 321.50(11.1)
55.836 *17*	0.308 *14*	^{157}Pm(10.56 s)	160.61(35), 188.052(13.5), 571.27(5.39)
• 55.9 *3*	0.037 *4*	^{153}Sm(46.27 h)	103.1807(31.4), 69.67340(4.85), 97.4316(0.847)
55.95 *3*	0.093 *7*	^{81}Sr(22.3 m)	153.54(33.8), 147.76(30.1), 443.34(17.5)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
56		^{125}Ce(9.0 s)	491
• 56.00 *6*	†0.63 *12*	^{227}Th(18.72 d)	235.971(†813), 50.13(†528), 256.25(†463)
56.08 *4*	29.20 *9*	^{148}Ba(0.607 s)	133.53(3.88), 415.78(3.59), 98.5(2.89)
56.1 *1*	0.076 *13*	^{186}Hg(1.38 m)	112.1(63), 251.5(55), 191.6(3.7)
56.2 *5*	†100 *10*	^{127}La(3.8 m)	25.0(†24)
56.2 *2*	0.28 *6*	^{221}Ra(28 s)	149.0(9.0), 93.1(2.1), 174.1(1.6)
56.290 *12*	3.77 *16*	^{161}Gd(3.66 m)	360.94(0.59), 314.92(22.7), 102.315(13.9)
• 56.32 *10*	†4.16×10^3 *24*	^{241}Pu(14.35 y)	148.567(†309000), 103.680(†69400), 77.10(†35100)
56.34 *2*	8.8 *9*	^{92}Ru(3.65 m)	213.81(96), 259.32(92), 134.57(65.5)
56.35 *2*	0.19 *2*	^{121}In(23.1 s)	925.57(87), 261.96(7.9), 657.32(7.1)
56.4 *1*	0.75 *7*	^{146}Ba(2.22 s)	140.7(20.2), 251.2(19.6), 121.2(14.2)
• 56.4 *10*		^{247}Cm(1.56×10^7 y)	402.6(72), 278.0(3.4), 287.4(2.0)
• 56.509 *22*	0.068 *7*	^{189}Re(24.3 h)	216.663(5.50), 219.395(4.54), 245.09(3.5)
• 56.509 *22*	0.15 *3*	^{189}Ir(13.2 d)	245.09(6), 69.537(3.5), 59.053(1.20)
56.51 *8*	†4	^{114}Te(15.2 m)	90.28(†100), 83.8(†67), 1417.6(†32)
56.518 *5*	†0.4 *2*	^{225}Fr(4.0 m)	182.3(†100), 31.50(†91), 225.1(†55)
• 56.518 *5*	0.287 *21*	^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
56.527 *13*	0.087 *10*	^{250}Es(8.6 h)	828.82(72), 303.41(21.6), 349.4(19.8)
• 56.55 *3*	†7 *3*	^{227}Th(18.72 d)	235.971(†813), 50.13(†528), 256.25(†463)
56.6 *2*	0.12	^{227}Pa(38.3 m)	64.62(6), 110.05(1.24), 84.8(0.86)
56.6 *5*		^{236}Pa(9.1 m)	642.35(37.0), 687.59(9.9), 1762.7(6.0)
• 56.6 *5*		^{236}Np(1.54×10^5 y)	160.308(32), 104.234(7.2), 45.242(0.13)
56.626 *8*	5.18 *11*	^{159}Ho(33.05 m)	121.012(36.2), 131.973(23.6), 309.594(17.2)
• 56.64 *3*		^{161}Tb(6.88 d)	25.65150(23.2), 48.91562(17.0), 74.56711(10.2)
56.64 *3*		^{161}Ho(2.48 h)	25.65150(27), 103.062(3.9), 77.414(1.91)
56.7 *2*	70 *4*	^{74}Zn(96 s)	49.4(33.4), 143.5(21.7)
56.7 *4*	0.090 *18*	^{120}Xe(40 m)	25.1(30), 72.6(9), 178.1(6.8)
• 56.7 *2*	†0.54 *13*	^{258}Md(51.5 d)	367.8(†100), 447.9(†37), 276.8(†20.2)
56.72		^{212}Pb(10.64 h)	238.632(43.3), 300.087(3.28), 115.183(0.592)
• 56.76 *4*	0.0061 *14*	^{231}Pa(32760 y)	27.36(10.3), 300.07(2.46), 302.65(2.2)
• 56.76 *10*	†1.63×10^3 *16*	^{241}Pu(14.35 y)	148.567(†309000), 103.680(†69400), 77.10(†35100)
56.78 *7*	0.32 *5*	^{191}Au(3.18 h)	586.45(17), 277.88(7.2), 674.19(6.8)
56.8 *1*	0.059 *5*	^{121}I(2.12 h)	212.189(84), 532.08(6.07), 598.74(1.47)
56.80 *3*	0.00062 *8*	^{195}Hg(9.9 h)	779.80(7), 61.46(6.2), 585.13(1.99)
• 56.80 *3*	0.0127 *5*	^{195}Hg(41.6 h)	261.75(30.9), 560.27(7), 387.87(2.15)
56.8 *1*		^{207}At(1.80 h)	814.41(44.5), 588.33(19.2), 300.654(12.8)
• 56.8		^{241}Am(432.2 y)	59.537(†60), 26.345(†1000×10^9), 33.195(†6000×10^8)
56.81 *5*	0.345 *21*	^{107}Ru(3.75 m)	194.05(9.9), 847.93(5.3), 462.61(3.66)
• 56.81 *6*	0.0361 *19*	^{245}Cm(8500 y)	174.94(10), 132.99(2.77), 41.95(0.350)
• 56.828 *3*	0.001130 *25*	^{239}Pu(24110 y)	51.624(0.007100), 38.661(0.000500), 129.297(0.00631)
56.84		^{214}Pb(26.8 m)	351.921(35.8), 295.213(18.5), 241.981(7.50)
56.9 *3*	0.15 *5*	^{118}Cs(14 s)	337.4(100), 472.8(37.4), 586.6(15.4)
56.9 *3*	0.058 *12*	^{127}Sn(2.10 h)	1114.3(39), 1095.6(20), 823.1(10.9)
56.95 *20*	0.038 *6*	^{223}Ac(2.10 m)	98.58(0.891), 191.3(0.58), 83.55(0.57)
56.96 *5*	0.020 *4*	^{228}Ac(6.15 h)	911.205(26.6), 968.971(16.2), 338.322(11.3)
57 *10*		^{163}Gd(68 s)	287.79(25), 214.0(11.5), 1562.1(9.0)
57.06	0.20	^{157}Er(18.65 m)	53.05(24), 391.32(14.2), 121.57(10.1)
57.07 *6*	0.0072 *21*	^{223}Fr(21.8 m)	50.13(36.0), 79.72(9.1), 234.81(3.0)
57.0723 *12*	0.8 *3*	^{167}Ho(3.1 h)	346.547(56), 321.336(23.5), 237.873(5.0)
• 57.0723 *12*	4.6 *8*	^{167}Tm(9.25 d)	207.801(41), 531.54(1.6), 264.9(>0.07)
57.1 *2*		^{223}Th(0.60 s)	151.98, 97.10, 88.00
57.1 *1*	0.022	^{227}Ra(42.2 m)	27.36(16), 300.07(4.6), 302.65(4.3)
57.1 *1*	0.020 *7*	^{230}Fr(19.1 s)	711.0(13.6), 129.1(11.0), 728.4(7.3)
57.10 *2*	0.054	^{233}Th(22.3 m)	86.477(2.7), 29.374(2.5), 459.222(1.4)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
• 57.10 *2*	0.39 *1*	^{237}Np(2.14×10^6 y)	29.374(15.0), 86.477(12.4), 94.66(0.6)
57.11 *2*	0.055 *12*	^{76}Kr(14.8 h)	315.7(39), 270.2(21.1), 45.48(19.5)
57.11 *5*	0.2579 *12*	^{93}Kr(1.286 s)	253.42(41.2), 323.89(24.1), 266.83(20.6)
57.18 *3*	>0.0036	^{227}Ra(42.2 m)	27.36(16), 300.07(4.6), 302.65(4.3)
• 57.18 *3*	0.027 *3*	^{231}Pa(32760 y)	27.36(10.3), 300.07(2.46), 302.65(2.2)
• 57.18 *3*	0.0029 *5*	^{231}Pa(32760 y)	27.36(10.3), 300.07(2.46), 302.65(2.2)
• 57.196 *1*	1.79 *5*	^{161}Tb(6.88 d)	25.65150(23.2), 48.91562(17.0), 74.56711(10.2)
57.196 *1*	0.055 *12*	^{161}Ho(2.48 h)	25.65150(27), 103.062(3.9), 77.414(1.91)
• 57.276 *2*	0.130 *7*	^{239}Np(2.3565 d)	106.125(27.2), 277.599(14.38), 228.183(10.76)
57.276 *2*	0.125 *20*	^{239}Am(11.9 h)	277.599(15.0), 228.183(11.3), 209.753(3.50)
• 57.276 *2*	0.09	^{243}Cm(29.1 y)	277.599(14.0), 228.183(10.6), 209.753(3.29)
• 57.29 *2*	0.0048	^{239}Np(2.3565 d)	106.125(27.2), 277.599(14.38), 228.183(10.76)
57.29 *2*	0.045	^{239}Am(11.9 h)	277.599(15.0), 228.183(11.3), 209.753(3.50)
• 57.29 *2*	0.045 *10*	^{243}Cm(29.1 y)	277.599(14.0), 228.183(10.6), 209.753(3.29)
• 57.3		^{245}Bk(4.94 d)	252.80(29.1), 380.8(2.40), 385.0(0.57)
• 57.356 *7*	11.7 *3*	^{143}Ce(33.039 h)	293.266(42.80), 664.571(5.69), 721.929(5.39)
57.4 *3*		^{122}Ba(1.95 m)	550.7, 388.7, 231.0
57.4 *1*	0.65 *7*	^{230}Fr(19.1 s)	711.0(13.6), 129.1(11.0), 728.4(7.3)
57.47 *5*	5.5 *9*	^{126}In(1.64 s)	1141.11(100), 908.58(99), 111.79(88)
57.50	†>0.014	^{142}Xe(1.22 s)	571.83(†100), 657.05(†79), 538.24(†77)
57.5		^{161}Er(3.21 h)	826.6(3.0), 211.15(12.2), 592.6(3.7)
57.5		^{227}Pa(38.3 m)	64.62(6), 110.05(1.24), 84.8(0.86)
57.60 *2*		^{167}Lu(51.5 m)	29.66(14.4), 239.22(8.6), 213.19(3.6)
57.61 *2*	0.030 *3*	^{127}Te(9.35 h)	417.95(1.0), 360.32(0.1346), 202.860(0.0580)
• 57.61 *2*	0.50 *5*	^{127}Te(109 d)	658.89(0.0122), 593.31(0.00225), 650.91(0.00028)
• 57.61 *2*	1.22 *7*	^{127}Xe(36.4 d)	202.860(68), 172.132(25.5), 374.991(17.2)
57.6740 *4*	11.1 *22*	^{151}Pr(18.90 s)	880.19(13), 189.057(11.8), 484.501(11.3)
57.7 *1*	0.26 *3*	^{97}Rb(169.9 ms)	167.1(26), 585.2(21.0), 600.5(10.6)
57.7 *3*	†100	^{149}Ce(5.3 s)	380.0(†33.7), 86.4(†20.2), 892.7(†8.0)
57.75 *5*	0.022 *8*	^{221}Rn(25 m)	186.38(21.6), 150.04(4.5), 216.90(2.6)
• 57.75 *5*	0.0044 *22*	^{225}Ac(10.0 d)	99.91(1.01), 150.04(0.80), 99.63(0.62)
• 57.75 *10*	0.007 *4*	^{234}Th(24.10 d)	63.29(4.8), 92.38(2.81), 92.80(2.77)
57.762 *5*	0.49 *3*	^{228}Ac(6.15 h)	911.205(26.6), 968.971(16.2), 338.322(11.3)
57.762 *5*	0.54 *9*	^{228}Pa(22 h)	911.205(4.19), 463.005(1.250), 964.770(4.25)
• 57.762 *5*	0.200 *4*	^{232}U(68.9 y)	129.065(0.0686), 270.243(0.00316), 327.995(0.00282)
57.78 *2*	0.16 *12*	^{167}Lu(51.5 m)	29.66(14.4), 239.22(8.6), 213.19(3.6)
57.8 *2*	0.53 *4*	^{121}Xe(40.1 m)	252.7(13), 132.8(10.9), 445.2(7.7)
• 57.85 *5*	†2.0×10^6 *15*	^{241}Am(432.2 y)	59.537(†60), 26.345(†1000×10^9), 33.195(†6000×10^8)
57.864 *5*	0.0139 *21*	^{165}Dy(2.334 h)	94.700(3.58), 361.68(0.84), 633.415(0.568)
57.864 *5*	0.0081 *12*	^{165}Dy(1.257 m)	515.467(1.53), 361.68(0.534), 153.803(0.242)
57.87 *8*	0.05	^{183}Ir(58 m)	392.52(10.4), 228.70(6.9), 87.67(5.6)
57.9 *3*		^{113}Pd(93 s)	95.74(3.3), 643.7(3.0), 739.63(2.4)
57.9	†>1.4	^{142}Xe(1.22 s)	571.83(†100), 657.05(†79), 538.24(†77)
• 57.90	0.0009	^{233}Pa(26.967 d)	312.17(38.6), 300.34(6.62), 340.81(4.47)
57.902 *15*	0.11	^{255}Fm(20.07 h)	81.477(0.81), 58.477(0.67), 80.92(0.27)
57.94 *1*	†0.17 *3*	^{153}Pm(5.4 m)	35.842(†100), 127.298(†75), 28.309(†34.6)
• 57.9805 *20*	0.067 *3*	^{155}Eu(4.7611 y)	86.545(30.7), 105.305(21.2), 45.2972(1.326)
• 57.9805 *20*	0.205 *6*	^{155}Tb(5.32 d)	86.545(32.0), 105.305(25), 180.103(7.45)
58.0	†33 *3*	^{148}Er(4.6 s)	1653.4(†100), 387.7(†88), 197.1(†71)
58.00 *1*	2.15 *10*	^{159}Gd(18.479 h)	363.55(11.4), 348.16(0.234), 226.01(0.215)
• 58.00 *1*	2.22 *13*	^{159}Dy(144.4 d)	348.16(0.00095), 79.45(0.00048), 290.27(0.00014)
58	†44	^{163}Lu(238 s)	163.08(†100), 54.00(†88), 396.34(†63)
58.0 *3*		^{192}Hg(4.85 h)	274.8(50.4), 157.2(7), 306.5(5.4)
• 58.0		^{237}Pu(45.2 d)	280.40(†870000), 298.89(†7.85×10^6), 320.75(†6.48×10^6)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
58.01 *5*	0.044 *7*	^{249}Es(102.2 m)	379.5(40.4), 813.2(9.2), 375.1(3.3)
58.015 *13*	0.0905 *23*	^{122}Xe(20.1 h)	350.065(7.80), 148.612(2.62), 416.633(1.87)
58.05 *5*	0.49 *12*	^{173}Ta(3.14 h)	172.2(18), 69.70(5.9), 90.3(5.0)
58.18 *5*	0.016 *5*	^{107}Ru(3.75 m)	194.05(9.9), 847.93(5.3), 462.61(3.66)
58.20 *6*	0.009 *3*	^{234}Pa(6.70 h)	131.30(18), 946.00(13.4), 883.24(9.6)
58.28 *1*	0.41 *3*	^{151}Nd(12.44 m)	116.80(43.4), 255.68(16.4), 1180.89(14.8)
58.3 *4*	0.099 *18*	^{120}Xe(40 m)	25.1(30), 72.6(9), 178.1(6.8)
58.3 *5*	†2.2 *5*	^{123}Ba(2.7 m)	94.6(†100), 123.5(†69), 30.6(†56)
• 58.3	0.0269 *12*	^{125}Sb(2.7582 y)	427.875(30), 600.600(17.86), 635.954(11.31)
• 58.3		^{249}Cf(351 y)	388.16(66), 333.37(14.6), 252.80(2.50)
58.35 *3*		^{163}Tm(1.810 h)	104.320(18.6), 69.229(11.6), 241.305(10.9)
58.39 *3*	19.2 *4*	^{133}Ce(4.9 h)	477.22(39), 510.36(20.7), 130.803(17.9)
58.39 *10*	0.64 *5*	^{184}Pt(17.3 m)	154.90(31), 191.97(27), 548.36(23.1)
58.4 *2*	†4.6 *10*	^{109}Tc(0.87 s)	194.6(†100), 128.7(†51), 96.2(†48)
58.4 *5*	7.3 *15*	^{127}Ce(32 s)	253.0, 177.0, 114.8
• 58.4	0.0039 *4*	^{154}Eu(8.593 y)	123.071(40.79), 1274.436(35.19), 723.304(20.22)
58.477 *15*	0.67	^{255}Fm(20.07 h)	81.477(0.81), 80.92(0.27), 23.001(0.15)
58.5 *2*		^{174}Er(3.3 m)	100.4(†100), 708.4(†93), 766.9(†92)
58.52 *6*	0.32 *3*	^{148}Ba(0.607 s)	56.08(29.20), 133.53(3.88), 415.78(3.59)
• 58.570 *3*	0.48 *2*	^{231}Th(25.52 h)	25.646(14.5), 84.216(6.6), 89.944(0.94)
• 58.570 *3*	0.44	^{231}U(4.2 d)	25.646(12), 84.216(7), 217.940(0.8)
• 58.570 *3*	23000 *8*	^{235}Np(396.1 d)	25.646(†600000), 84.216(†265000), 81.227(†58000)
• 58.603 *7*	†100	^{60}Fe(1.5×10^6 y)	
58.7 *3*	0.11	^{147}La(4.015 s)	117.718(12), 186.320(6.48), 438.30(5.04)
58.8 *1*	3.1 *4*	^{117}Xe(61 s)	28.5(7.0), 221.3(10.0), 32.3(7.6)
58.883 *20*	1.30 *21*	^{149}Nd(1.728 h)	211.309(25.9), 114.314(19.2), 270.166(10.7)
58.9 *2*	1.50 *19*	^{102}Cd(5.5 m)	481.0(63), 1036.6(12.8), 505.1(9.6)
58.92 *5*	>0.25	^{201}Pb(9.33 h)	331.19(79), 361.27(9.9), 945.96(7.4)
58.9275 *16*	4.3 *7*	^{182}Hf(61.5 m)	942.80(18.8), 799.64(9.4), 114.3152(6.2)
59.0 *3*	0.032 *11*	^{109}Rh(80 s)	326.868(54), 426.135(7.7), 178.034(7.6)
59.03 *5*	0.084 *4*	^{135}Ce(17.7 h)	265.56(41.8), 300.07(23.5), 606.76(18.8)
• 59.03 *3*	0.00098 *7*	^{144}Ce(284.893 d)	133.515(11.09), 80.120(1.36), 40.98(0.257)
• 59.04 *20*	†2.1×10^2 *10*	^{134}Ce(75.9 h)	162.306(†230000), 130.414(†209000), 39.08(†>150000)
• 59.053 *15*	0.09 *3*	^{189}Re(24.3 h)	216.663(5.50), 219.395(4.54), 245.09(3.5)
• 59.053 *15*	1.20 *12*	^{189}Ir(13.2 d)	245.09(6), 69.537(3.5), 36.202(0.67)
• 59.129 *22*	0.058 *5*	^{165}Tm(30.06 h)	242.917(35.5), 47.155(16.9), 297.369(12.71)
59.14 *5*	4.4 *7*	^{159}Tm(9.13 m)	38.35(5.8), 84.8(5.8), 271.30(5.1)
59.168 *10*	1.12 *3*	^{157}Sm(482 s)	197.870(56.00), 196.461(16.8), 394.351(11.93)
59.19 *5*	0.032 *10*	^{234}Pa(6.70 h)	131.30(18), 946.00(13.4), 883.24(9.6)
59.2		^{185}Pt(33.0 m)	229.60(†100), 135.3(†80), 197.4(†74)
59.23 *9*	†14.4 *14*	^{196}Bi(240 s)	1049.21(†21.1), 371.93(†20.8), 689.00(†19.2)
• 59.235 *2*	0.0222 *21*	^{161}Tb(6.88 d)	25.65150(23.2), 48.91562(17.0), 74.56711(10.2)
59.235 *2*	0.60 *5*	^{161}Ho(2.48 h)	25.65150(27), 103.062(3.9), 77.414(1.91)
• 59.24 *3*	0.028	^{189}Re(24.3 h)	216.663(5.50), 219.395(4.54), 245.09(3.5)
• 59.24 *3*	0.06	^{189}Ir(13.2 d)	245.09(6), 69.537(3.5), 59.053(1.20)
59.3 *5*	0.13 *3*	^{121}Cs(155 s)	153.9(15.2), 239.6(7.7), 427.1(3.63)
59.3 *5*	0.10 *3*	^{121}Cs(122 s)	179.4(30.2), 196.0(24.1), 459.7(12.0)
59.3 *1*	3.0 *7*	^{141}Tb(3.5 s)	293.3(16.8), 343.6(16.3), 198.4(14.8)
59.3 *1*	†13 *2*	^{227}Rn(22.5 s)	162.14(†100), 739.2(†65), 686.2(†62)
59.36 *6*	0.0063 *21*	^{223}Fr(21.8 m)	50.13(36.0), 79.72(9.1), 234.81(3.0)
59.40 *2*	0.16	^{167}Lu(51.5 m)	29.66(14.4), 239.22(8.6), 213.19(3.6)
59.4		^{190}Pb(1.2 m)	942.20(34), 151.19(8.92), 598.3(8.0)
• 59.45 *10*	0.0048 *12*	^{194}Au(38.02 h)	328.455(60), 293.545(10.2), 1468.91(6.3)
59.5 *2*	0.153 *24*	^{227}Pa(38.3 m)	64.62(6), 110.05(1.24), 84.8(0.86)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
59.5 *2*	0.104 *24*	^{227}Pa(38.3 m)	64.62(6), 110.05(1.24), 84.8(0.86)
59.51 *3*	5.4 *5*	^{161}Tm(33 m)	45.54(5.00), 1648.1(9.50), 84.40(9.4)
• 59.537 *1*	34.5 *7*	^{237}U(6.75 d)	208.00(21.14), 26.345(2.43), 164.61(1.852)
• 59.537 *1*	3.28 *10*	^{237}Pu(45.2 d)	26.345(0.221), 33.195(0.0745), 43.423(0.0039)
• 59.537 *1*	60	^{241}Am(432.2 y)	26.345(†1000×10^{9}), 33.195(†6000×10^{8}), 43.423(†3.00×10^{7})
59.55 *8*	0.0081 *16*	^{81}Rb(4.576 h)	190.38(64.0), 446.15(23.2), 510.31(5.3)
• 59.6 *5*	†0.65 *24*	^{227}Th(18.72 d)	235.971(†813), 50.13(†528), 256.25(†463)
• 59.602 *1*	0.021 *4*	^{155}Tb(5.32 d)	86.545(32.0), 105.305(25), 180.103(7.45)
• 59.692 *6*	2.69 *8*	^{172}Er(49.3 h)	610.062(44.2), 407.338(42.1), 68.107(3.29)
59.7 *1*	2.50 *16*	^{97}Rb(169.9 ms)	167.1(26), 585.2(21.0), 600.5(10.6)
59.77 *4*	0.53 *4*	^{111}Pd(23.4 m)	580.00(0.8), 70.44(0.78), 1459.0(0.56)
59.77 *4*	0.104 *14*	^{111}Pd(5.5 h)	70.44(8.3), 391.25(5.4), 632.80(3.6)
59.8 *1*	†38 *15*	^{141}Gd(24.5 s)	198.4(†208), 258.2(†177), 113.2(†69)
59.8 *1*	1.7 *3*	^{141}Tb(3.5 s)	293.3(16.8), 343.6(16.3), 198.4(14.8)
59.8 *2*	†15 *4*	^{156}Nd(5.47 s)	150.4(†100), 157.3(†78), 84.6(†63)
59.9 *5*	0.18 *4*	^{109}In(4.2 h)	203.5(74), 623.7(5.5), 1148.9(4.3)
59.90 *20*	†4.5 *12*	^{112}Te(2.0 m)	372.70(†100), 296.20(†86), 418.9(†57)
• 59.908 *18*	1.23 *14*	^{206}Po(8.8 d)	1032.26(32.9), 511.36(24.1), 286.410(23.8)
59.908 *18*		^{210}At(8.1 h)	82.802(†480000), 106(†170000), 167(†110000)
• 59.93 *5*	0.0248 *22*	^{151}Pm(28.40 h)	340.08(23), 167.75(8.3), 275.21(6.8)
59.96 *1*	1.92 *14*	^{208}Rn(24.35 m)	426.78(7.07), 251.05(5.02), 350.026(3.34)
59.97 *3*	2.30 *13*	^{200}Pt(12.5 h)	76.21(13), 135.90(3.24), 243.71(2.49)
• 59.98 *3*	0.069 *4*	^{160}Er(28.58 h)	7.133(4.95)
59.99 *3*	0.33 *3*	^{203}Bi(11.76 h)	820.3(30), 825.2(14.6), 896.9(13)
60.0 *6*	†82 *20*	^{118}Xe(6 m)	53.5(†100), 119.9(†76), 150.5(†44)
60		^{122}Ba(1.95 m)	550.7, 388.7, 231.0
60.0 *1*	5.7 *12*	^{185}Ir(14.4 h)	254.4(13.3), 1828.8(10), 97.4(4.2)
60.004 *15*	0.12 *2*	^{255}Fm(20.07 h)	81.477(0.81), 58.477(0.67), 80.92(0.27)
• 60.0086 *10*	1.13 *5*	^{155}Eu(4.7611 y)	86.545(30.7), 105.305(21.2), 45.2972(1.326)
• 60.0086 *10*	1.11 *4*	^{155}Tb(5.32 d)	86.545(32.0), 105.305(25), 180.103(7.45)
60.105 *3*	1.44 *3*	^{163}Tm(1.810 h)	104.320(18.6), 69.229(11.6), 241.305(10.9)
60.2 *1*	†14 *3*	^{130}Sn(1.7 m)	144.9(†100), 899.2(†49), 84.7(†42)
60.2 *1*	0.33 *3*	^{186}Hg(1.38 m)	112.1(63), 251.5(55), 191.6(3.7)
60.24 *3*	2.59 *18*	^{78}Zn(1.47 s)	224.75(43.9), 181.68(28.1), 860.30(24.5)
60.34 *20*		^{121}In(23.1 s)	925.57(87), 261.96(7.9), 657.32(7.1)
60.34 *20*	20	^{121}In(3.88 m)	1041.1(1.12), 1100.7(0.92), 1121.2(0.51)
• 60.399 *4*	0.710 *14*	^{165}Tm(30.06 h)	242.917(35.5), 47.155(16.9), 297.369(12.71)
60.44 *8*	0.91 *14*	^{167}Dy(6.20 m)	569.7(48), 259.33(27.9), 310.26(25.0)
60.5 *5*	†100 *20*	^{183}Hg(9.4 s)	159.91(†21), 172.70(†17), 305.14(†16)
60.5	†3.0	^{224}Ac(2.9 h)	156.4(†100), 140.8(†55), 261.6(†28)
60.5 *3*	0.061 *24*	^{227}Pa(38.3 m)	64.62(6), 110.05(1.24), 84.8(0.86)
• 60.50 *3*	0.0065 *10*	^{231}Pa(32760 y)	27.36(10.3), 300.07(2.46), 302.65(2.2)
• 60.5		^{235}U(7.038×10^{8} y)	185.712(57.2), 143.764(10.96), 163.358(5.08)
60.55 *10*	35.1 *16*	^{98}Cd(9.2 s)	347.18(78), 1176.1(66.3), 107.28(43.7)
• 60.579 *25*	0.10 *3*	^{182}Re(64.0 h)	229.3220(26), 67.75001(22.2), 1121.3007(22.0)
60.58 *9*	0.08 *3*	^{157}Sm(482 s)	197.870(56.00), 196.461(16.8), 394.351(11.93)
• 60.65	1.1	^{172}Hf(1.87 y)	23.9331(20.3), 125.812(11.3), 67.35(5.3)
60.82 *7*	0.5 *3*	^{157}Dy(8.14 h)	326.16(92), 182.20(1.84), 83.01(0.62)
• 60.84 *7*	0.0076 *20*	^{131}Te(30 h)	773.67(49.9), 852.21(27.0), 793.75(18.10)
60.9	0.0096 *21*	^{135}Ce(17.7 h)	265.56(41.8), 300.07(23.5), 606.76(18.8)
60.98 *2*	0.00043	^{167}Lu(51.5 m)	29.66(14.4), 239.22(8.6), 213.19(3.6)
61		^{185}Hg(21.6 s)	106, 159.42, 118.88
61.0 *5*		^{192}Bi(37 s)	853.8(†100.0), 501.8(†80), 504.3(†39)
61.0	†18	^{220}Fr(27.4 s)	45.0(†100), 106.0(†72), 161.5(†65)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
• 61.01 *1*	0.0070 *22*	^{151}Pm(28.40 h)	340.08(23), 167.75(8.3), 275.21(6.8)
61.044 *25*	0.046 *18*	^{153}Dy(6.4 h)	80.723(11.10), 213.754(10.90), 99.659(10.51)
61.1 *2*	1.4	^{104}Zr(1.2 s)	100.9(6), 504.7(5), 445.0(5)
• 61.1 *1*	1.43 *11*	^{127}Sb(3.85 d)	685.7(37), 473.0(25.7), 783.7(15.0)
61.1 *8*	†3 *1*	^{129}Sb(17.7 m)	759.8(†100.0), 657.78(†92), 433.76(†73)
61.11 *2*	†1.12×10^{4} *11*	^{157}Ho(12.6 m)	279.97(†47600), 341.16(†37000), 193.41(†15200)
61.20 *1*	11.4 *11*	^{65}Ga(15.2 m)	115.09(54), 153.0(8.9), 751.8(8.1)
61.2 *5*	†4 *2*	^{171}Ho(53 s)	903.3(†100), 198.6(†88), 279.2(†60)
• 61.25 *5*	12	^{145}Sm(340 d)	492.31(0.00328), 431.4(0.000052)
61.29	†8	^{176}W(2.5 h)	100.20(†100), 94.86(†8), 84.14(†4.5)
61.3	0.08	^{147}Ba(0.893 s)	167.4(11), 105.2(4.8), 196.1(4.8)
61.35 *3*	25.0 *4*	^{45}Ar(21.48 s)	1020.04(34.0), 3703.2(33.3), 1808.38(13.2)
61.4 *6*	26 *3*	^{60}Zn(2.38 m)	670.3(64), 273.4(10.9), 334.4(9.0)
61.4		^{126}Ce(50 s)	188, 120, 116.4
61.40 *11*	>0.7	^{157}Sm(482 s)	197.870(56.00), 196.461(16.8), 394.351(11.93)
61.441 *20*		^{223}Fr(21.8 m)	50.13(36.0), 79.72(9.1), 234.81(3.0)
• 61.441 *20*	†5.6 *12*	^{227}Th(18.72 d)	235.971(†813), 50.13(†528), 256.25(†463)
61.46 *3*	6.2 *4*	^{195}Hg(9.9 h)	779.80(7), 585.13(1.99), 180.11(1.90)
• 61.46 *3*	0.085 *14*	^{195}Hg(41.6 h)	261.75(30.9), 560.27(7), 387.87(2.15)
• 61.461 *2*	1.29 *2*	^{239}Np(2.3565 d)	106.125(27.2), 277.599(14.38), 228.183(10.76)
61.461 *2*	0.0020 *4*	^{239}Am(11.9 h)	277.599(15.0), 228.183(11.3), 209.753(3.50)
• 61.461 *2*	0.0140 *10*	^{243}Cm(29.1 y)	277.599(14.0), 228.183(10.6), 209.753(3.29)
61.48 *4*	2.28 *3*	^{148}Ba(0.607 s)	56.08(29.20), 133.53(3.88), 415.78(3.59)
• 61.484 *1*	0.029 *4*	^{155}Tb(5.32 d)	86.545(32.0), 105.305(25), 180.103(7.45)
61.49 *5*	0.186 *15*	^{132}Ce(3.51 h)	182.11(77), 155.37(10.5), 216.83(4.95)
• 61.5 *3*	0.56 *22*	^{251}Cf(898 y)	176.6(17.7), 227.0(6.3), 285.0(1.4)
• 61.6 *1*	1.45 *8*	^{257}Fm(100.5 d)	241.0(11.0), 179.4(8.7), 104.4(0.62)
61.6069 *3*	0.224 *22*	^{155}Sm(22.3 m)	104.3346(74.6), 245.771(3.7), 141.4428(1.98)
61.626 *4*	0.407 *12*	^{122}Xe(20.1 h)	350.065(7.80), 148.612(2.62), 416.633(1.87)
• 61.64	0.17 *3*	^{100}Pd(3.63 d)	84.02(45), 74.78(36.5), 126.05(8.10)
61.667 *5*	0.82 *7*	^{250}Es(8.6 h)	828.82(72), 303.41(21.6), 349.4(19.8)
61.7		^{156}Ho(56 m)	266.35(54.7), 137.83(51), 366.25(10.73)
61.7	†101	^{177}Ir(30 s)	183.6(†1010), 148.3(†929), 75.6(†>900)
61.77 *11*		^{159}Ho(33.05 m)	121.012(36.2), 131.973(23.6), 309.594(17.2)
61.8	1.31 *14*	^{206}At(30.0 m)	700.66(98), 477.10(86), 395.54(48)
• 61.88 *14*	†3.6×10^{3} *8*	^{134}Ce(75.9 h)	162.306(†230000), 130.414(†209000), 39.08(†>150000)
61.9 *1*	†9.1 *9*	^{171}Ta(23.3 m)	49.6(†100), 506.4(†54), 501.8(†22.6)
61.9 *4*	1.95 *16*	^{174}W(31 m)	35.42(14.1), 428.83(12.7), 328.68(9.5)
62.0 *2*	27 *5*	^{65}Ge(30.9 s)	649.7(33), 809.1(21.5), 190.8(10.3)
62.0 *1*	†13.8 *14*	^{206}Rn(5.67 m)	497.7(†100), 324.5(†96), 386.6(†61)
• 62.0 *5*		^{227}Th(18.72 d)	235.971(†813), 50.13(†528), 256.25(†463)
62.05 *10*	0.19 *6*	^{160}Yb(4.8 m)	173.74(42.0), 215.78(20.2), 140.35(9.3)
• 62.09 *5*	0.0010	^{253}Es(20.47 d)	41.79(0.050), 389.11(0.0264), 387.1(0.00810)
62.1	0.41	^{83}Zr(44 s)	55.55(8), 104.97(5.70), 475.1(5.1)
62.14 *5*	0.064 *7*	^{153}Dy(6.4 h)	80.723(11.10), 213.754(10.90), 99.659(10.51)
62.14 *5*	†64 *5*	^{163}Hf(40.0 s)	70.98(†100), 45.39(†48), 688.25(†33)
• 62.1503 *14*	>8.0×10^{-5}	^{77}As(38.83 h)	238.996(1.6), 520.639(0.558), 249.786(0.394)
• 62.17 *3*	0.167 *9*	^{173}Lu(1.37 y)	272.105(21.2), 78.63(11.87), 100.724(5.24)
62.215 *12*	0.008 *3*	^{178}Lu(28.4 m)	93.180(6.0), 1340.8(3.22), 1310.05(1.40)
62.27 *6*	0.101 *8*	^{132}Ce(3.51 h)	182.11(77), 155.37(10.5), 216.83(4.95)
62.289 *2*	16.39 *21*	^{49}Cr(42.3 m)	90.639(53.20), 152.928(30.32), 1361.61(0.045)
• 62.38 *2*	0.048 *3*	^{131}Te(30 h)	773.67(49.9), 852.21(27.0), 793.75(18.10)
62.39 *10*	0.066 *10*	^{105}Ru(4.44 h)	724.21(47), 469.37(17.5), 676.36(15.7)
• 62.41 *3*	<0.0	^{103}Ru(39.26 d)	497.080(90.9), 610.33(5.75), 443.799(3.27)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
• 62.41 *3*	0.00104 *3*	^{103}Pd(16.991 d)	39.757(0.07), 357.47(0.0221), 497.080(0.00396)
62.45 *5*	0.018 *6*	^{223}Fr(21.8 m)	50.13(36.0), 79.72(9.1), 234.81(3.0)
• 62.45 *5*	†12.6 *19*	^{227}Th(18.72 d)	235.971(†813), 50.13(†528), 256.25(†463)
62.47 *5*	0.126 *10*	^{249}Es(102.2 m)	379.5(40.4), 813.2(9.2), 375.1(3.3)
• 62.47 *5*	0.16	^{253}Fm(3.00 d)	271.8(2.6), 144.99(0.192), 405(0.08)
62.48 *10*		^{163}Er(75.0 m)	1113.5(0.0490), 436.1(0.0285), 439.94(0.0276)
62.5 *3*	19.1 *13*	^{73}Kr(27.0 s)	177.8(65.8), 454.8(15), 151.1(12.5)
62.5 *2*	0.03 *3*	^{97}Rb(169.9 ms)	167.1(26), 585.2(21.0), 600.5(10.6)
62.5 *5*	>0.012	^{98}Pd(17.7 m)	112.0(58), 662.2(19.7), 106.75(13.9)
62.5		^{214}Bi(19.9 m)	191.1
62.5		^{225}Rn(4.5 m)	207.2, 178.7, 169.7
• 62.524 *4*	0.206 *4*	^{172}Er(49.3 h)	610.062(44.2), 407.338(42.1), 68.107(3.29)
62.54 *2*	13.33 *24*	^{145}Ce(3.01 m)	724.33(59), 1148.03(9.15), 284.53(8.14)
• 62.59 *10*	0.006 *3*	^{237}Np(2.14×10^{6} y)	29.374(15.0), 86.477(12.4), 94.66(0.6)
62.6 *4*	0.028 *9*	^{138}Nd(5.04 h)	325.76(2.84), 199.50(0.53), 341.65(0.40)
62.6 *2*	0.9 *4*	^{173}Tm(8.24 h)	398.9(88), 461.4(6.9)
62.6 *2*	†3.7 *4*	^{203}At(7.4 m)	639.4(†100), 641.5(†55.8), 738.1(†38.4)
62.62 *6*	0.04	^{154}Pm(1.73 m)	2057.76(17.1), 1393.9(14.4), 81.99(12.6)
62.62 *5*	0.13 *3*	^{157}Sm(482 s)	197.870(56.00), 196.461(16.8), 394.351(11.93)
• 62.676 *5*	0.511 *11*	^{165}Tm(30.06 h)	242.917(35.5), 47.155(16.9), 297.369(12.71)
62.7 *2*	0.0025 *17*	^{121}I(2.12 h)	212.189(84), 532.08(6.07), 598.74(1.47)
62.70 *3*	0.094 *20*	^{189}Pt(10.87 h)	721.41(9.3), 94.33(7.6), 568.84(7.1)
62.70 *1*	1.5 *4*	^{234}Pa(6.70 h)	131.30(18), 946.00(13.4), 883.24(9.6)
62.70 *1*	†1.2×10^{3} *4*	^{234}Pa(1.17 m)	1001.03(†837000), 766.38(†294000), 742.81(†80000)
• 62.70 *1*	0.115 *11*	^{234}Np(4.4 d)	1558.31(18.72), 1527.21(11.2), 1601.80(9.1)
• 62.70 *1*	>1.0×10^{-8}	^{238}Pu(87.74 y)	43.498(0.0395), 99.853(0.00735), 152.720(0.000937)
• 62.7190 *6*	0.65 *3*	^{169}Lu(34.06 h)	960.622(23.4), 191.2137(20.6), 1449.74(9.92)
62.80 *10*	22.7 *30*	^{124}Cd(0.9 s)	179.91(49.9), 143.33(12.9), 36.50(4.6)
62.8 *3*	0.14	^{170}Hf(16.01 h)	164.78(33), 620.7(23), 120.17(19)
• 62.8		^{245}Bk(4.94 d)	252.80(29.1), 380.8(2.40), 385.0(0.57)
62.84 *10*	9.6 *9*	^{74}Kr(11.50 m)	89.65(31), 203.0(18.0), 296.67(9.9)
• 62.86 *2*	0.021 *3*	^{234}Th(24.10 d)	63.29(4.8), 92.38(2.81), 92.80(2.77)
62.9 *3*		^{122}Ba(1.95 m)	550.7, 388.7, 231.0
62.9 *2*		^{131}Sn(58.4 s)	367.40, 285.0, 102.20
62.9 *2*	†1.5 *5*	^{131}Sn(56.0 s)	1226.03(†100), 450.03(†90), 798.50(†86)
• 62.91 *2*	0.207 *16*	^{151}Pm(28.40 h)	340.08(23), 167.75(8.3), 275.21(6.8)
62.91 *3*	0.059 *20*	^{161}Gd(3.66 m)	360.94(0.59), 314.92(22.7), 102.315(13.9)
62.91 *1*	4.9 *8*	^{167}Yb(17.5 m)	113.34(55.3), 106.18(22.5), 176.25(21)
62.93 *20*	†1.6 *3*	^{126}Cd(0.506 s)	260.09(†100), 428.11(†83.7), 688.23(†5.9)
62.95 *3*	0.151 *22*	^{221}Rn(25 m)	186.38(21.6), 150.04(4.5), 216.90(2.6)
• 62.95 *3*	0.447 *22*	^{225}Ac(10.0 d)	99.91(1.01), 150.04(0.80), 99.63(0.62)
63.0 *5*	†3.5 *7*	^{106}Mo(8.4 s)	465.70(†100), 54.00(†54), 618.60(†25)
63.0 *2*		^{136}Nd(50.65 m)	108.90(32), 40.2(18.9), 574.8(10.4)
63 *2*		^{186}Pt(2.0 h)	276.7(0), 611.5(6.0), 635.6(>3.8)
63.0 *1*	†35.4 *18*	^{230}Ra(93 m)	72.0(†100), 202.8(†27.3), 469.7(†25.9)
• 63.0 *20*	2.0 *2*	^{254}Es(275.7 d)	316(0.15), 304(0.07), 385(0.05)
63.09 *4*	1.07 *5*	^{119}I(19.1 m)	257.52(87), 635.86(2.69), 320.53(2.17)
63.1 *5*	†8 *4*	^{125}Ba(3.5 m)	77.6(†100), 140.9(†86), 85.4(†82)
63.1 *1*	†16 *3*	^{130}Sn(1.7 m)	144.9(†100), 899.2(†49), 84.7(†42)
63.1 *5*	0.011 *4*	^{155}Sm(22.3 m)	104.3346(74.6), 245.771(3.7), 141.4428(1.98)
• 63.1		^{237}Pu(45.2 d)	280.40(†870000), 298.89(†7.85×10^{6}), 320.75(†6.48×10^{6})
• 63.12077 *9*	44.2 *6*	^{169}Yb(32.026 d)	197.95788(35.8), 177.21402(22.16), 109.77987(17.47)
• 63.1791 *8*	2.9×10^{-5} *15*	^{140}Ba(12.752 d)	537.261(24.39), 29.9640(14.1), 162.660(6.21)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
63.185 *7*	10.8 *3*	^{204}Po(3.53 h)	883.984(29.9), 270.068(27.8), 1016.31(24.1)
• 63.2 *1*	0.0056 *20*	^{131}Te(30 h)	773.67(49.9), 852.21(27.0), 793.75(18.10)
• 63.2 *5*	0.055 *15*	^{223}Ra(11.435 d)	269.459(13.7), 154.21(5.62), 323.871(3.93)
63.2 *5*		^{257}Rf(4.7 s)	117.0, 47.4, 296
• 63.29 *2*	4.8 *5*	^{234}Th(24.10 d)	92.38(2.81), 92.80(2.77), 112.81(0.277)
63.3 *3*		^{172}W(6.6 m)	38.9(†100), 423.3(†44), 89.8(†33.0)
63.36 *5*	<0.2	^{65}Co(1.20 s)	1141.7(4.0), 310.6(2.90), 963.7(2.6)
63.45 *5*	0.058 *7*	^{249}Es(102.2 m)	379.5(40.4), 813.2(9.2), 375.1(3.3)
63.45 *5*	>0.07	^{249}Es(102.2 m)	379.5(40.4), 813.2(9.2), 375.1(3.3)
63.5 *3*	†3.1 *8*	^{105}Nb(2.95 s)	94.8(†100), 246.9(†79), 309.9(†41.9)
63.5 *1*	†1.4 *5*	^{155}Tm(21.6 s)	226.8(†100), 531.7(†20), 88.1(†17)
63.5 *1*	†15 *5*	^{155}Tm(45 s)	88.1(†100), 323.2(†65), 507.0(†40)
• 63.5 *1*	†1.4×10^{6}	^{208}Po(2.898 y)	291.7(†9×10^{06}), 570.4(†5×10^{06}), 601.6(†4.1×10^{6})
63.5 *1*		^{212}At(0.119 s)	
63.51 *5*		^{152}Pm(13.8 m)	229.9, 200.6, 137.08
63.55 *10*	†6.5 *14*	^{224}Rn(107 m)	260.581(†100), 265.806(†93), 202.21(†21.9)
• 63.582 *3*	0.109 *16*	^{188}W(69.4 d)	290.669(0.402), 227.083(0.221), 207.849(0.0080)
63.6 *2*	0.066 *16*	^{76}Kr(14.8 h)	315.7(39), 270.2(21.1), 45.48(19.5)
63.6 *9*	†10 *3*	^{129}Sb(17.7 m)	759.8(†100.0), 657.78(†92), 433.76(†73)
63.6 *1*	0.090 *12*	^{142}Ba(10.6 m)	255.300(20.5), 1204.3(14.23), 895.2(13.9)
63.6	0.25 *13*	^{147}Cs(0.225 s)	85.2(7.3), 245.8(4.5), 109.7(4.5)
63.62 *3*	6.5 *3*	^{163}Yb(11.05 m)	860.28(10.1), 123.21(1.98), 1746.68(1.72)
• 63.65 *2*	0.050 *4*	^{231}Pa(32760 y)	27.36(10.3), 300.07(2.46), 302.65(2.2)
63.697 *10*	1.73 *8*	^{184}Ta(8.7 h)	414.03(72), 252.848(43), 920.932(32.0)
• 63.697 *10*	0.37 *6*	^{184}Re(169 d)	252.848(10.7), 216.548(9.43), 920.932(8.14)
• 63.7 *2*	0.0051 *21*	^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
63.781 *15*	0.018 *3*	^{155}Dy(9.9 h)	226.918(68.4), 184.564(3.37), 1089.8(>2.8)
63.8 *5*	0.0008 *3*	^{255}Fm(20.07 h)	81.477(0.81), 58.477(0.67), 80.92(0.27)
63.81 *6*	0.038 *16*	^{151}Nd(12.44 m)	116.80(43.4), 255.68(16.4), 1180.89(14.8)
63.82		^{131}Sn(58.4 s)	367.40, 285.0, 62.9
63.82	†0.32	^{131}Sn(56.0 s)	1226.03(†100), 450.03(†90), 798.50(†86)
• 63.825 *6*	0.023 *2*	^{231}Th(25.52 h)	25.646(14.5), 84.216(6.6), 89.944(0.94)
• 63.825 *6*	†2.8×10^{2}	^{235}Np(396.1 d)	25.646(†600000), 84.216(†265000), 81.227(†58000)
63.83 *2*	0.95 *8*	^{228}Fr(39 s)	473.7(10.2), 474.0(7.6), 410.40(6.3)
• 63.83 *2*	0.267 *14*	^{232}Th(1.405×10^{10} y)	140.86(0.018)
63.84 *10*	0.0832 *23*	^{79}Rb(22.9 m)	688.1(23), 182.77(19.2), 143.41(13.9)
63.85 *8*	1.37 *8*	^{99}Sr(0.269 s)	125.118(16.1), 536.12(14.0), 1198.12(9.2)
63.85	>0.28	^{179}Re(19.5 m)	430.221(28), 289.968(26.9), 1680.244(13.0)
63.87 *2*	0.024 *4*	^{207}At(1.80 h)	814.41(44.5), 588.33(19.2), 300.654(12.8)
• 63.88 *15*	3.0×10^{-5}	^{233}U(1.592×10^{5} y)	42.44(0.0862), 97.134(0.020), 54.699(0.0182)
• 63.9 *1*	0.0009 *3*	^{151}Gd(124 d)	153.56(6.20), 243.28(5.60), 174.70(2.96)
63.9		^{194}Bi(125 s)	272.4, 112.2
• 63.92 *7*	0.00087 *19*	^{151}Gd(124 d)	153.56(6.20), 243.28(5.60), 174.70(2.96)
63.92 *6*	0.0008 *3*	^{233}Th(22.3 m)	86.477(2.7), 29.374(2.5), 459.222(1.4)
• 63.92 *6*	0.012 *2*	^{237}Np(2.14×10^{6} y)	29.374(15.0), 86.477(12.4), 94.66(0.6)
63.929 *8*	23.0 *23*	^{157}Eu(15.18 h)	410.723(17.5), 370.509(11.0), 54.548(3.7)
63.93 *11*	0.0051 *16*	^{133}Ce(4.9 h)	477.22(39), 510.36(20.7), 58.39(19.2)
63.94 *5*	†11	^{154}Nd(25.9 s)	151.703(†800), 799.55(†600), 180.693(†510)
63.97 *5*	0.056 *12*	^{81}Rb(4.576 h)	190.38(64.0), 446.15(23.2), 510.31(5.3)
• 63.98 *3*	10.5 *10*	^{105}Ag(41.29 d)	344.520(41), 280.41(30.2), 644.55(11.1)
63.98 *3*		^{105}Ag(7.23 m)	319.14(†63000), 306.25(†12800), 442.37(†5900)
64 *2*	1.1	^{76}Rb(39.1 s)	2571.3(47), 424.0(43.4), 355.6(8.2)
64.0 *1*	†14 *4*	^{123}Ba(2.7 m)	94.6(†100), 123.5(†69), 30.6(†56)
64.085 *10*	<2.4	^{227}Fr(2.47 m)	90.035(39), 585.804(29.5), 64.267(14.5)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
64.1 *2*	5.5 *5*	^{105}Mo(35.6 s)	85.4(25.0), 76.50(19.3), 147.8(14.8)
• 64.135 *10*	0.0143 *19*	^{140}La(1.6781 d)	1596.210(95), 487.021(45.5), 815.772(23.28)
64.2 *4*	0.07	^{185}Au(4.25 m)	310.6(13), 243.1(6.6), 77.7(6)
64.267 *2*	14.5 *15*	^{227}Fr(2.47 m)	90.035(39), 585.804(29.5), 433.824(5.1)
• 64.28 *1*	9.6 *11*	^{126}Sn(1×10^5 y)	87.57(37), 86.94(8.9), 23.28(6.4)
64.28 *5*	0.281 *22*	^{221}Rn(25 m)	186.38(21.6), 150.04(4.5), 216.90(2.6)
• 64.28 *5*	0.033 *3*	^{225}Ac(10.0 d)	99.91(1.01), 150.04(0.80), 99.63(0.62)
64.3 *2*	1.0	^{145}La(24.8 s)	70.0(11), 355.8(3.8), 118.2(3.6)
64.3 *5*		^{189}Tl(2.3 m)	333.7(†100), 942.2(†69), 451.0(†49)
64.31 *8*	0.43 *10*	^{105}In(5.07 m)	131.37(41), 260.21(15.7), 604.11(9.2)
• 64.31 *10*	†2.4 *8*	^{227}Th(18.72 d)	235.971(†813), 50.13(†528), 256.25(†463)
• 64.37 *2*	0.01	^{235}U(7.038×10^8 y)	185.712(57.2), 143.764(10.96), 163.358(5.08)
• 64.4	0.110 *17*	^{147}Gd(38.06 h)	229.32(63), 396.00(34.3), 929.01(20.2)
64.4 *2*	0.13 *7*	^{157}Eu(15.18 h)	63.929(23.0), 410.723(17.5), 370.509(11.0)
64.4 *3*	0.020	^{223}Ac(2.10 m)	98.58(0.891), 191.3(0.58), 83.55(0.57)
• 64.42 *5*	0.274 *23*	^{252}Es(471.7 d)	52.33(0.55), 418.5(0.220), 377.4(0.122)
64.50 *20*	8.9 *6*	^{102}Zr(2.9 s)	599.60(13.9), 535.30(10.6), 156.60(2.92)
64.548 *25*	4.8	^{154}Pm(2.68 m)	184.810(32), 81.99(15.4), 546.66(14.5)
64.55 *2*	2.9	^{169}Ho(4.7 m)	788.4(21.2), 853.0(11.2), 760.8(10)
64.58 *3*	0.69 *13*	^{187}Ir(10.5 h)	912.95(4.79), 427.12(4.12), 400.89(3.94)
64.6 *1*	0.222 *25*	^{129}La(11.6 m)	278.6(25), 110.5(16.9), 457.0(8.0)
64.6 *10*	>2.9	^{132}In(0.201 s)	374.3(62), 4040.8(61), 299.2(49)
64.6	0.5	^{147}Ce(56.4 s)	268.80(7), 92.9(4.7), 374.23(3.5)
64.62 *5*	6	^{227}Pa(38.3 m)	110.05(1.24), 84.8(0.86), 67.6(0.42)
64.6761 *6*	0.0075 *15*	^{155}Sm(22.3 m)	104.3346(74.6), 245.771(3.7), 141.4428(1.98)
• 64.69	>0.0041	^{71}As(65.28 h)	174.954(82.00), 1095.490(4.08), 499.876(3.624)
• 64.70 *5*	0.045 *4*	^{229}Pa(1.50 d)	40.09(0.104), 75.12(0.035), 115.55(0.0182)
64.76 *6*	1.15 *14*	^{159}Sm(11.37 s)	189.79(46), 861.97(18.2), 254.43(9.8)
64.8 *3*	0.072 *9*	^{120}Xe(40 m)	25.1(30), 72.6(9), 178.1(6.8)
• 64.83 *2*	1.28 *2*	^{237}U(6.75 d)	59.537(34.5), 208.00(21.14), 26.345(2.43)
• 64.83 *2*	†1.45×10^6 *18*	^{241}Am(432.2 y)	59.537(†60), 26.345(†1000×10^9), 33.195(†6000×10^8)
• 64.88 *1*	1.89 *16*	^{151}Pm(28.40 h)	340.08(23), 167.75(8.3), 275.21(6.8)
64.9 *1*	37.0 *4*	^{73}Br(3.4 m)	336.0(10.4), 699.8(9.1), 125.6(7.55)
64.9		^{185}Ir(14.4 h)	254.4(13.3), 1828.8(10), 60.0(5.7)
64.96 *12*	2.4 *4*	^{181}Re(19.9 h)	365.57(56), 360.70(20), 639.30(6.4)
64.9725 *4*	2.3	^{156}Sm(9.4 h)	87.4897(24), 203.818(20.6), 165.8452(12.7)
65.0 *3*	0.0059 *21*	^{135}Ce(17.7 h)	265.56(41.8), 300.07(23.5), 606.76(18.8)
65 *14*		^{163}Gd(68 s)	287.79(25), 214.0(11.5), 1562.1(9.0)
65.0 *4*		^{177}Pt(11 s)	148.0(†100), 85.4(†62), 223.1(†52)
• 65.05 *8*	0.0106 *25*	^{131}Te(30 h)	773.67(49.9), 852.21(27.0), 793.75(18.10)
65.12 *11*	7.1 *3*	^{66}Ge(2.26 h)	43.89(28.7), 381.85(28), 272.97(10.4)
65.12 *6*	0.039 *6*	^{223}Fr(21.8 m)	50.13(36.0), 79.72(9.1), 234.81(3.0)
65.2 *2*	†39.8 *20*	^{202}Po(44.7 m)	688.6(†1000), 316.0(†286), 165.7(†174)
65.2 *3*		^{207}At(1.80 h)	814.41(44.5), 588.33(19.2), 300.654(12.8)
65.23	0.016 *5*	^{149}Nd(1.728 h)	211.309(25.9), 114.314(19.2), 270.166(10.7)
65.25 *18*		^{187}W(23.72 h)	685.774(27.3), 479.531(21.8), 72.001(11.14)
65.29 *3*	0.82 *16*	^{187}Ir(10.5 h)	912.95(4.79), 427.12(4.12), 400.89(3.94)
65.3 *2*	†20	^{181}Ir(4.90 m)	107.64(†100), 1639.6(†52), 318.9(†46)
65.3 *1*		^{187}Au(8.4 m)	1331.81(7.0), 1408.23(3.06), 914.73(3.02)
• 65.36 *6*	0.011 *4*	^{245}Cm(8500 y)	174.94(10), 132.99(2.77), 41.95(0.350)
65.39 *9*	†100	^{179}Os(6.5 m)	218.6(†17), 32.3(†17), 593.8(†16)
65.4	0.031 *10*	^{149}Nd(1.728 h)	211.309(25.9), 114.314(19.2), 270.166(10.7)
65.420 *14*	0.077 *5*	^{211}Pb(36.1 m)	404.853(3.78), 832.01(3.52), 427.088(1.76)
65.44 *10*	0.073 *22*	^{157}Sm(482 s)	197.870(56.00), 196.461(16.8), 394.351(11.93)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
65.459 *3*	1.83 *3*	^{155}Dy(9.9 h)	226.918(68.4), 184.564(3.37), 1089.8(>2.8)
65.46 *3*	15.2 *11*	^{100}Sr(202 ms)	963.85(22.0), 898.50(18.9), 10.68(9.7)
• 65.51 *18*		^{233}U(1.592×10^5 y)	42.44(0.0862), 97.134(0.020), 54.699(0.0182)
• 65.548 *13*	0.259 *9*	^{121}Te(16.78 d)	573.139(80.3), 507.591(17.7), 470.472(1.41)
65.6		^{176}Ta(8.09 h)	1159.28(25), 88.34(12), 1224.93(6)
65.66 *1*		^{119}In(2.4 m)	763.14(99), 23.870(16.0), 697.47(0.49)
65.7	†>92	^{107}Mo(3.5 s)	400.3(†100), 384.4(†57.6), 483.6(†41.6)
• 65.72203 *15*	2.92 *5*	^{182}Ta(114.43 d)	67.75001(41.2), 1121.3007(34.9), 1221.4066(26.98)
65.72203 *15*	0.25 *3*	^{182}Re(12.7 h)	67.75001(38.2), 1121.3007(32), 1221.4066(24.8)
• 65.72203 *15*	2.9 *6*	^{182}Re(64.0 h)	229.3220(26), 67.75001(22.2), 1121.3007(22.0)
• 65.723 *19*	4.56×10^{-5} *14*	^{239}Pu(24110 y)	51.624(0.007100), 38.661(0.000500), 129.297(0.00631)
65.8 *3*		^{122}Ba(1.95 m)	550.7, 388.7, 231.0
• 65.8 *3*		^{172}Lu(6.70 d)	1093.657(62.5), 900.724(29.8), 181.528(20.6)
• 65.83 *1*	1.15 *9*	^{151}Pm(28.40 h)	340.08(23), 167.75(8.3), 275.21(6.8)
• 65.86	>0.010	^{169}Yb(32.026 d)	63.12077(44.2), 197.95788(35.8), 177.21402(22.16)
65.86 *3*	3.9 *8*	^{185}Ta(49.4 m)	177.59(25.7), 173.68(22.6), 243.7(3.8)
• 65.87 *6*	0.0024	^{193}Os(30.5 h)	139.03(4.27), 460.50(3.95), 73.039(3.2)
65.9 *2*	5	^{145}Ba(4.31 s)	96.6(17), 91.9(7), 544.2(>5.0)
• 65.96 *2*	0.005 *3*	^{249}Cf(351 y)	388.16(66), 333.37(14.6), 252.80(2.50)
• 65.96		^{249}Cf(351 y)	388.16(66), 333.37(14.6), 252.80(2.50)
66.0 *3*	1.53 *15*	^{98}Sr(0.653 s)	119.353(73), 444.628(39), 428.4(31)
66.0 *6*	0.24 *3*	^{100}Sr(202 ms)	963.85(22.0), 898.50(18.9), 65.46(15.2)
66.0 *5*	0.011 *7*	^{223}Ac(2.10 m)	98.58(0.891), 191.3(0.58), 83.55(0.57)
66	†0.6	^{224}Ac(2.9 h)	156.4(†100), 140.8(†55), 261.6(†28)
66	†6	^{224}Ac(2.9 h)	156.4(†100), 140.8(†55), 261.6(†28)
66.0522 *8*	0.114 *6*	^{75}Ge(82.78 m)	264.6584(11), 198.6031(1.19), 468.8(0.223)
66.0522 *8*		^{75}Ge(47.7 s)	136.0008(0.020), 121.1166(0.0050), 279.5441(0.0043)
• 66.0522 *8*	1.123 *23*	^{75}Se(119.779 d)	264.6584(58.50), 136.0008(58.3), 279.5441(24.79)
66.06 *14*	2.12 *21*	^{127}Ba(12.7 m)	180.8(12), 114.8(9.3), 1201.0(1.61)
66.1		^{161}Er(3.21 h)	826.6(3.0), 211.15(12.2), 592.6(3.7)
66.12 *3*	0.164 *8*	^{155}Ho(48 m)	240.19(12.5), 136.30(5.00), 45.38(5)
• 66.122 *5*	0.00077 *12*	^{233}U(1.592×10^5 y)	42.44(0.0862), 97.134(0.020), 54.699(0.0182)
66.15 *10*	†20.4 *20*	^{229}U(58 m)	122.51(†100), 88.43(†88), 198.83(†88)
• 66.2 *5*	†0.41 *24*	^{227}Th(18.72 d)	235.971(†813), 50.13(†528), 256.25(†463)
• 66.24 *20*	0.031 *16*	^{153}Tb(2.34 d)	212.038(31.0), 170.504(6.8), 109.758(6.4)
• 66.26 *20*	†120 *60*	^{134}Ce(75.9 h)	162.306(†230000), 130.414(†209000), 39.08(†>150000)
66.3 *1*	2.3 *3*	^{145}Ho(2.4 s)	339.8(15), 312.9(14.3), 334.1(13.5)
66.3 *10*		^{181}Hg(3.6 s)	239.8, 158.7, 92.4
66.4 *1*	24.8 *24*	^{69}Se(27.4 s)	97.98(66), 691.8(16.6), 789.7(4.7)
66.4 *3*	0.063 *9*	^{120}Xe(40 m)	25.1(30), 72.6(9), 178.1(6.8)
66.4 *3*	0.15 *3*	^{127}Sn(2.10 h)	1114.3(39), 1095.6(20), 823.1(10.9)
66.4 *3*	5.0 *10*	^{129}Sn(2.23 m)	645.13(100), 80.5(6.6), 913.2(5.0)
• 66.4 *5*	†0.49 *24*	^{227}Th(18.72 d)	235.971(†813), 50.13(†528), 256.25(†463)
66.5		^{157}Eu(15.18 h)	63.929(23.0), 410.723(17.5), 370.509(11.0)
66.5 *1*	0.154 *15*	^{240}U(14.1 h)	44.10(1.05), 189.7(0.24), 169.2(0.115)
66.52 *4*	57	^{77}Rb(3.75 m)	178.99(22.2), 393.37(9.7), 149.93(4.3)
66.55 *5*	0.336 *12*	^{144}Ba(11.5 s)	103.855(23.30), 430.48(18.3), 172.828(15.4)
• 66.60 *2*	0.255 *17*	^{246}Pu(10.84 d)	43.81(25.0), 223.75(23.5), 179.94(9.7)
66.63 *5*	0.027 *3*	^{122}Xe(20.1 h)	350.065(7.80), 148.612(2.62), 416.633(1.87)
66.7 *1*	†4.5 *5*	^{171}Ta(23.3 m)	49.6(†100), 506.4(†54), 501.8(†22.6)
66.7 *1*	63 *3*	^{188}Hg(3.25 m)	190.1(4.40), 82.7(2.6), 114.8(1.14)
66.7 *10*	0.018	^{194}Pb(12.0 m)	581.82(18.8), 1519.45(16.4), 203.82(16.2)
66.7 *1*	†6 *1*	^{227}Rn(22.5 s)	162.14(†100), 739.2(†65), 686.2(†62)
• 66.72 *9*	0.026 *3*	^{148}Eu(54.5 d)	550.284(98.5), 629.987(71.9), 611.293(20.5)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
• 66.720 *10*	0.14	^{171}Tm(1.92 y)	
• 66.720 *10*	2.47 *3*	^{171}Lu(8.24 d)	739.78(47.8), 19.394(13.7), 667.404(11.04)
66.759 *10*	0.048 *19*	^{250}Es(8.6 h)	828.82(72), 303.41(21.6), 349.4(19.8)
66.77 *12*	0.08 *3*	^{184}Pt(17.3 m)	154.90(31), 191.97(27), 548.36(23.1)
66.8 *2*	2.40 *19*	^{104}Cd(57.7 m)	83.7(47), 709.6(19.5), 559.1(6.3)
• 66.80 *2*	0.0231 *13*	^{249}Cf(351 y)	388.16(66), 333.37(14.6), 252.80(2.50)
• 66.84 *5*	0.0010	^{253}Es(20.47 d)	41.79(0.050), 389.11(0.0264), 387.1(0.00810)
• 66.881 *17*	†4.8 *2*	^{136}Cs(13.16 d)	818.514(†100), 1048.073(†80), 340.547(†42.3)
• 66.898 *20*	0.021	^{242}Am(141 y)	49.367(0.19), 86.68(0.037), 109.69(0.024)
66.91 *2*	3.0 *3*	^{157}Er(18.65 m)	53.05(24), 391.32(14.2), 121.57(10.1)
• 66.95 *5*	0.030 *5*	^{131}Te(30 h)	773.67(49.9), 852.21(27.0), 793.75(18.10)
67.0 *5*	†2.0 *10*	^{192}Bi(37 s)	853.8(†100.0), 501.8(†80), 504.3(†39)
67 *1*	0.23 *11*	^{243}Pu(4.956 h)	84.0(23), 41.8(0.76), 381.7(0.56)
67		^{256}Es(7.6 h)	861.8(†100), 231.1(†61), 172.6(†49)
67.02 *5*	0.021 *6*	^{151}Nd(12.44 m)	116.80(43.4), 255.68(16.4), 1180.89(14.8)
67.029 *10*	0.040 *3*	^{155}Dy(9.9 h)	226.918(68.4), 184.564(3.37), 1089.8(>2.8)
67.03 *1*	78 *9*	^{73}Se(7.15 h)	360.80(108), 865.09(0.584), 510(0.296)
67.03 *1*	2.59 *21*	^{73}Se(39.8 m)	253.70(2.356), 84.0(2.03), 393.43(1.626)
67.09 *6*	0.86 *9*	^{183}Os(9.9 h)	1101.94(49.0), 1107.92(22.36), 1034.85(6.02)
67.10 *7*	0.036 *10*	^{234}Pa(6.70 h)	131.30(18), 946.00(13.4), 883.24(9.6)
67.1 *2*	0.0050 *9*	^{251}Fm(5.30 h)	425.4(0.95), 480.4(0.392), 358.3(0.315)
67.13 *20*	†48 *5*	^{161}Lu(77 s)	110.78(†100), 100.32(†95), 43.7(†70)
67.2	0.11 *3*	^{133}Te(12.5 m)	312.072(62), 407.63(27.1), 1333.21(10.67)
67.20 *1*	†2.6×10^3 *7*	^{158}Er(2.29 h)	71.91(†23300), 386.84(†111000), 248.58(†42000)
67.22 *2*	0.009 *5*	^{145}Pr(5.984 h)	748.278(0.5250), 675.795(0.514), 72.500(0.261)
• 67.22 *2*	0.553 *15*	^{145}Pm(17.7 y)	72.500(1.8)
67.29 *15*	1.46 *12*	^{74}Kr(11.50 m)	89.65(31), 203.0(18.0), 296.67(9.9)
67.3 *3*	0.5	^{169}Ho(4.7 m)	788.4(21.2), 853.0(11.2), 760.8(10)
• 67.35 *10*	5.3 *6*	^{172}Hf(1.87 y)	23.9331(20.3), 125.812(11.3), 81.7515(4.52)
67.37 *2*	0.45 *6*	^{167}Lu(51.5 m)	29.66(14.4), 239.22(8.6), 213.19(3.6)
67.4 *1*	6.9 *12*	^{119}Ag(2.1 s)	626.4(13), 366.2(12.1), 399.1(10.9)
• 67.4 *5*		^{146}Eu(4.59 d)	747.2(98), 633.03(43), 634.07(37)
67.4 *1*		^{157}Ho(12.6 m)	279.97(†47600), 341.16(†37000), 193.41(†15200)
67.4		^{165}Lu(10.74 m)	132.49(†100), 120.60(†100), 174.25(†47.0)
67.4 *3*		^{187}Pb(15.2 s)	275.5, 208.0
67.412 *3*	85	^{61}Co(1.650 h)	908.631(3.6), 841.211(0.79)
67.412 *3*	4.23 *13*	^{61}Cu(3.333 h)	282.956(12.2), 656.008(10.77), 1185.234(3.75)
67.432 *15*	†38 *4*	^{155}Nd(8.9 s)	180.574(†100), 418.99(†75), 955.08(†50)
• 67.45 *5*	†4.2×10^6 *10*	^{241}Am(432.2 y)	59.537(†60), 26.345(†1000×10^9), 33.195(†6000×10^8)
• 67.5		^{185}Os(93.6 d)	646.116(78.0), 874.813(6.29), 880.523(5.17)
67.57 *4*	4.0 *4*	^{166}Lu(2.65 m)	228.12(77.3), 337.50(41), 367.95(31.4)
67.6 *5*	34 *4*	^{125}La(76 s)	43.6(3.5), 985.2, 1240.6
67.6 *2*	5.6 *17*	^{129}Sn(6.9 m)	1161.31(56.0), 1128.44(50), 760.8(16.8)
67.6 *1*	0.42 *5*	^{227}Pa(38.3 m)	64.62(6), 110.05(1.24), 84.8(0.86)
67.60 *5*	9.6 *3*	^{242}U(16.8 m)	55.58(3.90), 585.0(1.92), 572.9(1.87)
67.64 *6*	5.1 *5*	^{184}Pt(17.3 m)	154.90(31), 191.97(27), 548.36(23.1)
67.67 *1*	0.70 *7*	^{226}Fr(48 s)	253.73(22.3), 186.05(16.3), 253.9(2.5)
• 67.67 *1*	0.11 *3*	^{226}Ac(29 h)	253.73(5.7), 186.05(4.8)
• 67.67 *1*	0.376 *21*	^{230}Th(7.538×10^4 y)	143.87(0.0486), 253.73(0.0111), 186.05(0.0088)
• 67.673 *10*	0.000164 *3*	^{239}Pu(24110 y)	51.624(0.007100), 38.661(0.000500), 129.297(0.00631)
67.7 *1*	8.7 *6*	^{98}Pd(17.7 m)	112.0(58), 662.2(19.7), 106.75(13.9)
67.712 *4*	0.014 *7*	^{165}Dy(2.334 h)	94.700(3.58), 361.68(0.84), 633.415(0.568)
67.712 *4*	0.012 *6*	^{165}Dy(1.257 m)	515.467(1.53), 361.68(0.534), 153.803(0.242)
• 67.75001 *17*	41.2 *6*	^{182}Ta(114.43 d)	1121.3007(34.9), 1221.4066(26.98), 1189.0503(16.23)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
67.75001 *17*	38.2 *13*	^{182}Re(12.7 h)	1121.3007(32), 1221.4066(24.8), 1189.0503(15.0)
• 67.75001 *17*	22.2 *22*	^{182}Re(64.0 h)	229.3220(26), 1121.3007(22.0), 1221.4066(17.4)
67.8	>0.0023	^{141}Ba(18.27 m)	190.328(46.0), 304.194(25.4), 276.948(23.4)
67.8 *1*	19 *4*	^{159}Eu(18.1 m)	78.6(9.1), 95.7(7.0), 146.4(3.3)
• 67.80 *5*	0.0065 *6*	^{229}Pa(1.50 d)	40.09(0.104), 64.70(0.045), 75.12(0.035)
• 67.846 *2*	0.092 *23*	^{239}Np(2.3565 d)	106.125(27.2), 277.599(14.38), 228.183(10.76)
67.846 *2*	0.130 *13*	^{239}Am(11.9 h)	277.599(15.0), 228.183(11.3), 209.753(3.50)
• 67.846 *2*	0.14 *4*	^{243}Cm(29.1 y)	277.599(14.0), 228.183(10.6), 209.753(3.29)
• 67.875	94.4 *14*	^{44}Ti(49 y)	78.337(96), 146.212(0.089)
67.89 *14*	7.9 *5*	^{102}Sr(69 ms)	243.80(53), 150.15(18.0), 93.89(13.4)
• 67.9	0.007	^{242}Am(141 y)	49.367(0.19), 86.68(0.037), 109.69(0.024)
• 67.943 *6*	0.00029 *5*	^{233}U(1.592×10^5 y)	42.44(0.0862), 97.134(0.020), 54.699(0.0182)
68.000 *22*	†2.0×10^2	^{154}Nd(25.9 s)	151.703(†800), 799.55(†600), 180.693(†510)
• 68.00 *10*	0.69 *7*	^{172}Hf(1.87 y)	23.9331(20.3), 125.812(11.3), 67.35(5.3)
68.00 *18*		^{187}Au(8.4 m)	1331.81(7.0), 1408.23(3.06), 914.73(3.02)
68	0.12 *3*	^{206}At(30.0 m)	41.2(0.032)
• 68.0 *12*		^{247}Cm(1.56×10^7 y)	402.6(72), 278.0(3.4), 287.4(2.0)
• 68	0.2	^{251}Cf(898 y)	176.6(17.7), 227.0(6.3), 285.0(1.4)
68.02 *10*	29	^{128}Cd(0.34 s)	247.92(75), 857.05(71), 925.0(9)
68.07 *3*	2.95 *15*	^{109}Ru(34.5 s)	206.29(22.0), 225.98(19.6), 1929.05(13.7)
68.09 *4*	†0.47 *8*	^{225}Fr(4.0 m)	182.3(†100), 31.50(†91), 225.1(†55)
• 68.09 *4*	0.069 *10*	^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
68.10 *6*	0.09 *4*	^{161}Tm(33 m)	45.54(5.00), 1648.1(9.50), 84.40(9.4)
• 68.1		^{243}Am(7370 y)	74.664(68), 43.533(5.93), 117.84(0.57)
• 68.107 *4*	3.29 *7*	^{172}Er(49.3 h)	610.062(44.2), 407.338(42.1), 446.025(2.96)
68.14		^{238}Pa(2.3 m)	1015.3(†<100), 1014.6(†<100), 635.18(†88)
68.2 *5*		^{69}As(15.2 m)	232.69(11), 145.95(4.96), 86.78(3.44)
• 68.20 *3*	0.366 *19*	^{153}Tb(2.34 d)	212.038(31.0), 170.504(6.8), 109.758(6.4)
68.2 *5*		^{223}Th(0.60 s)	151.98, 97.10, 88.00
• 68.23	0.0013 *4*	^{153}Sm(46.27 h)	103.1807(31.4), 69.67340(4.85), 97.4316(0.847)
• 68.23	0.012	^{153}Gd(241.6 d)	97.4316(30), 103.1807(21.4), 69.67340(2.54)
68.3 *2*	0.047 *16*	^{138}Xe(14.08 m)	258.411(31.5), 434.562(20.3), 1768.26(16.7)
68.3 *1*	0.082 *18*	^{142}Ba(10.6 m)	255.300(20.5), 1204.3(14.23), 895.2(13.9)
68.3 *1*	0.078 *10*	^{142}Ba(10.6 m)	255.300(20.5), 1204.3(14.23), 895.2(13.9)
68.4 *1*	1.6	^{169}Hf(3.24 m)	492.86(84), 369.5(9.7), 123.5(3.9)
68.44 *10*	0.08 *3*	^{121}Ag(0.78 s)	314.55(32.1), 353.43(19.9), 500.61(9.3)
68.47 *3*	†0.172 *22*	^{153}Pm(5.4 m)	35.842(†100), 127.298(†75), 28.309(†34.6)
• 68.48 *3*	0.0057 *14*	^{231}Th(25.52 h)	25.646(14.5), 84.216(6.6), 89.944(0.94)
• 68.48 *3*	0.0055	^{231}U(4.2 d)	25.646(12), 84.216(7), 217.940(0.8)
• 68.48 *3*		^{235}Np(396.1 d)	25.646(†600000), 84.216(†265000), 81.227(†58000)
68.49 *14*		^{164}Tm(2.0 m)	91.40(†1500), 1154.66(†366), 768.91(†279)
68.5 *1*	†3.0 *6*	^{169}Ta(4.9 m)	511.0(†20.6), 28.80(†18.3), 192.4(†8)
• 68.55 *16*	†7.6×10^2 *25*	^{134}Ce(75.9 h)	162.306(†230000), 130.414(†209000), 39.08(†>150000)
68.57 *18*	4.5 *10*	^{183}Lu(58 s)	1125.3(25.0), 1056.8(16.5), 168.1(7.5)
68.573 *14*	0.138 *13*	^{207}At(1.80 h)	814.41(44.5), 588.33(19.2), 300.654(12.8)
68.573 *14*	0.42 *3*	^{211}Rn(14.6 h)	167.90(0.07), 236.48(0.063)
• 68.6 *5*		^{146}Eu(4.59 d)	747.2(98), 633.03(43), 634.07(37)
68.60	0.17	^{157}Er(18.65 m)	53.05(24), 391.32(14.2), 121.57(10.1)
68.6 *1*	0.107 *13*	^{159}Er(36 m)	624.5(33), 649.1(23.4), 205.92(9.7)
68.699 *3*		^{235}Pa(24.5 m)	652.053, 659.3, 645.896
• 68.699 *3*	<1.0×10^{-6}	^{239}Pu(24110 y)	51.624(0.007100), 38.661(0.000500), 129.297(0.00631)
68.7 *1*	0.05 *3*	^{121}Cs(122 s)	179.4(30.2), 196.0(24.1), 459.7(12.0)
• 68.72 *9*	†3.6 *7*	^{227}Th(18.72 d)	235.971(†813), 50.13(†528), 256.25(†463)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
• 68.73 *2*	0.00011 *6*	^{239}Pu(24110 y)	51.624(0.007100), 38.661(0.000500), 129.297(0.00631)
68.752 *7*	0.40 *8*	^{73}Ga(4.86 h)	297.32(79.8), 325.70(11.17), 739.42(4.23)
68.79 *8*	0.0160 *16*	^{81}Rb(4.576 h)	190.38(64.0), 446.15(23.2), 510.31(5.3)
68.79 *3*	0.042 *9*	^{159}Ho(33.05 m)	121.012(36.2), 131.973(23.6), 309.594(17.2)
68.8 *2*	55 *6*	^{104}Mo(60 s)	69.7(17.8), 36.3(14), 55.0(8.6)
68.8 *3*	†46 *8*	^{109}Tc(0.87 s)	194.6(†100), 128.7(†51), 96.2(†48)
68.8 *5*	0.07 *3*	^{163}Tb(19.5 m)	351.138(26), 389.734(24.3), 494.534(23)
68.8 *2*	0.49 *5*	^{225}Th(8.72 m)	321.4(23), 246.0(5.06), 359.0(4.1)
• 68.8		^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
68.8	<0.3	^{236}Pa(9.1 m)	642.35(37.0), 687.59(9.9), 1762.7(6.0)
68.8 *1*		^{237}Am(73.0 m)	280.23(47.3), 438.4(8.3), 473.5(4.3)
68.83 *3*		^{225}Fr(4.0 m)	182.3(†100), 31.50(†91), 225.1(†55)
• 68.83 *3*	0.136 *13*	^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
68.83	†7	^{238}Pa(2.3 m)	1015.3(†<100), 1014.6(†<100), 635.18(†88)
68.855 *23*	0.012 *6*	^{155}Dy(9.9 h)	226.918(68.4), 184.564(3.37), 1089.8(>2.8)
68.86 *5*	9.1 *5*	^{165}Yb(9.9 m)	80.11(49), 1090.28(4.4), 118.06(2.39)
• 68.87 *5*	9.8×10^{-5} *15*	^{233}U(1.592×10^{5} y)	42.44(0.0862), 97.134(0.020), 54.699(0.0182)
68.90 *20*	0.38	^{116}Ag(2.68 m)	513.39(76), 2478.5(12), 699.58(11)
• 68.916 *6*	0.0754 *19*	^{140}La(1.6781 d)	1596.210(95), 487.021(45.5), 815.772(23.28)
68.93 *4*	2.77 *7*	^{144}Ba(11.5 s)	103.855(23.30), 430.48(18.3), 172.828(15.4)
68.98 *1*	1.41 *6*	^{151}Nd(12.44 m)	116.80(43.4), 255.68(16.4), 1180.89(14.8)
69.00 *10*	0.35 *6*	^{161}Tm(33 m)	45.54(5.00), 1648.1(9.50), 84.40(9.4)
69.00 *20*	1.5 *6*	^{180}Lu(5.7 m)	407.94(43.0), 1199.7(24.3), 1106.00(22.7)
69.0 *3*		^{223}Rn(23.2 m)	591.8(†100), 635.2(†76), 416.0(†55)
69.05 *3*	4.80 *24*	^{141}Xe(1.73 s)	909.23(24.0), 118.705(16.1), 105.937(9.8)
69.1 *1*	1.74 *8*	^{97}Rb(169.9 ms)	167.1(26), 585.2(21.0), 600.5(10.6)
69.1 *3*	†36 *6*	^{109}Tc(0.87 s)	194.6(†100), 128.7(†51), 96.2(†48)
69.1		^{225}Rn(4.5 m)	207.2, 178.7, 169.7
69.15 *6*	0.46 *6*	^{147}La(4.015 s)	117.718(12), 186.320(6.48), 438.30(5.04)
• 69.17 *6*	0.007 *3*	^{245}Cm(8500 y)	174.94(10), 132.99(2.77), 41.95(0.350)
• 69.2	0.010 *4*	^{177}Lu(160.4 d)	208.3664(57.7), 228.4838(37.0), 378.5029(29.7)
• 69.21 *4*	78000 *7*	^{227}Ac(21.773 y)	100(†110000), 160.26(†70000), 147.48(†37000)
69.229 *3*	11.6 *3*	^{163}Tm(1.810 h)	104.320(18.6), 241.305(10.9), 1434.45(7.96)
69.29 *5*		^{161}Ho(2.48 h)	25.65150(27), 103.062(3.9), 77.414(1.91)
69.3 *3*		^{170}Ho(2.76 m)	258.2(37.0), 931.3(36.1), 181.6(23.8)
69.37 *6*	0.078 *13*	^{103}Cd(7.3 m)	1461.81(12), 1448.70(5.55), 1079.90(5.44)
69.40 *3*	0.12 *5*	^{207}At(1.80 h)	814.41(44.5), 588.33(19.2), 300.654(12.8)
69.45 *10*	†48 *5*	^{157}Yb(38.6 s)	230.92(†100), 340.7(†90), 241.7(†74)
69.46 *5*	0.018 *7*	^{234}Pa(6.70 h)	131.30(18), 946.00(13.4), 883.24(9.6)
69.5 *1*	†2.13 *22*	^{123}La(17 s)	92.5(†100), 937.3(†43), 153.6(†43)
• 69.537 *15*	0.77 *3*	^{189}Re(24.3 h)	216.663(5.50), 219.395(4.54), 245.09(3.5)
• 69.537 *15*	3.5 *4*	^{189}Ir(13.2 d)	245.09(6), 59.053(1.20), 36.202(0.67)
69.6 *2*	0.94 *13*	^{120}Xe(40 m)	25.1(30), 72.6(9), 178.1(6.8)
69.6 *3*		^{122}Ba(1.95 m)	550.7, 388.7, 231.0
• 69.64 *10*	0.0023 *7*	^{194}Au(38.02 h)	328.455(60), 293.545(10.2), 1468.91(6.3)
• 69.67340 *22*	4.85 *6*	^{153}Sm(46.27 h)	103.1807(31.4), 97.4316(0.847), 75.4226(0.350)
• 69.67340 *22*	2.54 *9*	^{153}Gd(241.6 d)	97.4316(30), 103.1807(21.4), 83.3676(0.211)
69.7 *2*	17.8 *20*	^{104}Mo(60 s)	68.8(55), 36.3(14), 55.0(8.6)
69.7 *1*	0.262 *12*	^{142}Ba(10.6 m)	255.300(20.5), 1204.3(14.23), 895.2(13.9)
• 69.70 *2*	0.47 *5*	^{151}Pm(28.40 h)	340.08(23), 167.75(8.3), 275.21(6.8)
69.70 *5*	5.9 *7*	^{173}Ta(3.14 h)	172.2(18), 90.3(5.0), 160.4(4.9)
69.7 *3*		^{185}Ta(49.4 m)	177.59(25.7), 173.68(22.6), 65.86(3.9)
69.7 *3*	2.0 *3*	^{185}Ta(49.4 m)	177.59(25.7), 173.68(22.6), 65.86(3.9)
• 69.7 *1*		^{254}Es(275.7 d)	63.0(2.0), 316(0.15), 304(0.07)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
• 69.76 *3*	0.00095 *19*	^{237}U(6.75 d)	59.537(34.5), 208.00(21.14), 26.345(2.43)
• 69.76 *3*	0.00016	^{237}Pu(45.2 d)	59.537(3.28), 26.345(0.221), 33.195(0.0745)
• 69.76 *3*	†2.9×10^{7} *4*	^{241}Am(432.2 y)	59.537(†60), 26.345(†1000×10^{9}), 33.195(†6000×10^{8})
69.79 *10*	0.043 *11*	^{221}Rn(25 m)	186.38(21.6), 150.04(4.5), 216.90(2.6)
• 69.79 *10*	0.0054 *22*	^{225}Ac(10.0 d)	99.91(1.01), 150.04(0.80), 99.63(0.62)
69.8 *1*	8 *3*	^{129}Sn(6.9 m)	1161.31(56.0), 1128.44(50), 760.8(16.8)
• 69.8 *5*	†0.65 *24*	^{227}Th(18.72 d)	235.971(†813), 50.13(†528), 256.25(†463)
69.83 *2*	>0.19	^{167}Lu(51.5 m)	29.66(14.4), 239.22(8.6), 213.19(3.6)
69.9 *3*	†12	^{119}Pd(0.92 s)	129.9(†100), 256.6(†63), 326.1(†52)
69.9	0.13	^{147}Ce(56.4 s)	268.80(7), 92.9(4.7), 374.23(3.5)
• 69.99 *10*	0.84 *9*	^{172}Hf(1.87 y)	23.9331(20.3), 125.812(11.3), 67.35(5.3)
70.0	0.08	^{83}Zr(44 s)	55.55(8), 104.97(5.70), 475.1(5.1)
70.0 *8*	†5 *2*	^{112}Te(2.0 m)	372.70(†100), 296.20(†86), 418.9(†57)
70.0 *1*	35.5 *18*	^{130}Sn(3.72 m)	192.5(70), 779.8(59), 229.2(23.4)
70.0 *2*	11	^{145}La(24.8 s)	355.8(3.8), 118.2(3.6), 447.4(3.2)
70.0 *1*	†6.7×10^{2} *22*	^{158}Er(2.29 h)	71.91(†23300), 386.84(†111000), 248.58(†42000)
70 *5*		^{201}Pt(2.5 m)	1760, 230, 150
70.1 *4*	†2.4 *10*	^{142}Xe(1.22 s)	571.83(†100), 657.05(†79), 538.24(†77)
70.2		^{225}Rn(4.5 m)	207.2, 178.7, 169.7
70.22 *3*		^{187}W(23.72 h)	685.774(27.3), 479.531(21.8), 72.001(11.14)
• 70.280 *4*	0.00055 *8*	^{233}U(1.592×10^{5} y)	42.44(0.0862), 97.134(0.020), 54.699(0.0182)
70.3 *1*	1.1 *3*	^{119}Cs(43.0 s)	176.05(29.7), 225.13(26), 257.9(17.4)
70.3 *3*	0.39 *8*	^{127}Sn(2.10 h)	1114.3(39), 1095.6(20), 823.1(10.9)
• 70.4 *1*		^{254}Es(275.7 d)	63.0(2.0), 316(0.15), 304(0.07)
70.42 *10*	0.28	^{170}Hf(16.01 h)	164.78(33), 620.7(23), 120.17(19)
70.44 *7*	0.78 *11*	^{111}Pd(23.4 m)	580.00(0.8), 1459.0(0.56), 650.4(0.552)
70.44 *7*	8.3 *12*	^{111}Pd(5.5 h)	391.25(5.4), 632.80(3.6), 575.0(3.2)
70.45 *5*	6.4 *3*	^{177}W(135 m)	115.65(50), 426.98(13.2), 1036.4(10.3)
70.49 *10*	0.0008 *4*	^{233}Th(22.3 m)	86.477(2.7), 29.374(2.5), 459.222(1.4)
• 70.49 *10*	0.012 *3*	^{237}Np(2.14×10^{6} y)	29.374(15.0), 86.477(12.4), 94.66(0.6)
70.5 *1*	0.32	^{175}Ta(10.5 h)	207.4(14.0), 348.5(12.0), 266.9(10.8)
• 70.50 *5*	0.0070 *14*	^{231}Pa(32760 y)	27.36(10.3), 300.07(2.46), 302.65(2.2)
70.57 *5*	1.54 *7*	^{93}Kr(1.286 s)	253.42(41.2), 323.89(24.1), 266.83(20.6)
70.59 *15*	0.15 *15*	^{168}Lu(6.7 m)	198.82(28), 979.22(20), 896.12(15)
• 70.610 *5*	0.211 *6*	^{165}Tm(30.06 h)	242.917(35.5), 47.155(16.9), 297.369(12.71)
• 70.65 *5*	0.122 *15*	^{252}Es(471.7 d)	52.33(0.55), 64.42(0.274), 418.5(0.220)
70.6876 *16*	0.08 *4*	^{163}Tb(19.5 m)	351.138(26), 389.734(24.3), 494.534(23)
• 70.70 *13*		^{245}Cm(8500 y)	174.94(10), 132.99(2.77), 41.95(0.350)
70.71 *3*	1.27 *19*	^{107}Tc(21.2 s)	102.70(21.0), 177.00(9.2), 106.31(7.6)
70.75 *9*	22.6 *24*	^{184}Pt(17.3 m)	154.90(31), 191.97(27), 548.36(23.1)
70.780 *9*	0.087 *18*	^{153}Dy(6.4 h)	80.723(11.10), 213.754(10.90), 99.659(10.51)
70.78 *4*	†8	^{154}Nd(25.9 s)	151.703(†800), 799.55(†600), 180.693(†510)
70.8 *1*	11.22 *23*	^{154}Pr(2.3 s)	162.4(15), 932.1(11.7), 956.9(6.8)
• 70.85 *12*	†1.21×10^{3} *20*	^{134}Ce(75.9 h)	162.306(†230000), 130.414(†209000), 39.08(†>150000)
70.88 *20*		^{186}Ir(16.64 h)	296.911(64.0), 137.155(42), 434.849(34.4)
• 70.8814 *9*	1.70 *3*	^{169}Lu(34.06 h)	960.622(23.4), 191.2137(20.6), 1449.74(9.92)
70.9 *2*	0.78 *17*	^{98}Rb(114 ms)	144.224(24.5), 1693.3(5.9), 2171.7(5.7)
70.9 *2*	0.42 *13*	^{98}Rb(96 ms)	144.224(73), 289.4(68), 3010.5(23.4)
70.9 *2*	†54	^{99}Rb(59 ms)	144.224(†900), 289.4(†270), 1079.8(†90)
70.90 *10*	0.48 *10*	^{161}Yb(4.2 m)	78.20(34), 599.88(25.9), 631.45(13.9)
70.9 *2*		^{169}Hf(3.24 m)	492.86(84), 369.5(9.7), 123.5(3.9)
70.98 *8*	†100	^{163}Hf(40.0 s)	62.14(†64), 45.39(†48), 688.25(†33)
71.0 *2*	†0.94 *12*	^{111}Rh(11 s)	275.4(†100.0), 411.8(†9.42), 230.0(†8.9)
71.0 *4*	0.202 *6*	^{139}Xe(39.68 s)	218.59(56), 296.53(21.7), 174.97(11.3)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
• 71.0 *5*		^{146}Eu(4.59 d)	747.2(98), 633.03(43), 634.07(37)
71.00 *5*	0.030 *4*	^{153}Dy(6.4 h)	80.723(11.10), 213.754(10.90), 99.659(10.51)
71.1 *1*	0.65 *10*	^{105}Mo(35.6 s)	85.4(25.0), 76.50(19.3), 147.8(14.8)
71.1 *1*	†76 *19*	^{157}Ho(12.6 m)	279.97(†47600), 341.16(†37000), 193.41(†15200)
71.1 *2*	†0.29	^{171}Hf(12.1 h)	122.0(†100), 662.2(†83), 347.18(†47)
• 71.1 *1*	†8.0 *5*	^{258}Md(51.5 d)	367.8(†100), 447.9(†37), 276.8(†20.2)
71.12 *2*	0.39 *6*	^{117}Cd(2.49 h)	273.349(28), 1303.27(18.4), 344.459(17.9)
71.12 *2*		^{117}Cd(3.36 h)	1997.33(26), 1065.98(23.1), 564.397(14.7)
71.157 *10*	0.044 *3*	^{155}Dy(9.9 h)	226.918(68.4), 184.564(3.37), 1089.8(>2.8)
71.21 *2*		^{239}U(23.45 m)	74.664(48), 43.533(4.14), 662.24(0.18)
• 71.21 *2*		^{243}Am(7370 y)	74.664(68), 43.533(5.93), 117.84(0.57)
71.3 *2*	0.50 *9*	^{123}Cs(5.94 m)	97.3(23), 596.7(10.1), 83.3(4.1)
71.3	0.09	^{157}Er(18.65 m)	53.05(24), 391.32(14.2), 121.57(10.1)
• 71.30 *5*	0.043 *4*	^{254}Es(39.3 h)	211.80(0.096), 177.30(0.056), 104.0(0.0102)
• 71.313 *2*	0.27 *11*	^{185}Os(93.6 d)	646.116(78.0), 874.813(6.29), 880.523(5.17)
71.4 *2*	1.1 *3*	^{159}Eu(18.1 m)	67.8(19), 78.6(9.1), 95.7(7.0)
71.4 *10*		^{183}Hg(9.4 s)	153.8, 87.4
71.46 *6*	0.303 *7*	^{144}Ba(11.5 s)	103.855(23.30), 430.48(18.3), 172.828(15.4)
71.48 *10*	0.28	^{170}Hf(16.01 h)	164.78(33), 620.7(23), 120.17(19)
71.502 *10*	0.0024 *3*	^{165}Dy(2.334 h)	94.700(3.58), 361.68(0.84), 633.415(0.568)
71.53 *17*		^{197}Ir(5.8 m)	469.72(†100), 430.56(†61), 815.92(†45)
71.552 *5*	52 *5*	^{50}Ca(13.9 s)	256.894(98), 1519.30(62.0), 1590.85(37.8)
71.57 *3*	0.059 *20*	^{161}Gd(3.66 m)	360.94(0.59), 314.92(22.7), 102.315(13.9)
71.57 *13*	0.11 *4*	^{181}Re(19.9 h)	365.57(56), 360.70(20), 639.30(6.4)
71.58 *10*	0.11	^{170}Hf(16.01 h)	164.78(33), 620.7(23), 120.17(19)
71.6 *2*	†100 *32*	^{22}O(2.25 s)	1874.2(†8), 709.6
• 71.6 *2*	†4.7×10^3 *5*	^{241}Pu(14.35 y)	148.567(†309000), 103.680(†69400), 77.10(†35100)
71.6		^{247}Cf(3.11 h)	294.1(0.98), 447.8(0.55), 417.9(0.34)
71.62 *4*	0.17 *3*	^{66}Ge(2.26 h)	43.89(28.7), 381.85(28), 272.97(10.4)
• 71.646 *2*	0.154 *8*	^{177}Lu(6.734 d)	208.3664(11.0), 112.9498(6.4), 321.3162(0.219)
• 71.646 *2*	0.90 *4*	^{177}Lu(160.4 d)	208.3664(57.7), 228.4838(37.0), 378.5029(29.7)
• 71.646 *2*	0.0132 *19*	^{177}Ta(56.56 h)	112.9498(7.2), 208.3664(0.94), 1057.8(0.29)
71.68 *3*	0.096 *21*	^{189}Pt(10.87 h)	721.41(9.3), 94.33(7.6), 568.84(7.1)
71.7	†23.3	^{107}Mo(3.5 s)	400.3(†100), 65.7(†>92), 384.4(†57.6)
71.7 *2*	†15 *1*	^{174}Er(3.3 m)	100.4(†100), 708.4(†93), 766.9(†92)
71.7 *5*	0.55 *4*	^{212}Fr(20.0 m)	124.2(1.77), 84.1(0.63), 40.17(0.25)
71.70 *5*	0.128 *13*	^{221}Rn(25 m)	186.38(21.6), 150.04(4.5), 216.90(2.6)
• 71.70 *5*	0.0142 *11*	^{225}Ac(10.0 d)	99.91(1.01), 150.04(0.80), 99.63(0.62)
71.8 *2*		^{177}Pt(11 s)	148.0(†100), 85.4(†62), 223.1(†52)
71.819 *2*	†2.6 *13*	^{229}Ac(62.7 m)	164.522(†100), 569.1(†91), 261.92(†39)
• 71.819 *2*		^{229}Pa(1.50 d)	118.968(0.130), 146.345(0.098), 117.159(0.047)
• 71.819 *2*	0.0024 *4*	^{233}U(1.592×10^5 y)	42.44(0.0862), 97.134(0.020), 54.699(0.0182)
71.9 *2*		^{161}Eu(26 s)	314.3, 163.7, 91.9
• 71.90 *7*	0.0019 *10*	^{231}Pa(32760 y)	27.36(10.3), 300.07(2.46), 302.65(2.2)
71.91 *1*	23300 *16*	^{158}Er(2.29 h)	386.84(†111000), 248.58(†42000), 45.5(†35800)
71.95	>0.08	^{179}Re(19.5 m)	430.221(28), 289.968(26.9), 1680.244(13.0)
72.0 *3*		^{147}Ho(5.8 s)	189.1(†100), 883.9(†100), 486.7(†61)
72.0 *3*	0.039	^{170}Hf(16.01 h)	164.78(33), 620.7(23), 120.17(19)
72.0 *1*	†100 *5*	^{230}Ra(93 m)	63.0(†35.4), 202.8(†27.3), 469.7(†25.9)
72 *3*		^{255}Fm(20.07 h)	81.477(0.81), 58.477(0.67), 80.92(0.27)
72.001 *4*	11.14 *22*	^{187}W(23.72 h)	685.774(27.3), 479.531(21.8), 134.243(8.85)
• 72.028	>0.0036	^{169}Yb(32.026 d)	63.12077(44.2), 197.95788(35.8), 177.21402(22.16)
72.2	†1.36 *6*	^{111}Rh(11 s)	275.4(†100.0), 411.8(†9.42), 230.0(†8.9)
72.20 *5*	1.93 *18*	^{148}Ba(0.607 s)	56.08(29.20), 133.53(3.88), 415.78(3.59)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
• 72.20 *4*	0.56 *13*	^{226}Ac(29 h)	230.37(27), 158.18(17.5), 574.8(0.070)
• 72.20 *4*	0.60 *4*	^{230}U(20.8 d)	154.23(0.125), 230.37(0.122), 158.18(0.070)
72.319 *22*	†80	^{154}Nd(25.9 s)	151.703(†800), 799.55(†600), 180.693(†510)
72.38 *20*	0.50 *25*	^{74}Kr(11.50 m)	89.65(31), 203.0(18.0), 296.67(9.9)
• 72.386 *5*	1.99 *3*	^{171}Lu(8.24 d)	739.78(47.8), 19.394(13.7), 667.404(11.04)
72.39 *10*	0.020 *8*	^{133}Ce(4.9 h)	477.22(39), 510.36(20.7), 58.39(19.2)
72.40 *5*	†38.9 *7*	^{152}Pr(3.24 s)	164.2(†100), 284.9(†81.0), 1363.8(†36.6)
72.470 *6*	0.186 *12*	^{122}Xe(20.1 h)	350.065(7.80), 148.612(2.62), 416.633(1.87)
72.5 *3*	0.24 *11*	^{105}Tc(7.6 m)	143.26(16), 107.945(14.1), 321.50(11.1)
72.500 *4*	0.261 *14*	^{145}Pr(5.984 h)	748.278(0.5250), 675.795(0.514), 978.969(0.256)
• 72.500 *4*	1.8	^{145}Pm(17.7 y)	67.22(0.553)
72.50 *10*	0.096 *17*	^{151}Dy(17.9 m)	386.10(19.4), 49.46(18.0), 546.31(14.3)
72.50 *9*		^{157}Pm(10.56 s)	160.61(35), 188.052(13.5), 571.27(5.39)
72.546 *4*	0.398 *14*	^{159}Ho(33.05 m)	121.012(36.2), 131.973(23.6), 309.594(17.2)
72.6 *2*	9	^{120}Xe(40 m)	25.1(30), 178.1(6.8), 762.5(4.5)
72.6 *3*	0.151 *25*	^{121}Xe(40.1 m)	252.7(13), 132.8(10.9), 445.2(7.7)
72.6 *1*	0.8	^{181}Au(11.4 s)	198.60(4.4), 2022.4(4.2), 79.40(4.2)
• 72.63	0.17 *4*	^{100}Pd(3.63 d)	84.02(45), 74.78(36.5), 126.05(8.10)
72.65 *12*	0.21 *9*	^{181}Re(19.9 h)	365.57(56), 360.70(20), 639.30(6.4)
72.67 *10*		^{133}Ce(4.9 h)	477.22(39), 510.36(20.7), 58.39(19.2)
72.67 *10*	0.14	^{167}Dy(6.20 m)	569.7(48), 259.33(27.9), 310.26(25.0)
72.7 *3*		^{122}Ba(1.95 m)	550.7, 388.7, 231.0
72.70 *7*	0.59 *3*	^{210}Rn(2.4 h)	458.25(1.7), 648.70(0.843), 570.95(0.840)
• 72.7 *1*	0.0037 *14*	^{231}Pa(32760 y)	27.36(10.3), 300.07(2.46), 302.65(2.2)
• 72.7 *2*	0.11	^{235}U(7.038×10^{8} y)	185.712(57.2), 143.764(10.96), 163.358(5.08)
• 72.739 *10*	0.144 *21*	^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
• 72.751 *3*	0.251 *15*	^{231}Th(25.52 h)	25.646(14.5), 84.216(6.6), 89.944(0.94)
72.8 *2*	0.28 *9*	^{152}Ho(49.5 s)	647.2(92), 613.8(88.4), 683.3(88)
72.8 *2*	†2.5 *12*	^{155}Nd(8.9 s)	180.574(†100), 418.99(†75), 955.08(†50)
72.8		^{158}Pm(4.8 s)	
72.8	>0.010	^{223}Ac(2.10 m)	98.58(0.891), 191.3(0.58), 83.55(0.57)
72.82 *6*	†64 *6*	^{131}Pr(1.53 m)	266.13(†100), 387.56(†38), 324.35(†34)
72.86 *6*	†27.4 *17*	^{142}Xe(1.22 s)	571.83(†100), 657.05(†79), 538.24(†77)
72.875 *8*	0.147 *6*	^{163}Tm(1.810 h)	104.320(18.6), 69.229(11.6), 241.305(10.9)
• 72.88 *7*	0.00054 *8*	^{233}U(1.592×10^{5} y)	42.44(0.0862), 97.134(0.020), 54.699(0.0182)
72.9 *2*	0.6	^{169}Hf(3.24 m)	492.86(84), 369.5(9.7), 123.5(3.9)
• 72.90 *10*	†1.8 *4*	^{227}Th(18.72 d)	235.971(†813), 50.13(†528), 256.25(†463)
72.92 *16*	0.76 *6*	^{127}Ba(12.7 m)	180.8(12), 114.8(9.3), 66.06(2.12)
• 72.983 *10*	3.1×10^{-5} *25*	^{149}Pm(53.08 h)	285.95(3.1), 859.46(0.109), 590.88(0.069)
• 72.983 *10*	0.0141 *8*	^{149}Eu(93.1 d)	327.526(4.03), 277.089(3.56), 22.510(2.32)
• 73	0.3	^{251}Cf(898 y)	176.6(17.7), 227.0(6.3), 285.0(1.4)
73 *3*		^{255}Fm(20.07 h)	81.477(0.81), 58.477(0.67), 80.92(0.27)
• 73.039 *12*	3.2 *5*	^{193}Os(30.5 h)	139.03(4.27), 460.50(3.95), 557.36(1.30)
73.05 *3*	0.029 *2*	^{255}Fm(20.07 h)	81.477(0.81), 58.477(0.67), 80.92(0.27)
73.15 *9*	0.22 *5*	^{177}W(135 m)	115.65(50), 426.98(13.2), 1036.4(10.3)
73.174 *12*	38 *4*	^{183}Hf(1.067 h)	783.754(66), 459.069(27), 397.859(2.9)
73.2 *1*	†0.59 *6*	^{129}Ba(2.17 h)	182.30(†100), 1459.1(†50.0), 202.38(†33.7)
• 73.32 *5*	0.035 *4*	^{131}Te(30 h)	773.67(49.9), 852.21(27.0), 793.75(18.10)
73.36 *9*	0.56 *6*	^{174}W(31 m)	35.42(14.1), 428.83(12.7), 328.68(9.5)
73.361 *11*	1.45 *4*	^{157}Pm(10.56 s)	160.61(35), 188.052(13.5), 571.27(5.39)
73.392 *5*	8.3 *11*	^{164}Tb(3.0 m)	168.838(25.4), 754.80(23.3), 215.07(21)
73.392 *5*	2.0	^{164}Ho(29 m)	761.8, 688.44
• 73.42 *5*	0.0004	^{253}Es(20.47 d)	41.79(0.050), 389.11(0.0264), 387.1(0.00810)
73.4403 *20*	2.0 *5*	^{163}Tb(19.5 m)	351.138(26), 389.734(24.3), 494.534(23)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
• 73.45 *2*	>0.015	^{166}Ho(1.20×10^3 y)	184.410(72.6), 810.276(58.08), 711.683(55.32)
73.45 *2*	>0.09	^{166}Tm(7.70 h)	778.817(18.9), 2052.36(17.2), 184.410(16.1)
73.48 *3*	0.15 *6*	^{161}Tm(33 m)	45.54(5.00), 1648.1(9.50), 84.40(9.4)
73.50 *20*	0.7 *3*	^{102}Zr(2.9 s)	599.60(13.9), 535.30(10.6), 64.50(8.9)
• 73.5 *10*	0.014 *3*	^{105}Ag(41.29 d)	344.520(41), 280.41(30.2), 644.55(11.1)
73.5	†0.19	^{224}Ac(2.9 h)	156.4(†100), 140.8(†55), 261.6(†28)
73.5	†2.3	^{224}Ac(2.9 h)	156.4(†100), 140.8(†55), 261.6(†28)
73.5 *1*	0.0034 *10*	^{221}Rn(25 m)	186.38(21.6), 150.04(4.5), 216.90(2.6)
• 73.5 *1*	0.0098 *22*	^{225}Ac(10.0 d)	99.91(1.01), 150.04(0.80), 99.63(0.62)
73.6 *2*	†0.8 *1*	^{104}Nb(0.92 s)	192.2(†100), 368.4(†20), 620.2(†19.2)
73.6		^{161}Er(3.21 h)	826.6(3.0), 211.15(12.2), 592.6(3.7)
73.6 *5*		^{169}Ho(4.7 m)	788.4(21.2), 853.0(11.2), 760.8(10)
73.62 *3*	0.113 *12*	^{193}Au(17.65 h)	186.17(10.1), 255.57(6.7), 268.22(3.9)
• 73.62 *5*	†1.25 *19*	^{227}Th(18.72 d)	235.971(†813), 50.13(†528), 256.25(†463)
73.67	1.1	^{108}Ru(4.55 m)	164.95(28.0), 150.46(7.8), 91.33(2.38)
• 73.72 *5*	0.01	^{235}U(7.038×10^8 y)	185.712(57.2), 143.764(10.96), 163.358(5.08)
73.775 *4*	0.45 *17*	^{167}Ho(3.1 h)	346.547(56), 321.336(23.5), 237.873(5.0)
• 73.775 *4*		^{167}Tm(9.25 d)	207.801(41), 57.0723(4.6), 531.54(1.6)
73.784 *3*	0.0072 *17*	^{168}Ho(2.99 m)	741.356(36.6), 821.164(34.5), 815.990(18.6)
• 73.784 *3*	0.0100 *21*	^{168}Tm(93.1 d)	198.241(52.39), 815.990(48.99), 447.515(23.05)
• 73.81 *4*	0.006	^{242}Am(141 y)	49.367(0.19), 86.68(0.037), 109.69(0.024)
73.83 *5*		^{249}Cm(64.15 m)	634.31(1.5), 560.45(0.84), 368.76(0.35)
• 73.83 *5*	0.00043	^{253}Es(20.47 d)	41.79(0.050), 389.11(0.0264), 387.1(0.00810)
73.86 *2*	0.56 *3*	^{221}Rn(25 m)	186.38(21.6), 150.04(4.5), 216.90(2.6)
• 73.86 *2*	0.315 *14*	^{225}Ac(10.0 d)	99.91(1.01), 150.04(0.80), 99.63(0.62)
• 73.9	>0.011	^{172}Hf(1.87 y)	23.9331(20.3), 125.812(11.3), 67.35(5.3)
• 73.92 *2*	0.0172 *13*	^{234}Th(24.10 d)	63.29(4.8), 92.38(2.81), 92.80(2.77)
• 73.92		^{234}Th(24.10 d)	63.29(4.8), 92.38(2.81), 92.80(2.77)
73.97 *17*	†59.5 *13*	^{22}Mg(3.857 s)	583.02(†100), 1279.9(†5.71)
74.0	10	^{133}Pr(6.5 m)	134.3(14), 315.6(10), 465.0(7)
• 74		^{242}Am(141 y)	49.367(0.19), 86.68(0.037), 109.69(0.024)
74.05 *1*	0.38 *3*	^{133}Te(55.4 m)	912.671(55.28), 647.51(19.4), 863.955(15.6)
74.1 *1*	54	^{158}Yb(1.49 m)	252.6(1.8), 160.3(1.13), 147.7(0.92)
74.13 *5*	0.151 *13*	^{143}Cs(1.78 s)	195.554(13), 232.421(8.32), 306.424(6.80)
74.15 *4*	0.14	^{227}Ra(42.2 m)	27.36(16), 300.07(4.6), 302.65(4.3)
• 74.15 *4*	0.024 *3*	^{231}Pa(32760 y)	27.36(10.3), 300.07(2.46), 302.65(2.2)
74.29 *6*	0.163 *9*	^{144}Ba(11.5 s)	103.855(23.30), 430.48(18.3), 172.828(15.4)
74.3	2.4	^{147}Ba(0.893 s)	167.4(11), 105.2(4.8), 196.1(4.8)
74.32 *3*	1.11 *23*	^{149}Nd(1.728 h)	211.309(25.9), 114.314(19.2), 270.166(10.7)
74.33 *3*	0.041 *4*	^{155}Ho(48 m)	240.19(12.5), 136.30(5.00), 45.38(5)
74.33 *3*	1.9 *4*	^{187}Ir(10.5 h)	912.95(4.79), 427.12(4.12), 400.89(3.94)
74.4 *5*	0.026 *5*	^{224}Fr(3.30 m)	215.985(33.1), 131.613(16.3), 836.90(9.8)
74.4 *5*	>0.0040	^{224}Ac(2.9 h)	215.985(53), 131.613(26), 205.93(>0.40)
• 74.4 *5*	0.00042 *15*	^{228}Th(1.9131 y)	84.373(1.266), 215.985(0.263), 131.613(0.1355)
74.5 *5*	0.13 *7*	^{148}Ce(56 s)	269.519(17.0), 291.724(16.7), 121.169(13.2)
74.5		^{157}Tm(3.63 m)	455.00(9.3), 385.5(8.8), 348.40(8.4)
74.54 *10*	0.052	^{233}Th(22.3 m)	86.477(2.7), 29.374(2.5), 459.222(1.4)
• 74.54 *10*	0.011 *3*	^{237}Np(2.14×10^6 y)	29.374(15.0), 86.477(12.4), 94.66(0.6)
• 74.56711 *22*	10.2 *2*	^{161}Tb(6.88 d)	25.65150(23.2), 48.91562(17.0), 57.196(1.79)
74.56711 *22*	0.117 *12*	^{161}Ho(2.48 h)	25.65150(27), 103.062(3.9), 77.414(1.91)
74.57 *10*		^{187}Au(8.4 m)	1331.81(7.0), 1408.23(3.06), 914.73(3.02)
74.57 *5*	†6.1 *18*	^{229}Ac(62.7 m)	164.522(†100), 569.1(†91), 261.92(†39)
• 74.57 *5*	0.022 *4*	^{229}Pa(1.50 d)	118.968(0.130), 146.345(0.098), 117.159(0.047)
• 74.57 *5*	0.00150 *23*	^{233}U(1.592×10^5 y)	42.44(0.0862), 97.134(0.020), 54.699(0.0182)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
74.6 *2*	1.3 *6*	^{152}Nd(11.4 m)	278.5(32), 250.1(21.8), 16.0(8.0)
74.6 *2*	0.10	^{161}Er(3.21 h)	826.6(3.0), 211.15(12.2), 592.6(3.7)
74.6 *1*		^{169}Ho(4.7 m)	788.4(21.2), 853.0(11.2), 760.8(10)
74.6		^{180}Os(21.5 m)	20.1(†100), 717.4, 667.0
74.626 *3*	0.0066 *17*	^{168}Ho(2.99 m)	741.356(36.6), 821.164(34.5), 815.990(18.6)
• 74.626 *3*	0.018 *5*	^{168}Tm(93.1 d)	198.241(52.39), 815.990(48.99), 447.515(23.05)
74.66 *10*	0.98 *16*	^{149}Nd(1.728 h)	211.309(25.9), 114.314(19.2), 270.166(10.7)
74.664 *1*	48	^{239}U(23.45 m)	43.533(4.14), 662.24(0.18), 844.10(0.16)
• 74.664 *1*	68	^{243}Am(7370 y)	43.533(5.93), 117.84(0.57), 86.71(0.338)
74.7 *3*	1.2	^{80}Zn(0.545 s)	712.53(45.1), 715.40(33.8), 964.93(15.6)
74.7 *3*	4.3 *11*	^{80}Zn(0.545 s)	712.53(45.1), 715.40(33.8), 964.93(15.6)
74.7		^{138}Sm(3.1 m)	53.6
74.7 *2*		^{146}Dy(29 s)	2156.8, 1915.7, 1876.7
74.7 *6*		^{192}Hg(4.85 h)	274.8(50.4), 157.2(7), 306.5(5.4)
74.74 *4*		^{204}At(9.2 m)	684.341(95), 516.318(90), 426.253(67.5)
• 74.78 *2*	36.5 *8*	^{100}Pd(3.63 d)	84.02(45), 126.05(8.10), 42.10(7.7)
74.783 *15*	0.0030	^{162}Tb(7.60 m)	260.070(37.2), 807.53(42.8), 888.20(38.7)
74.8	2.2	^{109}In(4.2 h)	203.5(74), 623.7(5.5), 1148.9(4.3)
• 74.8 *2*	0.06 *1*	^{235}U(7.038×10^{8} y)	185.712(57.2), 143.764(10.96), 163.358(5.08)
74.875 *7*	0.117 *16*	^{125}Xe(16.9 h)	188.418(54), 243.378(30.1), 54.968(6.81)
74.88 *15*	0.045 *22*	^{157}Sm(482 s)	197.870(56.00), 196.461(16.8), 394.351(11.93)
74.88 *12*	0.11 *5*	^{159}Tm(9.13 m)	38.35(5.8), 84.8(5.8), 271.30(5.1)
74.9 *5*	<0.032	^{89}Kr(3.15 m)	220.948(20.1), 586.03(16.6), 904.27(7.2)
74.9 *3*		^{122}Ba(1.95 m)	550.7, 388.7, 231.0
74.9 *3*	<0.22	^{170}Hf(16.01 h)	164.78(33), 620.7(23), 120.17(19)
74.9 *2*	†1.1	^{171}Hf(12.1 h)	122.0(†100), 662.2(†83), 347.18(†47)
74.9 *2*	0.16	^{221}Rn(25 m)	186.38(21.6), 150.04(4.5), 216.90(2.6)
• 74.9 *2*	0.0174 *22*	^{225}Ac(10.0 d)	99.91(1.01), 150.04(0.80), 99.63(0.62)
74.9 *1*	0.20 *4*	^{227}Pa(38.3 m)	64.62(6), 110.05(1.24), 84.8(0.86)
74.92 *10*	0.90 *12*	^{166}Lu(2.65 m)	228.12(77.3), 337.50(41), 367.95(31.4)
• 74.940 *8*	0.118 *4*	^{172}Er(49.3 h)	610.062(44.2), 407.338(42.1), 68.107(3.29)
• 74.96 *10*	3.8×10^{-5} *6*	^{239}Pu(24110 y)	51.624(0.007100), 38.661(0.000500), 129.297(0.00631)
75 *2*		^{72}Br(78.6 s)	862.03(70), 1316.70(17.3), 454.70(13.1)
75	†1.4	^{149}Tb(4.16 m)	795.9(†111), 651(†37), 164.98(†8.3)
75.00 *10*	†2.2 *7*	^{163}Lu(238 s)	163.08(†100), 54.00(†88), 396.34(†63)
75 *2*	1.1 *5*	^{168}Lu(6.7 m)	198.82(28), 979.22(20), 896.12(15)
75.0 *3*		^{234}Pa(6.70 h)	131.30(18), 946.00(13.4), 883.24(9.6)
• 75.0 *1*	0.200 *17*	^{257}Fm(100.5 d)	241.0(11.0), 179.4(8.7), 61.6(1.45)
• 75.0404 *8*	0.304 *7*	^{169}Lu(34.06 h)	960.622(23.4), 191.2137(20.6), 1449.74(9.92)
75.04 *3*	0.69 *13*	^{187}Ir(10.5 h)	912.95(4.79), 427.12(4.12), 400.89(3.94)
75.09 *7*		^{225}Fr(4.0 m)	182.3(†100), 31.50(†91), 225.1(†55)
• 75.09 *7*	0.61 *13*	^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
75.1 *2*	27.7 *18*	^{128}Sn(59.07 m)	482.3(59), 557.3(16.5), 680.5(15.9)
• 75.1 *5*		^{146}Eu(4.59 d)	747.2(98), 633.03(43), 634.07(37)
75.1		^{147}Cs(0.225 s)	85.2(7.3), 245.8(4.5), 109.7(4.5)
75.1 *4*		^{175}Tm(15.2 m)	514.868(65), 941.23(15), 363.942(12.7)
75.1 *1*	†45 *4*	^{225}Fr(4.0 m)	182.3(†100), 31.50(†91), 225.1(†55)
• 75.12 *5*	0.035 *3*	^{229}Pa(1.50 d)	40.09(0.104), 64.70(0.045), 115.55(0.0182)
• 75.15 *25*	†1.5 *4*	^{227}Th(18.72 d)	235.971(†813), 50.13(†528), 256.25(†463)
75.2 *1*	†0.20 *2*	^{129}Ba(2.17 h)	182.30(†100), 1459.1(†50.0), 202.38(†33.7)
75.2 *3*		^{223}Th(0.60 s)	151.98, 97.10, 88.00
75.26 *1*	†24 *5*	^{160}Eu(38 s)	173.19(†100), 513.6(†60), 412.56(†56)
75.27 *3*	2.2 *5*	^{105}Tc(7.6 m)	143.26(16), 107.945(14.1), 321.50(11.1)
75.29 *3*	†0.22 *3*	^{153}Pm(5.4 m)	35.842(†100), 127.298(†75), 28.309(†34.6)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
75.3 *2*	0.39	^{140}Sm(14.82 m)	225.5(>10), 225.4(10), 140.0(5.0)
• 75.3 *1*		^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
• 75.354 *4*	1.39 *8*	^{233}Pa(26.967 d)	312.17(38.6), 300.34(6.62), 340.81(4.47)
75.4 *5*	†4.3	^{177}Os(2.8 m)	84.7(†100), 125.4(†63), 195.8(†61)
75.4103 *20*	1.25 *21*	^{182}Hf(61.5 m)	942.80(18.8), 799.64(9.4), 114.3152(6.2)
• 75.4226 *3*	0.350 *16*	^{153}Sm(46.27 h)	103.1807(31.4), 69.67340(4.85), 97.4316(0.847)
• 75.4226 *3*	0.079 *24*	^{153}Gd(241.6 d)	97.4316(30), 103.1807(21.4), 69.67340(2.54)
75.44 *4*	4.4 *3*	^{159}Sm(11.37 s)	189.79(46), 861.97(18.2), 254.43(9.8)
75.5 *19*	>0.08	^{94}Ru(51.8 m)	366.94(75), 891.68(25), 524.70(1.80)
75.5 *1*	17.0 *19*	^{137}Nd(38.5 m)	580.6(13), 306.60(10.0), 781.6(9.3)
75.5 *7*	0.11 *5*	^{138}Pr(2.12 h)	1037.8(101), 788.742(100), 302.7(80)
• 75.6 *5*	0.21 *9*	^{102}Rh(2.9 y)	475.070(95), 631.28(55.9), 697.49(43.9)
75.6	0.87 *20*	^{153}Ho(2.0 m)	295.8(67), 637.0(5.36), 688.5(3.7)
75.6	>900	^{177}Ir(30 s)	183.6(†1010), 148.3(†929), 88.1(†>300)
• 75.64 *2*	0.180 *25*	^{246}Pu(10.84 d)	43.81(25.0), 223.75(23.5), 179.94(9.7)
75.69 *6*	0.228 *21*	^{149}Nd(1.728 h)	211.309(25.9), 114.314(19.2), 270.166(10.7)
75.7 *10*		^{76}Zn(5.7 s)	281.7, 1030.6, 831.2
75.7	0.8 *4*	^{147}Cs(0.225 s)	85.2(7.3), 245.8(4.5), 109.7(4.5)
75.72 *4*	1.8 *6*	^{181}Os(105 m)	238.75(44), 826.77(20), 118.03(12.9)
75.8 *3*	†12.6 *8*	^{172}W(6.6 m)	38.9(†100), 423.3(†44), 89.8(†33.0)
75.8 *1*	0.51 *5*	^{186}Hg(1.38 m)	112.1(63), 251.5(55), 191.6(3.7)
• 75.8 *2*		^{237}U(6.75 d)	59.537(34.5), 208.00(21.14), 26.345(2.43)
• 75.8 *2*	0.00031	^{237}Pu(45.2 d)	59.537(3.28), 26.345(0.221), 33.195(0.0745)
• 75.8 *2*	†6×10^{06}	^{241}Am(432.2 y)	59.537(†60), 26.345(†1000×10^{9}), 33.195(†6000×10^{8})
• 75.8 *20*	>0.0033	^{249}Cf(351 y)	388.16(66), 333.37(14.6), 252.80(2.50)
75.81 *10*	2.45 *24*	^{123}Cd(1.82 s)	1165.86(25.7), 1027.45(22.6), 2102.81(12.5)
• 75.878 *5*	6.08 *8*	^{171}Lu(8.24 d)	739.78(47.8), 19.394(13.7), 667.404(11.04)
75.88 *5*	12.5 *7*	^{156}Pm(26.70 s)	173.75(52.0), 1147.84(20.5), 117.42(13.8)
75.88 *12*	0.21 *4*	^{174}W(31 m)	35.42(14.1), 428.83(12.7), 328.68(9.5)
75.9 *1*	0.128 *14*	^{146}Ba(2.22 s)	140.7(20.2), 251.2(19.6), 121.2(14.2)
75.940 *17*	†0.40 *3*	^{153}Pm(5.4 m)	35.842(†100), 127.298(†75), 28.309(†34.6)
75.99 *10*	0.28 *6*	^{159}Tm(9.13 m)	38.35(5.8), 84.8(5.8), 271.30(5.1)
76.0 *6*	0.008 *4*	^{89}Kr(3.15 m)	220.948(20.1), 586.03(16.6), 904.27(7.2)
76.012 *6*	0.176 *9*	^{180}Re(2.44 m)	902.795(90), 103.557(22.2), 825.357(9.9)
• 76.073 *10*	1.17×10^{-8} *20*	^{147}Pm(2.6234 y)	121.220(0.0028), 197.299(3.4×10^{-7})
• 76.073 *10*	0.91 *3*	^{147}Eu(24.1 d)	197.299(27), 121.220(22.9), 677.516(9.8)
• 76.10 *5*	0.00032 *7*	^{129}Te(33.6 d)	695.88(2.988), 729.57(0.70), 556.65(0.118)
76.1 *5*	†3.6×10^{2} *12*	^{177}Re(14 m)	196.85(†1200), 79.65(†1010), 84.3(†890)
76.10 *3*	0.059 *6*	^{187}Pt(2.35 h)	106.46(9), 201.52(6.4), 110.04(5.7)
76.1 *1*	0.150 *24*	^{227}Fr(2.47 m)	90.035(39), 585.804(29.5), 64.267(14.5)
76.198 *4*		^{231}Ac(7.5 m)	282.471(39.0), 307.063(30.4), 221.399(16.8)
76.2 *1*	>0.015	^{132}Ce(3.51 h)	182.11(77), 155.37(10.5), 216.83(4.95)
76.21 *4*	13	^{200}Pt(12.5 h)	135.90(3.24), 243.71(2.49), 59.97(2.30)
• 76.22 *2*	0.202 *16*	^{151}Pm(28.40 h)	340.08(23), 167.75(8.3), 275.21(6.8)
76.23 *3*	0.8 *5*	^{161}Er(3.21 h)	826.6(3.0), 211.15(12.2), 592.6(3.7)
76.3	0.14 *4*	^{76}Kr(14.8 h)	315.7(39), 270.2(21.1), 45.48(19.5)
• 76.39 *8*	0.0115 *21*	^{229}Pa(1.50 d)	118.968(0.130), 146.345(0.098), 117.159(0.047)
• 76.39 *8*	0.00036 *6*	^{233}U(1.592×10^{5} y)	42.44(0.0862), 97.134(0.020), 54.699(0.0182)
76.4 *10*		^{175}Pt(2.52 s)	208.3, 131.4
76.471 *1*	9.1 *9*	^{174}Tm(5.4 m)	366.526(92), 992.128(87), 272.918(86)
• 76.471 *1*	5.9 *3*	^{174}Lu(3.31 y)	1241.847(5.14), 1318.296(0.035), 1065.04(0.0164)
• 76.471 *1*	0.0638 *16*	^{174}Lu(142 d)	272.918(0.550), 992.128(0.546), 176.645(0.470)
76.50 *10*	19.3 *15*	^{105}Mo(35.6 s)	85.4(25.0), 147.8(14.8), 160.5(9.5)
76.5219 *19*	0.08 *4*	^{163}Tb(19.5 m)	351.138(26), 389.734(24.3), 494.534(23)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
• 76.54 *1*	0.023 *9*	^{146}Gd(48.27 d)	154.57(47), 115.51(44.0), 114.71(44.0)
• 76.56 *2*		^{165}Tm(30.06 h)	242.917(35.5), 47.155(16.9), 297.369(12.71)
76.6 *3*	†4.4 *6*	^{117}Pd(4.3 s)	247.5(†100), 649.9(†41), 323.9(†37)
76.7		^{176}Ta(8.09 h)	1159.28(25), 88.34(12), 1224.93(6)
• 76.7		^{237}Pu(45.2 d)	280.40(†870000), 298.89(†7.85×10^6), 320.75(†6.48×10^6)
76.701 *7*	1.88 *7*	^{157}Sm(482 s)	197.870(56.00), 196.461(16.8), 394.351(11.93)
76.78 *10*	†0.10 *5*	^{184}Ir(3.09 h)	263.97(†100), 119.80(†45), 390.38(†38)
76.8 *3*		^{122}Ba(1.95 m)	550.7, 388.7, 231.0
76.8 *2*	†0.5 *2*	^{155}Nd(8.9 s)	180.574(†100), 418.99(†75), 955.08(†50)
76.8 *5*	0.18 *9*	^{159}Tm(9.13 m)	38.35(5.8), 84.8(5.8), 271.30(5.1)
76.8		^{256}Es(7.6 h)	861.8(†100), 231.1(†61), 172.6(†49)
76.83 *6*	0.270 *23*	^{134}Te(41.8 m)	767.20(29.0), 210.465(22.3), 277.951(20.9)
76.860 *4*	0.0066 *13*	^{200}Au(48.4 m)	367.943(19), 1225.479(10.7), 1262.950(3.12)
• 76.860 *4*	0.031 *13*	^{200}Tl(26.1 h)	367.943(87), 1205.717(29.9), 579.298(13.8)
76.9 *5*	15.8 *23*	^{133}Ce(97 m)	97.261(<0.22), 557.7(11.3), 376.7(0.9)
76.925 *14*	0.20 *3*	^{157}Eu(15.18 h)	63.929(23.0), 410.723(17.5), 370.509(11.0)
76.99 *1*	22.4 *7*	^{88}Nb(14.5 m)	1082.53(103), 1057.01(100), 671.20(64)
77.0 *5*	†2.9 *8*	^{106}Mo(8.4 s)	465.70(†100), 54.00(†54), 618.60(†25)
77.0 *3*	0.076 *13*	^{121}Xe(40.1 m)	252.7(13), 132.8(10.9), 445.2(7.7)
77.0 *5*	9.4 *22*	^{172}Ho(25 s)	133.6(36), 178.0(23), 757.2(18)
77.0 *2*	0.049 *24*	^{227}Pa(38.3 m)	64.62(6), 110.05(1.24), 84.8(0.86)
• 77.10 *10*	35100 *12*	^{241}Pu(14.35 y)	148.567(†309000), 103.680(†69400), 159.955(†900)
• 77.12		^{229}Pa(1.50 d)	40.09(0.104), 64.70(0.045), 75.12(0.035)
• 77.13 *4*	0.00066 *10*	^{233}U(1.592×10^5 y)	42.44(0.0862), 97.134(0.020), 54.699(0.0182)
77.160 *19*	1.5 *3*	^{199}Pt(30.80 m)	542.993(15), 493.772(5.59), 317.056(4.95)
77.2 *2*	4.0 *3*	^{120}Xe(40 m)	25.1(30), 72.6(9), 178.1(6.8)
77.2	0.25	^{147}Ce(56.4 s)	268.80(7), 92.9(4.7), 374.23(3.5)
77.2 *2*	0.027	^{210}At(8.1 h)	1181.39(99.3), 245.31(79), 1483.39(46.5)
• 77.253 *5*	0.728 *18*	^{165}Tm(30.06 h)	242.917(35.5), 47.155(16.9), 297.369(12.71)
77.3 *1*	8 *5*	^{129}Sn(6.9 m)	1161.31(56.0), 1128.44(50), 760.8(16.8)
77.3 *1*		^{175}Ta(10.5 h)	207.4(14.0), 348.5(12.0), 266.9(10.8)
• 77.34 *3*	0.0733 *24*	^{231}Pa(32760 y)	27.36(10.3), 300.07(2.46), 302.65(2.2)
77.34 *3*	0.026 *5*	^{228}Ac(6.15 h)	911.205(26.6), 968.971(16.2), 338.322(11.3)
77.351 *2*	17.0 *16*	^{197}Pt(18.3 h)	191.437(3.7), 268.78(0.231)
77.351 *2*	0.0111 *16*	^{197}Pt(95.41 m)	279.01(2.4), 130.2(0.105), 201.6(0.034)
77.351 *2*	†9.4 *14*	^{197}Hg(23.8 h)	279.01(†2000), 130.2(†89), 201.6(†29)
• 77.351 *2*	18.0 *4*	^{197}Hg(64.14 h)	191.437(0.608), 268.78(0.0378)
77.36 *5*	0.0188 *19*	^{127}Cs(6.25 h)	411.95(62.8), 124.70(11.37), 462.31(5.07)
77.370 *20*	0.0071 *11*	^{187}W(23.72 h)	685.774(27.3), 479.531(21.8), 72.001(11.14)
77.38 *2*	0.104 *8*	^{113}Sb(6.67 m)	497.96(80), 332.41(14.8), 88.25(2.7)
77.393 *10*	1.06 *10*	^{161}Gd(3.66 m)	360.94(0.59), 314.92(22.7), 102.315(13.9)
• 77.414 *1*	0.0597 *20*	^{161}Tb(6.88 d)	25.65150(23.2), 48.91562(17.0), 74.56711(10.2)
77.414 *1*	1.91 *16*	^{161}Ho(2.48 h)	25.65150(27), 103.062(3.9), 59.235(0.60)
77.5	>0.06	^{179}Re(19.5 m)	430.221(28), 289.968(26.9), 1680.244(13.0)
77.594 *3*	9.5 *3*	^{142}Ba(10.6 m)	255.300(20.5), 1204.3(14.23), 895.2(13.9)
• 77.598 *2*	0.00041 *2*	^{239}Pu(24110 y)	51.624(0.007100), 38.661(0.000500), 129.297(0.00631)
77.60 *10*	1.59 *16*	^{123}Cd(1.82 s)	1165.86(25.7), 1027.45(22.6), 2102.81(12.5)
77.6 *5*	†100	^{125}Ba(3.5 m)	140.9(†86), 85.4(†82), 55.0(†48)
77.63 *5*	†10.6 *11*	^{225}Fr(4.0 m)	182.3(†100), 31.50(†91), 225.1(†55)
• 77.63 *5*	0.045 *6*	^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
77.6330 *21*	0.032 *16*	^{163}Tb(19.5 m)	351.138(26), 389.734(24.3), 494.534(23)
• 77.685 *17*		^{231}Th(25.52 h)	25.646(14.5), 84.216(6.6), 89.944(0.94)
77.7 *1*	0.91 *10*	^{146}Ba(2.22 s)	140.7(20.2), 251.2(19.6), 121.2(14.2)
77.70 *10*	†34.5 *20*	^{159}Yb(1.58 m)	166.16(†500), 177.12(†159), 390.20(†113)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
77.7 *4*	6	^{185}Au(4.25 m)	310.6(13), 243.1(6.6), 332.0(5.5)
77.75 *3*	0.038 *13*	^{143}Cs(1.78 s)	195.554(13), 232.421(8.32), 306.424(6.80)
77.8 *1*	†1.27 *24*	^{169}Ta(4.9 m)	511.0(†20.6), 28.80(†18.3), 192.4(†8)
77.8 *1*	1.20 *13*	^{186}Hg(1.38 m)	112.1(63), 251.5(55), 191.6(3.7)
77.9 *6*		^{192}Hg(4.85 h)	274.8(50.4), 157.2(7), 306.5(5.4)
77.916 *15*	0.0525 *17*	^{173}Hf(23.6 h)	123.672(83), 296.974(33.9), 139.634(12.7)
77.94 *5*	0.095 *17*	^{157}Sm(482 s)	197.870(56.00), 196.461(16.8), 394.351(11.93)
77.9921 *3*	15	^{147}Pr(13.4 m)	314.675(13.2), 641.380(10.0), 577.95(8.5)
78.0 *2*	0.03 *3*	^{97}Rb(169.9 ms)	167.1(26), 585.2(21.0), 600.5(10.6)
78		^{152}Ho(49.5 s)	315.9, 237.8
78.0 *1*	†10 *1*	^{227}Rn(22.5 s)	162.14(†100), 739.2(†65), 686.2(†62)
78		^{245}Am(2.05 h)	252.80(6), 240.86(0.34), 295.72(0.22)
78		^{256}Es(7.6 h)	861.8(†100), 231.1(†61), 172.6(†49)
78.041 *24*	0.078 *11*	^{163}Tm(1.810 h)	104.320(18.6), 69.229(11.6), 241.305(10.9)
78.07 *4*	0.9	^{161}Tm(33 m)	45.54(5.00), 1648.1(9.50), 84.40(9.4)
78.1 *7*	0.11 *4*	^{77}Rb(3.75 m)	66.52(57), 178.99(22.2), 393.37(9.7)
• 78.1		^{241}Am(432.2 y)	59.537(†60), 26.345(†1000×10^{9}), 33.195(†6000×10^{8})
78.1 *2*	0.004 *1*	^{240}U(14.1 h)	44.10(1.05), 189.7(0.24), 66.5(0.154)
• 78.15 *10*	5.5×10^{-5} *9*	^{233}U(1.592×10^{5} y)	42.44(0.0862), 97.134(0.020), 54.699(0.0182)
78.2 *1*	>0.012	^{132}Ce(3.51 h)	182.11(77), 155.37(10.5), 216.83(4.95)
78.20 *3*	34 *3*	^{161}Yb(4.2 m)	599.88(25.9), 631.45(13.9), 569.73(5.7)
78.21 *13*	†63 *8*	^{189}Hg(7.6 m)	320.99(†100), 565.42(†48), 434.52(†47)
78.25 *10*	0.054 *7*	^{223}Ac(2.10 m)	98.58(0.891), 191.3(0.58), 83.55(0.57)
78.26 *3*	0.044 *8*	^{153}Dy(6.4 h)	80.723(11.10), 213.754(10.90), 99.659(10.51)
• 78.3 *2*	0.0082 *21*	^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
78.33 *2*	0.58 *18*	^{167}Lu(51.5 m)	29.66(14.4), 239.22(8.6), 213.19(3.6)
• 78.337	96	^{44}Ti(49 y)	67.875(94.4), 146.212(0.089)
78.4 *3*		^{183}Hg(9.4 s)	60.5(†100), 159.91(†21), 172.70(†17)
• 78.4 *5*	0.00028	^{253}Es(20.47 d)	41.79(0.050), 389.11(0.0264), 387.1(0.00810)
• 78.422 *11*	0.000141 *6*	^{239}Pu(24110 y)	51.624(0.007100), 38.661(0.000500), 129.297(0.00631)
78.5 *2*	†26.4 *9*	^{111}Ru(2.12 s)	303.8(†100), 211.7(†77.7), 382.0(†41.3)
78.5 *2*	5.8 *12*	^{118}Pd(1.9 s)	125.4(34), 125.4(34), 224.2(20.1)
78.5 *2*	<2.4	^{118}Pd(1.9 s)	125.4(34), 125.4(34), 224.2(20.1)
78.5 *3*	0.011 *5*	^{119}I(19.1 m)	257.52(87), 635.86(2.69), 320.53(2.17)
78.56 *6*	0.33 *5*	^{204}Bi(11.22 h)	899.15(98), 374.72(82), 984.02(59)
• 78.57 *8*	0.020 *4*	^{131}Te(30 h)	773.67(49.9), 852.21(27.0), 793.75(18.10)
78.6 *1*	9.1 *16*	^{159}Eu(18.1 m)	67.8(19), 95.7(7.0), 146.4(3.3)
78.6 *3*	†40 *10*	^{170}Ho(43 s)	812.3(†100.0), 1894.5(†45.2), 1973.8(†36.5)
78.6 *3*	11.4 *13*	^{170}Ho(2.76 m)	258.2(37.0), 931.3(36.1), 181.6(23.8)
• 78.6 *3*	0.0039	^{170}Tm(128.6 d)	
78.6		^{190}Pb(1.2 m)	942.20(34), 151.19(8.92), 598.3(8.0)
• 78.63 *3*	11.87 *17*	^{173}Lu(1.37 y)	272.105(21.2), 100.724(5.24), 171.393(2.90)
78.6379 *10*	0.254 *11*	^{155}Sm(22.3 m)	104.3346(74.6), 245.771(3.7), 141.4428(1.98)
78.67 *2*	1.51 *18*	^{167}Lu(51.5 m)	29.66(14.4), 239.22(8.6), 213.19(3.6)
78.7 *2*	†2.8 *5*	^{131}Ce(10.3 m)	169.42(†100), 414.25(†68), 119.18(†44)
• 78.733 *3*	0.735 *19*	^{131}Ba(11.50 d)	496.326(47), 123.805(28.97), 216.078(19.66)
• 78.7435 *8*	6.5 *5*	^{172}Tm(63.6 h)	1093.657(6.0), 1387.093(5.6), 1529.72(5.1)
• 78.7435 *8*	10.6 *3*	^{172}Lu(6.70 d)	1093.657(62.5), 900.724(29.8), 181.528(20.6)
78.75 *3*	>0.06	^{179}Re(19.5 m)	430.221(28), 289.968(26.9), 1680.244(13.0)
• 78.76 *1*	0.083 *8*	^{150}Eu(35.8 y)	333.971(96), 439.401(80.4), 584.274(52.6)
78.76 *10*	41 *2*	^{166}Hf(6.77 m)	341.82(4.7), 407.91(4.5), 483.05(4.1)
78.8 *4*		^{183}Hg(9.4 s)	60.5(†100), 159.91(†21), 172.70(†17)
78.89 *5*	†110 *24*	^{157}Ho(12.6 m)	279.97(†47600), 341.16(†37000), 193.41(†15200)
78.93 *2*		^{163}Tm(1.810 h)	104.320(18.6), 69.229(11.6), 241.305(10.9)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
• 79.00 *7*	0.00173 *14*	^{229}Pa(1.50 d)	40.09(0.104), 64.70(0.045), 75.12(0.035)
79.0		^{235}Pu(25.3 m)	49.10(2.36), 756.4(0.479), 34.23(0.23)
• 79		^{249}Cf(351 y)	388.16(66), 333.37(14.6), 252.80(2.50)
79.05 *2*		^{237}Am(73.0 m)	280.23(47.3), 438.4(8.3), 473.5(4.3)
79.1 *3*		^{122}Ba(1.95 m)	550.7, 388.7, 231.0
79.1 *1*	†25 *2*	^{171}Ho(53 s)	903.3(†100), 198.6(†88), 279.2(†60)
• 79.1		^{241}Am(432.2 y)	59.537(†60), 26.345(†1000×10^{9}), 33.195(†6000×10^{8})
• 79.19 *3*	0.167 *5*	^{131}Te(30 h)	773.67(49.9), 852.21(27.0), 793.75(18.10)
79.19 *5*	†3.8 *7*	^{163}Lu(238 s)	163.08(†100), 54.00(†88), 396.34(†63)
• 79.2	>0.025	^{155}Tb(5.32 d)	86.545(32.0), 105.305(25), 180.103(7.45)
79.23 *4*	24.67 *15*	^{81}Y(72.4 s)	124.16(41.1), 408.36(15.3), 119.76(8.0)
79.25 *6*	0.049 *5*	^{241}Np(13.9 m)	174.94(3.1), 132.99(0.86), 518.8(0.40)
• 79.25 *6*	0.150 *9*	^{245}Cm(8500 y)	174.94(10), 132.99(2.77), 41.95(0.350)
79.28 *15*	1.8 *4*	^{128}In(0.72 s)	831.54(100), 1168.80(100), 120.54(11.1)
79.3219 *13*	2.1 *5*	^{167}Ho(3.1 h)	346.547(56), 321.336(23.5), 237.873(5.0)
79.35 *4*	0.15 *5*	^{161}Tm(33 m)	45.54(5.00), 1648.1(9.50), 84.40(9.4)
79.36 *10*	†2.0 *5*	^{131}Pr(1.53 m)	266.13(†100), 72.82(†64), 387.56(†38)
79.38 *15*	†164	^{154}Nd(25.9 s)	151.703(†800), 799.55(†600), 180.693(†510)
79.4 *5*	0.028 *4*	^{89}Kr(3.15 m)	220.948(20.1), 586.03(16.6), 904.27(7.2)
79.4 *6*	0.12 *4*	^{138}Pr(2.12 h)	1037.8(101), 788.742(100), 302.7(80)
79.40 *9*	4.2	^{181}Au(11.4 s)	198.60(4.4), 2022.4(4.2), 94.00(3.7)
79.40 *9*		^{185}Hg(49.1 s)	94.00, 14.5
79.41 *4*	0.059 *10*	^{161}Gd(3.66 m)	360.94(0.59), 314.92(22.7), 102.315(13.9)
79.445 *12*	20.9 *6*	^{134}Te(41.8 m)	767.20(29.0), 210.465(22.3), 277.951(20.9)
79.45 *2*	0.0475 *13*	^{159}Gd(18.479 h)	363.55(11.4), 58.00(2.15), 348.16(0.234)
• 79.45 *2*	0.00048 *13*	^{159}Dy(144.4 d)	58.00(2.22), 348.16(0.00095), 290.27(0.00014)
79.5104 *14*	11 *1*	^{158}Eu(45.9 m)	944.09(25), 977.131(13.6), 897.60(10.3)
• 79.5104 *14*	11.6 *4*	^{158}Tb(180 y)	944.09(44), 962.06(20.3), 181.930(9.9)
79.53 *5*	0.13 *4*	^{187}Pt(2.35 h)	106.46(9), 201.52(6.4), 110.04(5.7)
• 79.623 *10*	0.27 *3*	^{133}Xe(5.243 d)	80.997(38.0), 160.613(0.066), 302.853(0.0048)
• 79.623 *10*	2.62 *6*	^{133}Ba(10.52 y)	356.017(62.05), 80.997(34.06), 302.853(18.33)
79.65 *12*	1010 *18*	^{177}Re(14 m)	196.85(†1200), 84.3(†890), 94.9(†550)
79.70 *5*	1.48 *7*	^{101}Sr(118 ms)	128.34(18.0), 1124.82(10.9), 510.73(8.5)
79.7 *3*	1.02 *11*	^{113}Rh(2.72 s)	189.7(17.0), 409.3(15.9), 219.6(3.88)
79.72 *5*	0.0300 *25*	^{155}Ho(48 m)	240.19(12.5), 136.30(5.00), 45.38(5)
79.72 *1*	9.1 *4*	^{223}Fr(21.8 m)	50.13(36.0), 234.81(3.0), 49.89(2.7)
• 79.72 *1*	†125 *12*	^{227}Th(18.72 d)	235.971(†813), 50.13(†528), 256.25(†463)
79.75 *25*	†15	^{154}Nd(25.9 s)	151.703(†800), 799.55(†600), 180.693(†510)
• 79.79 *20*	1.74 *8*	^{72}Zn(46.5 h)	145.04(83), 191.96(9.37), 16.4(8.3)
79.8	†71	^{88}Mo(8.0 m)	170.5(†100), 130.9(†60), 90.7
79.8 *5*	0.037 *12*	^{142}Ba(10.6 m)	255.300(20.5), 1204.3(14.23), 895.2(13.9)
79.804 *1*	7.9 *3*	^{168}Ho(2.99 m)	741.356(36.6), 821.164(34.5), 815.990(18.6)
• 79.804 *1*	10.53 *21*	^{168}Tm(93.1 d)	198.241(52.39), 815.990(48.99), 447.515(23.05)
79.807 *3*	1.85 *6*	^{159}Ho(33.05 m)	121.012(36.2), 131.973(23.6), 309.594(17.2)
79.84 *2*	0.062 *21*	^{234}Pa(6.70 h)	131.30(18), 946.00(13.4), 883.24(9.6)
79.9 *2*	†1.5 *5*	^{131}Ce(10.3 m)	169.42(†100), 414.25(†68), 119.18(†44)
• 79.90 *8*	0.0036 *4*	^{254}Es(39.3 h)	211.80(0.096), 177.30(0.056), 71.30(0.043)
79.918 *7*	0.803 *15*	^{131}La(59 m)	108.081(25.0), 417.783(18.0), 365.162(16.9)
79.96 *20*	0.28 *6*	^{74}Kr(11.50 m)	89.65(31), 203.0(18.0), 296.67(9.9)
79.96 *5*	0.101 *20*	^{163}Yb(11.05 m)	860.28(10.1), 63.62(6.5), 123.21(1.98)
79.98 *5*		^{183}Os(9.9 h)	1101.94(49.0), 1107.92(22.36), 1034.85(6.02)
80.0 *5*	0.032 *8*	^{155}Sm(22.3 m)	104.3346(74.6), 245.771(3.7), 141.4428(1.98)
80 *30*	2.0 *4*	^{210}Tl(1.30 m)	799.7(99), 298(79), 1316(21)
80.0 *1*	0.147 *24*	^{227}Pa(38.3 m)	64.62(6), 110.05(1.24), 84.8(0.86)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
80.0		^{233}Th(22.3 m)	86.477(2.7), 29.374(2.5), 459.222(1.4)
80.00 *3*	0.11 *3*	^{250}Es(8.6 h)	828.82(72), 303.41(21.6), 349.4(19.8)
80.1 *3*	0.05 *1*	^{107}Rh(21.7 m)	302.77(66), 392.47(8.8), 312.21(4.8)
80.1 *2*	2.39 *19*	^{121}Xe(40.1 m)	252.7(13), 132.8(10.9), 445.2(7.7)
• 80.1 *2*	†2.43 *23*	^{258}Md(51.5 d)	367.8(†100), 447.9(†37), 276.8(†20.2)
80.109 *3*	4.4 *3*	^{140}Xe(13.60 s)	805.52(20), 1413.66(12.2), 1315.05(8.2)
80.11 *2*	49 *3*	^{165}Yb(9.9 m)	68.86(9.1), 1090.28(4.4), 118.06(2.39)
• 80.120 *5*	1.36 *6*	^{144}Ce(284.893 d)	133.515(11.09), 40.98(0.257), 33.568(0.200)
80.18 *14*	0.60 *6*	^{164}Tm(5.1 m)	208.08(14.6), 314.97(10), 240.49(7.5)
• 80.185 *2*	2.62 *3*	^{131}I(8.02070 d)	364.489(81.7), 636.989(7.17), 284.305(6.14)
80.19 *10*	0.8	^{170}Hf(16.01 h)	164.78(33), 620.7(23), 120.17(19)
• 80.19 *5*	0.0042 *21*	^{172}Er(49.3 h)	610.062(44.2), 407.338(42.1), 68.107(3.29)
80.2		^{156}Ho(56 m)	266.35(54.7), 137.83(51), 366.25(10.73)
• 80.2 *2*	0.085 *9*	^{257}Fm(100.5 d)	241.0(11.0), 179.4(8.7), 61.6(1.45)
• 80.22 *2*	1.6×10^{-5}	^{193}Os(30.5 h)	139.03(4.27), 460.50(3.95), 73.039(3.2)
• 80.27 *10*	0.15 *3*	^{232}Pa(1.31 d)	969.315(41.6), 894.351(19.8), 150.059(10.8)
80.29 *4*	0.75 *8*	^{204}Bi(11.22 h)	899.15(98), 374.72(82), 984.02(59)
80.3 *1*	4.7 *3*	^{101}Ag(11.1 m)	261.0(53), 588.0(10.0), 667.3(9.8)
80.3 *1*	†2.6 *5*	^{225}Fr(4.0 m)	182.3(†100), 31.50(†91), 225.1(†55)
• 80.4	0.0030 *8*	^{154}Eu(8.593 y)	123.071(40.79), 1274.436(35.19), 723.304(20.22)
80.4 *4*	1.2 *3*	^{159}Eu(18.1 m)	67.8(19), 78.6(9.1), 95.7(7.0)
80.4 *3*		^{165}Lu(10.74 m)	132.49(†100), 120.60(†100), 174.25(†47.0)
80.412 *10*		^{250}Bk(3.217 h)	989.12(45), 1031.85(35.6), 1028.65(4.91)
80.412 *10*	0.28 *3*	^{250}Es(8.6 h)	828.82(72), 303.41(21.6), 349.4(19.8)
• 80.46 *10*	0.0145 *13*	^{145}Eu(5.93 d)	893.73(66), 653.512(15.0), 1658.53(14.9)
80.460 *7*	0.521 *15*	^{163}Tm(1.810 h)	104.320(18.6), 69.229(11.6), 241.305(10.9)
80.5 *1*	6.6 *9*	^{129}Sn(2.23 m)	645.13(100), 913.2(5.0), 66.4(5.0)
80.5	0.00046	^{163}Er(75.0 m)	1113.5(0.0490), 436.1(0.0285), 439.94(0.0276)
• 80.574 *8*	6.71 *8*	^{166}Ho(26.83 h)	1379.40(0.93), 1581.89(0.187), 1662.48(0.120)
• 80.574 *8*	12.33 *7*	^{166}Ho(1.20×10^{3} y)	184.410(72.6), 810.276(58.08), 711.683(55.32)
80.574 *8*	11.4 *6*	^{166}Tm(7.70 h)	778.817(18.9), 2052.36(17.2), 184.410(16.1)
• 80.6 *1*	0.015 *10*	^{155}Tb(5.32 d)	86.545(32.0), 105.305(25), 180.103(7.45)
• 80.6 *1*	0.00058 *10*	^{229}Pa(1.50 d)	40.09(0.104), 64.70(0.045), 75.12(0.035)
80.64 *5*	0.44 *14*	^{105}Tc(7.6 m)	143.26(16), 107.945(14.1), 321.50(11.1)
80.660 *2*	8.6 *5*	^{162}Tb(7.60 m)	260.070(37.2), 807.53(42.8), 888.20(38.7)
80.660 *2*	8.0 *4*	^{162}Ho(15.0 m)	1319.3(3.8), 1372.8(0.81), 1187.7(0.546)
80.660 *2*	4 *3*	^{162}Ho(67.0 m)	185.005(28.6), 1220.0(22.5), 282.864(11.3)
80.7 *1*	†4.2 *4*	^{171}Ta(23.3 m)	49.6(†100), 506.4(†54), 501.8(†22.6)
• 80.7 *1*	0.032 *5*	^{252}Es(471.7 d)	52.33(0.55), 64.42(0.274), 418.5(0.220)
80.723 *2*	11.10 *22*	^{153}Dy(6.4 h)	213.754(10.90), 99.659(10.51), 254.259(8.58)
80.74 *3*	0.266 *15*	^{151}Nd(12.44 m)	116.80(43.4), 255.68(16.4), 1180.89(14.8)
80.80 *5*	0.75 *11*	^{202}Bi(1.72 h)	960.67(99), 422.18(83.7), 657.49(60.6)
• 80.8 *1*		^{254}Es(275.7 d)	63.0(2.0), 316(0.15), 304(0.07)
80.9 *2*	0.18 *6*	^{128}Sn(59.07 m)	482.3(59), 75.1(27.7), 557.3(16.5)
80.92	3.84 *15*	^{101}Mo(14.61 m)	191.92(19), 590.91(16.4), 1012.47(12.8)
80.92 *5*	0.27	^{255}Fm(20.07 h)	81.477(0.81), 58.477(0.67), 23.001(0.15)
• 80.997 *3*	38.0 *7*	^{133}Xe(5.243 d)	79.623(0.27), 160.613(0.066), 302.853(0.0048)
• 80.997 *3*	34.06 *27*	^{133}Ba(10.52 y)	356.017(62.05), 302.853(18.33), 383.851(8.94)
• 81.0 *6*	0.0070 *23*	^{75}Se(119.779 d)	264.6584(58.50), 136.0008(58.3), 279.5441(24.79)
81		^{208}Fr(59.1 s)	635.8(10), 778.5(6.8), 325.3(5.2)
81.0 *2*	0.045 *12*	^{211}Pb(36.1 m)	404.853(3.78), 832.01(3.52), 427.088(1.76)
• 81.0 *5*	0.0018 *4*	^{226}Ac(29 h)	230.37(27), 158.18(17.5), 72.20(0.56)
• 81.0 *5*	0.00048 *11*	^{230}U(20.8 d)	72.20(0.60), 154.23(0.125), 230.37(0.122)
• 81		^{249}Cf(351 y)	388.16(66), 333.37(14.6), 252.80(2.50)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
81.1 *3*	2.60 *15*	^{113}Rh(2.72 s)	189.7(17.0), 409.3(15.9), 219.6(3.88)
81.1 *2*	0.52 *5*	^{120}Xe(40 m)	25.1(30), 72.6(9), 178.1(6.8)
81.11 *5*	0.106 *17*	^{157}Sm(482 s)	197.870(56.00), 196.461(16.8), 394.351(11.93)
81.122 *5*	†1.0 *2*	^{101}Nb(7.1 s)	276.10(†100), 157.466(†32), 13.5(†32)
• 81.14 *2*	5.31 *10*	^{131}Te(30 h)	773.67(49.9), 852.21(27.0), 793.75(18.10)
• 81.1862 *24*	0.00038 *5*	^{77}As(38.83 h)	238.996(1.6), 520.639(0.558), 249.786(0.394)
• 81.1862 *24*	0.021 *7*	^{77}Br(57.036 h)	238.996(23), 520.639(22.4), 297.215(4.16)
• 81.196 *1*	0.00224 *24*	^{161}Tb(6.88 d)	25.65150(23.2), 48.91562(17.0), 74.56711(10.2)
81.196 *1*	0.055 *8*	^{161}Ho(2.48 h)	25.65150(27), 103.062(3.9), 77.414(1.91)
81.20 *10*	0.052 *10*	^{105}Ru(4.44 h)	724.21(47), 469.37(17.5), 676.36(15.7)
81.2		^{181}Hg(3.6 s)	239.8, 158.7, 92.4
81.21 *7*	0.32 *3*	^{184}Pt(17.3 m)	154.90(31), 191.97(27), 548.36(23.1)
• 81.227 *3*	0.89 *5*	^{231}Th(25.52 h)	25.646(14.5), 84.216(6.6), 89.944(0.94)
• 81.227 *3*	0.013	^{231}U(4.2 d)	25.646(12), 84.216(7), 217.940(0.8)
• 81.227 *3*	58000 *4*	^{235}Np(396.1 d)	25.646(†600000), 84.216(†265000), 58.570(†23000)
81.40		^{201}Bi(108 m)	629.1(24.0), 936.2(11.3), 1014.1(10.7)
81.477 *20*	0.81	^{255}Fm(20.07 h)	58.477(0.67), 80.92(0.27), 23.001(0.15)
81.5 *3*		^{122}Ba(1.95 m)	550.7, 388.7, 231.0
81.5 *1*	1.47 *16*	^{173}Ta(3.14 h)	172.2(18), 69.70(5.9), 90.3(5.0)
81.5 *1*	6 *1*	^{175}Ta(10.5 h)	207.4(14.0), 348.5(12.0), 266.9(10.8)
81.5	†36	^{176}Os(3.6 m)	1290.9(†100), 775.8(†98), 1209.2(†71)
81.53 *7*	>0.012	^{132}Ce(3.51 h)	182.11(77), 155.37(10.5), 216.83(4.95)
81.6		^{167}Ta(1.4 m)	296.3, 278.0, 214.2
81.61 *1*	0.321 *17*	^{133}Te(55.4 m)	912.671(55.28), 647.51(19.4), 863.955(15.6)
81.63		^{246}Am(25.0 m)	1078.86(27.7), 798.80(25), 1062.04(17.1)
81.7 *1*	2.5 *3*	^{119}Ag(2.1 s)	626.4(13), 366.2(12.1), 399.1(10.9)
• 81.7515 *5*	4.52 *23*	^{172}Hf(1.87 y)	23.9331(20.3), 125.812(11.3), 67.35(5.3)
81.78 *5*	0.70 *5*	^{109}Rh(80 s)	326.868(54), 426.135(7.7), 178.034(7.6)
81.80 *20*	2.8 *6*	^{99}Zr(2.1 s)	469.140(55), 546.13(48.6), 593.990(27.4)
81.826 *2*	3.36 *24*	^{141}Xe(1.73 s)	909.23(24.0), 118.705(16.1), 105.937(9.8)
81.826 *2*	6.03 *16*	^{144}Ba(11.5 s)	103.855(23.30), 430.48(18.3), 172.828(15.4)
81.9 *1*	†20 *1*	^{148}Er(4.6 s)	1653.4(†100), 387.7(†88), 197.1(†71)
81.99 *2*	12.6	^{154}Pm(1.73 m)	2057.76(17.1), 1393.9(14.4), 2139.76(9.7)
81.99 *2*	15.4	^{154}Pm(2.68 m)	184.810(32), 546.66(14.5), 1440.24(12.2)
• 81.99 *2*	0.0034 *23*	^{154}Eu(8.593 y)	184.810(0.0042)
82.0		^{126}Ce(50 s)	188, 120, 116.4
• 82	†1.5×10^4	^{227}Ac(21.773 y)	100(†110000), 69.21(†78000), 160.26(†70000)
• 82.087 *3*	0.40 *3*	^{231}Th(25.52 h)	25.646(14.5), 84.216(6.6), 89.944(0.94)
• 82.087 *3*	0.018	^{231}U(4.2 d)	25.646(12), 84.216(7), 217.940(0.8)
82.13 *2*	11.6 *14*	^{176}Tm(1.9 m)	189.57(44.5), 1069.3(34), 381.8(21.8)
82.13 *2*	0.0070 *14*	^{176}Lu(3.635 h)	
82.13 *4*		^{223}Rn(23.2 m)	591.8(†100), 635.2(†76), 416.0(†55)
82.19 *3*	2.9 *3*	^{189}Pt(10.87 h)	721.41(9.3), 94.33(7.6), 568.84(7.1)
82.2 *2*	2.3 *5*	^{129}Sn(2.23 m)	645.13(100), 80.5(6.6), 913.2(5.0)
82.20 *4*		^{189}Au(28.7 m)	713.17(†100), 812.68(†63), 447.65(†55)
82.282 *6*	2.52 *19*	^{250}Es(8.6 h)	828.82(72), 303.41(21.6), 349.4(19.8)
82.29 *6*		^{131}Sn(56.0 s)	3267.5, 2470.5, 2039.25
82.29 *6*		^{131}Sn(58.4 s)	367.40, 285.0, 62.9
82.29 *6*	†21.0 *30*	^{131}Sn(56.0 s)	1226.03(†100), 450.03(†90), 798.50(†86)
• 82.29 *2*		^{166}Yb(56.7 h)	
• 82.33 *1*		^{165}Tm(30.06 h)	242.917(35.5), 47.155(16.9), 297.369(12.71)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
• 82.339 *2*	>0.011	^{194}Os(6.0 y)	43.119(5)
82.4		^{112}Ru(1.75 s)	327.0, 244.6
82.4	>0.010	^{223}Ac(2.10 m)	98.58(0.891), 191.3(0.58), 83.55(0.57)
• 82.407 *7*	0.0255 *20*	^{191}Os(15.4 d)	129.419(29.0), 41.86(0.00513), 47.05(0.00270)
• 82.407 *7*	4.9 *5*	^{191}Pt(2.9 d)	538.90(13.7), 409.44(8.0), 359.90(6.0)
82.464 *4*	0.97 *9*	^{153}Dy(6.4 h)	80.723(11.10), 213.754(10.90), 99.659(10.51)
• 82.471 *2*	14	^{166}Dy(81.6 h)	28.242(1.13), 54.2400(0.81), 426.00(0.58)
82.5		^{26}Ne(197 ms)	233.6, 151.1
• 82.50 *15*	0.031 *7*	^{149}Gd(9.28 d)	149.735(48.2), 298.634(28.6), 346.651(23.9)
82.5		^{225}Rn(4.5 m)	207.2, 178.7, 169.7
82.546 *14*	4.2 *8*	^{105}Tc(7.6 m)	143.26(16), 107.945(14.1), 321.50(11.1)
• 82.58 *9*	0.014 *5*	^{131}Ba(11.50 d)	496.326(47), 123.805(28.97), 216.078(19.66)
82.58 *5*	0.78 *14*	^{159}Sm(11.37 s)	189.79(46), 861.97(18.2), 254.43(9.8)
• 82.6	0.16 *4*	^{225}Ac(10.0 d)	99.91(1.01), 150.04(0.80), 99.63(0.62)
82.6 *1*	0.014 *1*	^{240}U(14.1 h)	44.10(1.05), 189.7(0.24), 66.5(0.154)
82.64 *7*	13.7 *14*	^{135}Pr(24 m)	296.12(24), 213.45(13.0), 538.2(8.1)
82.7 *1*	2.6 *3*	^{188}Hg(3.25 m)	66.7(63), 190.1(4.40), 114.8(1.14)
• 82.802 *22*	0.091 *11*	^{206}Po(8.8 d)	1032.26(32.9), 511.36(24.1), 286.410(23.8)
82.802 *22*	480000	^{210}At(8.1 h)	106(†170000), 167(†110000), 141.2(†60000)
82.851 *9*	1.46 *11*	^{179}Re(19.5 m)	430.221(28), 289.968(26.9), 1680.244(13.0)
• 82.858 *15*	5.2 *3*	^{153}Tb(2.34 d)	212.038(31.0), 170.504(6.8), 109.758(6.4)
82.9 *1*	†>0.09	^{160}Ho(5.02 h)	728.18(†100), 879.383(†65.9), 962.317(†59.1)
• 82.9182 *5*	0.386 *21*	^{183}Ta(5.1 d)	246.0591(27), 353.9912(11.2), 107.9322(11.0)
• 82.9182 *5*	0.294 *14*	^{183}Re(70.0 d)	162.3219(23.3), 46.4839(7.97), 291.7238(3.05)
• 82.957 *30*	0.00016 *2*	^{233}U(1.592×10^5 y)	42.44(0.0862), 97.134(0.020), 54.699(0.0182)
83.0 *3*	†27 *11*	^{153}Nd(28.9 s)	418.3(†100), 105.4(†36), 475.2(†33)
83 *2*	0.6 *3*	^{168}Lu(6.7 m)	198.82(28), 979.22(20), 896.12(15)
83	†21	^{224}Ac(2.9 h)	156.4(†100), 140.8(†55), 261.6(†28)
• 83	0.1	^{251}Cf(898 y)	176.6(17.7), 227.0(6.3), 285.0(1.4)
83.01 *4*	0.62 *18*	^{157}Dy(8.14 h)	326.16(92), 182.20(1.84), 60.82(0.5)
83.1 *4*	†1.6 *8*	^{152}Pr(3.24 s)	164.2(†100), 284.9(†81.0), 72.40(†38.9)
83.11 *4*	2.02 *18*	^{187}Pt(2.35 h)	106.46(9), 201.52(6.4), 110.04(5.7)
• 83.15 *25*	0.0029 *8*	^{172}Er(49.3 h)	610.062(44.2), 407.338(42.1), 68.107(3.29)
83.16 *12*	8.3 *17*	^{57}Cr(21.1 s)	850.2(8.2), 1752.1(5), 1535.0(4.9)
83.3	†6.8	^{107}Mo(3.5 s)	400.3(†100), 65.7(†>92), 384.4(†57.6)
83.3 *1*	4.1 *5*	^{123}Cs(5.94 m)	97.3(23), 596.7(10.1), 307.0(3.9)
83.300 *1*	3.4 *7*	^{151}Pr(18.90 s)	880.19(13), 189.057(11.8), 484.501(11.3)
83.3 *4*	0.039 *20*	^{185}Au(4.25 m)	310.6(13), 243.1(6.6), 77.7(6)
• 83.30 *5*	0.079 *4*	^{234}Th(24.10 d)	63.29(4.8), 92.38(2.81), 92.80(2.77)
83.339 *5*	†8.6 *5*	^{153}Pm(5.4 m)	35.842(†100), 127.298(†75), 28.309(†34.6)
• 83.3676 *3*	0.203 *13*	^{153}Sm(46.27 h)	103.1807(31.4), 69.67340(4.85), 97.4316(0.847)
• 83.3676 *3*	0.211 *21*	^{153}Gd(241.6 d)	97.4316(30), 103.1807(21.4), 69.67340(2.54)
83.4 *6*	0.012 *4*	^{89}Kr(3.15 m)	220.948(20.1), 586.03(16.6), 904.27(7.2)
83.4 *2*	†100 *15*	^{103}Mo(67.5 s)	423.91(†69), 45.8(†57), 687.6(†31)
83.4 *3*	0.19 *4*	^{127}Sn(2.10 h)	1114.3(39), 1095.6(20), 823.1(10.9)
83.4 *1*	1.73 *23*	^{157}Er(18.65 m)	53.05(24), 391.32(14.2), 121.57(10.1)
83.43 *6*	>0.012	^{132}Ce(3.51 h)	182.11(77), 155.37(10.5), 216.83(4.95)
83.46 *4*		^{173}W(7.5 m)	457.68(†100), 130.19(†31.5), 174.8(†29.1)
83.4733 *25*	1.5 *3*	^{167}Ho(3.1 h)	346.547(56), 321.336(23.5), 237.873(5.0)
83.5 *1*	†0.65 *15*	^{185}Pt(33.0 m)	229.60(†100), 135.3(†80), 197.4(†74)
83.54 *8*	0.0308 *20*	^{210}At(8.1 h)	1181.39(99.3), 245.31(79), 1483.39(46.5)
83.55 *10*	0.57 *4*	^{223}Ac(2.10 m)	98.58(0.891), 191.3(0.58), 434.2(0.52)
83.58 *3*	1.73 *23*	^{157}Er(18.65 m)	53.05(24), 391.32(14.2), 121.57(10.1)
83.6 *4*	0.12 *6*	^{74}Kr(11.50 m)	89.65(31), 203.0(18.0), 296.67(9.9)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
83.6 *2*	0.49	^{94}Tc(293 m)	871.082(100), 702.626(99.6), 849.74(95.7)
83.697 *20*	†4.1×10^{2}	^{154}Nd(25.9 s)	151.703(†800), 799.55(†600), 180.693(†510)
83.7 *2*	47	^{104}Cd(57.7 m)	709.6(19.5), 559.1(6.3), 66.8(2.40)
83.8 *2*	†67 *14*	^{114}Te(15.2 m)	90.28(†100), 1417.6(†32), 54.6(†27)
83.8 *1*	0.89 *9*	^{117}Cs(8.4 s)	204.8(15.0), 29.7(9.9), 205.6(6.8)
83.8 *1*	0.44 *22*	^{200}Bi(36.4 m)	1026.5(100), 462.34(98), 419.70(91)
83.8 *1*	0.058 *9*	^{211}Pb(36.1 m)	404.853(3.78), 832.01(3.52), 427.088(1.76)
83.83 *5*		^{161}Ho(2.48 h)	25.65150(27), 103.062(3.9), 77.414(1.91)
83.8990 *15*	95.3 *10*	^{56}Cr(5.94 m)	26.6043(44.6)
83.968 *4*	0.750 *17*	^{163}Tm(1.810 h)	104.320(18.6), 69.229(11.6), 241.305(10.9)
84.0 *1*	2.03 *9*	^{73}Se(39.8 m)	67.03(2.59), 253.70(2.356), 393.43(1.626)
84.0 *3*	0.063 *13*	^{121}Xe(40.1 m)	252.7(13), 132.8(10.9), 445.2(7.7)
84.0 *5*	0.031 *10*	^{142}Ba(10.6 m)	255.300(20.5), 1204.3(14.23), 895.2(13.9)
84.0 *2*	23	^{243}Pu(4.956 h)	41.8(0.76), 381.7(0.56), 67(0.23)
• 84.0 *2*	40	^{247}Bk(1380 y)	265(30)
• 84.02 *2*	45	^{100}Pd(3.63 d)	74.78(36.5), 126.05(8.10), 42.10(7.7)
84.02 *5*	1.78 *15*	^{148}Ba(0.607 s)	56.08(29.20), 133.53(3.88), 415.78(3.59)
84.1	2.9	^{109}In(4.2 h)	203.5(74), 623.7(5.5), 1148.9(4.3)
84.1 *5*	0.63 *13*	^{212}Fr(20.0 m)	124.2(1.77), 71.7(0.55), 40.17(0.25)
84.1017 *10*	0.0023 *6*	^{155}Sm(22.3 m)	104.3346(74.6), 245.771(3.7), 141.4428(1.98)
84.11 *2*	0.036 *10*	^{166}Tm(7.70 h)	778.817(18.9), 2052.36(17.2), 184.410(16.1)
84.14	†4.5	^{176}W(2.5 h)	100.20(†100), 94.86(†8), 61.29(†8)
84.2 *1*	†1.6 *2*	^{171}Ta(23.3 m)	49.6(†100), 506.4(†54), 501.8(†22.6)
• 84.216 *3*	6.6 *3*	^{231}Th(25.52 h)	25.646(14.5), 89.944(0.94), 81.227(0.89)
• 84.216 *3*	7	^{231}U(4.2 d)	25.646(12), 217.940(0.8), 58.570(0.44)
• 84.216 *3*	265000 *15*	^{235}Np(396.1 d)	25.646(†600000), 81.227(†58000), 58.570(†23000)
• 84.2551 *3*	3.3	^{170}Tm(128.6 d)	
• 84.2551 *3*	4.256 *5*	^{170}Lu(2.00 d)	1280.25(3.450), 2041.88(1.434), 985.10(0.896)
84.3 *3*	0.42 *11*	^{164}Tb(3.0 m)	168.838(25.4), 754.80(23.3), 215.07(21)
84.3 *4*	†>0.47	^{164}Hf(111 s)	122.1(†100), 153.3(†47), 313.7(†22)
84.3 *2*	890 *18*	^{177}Re(14 m)	196.85(†1200), 79.65(†1010), 94.9(†550)
84.3 *2*		^{196}Tl(1.41 h)	426.0(†540), 635.5(†304), 695.6(†243)
84.373 *3*	1.79 *18*	^{224}Fr(3.30 m)	215.985(33.1), 131.613(16.3), 836.90(9.8)
84.373 *3*	>0.030	^{224}Ac(2.9 h)	215.985(53), 131.613(26), 205.93(>0.40)
• 84.373 *3*	1.266 *20*	^{228}Th(1.9131 y)	215.985(0.263), 131.613(0.1355), 166.411(0.1075)
84.4 *1*	1.3	^{140}Sm(14.82 m)	225.5(>10), 225.4(10), 140.0(5.0)
84.40 *3*	9.4 *9*	^{161}Tm(33 m)	45.54(5.00), 1648.1(9.50), 59.51(5.4)
84.45 *10*		^{163}Er(75.0 m)	1113.5(0.0490), 436.1(0.0285), 439.94(0.0276)
84.5 *3*		^{122}Ba(1.95 m)	550.7, 388.7, 231.0
84.50 *2*	0.022 *4*	^{140}Xe(13.60 s)	805.52(20), 1413.66(12.2), 1315.05(8.2)
• 84.5 *2*	7.0×10^{-5} *3*	^{233}U(1.592×10^{5} y)	42.44(0.0862), 97.134(0.020), 54.699(0.0182)
84.6 *1*	†63 *11*	^{156}Nd(5.47 s)	150.4(†100), 157.3(†78), 274.0(†36)
84.6	†100	^{178}Pt(21.1 s)	90.4(†80), 101.3(†76), 91.7(†54)
84.62 *7*	3.0 *5*	^{183}Au(42.0 s)	161.18(9.4), 214.13(5.9), 313.08(5.0)
• 84.68079 *16*	2.65 *5*	^{182}Ta(114.43 d)	67.75001(41.2), 1121.3007(34.9), 1221.4066(26.98)
84.68079 *16*	2.67 *22*	^{182}Re(12.7 h)	67.75001(38.2), 1121.3007(32), 1221.4066(24.8)
• 84.68079 *16*	2.75 *15*	^{182}Re(64.0 h)	229.3220(26), 67.75001(22.2), 1121.3007(22.0)
84.69 *6*	0.030 *6*	^{183}Hf(1.067 h)	783.754(66), 73.174(38), 459.069(27)
84.7 *2*	†0.43 *9*	^{111}Rh(11 s)	275.4(†100.0), 411.8(†9.42), 230.0(†8.9)
84.7 *4*	0.2 *1*	^{123}Cd(1.82 s)	1165.86(25.7), 1027.45(22.6), 2102.81(12.5)
84.7 *1*	†42 *4*	^{130}Sn(1.7 m)	144.9(†100), 899.2(†49), 311.3(†41)
84.7 *1*	†100	^{177}Os(2.8 m)	125.4(†63), 195.8(†61), 1268.6(†33)
84.7 *2*	0.064 *9*	^{183}Ir(58 m)	392.52(10.4), 228.70(6.9), 87.67(5.6)
84.7 *4*	0.133 *21*	^{187}Au(8.4 m)	1331.81(7.0), 1408.23(3.06), 914.73(3.02)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
• 84.7125 *5*	1.34 *6*	^{183}Ta(5.1 d)	246.0591(27), 353.9912(11.2), 107.9322(11.0)
• 84.7125 *5*	0.97 *4*	^{183}Re(70.0 d)	162.3219(23.3), 46.4839(7.97), 291.7238(3.05)
84.74 *6*	1.52 *4*	^{145}Cs(0.594 s)	175.36(20), 198.93(10.9), 112.46(10.71)
84.79 *9*		^{151}Ce(1.02 s)	96.8, 118.57, 52.6
84.8 *2*	†2	^{139}I(2.29 s)	527.7(†100), 571.2(†98), 536.6(†67)
84.8 *7*	5.8 *6*	^{159}Tm(9.13 m)	38.35(5.8), 271.30(5.1), 220.18(4.60)
84.8 *2*		^{169}Hf(3.24 m)	492.86(84), 369.5(9.7), 123.5(3.9)
84.8 *1*	0.86 *12*	^{227}Pa(38.3 m)	64.62(6), 110.05(1.24), 67.6(0.42)
84.8 *1*	0.40 *6*	^{227}Pa(38.3 m)	64.62(6), 110.05(1.24), 84.8(0.86)
84.83 *4*	0.022 *6*	^{155}Dy(9.9 h)	226.918(68.4), 184.564(3.37), 1089.8(>2.8)
• 84.86 *5*	0.00042 *15*	^{161}Tb(6.88 d)	25.65150(23.2), 48.91562(17.0), 74.56711(10.2)
84.86 *5*		^{161}Ho(2.48 h)	25.65150(27), 103.062(3.9), 77.414(1.91)
84.87 *4*	0.105 *12*	^{187}Ir(10.5 h)	912.95(4.79), 427.12(4.12), 400.89(3.94)
84.9 *2*	3.09 *19*	^{113}Rh(2.72 s)	189.7(17.0), 409.3(15.9), 219.6(3.88)
84.9 *5*	1.4×10^{-5}	^{116}Sb(15.8 m)	1293.54(85), 931.800(24.7), 2225.33(14.2)
84.9 *1*	†<1.6	^{163}Hf(40.0 s)	70.98(†100), 62.14(†64), 45.39(†48)
84.9 *1*	1.3	^{169}Ho(4.7 m)	788.4(21.2), 853.0(11.2), 760.8(10)
• 85.0		^{188}Ir(41.5 h)	155.032(29.7), 2214.62(18.7), 632.99(18)
85.086 *7*	1.04 *9*	^{250}Es(8.6 h)	828.82(72), 303.41(21.6), 349.4(19.8)
• 85.093	>0.0029	^{169}Yb(32.026 d)	63.12077(44.2), 197.95788(35.8), 177.21402(22.16)
85.1 *4*	0.95 *19*	^{74}Zn(96 s)	56.7(70), 49.4(33.4), 143.5(21.7)
85.1 *4*	12.1 *8*	^{92}Tc(4.23 m)	1509.48(101), 773.04(100), 329.71(79.9)
85.1 *1*	0.054 *6*	^{129}Ba(2.23 h)	6.545(23.7), 214.30(13.4), 220.83(8.54)
85.1 *1*	†0.15 *5*	^{129}Ba(2.17 h)	182.30(†100), 1459.1(†50.0), 202.38(†33.7)
85.1 *2*	>0.025	^{129}La(11.6 m)	278.6(25), 110.5(16.9), 457.0(8.0)
• 85.1 *1*		^{254}Es(275.7 d)	63.0(2.0), 316(0.15), 304(0.07)
85.118 *4*	0.387 *11*	^{163}Tm(1.810 h)	104.320(18.6), 69.229(11.6), 241.305(10.9)
85.12 *1*	2.28 *6*	^{151}Nd(12.44 m)	116.80(43.4), 255.68(16.4), 1180.89(14.8)
• 85.15 *8*	0.060 *7*	^{191}Pt(2.9 d)	538.90(13.7), 409.44(8.0), 359.90(6.0)
85.19 *7*	0.0054 *5*	^{249}Cm(64.15 m)	634.31(1.5), 560.45(0.84), 368.76(0.35)
85.2 *1*	†23 *8*	^{141}Gd(24.5 s)	198.4(†208), 258.2(†177), 113.2(†69)
85.2 *1*	1.8 *3*	^{141}Tb(3.5 s)	293.3(16.8), 343.6(16.3), 198.4(14.8)
85.2	7.3 *8*	^{147}Cs(0.225 s)	245.8(4.5), 109.7(4.5), 596.0(4.3)
85.2 *2*	0.040 *13*	^{159}Er(36 m)	624.5(33), 649.1(23.4), 205.92(9.7)
85.29 *10*	4	^{64}Ge(63.7 s)	427.03(37.4), 666.94(16.9), 128.2(10.7)
85.3 *3*	†11.6 *12*	^{105}Nb(2.95 s)	94.8(†100), 246.9(†79), 309.9(†41.9)
• 85.32 *3*	0.0024 *8*	^{188}W(69.4 d)	290.669(0.402), 227.083(0.221), 63.582(0.109)
85.4 *1*	25.0 *13*	^{105}Mo(35.6 s)	76.50(19.3), 147.8(14.8), 160.5(9.5)
85.4 *5*	0.22 *8*	^{110}Ru(14.6 s)	112.2(25.00), 166.1(0.65), 116.1(0.45)
85.4 *5*	†82 *8*	^{125}Ba(3.5 m)	77.6(†100), 140.9(†86), 55.0(†48)
85.4 *2*	†62 *8*	^{177}Pt(11 s)	148.0(†100), 223.1(†52), 157.2(†24)
• 85.43		^{233}U(1.592×10^5 y)	42.44(0.0862), 97.134(0.020), 54.699(0.0182)
• 85.43 *2*	0.00017 *3*	^{233}U(1.592×10^5 y)	42.44(0.0862), 97.134(0.020), 54.699(0.0182)
85.53 *6*	0.69 *8*	^{184}Pt(17.3 m)	154.90(31), 191.97(27), 548.36(23.1)
85.58 *8*	48.2 *10*	^{132}Sn(39.7 s)	340.53(49), 899.04(44.8), 246.87(42.3)
• 85.590 *10*	1.080 *14*	^{171}Lu(8.24 d)	739.78(47.8), 19.394(13.7), 667.404(11.04)
85.60 *10*	0.69 *14*	^{102}Zr(2.9 s)	599.60(13.9), 535.30(10.6), 64.50(8.9)
85.63 *4*	0.060 *4*	^{171}Er(7.516 h)	308.31(64.4), 295.901(28.9), 111.621(20.5)
85.669 *9*	0.150 *8*	^{159}Ho(33.05 m)	121.012(36.2), 131.973(23.6), 309.594(17.2)
85.79 *7*	0.15 *3*	^{161}Gd(3.66 m)	360.94(0.59), 314.92(22.7), 102.315(13.9)
85.8	0.039	^{148}Dy(3.1 m)	620.24(96), 1247.2(1.4), 178.3(0.5)
85.8		^{152}Ho(161.8 s)	102.3, 178.3, 109.4
• 85.80 *5*	0.0058 *6*	^{231}Th(25.52 h)	25.646(14.5), 84.216(6.6), 89.944(0.94)
85.9 *3*	2.06 *13*	^{121}Cs(155 s)	153.9(15.2), 239.6(7.7), 427.1(3.63)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
85.9 *3*	0.47 *8*	^{121}Cs(122 s)	179.4(30.2), 196.0(24.1), 459.7(12.0)
• 85.9 *2*	9.0×10^{-5} *5*	^{131}I(8.02070 d)	364.489(81.7), 636.989(7.17), 284.305(6.14)
85.9 *1*	†4.0 *5*	^{185}Pt(33.0 m)	229.60(†100), 135.3(†80), 197.4(†74)
85.9 *4*	0.05 *3*	^{185}Au(4.25 m)	310.6(13), 243.1(6.6), 77.7(6)
86.0 *2*	2	^{104}Mo(60 s)	68.8(55), 69.7(17.8), 36.3(14)
86.0 *5*	†5	^{106}Mo(8.4 s)	465.70(†100), 54.00(†54), 618.60(†25)
• 86 *1*	>0.0033	^{249}Cf(351 y)	388.16(66), 333.37(14.6), 252.80(2.50)
86.0 *1*	0.0066 *6*	^{255}Fm(20.07 h)	81.477(0.81), 58.477(0.67), 80.92(0.27)
• 86.059 *1*	0.150 *15*	^{155}Eu(4.7611 y)	86.545(30.7), 105.305(21.2), 45.2972(1.326)
• 86.059 *1*	0.015	^{155}Tb(5.32 d)	86.545(32.0), 105.305(25), 180.103(7.45)
86.08 *10*	0.06 *3*	^{151}Nd(12.44 m)	116.80(43.4), 255.68(16.4), 1180.89(14.8)
86.1 *2*	0.58 *5*	^{120}Xe(40 m)	25.1(30), 72.6(9), 178.1(6.8)
86.11 *12*	0.0027 *12*	^{133}Ce(4.9 h)	477.22(39), 510.36(20.7), 58.39(19.2)
86.24 *12*		^{164}Tm(2.0 m)	91.40(†1500), 1154.66(†366), 768.91(†279)
86.25 *9*	0.79 *6*	^{70}Se(41.1 m)	49.51(35.8), 426.15(29), 376.65(9.43)
86.25 *4*		^{225}Fr(4.0 m)	182.3(†100), 31.50(†91), 225.1(†55)
• 86.25 *4*	1.33 *10*	^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
86.26 *19*		^{81}Sr(22.3 m)	153.54(33.8), 147.76(30.1), 443.34(17.5)
86.26 *6*	1.148 *20*	^{145}Cs(0.594 s)	175.36(20), 198.93(10.9), 112.46(10.71)
86.30 *20*	†5.0 *13*	^{171}Hf(12.1 h)	122.0(†100), 662.2(†83), 347.18(†47)
86.31 *8*	†1370 *68*	^{179}Ir(79 s)	97.5(†1849), 45.20(†1329), 100.21(†1055)
86.33 *7*	0.098 *9*	^{105}Cd(55.5 m)	961.84(4.69), 346.870(4.20), 1302.459(3.98)
• 86.36 *3*	†5.2 *2*	^{136}Cs(13.16 d)	818.514(†100), 1048.073(†80), 340.547(†42.3)
86.4 *3*	†20.2	^{149}Ce(5.3 s)	57.7(†100), 380.0(†33.7), 892.7(†8.0)
86.40 *5*	†6 *2*	^{225}Fr(4.0 m)	182.3(†100), 31.50(†91), 225.1(†55)
• 86.40 *5*	2.57 *10*	^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.25(1.33)
• 86.43 *2*	0.192 *5*	^{131}Te(30 h)	773.67(49.9), 852.21(27.0), 793.75(18.10)
86.44 *4*	2.01 *9*	^{148}Ba(0.607 s)	56.08(29.20), 133.53(3.88), 415.78(3.59)
86.477 *10*	2.7	^{233}Th(22.3 m)	29.374(2.5), 459.222(1.4), 94.66(0.8)
• 86.477 *10*	12.4 *4*	^{237}Np(2.14×10^{6} y)	29.374(15.0), 94.66(0.6), 143.249(0.43)
• 86.49	0.032 *9*	^{100}Pd(3.63 d)	84.02(45), 74.78(36.5), 126.05(8.10)
86.53 *4*	0.029 *12*	^{200}Pt(12.5 h)	76.21(13), 135.90(3.24), 243.71(2.49)
• 86.545 *3*	30.7 *6*	^{155}Eu(4.7611 y)	105.305(21.2), 45.2972(1.326), 60.0086(1.13)
• 86.545 *3*	32.0 *6*	^{155}Tb(5.32 d)	105.305(25), 180.103(7.45), 262.322(5.29)
86.55 *2*	$\dagger1.22\times10^{4}$ *12*	^{157}Ho(12.6 m)	279.97(†47600), 341.16(†37000), 193.41(†15200)
86.6 *1*	0.39 *5*	^{97}Rb(169.9 ms)	167.1(26), 585.2(21.0), 600.5(10.6)
86.6		^{157}Lu(5.0 s)	967.5, 949.8, 880.5
86.65 *10*	0.392 *19*	^{98}Nb(51.3 m)	787.374(93), 722.645(73.8), 1168.830(17.8)
86.6759 *6*	4.56 *24*	^{147}Pr(13.4 m)	77.9921(15), 314.675(13.2), 641.380(10.0)
• 86.68 *4*	0.037	^{242}Am(141 y)	49.367(0.19), 109.69(0.024), 163.24(0.024)
86.7 *3*	0.32 *11*	^{164}Tb(3.0 m)	168.838(25.4), 754.80(23.3), 215.07(21)
86.71 *6*	†5.4 *6*	^{165}Lu(10.74 m)	132.49(†100), 120.60(†100), 174.25(†47.0)
86.71 *2*	0.052 *6*	^{239}U(23.45 m)	74.664(48), 43.533(4.14), 662.24(0.18)
• 86.71 *2*	0.338 *7*	^{243}Am(7370 y)	74.664(68), 43.533(5.93), 117.84(0.57)
86.75 *2*	0.77 *4*	^{155}Ho(48 m)	240.19(12.5), 136.30(5.00), 45.38(5)
• 86.77 *15*	0.00012 *3*	^{233}U(1.592×10^{5} y)	42.44(0.0862), 97.134(0.020), 54.699(0.0182)
86.78 *2*	3.44 *7*	^{69}As(15.2 m)	232.69(11), 145.95(4.96), 287.18(1.420)
• 86.7882 *4*	12.99 *9*	^{160}Tb(72.3 d)	879.383(30.01), 298.580(25.51), 966.171(25.21)
86.7882 *4*	†45	^{160}Ho(5.02 h)	728.18(†100), 879.383(†65.9), 962.317(†59.1)
86.7882 *4*	13.6 *3*	^{160}Ho(25.6 m)	728.18(46.9), 879.383(26.6), 962.317(25.6)
86.79 *15*	†17 *4*	^{161}Lu(77 s)	110.78(†100), 100.32(†95), 43.7(†70)
86.8	0.044 *6*	^{133}Te(55.4 m)	912.671(55.28), 647.51(19.4), 863.955(15.6)
• 86.814 *3*	1.97 *12*	^{233}Pa(26.967 d)	312.17(38.6), 300.34(6.62), 340.81(4.47)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
86.84 *7*	0.04 *3*	^{187}Ir(10.5 h)	912.95(4.79), 427.12(4.12), 400.89(3.94)
86.86 *12*	0.32 *9*	^{159}Tm(9.13 m)	38.35(5.8), 84.8(5.8), 271.30(5.1)
86.873 *3*	0.014 *4*	^{163}Tb(19.5 m)	351.138(26), 389.734(24.3), 494.534(23)
• 86.9 *2*	†0.56 *15*	^{258}Md(51.5 d)	367.8(†100), 447.9(†37), 276.8(†20.2)
• 86.93 *1*		^{165}Tm(30.06 h)	242.917(35.5), 47.155(16.9), 297.369(12.71)
• 86.94 *1*	8.9 *9*	^{126}Sn(1×10^5 y)	87.57(37), 64.28(9.6), 23.28(6.4)
86.97 *3*	0.418 *13*	^{135}Ce(17.7 h)	265.56(41.8), 300.07(23.5), 606.76(18.8)
87.0 *2*	>3	^{104}Mo(60 s)	68.8(55), 69.7(17.8), 36.3(14)
87.0 *5*	†3	^{106}Mo(8.4 s)	465.70(†100), 54.00(†54), 618.60(†25)
87.0 *7*	0.0151 *17*	^{111}Pd(23.4 m)	580.00(0.8), 70.44(0.78), 1459.0(0.56)
87.0 *7*	0.029	^{111}Pd(5.5 h)	70.44(8.3), 391.25(5.4), 632.80(3.6)
87.0 *2*	5.74 *4*	^{137}Pm(2.4 m)	177.5(40.29), 108.6(35), 233.6(29.57)
• 87.02 *6*	0.019 *3*	^{234}Th(24.10 d)	63.29(4.8), 92.38(2.81), 92.80(2.77)
87.13 *11*	48.7 *17*	^{63}Co(27.4 s)	981.7(2.11), 155.6(1.60), 1364.5(1.43)
87.155 *20*	†21.6 *22*	^{155}Nd(8.9 s)	180.574(†100), 418.99(†75), 955.08(†50)
87.16 *9*	1.06 *13*	^{170}Ho(2.76 m)	258.2(37.0), 931.3(36.1), 181.6(23.8)
87.17 *10*		^{115}Pd(25 s)	342.71(8), 303.87(7), 396.56(6)
87.19 *17*	0.79 *6*	^{146}Ce(13.52 m)	316.74(56), 218.23(20.8), 264.56(9.0)
87.19 *20*	>0.13	^{186}Ir(16.64 h)	296.911(64.0), 137.155(42), 434.849(34.4)
• 87.2 *2*	0.0088 *13*	^{137}Ce(34.4 h)	824.82(0.44), 169.26(0.44), 762.3(0.192)
87.2 *2*	0.088 *12*	^{183}Au(42.0 s)	161.18(9.4), 214.13(5.9), 313.08(5.0)
87.22 *6*	0.15 *8*	^{161}Tm(33 m)	45.54(5.00), 1648.1(9.50), 84.40(9.4)
87.26 *19*	†0.52 *12*	^{188}Au(8.84 m)	265.63(†100), 340.04(†23.9), 605.5(†16.3)
• 87.27 *11*	0.00017 *3*	^{233}U(1.592×10^5 y)	42.44(0.0862), 97.134(0.020), 54.699(0.0182)
87.3 *6*	†43 *3*	^{119}Xe(5.8 m)	231.8(†100), 98.5(†95), 461.5(†91)
87.3 *2*	12	^{136}Te(17.5 s)	2077.9(22), 333.99(19), 578.75(18)
87.3 *2*		^{137}Te(2.49 s)	738.2, 630.7, 578.75
87.3 *1*	0.47 *7*	^{181}Au(11.4 s)	198.60(4.4), 2022.4(4.2), 79.40(4.2)
87.34 *6*	0.451 *8*	^{145}Cs(0.594 s)	175.36(20), 198.93(10.9), 112.46(10.71)
87.38 *19*	0.35 *5*	^{105}In(5.07 m)	131.37(41), 260.21(15.7), 604.11(9.2)
• 87.3836 *10*	2.46 *4*	^{169}Lu(34.06 h)	960.622(23.4), 191.2137(20.6), 1449.74(9.92)
87.40 *5*	>0.16	^{105}Tc(7.6 m)	143.26(16), 107.945(14.1), 321.50(11.1)
87.4 *2*	†1	^{139}I(2.29 s)	527.7(†100), 571.2(†98), 536.6(†67)
87.4 *10*		^{183}Hg(9.4 s)	153.8, 71.4
87.4 *1*		^{243}Bk(4.5 h)	755(†100), 946(†80), 840(†30)
87.41 *3*	0.19	^{221}Rn(25 m)	186.38(21.6), 150.04(4.5), 216.90(2.6)
• 87.41 *3*	0.254 *12*	^{225}Ac(10.0 d)	99.91(1.01), 150.04(0.80), 99.63(0.62)
87.456 *7*	0.94 *14*	^{184}Ta(8.7 h)	414.03(72), 252.848(43), 920.932(32.0)
• 87.456 *7*	0.239 *12*	^{184}Re(169 d)	252.848(10.7), 216.548(9.43), 920.932(8.14)
87.4897 *3*	24 *7*	^{156}Sm(9.4 h)	203.818(20.6), 165.8452(12.7), 37.9681(>2.9)
87.5 *1*	3.7 *12*	^{47}Cr(508 ms)	
87.5 *3*	†7.4 *5*	^{172}W(6.6 m)	38.9(†100), 423.3(†44), 89.8(†33.0)
87.5 *1*	0.12	^{175}Ta(10.5 h)	207.4(14.0), 348.5(12.0), 266.9(10.8)
87.53 *3*	0.38 *5*	^{161}Er(3.21 h)	826.6(3.0), 211.15(12.2), 592.6(3.7)
87.54 *6*	†23.0 *16*	^{165}Lu(10.74 m)	132.49(†100), 120.60(†100), 174.25(†47.0)
• 87.57 *1*	37	^{126}Sn(1×10^5 y)	64.28(9.6), 86.94(8.9), 23.28(6.4)
87.585 *4*	0.0143 *14*	^{165}Dy(2.334 h)	94.700(3.58), 361.68(0.84), 633.415(0.568)
87.585 *4*	0.0111 *12*	^{165}Dy(1.257 m)	515.467(1.53), 361.68(0.534), 153.803(0.242)
• 87.62 *3*	1.32 *7*	^{153}Tb(2.34 d)	212.038(31.0), 170.504(6.8), 109.758(6.4)
87.67 *3*	0.202 *20*	^{163}Yb(11.05 m)	860.28(10.1), 63.62(6.5), 123.21(1.98)
87.67 *6*	5.6 *8*	^{183}Ir(58 m)	392.52(10.4), 228.70(6.9), 282.39(4.9)
87.7 *3*	†0.11	^{154}Nd(25.9 s)	151.703(†800), 799.55(†600), 180.693(†510)
• 87.73 *1*	1.6×10^{-5} *10*	^{168}Tm(93.1 d)	
87.73 *1*		^{168}Lu(5.5 m)	1483.65(†100), 228.58(†97), 111.8(†68)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
87.73 *1*	13.1 *20*	^{168}Lu(6.7 m)	198.82(28), 979.22(20), 896.12(15)
87.74 *2*	0.204 *17*	^{191}Au(3.18 h)	586.45(17), 277.88(7.2), 674.19(6.8)
87.80 *10*	0.0160 *16*	^{81}Rb(4.576 h)	190.38(64.0), 446.15(23.2), 510.31(5.3)
87.8	†100	^{131}Nd(27 s)	174.42(†34), 164.09(†25), 668.0(†21)
• 87.8671 *15*	0.202 *11*	^{77}As(38.83 h)	238.996(1.6), 520.639(0.558), 249.786(0.394)
• 87.8671 *15*	1.400 *23*	^{77}Br(57.036 h)	238.996(23), 520.639(22.4), 297.215(4.16)
87.939 *11*	5.14 *12*	^{133}Ce(4.9 h)	477.22(39), 510.36(20.7), 58.39(19.2)
• 87.942 *1*	0.183 *4*	^{161}Tb(6.88 d)	25.65150(23.2), 48.91562(17.0), 74.56711(10.2)
87.942 *1*	0.012 *6*	^{161}Ho(2.48 h)	25.65150(27), 103.062(3.9), 77.414(1.91)
87.9691 *16*	0.9 *4*	^{175}Tm(15.2 m)	514.868(65), 941.23(15), 363.942(12.7)
87.99 *3*	0.18	^{233}Th(22.3 m)	86.477(2.7), 29.374(2.5), 459.222(1.4)
• 87.99 *3*	0.14 *1*	^{237}Np(2.14×10^{6} y)	29.374(15.0), 86.477(12.4), 94.66(0.6)
88.0 *3*		^{122}Ba(1.95 m)	550.7, 388.7, 231.0
88.00 *5*		^{223}Th(0.60 s)	151.98, 97.10, 75.2
88.04 *5*	1.171 *3*	^{109}Pd(13.7012 h)	311.4(0.032), 647.3(0.024), 781.4(0.0112)
• 88.04 *5*	3.61 *10*	^{109}Cd(462.6 d)	
• 88.05 *2*	0.006 *2*	^{239}Np(2.3565 d)	106.125(27.2), 277.599(14.38), 228.183(10.76)
88.05 *2*	0.0006	^{239}Am(11.9 h)	277.599(15.0), 228.183(11.3), 209.753(3.50)
• 88.05 *2*		^{243}Cm(29.1 y)	277.599(14.0), 228.183(10.6), 209.753(3.29)
88.064 *3*	1.33 *6*	^{133}Te(55.4 m)	912.671(55.28), 647.51(19.4), 863.955(15.6)
88.1 *4*	1.7 *13*	^{74}Zn(96 s)	56.7(70), 49.4(33.4), 143.5(21.7)
88.1 *3*	†22.4 *22*	^{113}Ru(0.80 s)	263.2(†100), 211.7(†31.0), 337.5(†27.9)
88.1 *3*	0.043 *8*	^{127}Sn(2.10 h)	1114.3(39), 1095.6(20), 823.1(10.9)
88.1 *1*	†17 *5*	^{155}Tm(21.6 s)	226.8(†100), 531.7(†20), 1057.2(†13)
88.1 *1*	†100 *7*	^{155}Tm(45 s)	323.2(†65), 507.0(†40), 247.0(†28)
88.1	>300	^{177}Ir(30 s)	183.6(†1010), 148.3(†929), 75.6(†>900)
88.17 *8*		^{223}Rn(23.2 m)	591.8(†100), 635.2(†76), 416.0(†55)
88.2 *5*	0.22 *8*	^{110}Ru(14.6 s)	112.2(25.00), 166.1(0.65), 116.1(0.45)
88.20 *7*	>0.012	^{132}Ce(3.51 h)	182.11(77), 155.37(10.5), 216.83(4.95)
88.2 *1*	†23.5 *8*	^{155}Er(5.3 m)	110.12(†100), 241.5(†65), 234.0(†40.0)
88.2 *2*	0.017 *4*	^{211}Pb(36.1 m)	404.853(3.78), 832.01(3.52), 427.088(1.76)
• 88.205 *15*	0.047 *5*	^{165}Tm(30.06 h)	242.917(35.5), 47.155(16.9), 297.369(12.71)
88.25 *2*	2.7 *3*	^{113}Sb(6.67 m)	497.96(80), 332.41(14.8), 940.63(2.62)
88.26 *5*	0.021 *5*	^{155}Ho(48 m)	240.19(12.5), 136.30(5.00), 45.38(5)
88.29 *6*	3.44 *13*	^{75}Kr(4.3 m)	132.43(67), 154.66(20.8), 153.15(8.0)
88.290 *20*	0.38 *3*	^{153}Dy(6.4 h)	80.723(11.10), 213.754(10.90), 99.659(10.51)
88.3 *1*	0.021 *5*	^{107}Ru(3.75 m)	194.05(9.9), 847.93(5.3), 462.61(3.66)
• 88.30 *10*	0.397 *25*	^{153}Tb(2.34 d)	212.038(31.0), 170.504(6.8), 109.758(6.4)
• 88.34 *3*	13.3 *13*	^{176}Lu(3.78×10^{10} y)	306.78(94), 201.83(86), 400.99(0.329)
88.34 *3*	0.55640 *4*	^{176}Lu(3.635 h)	1159.28(0.00139), 1061.61(0.000762), 201.83(>0.0007)
88.34 *3*	12	^{176}Ta(8.09 h)	1159.28(25), 1224.93(6), 201.83(6)
88.38 *6*	0.084 *17*	^{157}Sm(482 s)	197.870(56.00), 196.461(16.8), 394.351(11.93)
• 88.4	0.037 *9*	^{177}Lu(160.4 d)	208.3664(57.7), 228.4838(37.0), 378.5029(29.7)
88.42 *3*	†10.3 *16*	^{189}Au(28.7 m)	713.17(†100), 812.68(†63), 447.65(†55)
• 88.43 *8*	0.027 *6*	^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
88.43 *5*	†88 *8*	^{229}U(58 m)	122.51(†100), 198.83(†88), 247.82(†58)
• 88.46 *8*	0.00040 *6*	^{233}U(1.592×10^{5} y)	42.44(0.0862), 97.134(0.020), 54.699(0.0182)
88.50 *3*	1.41 *7*	^{100}Sr(202 ms)	963.85(22.0), 898.50(18.9), 65.46(15.2)
88.5 *1*		^{125}La(76 s)	67.6(34), 43.6(3.5), 985.2
88.5 *6*		^{192}Hg(4.85 h)	274.8(50.4), 157.2(7), 306.5(5.4)
88.6 *1*	0.4 *3*	^{119}Cs(43.0 s)	176.05(29.7), 225.13(26), 257.9(17.4)
88.6 *3*	†<0.1	^{129}Ba(2.17 h)	182.30(†100), 1459.1(†50.0), 202.38(†33.7)
88.6	0.13	^{157}Er(18.65 m)	53.05(24), 391.32(14.2), 121.57(10.1)
88.6 *7*	1.06 *14*	^{201}Bi(108 m)	629.1(24.0), 936.2(11.3), 1014.1(10.7)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
88.7 *3*	0.18 *3*	^{120}Xe(40 m)	25.1(30), 72.6(9), 178.1(6.8)
88.7 *3*		^{122}Ba(1.95 m)	550.7, 388.7, 231.0
88.71 *2*	0.581 *17*	^{135}Ce(17.7 h)	265.56(41.8), 300.07(23.5), 606.76(18.8)
88.71 *10*	0.78 *18*	^{159}Tm(9.13 m)	38.35(5.8), 84.8(5.8), 271.30(5.1)
• 88.80 *7*	2.16 *8*	^{72}Zn(46.5 h)	145.04(83), 191.96(9.37), 16.4(8.3)
• 88.80 *9*	0.0124 *16*	^{151}Pm(28.40 h)	340.08(23), 167.75(8.3), 275.21(6.8)
88.867 *1*	64.4 *10*	^{178}Lu(23.1 m)	426.383(97.0), 325.562(94.1), 213.440(81.4)
88.867 *1*	64.4 *10*	^{178}Ta(2.36 h)	426.383(97.0), 325.562(94.1), 213.440(81.4)
88.9 *10*	>2.9	^{132}In(0.201 s)	374.3(62), 4040.8(61), 299.2(49)
88.9 *1*	0.15 *3*	^{208}Fr(59.1 s)	635.8(10), 778.5(6.8), 325.3(5.2)
88.922 *8*	0.38 *3*	^{153}Dy(6.4 h)	80.723(11.10), 213.754(10.90), 99.659(10.51)
• 88.9667 *14*	8.4 *9*	^{156}Eu(15.19 d)	811.79(9.70), 1230.68(7.98), 1153.67(6.79)
• 88.9667 *14*	17.7 *19*	^{156}Tb(5.35 d)	534.318(66.6), 199.2132(40.9), 1222.36(31.00)
89 *1*	1.5 *5*	^{105}Mo(35.6 s)	85.4(25.0), 76.50(19.3), 147.8(14.8)
89.03 *9*	0.08 *3*	^{184}Pt(17.3 m)	154.90(31), 191.97(27), 548.36(23.1)
• 89.09 *4*	0.0046 *4*	^{172}Er(49.3 h)	610.062(44.2), 407.338(42.1), 68.107(3.29)
89.10 *6*	0.192 *24*	^{141}Xe(1.73 s)	909.23(24.0), 118.705(16.1), 105.937(9.8)
89.10 *5*	0.31 *3*	^{159}Er(36 m)	624.5(33), 649.1(23.4), 205.92(9.7)
89.1 *4*	0.039 *20*	^{185}Au(4.25 m)	310.6(13), 243.1(6.6), 77.7(6)
89.1 *2*	0.13 *4*	^{227}Pa(38.3 m)	64.62(6), 110.05(1.24), 84.8(0.86)
89.17 *3*	0.38 *2*	^{140}Xe(13.60 s)	805.52(20), 1413.66(12.2), 1315.05(8.2)
89.23 *3*	38 *4*	^{130}In(0.32 s)	1905.17(74), 129.80(61), 1221.24(60)
89.23 *3*	20.2 *18*	^{130}In(0.55 s)	1221.24(89), 774.37(46), 2377.14(15.8)
89.3 *3*	†1.8	^{177}Os(2.8 m)	84.7(†100), 125.4(†63), 195.8(†61)
• 89.36 *1*	2.40 *18*	^{175}Hf(70 d)	343.40(84), 433.0(1.436), 229.6(0.683)
• 89.39 *6*	2.0×10^{-6}	^{239}Pu(24110 y)	51.624(0.007100), 38.661(0.000500), 129.297(0.00631)
89.43 *15*	0.050 *10*	^{161}Gd(3.66 m)	360.94(0.59), 314.92(22.7), 102.315(13.9)
• 89.4865 *3*	0.179 *21*	^{153}Sm(46.27 h)	103.1807(31.4), 69.67340(4.85), 97.4316(0.847)
• 89.4865 *3*	0.069 *21*	^{153}Gd(241.6 d)	97.4316(30), 103.1807(21.4), 69.67340(2.54)
89.49 *2*	0.097 *22*	^{167}Lu(51.5 m)	29.66(14.4), 239.22(8.6), 213.19(3.6)
89.53	95.5 *6*	^{25}Ne(602 ms)	979.77(18.1), 1069.30(2.3), 2202(1.1)
• 89.58 *6*	0.022 *3*	^{245}Cm(8500 y)	174.94(10), 132.99(2.77), 41.95(0.350)
89.6 *2*	0.050 *10*	^{223}Ac(2.10 m)	98.58(0.891), 191.3(0.58), 83.55(0.57)
• 89.648 *5*	3.0×10^{-5} *6*	^{239}Pu(24110 y)	51.624(0.007100), 38.661(0.000500), 129.297(0.00631)
89.65 *10*	31	^{74}Kr(11.50 m)	203.0(18.0), 296.67(9.9), 62.84(9.6)
• 89.65 *7*	$\dagger1.5\times10^{7}$	^{99}Tc(2.111×10^{5} y)	
89.65 *7*		^{99}Tc(6.01 h)	322.41(0.000097), 232.72(8.5×10^{-6})
• 89.65 *7*	29.0 *13*	^{99}Rh(16.1 d)	528.24(33), 353.05(30.0), 322.41(5.4)
89.65 *7*	1.71 *17*	^{99}Rh(4.7 h)	340.71(70), 617.8(12.0), 1261.2(11)
89.69 *8*	†6	^{154}Nd(25.9 s)	151.703(†800), 799.55(†600), 180.693(†510)
89.7 *10*	0.93 *19*	^{74}Kr(11.50 m)	89.65(31), 203.0(18.0), 296.67(9.9)
89.7 *4*	†19 *6*	^{172}Ir(4.4 s)	123.2(†100), 136.3(†19)
89.73 *1*	3.26 *20*	^{117}Cd(2.49 h)	273.349(28), 1303.27(18.4), 344.459(17.9)
89.73 *1*		^{117}Cd(3.36 h)	1997.33(26), 1065.98(23.1), 564.397(14.7)
89.753 *8*	0.0029 *6*	^{165}Dy(2.334 h)	94.700(3.58), 361.68(0.84), 633.415(0.568)
89.753 *8*		^{165}Dy(1.257 m)	515.467(1.53), 361.68(0.534), 153.803(0.242)
89.77 *6*	0.11 *3*	^{184}Pt(17.3 m)	154.90(31), 191.97(27), 548.36(23.1)
• 89.79 *8*	0.0024 *6*	^{129}Cs(32.06 h)	371.918(30.60), 411.490(22.31), 548.945(3.40)
89.8 *2*	1.79 *18*	^{120}Xe(40 m)	25.1(30), 72.6(9), 178.1(6.8)
89.80 *4*	0.48 *5*	^{141}Xe(1.73 s)	909.23(24.0), 118.705(16.1), 105.937(9.8)
89.8 *3*	†33.0 *20*	^{172}W(6.6 m)	38.9(†100), 423.3(†44), 221.3(†29)
89.89 *11*	†12.0 *6*	^{32}Ar(98 ms)	1168.4(†32.8), 707.4(†12.1), 461.09(†12.1)
89.9 *2*	77.6 *30*	^{120}In(47.3 s)	1171.3(100), 1023.1(97.4), 197.3(80.6)
• 89.9 *2*	79.5 *16*	^{120}Sb(5.76 d)	1171.3(100), 1023.1(99.4), 197.3(87.0)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
89.9	0.9	^{147}Ce(56.4 s)	268.80(7), 92.9(4.7), 374.23(3.5)
89.90 *9*	0.74 *12*	^{181}Au(11.4 s)	198.60(4.4), 2022.4(4.2), 79.40(4.2)
• 89.91 *5*	0.014 *3*	^{105}Ag(41.29 d)	344.520(41), 280.41(30.2), 644.55(11.1)
• 89.944 *5*	0.94 *6*	^{231}Th(25.52 h)	25.646(14.5), 84.216(6.6), 81.227(0.89)
• 89.944 *5*		^{231}U(4.2 d)	25.646(12), 84.216(7), 217.940(0.8)
• 89.944 *5*	†>2.7×10^3	^{235}Np(396.1 d)	25.646(†600000), 84.216(†265000), 81.227(†58000)
89.96 *1*	1.70 *6*	^{151}Nd(12.44 m)	116.80(43.4), 255.68(16.4), 1180.89(14.8)
90.0 *4*	0.61 *18*	^{136}Sm(47 s)	114.4(36), 747.7(5.4), 485.3(5.0)
90		^{143}Xe(0.30 s)	
90.0 *1*	0.040 *12*	^{161}Er(3.21 h)	826.6(3.0), 211.15(12.2), 592.6(3.7)
90.0 *2*	0.39 *11*	^{173}Ta(3.14 h)	172.2(18), 69.70(5.9), 90.3(5.0)
90.0 *9*	0.40 *12*	^{175}Ta(10.5 h)	207.4(14.0), 348.5(12.0), 266.9(10.8)
• 90.0 *1*	0.017 *7*	^{189}Re(24.3 h)	216.663(5.50), 219.395(4.54), 245.09(3.5)
• 90.0 *3*		^{227}Th(18.72 d)	235.971(†813), 50.13(†528), 256.25(†463)
90.035 *2*	39 *4*	^{227}Fr(2.47 m)	585.804(29.5), 64.267(14.5), 433.824(5.1)
• 90.04 *4*	0.109 *22*	^{205}Bi(15.31 d)	1764.36(1.368), 703.44(31), 987.62(0.585)
90.06 *3*	0.19 *3*	^{140}Pm(5.95 m)	1028.19(100), 773.74(100), 419.57(92)
90.1	2.2	^{134}Nd(8.5 m)	163.2(58), 288.9(13), 216.8(12)
• 90.15 *4*	0.254 *16*	^{153}Tb(2.34 d)	212.038(31.0), 170.504(6.8), 109.758(6.4)
• 90.18 *6*	†5.5×10^3 *5*	^{134}Ce(75.9 h)	162.306(†230000), 130.414(†209000), 39.08(†>150000)
90.26 *8*	0.43 *6*	^{167}Dy(6.20 m)	569.7(48), 259.33(27.9), 310.26(25.0)
90.28 *8*	†100 *18*	^{114}Te(15.2 m)	83.8(†67), 1417.6(†32), 54.6(†27)
90.3 *1*	5.0 *5*	^{173}Ta(3.14 h)	172.2(18), 69.70(5.9), 160.4(4.9)
90.326 *2*	1.067 *21*	^{155}Dy(9.9 h)	226.918(68.4), 184.564(3.37), 1089.8(>2.8)
90.3725 *17*	0.0093 *22*	^{155}Sm(22.3 m)	104.3346(74.6), 245.771(3.7), 141.4428(1.98)
90.4		^{99}Y(1.470 s)	121.761(33), 724.30(14.9), 536.2(6.6)
90.4 *2*	0.62 *10*	^{159}Eu(18.1 m)	67.8(19), 78.6(9.1), 95.7(7.0)
90.4	†80 *6*	^{178}Pt(21.1 s)	84.6(†100), 101.3(†76), 91.7(†54)
• 90.42 *23*	0.00063 *21*	^{195}Hg(41.6 h)	261.75(30.9), 560.27(7), 387.87(2.15)
90.45 *14*	1.30 *13*	^{185}Ir(14.4 h)	254.4(13.3), 1828.8(10), 60.0(5.7)
90.5		^{256}Es(7.6 h)	861.8(†100), 231.1(†61), 172.6(†49)
90.596 *7*	0.563 *19*	^{122}Xe(20.1 h)	350.065(7.80), 148.612(2.62), 416.633(1.87)
90.6	†273 *10*	^{177}Ir(30 s)	183.6(†1010), 148.3(†929), 75.6(†>900)
90.639 *2*	53.20 *11*	^{49}Cr(42.3 m)	152.928(30.32), 62.289(16.39), 1361.61(0.045)
• 90.6448 *17*	0.0240 *18*	^{172}Tm(63.6 h)	78.7435(6.5), 1093.657(6.0), 1387.093(5.6)
• 90.6448 *17*	4.54 *16*	^{172}Lu(6.70 d)	1093.657(62.5), 900.724(29.8), 181.528(20.6)
90.65 *11*	1.9 *8*	^{186}Ta(10.5 m)	197.93(50), 214.87(42.3), 510.82(37.5)
90.7		^{88}Mo(8.0 m)	170.5(†100), 79.8(†71), 130.9(†60)
90.7 *1*	0.201 *19*	^{127}Cs(6.25 h)	411.95(62.8), 124.70(11.37), 462.31(5.07)
• 90.7 *4*	0.00066 *20*	^{254}Es(39.3 h)	211.80(0.096), 177.30(0.056), 71.30(0.043)
90.75 *7*	3.2 *3*	^{79}Ga(2.847 s)	464.79(24.2), 516.41(21.5), 1187.28(12.8)
• 90.7692 *10*	0.557 *12*	^{169}Lu(34.06 h)	960.622(23.4), 191.2137(20.6), 1449.74(9.92)
90.77 *10*	0.09 *3*	^{157}Pm(10.56 s)	160.61(35), 188.052(13.5), 571.27(5.39)
90.8 *2*	†100	^{99}Rb(59 ms)	125.2(†40), 1071.6(†26), 981.4(†21)
90.8 *2*	†100	^{100}Rb(51 ms)	125.2(†54)
90.8 *1*	1.84 *20*	^{209}At(5.41 h)	545.0(91), 781.9(83.5), 790.2(63.5)
90.81 *7*	0.008 *3*	^{187}Ir(10.5 h)	912.95(4.79), 427.12(4.12), 400.89(3.94)
90.84 *1*	0.018 *8*	^{167}Yb(17.5 m)	113.34(55.3), 106.18(22.5), 176.25(21)
90.87 *25*	†2.7 *4*	^{183}Hg(9.4 s)	60.5(†100), 159.91(†21), 172.70(†17)
90.874 *5*	†13.6 *7*	^{153}Pm(5.4 m)	35.842(†100), 127.298(†75), 28.309(†34.6)
90.89 *3*	2.05 *12*	^{148}Ce(56 s)	269.519(17.0), 291.724(16.7), 121.169(13.2)
90.9	0.22	^{147}Ba(0.893 s)	167.4(11), 105.2(4.8), 196.1(4.8)
90.9 *1*	>0.024	^{204}Bi(11.22 h)	899.15(98), 374.72(82), 984.02(59)
90.94 *5*	0.39 *11*	^{66}Ge(2.26 h)	43.89(28.7), 381.85(28), 272.97(10.4)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
• 90.95		^{229}Pa(1.50 d)	40.09(0.104), 64.70(0.045), 75.12(0.035)
91.0 *2*	4.9 *5*	^{104}Mo(60 s)	68.8(55), 69.7(17.8), 36.3(14)
91.0 *6*	†16 *1*	^{119}Xe(5.8 m)	231.8(†100), 98.5(†95), 461.5(†91)
91.00 *2*	16.0 *12*	^{174}Ta(1.05 h)	206.50(58), 1205.92(4.9), 1228.33(1.4)
• 91.0 *3*	†0.30 *18*	^{258}Md(51.5 d)	367.8(†100), 447.9(†37), 276.8(†20.2)
• 91.03 *10*	0.00030 *5*	^{233}U(1.592×10^5 y)	42.44(0.0862), 97.134(0.020), 54.699(0.0182)
91.1 *2*	0.21 *4*	^{76}Kr(14.8 h)	315.7(39), 270.2(21.1), 45.48(19.5)
91.1 *2*		^{116}Pd(12.4 s)	569, 279.3, 178.3
91.1 *5*	0.22 *7*	^{136}Sm(47 s)	114.4(36), 747.7(5.4), 485.3(5.0)
91.1 *2*	0.0073 *5*	^{145}Pr(5.984 h)	748.278(0.5250), 675.795(0.514), 72.500(0.261)
• 91.105 *2*	28	^{147}Nd(10.98 d)	531.016(13.1), 319.411(1.95), 439.895(1.20)
91.11 *2*	1.50 *10*	^{191}Au(3.18 h)	586.45(17), 277.88(7.2), 674.19(6.8)
91.125 *22*		^{149}Nd(1.728 h)	211.309(25.9), 114.314(19.2), 270.166(10.7)
91.15 *10*	3.1 *4*	^{128}In(0.72 s)	831.54(100), 1168.80(100), 120.54(11.1)
91.19 *5*	0.06	^{176}Ta(8.09 h)	1159.28(25), 88.34(12), 1224.93(6)
91.2 *3*	†0.42 *21*	^{183}Hg(9.4 s)	60.5(†100), 159.91(†21), 172.70(†17)
• 91.266 *5*	7.0 *1*	^{67}Cu(61.83 h)	184.577(48.7), 93.311(16.1), 300.219(0.797)
• 91.266 *5*	3.16 *9*	^{67}Ga(3.2612 d)	93.311(39.2), 184.577(21.2), 300.219(16.80)
91.267 *6*	1.04 *7*	^{184}Ta(8.7 h)	414.03(72), 252.848(43), 920.932(32.0)
• 91.267 *6*	0.254 *12*	^{184}Re(169 d)	252.848(10.7), 216.548(9.43), 920.932(8.14)
91.29 *8*	0.083 *10*	^{183}Ir(58 m)	392.52(10.4), 228.70(6.9), 87.67(5.6)
91.3 *3*	†2.1 *4*	^{111}Ru(2.12 s)	303.8(†100), 211.7(†77.7), 382.0(†41.3)
• 91.3	0.11 *5*	^{172}Hf(1.87 y)	23.9331(20.3), 125.812(11.3), 67.35(5.3)
91.33 *7*	2.38 *6*	^{108}Ru(4.55 m)	164.95(28.0), 150.46(7.8), 73.67(1.1)
91.35 *3*	0.075 *13*	^{155}Ho(48 m)	240.19(12.5), 136.30(5.00), 45.38(5)
91.4 *2*	1.5 *3*	^{118}Pd(1.9 s)	125.4(34), 125.4(34), 224.2(20.1)
91.40 *2*	2.2	^{164}Ho(29 m)	
91.40 *2*	1500	^{164}Tm(2.0 m)	1154.66(†366), 768.91(†279), 208.08(†254)
91.40 *2*	4.2 *6*	^{164}Tm(5.1 m)	208.08(14.6), 314.97(10), 240.49(7.5)
• 91.400 *25*	0.449 *9*	^{171}Lu(8.24 d)	739.78(47.8), 19.394(13.7), 667.404(11.04)
91.455 *5*	†8.1 *5*	^{153}Pm(5.4 m)	35.842(†100), 127.298(†75), 28.309(†34.6)
91.48 *5*	0.77 *8*	^{187}Pt(2.35 h)	106.46(9), 201.52(6.4), 110.04(5.7)
91.5 *1*	0.34 *17*	^{141}Tb(3.5 s)	293.3(16.8), 343.6(16.3), 198.4(14.8)
• 91.54 *7*	0.177 *9*	^{153}Tb(2.34 d)	212.038(31.0), 170.504(6.8), 109.758(6.4)
91.550 *8*	0.234 *13*	^{163}Tm(1.810 h)	104.320(18.6), 69.229(11.6), 241.305(10.9)
91.6 *3*		^{122}Ba(1.95 m)	550.7, 388.7, 231.0
91.6 *3*	†3.7 *5*	^{155}Er(5.3 m)	110.12(†100), 241.5(†65), 234.0(†40.0)
91.6 *5*	0.028 *18*	^{159}Tm(9.13 m)	38.35(5.8), 84.8(5.8), 271.30(5.1)
91.6 *1*	†21	^{173}Ir(2.20 s)	49.6(†100), 285.0(†76), 296.4(†48)
91.6 *1*	†30	^{173}Ir(9.8 s)	49.6(†100), 285.0(†37), 147.7(†24)
91.6 *1*		^{177}Pt(11 s)	
91.7 *2*	0.084 *15*	^{132}Sn(39.7 s)	340.53(49), 85.58(48.2), 899.04(44.8)
• 91.7 *3*	0.006 *3*	^{151}Pm(28.40 h)	340.08(23), 167.75(8.3), 275.21(6.8)
91.7	†54 *4*	^{178}Pt(21.1 s)	84.6(†100), 90.4(†80), 101.3(†76)
91.70 *5*		^{223}Rn(23.2 m)	591.8(†100), 635.2(†76), 416.0(†55)
91.8 *1*	†19 *2*	^{153}Yb(4.2 s)	547.4(†100), 674.1(†61), 369.6(†32)
91.9 *2*	1.16 *7*	^{55}Co(17.53 h)	931.3(75), 477.2(20.2), 1408.4(16.88)
91.9 *1*	†7 *2*	^{130}Sn(1.7 m)	144.9(†100), 899.2(†49), 84.7(†42)
91.9 *2*	7	^{145}Ba(4.31 s)	96.6(17), 65.9(5), 544.2(>5.0)
91.9 *2*		^{161}Eu(26 s)	314.3, 163.7, 71.9
91.9 *3*	3.0 *5*	^{184}Hg(30.6 s)	236.18(64), 156.24(58), 295.11(10.3)
91.97 *5*	0.34 *4*	^{165}Yb(9.9 m)	80.11(49), 68.86(9.1), 1090.28(4.4)
• 91.9737 *12*	0.599 *12*	^{169}Lu(34.06 h)	960.622(23.4), 191.2137(20.6), 1449.74(9.92)
92.0 *10*	>0.40	^{65}Ga(15.2 m)	115.09(54), 61.20(11.4), 153.0(8.9)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
92.0 *3*	0.23 *7*	^{99}Y(1.470 s)	121.761(33), 724.30(14.9), 536.2(6.6)
92.0 *2*	0.09 *2*	^{104}Mo(60 s)	68.8(55), 69.7(17.8), 36.3(14)
92	†6	^{224}Ac(2.9 h)	156.4(†100), 140.8(†55), 261.6(†28)
• 92.0 *5*	<0.004	^{233}Pa(26.967 d)	312.17(38.6), 300.34(6.62), 340.81(4.47)
92.0 *5*		^{233}Np(36.2 m)	312.17(0.7), 298.89(0.44), 546.9(0.280)
• 92.0 *5*		^{237}Pu(45.2 d)	280.40(†870000), 298.89(†7.85×10^6), 320.75(†6.48×10^6)
• 92.00 *5*		^{234}Th(24.10 d)	63.29(4.8), 92.38(2.81), 92.80(2.77)
92.03 *1*	†0.53 *9*	^{153}Pm(5.4 m)	35.842(†100), 127.298(†75), 28.309(†34.6)
92.05 *7*	0.16 *5*	^{167}Lu(51.5 m)	29.66(14.4), 239.22(8.6), 213.19(3.6)
92.1 *2*	0.0011 *3*	^{210}At(8.1 h)	1181.39(99.3), 245.31(79), 1483.39(46.5)
92.1 *1*	†19 *4*	^{230}Ra(93 m)	72.0(†100), 63.0(†35.4), 202.8(†27.3)
• 92.1		^{241}Am(432.2 y)	59.537(†60), 26.345(†1000×10^9), 33.195(†6000×10^8)
92.15 *7*	0.59 *11*	^{78}Zn(1.47 s)	224.75(43.9), 181.68(28.1), 860.30(24.5)
• 92.190 *16*	0.72 *3*	^{82}Br(35.30 h)	776.517(83.5), 554.348(70.8), 619.106(43.4)
92.190 *16*	0.65 *6*	^{82}Rb(6.472 h)	776.517(84), 554.348(62.4), 619.106(37.976)
92.2		^{101}Rb(32 ms)	271.2(†100), 251.6(†31), 1091.8(†25)
92.2 *1*	†10.9 *11*	^{171}Ta(23.3 m)	49.6(†100), 506.4(†54), 501.8(†22.6)
92.2 *2*	0.071 *7*	^{194}Pb(12.0 m)	581.82(18.8), 1519.45(16.4), 203.82(16.2)
92.2 *1*	>0.024	^{204}Bi(11.22 h)	899.15(98), 374.72(82), 984.02(59)
92.22 *6*	0.038 *13*	^{155}Ho(48 m)	240.19(12.5), 136.30(5.00), 45.38(5)
92.26 *2*		^{223}Rn(23.2 m)	591.8(†100), 635.2(†76), 416.0(†55)
• 92.284 *3*	0.585 *9*	^{131}Ba(11.50 d)	496.326(47), 123.805(28.97), 216.078(19.66)
92.3 *3*	†1.0 *3*	^{148}Er(4.6 s)	1653.4(†100), 387.7(†88), 197.1(†71)
92.3		^{167}Ta(1.4 m)	296.3, 278.0, 214.2
92.3 *5*	†6.5 *10*	^{189}Au(28.7 m)	713.17(†100), 812.68(†63), 447.65(†55)
92.33 *3*	0.20 *4*	^{133}Te(55.4 m)	912.671(55.28), 647.51(19.4), 863.955(15.6)
• 92.38 *1*	2.81 *15*	^{234}Th(24.10 d)	63.29(4.8), 92.80(2.77), 112.81(0.277)
92.40 *5*	0.76 *3*	^{148}Ba(0.607 s)	56.08(29.20), 133.53(3.88), 415.78(3.59)
92.4 *2*	0.30 *3*	^{152}Tb(4.2 m)	344.281(20.8), 411.115(18.8), 471.9(12.2)
92.4 *10*		^{181}Hg(3.6 s)	239.8, 158.7, 214.2
92.5 *1*	†100	^{123}La(17 s)	937.3(†43), 153.6(†43), 120.9(†31)
92.5 *1*	†12 *1*	^{227}Rn(22.5 s)	162.14(†100), 739.2(†65), 686.2(†62)
• 92.5	0.0041	^{242}Am(141 y)	49.367(0.19), 86.68(0.037), 109.69(0.024)
• 92.51 *2*	0.326 *11*	^{249}Cf(351 y)	388.16(66), 333.37(14.6), 252.80(2.50)
• 92.6 *5*	0.019 *10*	^{148}Eu(54.5 d)	550.284(98.5), 629.987(71.9), 611.293(20.5)
92.60 *10*	1.40 *25*	^{186}Ta(10.5 m)	197.93(50), 214.87(42.3), 510.82(37.5)
92.62 *9*	0.042 *7*	^{144}Ba(11.5 s)	103.855(23.30), 430.48(18.3), 172.828(15.4)
92.7 *2*	0.29	^{115}Pd(25 s)	342.71(8), 303.87(7), 396.56(6)
92.7 *6*	†51 *5*	^{123}Ba(2.7 m)	94.6(†100), 123.5(†69), 30.6(†56)
92.71 *5*	0.386 *20*	^{223}Ac(2.10 m)	98.58(0.891), 191.3(0.58), 83.55(0.57)
92.77 *7*	5.3 *5*	^{184}Pt(17.3 m)	154.90(31), 191.97(27), 548.36(23.1)
92.8		^{101}Rb(32 ms)	271.2(†100), 251.6(†31), 1091.8(†25)
• 92.80 *2*	2.77 *15*	^{234}Th(24.10 d)	63.29(4.8), 92.38(2.81), 112.81(0.277)
92.9	4.7	^{147}Ce(56.4 s)	268.80(7), 374.23(3.5), 452.1(3.3)
• 92.9 *2*	0.023	^{188}Pt(10.2 d)	187.59(19.4), 195.05(18.6), 381.43(7.5)
92.91 *7*	1.02 *21*	^{139}Nd(5.50 h)	113.94(40), 737.96(35), 982.2(26.4)
92.957 *2*	0.992 *23*	^{153}Dy(6.4 h)	80.723(11.10), 213.754(10.90), 99.659(10.51)
• 92.97 *4*	0.0338 *22*	^{151}Pm(28.40 h)	340.08(23), 167.75(8.3), 275.21(6.8)
93 *1*	†10 *3*	^{103}Mo(67.5 s)	83.4(†100), 423.91(†69), 45.8(†57)
93.0	0.8 *4*	^{147}Cs(0.225 s)	85.2(7.3), 245.8(4.5), 109.7(4.5)
93.0	0.8	^{147}Ba(0.893 s)	167.4(11), 105.2(4.8), 196.1(4.8)
93.0 *3*	†11.5 *7*	^{172}W(6.6 m)	38.9(†100), 423.3(†44), 89.8(†33.0)
93.05 *20*	3.3 *4*	^{166}Hf(6.77 m)	78.76(41), 341.82(4.7), 407.91(4.5)
• 93.063 *25*	0.045 *5*	^{231}Th(25.52 h)	25.646(14.5), 84.216(6.6), 89.944(0.94)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
• 93.063 *25*	†3.8×10^3 *19*	^{235}Np(396.1 d)	25.646(†600000), 84.216(†265000), 81.227(†58000)
93.10 *10*	13 *3*	^{81}Ge(7.6 s)	335.98(58.9), 792.94(34), 1495.53(19.9)
93.10 *10*	26 *3*	^{81}Ge(7.6 s)	335.98(12.8), 197.30(12.3), 737.74(10.5)
93.1 *1*	2.1 *5*	^{221}Ra(28 s)	149.0(9.0), 174.1(1.6), 320(0.7)
93.124 *20*	1.45 *3*	^{107}Cd(6.50 h)	828.93(0.17), 796.462(0.0665), 324.81(0.0314)
93.180 *1*	6.0 *15*	^{178}Lu(28.4 m)	1340.8(3.22), 1310.05(1.40), 1269.34(0.93)
93.180 *1*	17.2 *3*	^{178}Lu(23.1 m)	426.383(97.0), 325.562(94.1), 213.440(81.4)
93.180 *1*	1.78 *18*	^{178}Ta(9.31 m)	1350.68(1.18), 1340.8(1.027), 1106.19(0.536)
93.180 *1*	17.2 *3*	^{178}Ta(2.36 h)	426.383(97.0), 325.562(94.1), 213.440(81.4)
93.2 *1*	5.4 *10*	^{104}Sn(20.8 s)	132.7(56), 912.6(42), 401.2(16.2)
93.2 *5*	0.20 *4*	^{166}Lu(2.65 m)	228.12(77.3), 337.50(41), 367.95(31.4)
• 93.21 *7*	0.0019 *6*	^{151}Gd(124 d)	153.56(6.20), 243.28(5.60), 174.70(2.96)
93.22 *3*	0.0052 *8*	^{187}W(23.72 h)	685.774(27.3), 479.531(21.8), 72.001(11.14)
93.24 *5*	0.103 *11*	^{102}Mo(11.3 m)	211.66(3.8), 148.19(3.76), 223.83(1.44)
93.243 *1*	0.50 *5*	^{149}Pr(2.26 m)	138.447(11.0), 165.087(9.9), 108.520(9.5)
93.3	0.29	^{134}Nd(8.5 m)	163.2(58), 288.9(13), 216.8(12)
93.3	2.61 *16*	^{179}Pt(21.2 s)	171.7(16), 193.1(14.2), 99.8(13.2)
93.30 *5*	0.020 *6*	^{185}Ta(49.4 m)	177.59(25.7), 173.68(22.6), 65.86(3.9)
• 93.311 *5*	16.1 *2*	^{67}Cu(61.83 h)	184.577(48.7), 91.266(7.0), 300.219(0.797)
• 93.311 *5*	39.2 *10*	^{67}Ga(3.2612 d)	184.577(21.2), 300.219(16.80), 393.529(4.68)
93.326 *2*	11.7 *6*	^{180}Lu(5.7 m)	407.94(43.0), 1199.7(24.3), 1106.00(22.7)
93.326 *2*	4.5	^{180}Ta(8.152 h)	
• 93.329 *3*	0.652 *18*	^{129}Cs(32.06 h)	371.918(30.60), 411.490(22.31), 548.945(3.40)
93.33 *10*	†5.4 *10*	^{163}Lu(238 s)	163.08(†100), 54.00(†88), 396.34(†63)
93.33 *8*	†1.43 *3*	^{165}Lu(10.74 m)	132.49(†100), 120.60(†100), 174.25(†47.0)
• 93.43 *7*	0.105 *6*	^{153}Tb(2.34 d)	212.038(31.0), 170.504(6.8), 109.758(6.4)
• 93.47 *16*	†9.3×10^2 *25*	^{134}Ce(75.9 h)	162.306(†230000), 130.414(†209000), 39.08(†>150000)
93.5 *1*	1.1	^{104}Sn(20.8 s)	132.7(56), 912.6(42), 401.2(16.2)
93.5	0.0017 *8*	^{135}Ce(17.7 h)	265.56(41.8), 300.07(23.5), 606.76(18.8)
93.54 *7*	0.130 *9*	^{87}Br(55.60 s)	1419.71(22.0), 1476.04(7.9), 1577.60(6.0)
93.60 *15*	0.12 *4*	^{181}Re(19.9 h)	365.57(56), 360.70(20), 639.30(6.4)
• 93.6 *1*	0.00101 *14*	^{229}Pa(1.50 d)	40.09(0.104), 64.70(0.045), 75.12(0.035)
• 93.61514 *12*	2.61 *4*	^{169}Yb(32.026 d)	63.12077(44.2), 197.95788(35.8), 177.21402(22.16)
93.628 *4*	33.7 *17*	^{91}Rb(58.4 s)	2564.19(12.5), 3599.67(10.4), 345.52(8.3)
93.64 *5*	0.100 *12*	^{140}Xe(13.60 s)	805.52(20), 1413.66(12.2), 1315.05(8.2)
93.70 *14*	31.4 *14*	^{116}Te(2.49 h)	628.63(3.22), 102.97(1.95), 637.9(0.755)
93.7 *2*	†3.0×10^3 *6*	^{158}Er(2.29 h)	71.91(†23300), 386.84(†111000), 248.58(†42000)
• 93.74 *5*	0.0007	^{253}Es(20.47 d)	41.79(0.050), 389.11(0.0264), 387.1(0.00810)
93.8 *1*	0.021 *5*	^{107}Ru(3.75 m)	194.05(9.9), 847.93(5.3), 462.61(3.66)
93.81 *10*	3.29 *22*	^{74}Kr(11.50 m)	89.65(31), 203.0(18.0), 296.67(9.9)
• 93.82 *6*	0.036 *4*	^{245}Cm(8500 y)	174.94(10), 132.99(2.77), 41.95(0.350)
93.88 *3*	0.022	^{163}Tm(1.810 h)	104.320(18.6), 69.229(11.6), 241.305(10.9)
93.88 *19*	†29 *5*	^{181}Ir(4.90 m)	107.64(†100), 1639.6(†52), 318.9(†46)
93.89 *8*	13.4 *7*	^{102}Sr(69 ms)	243.80(53), 150.15(18.0), 253.95(12.6)
93.8980 *22*	0.11 *5*	^{163}Tb(19.5 m)	351.138(26), 389.734(24.3), 494.534(23)
93.9 *2*	0.098 *10*	^{132}Sn(39.7 s)	340.53(49), 85.58(48.2), 899.04(44.8)
• 93.919 *6*	0.0591 *12*	^{160}Tb(72.3 d)	879.383(30.01), 298.580(25.51), 966.171(25.21)
93.919 *6*	†>0.09	^{160}Ho(5.02 h)	728.18(†100), 879.383(†65.9), 962.317(†59.1)
93.93 *8*	0.039 *6*	^{223}Fr(21.8 m)	50.13(36.0), 79.72(9.1), 234.81(3.0)
• 93.93 *8*	†90 *7*	^{227}Th(18.72 d)	235.971(†813), 50.13(†528), 256.25(†463)
93.96 *8*	1.67 *18*	^{80}Zn(0.545 s)	712.53(45.1), 715.40(33.8), 964.93(15.6)
94.0 *1*	0.128 *14*	^{146}Ba(2.22 s)	140.7(20.2), 251.2(19.6), 121.2(14.2)
94.0 *5*	0.046 *23*	^{159}Tm(9.13 m)	38.35(5.8), 84.8(5.8), 271.30(5.1)
94.00 *9*	3.7 *6*	^{181}Au(11.4 s)	198.60(4.4), 2022.4(4.2), 79.40(4.2)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
94.00 *9*		^{185}Hg(49.1 s)	14.5, 79.40
94 *5*	†3	^{189}W(11.5 m)	258(†100), 417(†96), 550(†28)
• 94 *5*		^{235}U(7.038×10^{8} y)	185.712(57.2), 143.764(10.96), 163.358(5.08)
94.05 *10*	>0.06	^{164}Yb(75.8 m)	40.928(1.147), 675.41(0.38), 390.6(0.31)
94.090 *20*	0.166 *24*	^{153}Dy(6.4 h)	80.723(11.10), 213.754(10.90), 99.659(10.51)
94.1 *2*	0.44 *5*	^{148}Ho(9.59 s)	1687.5(82.47), 660.8(58.94), 504.3(18.62)
94.10 *15*	0.14 *5*	^{157}Tm(3.63 m)	455.00(9.3), 385.5(8.8), 348.40(8.4)
94.1 *4*		^{165}Ta(31.0 s)	311.0, 199.4, 162.8
• 94.11 *10*	0.456 *18*	^{83}Sr(32.41 h)	762.65(30), 381.53(14.1), 418.37(4.41)
94.13 *3*	0.91 *7*	^{161}Er(3.21 h)	826.6(3.0), 211.15(12.2), 592.6(3.7)
94.17 *5*	†12.0 *20*	^{163}Lu(238 s)	163.08(†100), 54.00(†88), 396.34(†63)
94.2 *1*	0.046 *3*	^{86}Zr(16.5 h)	242.80(96), 29.10(21.6), 612.00(5.7)
94.2 *2*	4.8 *10*	^{173}Er(1.4 m)	895.2(54), 199.2(48), 192.8(47)
94.29 *7*	0.39 *3*	^{160}Yb(4.8 m)	173.74(42.0), 215.78(20.2), 140.35(9.3)
94.3	3.23	^{149}Ho(58 s)	1034.6(99.7), 1736.4(28.0), 372.1(25.3)
94.3 *1*	†1.5 *3*	^{185}Pt(33.0 m)	229.60(†100), 135.3(†80), 197.4(†74)
94.3 *3*	0.012 *3*	^{211}Pb(36.1 m)	404.853(3.78), 832.01(3.52), 427.088(1.76)
94.33 *3*	7.6 *6*	^{189}Pt(10.87 h)	721.41(9.3), 568.84(7.1), 243.37(7.0)
94.38 *3*	1.2 *5*	^{161}Tm(33 m)	45.54(5.00), 1648.1(9.50), 84.40(9.4)
94.4 *1*	1.4 *1*	^{117}Xe(61 s)	28.5(7.0), 221.3(10.0), 32.3(7.6)
94.40 *15*	0.018 *3*	^{151}Nd(12.44 m)	116.80(43.4), 255.68(16.4), 1180.89(14.8)
94.5 *3*	0.24 *8*	^{126}Ba(100 m)	233.6(19.6), 257.6(7.6), 241.0(6.0)
94.5 *1*	0.17 *17*	^{141}Tb(3.5 s)	293.3(16.8), 343.6(16.3), 198.4(14.8)
94.5 *2*	†0.13 *3*	^{155}Tm(21.6 s)	226.8(†100), 531.7(†20), 88.1(†17)
94.5 *2*	0.40 *4*	^{185}Ir(14.4 h)	254.4(13.3), 1828.8(10), 60.0(5.7)
94.59 *4*	0.016 *3*	^{185}Ta(49.4 m)	177.59(25.7), 173.68(22.6), 65.86(3.9)
94.6 *1*	†100	^{123}Ba(2.7 m)	123.5(†69), 30.6(†56), 116.1(†54)
94.6 *3*	†1.5 *9*	^{142}Xe(1.22 s)	571.83(†100), 657.05(†79), 538.24(†77)
94.63 *7*	0.233 *22*	^{153}Dy(6.4 h)	80.723(11.10), 213.754(10.90), 99.659(10.51)
94.66 *5*	0.8	^{233}Th(22.3 m)	86.477(2.7), 29.374(2.5), 459.222(1.4)
• 94.66 *5*	0.6 *2*	^{237}Np(2.14×10^{6} y)	29.374(15.0), 86.477(12.4), 143.249(0.43)
94.67 *8*	2.44 *20*	^{170}Ho(2.76 m)	258.2(37.0), 931.3(36.1), 181.6(23.8)
• 94.694 *8*	0.152 *7*	^{166}Ho(1.20×10^{3} y)	184.410(72.6), 810.276(58.08), 711.683(55.32)
94.700 *3*	3.58 *18*	^{165}Dy(2.334 h)	361.68(0.84), 633.415(0.568), 715.328(0.534)
94.73 *2*	†2.8 *18*	^{225}Fr(4.0 m)	182.3(†100), 31.50(†91), 225.1(†55)
• 94.73 *2*	0.267 *21*	^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
94.8 *1*	†100 *5*	^{105}Nb(2.95 s)	246.9(†79), 309.9(†41.9), 137.9(†38.8)
94.8 *4*	0.43 *9*	^{185}Au(4.25 m)	310.6(13), 243.1(6.6), 77.7(6)
94.86	†8	^{176}W(2.5 h)	100.20(†100), 61.29(†8), 84.14(†4.5)
• 94.86 *7*	0.00216 *24*	^{229}Pa(1.50 d)	40.09(0.104), 64.70(0.045), 75.12(0.035)
94.88 *10*	0.041 *13*	^{149}Nd(1.728 h)	211.309(25.9), 114.314(19.2), 270.166(10.7)
94.9		^{131}La(59 m)	108.081(25.0), 417.783(18.0), 365.162(16.9)
94.9 *1*	550 *12*	^{177}Re(14 m)	196.85(†1200), 79.65(†1010), 84.3(†890)
94.90 *5*	0.062 *14*	^{221}Rn(25 m)	186.38(21.6), 150.04(4.5), 216.90(2.6)
• 94.90 *5*	0.095 *9*	^{225}Ac(10.0 d)	99.91(1.01), 150.04(0.80), 99.63(0.62)
• 94.90 *5*	†0.75 *12*	^{227}Th(18.72 d)	235.971(†813), 50.13(†528), 256.25(†463)
• 94.9		^{254}Es(275.7 d)	63.0(2.0), 316(0.15), 304(0.07)
94.92 *8*	†2.2 *17*	^{225}Fr(4.0 m)	182.3(†100), 31.50(†91), 225.1(†55)
• 94.92 *8*	0.013 *3*	^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
94.989 *2*	2.87 *6*	^{133}Te(55.4 m)	912.671(55.28), 647.51(19.4), 863.955(15.6)
95 *1*	†11 *3*	^{103}Mo(67.5 s)	83.4(†100), 423.91(†69), 45.8(†57)
• 95.00 *12*	0.0051 *25*	^{131}Te(30 h)	773.67(49.9), 852.21(27.0), 793.75(18.10)
• 95.0 *5*		^{146}Eu(4.59 d)	747.2(98), 633.03(43), 634.07(37)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
95.0 *3*	†0.6	^{154}Nd(25.9 s)	151.703(†800), 799.55(†600), 180.693(†510)
95.0 *3*	0.10 *3*	^{192}Hg(4.85 h)	274.8(50.4), 157.2(7), 306.5(5.4)
95.0 *2*	0.018 *3*	^{211}Pb(36.1 m)	404.853(3.78), 832.01(3.52), 427.088(1.76)
95	†100	^{228}Pa(22 h)	310(†42), 240(†23), 280(†20)
95 *21*		^{258}Ha(4.4 s)	
95.05 *1*	†0.9 *1*	^{158}Ho(11.3 m)	218.21(†100.0), 98.91(†70), 945.7(†37)
95.1 *2*	0.13 *8*	^{105}Mo(35.6 s)	85.4(25.0), 76.50(19.3), 147.8(14.8)
95.1 *1*	†10 *1*	^{227}Rn(22.5 s)	162.14(†100), 739.2(†65), 686.2(†62)
95.2 *3*	0.07	^{153}Ho(2.0 m)	295.8(67), 637.0(5.36), 688.5(3.7)
95.2 *3*	0.04	^{154}Pm(1.73 m)	2057.76(17.1), 1393.9(14.4), 81.99(12.6)
95.2 *1*	†0.6 *3*	^{201}Po(8.9 m)	967.4(†100.0), 964.3(†85), 411.9(†33.0)
95.212 *2*	0.10 *3*	^{174}Tm(5.4 m)	366.526(92), 992.128(87), 272.918(86)
95.23 *4*	17.5 *14*	^{172}Ta(36.8 m)	214.02(46), 1109.27(12.4), 1330.41(6.76)
• 95.254 *18*	0.030 *3*	^{189}Re(24.3 h)	216.663(5.50), 219.395(4.54), 245.09(3.5)
• 95.254 *18*	0.38 *3*	^{189}Ir(13.2 d)	245.09(6), 69.537(3.5), 59.053(1.20)
95.27 *2*	0.24 *3*	^{167}Lu(51.5 m)	29.66(14.4), 239.22(8.6), 213.19(3.6)
95.2724 *21*		^{175}Tm(15.2 m)	514.868(65), 941.23(15), 363.942(12.7)
95.3 *1*	1.78 *12*	^{139}Pm(4.15 m)	402.8(15), 463.1(4.1), 367.8(3.52)
95.5 *2*	0.5 *1*	^{150}Tb(5.8 m)	638.05(100), 650.4(70), 438.37(42)
• 95.6		^{188}Ir(41.5 h)	155.032(29.7), 2214.62(18.7), 632.99(18)
95.6 *4*	†17 *3*	^{231}Fr(17.5 s)	432.6(†100), 454.1(†80)
95.6		^{247}Cf(3.11 h)	294.1(0.98), 447.8(0.55), 417.9(0.34)
95.69 *7*	0.0016	^{241}Np(13.9 m)	174.94(3.1), 132.99(0.86), 518.8(0.40)
• 95.69 *7*	0.008 *3*	^{245}Cm(8500 y)	174.94(10), 132.99(2.77), 41.95(0.350)
95.7 *2*	4.5 *4*	^{121}Xe(40.1 m)	252.7(13), 132.8(10.9), 445.2(7.7)
95.7 *1*	7.0 *8*	^{159}Eu(18.1 m)	67.8(19), 78.6(9.1), 146.4(3.3)
• 95.7		^{235}U(7.038×10^{8} y)	185.712(57.2), 143.764(10.96), 163.358(5.08)
95.73 *3*	0.85 *9*	^{79}As(9.01 m)	364.9(1.06), 432.1(0.850), 879.2(0.80)
95.74 *20*	3.3	^{113}Pd(93 s)	643.7(3.0), 739.63(2.4), 222.06(1.2)
95.8 *1*	0.011 *6*	^{157}Eu(15.18 h)	63.929(23.0), 410.723(17.5), 370.509(11.0)
95.9 *1*	0.82 *10*	^{176}Tm(1.9 m)	189.57(44.5), 1069.3(34), 381.8(21.8)
95.91 *4*	0.81 *6*	^{100}Sr(202 ms)	963.85(22.0), 898.50(18.9), 65.46(15.2)
95.931 *4*	0.00092 *17*	^{165}Dy(2.334 h)	94.700(3.58), 361.68(0.84), 633.415(0.568)
95.931 *4*	0.039 *3*	^{165}Dy(1.257 m)	515.467(1.53), 361.68(0.534), 153.803(0.242)
95.94 *4*	0.69 *4*	^{100}Sr(202 ms)	963.85(22.0), 898.50(18.9), 65.46(15.2)
96.0 *5*	†100 *10*	^{19}N(0.27 s)	3137.8(†76), 709.2(†63)
96.0 *3*	0.25	^{113}Pd(93 s)	95.74(3.3), 643.7(3.0), 739.63(2.4)
96.0 *6*	†38 *3*	^{119}Xe(5.8 m)	231.8(†100), 98.5(†95), 461.5(†91)
• 96.0		^{231}Pa(32760 y)	27.36(10.3), 300.07(2.46), 302.65(2.2)
• 96 *3*	0.012	^{246}Cf(35.7 h)	42.13(0.014), 146(0.0035)
96.06 *7*	2.6 *4*	^{183}Au(42.0 s)	161.18(9.4), 214.13(5.9), 313.08(5.0)
• 96.09 *2*	0.086 *11*	^{235}U(7.038×10^{8} y)	185.712(57.2), 143.764(10.96), 163.358(5.08)
96.1 *7*	0.17 *4*	^{129}Sb(4.40 h)	812.8(43), 914.6(20.0), 544.7(17.9)
96.1		^{173}Er(1.4 m)	895.2(54), 199.2(48), 192.8(47)
• 96.10 *14*	†4.4 *12*	^{227}Th(18.72 d)	235.971(†813), 50.13(†528), 256.25(†463)
• 96.118 *5*	2.2×10^{-5} *4*	^{239}Pu(24110 y)	51.624(0.007100), 38.661(0.000500), 129.297(0.00631)
96.15 *5*	0.021 *5*	^{221}Rn(25 m)	186.38(21.6), 150.04(4.5), 216.90(2.6)
• 96.15 *5*	0.031 *3*	^{225}Ac(10.0 d)	99.91(1.01), 150.04(0.80), 99.63(0.62)
96.2 *3*	†48 *5*	^{109}Tc(0.87 s)	194.6(†100), 128.7(†51), 68.8(†46)
96.2 *2*	0.037 *2*	^{113}Ag(5.37 h)	298.58(10), 258.8(1.64), 316.3(1.343)
• 96.224 *2*	0.00127 *19*	^{233}U(1.592×10^{5} y)	42.44(0.0862), 97.134(0.020), 54.699(0.0182)
96.27 *5*	0.040 *8*	^{153}Dy(6.4 h)	80.723(11.10), 213.754(10.90), 99.659(10.51)
• 96.28 *6*	0.036 *3*	^{252}Fm(25.39 h)	41.53(0.011)
• 96.3 *1*	0.0091 *14*	^{177}Ta(56.56 h)	112.9498(7.2), 208.3664(0.94), 1057.8(0.29)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
• 96.3 *1*	0.0056 *6*	^{254}Es(39.3 h)	211.80(0.096), 177.30(0.056), 71.30(0.043)
96.34 *9*	0.20 *6*	^{66}Ge(2.26 h)	43.89(28.7), 381.85(28), 272.97(10.4)
96.36 *8*	0.63 *9*	^{183}Ir(58 m)	392.52(10.4), 228.70(6.9), 87.67(5.6)
• 96.4 *2*	0.008 *3*	^{131}Te(30 h)	773.67(49.9), 852.21(27.0), 793.75(18.10)
96.4 *1*	11.6 *18*	^{141}Gd(24.5 s)	351.1(89), 223.9(64), 574.9(51)
96.4 *4*	0.0138 *23*	^{243}Pu(4.956 h)	84.0(23), 41.8(0.76), 381.7(0.56)
96.44 *8*	1.03 *10*	^{174}W(31 m)	35.42(14.1), 428.83(12.7), 328.68(9.5)
96.442 *9*	0.60 *3*	^{179}Re(19.5 m)	430.221(28), 289.968(26.9), 1680.244(13.0)
96.49 *5*	†9.6 *18*	^{163}Lu(238 s)	163.08(†100), 54.00(†88), 396.34(†63)
96.5 *3*		^{122}Ba(1.95 m)	550.7, 388.7, 231.0
• 96.517 *9*	3.28 *16*	^{191}Pt(2.9 d)	538.90(13.7), 409.44(8.0), 359.90(6.0)
96.54 *5*	4.2 *4*	^{130}In(0.55 s)	2258.79(88), 391.39(11.4), 2320.72(4.1)
96.54 *15*	0.032	^{204}Bi(11.22 h)	899.15(98), 374.72(82), 984.02(59)
96.58 *6*	0.58 *6*	^{148}Ba(0.607 s)	56.08(29.20), 133.53(3.88), 415.78(3.59)
96.6 *2*	0.109 *23*	^{76}Kr(14.8 h)	315.7(39), 270.2(21.1), 45.48(19.5)
96.6 *5*	0.009	^{107}Rh(21.7 m)	302.77(66), 392.47(8.8), 312.21(4.8)
96.6 *2*	17	^{145}Ba(4.31 s)	91.9(7), 65.9(5), 544.2(>5.0)
96.6 *2*	†12 *3*	^{154}Lu(1.12 s)	821.3(†100), 694.7(†97), 433.6(†83)
96.65 *8*	0.83 *18*	^{159}Sm(11.37 s)	189.79(46), 861.97(18.2), 254.43(9.8)
96.7 *6*	0.16 *8*	^{92}Rb(4.492 s)	814.98(33), 2820.6(6.2), 569.8(5.6)
96.7 *1*	†7 *2*	^{130}Sn(1.7 m)	144.9(†100), 899.2(†49), 84.7(†42)
• 96.70 *5*	0.17 *8*	^{188}Pt(10.2 d)	187.59(19.4), 195.05(18.6), 381.43(7.5)
• 96.7		^{241}Am(432.2 y)	59.537(†60), 26.345(†1000×10^{9}), 33.195(†6000×10^{8})
• 96.73 *8*	0.20 *7*	^{111}Ag(7.45 d)	342.118(7), 245.422(1.24), 620.3(0.019)
96.73 *8*	0.00017	^{111}Ag(64.8 s)	245.422(0.50), 620.3(0.121), 171.28(0.12)
• 96.7345 *11*	3.42 *6*	^{75}Se(119.779 d)	264.6584(58.50), 136.0008(58.3), 279.5441(24.79)
96.750 *20*	0.067 *12*	^{153}Dy(6.4 h)	80.723(11.10), 213.754(10.90), 99.659(10.51)
96.76 *2*		^{223}Rn(23.2 m)	591.8(†100), 635.2(†76), 416.0(†55)
96.8 *3*	0.68 *11*	^{113}Rh(2.72 s)	189.7(17.0), 409.3(15.9), 219.6(3.88)
96.8 *3*	0.7	^{118}Pd(1.9 s)	125.4(34), 125.4(34), 224.2(20.1)
96.8 *2*		^{151}Ce(1.02 s)	118.57, 84.79, 52.6
96.8		^{221}Fr(4.9 m)	218.19(11.6), 410.7(0.14), 99.5(0.11)
96.8 *2*	†13	^{256}Es(7.6 h)	861.8(†100), 231.1(†61), 172.6(†49)
• 96.82 *3*	0.099 *8*	^{193}Os(30.5 h)	139.03(4.27), 460.50(3.95), 73.039(3.2)
• 96.84 *3*	0.095 *5*	^{231}Pa(32760 y)	27.36(10.3), 300.07(2.46), 302.65(2.2)
• 96.85 *5*	0.00223 *12*	^{166}Ho(1.20×10^{3} y)	184.410(72.6), 810.276(58.08), 711.683(55.32)
96.85 *5*	0.0123 *6*	^{166}Tm(7.70 h)	778.817(18.9), 2052.36(17.2), 184.410(16.1)
96.87 *7*	0.0377 *23*	^{85}Br(2.90 m)	802.41(2.56), 924.63(1.63), 919.06(0.65)
• 96.8817 *7*	0.007	^{153}Sm(46.27 h)	103.1807(31.4), 69.67340(4.85), 97.4316(0.847)
• 96.8817 *7*	>0.0048	^{153}Gd(241.6 d)	97.4316(30), 103.1807(21.4), 69.67340(2.54)
96.90 *10*	1.25 *14*	^{102}Zr(2.9 s)	599.60(13.9), 535.30(10.6), 64.50(8.9)
96.9	0.034 *13*	^{149}Nd(1.728 h)	211.309(25.9), 114.314(19.2), 270.166(10.7)
96.91 *2*	1.04 *5*	^{155}Ho(48 m)	240.19(12.5), 136.30(5.00), 45.38(5)
96.95 *8*	7.6 *15*	^{194}Tl(32.8 m)	636.5(99), 428.0(99), 748.9(76)
97.0 *5*	†3.5 *6*	^{106}Mo(8.4 s)	465.70(†100), 54.00(†54), 618.60(†25)
97.0 *3*	0.19 *3*	^{120}Xe(40 m)	25.1(30), 72.6(9), 178.1(6.8)
97.001 *12*	1.45 *10*	^{149}Nd(1.728 h)	211.309(25.9), 114.314(19.2), 270.166(10.7)
97.04 *7*	0.124 *20*	^{161}Gd(3.66 m)	360.94(0.59), 314.92(22.7), 102.315(13.9)
97.1	1.6	^{83}Zr(44 s)	55.55(8), 104.97(5.70), 475.1(5.1)
97.1 *3*	†33 *6*	^{117}Rh(0.44 s)	131.8(†100), 34.6(†32.7), 481.6
97.10 *17*		^{223}Th(0.60 s)	151.98, 88.00, 75.2
• 97.134 *1*	0.020 *3*	^{233}U(1.592×10^{5} y)	42.44(0.0862), 54.699(0.0182), 29.192(0.0120)
97.17 *10*	0.24 *8*	^{234}Pa(6.70 h)	131.30(18), 946.00(13.4), 883.24(9.6)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
97.2 *3*	0.47 *8*	^{127}Sn(2.10 h)	1114.3(39), 1095.6(20), 823.1(10.9)
97.2 *1*	†5.0 *6*	^{206}Rn(5.67 m)	497.7(†100), 324.5(†96), 386.6(†61)
97.261 *10*	1.76 *4*	^{133}Ce(4.9 h)	477.22(39), 510.36(20.7), 58.39(19.2)
97.261 *10*	<0.22	^{133}Ce(97 m)	76.9(15.8), 557.7(11.3), 376.7(0.9)
97.27 *4*	0.028 *3*	^{207}At(1.80 h)	814.41(44.5), 588.33(19.2), 300.654(12.8)
97.3 *1*	23	^{123}Cs(5.94 m)	596.7(10.1), 83.3(4.1), 307.0(3.9)
97.3 *2*	0.0116 *13*	^{211}Pb(36.1 m)	404.853(3.78), 832.01(3.52), 427.088(1.76)
97.34 *3*	0.040 *9*	^{164}Yb(75.8 m)	40.928(1.147), 675.41(0.38), 390.6(0.31)
97.4 *10*	0.17 *6*	^{88}Nb(7.8 m)	1057.01(89.3), 1082.53(53.9), 399.41(45.7)
97.4 *2*	3.13 *19*	^{102}Cd(5.5 m)	481.0(63), 1036.6(12.8), 505.1(9.6)
97.4	0.8	^{147}Ba(0.893 s)	167.4(11), 105.2(4.8), 196.1(4.8)
97.4	0.11	^{147}Ba(0.893 s)	167.4(11), 105.2(4.8), 196.1(4.8)
97.4 *3*	0.6 *3*	^{147}La(4.015 s)	117.718(12), 186.320(6.48), 438.30(5.04)
97.4 *2*	4.2 *8*	^{185}Ir(14.4 h)	254.4(13.3), 1828.8(10), 60.0(5.7)
97.4 *1*	†1.7 *5*	^{185}Hg(21.6 s)	222.8(†100.0), 258.7(†98), 212.5(†58)
97.43 *17*	†2.3 *3*	^{165}Lu(10.74 m)	132.49(†100), 120.60(†100), 174.25(†47.0)
• 97.4316 *4*	0.847 *11*	^{153}Sm(46.27 h)	103.1807(31.4), 69.67340(4.85), 75.4226(0.350)
• 97.4316 *4*	30	^{153}Gd(241.6 d)	103.1807(21.4), 69.67340(2.54), 83.3676(0.211)
97.44 *8*	†0.32 *6*	^{184}Ir(3.09 h)	263.97(†100), 119.80(†45), 390.38(†38)
97.45 *5*	0.77 *7*	^{159}Er(36 m)	624.5(33), 649.1(23.4), 205.92(9.7)
• 97.5 *3*	0.07	^{101}Rh(3.3 y)	127.23(73), 197.6(70.8), 324.8(13.4)
97.5 *2*	0.67 *22*	^{129}Sn(6.9 m)	1161.31(56.0), 1128.44(50), 760.8(16.8)
97.5		^{168}Hf(25.95 m)	183.8(†100), 157.2(†68), 324.1
97.5 *8*	†1849 *96*	^{179}Ir(79 s)	86.31(†1370), 45.20(†1329), 100.21(†1055)
97.5 *4*	1.12 *20*	^{185}Au(4.25 m)	310.6(13), 243.1(6.6), 77.7(6)
97.5		^{207}At(1.80 h)	814.41(44.5), 588.33(19.2), 300.654(12.8)
97.5	2.8 *6*	^{212}Fr(20.0 m)	1273.8(46), 227.72(43), 1185.6(14.1)
97.51 *5*	0.126 *16*	^{200}Pt(12.5 h)	76.21(13), 135.90(3.24), 243.71(2.49)
97.55 *5*	0.28 *4*	^{187}Pt(2.35 h)	106.46(9), 201.52(6.4), 110.04(5.7)
• 97.55 *5*	0.023 *1*	^{231}Th(25.52 h)	25.646(14.5), 84.216(6.6), 89.944(0.94)
• 97.576 *20*		^{239}Pu(24110 y)	51.624(0.007100), 38.661(0.000500), 129.297(0.00631)
97.58 *13*	0.24 *4*	^{202}Bi(1.72 h)	960.67(99), 422.18(83.7), 657.49(60.6)
97.6 *4*	†5.8 *6*	^{166}W(18.8 s)	125.8(†310), 224.6(†24.0), 172.5(†17.8)
97.70 *4*	1.05 *13*	^{117}Cd(3.36 h)	1997.33(26), 1065.98(23.1), 564.397(14.7)
97.7 *1*	0.37 *3*	^{146}Ba(2.22 s)	140.7(20.2), 251.2(19.6), 121.2(14.2)
97.7 *2*	†80 *8*	^{232}Ra(250 s)	470.9(†100), 478.5(†69), 105.2(†66)
97.785 *3*	43.1	^{99}Nb(15.0 s)	137.723(90.6)
97.785 *3*	7	^{99}Nb(2.6 m)	253.50(3.64), 2641.3(3.64), 2851.5(3.05)
97.79 *9*	†50 *10*	^{182}Lu(2.0 m)	818.4(†100), 720.6(†100), 808.1(†50)
97.8 *4*	†57 *3*	^{121}La(5.3 s)	139.3(†100), 134.4(†73), 213.3(†57)
97.8 *1*	0.133 *22*	^{133}Te(55.4 m)	912.671(55.28), 647.51(19.4), 863.955(15.6)
97.8 *1*	†12 *4*	^{135}Pm(49 s)	198.5(†100), 207.2(†70), 463.5(†62)
• 97.8	>0.0006	^{189}Ir(13.2 d)	245.09(6), 69.537(3.5), 59.053(1.20)
• 97.8324 *15*	0.08 *2*	^{182}Hf(9×10^6 y)	270.4031(80), 156.088(7.0), 114.3152(2.6)
97.8324 *15*	3.8 *14*	^{182}Hf(61.5 m)	942.80(18.8), 799.64(9.4), 114.3152(6.2)
97.87 *5*	0.016 *9*	^{151}Nd(12.44 m)	116.80(43.4), 255.68(16.4), 1180.89(14.8)
97.90 *13*	0.105 *21*	^{187}Au(8.4 m)	1331.81(7.0), 1408.23(3.06), 914.73(3.02)
97.9 *1*	4.0 *20*	^{210}Tl(1.30 m)	799.7(99), 298(79), 1316(21)
• 97.93 *15*	0.096 *14*	^{190}Ir(11.78 d)	186.718(52.4), 605.24(39.9), 518.55(34.0)
97.98 *5*	66	^{69}Se(27.4 s)	66.4(24.8), 691.8(16.6), 789.7(4.7)
98 *2*	†6.3 *5*	^{94}Kr(0.20 s)	629.2(†100), 764.5(†71), 219.466(†67.4)
98.0 *1*	47	^{101}Cd(1.2 m)	1722.5(11), 1259.3(8), 924.7(7)
98.0 *2*	<0.1	^{104}Mo(60 s)	68.8(55), 69.7(17.8), 36.3(14)
98.0 *2*	0.77 *5*	^{119}Cd(2.20 m)	1025.0(24.8), 2021.3(22.6), 720.7(17.9)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
98.0 *1*	1.29 *8*	^{148}Ce(56 s)	269.519(17.0), 291.724(16.7), 121.169(13.2)
98.0 *2*	†0.47 *19*	^{155}Tm(21.6 s)	226.8(†100), 531.7(†20), 88.1(†17)
98.0 *3*	†1.8 *3*	^{228}U(9.1 m)	246(†0.42), 185.7(†0.32), 152(†0.21)
• 98.005	>0.0018	^{169}Yb(32.026 d)	63.12077(44.2), 197.95788(35.8), 177.21402(22.16)
98.028 *3*	0.152 *12*	^{161}Ho(2.48 h)	25.65150(27), 103.062(3.9), 77.414(1.91)
• 98.05 *2*	0.36 *3*	^{151}Pm(28.40 h)	340.08(23), 167.75(8.3), 275.21(6.8)
98.09 *10*	0.32 *11*	^{164}Tb(3.0 m)	168.838(25.4), 754.80(23.3), 215.07(21)
• 98.09 *5*	0.0010	^{253}Es(20.47 d)	41.79(0.050), 389.11(0.0264), 387.1(0.00810)
98.1	0.76 *18*	^{148}Ba(0.607 s)	56.08(29.20), 133.53(3.88), 415.78(3.59)
98.1 *2*	0.150 *18*	^{149}Tb(4.118 h)	352.24(29.43), 164.98(26.4), 388.57(18.37)
98.1 *3*	0.3 *1*	^{200}Bi(36.4 m)	1026.5(100), 462.34(98), 419.70(91)
98.11 *5*	†5.4 *10*	^{163}Lu(238 s)	163.08(†100), 54.00(†88), 396.34(†63)
98.166 *3*	1.55 *8*	^{148}Ce(56 s)	269.519(17.0), 291.724(16.7), 121.169(13.2)
98.19 *9*	†0.19 *9*	^{158}Ho(11.3 m)	218.21(†100.0), 98.91(†70), 945.7(†37)
98.197 *27*	0.037 *5*	^{131}La(59 m)	108.081(25.0), 417.783(18.0), 365.162(16.9)
98.2 *5*	0.00139 *17*	^{107}Cd(6.50 h)	93.124(1.45), 828.93(0.17), 796.462(0.0665)
98.2 *5*	†26 *3*	^{121}Ba(29.7 s)	111.6(†100), 99.2(†86), 210.8(†61)
98.2 *1*	0.15 *4*	^{188}Hg(3.25 m)	66.7(63), 190.1(4.40), 82.7(2.6)
98.24 *5*	1.18 *8*	^{160}Yb(4.8 m)	173.74(42.0), 215.78(20.2), 140.35(9.3)
98.25 *2*	0.082 *8*	^{167}Yb(17.5 m)	113.34(55.3), 106.18(22.5), 176.25(21)
98.3 *2*	†100	^{101}Y(448 ms)	133.8(†18.8), 232.1(†11.9), 661.8(†11.3)
• 98.3 *1*	0.018 *4*	^{131}Te(30 h)	773.67(49.9), 852.21(27.0), 793.75(18.10)
98.35 *15*	†3.8 *10*	^{155}Nd(8.9 s)	180.574(†100), 418.99(†75), 955.08(†50)
• 98.36 *3*	0.010	^{243}Am(7370 y)	74.664(68), 43.533(5.93), 117.84(0.57)
• 98.37 *5*	0.34 *3*	^{188}Pt(10.2 d)	187.59(19.4), 195.05(18.6), 381.43(7.5)
98.44 *9*	0.036 *5*	^{183}Au(42.0 s)	161.18(9.4), 214.13(5.9), 313.08(5.0)
98.48 *17*	†4.0 *6*	^{181}Pt(51 s)	289.29(†100), 111.97(†100), 230.15(†92)
98.5 *1*	0.062 *7*	^{71}Zn(3.96 h)	386.28(93), 487.38(62), 620.18(57)
98.5 *3*	†7.2 *5*	^{109}Tc(0.87 s)	194.6(†100), 128.7(†51), 96.2(†48)
98.5 *5*	†95 *6*	^{119}Xe(5.8 m)	231.8(†100), 461.5(†91), 207.8(†60)
98.5	2.89 *6*	^{148}Ba(0.607 s)	56.08(29.20), 133.53(3.88), 415.78(3.59)
98.5 *1*	†9 *3*	^{185}Hg(21.6 s)	222.8(†100.0), 258.7(†98), 212.5(†58)
98.5 *4*	0.6 *3*	^{186}Tl(27.5 s)	405.43(92), 402.72(45.9), 356.84(29.3)
• 98.530 *20*	2.46 *4*	^{148}Pm(41.29 d)	550.284(94.5), 629.987(89), 725.673(32.7)
• 98.530 *20*	0.101 *3*	^{148}Eu(54.5 d)	550.284(98.5), 629.987(71.9), 611.293(20.5)
98.55 *6*	3.2 *3*	^{146}Ce(13.52 m)	316.74(56), 218.23(20.8), 264.56(9.0)
98.55 *10*	4.2	^{170}Hf(16.01 h)	164.78(33), 620.7(23), 120.17(19)
98.58 *5*	0.891 *20*	^{223}Ac(2.10 m)	191.3(0.58), 83.55(0.57), 434.2(0.52)
• 98.60 *5*		^{165}Tm(30.06 h)	242.917(35.5), 47.155(16.9), 297.369(12.71)
98.60 *9*	3.5 *13*	^{181}Lu(3.5 m)	652.5(22.0), 205.94(16.1), 574.9(15.4)
98.68 *3*		^{86}Y(48 m)	627.21(0.69), 1153.01(0.69), 1076.64(0.69)
98.7 *1*	†190 *95*	^{157}Ho(12.6 m)	279.97(†47600), 341.16(†37000), 193.41(†15200)
• 98.70 *8*	0.0166 *24*	^{193}Os(30.5 h)	139.03(4.27), 460.50(3.95), 73.039(3.2)
98.7 *2*	0.0019	^{255}Fm(20.07 h)	81.477(0.81), 58.477(0.67), 80.92(0.27)
98.7 *2*	0.001	^{255}Fm(20.07 h)	81.477(0.81), 58.477(0.67), 80.92(0.27)
• 98.71 *3*	0.059 *9*	^{151}Pm(28.40 h)	340.08(23), 167.75(8.3), 275.21(6.8)
98.72 *10*	0.21 *11*	^{164}Tb(3.0 m)	168.838(25.4), 754.80(23.3), 215.07(21)
• 98.78 *2*	0.00122 *4*	^{239}Pu(24110 y)	51.624(0.007100), 38.661(0.000500), 129.297(0.00631)
98.8 *1*		^{125}La(76 s)	67.6(34), 43.6(3.5), 985.2
98.80 *15*	0.00084 *17*	^{165}Dy(2.334 h)	94.700(3.58), 361.68(0.84), 633.415(0.568)
98.8 *1*	0.38 *4*	^{188}Hg(3.25 m)	66.7(63), 190.1(4.40), 82.7(2.6)
98.85 *5*	10	^{195}Ir(2.5 h)	211.407(2.4), 30.898(1.3), 129.70(1.2)
98.85 *5*	10	^{195}Ir(3.8 h)	684.88(9.4), 432.86(9), 319.90(9.4)
• 98.85 *5*	10.9 *5*	^{195}Au(186.09 d)	129.70(0.817), 30.898(0.75), 211.407(0.0109)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
98.860 *13*	4.81 *20*	^{240}Np(61.9 m)	566.34(25.3), 973.9(23.8), 600.57(18.4)
98.860 *13*	0.17 *3*	^{240}Np(7.22 m)	554.60(20.9), 597.40(11.7), 1496.9(1.33)
• 98.860 *13*	1.5 *2*	^{240}Am(50.8 h)	987.76(73.2), 888.80(25.1), 42.824(0.09)
• 98.860 *13*	0.0001470 *15*	^{244}Cm(18.10 y)	42.824(.0044100), 152.63(<4.9×10^{-7}), 554.60(0.000079)
98.9 *1*	0.61 *23*	^{194}Tl(32.8 m)	636.5(99), 428.0(99), 748.9(76)
• 98.91 *1*	4.29 *13*	^{158}Tb(180 y)	218.21(0.933)
98.91 *1*		^{158}Ho(21.3 m)	406.14(†100), 838.9(†84.3), 1484.1(†66.2)
98.91 *1*	†70 *5*	^{158}Ho(11.3 m)	218.21(†100.0), 945.7(†37), 948.8(†34.5)
98.97 *12*	0.78 *7*	^{195}Pb(15.0 m)	383.64(106.9), 394.21(44), 878.40(24.2)
• 98.97 *2*	>0.0020	^{237}Pu(45.2 d)	59.537(3.28), 26.345(0.221), 33.195(0.0745)
• 98.97 *2*	†2.03×10^{8} *3*	^{241}Am(432.2 y)	59.537(†60), 26.345(†1000×10^{9}), 33.195(†6000×10^{8})
98.982 *2*	0.066 *10*	^{168}Ho(2.99 m)	741.356(36.6), 821.164(34.5), 815.990(18.6)
• 98.982 *2*	0.147 *21*	^{168}Tm(93.1 d)	198.241(52.39), 815.990(48.99), 447.515(23.05)
98.99 *3*	12.4 *7*	^{148}Ce(56 s)	269.519(17.0), 291.724(16.7), 121.169(13.2)
99.0 *2*	0.54 *11*	^{120}Xe(40 m)	25.1(30), 72.6(9), 178.1(6.8)
99.0 *2*	1.6 *3*	^{120}Xe(40 m)	25.1(30), 72.6(9), 178.1(6.8)
• 99.010 *2*	0.087 *4*	^{155}Tb(5.32 d)	86.545(32.0), 105.305(25), 180.103(7.45)
99.01 *14*	†2.5	^{181}Pt(51 s)	289.29(†100), 111.97(†100), 230.15(†92)
• 99.0792 *4*	6.7 *3*	^{183}Ta(5.1 d)	246.0591(27), 353.9912(11.2), 107.9322(11.0)
• 99.0792 *4*	2.69 *5*	^{183}Re(70.0 d)	162.3219(23.3), 46.4839(7.97), 291.7238(3.05)
99.1 *1*	†9.1 *13*	^{171}Hf(12.1 h)	122.0(†100), 662.2(†83), 347.18(†47)
99.163 *6*	0.128 *7*	^{250}Bk(3.217 h)	989.12(45), 1031.85(35.6), 1028.65(4.91)
99.163 *6*		^{250}Es(2.22 h)	989.12(13.3), 1031.85(10.6), 828.82(5.5)
99.163 *6*	0.78 *7*	^{250}Es(8.6 h)	828.82(72), 303.41(21.6), 349.4(19.8)
99.163 *6*	0.031 *3*	^{254}Fm(3.240 h)	42.723(0.0130), 154.35(0.0010)
99.20 *3*	1.27 *6*	^{100}Sr(202 ms)	963.85(22.0), 898.50(18.9), 65.46(15.2)
99.2 *5*	†86 *9*	^{121}Ba(29.7 s)	111.6(†100), 210.8(†61), 110.6(†39)
99.2		^{225}Rn(4.5 m)	207.2, 178.7, 169.7
99.2 *2*	0.165 *12*	^{246}Am(25.0 m)	1078.86(27.7), 798.80(25), 1062.04(17.1)
99.2 *2*		^{246}Am(25.0 m)	1078.86(27.7), 798.80(25), 1062.04(17.1)
99.2 *2*	4.8 *11*	^{246}Am(39 m)	679.0(53), 205.0(36), 152.9(25)
• 99.2 *2*		^{246}Bk(1.80 d)	798.80(61), 1081.40(5.8), 833.60(5.0)
• 99.279 *3*	0.120 *7*	^{231}Th(25.52 h)	25.646(14.5), 84.216(6.6), 89.944(0.94)
• 99.279 *3*	†7.7×10^{3} *8*	^{235}Np(396.1 d)	25.646(†600000), 84.216(†265000), 81.227(†58000)
99.289 *2*	0.18 *4*	^{168}Ho(2.99 m)	741.356(36.6), 821.164(34.5), 815.990(18.6)
• 99.289 *2*	4.071 *21*	^{168}Tm(93.1 d)	198.241(52.39), 815.990(48.99), 447.515(23.05)
99.3 *3*		^{203}At(7.4 m)	639.4(†100), 641.5(†55.8), 738.1(†38.4)
99.383 *4*	4.6 *8*	^{244}Am(10.1 h)	743.971(66), 897.848(28), 153.863(16)
99.4 *1*	0.10 *5*	^{117}Cd(3.36 h)	1997.33(26), 1065.98(23.1), 564.397(14.7)
99.4 *3*	0.66 *17*	^{192}Hg(4.85 h)	274.8(50.4), 157.2(7), 306.5(5.4)
99.419 *10*	0.235 *11*	^{159}Ho(33.05 m)	121.012(36.2), 131.973(23.6), 309.594(17.2)
99.46 *5*	0.88 *4*	^{160}Yb(4.8 m)	173.74(42.0), 215.78(20.2), 140.35(9.3)
• 99.49 *2*	2.0×10^{-5} *12*	^{140}Ba(12.752 d)	537.261(24.39), 29.9640(14.1), 162.660(6.21)
99.497 *6*	1.28 *8*	^{228}Ac(6.15 h)	911.205(26.6), 968.971(16.2), 338.322(11.3)
99.497 *6*	0.23 *9*	^{228}Pa(22 h)	911.205(4.19), 463.005(1.250), 964.770(4.25)
99.5 *5*	†3.8	^{220}Fr(27.4 s)	45.0(†100), 106.0(†72), 161.5(†65)
99.5 *2*	0.11 *4*	^{221}Fr(4.9 m)	218.19(11.6), 410.7(0.14), 150.0(0.07)
99.53 *20*	0.45 *4*	^{166}Lu(2.65 m)	228.12(77.3), 337.50(41), 367.95(31.4)
99.55 *6*		^{168}Lu(5.5 m)	1483.65(†100), 228.58(†97), 111.8(†68)
99.55 *6*		^{168}Lu(6.7 m)	198.82(28), 979.22(20), 896.12(15)
99.56 *10*	0.034 *10*	^{140}Xe(13.60 s)	805.52(20), 1413.66(12.2), 1315.05(8.2)
99.6 *1*		^{169}Ta(4.9 m)	511.0(†20.6), 28.80(†18.3), 192.4(†8)
99.6 *3*	2.5 *5*	^{183}Lu(58 s)	1125.3(25.0), 1056.8(16.5), 168.1(7.5)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
• 99.6 *1*		^{227}Th(18.72 d)	235.971(†813), 50.13(†528), 256.25(†463)
• 99.6 *2*		^{227}Th(18.72 d)	235.971(†813), 50.13(†528), 256.25(†463)
99.63 *3*	0.43 *11*	^{161}Er(3.21 h)	826.6(3.0), 211.15(12.2), 592.6(3.7)
99.63 *5*	0.21 *3*	^{221}Rn(25 m)	186.38(21.6), 150.04(4.5), 216.90(2.6)
• 99.63 *5*	0.62 *3*	^{225}Ac(10.0 d)	99.91(1.01), 150.04(0.80), 188.00(0.54)
99.659 *2*	10.51 *10*	^{153}Dy(6.4 h)	80.723(11.10), 213.754(10.90), 254.259(8.58)
99.76 *4*	2.37 *25*	^{161}Tm(33 m)	45.54(5.00), 1648.1(9.50), 84.40(9.4)
99.8	13.2 *23*	^{179}Pt(21.2 s)	171.7(16), 193.1(14.2), 1565.4(11.1)
99.8 *3*	0.3 *1*	^{181}Os(105 m)	238.75(44), 826.77(20), 118.03(12.9)
99.818 *15*	0.017 *7*	^{116}In(54.41 m)	1293.54(84.4), 1097.3(56.2), 416.86(28.9)
99.818 *15*	32 *3*	^{116}Sb(60.3 m)	1293.54(100), 972.550(72), 542.872(52)
99.853 *3*	3.2 *5*	^{234}Pa(6.70 h)	131.30(18), 946.00(13.4), 883.24(9.6)
99.853 *3*		^{234}Pa(1.17 m)	1001.03(†837000), 766.38(†294000), 742.81(†80000)
• 99.853 *3*	0.0314 *14*	^{234}Np(4.4 d)	1558.31(18.72), 1527.21(11.2), 1601.80(9.1)
• 99.853 *3*	0.00735 *8*	^{238}Pu(87.74 y)	43.498(0.0395), 152.720(0.000937), 766.38(0.000022)
99.88 *4*	0.136 *23*	^{193}Au(17.65 h)	186.17(10.1), 255.57(6.7), 268.22(3.9)
99.91 *5*	1.5 *5*	^{221}Rn(25 m)	186.38(21.6), 150.04(4.5), 216.90(2.6)
• 99.91 *5*	1.01 *5*	^{225}Ac(10.0 d)	150.04(0.80), 99.63(0.62), 188.00(0.54)
99.93 *10*	2.5	^{170}Hf(16.01 h)	164.78(33), 620.7(23), 120.17(19)
99.954 *7*	0.132 *12*	^{207}Po(5.80 h)	992.33(59.3), 742.64(28.2), 911.79(16.95)
• 99.961 *15*	0.040 *4*	^{144}Ce(284.893 d)	133.515(11.09), 80.120(1.36), 40.98(0.257)
• 100.0 *1*	0.096 *5*	^{131}Te(30 h)	773.67(49.9), 852.21(27.0), 793.75(18.10)
• 100	110000	^{227}Ac(21.773 y)	69.21(†78000), 160.26(†70000), 147.48(†37000)
• 100		^{249}Cf(351 y)	388.16(66), 333.37(14.6), 252.80(2.50)
• 100.02 *1*	2.54 *16*	^{151}Pm(28.40 h)	340.08(23), 167.75(8.3), 275.21(6.8)
100.03 *5*	†0.15 *4*	^{229}Ac(62.7 m)	164.522(†100), 569.1(†91), 261.92(†39)
• 100.03 *5*	5.0×10^{-5} *8*	^{233}U(1.592×10^{5} y)	42.44(0.0862), 97.134(0.020), 54.699(0.0182)
100.04 *10*	0.00169 *9*	^{163}Er(75.0 m)	1113.5(0.0490), 436.1(0.0285), 439.94(0.0276)
100.05 *5*	2.33 *19*	^{157}Tm(3.63 m)	455.00(9.3), 385.5(8.8), 348.40(8.4)
100.078 *3*	0.73 *4*	^{147}Pr(13.4 m)	77.9921(15), 314.675(13.2), 641.380(10.0)
100.1 *5*	†6 *3*	^{125}Ba(3.5 m)	77.6(†100), 140.9(†86), 85.4(†82)
100.1 *2*	0.038 *15*	^{151}Nd(12.44 m)	116.80(43.4), 255.68(16.4), 1180.89(14.8)
100.1 *2*	2.7 *6*	^{227}Fr(2.47 m)	90.035(39), 585.804(29.5), 64.267(14.5)
• 100.1065 *3*	14.10 *10*	^{182}Ta(114.43 d)	67.75001(41.2), 1121.3007(34.9), 1221.4066(26.98)
100.1065 *3*	14.3 *10*	^{182}Re(12.7 h)	67.75001(38.2), 1121.3007(32), 1221.4066(24.8)
• 100.1065 *3*	16.4 *4*	^{182}Re(64.0 h)	229.3220(26), 67.75001(22.2), 1121.3007(22.0)
100.2 *5*	0.29 *7*	^{136}Sm(47 s)	114.4(36), 747.7(5.4), 485.3(5.0)
100.2 *3*	4.6 *3*	^{158}Sm(5.30 m)	189.4(15.2), 363.6(12.4), 324.5(10.6)
100.20	†100	^{176}W(2.5 h)	94.86(†8), 61.29(†8), 84.14(†4.5)
100.21 *9*	†1055 *55*	^{179}Ir(79 s)	97.5(†1849), 86.31(†1370), 45.20(†1329)
100.22 *2*	0.30 *4*	^{167}Lu(51.5 m)	29.66(14.4), 239.22(8.6), 213.19(3.6)
100.24 *3*	3.5 *3*	^{111}Sb(75 s)	154.48(71), 489.1(42), 1032.6(10.0)
• 100.27 *3*	†5.0 *10*	^{227}Th(18.72 d)	235.971(†813), 50.13(†528), 256.25(†463)
100.3	0.50 *25*	^{147}Cs(0.225 s)	85.2(7.3), 245.8(4.5), 109.7(4.5)
100.3 *2*	10.7 *5*	^{151}Er(23.5 s)	638.3(36), 667.2(17), 256.4(15.9)
100.32 *10*	†95 *9*	^{161}Lu(77 s)	110.78(†100), 43.7(†70), 256.24(†49)
100.37 *3*	0.0087 *8*	^{187}W(23.72 h)	685.774(27.3), 479.531(21.8), 72.001(11.14)
100.4 *3*	0.26 *4*	^{113}Rh(2.72 s)	189.7(17.0), 409.3(15.9), 219.6(3.88)
100.4 *2*	†100 *1*	^{174}Er(3.3 m)	708.4(†93), 766.9(†92), 151.8(†91)
100.4 *4*		^{185}Au(4.25 m)	310.6(13), 243.1(6.6), 77.7(6)
100.40 *4*	0.183 *16*	^{204}Bi(11.22 h)	899.15(98), 374.72(82), 984.02(59)
• 100.4 *3*	0.013	^{252}Cf(2.645 y)	43.38(0.0148), 155.0(0.0019)
100.41 *3*	0.096 *13*	^{228}Ac(6.15 h)	911.205(26.6), 968.971(16.2), 338.322(11.3)
100.41 *3*	0.046 *4*	^{228}Pa(22 h)	911.205(4.19), 463.005(1.250), 964.770(4.25)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
• 100.413 *9*	0.00010 *5*	^{161}Tb(6.88 d)	25.65150(23.2), 48.91562(17.0), 74.56711(10.2)
100.413 *9*	>0.05	^{161}Ho(2.48 h)	25.65150(27), 103.062(3.9), 77.414(1.91)
100.48 *6*	2.70 *15*	^{79}Ge(19.1 s)	109.58(21), 1505.85(9.2), 503.26(2.16)
100.5 *1*	1.1 *3*	^{150}Tm(2.2 s)	1578.9(91), 474.5(86), 207.6(82)
100.5 *5*	0.06	^{203}Bi(11.76 h)	820.3(30), 825.2(14.6), 896.9(13)
100.54 *11*	1.39 *13*	^{136}Nd(50.65 m)	108.90(32), 40.2(18.9), 574.8(10.4)
100.599 *8*	4.81 *18*	^{159}Ho(33.05 m)	121.012(36.2), 131.973(23.6), 309.594(17.2)
100.6 *5*		^{142}Cs(1.70 s)	359.598(27.2), 1326.46(12.92), 966.89(9.0)
100.6	0.08	^{147}Ba(0.893 s)	167.4(11), 105.2(4.8), 196.1(4.8)
• 100.6 *3*	0.012 *3*	^{151}Pm(28.40 h)	340.08(23), 167.75(8.3), 275.21(6.8)
100.7 *3*	†60	^{147}Dy(40 s)	365.1(†100), 253.4(†80), 1388.0(†60)
100.7 *3*		^{151}Ho(35.2 s)	253.4
100.7 *3*		^{151}Ho(47.2 s)	253.4
100.70 *3*	0.09 *3*	^{167}Lu(51.5 m)	29.66(14.4), 239.22(8.6), 213.19(3.6)
100.70 *5*	0.017	^{180}Hf(5.5 h)	
100.707 *10*	>0.05	^{161}Ho(2.48 h)	25.65150(27), 103.062(3.9), 77.414(1.91)
100.721 *2*	2.71 *19*	^{141}Xe(1.73 s)	909.23(24.0), 118.705(16.1), 105.937(9.8)
• 100.724 *20*	5.24 *9*	^{173}Lu(1.37 y)	272.105(21.2), 78.63(11.87), 171.393(2.90)
100.75 *10*	3.4 *3*	^{121}Cd(8.3 s)	2059.41(21.0), 1020.89(18.9), 987.81(13.6)
100.75 *16*	2.5 *3*	^{185}Ir(14.4 h)	254.4(13.3), 1828.8(10), 60.0(5.7)
100.8 *1*	20.3 *12*	^{53}Ti(32.7 s)	127.6(46), 228.4(40), 1675.5(25)
100.8 *6*	†0.37 *12*	^{142}Xe(1.22 s)	571.83(†100), 657.05(†79), 538.24(†77)
100.8 *1*	15.2 *3*	^{149}Dy(4.20 m)	789.4(11.8), 1776.3(11.1), 653.6(8.9)
100.8 *2*	0.37 *9*	^{152}Ho(49.5 s)	647.2(92), 613.8(88.4), 683.3(88)
100.8 *1*	21.0 *6*	^{170}Ta(6.76 m)	221.2(15.7), 860.4(7.39), 987.0(5.88)
100.8 *2*		^{175}Ta(10.5 h)	207.4(14.0), 348.5(12.0), 266.9(10.8)
100.8	0.41	^{190}Hg(20.0 m)	142.6(68), 171.5(4.8), 154.7(2.5)
• 100.82 *6*	0.0033 *17*	^{189}Re(24.3 h)	216.663(5.50), 219.395(4.54), 245.09(3.5)
100.84 *6*	0.047 *16*	^{155}Ho(48 m)	240.19(12.5), 136.30(5.00), 45.38(5)
• 100.84 *5*	0.030 *4*	^{231}Pa(32760 y)	27.36(10.3), 300.07(2.46), 302.65(2.2)
100.88 *7*	2.53 *17*	^{146}Ce(13.52 m)	316.74(56), 218.23(20.8), 264.56(9.0)
• 100.89 *8*	0.070 *7*	^{82}Br(35.30 h)	776.517(83.5), 554.348(70.8), 619.106(43.4)
100.89 *8*	0.110 *8*	^{82}Rb(6.472 h)	776.517(84), 554.348(62.4), 619.106(37.976)
100.89 *2*	0.124 *21*	^{234}Pa(6.70 h)	131.30(18), 946.00(13.4), 883.24(9.6)
100.9 *2*	6	^{104}Zr(1.2 s)	504.7(5), 445.0(5), 263.7(4.1)
100.93 *2*		^{223}Rn(23.2 m)	591.8(†100), 635.2(†76), 416.0(†55)
• 100.95	†118	^{241}Pu(14.35 y)	148.567(†309000), 103.680(†69400), 77.10(†35100)
100.96 *5*	0.32 *8*	^{221}Rn(25 m)	186.38(21.6), 150.04(4.5), 216.90(2.6)
• 100.96 *5*	0.070 *11*	^{225}Ac(10.0 d)	99.91(1.01), 150.04(0.80), 99.63(0.62)
101.0 *3*		^{72}Kr(17.2 s)	415.1(34.7), 310.0(28.5), 162.2(16.3)
101.0 *2*	0.26 *6*	^{104}Mo(60 s)	68.8(55), 69.7(17.8), 36.3(14)
101.0 *2*	0.08 *5*	^{117}Cd(3.36 h)	1997.33(26), 1065.98(23.1), 564.397(14.7)
101.0 *1*	†14 *3*	^{230}Ra(93 m)	72.0(†100), 63.0(†35.4), 202.8(†27.3)
101.019 *20*	†3.5×10^2	^{154}Nd(25.9 s)	151.703(†800), 799.55(†600), 180.693(†510)
101.029 *4*	3.59 *18*	^{148}Ce(56 s)	269.519(17.0), 291.724(16.7), 121.169(13.2)
101.04 *14*	†6.5 *13*	^{187}Hg(1.9 m)	233.38(†100), 376.34(†38), 240.26(†33)
101.05 *5*	2.75 *15*	^{81}Y(72.4 s)	124.16(41.1), 79.23(24.67), 408.36(15.3)
101.1 *1*	0.035 *7*	^{109}Ru(34.5 s)	206.29(22.0), 225.98(19.6), 1929.05(13.7)
101.1 *2*	4.4	^{115}Rh(0.99 s)	127.9(64.6), 125.6(33.3), 296.5(17)
101.1 *2*		^{116}Pd(12.4 s)	569, 279.3, 178.3
101.1 *2*	0.95 *10*	^{176}Tm(1.9 m)	189.57(44.5), 1069.3(34), 381.8(21.8)
101.1 *2*	0.040 *10*	^{223}Ac(2.10 m)	98.58(0.891), 191.3(0.58), 83.55(0.57)
• 101.1 *2*	0.018 *3*	^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
101.11 *8*	0.631 *19*	^{144}Ba(11.5 s)	103.855(23.30), 430.48(18.3), 172.828(15.4)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
• 101.148 *2*	0.161 *10*	^{155}Tb(5.32 d)	86.545(32.0), 105.305(25), 180.103(7.45)
101.198 *25*	0.30 *3*	^{179}Re(19.5 m)	430.221(28), 289.968(26.9), 1680.244(13.0)
101.2	2.3	^{134}Nd(8.5 m)	163.2(58), 288.9(13), 216.8(12)
101.2 *1*	0.18 *5*	^{139}Nd(5.50 h)	113.94(40), 737.96(35), 982.2(26.4)
101.2 *6*	0.11 *6*	^{148}Ho(9.59 s)	1687.5(82.47), 660.8(58.94), 504.3(18.62)
101.2		^{173}Er(1.4 m)	895.2(54), 199.2(48), 192.8(47)
101.2 *2*	†3.5 *4*	^{206}Rn(5.67 m)	497.7(†100), 324.5(†96), 386.6(†61)
101.24 *12*	0.16 *9*	^{164}Tm(5.1 m)	208.08(14.6), 314.97(10), 240.49(7.5)
101.3 *3*	0.117 *18*	^{120}Xe(40 m)	25.1(30), 72.6(9), 178.1(6.8)
101.3 *8*	0.77 *15*	^{168}Lu(6.7 m)	198.82(28), 979.22(20), 896.12(15)
101.3	†76 *4*	^{178}Pt(21.1 s)	84.6(†100), 90.4(†80), 91.7(†54)
101.3	0.025 *21*	^{243}Pu(4.956 h)	84.0(23), 41.8(0.76), 381.7(0.56)
101.34 *7*	0.065 *23*	^{155}Ho(48 m)	240.19(12.5), 136.30(5.00), 45.38(5)
101.4 *1*	0.10 *3*	^{142}Gd(70.2 s)	750.2(11.2), 178.90(11.20), 284.4(6.16)
101.4 *2*		^{177}Re(14 m)	196.85(†1200), 79.65(†1010), 84.3(†890)
• 101.405	>0.007	^{169}Yb(32.026 d)	63.12077(44.2), 197.95788(35.8), 177.21402(22.16)
101.42 *3*	0.41 *6*	^{134}Te(41.8 m)	767.20(29.0), 210.465(22.3), 277.951(20.9)
• 101.42 *10*	0.0042 *18*	^{194}Au(38.02 h)	328.455(60), 293.545(10.2), 1468.91(6.3)
101.6 *6*	0.0171 *14*	^{99}Rh(4.7 h)	340.71(70), 617.8(12.0), 1261.2(11)
101.6 *2*	0.7 *2*	^{105}Mo(35.6 s)	85.4(25.0), 76.50(19.3), 147.8(14.8)
101.6 *2*	0.17 *6*	^{117}Xe(61 s)	28.5(7.0), 221.3(10.0), 32.3(7.6)
• 101.6 *3*	0.223 *20*	^{131}Te(30 h)	773.67(49.9), 852.21(27.0), 793.75(18.10)
• 101.72 *20*	0.019 *4*	^{128}Ba(2.43 d)	273.44(15), 374.99(0.309), 229.50(0.106)
101.75 *5*	0.47 *11*	^{177}W(135 m)	115.65(50), 426.98(13.2), 1036.4(10.3)
• 101.77 *7*	8.2×10^{-5} *13*	^{233}U(1.592×10^{5} y)	42.44(0.0862), 97.134(0.020), 54.699(0.0182)
101.78 *4*	0.21 *8*	^{183}Os(9.9 h)	1101.94(49.0), 1107.92(22.36), 1034.85(6.02)
101.79 *10*	0.0050 *25*	^{111}Pd(23.4 m)	580.00(0.8), 70.44(0.78), 1459.0(0.56)
101.79 *10*	0.28 *4*	^{111}Pd(5.5 h)	70.44(8.3), 391.25(5.4), 632.80(3.6)
101.8 *5*	0.22 *7*	^{98}Sr(0.653 s)	119.353(73), 444.628(39), 428.4(31)
101.8 *7*	0.28	^{186}Pt(2.0 h)	276.7(0), 611.5(6.0), 635.6(>3.8)
101.8 *2*	0.65 *9*	^{190}Pb(1.2 m)	942.20(34), 151.19(8.92), 598.3(8.0)
101.894 *2*	3.6 *6*	^{227}Fr(2.47 m)	90.035(39), 585.804(29.5), 64.267(14.5)
101.90 *10*	†2.1 *5*	^{106}Sn(115 s)	386.8(†100), 477.5(†62), 253.30(†57)
101.9 *3*	1.15 *24*	^{192}Hg(4.85 h)	274.8(50.4), 157.2(7), 306.5(5.4)
• 101.90 *3*	0.27 *1*	^{238}Np(2.117 d)	984.45(27.8), 1028.54(20.3), 1025.87(9.6)
101.90 *3*	0.067 *8*	^{238}Am(98 m)	962.77(28), 918.69(23.0), 561.11(10.9)
• 101.90 *3*	0.0025 *4*	^{242}Cm(162.8 d)	44.08(0.0325), 157.42(0.0014), 561.11(0.00015)
• 101.93 *1*	1.28 *9*	^{151}Pm(28.40 h)	340.08(23), 167.75(8.3), 275.21(6.8)
• 101.9340 *7*	0.332 *16*	^{183}Ta(5.1 d)	246.0591(27), 353.9912(11.2), 107.9322(11.0)
• 101.9340 *7*	0.0163 *7*	^{183}Re(70.0 d)	162.3219(23.3), 46.4839(7.97), 291.7238(3.05)
• 101.95 *2*	0.0008	^{239}Np(2.3565 d)	106.125(27.2), 277.599(14.38), 228.183(10.76)
101.95 *2*	0.008	^{239}Am(11.9 h)	277.599(15.0), 228.183(11.3), 209.753(3.50)
• 101.95 *2*	0.008	^{243}Cm(29.1 y)	277.599(14.0), 228.183(10.6), 209.753(3.29)
101.990 *1*		^{161}Ho(2.48 h)	25.65150(27), 103.062(3.9), 77.414(1.91)
102.0 *1*	2.55 *10*	^{97}Rb(169.9 ms)	167.1(26), 585.2(21.0), 600.5(10.6)
102.00 *10*	1.39 *14*	^{102}Zr(2.9 s)	599.60(13.9), 535.30(10.6), 64.50(8.9)
102.0 *1*	†11.2 *23*	^{105}Nb(2.95 s)	94.8(†100), 246.9(†79), 309.9(†41.9)
• 102		^{151}Gd(124 d)	153.56(6.20), 243.28(5.60), 174.70(2.96)
102.0 *1*	0.024 *12*	^{161}Er(3.21 h)	826.6(3.0), 211.15(12.2), 592.6(3.7)
102.00 *3*	17.5 *7*	^{162}Tm(21.70 m)	798.68(8.4), 227.52(7), 900.7(6.5)
102.00 *3*	2.6 *13*	^{162}Tm(24.3 s)	811.52(6.5), 798.68(5.2), 227.52(5)
102.0 *3*	9.7 *8*	^{171}Re(15.2 s)	568.4(16.1), 1066.0(8.1), 434.9(7.6)
102.0	>0.06	^{179}Re(19.5 m)	430.221(28), 289.968(26.9), 1680.244(13.0)
102.0 *1*	0.088 *22*	^{188}Hg(3.25 m)	66.7(63), 190.1(4.40), 82.7(2.6)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
102.0 *20*		^{200}At(4.3 s)	158.3
102.0 *20*		^{200}At(44.0 s)	158.3
102.013 *16*		^{179}Re(19.5 m)	430.221(28), 289.968(26.9), 1680.244(13.0)
• 102.06 *1*	10.37 *20*	^{131}Te(30 h)	773.67(49.9), 852.21(27.0), 793.75(18.10)
102.08 *2*	0.47 *11*	^{167}Lu(51.5 m)	29.66(14.4), 239.22(8.6), 213.19(3.6)
102.1 *1*	0.0066 *19*	^{94}Sr(75.3 s)	1427.7(94), 723.8(2.40), 703.9(2.13)
102.12 *20*		^{186}Ir(16.64 h)	296.911(64.0), 137.155(42), 434.849(34.4)
102.16 *3*	0.064 *8*	^{155}Ho(48 m)	240.19(12.5), 136.30(5.00), 45.38(5)
102.20		^{131}Sn(58.4 s)	367.40, 285.0, 62.9
102.20		^{131}Sn(56.0 s)	1226.03(†100), 450.03(†90), 798.50(†86)
• 102.263 *15*	6.0 *3*	^{153}Tb(2.34 d)	212.038(31.0), 170.504(6.8), 109.758(6.4)
• 102.268 *3*	0.41 *3*	^{231}Th(25.52 h)	25.646(14.5), 84.216(6.6), 89.944(0.94)
• 102.268 *3*	†1.15×10^4 *23*	^{235}Np(396.1 d)	25.646(†600000), 84.216(†265000), 81.227(†58000)
102.3 *3*		^{122}Ba(1.95 m)	550.7, 388.7, 231.0
102.3 *3*	>0.025	^{129}La(11.6 m)	278.6(25), 110.5(16.9), 457.0(8.0)
102.3	0.029	^{148}Dy(3.1 m)	620.24(96), 1247.2(1.4), 178.3(0.5)
102.3		^{152}Ho(161.8 s)	85.8, 178.3, 109.4
102.3 *4*	0.06 *3*	^{185}Au(4.25 m)	310.6(13), 243.1(6.6), 77.7(6)
102.3 *2*	0.17 *3*	^{200}Po(11.5 m)	671.0(34.0), 617.7(19.7), 434.4(9.3)
102.315 *10*	13.9 *8*	^{161}Gd(3.66 m)	360.94(0.59), 314.92(22.7), 283.55(5.95)
• 102.32 *5*	1.88 *13*	^{252}Es(471.7 d)	785.09(18.3), 139.03(13.9), 924.12(2.41)
102.37 *6*	1.46 *22*	^{183}Ir(58 m)	392.52(10.4), 228.70(6.9), 87.67(5.6)
102.38 *3*	25.2 *12*	^{166}Lu(2.65 m)	228.12(77.3), 337.50(41), 367.95(31.4)
102.38 *3*	13 *3*	^{166}Lu(1.41 m)	228.12(15), 285.07(11.0), 830.06(10.2)
102.38 *3*	11 *5*	^{166}Lu(2.12 m)	1427.18(23.0), 2098.6(16.1), 1256.64(15.2)
102.4 *5*	0.02	^{107}Rh(21.7 m)	302.77(66), 392.47(8.8), 312.21(4.8)
• 102.4 *1*	0.015 *5*	^{155}Tb(5.32 d)	86.545(32.0), 105.305(25), 180.103(7.45)
102.45 *2*	0.55 *3*	^{151}Nd(12.44 m)	116.80(43.4), 255.68(16.4), 1180.89(14.8)
• 102.481 *3*	0.134 *8*	^{183}Ta(5.1 d)	246.0591(27), 353.9912(11.2), 107.9322(11.0)
102.5 *3*	1.4 *3*	^{114}Rh(1.85 s)	332.9(87), 519.8(48.4), 618.7(31)
102.5 *2*	0.65 *7*	^{159}Eu(18.1 m)	67.8(19), 78.6(9.1), 95.7(7.0)
102.50 *10*	†7.4 *15*	^{163}Lu(238 s)	163.08(†100), 54.00(†88), 396.34(†63)
• 102.5 *1*		^{227}Th(18.72 d)	235.971(†813), 50.13(†528), 256.25(†463)
102.56 *3*	0.19 *7*	^{167}Lu(51.5 m)	29.66(14.4), 239.22(8.6), 213.19(3.6)
• 102.57 *3*	0.032 *16*	^{151}Pm(28.40 h)	340.08(23), 167.75(8.3), 275.21(6.8)
102.6 *5*	1.1 *4*	^{74}Zn(96 s)	56.7(70), 49.4(33.4), 143.5(21.7)
102.6 *1*		^{133}Ce(4.9 h)	477.22(39), 510.36(20.7), 58.39(19.2)
102.6 *2*	†25 *8*	^{181}Ir(4.90 m)	107.64(†100), 1639.6(†52), 318.9(†46)
• 102.6 *5*	>0.014	^{231}Pa(32760 y)	27.36(10.3), 300.07(2.46), 302.65(2.2)
102.62 *12*	0.26 *10*	^{181}Re(19.9 h)	365.57(56), 360.70(20), 639.30(6.4)
102.623 *10*	0.19	^{250}Es(8.6 h)	828.82(72), 303.41(21.6), 349.4(19.8)
102.64 *9*	†100 *6*	^{103}Nb(1.5 s)	641.1(†55), 538.5(†34.0), 138.5(†13.5)
102.70 *3*	21.0 *22*	^{107}Tc(21.2 s)	177.00(9.2), 106.31(7.6), 458.7(5.6)
102.70 *20*	1.8	^{116}Ag(10.4 s)	513.39(92), 705.82(61), 1028.90(30.4)
102.8 *3*	†1.2 *4*	^{126}Cd(0.506 s)	260.09(†100), 428.11(†83.7), 688.23(†5.9)
102.8 *3*	0.4 *1*	^{128}Sb(9.01 h)	753.82(100), 743.22(100), 314.12(61)
• 102.8 *2*		^{147}Gd(38.06 h)	229.32(63), 396.00(34.3), 929.01(20.2)
102.8 *2*		^{242}Np(2.2 m)	735.93(5), 780.44(2.76), 1473.1(2.34)
102.8 *2*		^{242}Np(5.5 m)	785.7(60), 944.8(37.8), 159.0(19.2)
• 102.82 *2*	0.85 *6*	^{236}Np(1.54×10^5 y)	158.35(4.0), 44.63(0.0167)
102.91 *5*	45 *3*	^{124}In(2.4 s)	1131.64(100), 969.94(52), 1072.85(47)
102.9361 *15*	1.8	^{156}Sm(9.4 h)	87.4897(24), 203.818(20.6), 165.8452(12.7)
102.97 *17*	1.95 *11*	^{116}Te(2.49 h)	93.70(31.4), 628.63(3.22), 637.9(0.755)
• 102.98 *2*	0.0064 *9*	^{237}U(6.75 d)	59.537(34.5), 208.00(21.14), 26.345(2.43)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
• 102.98 *2*	0.0010	^{237}Pu(45.2 d)	59.537(3.28), 26.345(0.221), 33.195(0.0745)
• 102.98 *2*	†0.950×10^{8} *10*	^{241}Am(432.2 y)	59.537(†60), 26.345(†1000×10^{9}), 33.195(†6000×10^{8})
102.985 *22*	0.188 *22*	^{159}Ho(33.05 m)	121.012(36.2), 131.973(23.6), 309.594(17.2)
• 102.998 *10*	†2.53×10^{4} *25*	^{134}Ce(75.9 h)	162.306(†230000), 130.414(†209000), 39.08(†>150000)
103.01 *6*		^{81}As(33.3 s)	467.72(20), 491.20(8.5), 521.10(1.40)
• 103.032 *6*	0.000230 *12*	^{239}Pu(24110 y)	51.624(0.007100), 38.661(0.000500), 129.297(0.00631)
• 103.062 *1*	0.101 *4*	^{161}Tb(6.88 d)	25.65150(23.2), 48.91562(17.0), 74.56711(10.2)
103.062 *1*	3.9	^{161}Ho(2.48 h)	25.65150(27), 77.414(1.91), 59.235(0.60)
103.080 *4*	0.96 *16*	^{140}Xe(13.60 s)	805.52(20), 1413.66(12.2), 1315.05(8.2)
103.1 *2*	†48 *12*	^{114}Xe(10.0 s)	308.5(†100), 161.6(†64)
103.1 *3*		^{122}Ba(1.95 m)	550.7, 388.7, 231.0
103.1 *1*	†2.0 *4*	^{185}Pt(33.0 m)	229.60(†100), 135.3(†80), 197.4(†74)
103.1		^{192}Bi(39.6 s)	33.6, 268.8
• 103.1 *1*	0.39	^{245}Bk(4.94 d)	252.80(29.1), 380.8(2.40), 385.0(0.57)
• 103.14 *17*	2.32 *8*	^{72}Zn(46.5 h)	145.04(83), 191.96(9.37), 16.4(8.3)
• 103.1498 *7*	0.27 *13*	^{183}Ta(5.1 d)	246.0591(27), 353.9912(11.2), 107.9322(11.0)
• 103.1498 *7*	0.0084 *19*	^{183}Re(70.0 d)	162.3219(23.3), 46.4839(7.97), 291.7238(3.05)
103.16 *12*	0.17 *7*	^{181}Re(19.9 h)	365.57(56), 360.70(20), 639.30(6.4)
• 103.1807 *3*	31.4 *4*	^{153}Sm(46.27 h)	69.67340(4.85), 97.4316(0.847), 75.4226(0.350)
• 103.1807 *3*	21.4 *5*	^{153}Gd(241.6 d)	97.4316(30), 69.67340(2.54), 83.3676(0.211)
103.2 *1*	0.25 *25*	^{148}Ce(56 s)	269.519(17.0), 291.724(16.7), 121.169(13.2)
103.25 *17*	1.3 *2*	^{200}Bi(36.4 m)	1026.5(100), 462.34(98), 419.70(91)
103.3 *2*	3.3 *4*	^{76}Kr(14.8 h)	315.7(39), 270.2(21.1), 45.48(19.5)
• 103.3 *3*	0.061 *10*	^{131}Te(30 h)	773.67(49.9), 852.21(27.0), 793.75(18.10)
103.3	†0.6	^{131}Pr(1.53 m)	266.13(†100), 72.82(†64), 387.56(†38)
• 103.3 *1*	0.010 *5*	^{155}Tb(5.32 d)	86.545(32.0), 105.305(25), 180.103(7.45)
103.3 *2*	†17.7 *21*	^{196}Ir(1.40 h)	393.346(†105.2), 521.175(†104), 447.1(†102.1)
103.32 *5*	0.017 *7*	^{167}Yb(17.5 m)	113.34(55.3), 106.18(22.5), 176.25(21)
• 103.35 *10*	0.0042 *13*	^{234}Th(24.10 d)	63.29(4.8), 92.38(2.81), 92.80(2.77)
103.40 *20*	0.95 *16*	^{102}Sr(69 ms)	243.80(53), 150.15(18.0), 93.89(13.4)
103.4 *1*	13.9 *14*	^{132}Sb(2.79 m)	973.9(99), 696.8(86), 989.6(14.9)
103.4 *1*	35 *4*	^{132}Sb(4.10 m)	696.8(100), 973.9(100), 150.6(66)
103.4 *4*	†7.3 *5*	^{172}W(6.6 m)	38.9(†100), 423.3(†44), 89.8(†33.0)
103.440 *10*	0.69 *6*	^{250}Es(8.6 h)	828.82(72), 303.41(21.6), 349.4(19.8)
103.46 *10*	0.052 *15*	^{221}Rn(25 m)	186.38(21.6), 150.04(4.5), 216.90(2.6)
• 103.46 *10*	0.0044 *22*	^{225}Ac(10.0 d)	99.91(1.01), 150.04(0.80), 99.63(0.62)
103.5		^{182}Hg(10.83 s)	129.3(†100), 217.7(†75), 413.5(†53)
103.5 *2*	0.90 *18*	^{225}Th(8.72 m)	321.4(23), 246.0(5.06), 359.0(4.1)
103.50 *4*	†12	^{238}Pa(2.3 m)	1015.3(†<100), 1014.6(†<100), 635.18(†88)
• 103.50 *4*	0.0078 *8*	^{242}Pu(3.733×10^{5} y)	44.915(0.036), 158.80(0.00045)
103.54 *8*	4.5 *3*	^{170}Ho(2.76 m)	258.2(37.0), 931.3(36.1), 181.6(23.8)
103.55 *15*	†32 *7*	^{187}Hg(1.9 m)	233.38(†100), 376.34(†38), 240.26(†33)
103.557 *7*	0.81 *16*	^{180}Ta(8.152 h)	
103.557 *7*	22.2 *6*	^{180}Re(2.44 m)	902.795(90), 825.357(9.9), 749.345(1.12)
103.6 *2*	†0.16 *4*	^{229}Ac(62.7 m)	164.522(†100), 569.1(†91), 261.92(†39)
• 103.6 *2*	9.2×10^{-5} *14*	^{233}U(1.592×10^{5} y)	42.44(0.0862), 97.134(0.020), 54.699(0.0182)
103.6 *2*	†4.1	^{256}Es(7.6 h)	861.8(†100), 231.1(†61), 172.6(†49)
103.64 *4*	1.03 *6*	^{200}Pt(12.5 h)	76.21(13), 135.90(3.24), 243.71(2.49)
• 103.680 *5*	69400 *20*	^{241}Pu(14.35 y)	148.567(†309000), 77.10(†35100), 159.955(†900)
103.7 *1*	0.67 *6*	^{100}Zr(7.1 s)	504.25(31), 400.48(19.2), 498.0(0.72)
103.7 *3*	0.45 *17*	^{129}Sn(6.9 m)	1161.31(56.0), 1128.44(50), 760.8(16.8)
103.7 *5*	7.2 *22*	^{172}Ho(25 s)	133.6(36), 178.0(23), 757.2(18)
• 103.71 *6*		^{234}Th(24.10 d)	63.29(4.8), 92.38(2.81), 92.80(2.77)
103.73 *17*	†12.6 *25*	^{165}Lu(10.74 m)	132.49(†100), 120.60(†100), 174.25(†47.0)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
103.74 *1*	6.0 *5*	^{122}In(10.3 s)	1140.55(98), 1001.58(50.7), 1190.58(20.5)
103.74 *1*	81 *6*	^{122}In(10.8 s)	1140.55(100), 1001.58(98.4), 163.48(66)
103.75 *6*	0.314 *22*	^{139}Xe(39.68 s)	218.59(56), 296.53(21.7), 174.97(11.3)
103.77 *15*	†2	^{181}Pt(51 s)	289.29(†100), 111.97(†100), 230.15(†92)
103.77 *2*	0.24 *3*	^{234}Pa(6.70 h)	131.30(18), 946.00(13.4), 883.24(9.6)
103.79 *4*	0.0101 *3*	^{187}W(23.72 h)	685.774(27.3), 479.531(21.8), 72.001(11.14)
• 103.85 *8*	0.0009 *3*	^{121}Te(154 d)	1102.149(2.54), 37.138(0.94), 998.291(0.0796)
103.855 *6*	23.30 *12*	^{144}Ba(11.5 s)	430.48(18.3), 172.828(15.4), 156.600(15.1)
103.857 *7*	0.049 *3*	^{122}Xe(20.1 h)	350.065(7.80), 148.612(2.62), 416.633(1.87)
103.89 *2*	2.17 *11*	^{155}Ho(48 m)	240.19(12.5), 136.30(5.00), 45.38(5)
103.9 *4*	0.00093 *20*	^{109}Pd(13.7012 h)	88.04(1.171), 311.4(0.032), 647.3(0.024)
• 103.971 *9*	0.87 *3*	^{233}Pa(26.967 d)	312.17(38.6), 300.34(6.62), 340.81(4.47)
103.99 *16*	0.70 *21*	^{149}Pr(2.26 m)	138.447(11.0), 165.087(9.9), 108.520(9.5)
104.0 *2*		^{111}Tc(0.30 s)	150.4
104.0 *3*	0.10 *5*	^{127}In(1.09 s)	1597.7(49), 646.1(6.2), 805.1(5.6)
104.0		^{180}Os(21.5 m)	20.1(†100), 717.4, 667.0
• 104.0 *2*	0.0102 *10*	^{254}Es(39.3 h)	211.80(0.096), 177.30(0.056), 71.30(0.043)
104.1 *4*	0.19 *4*	^{127}Sn(2.10 h)	1114.3(39), 1095.6(20), 823.1(10.9)
104.1	1.7	^{134}Nd(8.5 m)	163.2(58), 288.9(13), 216.8(12)
104.1 *1*	†14 *1*	^{227}Rn(22.5 s)	162.14(†100), 739.2(†65), 686.2(†62)
• 104.1 *10*		^{236}Np(1.54×10^5 y)	160.308(32), 104.234(7.2), 45.242(0.13)
104.15 *3*	13.8 *5*	^{108}Sn(10.30 m)	396.44(64.3), 272.75(45.5), 669.08(22.6)
104.187 *3*	2.4 *4*	^{209}At(5.41 h)	545.0(91), 781.9(83.5), 790.2(63.5)
104.2 *3*	†27 *5*	^{112}Te(2.0 m)	372.70(†100), 296.20(†86), 418.9(†57)
104.20 *9*	†15	^{154}Nd(25.9 s)	151.703(†800), 799.55(†600), 180.693(†510)
104.2 *1*	0.07 *2*	^{159}Er(36 m)	624.5(33), 649.1(23.4), 205.92(9.7)
• 104.2 *1*	0.019 *3*	^{223}Ra(11.435 d)	269.459(13.7), 154.21(5.62), 323.871(3.93)
104.234 *6*	<0.15	^{236}Pa(9.1 m)	642.35(37.0), 687.59(9.9), 1762.7(6.0)
104.234 *6*		^{236}Np(22.5 h)	642.35(0.9), 687.59(0.250), 538.11(0.0110)
• 104.234 *6*	7.2 *3*	^{236}Np(1.54×10^5 y)	160.308(32), 45.242(0.13), 104.1
• 104.234 *6*	0.00708 *10*	^{240}Pu(6563 y)	45.242(0.0450), 160.308(0.000402), 212.46(0.000029)
104.26 *7*	0.157 *20*	^{165}Yb(9.9 m)	80.11(49), 68.86(9.1), 1090.28(4.4)
• 104.2955 *17*	0.477 *16*	^{169}Lu(34.06 h)	960.622(23.4), 191.2137(20.6), 1449.74(9.92)
104.30 *4*	0.02	^{154}Pm(1.73 m)	2057.76(17.1), 1393.9(14.4), 81.99(12.6)
104.30 *4*	0.14	^{154}Pm(2.68 m)	184.810(32), 81.99(15.4), 546.66(14.5)
104.3 *5*	0.32 *11*	^{164}Tb(3.0 m)	168.838(25.4), 754.80(23.3), 215.07(21)
104.3 *2*	3.1 *4*	^{175}Ta(10.5 h)	207.4(14.0), 348.5(12.0), 266.9(10.8)
104.320 *3*	18.6 *4*	^{163}Tm(1.810 h)	69.229(11.6), 241.305(10.9), 1434.45(7.96)
104.3346 *8*	74.6 *19*	^{155}Sm(22.3 m)	245.771(3.7), 141.4428(1.98), 30.5(0.56)
• 104.360 *12*	0.176 *17*	^{254}Es(39.3 h)	648.80(28.4), 693.79(24.3), 688.68(12.3)
104.398 *4*	1.28 *16*	^{140}Xe(13.60 s)	805.52(20), 1413.66(12.2), 1315.05(8.2)
104.4 *3*	4.52	^{67}As(42.5 s)	122.7(19.2), 120.8(9.3), 243.6(7.8)
104.4 *2*	†6.6	^{101}Y(448 ms)	98.3(†100), 133.8(†18.8), 232.1(†11.9)
• 104.4 *1*	0.62 *5*	^{257}Fm(100.5 d)	241.0(11.0), 179.4(8.7), 61.6(1.45)
104.5 *2*	†100	^{116}Xe(56 s)	310.7(†42), 247.7(†40), 191.6(†38)
104.5 *3*	†2.2	^{149}Ce(5.3 s)	57.7(†100), 380.0(†33.7), 86.4(†20.2)
104.5 *2*	†11.1 *22*	^{177}Tm(85 s)	517.5(†22.2), 44.5(†10), 589.0(†8.9)
104.5 *6*	0.70 *17*	^{192}Hg(4.85 h)	274.8(50.4), 157.2(7), 306.5(5.4)
104.5266 *19*	0.37 *15*	^{175}Tm(15.2 m)	514.868(65), 941.23(15), 363.942(12.7)
• 104.53 *8*	†2.1×10^3 *3*	^{134}Ce(75.9 h)	162.306(†230000), 130.414(†209000), 39.08(†>150000)
104.6 *2*	0.44 *6*	^{117}Xe(61 s)	28.5(7.0), 221.3(10.0), 32.3(7.6)
104.6 *3*	0.074 *19*	^{158}Tm(3.98 m)	192.13(62), 335.10(16.8), 1149.83(7.6)
104.6 *2*	†0.52 *19*	^{213}Ra(2.74 m)	110.1(†10.0), 214.7(†1.5)
104.6 *2*	†12 *10*	^{213}Ra(2.1 ms)	214.7(†100), 110.1(†50)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
• 104.6 *2*	0.009 *3*	^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
104.62 *5*		^{91}Mo(15.49 m)	1636.99(0.329), 1581.04(0.226), 2631.97(0.118)
104.62 *5*		^{91}Mo(65.0 s)	1507.93(24.3), 1208.09(18.7), 2240.87(0.73)
104.68		^{131}Sn(56.0 s)	1226.03(†100), 450.03(†90), 798.50(†86)
104.70 *8*	0.167 *15*	^{101}Mo(14.61 m)	191.92(19), 590.91(16.4), 1012.47(12.8)
104.7 *4*	0.19	^{117}Ag(5.34 s)	135.4(48), 386.8(39.9), 298.1(21.1)
104.7 *4*	0.161 *23*	^{117}Ag(72.8 s)	135.4(23), 337.7(10.3), 157.1(7.9)
104.7 *3*	0.32 *10*	^{181}Os(105 m)	238.75(44), 826.77(20), 118.03(12.9)
• 104.84 *1*	3.51 *23*	^{151}Pm(28.40 h)	340.08(23), 167.75(8.3), 275.21(6.8)
104.84 *4*		^{223}Rn(23.2 m)	591.8(†100), 635.2(†76), 416.0(†55)
104.9 *2*	0.16 *4*	^{76}Kr(14.8 h)	315.7(39), 270.2(21.1), 45.48(19.5)
104.9 *6*	0.044 *15*	^{151}Nd(12.44 m)	116.80(43.4), 255.68(16.4), 1180.89(14.8)
104.97 *5*	5.70 *23*	^{83}Zr(44 s)	55.55(8), 475.1(5.1), 254.76(4.72)
105.00 *4*	21.8 *6*	^{79}Sr(2.25 m)	39.41(28), 413.8(7.6), 218.98(5.9)
105.0 *3*	0.027 *9*	^{120}Xe(40 m)	25.1(30), 72.6(9), 178.1(6.8)
• 105.0 *2*	0.035 *5*	^{131}Te(30 h)	773.67(49.9), 852.21(27.0), 793.75(18.10)
105 *1*	0.11	^{142}Gd(70.2 s)	750.2(11.2), 178.90(11.20), 284.4(6.16)
105.15 *10*	0.064 *9*	^{205}At(26.2 m)	719.30(31), 669.41(8.6), 628.88(5.6)
105.19 *2*	0.59 *6*	^{167}Yb(17.5 m)	113.34(55.3), 106.18(22.5), 176.25(21)
• 105.19 *10*	0.0026 *8*	^{169}Yb(32.026 d)	63.12077(44.2), 197.95788(35.8), 177.21402(22.16)
105.2 *2*	0.88 *20*	^{104}Mo(60 s)	68.8(55), 69.7(17.8), 36.3(14)
• 105.200 *20*	0.00442 *18*	^{115}Cd(44.6 d)	933.8(2.000), 1290.580(0.890), 484.470(0.290)
105.2	4.8	^{147}Ba(0.893 s)	167.4(11), 196.1(4.8), 249.3(3.6)
105.20 *3*	5.24 *25*	^{148}Ce(56 s)	269.519(17.0), 291.724(16.7), 121.169(13.2)
105.20 *10*	†28 *5*	^{161}Lu(77 s)	110.78(†100), 100.32(†95), 43.7(†70)
• 105.2 *4*		^{227}Th(18.72 d)	235.971(†813), 50.13(†528), 256.25(†463)
105.2 *4*	†66 *20*	^{232}Ra(250 s)	470.9(†100), 97.7(†80), 478.5(†69)
105.2 *1*	0.043	^{233}Th(22.3 m)	86.477(2.7), 29.374(2.5), 459.222(1.4)
105.3 *4*	†8.5 *6*	^{172}W(6.6 m)	38.9(†100), 423.3(†44), 89.8(†33.0)
• 105.305 *3*	21.2 *5*	^{155}Eu(4.7611 y)	86.545(30.7), 45.2972(1.326), 60.0086(1.13)
• 105.305 *3*	25	^{155}Tb(5.32 d)	86.545(32.0), 180.103(7.45), 262.322(5.29)
• 105.3595 *6*	12.34 *24*	^{177}Lu(160.4 d)	208.3664(57.7), 228.4838(37.0), 378.5029(29.7)
• 105.3595 *6*	0.0065 *8*	^{177}Ta(56.56 h)	112.9498(7.2), 208.3664(0.94), 1057.8(0.29)
105.40 *15*	0.022 *11*	^{117}Cd(2.49 h)	273.349(28), 1303.27(18.4), 344.459(17.9)
105.4 *2*	†36 *5*	^{153}Nd(28.9 s)	418.3(†100), 475.2(†33), 83.0(†27)
105.4 *1*	0.067 *12*	^{161}Er(3.21 h)	826.6(3.0), 211.15(12.2), 592.6(3.7)
105.4 *6*	0.17 *4*	^{192}Hg(4.85 h)	274.8(50.4), 157.2(7), 306.5(5.4)
105.44 *8*	0.29 *3*	^{184}Pt(17.3 m)	154.90(31), 191.97(27), 548.36(23.1)
• 105.47 *5*	1.65 *19*	^{232}Pa(1.31 d)	969.315(41.6), 894.351(19.8), 150.059(10.8)
105.50 *5*		^{129}Sb(4.40 h)	812.8(43), 914.6(20.0), 544.7(17.9)
105.5 *2*	0.71 *7*	^{159}Eu(18.1 m)	67.8(19), 78.6(9.1), 95.7(7.0)
105.6 *1*	3.3 *3*	^{119}Cd(2.20 m)	1025.0(24.8), 2021.3(22.6), 720.7(17.9)
105.6 *3*	1.3 *3*	^{171}Re(15.2 s)	568.4(16.1), 102.0(9.7), 1066.0(8.1)
105.6 *1*	†6.2 *6*	^{185}Pt(33.0 m)	229.60(†100), 135.3(†80), 197.4(†74)
105.6	0.33 *7*	^{185}Au(4.25 m)	310.6(13), 243.1(6.6), 77.7(6)
105.61 *24*	†2.0 *3*	^{142}Xe(1.22 s)	571.83(†100), 657.05(†79), 538.24(†77)
105.64 *2*	0.73 *10*	^{161}Gd(3.66 m)	360.94(0.59), 314.92(22.7), 102.315(13.9)
105.66 *5*	7.9 *14*	^{77}Zn(2.08 s)	189.49(28.1), 473.94(19.7), 1832.0(12.4)
105.7 *3*	†7	^{154}Nd(25.9 s)	151.703(†800), 799.55(†600), 180.693(†510)
105.7 *1*	0.030 *10*	^{161}Er(3.21 h)	826.6(3.0), 211.15(12.2), 592.6(3.7)
105.7 *2*	†100	^{175}Ir(9 s)	399.0(†30)
105.75 *10*	0.09 *4*	^{167}Ho(3.1 h)	346.547(56), 321.336(23.5), 237.873(5.0)
105.753 *1*	5.8 *12*	^{151}Pr(18.90 s)	880.19(13), 189.057(11.8), 484.501(11.3)
105.8 *1*	0.057 *13*	^{159}Er(36 m)	624.5(33), 649.1(23.4), 205.92(9.7)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
105.8 *3*	0.09 *5*	^{159}Tm(9.13 m)	38.35(5.8), 84.8(5.8), 271.30(5.1)
105.8 *3*	4.0 *7*	^{181}Lu(3.5 m)	652.5(22.0), 205.94(16.1), 574.9(15.4)
105.8 *2*	†26	^{256}Es(7.6 h)	861.8(†100), 231.1(†61), 172.6(†49)
• 105.810 *17*	0.0071 *7*	^{231}Th(25.52 h)	25.646(14.5), 84.216(6.6), 89.944(0.94)
105.85 *10*	†54 *4*	^{157}Yb(38.6 s)	230.92(†100), 340.7(†90), 241.7(†74)
105.87 *10*	1.30 *8*	^{77}Kr(74.4 m)	129.64(81), 146.59(37.3), 312.0(3.7)
• 105.87 *2*	>0.0012	^{188}W(69.4 d)	290.669(0.402), 227.083(0.221), 63.582(0.109)
105.88 *2*	3.4 *3*	^{161}Tm(33 m)	45.54(5.00), 1648.1(9.50), 84.40(9.4)
105.9 *3*	0.14	^{142}La(91.1 m)	641.285(47), 2397.8(13.3), 2542.7(10.00)
105.9 *3*	23.0 *19*	^{178}Re(13.2 m)	237.3(45), 939.1(8.9), 777.9(3.8)
105.92 *5*	0.260 *21*	^{107}Ru(3.75 m)	194.05(9.9), 847.93(5.3), 462.61(3.66)
105.937 *5*	9.8 *7*	^{141}Xe(1.73 s)	909.23(24.0), 118.705(16.1), 459.30(5.5)
105.94 *2*	0.156 *18*	^{145}Cs(0.594 s)	175.36(20), 198.93(10.9), 112.46(10.71)
105.95 *5*	0.248 *21*	^{101}Mo(14.61 m)	191.92(19), 590.91(16.4), 1012.47(12.8)
106 *1*	0.09 *3*	^{77}Rb(3.75 m)	66.52(57), 178.99(22.2), 393.37(9.7)
106.0 *10*	0.28	^{149}Er(8.9 s)	1171.0(9.4), 171.5(6.5), 343.9(6.3)
106		^{185}Hg(21.6 s)	159.42, 118.88, 61
106 *1*	170000	^{210}At(8.1 h)	82.802(†480000), 167(†110000), 141.2(†60000)
106.0	†72	^{220}Fr(27.4 s)	45.0(†100), 161.5(†65), 154.0(†43)
• 106.0 *5*		^{231}Pa(32760 y)	27.36(10.3), 300.07(2.46), 302.65(2.2)
• 106.01 *5*	0.139 *13*	^{252}Es(471.7 d)	785.09(18.3), 139.03(13.9), 924.12(2.41)
106.05 *3*	0.45 *3*	^{90}Kr(32.32 s)	1118.69(39.0), 121.82(35.5), 539.49(30.8)
106.05 *4*	0.032 *9*	^{163}Tm(1.810 h)	104.320(18.6), 69.229(11.6), 241.305(10.9)
• 106.108 *1*	0.0778 *24*	^{161}Tb(6.88 d)	25.65150(23.2), 48.91562(17.0), 74.56711(10.2)
106.108 *1*		^{161}Ho(2.48 h)	25.65150(27), 103.062(3.9), 77.414(1.91)
• 106.125 *2*	27.2 *4*	^{239}Np(2.3565 d)	277.599(14.38), 228.183(10.76), 209.753(3.42)
106.125 *2*	0.047 *5*	^{239}Am(11.9 h)	277.599(15.0), 228.183(11.3), 209.753(3.50)
• 106.125 *2*	0.31 *3*	^{243}Cm(29.1 y)	277.599(14.0), 228.183(10.6), 209.753(3.29)
• 106.15 *25*	0.053 *5*	^{237}Np(2.14×10^{6} y)	29.374(15.0), 86.477(12.4), 94.66(0.6)
106.17 *8*	0.62 *6*	^{146}Ce(13.52 m)	316.74(56), 218.23(20.8), 264.56(9.0)
106.18 *1*	22.5 *10*	^{167}Yb(17.5 m)	113.34(55.3), 176.25(21), 62.91(4.9)
106.3 *1*	0.032 *5*	^{107}Ru(3.75 m)	194.05(9.9), 847.93(5.3), 462.61(3.66)
106.3 *1*	8.1 *3*	^{149}Dy(4.20 m)	100.8(15.2), 789.4(11.8), 1776.3(11.1)
106.3	2.45 *16*	^{179}Pt(21.2 s)	171.7(16), 193.1(14.2), 99.8(13.2)
106.31 *3*	7.6 *6*	^{107}Tc(21.2 s)	102.70(21.0), 177.00(9.2), 458.7(5.6)
106.37 *2*	0.051 *17*	^{191}Au(3.18 h)	586.45(17), 277.88(7.2), 674.19(6.8)
106.4 *2*	40 *4*	^{96}Ag(5.1 s)	1415.4(100), 683.8(96), 325.1(88)
106.4 *3*	†3.8	^{154}Nd(25.9 s)	151.703(†800), 799.55(†600), 180.693(†510)
• 106.42 *5*	†1.5×10^{5}	^{241}Am(432.2 y)	59.537(†60), 26.345(†1000×10^{9}), 33.195(†6000×10^{8})
106.46 *3*	9	^{187}Pt(2.35 h)	201.52(6.4), 110.04(5.7), 709.17(5.2)
106.48 *4*	†1.90×10^{3} *19*	^{157}Ho(12.6 m)	279.97(†47600), 341.16(†37000), 193.41(†15200)
• 106.48 *2*	0.049 *8*	^{239}Np(2.3565 d)	106.125(27.2), 277.599(14.38), 228.183(10.76)
106.48 *2*	0.0070 *10*	^{239}Am(11.9 h)	277.599(15.0), 228.183(11.3), 209.753(3.50)
• 106.48 *2*	0.011	^{243}Cm(29.1 y)	277.599(14.0), 228.183(10.6), 209.753(3.29)
• 106.49 *10*	0.0072 *18*	^{194}Au(38.02 h)	328.455(60), 293.545(10.2), 1468.91(6.3)
106.5 *3*	0.045 *9*	^{120}Xe(40 m)	25.1(30), 72.6(9), 178.1(6.8)
• 106.52 *2*	0.09 *3*	^{147}Gd(38.06 h)	229.32(63), 396.00(34.3), 929.01(20.2)
• 106.55 *3*	0.0868 *25*	^{151}Gd(124 d)	153.56(6.20), 243.28(5.60), 174.70(2.96)
106.56 *4*		^{187}W(23.72 h)	685.774(27.3), 479.531(21.8), 72.001(11.14)
• 106.587 *16*	0.017 *1*	^{231}Th(25.52 h)	25.646(14.5), 84.216(6.6), 89.944(0.94)
106.596 *12*	0.0262 *8*	^{187}W(23.72 h)	685.774(27.3), 479.531(21.8), 72.001(11.14)
106.68 *5*	0.036 *10*	^{234}Pa(6.70 h)	131.30(18), 946.00(13.4), 883.24(9.6)
106.75 *10*	13.9 *12*	^{98}Pd(17.7 m)	112.0(58), 662.2(19.7), 67.7(8.7)
• 106.78 *15*	0.037 *9*	^{153}Tb(2.34 d)	212.038(31.0), 170.504(6.8), 109.758(6.4)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
• 106.78 *3*	0.0233 *14*	^{223}Ra(11.435 d)	269.459(13.7), 154.21(5.62), 323.871(3.93)
• 106.79 *6*	†1.60×10^{4} *17*	^{227}Ac(21.773 y)	100(†110000), 69.21(†78000), 160.26(†70000)
106.8 *3*		^{122}Ba(1.95 m)	550.7, 388.7, 231.0
• 106.85 *10*	<0.03	^{231}Th(25.52 h)	25.646(14.5), 84.216(6.6), 89.944(0.94)
106.9 *2*	0.49 *12*	^{126}Ba(100 m)	233.6(19.6), 257.6(7.6), 241.0(6.0)
106.9	0.40 *7*	^{159}Er(36 m)	624.5(33), 649.1(23.4), 205.92(9.7)
106.9 *1*	†3.0 *4*	^{185}Pt(33.0 m)	229.60(†100), 135.3(†80), 197.4(†74)
106.9 *3*	†5	^{223}Rn(23.2 m)	591.8(†100), 635.2(†76), 416.0(†55)
106.92 *15*	0.043 *12*	^{90}Kr(32.32 s)	1118.69(39.0), 121.82(35.5), 539.49(30.8)
107.0 *5*	0.57 *19*	^{74}Zn(96 s)	56.7(70), 49.4(33.4), 143.5(21.7)
107		^{164}Hf(111 s)	122.1(†100), 153.3(†47), 313.7(†22)
107.0		^{180}Os(21.5 m)	20.1(†100), 717.4, 667.0
107.0 *3*	†6.7 *6*	^{182}Ir(15 m)	273.23(†100), 126.79(†77), 236.3(†21.0)
107.0	>0.032	^{195}Tl(1.16 h)	563.52(10.5), 884.47(10.0), 1363.88(8.4)
107.0 *5*	0.15	^{227}Pa(38.3 m)	64.62(6), 110.05(1.24), 84.8(0.86)
• 107.01 *2*	0.64 *3*	^{193}Os(30.5 h)	139.03(4.27), 460.50(3.95), 73.039(3.2)
107.1 *1*	0.65 *7*	^{98}Rb(114 ms)	144.224(24.5), 1693.3(5.9), 2171.7(5.7)
107.1 *3*	0.14 *5*	^{123}Cd(1.82 s)	1165.86(25.7), 1027.45(22.6), 2102.81(12.5)
107.108 *8*	†11 *2*	^{225}Fr(4.0 m)	182.3(†100), 31.50(†91), 225.1(†55)
• 107.108 *8*	0.81 *4*	^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
• 107.160 *20*	1.41 *10*	^{182}Re(64.0 h)	229.3220(26), 67.75001(22.2), 1121.3007(22.0)
107.2 *2*		^{173}Ta(3.14 h)	172.2(18), 69.70(5.9), 90.3(5.0)
107.2 *2*	0.76 *15*	^{194}Tl(32.8 m)	636.5(99), 428.0(99), 748.9(76)
107.22 *5*	0.43 *4*	^{131}La(59 m)	108.081(25.0), 417.783(18.0), 365.162(16.9)
107.22 *5*	0.51 *7*	^{161}Tm(33 m)	45.54(5.00), 1648.1(9.50), 84.40(9.4)
107.28 *10*	43.7 *11*	^{98}Cd(9.2 s)	347.18(78), 1176.1(66.3), 60.55(35.1)
107.3 *1*	0.049 *12*	^{161}Er(3.21 h)	826.6(3.0), 211.15(12.2), 592.6(3.7)
107.3	0.007	^{198}Pb(2.40 h)	290.3(36), 365.4(19), 173.4(18)
107.306 *4*	0.59 *6*	^{227}Fr(2.47 m)	90.035(39), 585.804(29.5), 64.267(14.5)
107.32 *9*	0.00103 *5*	^{135}La(19.5 h)	480.51(1.5), 874.51(0.164), 587.83(0.1108)
107.32 *5*	0.44 *6*	^{148}Ba(0.607 s)	56.08(29.20), 133.53(3.88), 415.78(3.59)
• 107.34 *4*	†6.1×10^{3} *4*	^{134}Ce(75.9 h)	162.306(†230000), 130.414(†209000), 39.08(†>150000)
107.4 *5*	27 *5*	^{184}Lu(20 s)	367.6(109), 242.4(76), 481.9(65)
107.4 *5*		^{184}Lu	
107.4 *1*	†4.2 *13*	^{185}Hg(21.6 s)	222.8(†100.0), 258.7(†98), 212.5(†58)
107.43 *11*	0.106 *15*	^{100}Sr(202 ms)	963.85(22.0), 898.50(18.9), 65.46(15.2)
107.5		^{110}Te(18.6 s)	894.8, 605.9, 219.1
107.6 *3*	0.006 *3*	^{105}Cd(55.5 m)	961.84(4.69), 346.870(4.20), 1302.459(3.98)
107.6 *5*	0.010 *10*	^{146}La(6.27 s)	258.47(64), 924.58(7.45), 702.28(6.43)
• 107.60 *20*	>0.00040	^{155}Eu(4.7611 y)	86.545(30.7), 105.305(21.2), 45.2972(1.326)
107.64 *16*	†100 *5*	^{181}Ir(4.90 m)	1639.6(†52), 318.9(†46), 231.6(†30)
107.69 *1*	2.09 *23*	^{143}Eu(2.63 m)	1107.3(8), 1536.8(3.29), 1912.7(2.13)
107.7 *1*	0.19 *10*	^{138}Cs(2.91 m)	1435.795(19), 462.796(18.6), 191.96(15.4)
107.72 *10*	0.069 *5*	^{79}Rb(22.9 m)	688.1(23), 182.77(19.2), 143.41(13.9)
107.72 *9*	0.41 *6*	^{183}Ir(58 m)	392.52(10.4), 228.70(6.9), 87.67(5.6)
107.74 *5*	>0.00039	^{161}Ho(2.48 h)	25.65150(27), 103.062(3.9), 77.414(1.91)
• 107.75 *7*	†0.56 *19*	^{227}Th(18.72 d)	235.971(†813), 50.13(†528), 256.25(†463)
107.79 *3*	0.085 *16*	^{149}Nd(1.728 h)	211.309(25.9), 114.314(19.2), 270.166(10.7)
107.8 *2*	0.090 *15*	^{117}Cs(8.4 s)	204.8(15.0), 29.7(9.9), 205.6(6.8)
107.8 *1*	†6.4 *21*	^{185}Hg(21.6 s)	222.8(†100.0), 258.7(†98), 212.5(†58)
107.85 *2*	2.75 *15*	^{185}Ta(49.4 m)	177.59(25.7), 173.68(22.6), 65.86(3.9)
107.896 *25*	6.8	^{154}Pm(2.68 m)	184.810(32), 81.99(15.4), 546.66(14.5)
107.9		^{130}Ce(25 m)	1072.6(†100), 997.7(†100), 920.5(†100)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
107.9 *1*	0.114 *14*	^{146}Ba(2.22 s)	140.7(20.2), 251.2(19.6), 121.2(14.2)
107.925 *15*	0.048 *3*	^{155}Dy(9.9 h)	226.918(68.4), 184.564(3.37), 1089.8(>2.8)
• 107.9322 *4*	11.0 *4*	^{183}Ta(5.1 d)	246.0591(27), 353.9912(11.2), 161.3467(8.9)
• 107.9322 *4*	2.17 *4*	^{183}Re(70.0 d)	162.3219(23.3), 46.4839(7.97), 291.7238(3.05)
107.945 *8*	14.1 *14*	^{105}Tc(7.6 m)	143.26(16), 321.50(11.1), 159.528(10.2)
107.98 *9*	†0.77 *9*	^{160}Ho(5.02 h)	728.18(†100), 879.383(†65.9), 962.317(†59.1)
107.98 *9*	0.36 *4*	^{160}Ho(25.6 m)	728.18(46.9), 879.383(26.6), 962.317(25.6)
108.0 *3*	1.0	^{118}Pd(1.9 s)	125.4(34), 125.4(34), 224.2(20.1)
108.0 *2*	0.67 *10*	^{121}Cs(155 s)	153.9(15.2), 239.6(7.7), 427.1(3.63)
108.0 *5*	†8 *2*	^{125}Ba(3.5 m)	77.6(†100), 140.9(†86), 85.4(†82)
• 108.00 *5*	0.0106 *13*	^{234}Th(24.10 d)	63.29(4.8), 92.38(2.81), 92.80(2.77)
• 108.0053 *25*	0.083 *4*	^{169}Lu(34.06 h)	960.622(23.4), 191.2137(20.6), 1449.74(9.92)
108.056 *8*	0.353 *12*	^{204}Po(3.53 h)	883.984(29.9), 270.068(27.8), 1016.31(24.1)
108.081 *5*	25.0 *5*	^{131}La(59 m)	417.783(18.0), 365.162(16.9), 285.246(12.4)
108.088 *10*	24.3 *9*	^{151}Tb(17.609 h)	287.357(28.3), 251.863(26.3), 587.46(15.6)
108.1	†7	^{224}Ac(2.9 h)	156.4(†100), 140.8(†55), 261.6(†28)
108.160 *3*		^{165}Tb(2.11 m)	1178.53(13.2), 538.51(7.2), 1292.05(7.0)
108.191 *9*	2.68 *6*	^{157}Pm(10.56 s)	160.61(35), 188.052(13.5), 571.27(5.39)
108.3 *2*	0.12 *6*	^{101}Zr(2.1 s)	119.3(10.8), 205.6(6.0), 912.2(3.48)
108.3 *2*	†6	^{135}Pm(49 s)	198.5(†100), 207.2(†70), 463.5(†62)
108.3 *4*	0.055 *23*	^{180}Lu(5.7 m)	407.94(43.0), 1199.7(24.3), 1106.00(22.7)
108.4 *1*	†52 *7*	^{151}Yb(1.6 s)	474.2(†100), 520.1(†85)
108.42 *4*	2.29 *14*	^{221}Rn(25 m)	186.38(21.6), 150.04(4.5), 216.90(2.6)
• 108.42 *4*	0.251 *11*	^{225}Ac(10.0 d)	99.91(1.01), 150.04(0.80), 99.63(0.62)
108.44 *8*	†7.0 *9*	^{224}Rn(107 m)	260.581(†100), 265.806(†93), 202.21(†21.9)
108.5 *1*	0.70 *12*	^{107}Tc(21.2 s)	102.70(21.0), 177.00(9.2), 106.31(7.6)
108.50 *30*	0.050 *6*	^{116}Te(2.49 h)	93.70(31.4), 628.63(3.22), 102.97(1.95)
108.5 *3*	0.20 *4*	^{141}Sm(22.6 m)	196.88(74), 431.6(40.4), 777.6(20.3)
108.520 *1*	9.5 *4*	^{149}Pr(2.26 m)	138.447(11.0), 165.087(9.9), 332.944(6.15)
• 108.573 *25*	0.80 *5*	^{182}Re(64.0 h)	229.3220(26), 67.75001(22.2), 1121.3007(22.0)
108.6 *2*	0.52 *20*	^{105}Mo(35.6 s)	85.4(25.0), 76.50(19.3), 147.8(14.8)
108.6 *2*	1.3 *4*	^{129}Sn(6.9 m)	1161.31(56.0), 1128.44(50), 760.8(16.8)
108.6 *2*	35	^{137}Pm(2.4 m)	177.5(40.29), 233.6(29.57), 286.0(16.06)
108.6 *3*	†12 *4*	^{180}Yb(2.4 m)	172.9(†100), 375.0(†87), 419.8(†56)
108.67 *15*	0.31 *3*	^{190}Re(3.2 h)	186.718(27.8), 605.24(14.9), 557.972(14.3)
108.700 *19*	†0.58 *4*	^{153}Pm(5.4 m)	35.842(†100), 127.298(†75), 28.309(†34.6)
108.7 *2*	†100 *4*	^{153}Ho(9.3 m)	365.9(†92), 161.5(†83), 270.6(†72)
108.7 *2*	2	^{153}Ho(2.0 m)	295.8(67), 637.0(5.36), 688.5(3.7)
108.7 *3*	1.17 *14*	^{158}Sm(5.30 m)	189.4(15.2), 363.6(12.4), 324.5(10.6)
108.7 *7*	0.0006	^{233}Th(22.3 m)	86.477(2.7), 29.374(2.5), 459.222(1.4)
• 108.7 *7*	0.068 *15*	^{237}Np(2.14×10^6 y)	29.374(15.0), 86.477(12.4), 94.66(0.6)
108.788 *6*	43.5 *25*	^{91}Kr(8.57 s)	506.592(19.1), 612.87(7.7), 1108.68(7.2)
• 108.79 *3*	0.120 *13*	^{97}Ru(2.9 d)	215.718(86), 324.48(10.79), 569.31(0.873)
108.79 *2*	0.463 *25*	^{155}Ho(48 m)	240.19(12.5), 136.30(5.00), 45.38(5)
108.8 *3*	†1.0 *7*	^{131}Sn(56.0 s)	1226.03(†100), 450.03(†90), 798.50(†86)
108.8 *3*	0.28 *4*	^{159}Eu(18.1 m)	67.8(19), 78.6(9.1), 95.7(7.0)
108.85 *3*	10.4 *3*	^{66}Ge(2.26 h)	43.89(28.7), 381.85(28), 272.97(10.4)
108.90 *10*	32	^{136}Nd(50.65 m)	40.2(18.9), 574.8(10.4), 149.1(6.9)
108.9 *5*		^{163}Yb(11.05 m)	860.28(10.1), 63.62(6.5), 123.21(1.98)
108.95 *11*	0.044 *14*	^{96}Nb(23.35 h)	778.224(96.45), 568.80(58.0), 459.88(26.62)
108.95 *5*	0.050 *24*	^{140}Xe(13.60 s)	805.52(20), 1413.66(12.2), 1315.05(8.2)
• 108.96 *5*	2.8 *3*	^{232}Pa(1.31 d)	969.315(41.6), 894.351(19.8), 150.059(10.8)
108.96 *5*	1.5	^{232}Np(14.7 m)	327.3(52), 819.187(33.3), 866.760(24.4)
• 108.96 *5*	0.012	^{236}Pu(2.858 y)	47.574(0.066), 166.0(0.00066), 643.5(0.00024)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
109.0 *5*	†2.0 *6*	^{106}Mo(8.4 s)	465.70(†100), 54.00(†54), 618.60(†25)
109.08 *9*	25.0 *11*	^{176}Re(5.3 m)	240.17(48), 848.7(4.0), 820(3.8)
109.1 *4*	†1.0 *5*	^{136}Eu(3.3 s)	254.9(†100), 431.4(†34), 458.0(†20)
109.10 *5*	0.294 *14*	^{144}Ba(11.5 s)	103.855(23.30), 430.48(18.3), 172.828(15.4)
109.1 *1*	†5.8 *7*	^{185}Pt(33.0 m)	229.60(†100), 135.3(†80), 197.4(†74)
109.1 *4*	0.49 *14*	^{186}Pt(2.0 h)	276.7(0), 611.5(6.0), 635.6(>3.8)
109.1		^{207}At(1.80 h)	814.41(44.5), 588.33(19.2), 300.654(12.8)
• 109.10 *10*		^{237}Np(2.14×10^{6} y)	29.374(15.0), 86.477(12.4), 94.66(0.6)
• 109.16 *2*	1.54 *5*	^{235}U(7.038×10^{8} y)	185.712(57.2), 143.764(10.96), 163.358(5.08)
• 109.2	0.044 *8*	^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
109.2 *2*	0.161 *16*	^{243}Pu(4.956 h)	84.0(23), 41.8(0.76), 381.7(0.56)
109.3 *3*		^{122}Ba(1.95 m)	550.7, 388.7, 231.0
• 109.301 *15*	0.607 *14*	^{171}Lu(8.24 d)	739.78(47.8), 19.394(13.7), 667.404(11.04)
109.34		^{238}Pa(2.3 m)	1015.3(†<100), 1014.6(†<100), 635.18(†88)
109.4 *3*	<0.6	^{97}Sr(426 ms)	1905.0(25), 953.8(21.4), 652.2(11.4)
109.40 *4*	0.062 *7*	^{131}Te(25.0 m)	149.716(69), 452.323(18.18), 1146.96(4.95)
• 109.40 *4*	0.046 *10*	^{131}Te(30 h)	773.67(49.9), 852.21(27.0), 793.75(18.10)
109.4	0.048	^{148}Dy(3.1 m)	620.24(96), 1247.2(1.4), 178.3(0.5)
109.4		^{152}Ho(161.8 s)	102.3, 85.8, 178.3
109.4 *3*	0.60 *8*	^{192}Hg(4.85 h)	274.8(50.4), 157.2(7), 306.5(5.4)
• 109.422 *11*	0.219 *4*	^{140}La(1.6781 d)	1596.210(95), 487.021(45.5), 815.772(23.28)
• 109.48 *3*		^{206}Po(8.8 d)	1032.26(32.9), 511.36(24.1), 286.410(23.8)
• 109.5 *1*	0.00030 *3*	^{233}U(1.592×10^{5} y)	42.44(0.0862), 97.134(0.020), 54.699(0.0182)
109.53 *10*	0.037 *9*	^{98}Nb(51.3 m)	787.374(93), 722.645(73.8), 1168.830(17.8)
109.54 *2*	0.48 *7*	^{200}Pb(21.5 h)	147.63(37.7), 257.17(4.46), 235.63(4.30)
• 109.56 *2*	0.085 *7*	^{151}Pm(28.40 h)	340.08(23), 167.75(8.3), 275.21(6.8)
109.58 *6*	21	^{79}Ge(19.1 s)	1505.85(9.2), 100.48(2.70), 503.26(2.16)
109.58 *6*	12	^{79}Ge(39.0 s)	230.62(61), 542.27(32.6), 755(18)
109.59 *3*	0.00059 *17*	^{165}Dy(2.334 h)	94.700(3.58), 361.68(0.84), 633.415(0.568)
109.59 *3*		^{165}Dy(1.257 m)	515.467(1.53), 361.68(0.534), 153.803(0.242)
109.6 *4*	0.8 *3*	^{129}Sn(6.9 m)	1161.31(56.0), 1128.44(50), 760.8(16.8)
109.60 *5*	0.12 *8*	^{204}Bi(11.22 h)	899.15(98), 374.72(82), 984.02(59)
• 109.6 *5*	†0.41	^{227}Th(18.72 d)	235.971(†813), 50.13(†528), 256.25(†463)
• 109.681 *7*	†0.21 *3*	^{136}Cs(13.16 d)	818.514(†100), 1048.073(†80), 340.547(†42.3)
• 109.69 *4*	0.024	^{242}Am(141 y)	49.367(0.19), 86.68(0.037), 163.24(0.024)
109.7	4.5 *5*	^{147}Cs(0.225 s)	85.2(7.3), 245.8(4.5), 596.0(4.3)
109.7 *4*	0.13 *6*	^{185}Au(4.25 m)	310.6(13), 243.1(6.6), 77.7(6)
• 109.70 *7*	†4.9×10^{4}	^{241}Am(432.2 y)	59.537(†60), 26.345(†1000×10^{9}), 33.195(†6000×10^{8})
• 109.7265 *5*	0.598 *24*	^{183}Ta(5.1 d)	246.0591(27), 353.9912(11.2), 107.9322(11.0)
• 109.7265 *5*	2.87 *6*	^{183}Re(70.0 d)	162.3219(23.3), 46.4839(7.97), 291.7238(3.05)
• 109.74 *4*	0.0029 *14*	^{151}Gd(124 d)	153.56(6.20), 243.28(5.60), 174.70(2.96)
• 109.758 *15*	6.4 *3*	^{153}Tb(2.34 d)	212.038(31.0), 170.504(6.8), 102.263(6.0)
• 109.77987 *6*	0.0013 *3*	^{169}Er(9.40 d)	8.41031(0.158), 118.19018(0.00014)
• 109.77987 *6*	17.47 *18*	^{169}Yb(32.026 d)	63.12077(44.2), 197.95788(35.8), 177.21402(22.16)
109.78 *10*	0.06 *3*	^{195}Tl(1.16 h)	563.52(10.5), 884.47(10.0), 1363.88(8.4)
109.8 *1*	†31 *3*	^{123}La(17 s)	92.5(†100), 937.3(†43), 153.6(†43)
109.8 *1*	0.38 *4*	^{186}Hg(1.38 m)	112.1(63), 251.5(55), 191.6(3.7)
• 109.83 *4*		^{161}Tb(6.88 d)	25.65150(23.2), 48.91562(17.0), 74.56711(10.2)
109.83 *4*		^{161}Ho(2.48 h)	25.65150(27), 103.062(3.9), 77.414(1.91)
109.86 *2*	†1.33×10^{3} *14*	^{157}Ho(12.6 m)	279.97(†47600), 341.16(†37000), 193.41(†15200)
109.87 *5*	0.67 *6*	^{148}Ba(0.607 s)	56.08(29.20), 133.53(3.88), 415.78(3.59)
109.894 *5*	2.71 *10*	^{19}O(26.91 s)	197.142(95.9), 1356.843(50.4), 1444.085(2.64)
109.894 *5*	0.012 *2*	^{19}Ne(17.34 s)	1356.843(0.00206), 197.142(0.00206), 1444.085(0.000108)
109.897 *23*	0.041 *3*	^{122}Xe(20.1 h)	350.065(7.80), 148.612(2.62), 416.633(1.87)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
109.9 *2*	0.49	^{140}Sm(14.82 m)	225.5(>10), 225.4(10), 140.0(5.0)
109.9 *1*	0.056 *12*	^{161}Er(3.21 h)	826.6(3.0), 211.15(12.2), 592.6(3.7)
109.97 *11*	2.7 *5*	^{181}Re(19.9 h)	365.57(56), 360.70(20), 639.30(6.4)
110.00 *5*	0.34 *3*	^{226}Fr(48 s)	253.73(22.3), 186.05(16.3), 253.9(2.5)
• 110.00 *5*	5.9×10^{-5} *5*	^{230}Th(7.538×10^{4} y)	67.67(0.376), 143.87(0.0486), 253.73(0.0111)
110.04 *3*	5.7 *5*	^{187}Pt(2.35 h)	106.46(9), 201.52(6.4), 709.17(5.2)
110.05 *5*	1.24 *9*	^{227}Pa(38.3 m)	64.62(6), 84.8(0.86), 67.6(0.42)
• 110.093 *19*	0.0126 *9*	^{192}Ir(73.831 d)	205.79549(3.300), 484.5780(3.184), 374.4852(0.721)
110.1 *4*	0.39 *4*	^{127}Sn(2.10 h)	1114.3(39), 1095.6(20), 823.1(10.9)
110.1 *2*	0.019 *3*	^{176}Ta(8.09 h)	1159.28(25), 88.34(12), 1224.93(6)
110.1 *1*	†10.0 *25*	^{213}Ra(2.74 m)	214.7(†1.5), 104.6(†0.52)
110.1 *1*	†50 *20*	^{213}Ra(2.1 ms)	214.7(†100), 104.6(†12)
110.12 *7*	†100	^{155}Er(5.3 m)	241.5(†65), 234.0(†40.0), 512.2(†37)
110.23 *7*	0.083 *22*	^{133}Te(55.4 m)	912.671(55.28), 647.51(19.4), 863.955(15.6)
110.28 *5*	0.8 *4*	^{193}Au(17.65 h)	186.17(10.1), 255.57(6.7), 268.22(3.9)
110.30 *12*	0.96 *22*	^{181}Re(19.9 h)	365.57(56), 360.70(20), 639.30(6.4)
110.3 *1*	†20 *3*	^{225}Fr(4.0 m)	182.3(†100), 31.50(†91), 225.1(†55)
• 110.33 *6*	0.0050 *6*	^{151}Gd(124 d)	153.56(6.20), 243.28(5.60), 174.70(2.96)
110.332 *8*	†0.85 *11*	^{225}Fr(4.0 m)	182.3(†100), 31.50(†91), 225.1(†55)
• 110.332 *8*	0.124 *12*	^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
110.34 *5*	0.137 *10*	^{224}Fr(3.30 m)	215.985(33.1), 131.613(16.3), 836.90(9.8)
110.35 *10*	8.2 *9*	^{157}Tm(3.63 m)	455.00(9.3), 385.5(8.8), 348.40(8.4)
110.4 *4*	6.5 *3*	^{80}Ge(29.5 s)	265.36(27.0), 1564.3(4.9), 936.97(4.05)
110.4 *2*	1.1	^{115}Pd(25 s)	342.71(8), 303.87(7), 396.56(6)
• 110.414 *18*	0.087 *4*	^{182}Ta(114.43 d)	67.75001(41.2), 1121.3007(34.9), 1221.4066(26.98)
110.414 *18*	0.016 *3*	^{182}Re(12.7 h)	67.75001(38.2), 1121.3007(32), 1221.4066(24.8)
• 110.414 *18*	0.1 *1*	^{182}Re(64.0 h)	229.3220(26), 67.75001(22.2), 1121.3007(22.0)
110.471 *9*	0.23 *4*	^{182}Os(22.10 h)	510.056(52), 180.230(33.5), 263.285(6.71)
110.5 *1*	16.9 *8*	^{129}La(11.6 m)	278.6(25), 457.0(8.0), 253.8(8.0)
• 110.5 *2*	$\dagger3.5\times10^{3}$ *12*	^{235}Np(396.1 d)	25.646(†600000), 84.216(†265000), 81.227(†58000)
110.6 *5*	†39 *4*	^{121}Ba(29.7 s)	111.6(†100), 99.2(†86), 210.8(†61)
• 110.65 *5*		^{227}Th(18.72 d)	235.971(†813), 50.13(†528), 256.25(†463)
• 110.66 *12*	0.0068 *12*	^{151}Gd(124 d)	153.56(6.20), 243.28(5.60), 174.70(2.96)
110.7 *3*	†1.8 *4*	^{189}Au(28.7 m)	713.17(†100), 812.68(†63), 447.65(†55)
110.70 *10*	0.10 *5*	^{206}At(30.0 m)	700.66(98), 477.10(86), 395.54(48)
110.7 *1*	†2.7 *3*	^{230}Ra(93 m)	72.0(†100), 63.0(†35.4), 202.8(†27.3)
110.78 *10*	†100 *9*	^{161}Lu(77 s)	100.32(†95), 43.7(†70), 256.24(†49)
110.8 *3*	>0.26	^{137}Nd(38.5 m)	75.5(17.0), 580.6(13), 306.60(10.0)
110.8 *1*	4.2 *12*	^{236}Th(37.5 m)	646.6(0.72), 196.0(0.69), 340.1(0.67)
110.8 *2*	12 *3*	^{244}Np(2.29 m)	217.1(59), 162.4(52)
• 110.856 *10*	0.058 *4*	^{223}Ra(11.435 d)	269.459(13.7), 154.21(5.62), 323.871(3.93)
• 110.89 *12*	0.00107 *6*	^{125}Sb(2.7582 y)	427.875(30), 600.600(17.86), 635.954(11.31)
110.9	0.216 *22*	^{64}Ga(2.630 m)	991.52(43), 807.86(13.65), 3365.86(13.1)
• 110.9 *3*	0.07	^{101}Rh(3.3 y)	127.23(73), 197.6(70.8), 324.8(13.4)
110.91 *11*	0.23 *3*	^{183}Ir(58 m)	392.52(10.4), 228.70(6.9), 87.67(5.6)
• 110.9291 *10*	1.75 *4*	^{169}Lu(34.06 h)	960.622(23.4), 191.2137(20.6), 1449.74(9.92)
• 110.943 *24*	1.92 *11*	^{145}Eu(5.93 d)	893.73(66), 653.512(15.0), 1658.53(14.9)
110.98 *8*	6.3 *15*	^{194}Tl(32.8 m)	636.5(99), 428.0(99), 748.9(76)
111.0 *10*	0.039	^{79}Rb(22.9 m)	688.1(23), 182.77(19.2), 143.41(13.9)
111.0 *3*	0.44 *5*	^{121}Cs(122 s)	179.4(30.2), 196.0(24.1), 459.7(12.0)
111.0 *2*	0.020	^{239}U(23.45 m)	74.664(48), 43.533(4.14), 662.24(0.18)
111.05 *3*	0.0057 *6*	^{223}Fr(21.8 m)	50.13(36.0), 79.72(9.1), 234.81(3.0)
111.10 *5*		^{167}Lu(51.5 m)	29.66(14.4), 239.22(8.6), 213.19(3.6)
• 111.10 *3*	0.208 *15*	^{182}Re(64.0 h)	229.3220(26), 67.75001(22.2), 1121.3007(22.0)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
• 111.1	0.0028	^{242}Am(141 y)	49.367(0.19), 86.68(0.037), 109.69(0.024)
• 111.109 *12*	0.0534 *21*	^{173}Lu(1.37 y)	272.105(21.2), 78.63(11.87), 100.724(5.24)
111.12 *3*	12.5 *13*	^{222}Fr(14.2 m)	206.15(51), 242.12(1.89), 317.8(0.8)
111.12 *3*	3.29 *20*	^{226}Th(30.9 m)	242.12(0.866), 131.02(0.278), 206.15(0.189)
111.13 *10*	†3.1 *9*	^{200}Au(18.7 h)	497.77(†123), 367.943(†123), 579.298(†121)
• 111.17 *5*	0.30 *8*	^{147}Gd(38.06 h)	229.32(63), 396.00(34.3), 929.01(20.2)
111.2 *2*	0.10 *3*	^{176}Tm(1.9 m)	189.57(44.5), 1069.3(34), 381.8(21.8)
111.208 *4*	23.7 *10*	^{184}Ta(8.7 h)	414.03(72), 252.848(43), 920.932(32.0)
• 111.208 *4*	17.1 *6*	^{184}Re(38.0 d)	903.279(37.9), 792.071(37.5), 894.757(15.6)
• 111.208 *4*	5.8 *3*	^{184}Re(169 d)	252.848(10.7), 216.548(9.43), 920.932(8.14)
111.3 *3*	0.099 *18*	^{120}Xe(40 m)	25.1(30), 72.6(9), 178.1(6.8)
111.3 *1*	7	^{149}Tm(0.9 s)	796.2(18), 158.8(12.3), 416.7(11)
111.3 *2*	0.017 *3*	^{176}Ta(8.09 h)	1159.28(25), 88.34(12), 1224.93(6)
111.312 *2*	5.55 *12*	^{144}Ba(11.5 s)	103.855(23.30), 430.48(18.3), 172.828(15.4)
111.394 *17*	0.037 *10*	^{182}Os(22.10 h)	510.056(52), 180.230(33.5), 263.285(6.71)
111.4 *2*	0.21 *3*	^{100}Cd(49.1 s)	936.55(66), 139.71(6.7), 582.5(6.3)
111.40 *8*	0.012 *4*	^{101}Pd(8.47 h)	296.29(19), 590.44(12.06), 269.67(6.43)
111.4 *4*	0.0017 *5*	^{194}Ir(19.15 h)	328.455(13.1), 293.545(2.55), 645.157(1.17)
• 111.4 *2*	8.9 *4*	^{194}Ir(171 d)	482.833(97), 328.455(93), 600.5(62)
111.47 *3*	0.115 *8*	^{155}Ho(48 m)	240.19(12.5), 136.30(5.00), 45.38(5)
111.5 *1*	2.7 *3*	^{129}Sn(6.9 m)	1161.31(56.0), 1128.44(50), 760.8(16.8)
111.5 *10*	4.4 *15*	^{132}In(0.201 s)	374.3(62), 4040.8(61), 299.2(49)
111.5		^{173}Er(1.4 m)	895.2(54), 199.2(48), 192.8(47)
111.5	>0.019	^{195}Tl(1.16 h)	563.52(10.5), 884.47(10.0), 1363.88(8.4)
111.54 *3*	2.29 *14*	^{221}Rn(25 m)	186.38(21.6), 150.04(4.5), 216.90(2.6)
• 111.54 *3*	0.317 *14*	^{225}Ac(10.0 d)	99.91(1.01), 150.04(0.80), 99.63(0.62)
111.6 *3*	0.065 *9*	^{97}Zr(16.91 h)	743.36(93), 507.64(5.03), 1147.97(2.61)
111.6		^{101}Rb(32 ms)	271.2(†100), 251.6(†31), 1091.8(†25)
111.6 *5*	†100	^{121}Ba(29.7 s)	99.2(†86), 210.8(†61), 110.6(†39)
111.6 *2*	1.8 *5*	^{139}Eu(17.9 s)	267.3(31), 155.3(31), 190.1(25)
111.6		^{167}Ta(1.4 m)	296.3, 278.0, 214.2
111.6 *2*	†13	^{256}Es(7.6 h)	861.8(†100), 231.1(†61), 172.6(†49)
111.621 *4*	20.5 *8*	^{171}Er(7.516 h)	308.31(64.4), 295.901(28.9), 124.015(9.1)
• 111.76 *8*	1.74 *4*	^{132}Te(3.204 d)	228.16(88.0), 49.72(15.0), 116.30(1.96)
111.79 *5*	88 *8*	^{126}In(1.64 s)	1141.11(100), 908.58(99), 1636.50(29.6)
111.79 *25*	†68	^{168}Lu(5.5 m)	1483.65(†100), 228.58(†97), 111.8(†68)
111.8 *3*	9	^{125}Cs(45 m)	526(24), 412(5), 712(3.5)
111.8 *3*	†68	^{168}Lu(5.5 m)	1483.65(†100), 228.58(†97), 111.79(†68)
111.854 *17*	0.056 *11*	^{179}Re(19.5 m)	430.221(28), 289.968(26.9), 1680.244(13.0)
111.88 *5*		^{184}Ta(8.7 h)	414.03(72), 252.848(43), 920.932(32.0)
111.9 *1*		^{125}La(76 s)	67.6(34), 43.6(3.5), 985.2
• 111.9 *2*	0.04 *1*	^{131}Te(30 h)	773.67(49.9), 852.21(27.0), 793.75(18.10)
111.9 *2*	21.3 *24*	^{139}Eu(17.9 s)	267.3(31), 155.3(31), 190.1(25)
111.9		^{161}Er(3.21 h)	826.6(3.0), 211.15(12.2), 592.6(3.7)
• 111.9 *1*	0.00058 *10*	^{229}Pa(1.50 d)	40.09(0.104), 64.70(0.045), 75.12(0.035)
• 111.9379 *12*	1.49 *15*	^{156}Tb(5.35 d)	534.318(66.6), 199.2132(40.9), 1222.36(31.00)
111.97 *9*	†100	^{181}Pt(51 s)	289.29(†100), 230.15(†92), 243.11(†61)
112.0 *1*	58 *6*	^{98}Pd(17.7 m)	662.2(19.7), 106.75(13.9), 67.7(8.7)
112.0 *5*	†2.4 *5*	^{106}Mo(8.4 s)	465.70(†100), 54.00(†54), 618.60(†25)
112.0	0.008 *3*	^{135}Ce(17.7 h)	265.56(41.8), 300.07(23.5), 606.76(18.8)
• 112.0 *1*	0.00045 *5*	^{233}U(1.592×10^5 y)	42.44(0.0862), 97.134(0.020), 54.699(0.0182)
112		^{234}Am(2.32 m)	185, 168, 147
112.03 *11*	0.007 *3*	^{133}Ce(4.9 h)	477.22(39), 510.36(20.7), 58.39(19.2)
112.1 *4*	†8 *2*	^{59}Cr(0.74 s)	1238.6(†100)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
112.1 *2*	0.40 *7*	^{184}Au(53.0 s)	162.97(50), 272.98(40), 362.47(17.5)
112.1 *1*	63	^{186}Hg(1.38 m)	251.5(55), 191.6(3.7), 227.7(3.0)
112.15 *5*	0.130 *22*	^{151}Nd(12.44 m)	116.80(43.4), 255.68(16.4), 1180.89(14.8)
112.185 *2*	1.0 *3*	^{149}Pr(2.26 m)	138.447(11.0), 165.087(9.9), 108.520(9.5)
112.2 *1*	25.00 *25*	^{110}Ru(14.6 s)	166.1(0.65), 116.1(0.45), 415.4(0.43)
112.2		^{194}Bi(125 s)	272.4, 63.9
112.2 *1*	†8 *1*	^{227}Rn(22.5 s)	162.14(†100), 739.2(†65), 686.2(†62)
112.26 *15*	0.11 *4*	^{133}Te(55.4 m)	912.671(55.28), 647.51(19.4), 863.955(15.6)
112.29 *3*	3.4 *3*	^{78}Zn(1.47 s)	224.75(43.9), 181.68(28.1), 860.30(24.5)
112.29 *10*	0.030	^{210}At(8.1 h)	1181.39(99.3), 245.31(79), 1483.39(46.5)
112.3 *6*	0.38 *15*	^{117}I(2.22 m)	325.9(75), 274.4(20.4), 661.5(5.1)
112.35 *9*	0.023 *7*	^{132}Ce(3.51 h)	182.11(77), 155.37(10.5), 216.83(4.95)
112.36 *6*	96.0 *6*	^{48}Cr(21.56 h)	308.25(100), 420.5(<0.03)
112.36 *4*	0.038 *4*	^{187}Ir(10.5 h)	912.95(4.79), 427.12(4.12), 400.89(3.94)
• 112.38 *11*	2.07 *8*	^{72}Zn(46.5 h)	145.04(83), 191.96(9.37), 16.4(8.3)
112.3880 *12*	1.67 *18*	^{75}Br(96.7 m)	286.572(88), 141.3147(6.6), 427.883(4.4)
112.4 *4*	†5.4 *4*	^{172}W(6.6 m)	38.9(†100), 423.3(†44), 89.8(†33.0)
• 112.43 *5*	0.023 *3*	^{105}Ag(41.29 d)	344.520(41), 280.41(30.2), 644.55(11.1)
112.43 *10*	0.092 *23*	^{159}Tm(9.13 m)	38.35(5.8), 84.8(5.8), 271.30(5.1)
112.46 *2*	10.71 *14*	^{145}Cs(0.594 s)	175.36(20), 198.93(10.9), 435.63(5.74)
112.5 *1*	†100	^{84}Zr(25.9 m)	44.9(†48), 372.9(†41), 666.7(†39)
112.5 *5*	0.31 *16*	^{105}Tc(7.6 m)	143.26(16), 107.945(14.1), 321.50(11.1)
112.515 *10*	2.20 *17*	^{193}Au(17.65 h)	186.17(10.1), 255.57(6.7), 268.22(3.9)
112.52 *3*	0.136 *6*	^{72}Ga(14.10 h)	834.01(96), 2201.69(25.9), 629.95(24.8)
• 112.52 *3*	0.0268 *25*	^{72}As(26.0 h)	834.01(80), 629.95(7.92), 1463.95(1.107)
112.52 *4*	0.119 *16*	^{149}Nd(1.728 h)	211.309(25.9), 114.314(19.2), 270.166(10.7)
• 112.549 *2*	0.00011 *5*	^{161}Tb(6.88 d)	25.65150(23.2), 48.91562(17.0), 74.56711(10.2)
112.549 *2*	0.0035 *6*	^{161}Ho(2.48 h)	25.65150(27), 103.062(3.9), 77.414(1.91)
112.56 *8*	4.7 *5*	^{135}Nd(12.4 m)	204.02(52), 41.43(23), 441.2(14.9)
112.56 *3*	3.1 *3*	^{161}Tm(33 m)	45.54(5.00), 1648.1(9.50), 84.40(9.4)
112.60 *13*	0.130 *23*	^{138}Cs(33.41 m)	1435.795(76.3), 462.796(30.7), 1009.78(29.8)
112.60 *13*	1.52 *19*	^{138}Cs(2.91 m)	1435.795(19), 462.796(18.6), 191.96(15.4)
112.6		^{190}Hg(20.0 m)	142.6(68), 171.5(4.8), 154.7(2.5)
• 112.6 *5*	†0.6	^{227}Th(18.72 d)	235.971(†813), 50.13(†528), 256.25(†463)
112.606 *3*	3.7 *5*	^{140}Xe(13.60 s)	805.52(20), 1413.66(12.2), 1315.05(8.2)
112.7 *2*	†0.81	^{103}Nb(1.5 s)	102.64(†100), 641.1(†55), 538.5(†34.0)
• 112.70 *14*	0.0048 *6*	^{171}Lu(8.24 d)	739.78(47.8), 19.394(13.7), 667.404(11.04)
• 112.7 *1*	0.0087 *6*	^{205}Bi(15.31 d)	1764.36(1.368), 703.44(31), 987.62(0.585)
112.73 *5*	0.44 *3*	^{148}Ba(0.607 s)	56.08(29.20), 133.53(3.88), 415.78(3.59)
112.74 *10*	1.05 *8*	^{121}Cd(8.3 s)	2059.41(21.0), 1020.89(18.9), 987.81(13.6)
112.75 *2*	0.92 *15*	^{232}Ac(119 s)	665.0(15.3), 1899(8.9), 1959(5.4)
• 112.75 *2*	0.019 *2*	^{236}U(2.342×10^7 y)	49.369(0.078)
• 112.761 *11*	1.27 *4*	^{172}Lu(6.70 d)	1093.657(62.5), 900.724(29.8), 181.528(20.6)
112.78	0.013	^{135}I(6.57 h)	1260.409(28.90), 1131.511(22.74), 1678.027(9.62)
112.8	1.01 *9*	^{141}Ba(18.27 m)	190.328(46.0), 304.194(25.4), 276.948(23.4)
112.8 *3*	0.11	^{170}Hf(16.01 h)	164.78(33), 620.7(23), 120.17(19)
• 112.8 *2*	0.0022 *11*	^{225}Ac(10.0 d)	99.91(1.01), 150.04(0.80), 99.63(0.62)
112.8 *2*	0.24 *9*	^{236}Th(37.5 m)	110.8(4.2), 646.6(0.72), 196.0(0.69)
• 112.81 *5*	0.277 *20*	^{234}Th(24.10 d)	63.29(4.8), 92.38(2.81), 92.80(2.77)
112.88 *4*	0.0021 *6*	^{167}Yb(17.5 m)	113.34(55.3), 106.18(22.5), 176.25(21)
• 112.9498 *5*	6.4 *3*	^{177}Lu(6.734 d)	208.3664(11.0), 321.3162(0.219), 249.6741(0.212)
• 112.9498 *5*	20.4 *4*	^{177}Lu(160.4 d)	208.3664(57.7), 228.4838(37.0), 378.5029(29.7)
• 112.9498 *5*	7.2 *8*	^{177}Ta(56.56 h)	208.3664(0.94), 1057.8(0.29), 745.9(0.207)
113.0 *1*	0.117 *23*	^{159}Er(36 m)	624.5(33), 649.1(23.4), 205.92(9.7)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
113.0		^{171}W(2.38 m)	184.2(†100), 294.5(†89), 478.7(†83)
113.0 *1*	19.8 *11*	^{174}Re(2.40 m)	243.4(37), 1002.9(5.62), 349.5(4.8)
113 *1*	0.27 *11*	^{196}Pb(37 m)	253.1(27.0), 502.1(26.5), 366.5(11.1)
113 *1*		^{204}Fr(1.7 s)	
113.02 *3*	0.171 *14*	^{81}Sr(22.3 m)	153.54(33.8), 147.76(30.1), 443.34(17.5)
113.030 *46*	0.09 *3*	^{227}Fr(2.47 m)	90.035(39), 585.804(29.5), 64.267(14.5)
• 113.04 *3*	0.0097 *16*	^{151}Pm(28.40 h)	340.08(23), 167.75(8.3), 275.21(6.8)
113.07 *4*	0.201 *13*	^{187}Ir(10.5 h)	912.95(4.79), 427.12(4.12), 400.89(3.94)
113.08 *4*	†10.8 *11*	^{155}Nd(8.9 s)	180.574(†100), 418.99(†75), 955.08(†50)
113.1	>1.4×10^{-5}	^{116}Sb(15.8 m)	1293.54(85), 931.800(24.7), 2225.33(14.2)
113.1 *1*	†6.3 *16*	^{171}Hf(12.1 h)	122.0(†100), 662.2(†83), 347.18(†47)
113.1 *1*	0.118 *18*	^{209}At(5.41 h)	545.0(91), 781.9(83.5), 790.2(63.5)
113.15	0.007	^{135}I(6.57 h)	1260.409(28.90), 1131.511(22.74), 1678.027(9.62)
• 113.159 *20*	†34	^{227}Th(18.72 d)	235.971(†813), 50.13(†528), 256.25(†463)
• 113.159 *20*	†10	^{227}Th(18.72 d)	235.971(†813), 50.13(†528), 256.25(†463)
113.18 *6*	†66 *4*	^{159}Yb(1.58 m)	166.16(†500), 177.12(†159), 390.20(†113)
113.20 *30*	0.067 *13*	^{115}Ag(20.0 m)	229.08(18), 212.80(4.4), 472.70(4.0)
113.2 *1*	†69 *15*	^{141}Gd(24.5 s)	198.4(†208), 258.2(†177), 145.0(†46)
113.2 *1*	7.9 *8*	^{141}Tb(3.5 s)	293.3(16.8), 343.6(16.3), 198.4(14.8)
• 113.25 *7*	0.0035 *7*	^{103}Ru(39.26 d)	497.080(90.9), 610.33(5.75), 443.799(3.27)
113.3 *1*	0.39 *5*	^{97}Rb(169.9 ms)	167.1(26), 585.2(21.0), 600.5(10.6)
113.3 *5*	0.031	^{205}At(26.2 m)	719.30(31), 669.41(8.6), 628.88(5.6)
113.34 *1*	55.3 *20*	^{167}Yb(17.5 m)	106.18(22.5), 176.25(21), 62.91(4.9)
113.345 *26*	0.88 *14*	^{105}Tc(7.6 m)	143.26(16), 107.945(14.1), 321.50(11.1)
113.35 *7*	†10.9 *12*	^{224}Rn(107 m)	260.581(†100), 265.806(†93), 202.21(†21.9)
113.36 *25*	†1.8 *3*	^{142}Xe(1.22 s)	571.83(†100), 657.05(†79), 538.24(†77)
113.4 *3*	0.14 *4*	^{76}Kr(14.8 h)	315.7(39), 270.2(21.1), 45.48(19.5)
113.4 *3*	†11.2 *11*	^{115}Ag(18.0 s)	229.08(†100), 131.52(†77), 388.9(†52)
113.40 *14*	0.7	^{181}Re(19.9 h)	365.57(56), 360.70(20), 639.30(6.4)
113.401 *2*	5.7 *3*	^{109}Rh(80 s)	326.868(54), 426.135(7.7), 178.034(7.6)
113.43 *6*	0.0053 *8*	^{133}La(3.912 h)	278.835(2.50), 302.353(1.648), 290.06(1.413)
113.5 *1*	0.0057 *10*	^{72}Ga(14.10 h)	834.01(96), 2201.69(25.9), 629.95(24.8)
113.5 *5*	†8.8 *9*	^{88}Se(1.52 s)	159.2(†100), 259.2(†82), 1903.7(†64)
• 113.5 *1*	0.015 *5*	^{131}Te(30 h)	773.67(49.9), 852.21(27.0), 793.75(18.10)
113.5	†0.06	^{152}Tb(17.5 h)	344.281(†1500), 586.294(†223), 271.135(†203)
113.5 *4*	†17.0 *10*	^{172}W(6.6 m)	38.9(†100), 423.3(†44), 89.8(†33.0)
113.5 *1*	†10 *3*	^{234}Ac(44 s)	1847(†100), 1912(†91), 688.5(†87)
• 113.5 *1*	0.0102 *15*	^{238}U(4.468×10^{9} y)	49.55(0.064)
• 113.514 *31*	0.0161 *12*	^{140}Ba(12.752 d)	537.261(24.39), 29.9640(14.1), 162.660(6.21)
113.53 *7*	1.57 *6*	^{70}Se(41.1 m)	49.51(35.8), 426.15(29), 376.65(9.43)
113.55 *17*		^{223}Th(0.60 s)	151.98, 97.10, 88.00
113.551 *15*	0.481 *12*	^{125}Xe(16.9 h)	188.418(54), 243.378(30.1), 54.968(6.81)
• 113.599 *4*	1.56 *3*	^{165}Tm(30.06 h)	242.917(35.5), 47.155(16.9), 297.369(12.71)
113.62 *18*	†24 *5*	^{164}Tm(2.0 m)	91.40(†1500), 1154.66(†366), 768.91(†279)
• 113.67251 *11*	17.885 *17*	^{182}Ta(114.43 d)	67.75001(41.2), 1121.3007(34.9), 1221.4066(26.98)
113.67251 *10*	0.41 *6*	^{182}Re(12.7 h)	67.75001(38.2), 1121.3007(32), 1221.4066(24.8)
• 113.67251 *14*	4.9 *3*	^{182}Re(64.0 h)	229.3220(26), 67.75001(22.2), 1121.3007(22.0)
113.7 *3*	0.036 *9*	^{120}Xe(40 m)	25.1(30), 72.6(9), 178.1(6.8)
113.7 *2*		^{146}Dy(29 s)	2156.8, 1915.7, 1876.7
113.7		^{167}Ta(1.4 m)	296.3, 278.0, 214.2
113.7		^{180}Os(21.5 m)	20.1(†100), 717.4, 667.0
• 113.71 *13*	0.0013 *8*	^{172}Er(49.3 h)	610.062(44.2), 407.338(42.1), 68.107(3.29)
113.745 *21*	0.141 *10*	^{183}Hf(1.067 h)	783.754(66), 73.174(38), 459.069(27)
113.747 *8*	0.0773 *22*	^{187}W(23.72 h)	685.774(27.3), 479.531(21.8), 72.001(11.14)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
113.8 *1*	†2.4 *5*	^{185}Pt(33.0 m)	229.60(†100), 135.3(†80), 197.4(†74)
• 113.805 *4*	1.88 *3*	^{175}Yb(4.185 d)	396.329(6.40), 282.522(3.01), 144.863(0.328)
• 113.805 *4*	0.294 *25*	^{175}Hf(70 d)	343.40(84), 89.36(2.40), 433.0(1.436)
113.820 *24*	2.89 *20*	^{189}Pt(10.87 h)	721.41(9.3), 94.33(7.6), 568.84(7.1)
113.88 *19*	0.10 *3*	^{151}Nd(12.44 m)	116.80(43.4), 255.68(16.4), 1180.89(14.8)
113.9	0.106 *5*	^{141}Ba(18.27 m)	190.328(46.0), 304.194(25.4), 276.948(23.4)
113.90 *5*	0.92 *14*	^{159}Tm(9.13 m)	38.35(5.8), 84.8(5.8), 271.30(5.1)
113.9 *3*	0.22	^{170}Hf(16.01 h)	164.78(33), 620.7(23), 120.17(19)
113.90 *7*	0.18 *18*	^{172}Ta(36.8 m)	214.02(46), 95.23(17.5), 1109.27(12.4)
113.91 *3*	0.273 *20*	^{163}Yb(11.05 m)	860.28(10.1), 63.62(6.5), 123.21(1.98)
113.935 *10*	†2.0 *2*	^{101}Nb(7.1 s)	276.10(†100), 157.466(†32), 13.5(†32)
113.94 *5*	0.7	^{139}Nd(29.7 m)	405.12(7), 1074.2(2.5), 669.0(1.52)
113.94 *5*	40 *5*	^{139}Nd(5.50 h)	737.96(35), 982.2(26.4), 708.06(26.4)
• 113.976	>0.009	^{169}Yb(32.026 d)	63.12077(44.2), 197.95788(35.8), 177.21402(22.16)
114 *2*	0.8 *3*	^{168}Lu(6.7 m)	198.82(28), 979.22(20), 896.12(15)
114.0		^{225}Rn(4.5 m)	207.2, 178.7, 169.7
• 114.0 *10*	†1.02×10^4 *20*	^{241}Pu(14.35 y)	148.567(†309000), 103.680(†69400), 77.10(†35100)
114.02 *11*		^{133}Ce(4.9 h)	477.22(39), 510.36(20.7), 58.39(19.2)
114.03 *10*	†18.8 *20*	^{229}U(58 m)	122.51(†100), 88.43(†88), 198.83(†88)
114.031 *25*	0.073 *13*	^{93}Tc(2.75 h)	1363.02(66), 1520.37(24.4), 1477.13(8.7)
• 114.04 *5*	0.0006	^{253}Es(20.47 d)	41.79(0.050), 389.11(0.0264), 387.1(0.00810)
• 114.0607 *25*	2.6 *3*	^{172}Hf(1.87 y)	23.9331(20.3), 125.812(11.3), 67.35(5.3)
• 114.09 *5*		^{237}U(6.75 d)	59.537(34.5), 208.00(21.14), 26.345(2.43)
114.155 *13*	0.79 *15*	^{193}Au(17.65 h)	186.17(10.1), 255.57(6.7), 268.22(3.9)
114.18 *15*	0.19 *3*	^{190}Re(3.2 h)	186.718(27.8), 605.24(14.9), 557.972(14.3)
114.2	†0.5	^{131}Pr(1.53 m)	266.13(†100), 72.82(†64), 387.56(†38)
114.2 *1*	0.62 *4*	^{188}Hg(3.25 m)	66.7(63), 190.1(4.40), 82.7(2.6)
114.22 *6*	0.0014 *7*	^{163}Tb(19.5 m)	351.138(26), 389.734(24.3), 494.534(23)
114.314 *11*	19.2 *13*	^{149}Nd(1.728 h)	211.309(25.9), 270.166(10.7), 654.831(8.0)
• 114.3152 *16*	2.6 *4*	^{182}Hf(9×10^6 y)	270.4031(80), 156.088(7.0), 172.5708(0.20)
114.3152 *16*	6.2 *6*	^{182}Hf(61.5 m)	942.80(18.8), 799.64(9.4), 339.65(5.6)
114.34 *4*	4.23 *11*	^{81}Y(72.4 s)	124.16(41.1), 79.23(24.67), 408.36(15.3)
• 114.4 *2*	0.0017 *3*	^{97}Ru(2.9 d)	215.718(86), 324.48(10.79), 569.31(0.873)
114.4 *2*	36 *4*	^{136}Sm(47 s)	747.7(5.4), 485.3(5.0), 313.6(4.7)
114.40 *16*	1.2 *2*	^{200}Bi(36.4 m)	1026.5(100), 462.34(98), 419.70(91)
• 114.4 *3*	0.00023 *4*	^{233}U(1.592×10^5 y)	42.44(0.0862), 97.134(0.020), 54.699(0.0182)
• 114.4 *4*	0.006 *1*	^{238}Np(2.117 d)	984.45(27.8), 1028.54(20.3), 1025.87(9.6)
114.42 *6*	3.63 *18*	^{159}Sm(11.37 s)	189.79(46), 861.97(18.2), 254.43(9.8)
114.46 *15*	2.5 *3*	^{102}Sr(69 ms)	243.80(53), 150.15(18.0), 93.89(13.4)
114.463 *5*	20.63 *8*	^{183}Os(13.0 h)	381.768(89.6), 167.844(8.81), 851.474(4.56)
114.463 *5*	0.71 *6*	^{183}Os(9.9 h)	1101.94(49.0), 1107.92(22.36), 1034.85(6.02)
114.5	>0.08	^{83}Zr(44 s)	55.55(8), 104.97(5.70), 475.1(5.1)
• 114.5 *10*	0.07	^{101}Rh(3.3 y)	127.23(73), 197.6(70.8), 324.8(13.4)
114.5 *1*	0.56 *7*	^{107}Tc(21.2 s)	102.70(21.0), 177.00(9.2), 106.31(7.6)
114.5 *3*	0.74 *17*	^{192}Hg(4.85 h)	274.8(50.4), 157.2(7), 306.5(5.4)
• 114.5 *5*	0.009 *5*	^{223}Ra(11.435 d)	269.459(13.7), 154.21(5.62), 323.871(3.93)
114.56 *7*	0.0101 *21*	^{228}Ac(6.15 h)	911.205(26.6), 968.971(16.2), 338.322(11.3)
114.6 *2*	0.07 *2*	^{104}Mo(60 s)	68.8(55), 69.7(17.8), 36.3(14)
114.6 *2*	1.0	^{140}Sm(14.82 m)	225.5(>10), 225.4(10), 140.0(5.0)
114.6 *3*	0.095 *20*	^{208}Rn(24.35 m)	426.78(7.07), 251.05(5.02), 350.026(3.34)
114.62 *9*	†0.94 *1*	^{184}Ir(3.09 h)	263.97(†100), 119.80(†45), 390.38(†38)
114.7 *2*		^{116}Pd(12.4 s)	569, 279.3, 178.3
• 114.7		^{185}Os(93.6 d)	646.116(78.0), 874.813(6.29), 880.523(5.17)
• 114.71 *2*	44.0 *5*	^{146}Gd(48.27 d)	154.57(47), 115.51(44.0), 576.0(0.065)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
114.8 *3*	9.3 *4*	^{127}Ba(12.7 m)	180.8(12), 66.06(2.12), 1201.0(1.61)
114.8		^{127}Ce(32 s)	58.4(7.3), 253.0, 177.0
114.8 *1*	1.14 *4*	^{188}Hg(3.25 m)	66.7(63), 190.1(4.40), 82.7(2.6)
114.81 *3*	†58	^{154}Nd(25.9 s)	151.703(†800), 799.55(†600), 180.693(†510)
114.86 *5*	0.194 *13*	^{100}Sr(202 ms)	963.85(22.0), 898.50(18.9), 65.46(15.2)
114.9 *1*	0.97 *3*	^{146}Ba(2.22 s)	140.7(20.2), 251.2(19.6), 121.2(14.2)
114.9 *4*	†13.3 *8*	^{172}W(6.6 m)	38.9(†100), 423.3(†44), 89.8(†33.0)
114.9	†141 *10*	^{177}Ir(30 s)	183.6(†1010), 148.3(†929), 75.6(†>900)
• 114.92 *10*		^{237}Pu(45.2 d)	280.40(†870000), 298.89(†7.85×10^6), 320.75(†6.48×10^6)
• 114.970 *20*	0.0074 *5*	^{103}Ru(39.26 d)	497.080(90.9), 610.33(5.75), 443.799(3.27)
115.0 *2*	1 *2*	^{104}Mo(60 s)	68.8(55), 69.7(17.8), 36.3(14)
115 *1*		^{122}Ba(1.95 m)	550.7, 388.7, 231.0
115.00 *4*	2.70 *7*	^{144}Ba(11.5 s)	103.855(23.30), 430.48(18.3), 172.828(15.4)
115.0 *3*	0.25	^{170}Hf(16.01 h)	164.78(33), 620.7(23), 120.17(19)
115.0 *1*	0.39 *11*	^{173}Ta(3.14 h)	172.2(18), 69.70(5.9), 90.3(5.0)
115.0 *5*	0.09 *3*	^{195}Ir(3.8 h)	98.85(10), 684.88(9.4), 432.86(9)
115.02 *10*	5.5 *4*	^{121}Ag(0.78 s)	314.55(32.1), 353.43(19.9), 500.61(9.3)
115.05 *5*	8.6 *16*	^{177}W(135 m)	115.65(50), 426.98(13.2), 1036.4(10.3)
115.09 *4*	54 *8*	^{65}Ga(15.2 m)	61.20(11.4), 153.0(8.9), 751.8(8.1)
115.1	0.36	^{147}Ba(0.893 s)	167.4(11), 105.2(4.8), 196.1(4.8)
115.1 *1*	0.120 *13*	^{186}Hg(1.38 m)	112.1(63), 251.5(55), 191.6(3.7)
115.104 *10*	0.0071 *5*	^{165}Dy(2.334 h)	94.700(3.58), 361.68(0.84), 633.415(0.568)
115.13 *5*	0.0163 *6*	^{127}Cs(6.25 h)	411.95(62.8), 124.70(11.37), 462.31(5.07)
115.15 *7*	1.59 *24*	^{183}Au(42.0 s)	161.18(9.4), 214.13(5.9), 313.08(5.0)
115.17 *5*	0.07 *3*	^{109}Ru(34.5 s)	206.29(22.0), 225.98(19.6), 1929.05(13.7)
115.18 *4*	0.092 *5*	^{194}Pb(12.0 m)	581.82(18.8), 1519.45(16.4), 203.82(16.2)
• 115.18 *4*	0.075 *3*	^{205}Bi(15.31 d)	1764.36(1.368), 703.44(31), 987.62(0.585)
115.183 *5*	0.592 *7*	^{212}Pb(10.64 h)	238.632(43.3), 300.087(3.28), 415.2(0.143)
115.2 *1*	49 *3*	^{134}Sb(10.43 s)	1279.1(100), 297.0(97), 706.3(57)
115.2 *2*	73.1 *5*	^{156}Yb(26.1 s)	
115.268 *7*	0.097 *6*	^{155}Dy(9.9 h)	226.918(68.4), 184.564(3.37), 1089.8(>2.8)
• 115.30 *16*	0.00027 *8*	^{129}Te(33.6 d)	695.88(2.988), 729.57(0.70), 556.65(0.118)
115.3	†>0.07	^{152}Tb(17.5 h)	344.281(†1500), 586.294(†223), 271.135(†203)
115.3 *1*		^{155}Ho(48 m)	240.19(12.5), 136.30(5.00), 45.38(5)
• 115.3 *4*	0.028 *4*	^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
115.32 *12*	0.0052 *3*	^{187}W(23.72 h)	685.774(27.3), 479.531(21.8), 72.001(11.14)
115.33 *2*	†2.22×10^3 *22*	^{158}Er(2.29 h)	71.91(†23300), 386.84(†111000), 248.58(†42000)
• 115.370 *15*	0.00046 *5*	^{239}Pu(24110 y)	51.624(0.007100), 38.661(0.000500), 129.297(0.00631)
115.39 *6*	2.11 *19*	^{81}Y(72.4 s)	124.16(41.1), 79.23(24.67), 408.36(15.3)
115.4 *4*	0.0022	^{233}Th(22.3 m)	86.477(2.7), 29.374(2.5), 459.222(1.4)
• 115.4 *4*	0.0026 *8*	^{237}Np(2.14×10^6 y)	29.374(15.0), 86.477(12.4), 94.66(0.6)
• 115.45 *5*	0.07 *4*	^{235}U(7.038×10^8 y)	185.712(57.2), 143.764(10.96), 163.358(5.08)
115.46 *4*	0.235 *20*	^{115}Sb(32.1 m)	497.358(98), 489.27(1.3), 1236.52(0.58)
115.5 *1*	0.82 *4*	^{155}Ho(48 m)	240.19(12.5), 136.30(5.00), 45.38(5)
• 115.5 *1*		^{241}Am(432.2 y)	59.537(†60), 26.345(†1000×10^9), 33.195(†6000×10^8)
• 115.51 *2*	44.0 *5*	^{146}Gd(48.27 d)	154.57(47), 114.71(44.0), 576.0(0.065)
• 115.55 *5*	0.0182 *14*	^{229}Pa(1.50 d)	40.09(0.104), 64.70(0.045), 75.12(0.035)
115.57 *7*	0.053 *7*	^{187}Ir(10.5 h)	912.95(4.79), 427.12(4.12), 400.89(3.94)
• 115.590 *6*	0.0010 *2*	^{231}Th(25.52 h)	25.646(14.5), 84.216(6.6), 89.944(0.94)
115.6 *2*	†2.3 *8*	^{105}Nb(2.95 s)	94.8(†100), 246.9(†79), 309.9(†41.9)
115.6 *2*	1.30 *5*	^{148}Ho(9.59 s)	1687.5(82.47), 660.8(58.94), 504.3(18.62)
115.65 *20*	0.52 *4*	^{107}Rh(21.7 m)	302.77(66), 392.47(8.8), 312.21(4.8)
115.65 *5*	50 *4*	^{177}W(135 m)	426.98(13.2), 1036.4(10.3), 115.05(8.6)
• 115.6649 *20*	0.053 *12*	^{156}Tb(5.35 d)	534.318(66.6), 199.2132(40.9), 1222.36(31.00)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
115.7	1.7	^{134}Nd(8.5 m)	163.2(58), 288.9(13), 216.8(12)
115.7 *2*	0.022 *3*	^{135}Ce(17.7 h)	265.56(41.8), 300.07(23.5), 606.76(18.8)
115.7	>0.018	^{163}Yb(11.05 m)	860.28(10.1), 63.62(6.5), 123.21(1.98)
• 115.7		^{188}Ir(41.5 h)	155.032(29.7), 2214.62(18.7), 632.99(18)
115.723 *6*	0.066 *23*	^{200}Au(48.4 m)	367.943(19), 1225.479(10.7), 1262.950(3.12)
• 115.723 *6*	0.017 *6*	^{200}Tl(26.1 h)	367.943(87), 1205.717(29.9), 579.298(13.8)
115.80 *15*	0.032 *6*	^{101}Mo(14.61 m)	191.92(19), 590.91(16.4), 1012.47(12.8)
115.8		^{225}Rn(4.5 m)	207.2, 178.7, 169.7
115.86 *12*	0.259 *14*	^{187}Au(8.4 m)	1331.81(7.0), 1408.23(3.06), 914.73(3.02)
115.9 *2*	0.18 *6*	^{128}Sn(59.07 m)	482.3(59), 75.1(27.7), 557.3(16.5)
115.944 *9*	0.67 *7*	^{182}Os(22.10 h)	510.056(52), 180.230(33.5), 263.285(6.71)
115.95 *10*	0.8	^{170}Hf(16.01 h)	164.78(33), 620.7(23), 120.17(19)
115.98 *10*	†0.054 *13*	^{225}Fr(4.0 m)	182.3(†100), 31.50(†91), 225.1(†55)
• 115.98 *10*	0.017 *3*	^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
116.0 *2*	6.1 *4*	^{102}Cd(5.5 m)	481.0(63), 1036.6(12.8), 505.1(9.6)
116.0 *6*	0.076 *23*	^{141}Eu(2.7 s)	394.0(0.60), 882.9(0.54), 518.8(0.45)
116.0 *1*	0.090 *9*	^{211}Rn(14.6 h)	674.1(45), 1362.9(32.5), 678.4(28.9)
• 116.01 *4*	0.150 *4*	^{148}Eu(54.5 d)	550.284(98.5), 629.987(71.9), 611.293(20.5)
116.057 *10*	0.706 *21*	^{204}Po(3.53 h)	883.984(29.9), 270.068(27.8), 1016.31(24.1)
116.1 *2*	0.45 *8*	^{110}Ru(14.6 s)	112.2(25.00), 166.1(0.65), 415.4(0.43)
116.1 *6*	†54 *8*	^{123}Ba(2.7 m)	94.6(†100), 123.5(†69), 30.6(†56)
116.1 *4*	0.40 *18*	^{136}Sm(47 s)	114.4(36), 747.7(5.4), 485.3(5.0)
• 116.1	>0.034	^{172}Hf(1.87 y)	23.9331(20.3), 125.812(11.3), 67.35(5.3)
116.14 *4*	19 *3*	^{173}Er(1.4 m)	895.2(54), 199.2(48), 192.8(47)
• 116.19 *4*	†2.7×10^3 *3*	^{134}Ce(75.9 h)	162.306(†230000), 130.414(†209000), 39.08(†>150000)
116.2 *2*	0.28 *14*	^{102}Zr(2.9 s)	599.60(13.9), 535.30(10.6), 64.50(8.9)
116.2 *7*	0.17 *4*	^{129}Sb(4.40 h)	812.8(43), 914.6(20.0), 544.7(17.9)
116.25 *10*	0.208 *7*	^{79}Rb(22.9 m)	688.1(23), 182.77(19.2), 143.41(13.9)
• 116.258 *2*	0.000597 *9*	^{239}Pu(24110 y)	51.624(0.007100), 38.661(0.000500), 129.297(0.00631)
• 116.30 *8*	1.96 *5*	^{132}Te(3.204 d)	228.16(88.0), 49.72(15.0), 111.76(1.74)
116.3 *2*	0.084 *9*	^{138}Nd(5.04 h)	325.76(2.84), 199.50(0.53), 341.65(0.40)
116.3 *1*	0.84 *9*	^{157}Tm(3.63 m)	455.00(9.3), 385.5(8.8), 348.40(8.4)
116.314 *28*	0.040 *10*	^{157}Eu(15.18 h)	63.929(23.0), 410.723(17.5), 370.509(11.0)
116.32 *3*	7.6 *4*	^{109}Ru(34.5 s)	206.29(22.0), 225.98(19.6), 1929.05(13.7)
116.355 *9*	0.101 *3*	^{122}Xe(20.1 h)	350.065(7.80), 148.612(2.62), 416.633(1.87)
116.4		^{126}Ce(50 s)	188, 120, 82.0
116.41 *3*	7.58 *9*	^{123}Ag(0.309 s)	263.87(35.9), 409.79(13.2), 591.30(8.2)
• 116.41 *7*	0.00019 *3*	^{233}U(1.592×10^5 y)	42.44(0.0862), 97.134(0.020), 54.699(0.0182)
• 116.4186 *5*	0.431 *5*	^{182}Ta(114.43 d)	67.75001(41.2), 1121.3007(34.9), 1221.4066(26.98)
116.4186 *5*	0.35 *10*	^{182}Re(12.7 h)	67.75001(38.2), 1121.3007(32), 1221.4066(24.8)
• 116.4186 *5*	0.51 *5*	^{182}Re(64.0 h)	229.3220(26), 67.75001(22.2), 1121.3007(22.0)
116.44 *9*	0.28 *11*	^{133}Te(55.4 m)	912.671(55.28), 647.51(19.4), 863.955(15.6)
116.44 *5*	0.82 *7*	^{160}Yb(4.8 m)	173.74(42.0), 215.78(20.2), 140.35(9.3)
116.45 *5*	0.154 *16*	^{107}Ru(3.75 m)	194.05(9.9), 847.93(5.3), 462.61(3.66)
116.47 *3*	0.65 *6*	^{210}At(8.1 h)	1181.39(99.3), 245.31(79), 1483.39(46.5)
116.5 *2*	†1.13 *11*	^{111}Rh(11 s)	275.4(†100.0), 411.8(†9.42), 230.0(†8.9)
116.5 *10*	0.050 *20*	^{116}In(54.41 m)	1293.54(84.4), 1097.3(56.2), 416.86(28.9)
116.5 *3*	0.28 *3*	^{192}Hg(4.85 h)	274.8(50.4), 157.2(7), 306.5(5.4)
116.5	†>7	^{220}Fr(27.4 s)	45.0(†100), 106.0(†72), 161.5(†65)
116.51 *6*		^{152}Pm(13.8 m)	229.9, 200.6, 63.51
• 116.557 *11*	0.11 *4*	^{200}Tl(26.1 h)	367.943(87), 1205.717(29.9), 579.298(13.8)
• 116.62 *6*	0.45 *3*	^{119}Te(4.70 d)	153.59(66), 1212.73(66), 270.53(28.0)
116.656 *6*	2.30 *6*	^{171}Er(7.516 h)	308.31(64.4), 295.901(28.9), 111.621(20.5)
116.67 *9*	2.83 *6*	^{167}Yb(17.5 m)	113.34(55.3), 106.18(22.5), 176.25(21)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
116.69 *1*	0.045 *6*	^{167}Yb(17.5 m)	113.34(55.3), 106.18(22.5), 176.25(21)
116.7 *1*	5.4 *5*	^{117}Xe(61 s)	28.5(7.0), 221.3(10.0), 32.3(7.6)
116.7		^{146}Tb(23 s)	1579.4(100), 1078.6(51.6), 1417.2(17.2)
116.7 *1*		^{190}Ir(3.25 h)	616.08(93.10), 502.53(92.31), 361.136(89.57)
116.742 *1*	0.40 *8*	^{149}Pr(2.26 m)	138.447(11.0), 165.087(9.9), 108.520(9.5)
116.8 *2*	3.66 *19*	^{113}Rh(2.72 s)	189.7(17.0), 409.3(15.9), 219.6(3.88)
116.80 *1*	43.4 *6*	^{151}Nd(12.44 m)	255.68(16.4), 1180.89(14.8), 138.89(7.84)
• 116.823 *13*	0.0207 *13*	^{231}Th(25.52 h)	25.646(14.5), 84.216(6.6), 89.944(0.94)
116.9 *3*		^{122}Ba(1.95 m)	550.7, 388.7, 231.0
116.9 *3*	0.47	^{170}Hf(16.01 h)	164.78(33), 620.7(23), 120.17(19)
116.9 *3*		^{177}Re(14 m)	196.85(†1200), 79.65(†1010), 84.3(†890)
116.9 *1*	1.17 *18*	^{198}Pb(2.40 h)	290.3(36), 365.4(19), 173.4(18)
116.92 *3*	3.76 *20*	^{148}Ce(56 s)	269.519(17.0), 291.724(16.7), 121.169(13.2)
116.930 *24*	0.11 *3*	^{149}Nd(1.728 h)	211.309(25.9), 114.314(19.2), 270.166(10.7)
• 116.952 *11*	0.2845 *15*	^{125}Sb(2.7582 y)	427.875(30), 600.600(17.86), 635.954(11.31)
117.0 *2*	0.092 *20*	^{100}Cd(49.1 s)	936.55(66), 139.71(6.7), 582.5(6.3)
117.0		^{168}Hf(25.95 m)	183.8(†100), 157.2(†68), 324.1
117.0 *2*	†5.5 *6*	^{171}Ta(23.3 m)	49.6(†100), 506.4(†54), 501.8(†22.6)
117.0		^{257}Rf(4.7 s)	47.4, 296, 63.2
• 117.01 *4*	0.187 *24*	^{177}Lu(160.4 d)	208.3664(57.7), 228.4838(37.0), 378.5029(29.7)
117.07 *6*	2.42 *24*	^{184}Pt(17.3 m)	154.90(31), 191.97(27), 548.36(23.1)
117.1		^{145}La(24.8 s)	70.0(11), 355.8(3.8), 118.2(3.6)
• 117.1 *1*		^{243}Cm(29.1 y)	277.599(14.0), 228.183(10.6), 209.753(3.29)
117.159 *2*	†17 *3*	^{229}Ac(62.7 m)	164.522(†100), 569.1(†91), 261.92(†39)
• 117.159 *2*	0.047 *3*	^{229}Pa(1.50 d)	118.968(0.130), 146.345(0.098), 42.44(0.044)
• 117.159 *2*	0.0023 *4*	^{233}U(1.592×10^5 y)	42.44(0.0862), 97.134(0.020), 54.699(0.0182)
117.168 *23*	0.0020 *8*	^{173}Hf(23.6 h)	123.672(83), 296.974(33.9), 139.634(12.7)
117.181 *13*	0.062 *12*	^{173}Hf(23.6 h)	123.672(83), 296.974(33.9), 139.634(12.7)
117.2 *1*	2.1 *5*	^{129}Sn(6.9 m)	1161.31(56.0), 1128.44(50), 760.8(16.8)
117.2	0.018 *9*	^{149}Tb(4.118 h)	352.24(29.43), 164.98(26.4), 388.57(18.37)
117.2 *2*	0.74 *18*	^{152}Ho(49.5 s)	647.2(92), 613.8(88.4), 683.3(88)
117.2		^{185}Pt(33.0 m)	229.60(†100), 135.3(†80), 197.4(†74)
• 117.20 *5*	†11.2 *12*	^{227}Th(18.72 d)	235.971(†813), 50.13(†528), 256.25(†463)
• 117.20 *5*		^{227}Th(18.72 d)	235.971(†813), 50.13(†528), 256.25(†463)
117.211 *9*	84.3 *19*	^{209}Tl(2.20 m)	1567.09(99.8), 465.130(96.9), 920.13(0.61)
• 117.25 *4*	0.010 *3*	^{189}Re(24.3 h)	216.663(5.50), 219.395(4.54), 245.09(3.5)
117.29 *9*	0.070 *21*	^{187}Au(8.4 m)	1331.81(7.0), 1408.23(3.06), 914.73(3.02)
117.3	†0.5	^{131}Pr(1.53 m)	266.13(†100), 72.82(†64), 387.56(†38)
117.3 *3*	0.0172 *18*	^{152}Eu(9.274 h)	344.281(2.44), 1314.67(0.956), 970.38(0.604)
117.3 *3*	†1.2 *3*	^{152}Tb(17.5 h)	344.281(†1500), 586.294(†223), 271.135(†203)
117.3 *3*	0.27 *13*	^{153}Ho(2.0 m)	295.8(67), 637.0(5.36), 688.5(3.7)
117.32 *5*	1.22 *5*	^{143}Cs(1.78 s)	195.554(13), 232.421(8.32), 306.424(6.80)
• 117.377 *19*	0.0397 *21*	^{169}Yb(32.026 d)	63.12077(44.2), 197.95788(35.8), 177.21402(22.16)
117.4 *3*	0.47 *10*	^{157}Er(18.65 m)	53.05(24), 391.32(14.2), 121.57(10.1)
117.4 *4*	0.08 *4*	^{185}Au(4.25 m)	310.6(13), 243.1(6.6), 77.7(6)
117.42 *5*	13.8 *7*	^{156}Pm(26.70 s)	173.75(52.0), 1147.84(20.5), 267.32(13.3)
117.480 *25*	†132	^{154}Nd(25.9 s)	151.703(†800), 799.55(†600), 180.693(†510)
117.5	0.010 *6*	^{61}Cu(3.333 h)	282.956(12.2), 656.008(10.77), 67.412(4.23)
117.5 *3*	†2.3 *5*	^{142}Xe(1.22 s)	571.83(†100), 657.05(†79), 538.24(†77)
117.5 *3*	†6.3 *25*	^{171}Hf(12.1 h)	122.0(†100), 662.2(†83), 347.18(†47)
117.5 *2*	0.012 *3*	^{176}Ta(8.09 h)	1159.28(25), 88.34(12), 1224.93(6)
• 117.5		^{185}Os(93.6 d)	646.116(78.0), 874.813(6.29), 880.523(5.17)
• 117.5 *5*	†0.81 *16*	^{227}Th(18.72 d)	235.971(†813), 50.13(†528), 256.25(†463)
• 117.536 *28*	0.132 *20*	^{206}Po(8.8 d)	1032.26(32.9), 511.36(24.1), 286.410(23.8)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
117.57 *5*	6.5 *5*	^{143}Gd(112 s)	271.94(84), 588.00(15.7), 798.89(10.7)
117.6 *4*	0.60 *20*	^{118}Cs(14 s)	337.4(100), 472.8(37.4), 586.6(15.4)
117.67 *5*	0.07 *3*	^{109}Ru(34.5 s)	206.29(22.0), 225.98(19.6), 1929.05(13.7)
117.7 *2*	0.087 *9*	^{94}Rb(2.702 s)	1309.1(87), 836.9(87.10), 1577.5(31.8)
117.7 *2*	†9.2 *5*	^{109}Tc(0.87 s)	194.6(†100), 128.7(†51), 96.2(†48)
117.702 *20*	0.0015	^{233}Th(22.3 m)	86.477(2.7), 29.374(2.5), 459.222(1.4)
• 117.702 *20*	0.16 *1*	^{237}Np(2.14×10^6 y)	29.374(15.0), 86.477(12.4), 94.66(0.6)
117.718 *6*	12	^{147}La(4.015 s)	186.320(6.48), 438.30(5.04), 215.52(3.48)
117.8 *2*		^{146}Dy(29 s)	2156.8, 1915.7, 1876.7
117.8 *3*	0.6	^{170}Hf(16.01 h)	164.78(33), 620.7(23), 120.17(19)
117.8 *3*	†>0.27	^{230}Ra(93 m)	72.0(†100), 63.0(†35.4), 202.8(†27.3)
• 117.8 *2*	0.0019 *4*	^{230}Pa(17.4 d)	314.8(0.094), 366.56(0.076), 383.6(0.036)
117.84 *2*	0.13 *4*	^{239}U(23.45 m)	74.664(48), 43.533(4.14), 662.24(0.18)
• 117.84 *2*	0.57 *8*	^{243}Am(7370 y)	74.664(68), 43.533(5.93), 86.71(0.338)
117.88 *9*	0.10	^{183}Ir(58 m)	392.52(10.4), 228.70(6.9), 87.67(5.6)
117.9 *2*		^{181}Ir(4.90 m)	107.64(†100), 1639.6(†52), 318.9(†46)
117.99 *2*	0.557 *9*	^{193}Au(17.65 h)	186.17(10.1), 255.57(6.7), 268.22(3.9)
• 117.99 *15*	0.013 *4*	^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
118.0 *2*	0.2 *1*	^{105}Mo(35.6 s)	85.4(25.0), 76.50(19.3), 147.8(14.8)
118		^{147}La(4.015 s)	117.718(12), 186.320(6.48), 438.30(5.04)
• 118.0	>0.0025	^{155}Tb(5.32 d)	86.545(32.0), 105.305(25), 180.103(7.45)
118 *2*		^{159}Eu(18.1 m)	67.8(19), 78.6(9.1), 95.7(7.0)
118	†100	^{174}Os(44 s)	325(†43), 302(†26), 138(†25)
118.03 *2*	0.376 *21*	^{135}Ce(17.7 h)	265.56(41.8), 300.07(23.5), 606.76(18.8)
118.03 *4*	12.9 *14*	^{181}Os(105 m)	238.75(44), 826.77(20), 831.62(7.7)
118.03 *4*	†28.3 *30*	^{181}Os(2.7 m)	144.99(†100), 1118.8(†4.2), 1468.0(†1.3)
118.06 *15*		^{131}Sn(56.0 s)	3267.5, 2470.5, 2039.25
118.06 *15*		^{131}Sn(58.4 s)	367.40, 285.0, 62.9
118.06 *15*	†2.8 *7*	^{131}Sn(56.0 s)	1226.03(†100), 450.03(†90), 798.50(†86)
118.06 *5*	2.39 *13*	^{165}Yb(9.9 m)	80.11(49), 68.86(9.1), 1090.28(4.4)
• 118.1107 *10*	0.00032	^{153}Sm(46.27 h)	103.1807(31.4), 69.67340(4.85), 97.4316(0.847)
• 118.1107 *10*	>0.00028	^{153}Gd(241.6 d)	97.4316(30), 103.1807(21.4), 69.67340(2.54)
118.18 *3*	0.030 *10*	^{166}Tm(7.70 h)	778.817(18.9), 2052.36(17.2), 184.410(16.1)
• 118.19018 *18*	0.00014 *4*	^{169}Er(9.40 d)	8.41031(0.158), 109.77987(0.0013)
• 118.19018 *18*	3.869 *18*	^{169}Yb(32.026 d)	63.12077(44.2), 197.95788(35.8), 177.21402(22.16)
118.2 *2*	3.6	^{145}La(24.8 s)	70.0(11), 355.8(3.8), 447.4(3.2)
118.2 *2*	0.037 *19*	^{221}Fr(4.9 m)	218.19(11.6), 410.7(0.14), 99.5(0.11)
118.244 *3*	0.09 *3*	^{163}Tb(19.5 m)	351.138(26), 389.734(24.3), 494.534(23)
118.3 *5*	0.012 *6*	^{89}Rb(15.15 m)	1031.94(58), 1248.19(42.6), 2196.02(13.3)
118.3 *2*	†<0.1	^{129}Ba(2.17 h)	182.30(†100), 1459.1(†50.0), 202.38(†33.7)
118.304 *10*	0.096 *6*	^{155}Dy(9.9 h)	226.918(68.4), 184.564(3.37), 1089.8(>2.8)
118.310 *3*	4.5 *5*	^{140}Xe(13.60 s)	805.52(20), 1413.66(12.2), 1315.05(8.2)
118.4 *3*	0.6 *1*	^{128}Sb(9.01 h)	753.82(100), 743.22(100), 314.12(61)
118.5 *2*	0.073 *3*	^{91}Sr(9.63 h)	1024.3(33), 749.8(23.61), 652.9(8.0)
118.5 *5*	†>7	^{220}Fr(27.4 s)	45.0(†100), 106.0(†72), 161.5(†65)
118.556 *11*	†14 *1*	^{101}Nb(7.1 s)	276.10(†100), 157.466(†32), 13.5(†32)
118.57 *9*		^{151}Ce(1.02 s)	96.8, 84.79, 52.6
118.59 *7*	15.4 *9*	^{100}Y(735 ms)	212.531(73), 665.98(7.7), 616.67(6.9)
118.59 *7*	†5 *2*	^{100}Y(0.94 s)	212.531(†100), 351.960(†33), 878.54(†18)
• 118.59	0.153 *23*	^{100}Pd(3.63 d)	84.02(45), 74.78(36.5), 126.05(8.10)
118.6 *1*	0.051 *13*	^{146}La(6.27 s)	258.47(64), 924.58(7.45), 702.28(6.43)
118.6		^{167}Ta(1.4 m)	296.3, 278.0, 214.2
118.6 *2*	2.5 *6*	^{173}Er(1.4 m)	895.2(54), 199.2(48), 192.8(47)
• 118.60 *5*	0.007 *3*	^{189}Re(24.3 h)	216.663(5.50), 219.395(4.54), 245.09(3.5)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
118.63 *6*	†2.00×10^3 *22*	^{158}Er(2.29 h)	71.91(†23300), 386.84(†111000), 248.58(†42000)
118.7 *6*	0.10 *6*	^{111}Pd(5.5 h)	70.44(8.3), 391.25(5.4), 632.80(3.6)
118.70 *2*	33.6 *16*	^{162}Yb(18.87 m)	163.35(40.0), 576.10(3.24), 44.65(3.04)
118.705 *4*	16.1 *12*	^{141}Xe(1.73 s)	909.23(24.0), 105.937(9.8), 459.30(5.5)
118.72 *3*	31.2 *7*	^{103}Ag(65.7 m)	148.193(28.3), 266.86(13.3), 1273.83(9.3)
• 118.80 *15*	0.032 *3*	^{170}Lu(2.00 d)	84.2551(4.256), 1280.25(3.450), 2041.88(1.434)
118.8 *2*	0.37 *9*	^{190}Pb(1.2 m)	942.20(34), 151.19(8.92), 598.3(8.0)
• 118.837 *32*	0.061 *7*	^{140}Ba(12.752 d)	537.261(24.39), 29.9640(14.1), 162.660(6.21)
118.87 *19*		^{89}Tc(12.8 s)	
118.87 *19*		^{89}Tc(12.9 s)	268.5
118.88 *9*	1.14 *17*	^{181}Au(11.4 s)	198.60(4.4), 2022.4(4.2), 79.40(4.2)
118.88 *9*		^{185}Hg(21.6 s)	106, 159.42, 61
• 118.9 *2*	0.0008 *4*	^{172}Er(49.3 h)	610.062(44.2), 407.338(42.1), 68.107(3.29)
118.91 *23*		^{184}Tl(11 s)	366.51(†100), 286.80(†39), 340.0(†25)
118.93 *2*	0.0119 *22*	^{176}Ta(8.09 h)	1159.28(25), 88.34(12), 1224.93(6)
118.96 *13*	0.020 *8*	^{133}Ce(4.9 h)	477.22(39), 510.36(20.7), 58.39(19.2)
• 118.968 *2*	0.130 *6*	^{229}Pa(1.50 d)	146.345(0.098), 117.159(0.047), 42.44(0.044)
• 118.968 *2*	0.00406 *4*	^{233}U(1.592×10^5 y)	42.44(0.0862), 97.134(0.020), 54.699(0.0182)
119.0 *2*	0.06 *3*	^{109}Sn(18.0 m)	1099.4(30), 649.90(28.0), 1321.3(11.9)
119.0 *3*	1.1	^{170}Hf(16.01 h)	164.78(33), 620.7(23), 120.17(19)
• 119.0		^{172}Hf(1.87 y)	23.9331(20.3), 125.812(11.3), 67.35(5.3)
• 119.023 *15*	0.030 *6*	^{172}Lu(6.70 d)	1093.657(62.5), 900.724(29.8), 181.528(20.6)
• 119.069 *8*	0.173 *4*	^{166}Ho(1.20×10^3 y)	184.410(72.6), 810.276(58.08), 711.683(55.32)
119.069 *8*	0.0034	^{166}Tm(7.70 h)	778.817(18.9), 2052.36(17.2), 184.410(16.1)
119.1 *12*	0.8 *3*	^{105}In(5.07 m)	131.37(41), 260.21(15.7), 604.11(9.2)
119.1 *2*	†0.74 *21*	^{185}Hg(21.6 s)	222.8(†100.0), 258.7(†98), 212.5(†58)
119.1 *10*	0.21	^{186}Pt(2.0 h)	276.7(0), 611.5(6.0), 635.6(>3.8)
119.1 *3*		^{207}Hg(2.9 m)	351.059(77), 997.1(69), 1637.1(30)
• 119.10 *11*	0.0025 *25*	^{245}Cm(8500 y)	174.94(10), 132.99(2.77), 41.95(0.350)
119.12 *10*	0.38 *9*	^{195}Ir(3.8 h)	98.85(10), 684.88(9.4), 432.86(9)
119.18 *5*	†44 *3*	^{131}Ce(10.3 m)	169.42(†100), 414.25(†68), 26.2(†43)
119.2 *2*	0.00132 *12*	^{83}Br(2.40 h)	529.635(1.200), 520.39(0.0576), 552.63(0.0200)
• 119.2 *2*	0.0143 *22*	^{83}Rb(86.2 d)	520.39(44.7), 529.635(29.3), 552.63(16.0)
119.24 *5*	†9.2 *12*	^{229}U(58 m)	122.51(†100), 88.43(†88), 198.83(†88)
119.3 *1*	10.8 *12*	^{101}Zr(2.1 s)	205.6(6.0), 912.2(3.48), 2009.5(3.4)
119.353 *3*	73	^{98}Sr(0.653 s)	444.628(39), 428.4(31), 36.5(20.4)
119.36 *3*	5.6 *3*	^{78}Zn(1.47 s)	224.75(43.9), 181.68(28.1), 860.30(24.5)
119.36 *20*		^{186}Ir(16.64 h)	296.911(64.0), 137.155(42), 434.849(34.4)
119.4 *3*	>2.7	^{74}Zn(96 s)	56.7(70), 49.4(33.4), 143.5(21.7)
119.4 *3*	0.19 *4*	^{113}Rh(2.72 s)	189.7(17.0), 409.3(15.9), 219.6(3.88)
119.4	0.6	^{134}Nd(8.5 m)	163.2(58), 288.9(13), 216.8(12)
119.4 *4*	0.067 *22*	^{139}Xe(39.68 s)	218.59(56), 296.53(21.7), 174.97(11.3)
119.4 *1*	†0.46 *4*	^{158}Ho(11.3 m)	218.21(†100.0), 98.91(†70), 945.7(†37)
119.4 *1*	0.109 *10*	^{223}Ac(2.10 m)	98.58(0.891), 191.3(0.58), 83.55(0.57)
119.4 *3*	0.00068 *23*	^{250}Bk(3.217 h)	989.12(45), 1031.85(35.6), 1028.65(4.91)
119.47 *3*	0.0071 *5*	^{165}Dy(2.334 h)	94.700(3.58), 361.68(0.84), 633.415(0.568)
119.47 *3*	0.0027 *6*	^{165}Dy(1.257 m)	515.467(1.53), 361.68(0.534), 153.803(0.242)
119.5 *1*	1.95 *7*	^{75}Kr(4.3 m)	132.43(67), 154.66(20.8), 153.15(8.0)
119.5 *2*	0.27	^{140}Sm(14.82 m)	225.5(>10), 225.4(10), 140.0(5.0)
119.52 *2*	1.30 *8*	^{135}Ce(17.7 h)	265.56(41.8), 300.07(23.5), 606.76(18.8)
119.58 *15*	0.11 *6*	^{133}Te(55.4 m)	912.671(55.28), 647.51(19.4), 863.955(15.6)
119.60 *5*	0.150 *15*	^{109}Ru(34.5 s)	206.29(22.0), 225.98(19.6), 1929.05(13.7)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
119.6 *1*	†38 *15*	^{141}Gd(24.5 s)	198.4(†208), 258.2(†177), 113.2(†69)
119.6 *1*		^{141}Tb(3.5 s)	293.3(16.8), 343.6(16.3), 198.4(14.8)
119.6 *1*	†2.5	^{210}Fr(3.18 m)	643.8(†100), 817.6(†60), 203.1(†35)
119.61 *5*	0.0010 *3*	^{161}Ho(2.48 h)	25.65150(27), 103.062(3.9), 77.414(1.91)
119.64 *3*	0.18 *4*	^{193}Au(17.65 h)	186.17(10.1), 255.57(6.7), 268.22(3.9)
119.65 *18*	0.053 *6*	^{185}Ir(14.4 h)	254.4(13.3), 1828.8(10), 60.0(5.7)
119.68 *10*	1.7 *3*	^{159}Tm(9.13 m)	38.35(5.8), 84.8(5.8), 271.30(5.1)
119.68 *10*	0.8 *6*	^{159}Tm(9.13 m)	38.35(5.8), 84.8(5.8), 271.30(5.1)
• 119.685 *4*	2.2×10^{-5} *10*	^{239}Pu(24110 y)	51.624(0.007100), 38.661(0.000500), 129.297(0.00631)
119.69 *3*	0.12 *4*	^{140}Xe(13.60 s)	805.52(20), 1413.66(12.2), 1315.05(8.2)
119.6987 *18*	0.5	^{182}Hf(61.5 m)	942.80(18.8), 799.64(9.4), 114.3152(6.2)
119.7 *4*	2.21 *23*	^{127}Sn(2.10 h)	1114.3(39), 1095.6(20), 823.1(10.9)
119.7 *2*	†<0.1	^{129}Ba(2.17 h)	182.30(†100), 1459.1(†50.0), 202.38(†33.7)
119.7 *1*	6.1 *6*	^{147}Tb(1.7 h)	1152.4(100), 694.4(43), 139.9(27.46)
119.735 *20*	>0.022	^{153}Dy(6.4 h)	80.723(11.10), 213.754(10.90), 99.659(10.51)
119.76 *4*	8.0 *6*	^{81}Y(72.4 s)	124.16(41.1), 79.23(24.67), 408.36(15.3)
• 119.76 *2*	1.0×10^{-5} *1*	^{239}Pu(24110 y)	51.624(0.007100), 38.661(0.000500), 129.297(0.00631)
119.763 *5*	†32.9 *16*	^{153}Pm(5.4 m)	35.842(†100), 127.298(†75), 28.309(†34.6)
119.80 *9*	†45 *3*	^{184}Ir(3.09 h)	263.97(†100), 390.38(†38), 961.22(†18.3)
119.8 *1*	†14.70 *15*	^{185}Pt(33.0 m)	229.60(†100), 135.3(†80), 197.4(†74)
119.8 *5*	0.06	^{203}Bi(11.76 h)	820.3(30), 825.2(14.6), 896.9(13)
119.8 *3*	>0.08	^{204}Bi(11.22 h)	899.15(98), 374.72(82), 984.02(59)
119.85 *10*	0.30 *4*	^{221}Rn(25 m)	186.38(21.6), 150.04(4.5), 216.90(2.6)
• 119.85 *10*	0.020 *4*	^{225}Ac(10.0 d)	99.91(1.01), 150.04(0.80), 99.63(0.62)
• 119.87 *5*	0.054 *9*	^{225}Ac(10.0 d)	99.91(1.01), 150.04(0.80), 99.63(0.62)
119.885 *1*	0.61 *3*	^{149}Pr(2.26 m)	138.447(11.0), 165.087(9.9), 108.520(9.5)
119.9 *6*	†76 *8*	^{118}Xe(6 m)	53.5(†100), 60.0(†82), 150.5(†44)
119.9 *1*	5.4 *5*	^{129}Sn(6.9 m)	1161.31(56.0), 1128.44(50), 760.8(16.8)
119.9 *4*	†2.5 *4*	^{142}Xe(1.22 s)	571.83(†100), 657.05(†79), 538.24(†77)
119.9		^{161}Er(3.21 h)	826.6(3.0), 211.15(12.2), 592.6(3.7)
• 119.90 *20*	0.0067 *7*	^{170}Lu(2.00 d)	84.2551(4.256), 1280.25(3.450), 2041.88(1.434)
• 119.9 *1*	0.108 *6*	^{238}Np(2.117 d)	984.45(27.8), 1028.54(20.3), 1025.87(9.6)
119.913 *2*	4.79 *25*	^{179}Re(19.5 m)	430.221(28), 289.968(26.9), 1680.244(13.0)
• 119.98 *2*	0.051 *21*	^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
120.00 *10*	68 *5*	^{103}Zr(1.3 s)	248(100), 164.05(94), 126.30(84)
120.0 *3*		^{122}Ba(1.95 m)	550.7, 388.7, 231.0
120.0 *6*	†27 *4*	^{123}Ba(2.7 m)	94.6(†100), 123.5(†69), 30.6(†56)
120		^{126}Ce(50 s)	188, 116.4, 82.0
120		^{127}Ce(32 s)	58.4(7.3), 253.0, 177.0
120 *2*	0.6 *3*	^{168}Lu(6.7 m)	198.82(28), 979.22(20), 896.12(15)
120.0 *2*	0.021 *6*	^{201}Pb(9.33 h)	331.19(79), 361.27(9.9), 945.96(7.4)
120.02 *12*	0.35 *5*	^{183}Ir(58 m)	392.52(10.4), 228.70(6.9), 87.67(5.6)
120.1 *3*	0.77 *17*	^{192}Hg(4.85 h)	274.8(50.4), 157.2(7), 306.5(5.4)
• 120.154 *25*	0.0179 *9*	^{110}Ag(249.79 d)	657.7622(94.0), 884.685(72.2), 937.493(34.13)
120.17 *10*	19	^{170}Hf(16.01 h)	164.78(33), 620.7(23), 572.9(18)
120.3	0.024 *10*	^{96}Nb(23.35 h)	778.224(96.45), 568.80(58.0), 459.88(26.62)
• 120.3	0.040 *10*	^{96}Tc(4.28 d)	778.224(100), 849.929(98), 812.581(82)
120.3	†1.0 *4*	^{178}Ir(12 s)	266.1(†100.0), 131.6(†79), 363.1(†39.9)
120.31 *3*	0.79 *4*	^{167}Lu(51.5 m)	29.66(14.4), 239.22(8.6), 213.19(3.6)
120.34 *12*	5.3 *4*	^{61}Fe(5.98 m)	1205.07(44), 1027.42(42.7), 297.90(22.2)
120.34 *5*	38 *3*	^{124}In(2.4 s)	1131.64(100), 969.94(52), 1072.85(47)
• 120.34 *4*		^{165}Tm(30.06 h)	242.917(35.5), 47.155(16.9), 297.369(12.71)
• 120.35 *5*	0.026	^{235}U(7.038×10^{8} y)	185.712(57.2), 143.764(10.96), 163.358(5.08)
• 120.36 *8*	$\dagger4.5\times10^{4}$	^{241}Am(432.2 y)	59.537(†60), 26.345(†1000×10^{9}), 33.195(†6000×10^{8})

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
• 120.3713 *6*	0.068 *4*	^{183}Ta(5.1 d)	246.0591(27), 353.9912(11.2), 107.9322(11.0)
• 120.3713 *6*	0.014 *7*	^{183}Re(70.0 d)	162.3219(23.3), 46.4839(7.97), 291.7238(3.05)
120.395 *1*	1.40 *8*	^{149}Pr(2.26 m)	138.447(11.0), 165.087(9.9), 108.520(9.5)
120.4 *2*	2.4 *3*	^{102}Cd(5.5 m)	481.0(63), 1036.6(12.8), 505.1(9.6)
120.42 *12*	0.67 *10*	^{16}C(0.747 s)	298.22(<0.5), 276.85(<0.07), 397.27(<0.03)
• 120.44 *8*	0.017 *7*	^{145}Eu(5.93 d)	893.73(66), 653.512(15.0), 1658.53(14.9)
• 120.49 *6*	0.40 *4*	^{147}Nd(10.98 d)	91.105(28), 531.016(13.1), 319.411(1.95)
120.5 *3*	0.194 *18*	^{60}Cu(23.7 m)	1332.501(88), 1791.6(45.4), 826.06(21.7)
120.54 *5*	11.1 *10*	^{128}In(0.72 s)	831.54(100), 1168.80(100), 321.22(10.5)
120.54 *15*	0.056 *17*	^{199}Pb(90 m)	366.90(44.2), 353.39(9.5), 1135.04(7.8)
• 120.579 *2*	0.069 *6*	^{155}Tb(5.32 d)	86.545(32.0), 105.305(25), 180.103(7.45)
120.58 *12*	1.84 *16*	^{99}Sr(0.269 s)	125.118(16.1), 536.12(14.0), 1198.12(9.2)
120.6 *1*	9.3 *10*	^{141}Gd(14 s)	215.8(54), 525.9(17), 336.2(17.1)
120.60 *6*	†100 *6*	^{165}Lu(10.74 m)	132.49(†100), 174.25(†47.0), 203.68(†38.0)
120.6 *1*	2.2 *3*	^{181}Au(11.4 s)	198.60(4.4), 2022.4(4.2), 79.40(4.2)
120.62 *5*	0.061 *13*	^{183}Os(13.0 h)	381.768(89.6), 114.463(20.63), 167.844(8.81)
120.64 *1*	†0.22 *4*	^{153}Pm(5.4 m)	35.842(†100), 127.298(†75), 28.309(†34.6)
120.709 *8*	1.39 *15*	^{227}Fr(2.47 m)	90.035(39), 585.804(29.5), 64.267(14.5)
120.8 *3*	9.3	^{67}As(42.5 s)	122.7(19.2), 243.6(7.8), 808.1(6.2)
120.8 *3*	0.83 *11*	^{113}Rh(2.72 s)	189.7(17.0), 409.3(15.9), 219.6(3.88)
120.8 *1*	1.7	^{140}Sm(14.82 m)	225.5(>10), 225.4(10), 140.0(5.0)
120.8	0.37	^{147}Ba(0.893 s)	167.4(11), 105.2(4.8), 196.1(4.8)
120.8 *2*	†0.8 *4*	^{192}Bi(37 s)	853.8(†100.0), 501.8(†80), 504.3(†39)
120.8		^{225}Rn(4.5 m)	207.2, 178.7, 169.7
• 120.80 *5*	0.0115 *10*	^{229}Pa(1.50 d)	40.09(0.104), 64.70(0.045), 75.12(0.035)
• 120.80 *10*	0.0205 *20*	^{249}Cf(351 y)	388.16(66), 333.37(14.6), 252.80(2.50)
• 120.816 *1*	0.00332 *3*	^{233}U(1.592×10^5 y)	42.44(0.0862), 97.134(0.020), 54.699(0.0182)
120.9 *5*	0.073 *15*	^{98}Sr(0.653 s)	119.353(73), 444.628(39), 428.4(31)
120.9 *1*	†31	^{123}La(17 s)	92.5(†100), 937.3(†43), 153.6(†43)
120.9 *1*		^{212}Bi(25.0 m)	276.5, 223.0, 405.2
120.90 *2*	0.33 *3*	^{230}Ac(122 s)	454.95(8), 508.20(5.15), 1243.9(3.50)
• 120.90 *2*	0.35 *6*	^{230}Pa(17.4 d)	951.95(1.65), 918.48(8.2), 454.95(6.27)
• 120.90 *2*	0.0342 *5*	^{234}U(2.455×10^5 y)	53.20(0.123), 454.95(0.000025), 508.20(0.000015)
120.92 *3*	3.51 *23*	^{90}Kr(32.32 s)	1118.69(39.0), 121.82(35.5), 539.49(30.8)
120.95 *20*	0.88 *18*	^{148}Ba(0.607 s)	56.08(29.20), 133.53(3.88), 415.78(3.59)
121 *2*	†4.9 *5*	^{94}Kr(0.20 s)	629.2(†100), 764.5(†71), 219.466(†67.4)
121.00 *20*	0.077 *9*	^{112}Ag(3.130 h)	617.27(43), 1387.67(5.4), 606.49(3.1)
121.00 *20*	>0.023	^{112}In(14.97 m)	617.27(4.6), 606.49(1.111), 1253.43(0.218)
121.0 *1*	†6.2×10^2 *14*	^{157}Ho(12.6 m)	279.97(†47600), 341.16(†37000), 193.41(†15200)
121.01 *2*	0.08 *4*	^{145}Cs(0.594 s)	175.36(20), 198.93(10.9), 112.46(10.71)
121.012 *14*	36.2 *7*	^{159}Ho(33.05 m)	131.973(23.6), 309.594(17.2), 252.963(13.7)
121.03 *3*	0.156 *13*	^{207}At(1.80 h)	814.41(44.5), 588.33(19.2), 300.654(12.8)
121.083 *12*		^{155}Dy(9.9 h)	226.918(68.4), 184.564(3.37), 1089.8(>2.8)
121.09 *8*	0.05 *3*	^{184}Pt(17.3 m)	154.90(31), 191.97(27), 548.36(23.1)
121.1166 *16*	0.0050 *23*	^{75}Ge(47.7 s)	136.0008(0.020), 279.5441(0.0043), 400.6600(0.0039)
• 121.1166 *16*	17.14 *18*	^{75}Se(119.779 d)	264.6584(58.50), 136.0008(58.3), 279.5441(24.79)
121.147 *7*	4.76 *9*	^{157}Sm(482 s)	197.870(56.00), 196.461(16.8), 394.351(11.93)
121.16	1.8 *5*	^{175}W(35.2 m)	270.25(12.6), 166.69(9.0), 149.17(3.6)
121.169 *3*	13.2 *6*	^{148}Ce(56 s)	269.519(17.0), 291.724(16.7), 98.99(12.4)
121.17 *16*	0.39 *20*	^{110}In(4.9 h)	657.7622(98.3), 884.685(92.9), 937.493(68.4)
• 121.198 *9*	0.252 *10*	^{166}Ho(1.20×10^3 y)	184.410(72.6), 810.276(58.08), 711.683(55.32)
121.2 *1*	14.2 *3*	^{146}Ba(2.22 s)	140.7(20.2), 251.2(19.6), 197.0(12.6)
• 121.2 *1*	0.023 *8*	^{185}Os(93.6 d)	646.116(78.0), 874.813(6.29), 880.523(5.17)
• 121.2 *2*	†1.14×10^3 *12*	^{241}Pu(14.35 y)	148.567(†309000), 103.680(†69400), 77.10(†35100)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
• 121.220 *17*	0.0028	^{147}Pm(2.6234 y)	197.299(3.4×10^{-7}), 76.073(1.17×10^{-8})
• 121.220 *17*	22.9 *8*	^{147}Eu(24.1 d)	197.299(27), 677.516(9.8), 1077.043(6.15)
121.3 *3*	0.20 *4*	^{76}Kr(14.8 h)	315.7(39), 270.2(21.1), 45.48(19.5)
121.37 *8*	0.470 *17*	^{139}Xe(39.68 s)	218.59(56), 296.53(21.7), 174.97(11.3)
• 121.41 *3*	0.029 *3*	^{189}Re(24.3 h)	216.663(5.50), 219.395(4.54), 245.09(3.5)
• 121.41 *3*	0.0028 *3*	^{189}Ir(13.2 d)	245.09(6), 69.537(3.5), 59.053(1.20)
121.42 *7*	0.036 *4*	^{87}Br(55.60 s)	1419.71(22.0), 1476.04(7.9), 1577.60(6.0)
121.49 *7*	0.14 *6*	^{105}Tc(7.6 m)	143.26(16), 107.945(14.1), 321.50(11.1)
121.51 *4*	3.0 *3*	^{71}Zn(2.45 m)	511.56(32), 910.27(7.8), 389.88(3.8)
121.51 *4*	2.9 *3*	^{71}Zn(3.96 h)	386.28(93), 487.38(62), 620.18(57)
121.51 *20*	0.04 *2*	^{140}Xe(13.60 s)	805.52(20), 1413.66(12.2), 1315.05(8.2)
• 121.53 *4*	†2.6×10^{4} *3*	^{227}Ac(21.773 y)	100(†110000), 69.21(†78000), 160.26(†70000)
121.57 *11*	10.1 *20*	^{157}Er(18.65 m)	53.05(24), 391.32(14.2), 150.4(3.0)
121.6 *2*	†82 *15*	^{114}Cs(0.57 s)	30.7(†100)
121.6 *3*	†6	^{223}Rn(23.2 m)	591.8(†100), 635.2(†76), 416.0(†55)
• 121.60 *4*	0.036 *3*	^{249}Cf(351 y)	388.16(66), 333.37(14.6), 252.80(2.50)
• 121.61 *8*	0.0026 *7*	^{182}Ta(114.43 d)	67.75001(41.2), 1121.3007(34.9), 1221.4066(26.98)
121.61 *8*	0.0025 *6*	^{182}Re(12.7 h)	67.75001(38.2), 1121.3007(32), 1221.4066(24.8)
121.6211 *5*	3.42 *22*	^{177}Yb(1.911 h)	150.392(20.3), 1080.21(5.6), 1241.2(3.47)
121.7 *3*	0.010 *3*	^{161}Gd(3.66 m)	360.94(0.59), 314.92(22.7), 102.315(13.9)
121.73 *5*	0.202 *20*	^{163}Yb(11.05 m)	860.28(10.1), 63.62(6.5), 123.21(1.98)
121.761 *3*	33	^{99}Y(1.470 s)	724.30(14.9), 536.2(6.6), 575.4(6.3)
121.761 *3*	0.93 *10*	^{100}Y(735 ms)	
• 121.77 *4*	0.090 *9*	^{151}Pm(28.40 h)	340.08(23), 167.75(8.3), 275.21(6.8)
121.7824 *4*	15.7 *12*	^{152}Pm(4.1 m)	841.586(2.17), 961.06(1.92), 963.37(1.83)
121.7824 *4*		^{152}Pm(13.8 m)	229.9, 200.6, 63.51
121.7824 *4*	45 *3*	^{152}Pm(7.52 m)	244.6989(78), 340.48(31.3), 1097.1(28.7)
• 121.7824 *4*	28.4 *3*	^{152}Eu(13.542 y)	1408.011(20.87), 964.131(14.34), 1112.116(13.55)
121.7824 *4*	7.21 *22*	^{152}Eu(9.274 h)	841.586(14.6), 963.37(12.01), 1389.00(0.770)
121.8 *2*	†39 *6*	^{174}Er(3.3 m)	100.4(†100), 708.4(†93), 766.9(†92)
• 121.8	0.006	^{242}Am(141 y)	49.367(0.19), 86.68(0.037), 109.69(0.024)
121.82 *3*	35.5 *12*	^{90}Kr(32.32 s)	1118.69(39.0), 539.49(30.8), 242.19(9.9)
121.9 *2*	0.31 *16*	^{105}Tc(7.6 m)	143.26(16), 107.945(14.1), 321.50(11.1)
121.9 *1*	0.32 *3*	^{117}Cs(8.4 s)	204.8(15.0), 29.7(9.9), 205.6(6.8)
121.9 *2*	0.39 *7*	^{159}Eu(18.1 m)	67.8(19), 78.6(9.1), 95.7(7.0)
121.9 *2*	0.12 *3*	^{225}Th(8.72 m)	321.4(23), 246.0(5.06), 359.0(4.1)
121.92 *10*	†4.2 *7*	^{165}Lu(10.74 m)	132.49(†100), 120.60(†100), 174.25(†47.0)
• 121.97 *5*	0.0007	^{253}Es(20.47 d)	41.79(0.050), 389.11(0.0264), 387.1(0.00810)
• 122.0 *2*	0.0003 *2*	^{149}Eu(93.1 d)	327.526(4.03), 277.089(3.56), 22.510(2.32)
122.0 *1*	†100	^{171}Hf(12.1 h)	662.2(†83), 347.18(†47), 1071.8(†46)
122.0	0.27	^{190}Hg(20.0 m)	142.6(68), 171.5(4.8), 154.7(2.5)
122.0	>0.021	^{195}Tl(1.16 h)	563.52(10.5), 884.47(10.0), 1363.88(8.4)
122.05 *7*	0.015 *3*	^{185}Ta(49.4 m)	177.59(25.7), 173.68(22.6), 65.86(3.9)
122.0614 *4*	13.9 *4*	^{57}Mn(87.2 s)	14.41300(10.56), 692.03(5.50), 352.36(2.09)
• 122.0614 *4*	85.60 *17*	^{57}Co(271.79 d)	136.4743(10.68), 14.41300(9.16), 692.03(0.157)
122.08 *5*	2.9 *3*	^{187}Pt(2.35 h)	106.46(9), 201.52(6.4), 110.04(5.7)
• 122.1 *5*		^{146}Eu(4.59 d)	747.2(98), 633.03(43), 634.07(37)
122.1 *3*	†100 *10*	^{164}Hf(111 s)	153.3(†47), 313.7(†22), 31.4(†12)
122.1 *2*	0.0050 *9*	^{251}Fm(5.30 h)	425.4(0.95), 480.4(0.392), 358.3(0.315)
122.13 *15*	0.30 *4*	^{127}Cd(0.43 s)	1235.07(8.3), 376.28(7.5), 523.60(5.15)
122.2 *2*	0.36 *13*	^{97}Rb(169.9 ms)	167.1(26), 585.2(21.0), 600.5(10.6)
122.2 *5*	0.23 *8*	^{117}I(2.22 m)	325.9(75), 274.4(20.4), 661.5(5.1)
122.25 *20*	0.66 *8*	^{190}Pb(1.2 m)	942.20(34), 151.19(8.92), 598.3(8.0)
122.27 *6*	0.197 *7*	^{88}Kr(2.84 h)	2392.11(34.6), 196.301(25.98), 2195.842(13.18)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
122.297 *3*	76.50 *4*	^{96}Sr(1.07 s)	809.401(71.9), 931.7(11.8), 530.0(9.0)
122.3 *1*	0.018 *6*	^{161}Er(3.21 h)	826.6(3.0), 211.15(12.2), 592.6(3.7)
122.3 *1*	0.42 *13*	^{182}Os(22.10 h)	510.056(52), 180.230(33.5), 263.285(6.71)
122.3 *6*		^{192}Hg(4.85 h)	274.8(50.4), 157.2(7), 306.5(5.4)
• 122.319 *10*	1.192 *14*	^{223}Ra(11.435 d)	269.459(13.7), 154.21(5.62), 323.871(3.93)
• 122.35 *12*	3.0×10^{-6} *2*	^{239}Pu(24110 y)	51.624(0.007100), 38.661(0.000500), 129.297(0.00631)
122.370 *22*	64.2 *23*	^{90}Mo(5.67 h)	257.34(78), 203.13(6.4), 323.20(6.3)
122.4 *3*		^{122}Ba(1.95 m)	550.7, 388.7, 231.0
• 122.4 *1*	0.009 *3*	^{143}Ce(33.039 h)	293.266(42.80), 57.356(11.7), 664.571(5.69)
122.40 *4*	20.6 *24*	^{173}Er(1.4 m)	895.2(54), 199.2(48), 192.8(47)
122.415 *13*	0.256 *16*	^{149}Nd(1.728 h)	211.309(25.9), 114.314(19.2), 270.166(10.7)
• 122.42 *4*	0.0117 *7*	^{171}Lu(8.24 d)	739.78(47.8), 19.394(13.7), 667.404(11.04)
122.50 *10*	†29 *3*	^{106}Sn(115 s)	386.8(†100), 477.5(†62), 253.30(†57)
122.5 *3*	†20 *1*	^{109}Tc(0.87 s)	194.6(†100), 128.7(†51), 96.2(†48)
122.5 *8*	0.048 *24*	^{141}Xe(1.73 s)	909.23(24.0), 118.705(16.1), 105.937(9.8)
122.5 *4*	†13.2 *8*	^{172}W(6.6 m)	38.9(†100), 423.3(†44), 89.8(†33.0)
122.51 *5*	†100 *8*	^{229}U(58 m)	88.43(†88), 198.83(†88), 247.82(†58)
122.55 *5*	1.55 *12*	^{161}Tm(33 m)	45.54(5.00), 1648.1(9.50), 84.40(9.4)
• 122.55 *3*	0.0167 *6*	^{173}Lu(1.37 y)	272.105(21.2), 78.63(11.87), 100.724(5.24)
122.58 *6*	25 *4*	^{186}Ta(10.5 m)	197.93(50), 214.87(42.3), 510.82(37.5)
• 122.58 *6*	†0.56 *2*	^{186}Re(90.64 h)	
122.586 *8*	1.14 *3*	^{204}Po(3.53 h)	883.984(29.9), 270.068(27.8), 1016.31(24.1)
122.6 *3*	†7	^{177}Os(2.8 m)	84.7(†100), 125.4(†63), 195.8(†61)
122.6 *1*	0.113 *18*	^{198}Pb(2.40 h)	290.3(36), 365.4(19), 173.4(18)
• 122.6 *10*	0.0068 *6*	^{205}Bi(15.31 d)	1764.36(1.368), 703.44(31), 987.62(0.585)
122.63 *4*		^{167}Lu(51.5 m)	29.66(14.4), 239.22(8.6), 213.19(3.6)
122.64 *8*	0.40 *5*	^{184}Pt(17.3 m)	154.90(31), 191.97(27), 548.36(23.1)
• 122.651 *5*	0.0070 *21*	^{154}Eu(8.593 y)	123.071(40.79), 1274.436(35.19), 723.304(20.22)
122.7 *3*	19.2	^{67}As(42.5 s)	120.8(9.3), 243.6(7.8), 808.1(6.2)
122.7 *1*	0.026 *18*	^{205}Po(1.66 h)	872.39(37), 1001.21(28.8), 849.83(25.5)
122.71 *5*	0.051 *17*	^{191}Au(3.18 h)	586.45(17), 277.88(7.2), 674.19(6.8)
122.72 *5*	5.1 *4*	^{71}Br(21.4 s)	260.5(8.0), 233.7(6.5), 171.6(6.2)
122.78 *3*		^{195}Tl(1.16 h)	563.52(10.5), 884.47(10.0), 1363.88(8.4)
122.793 *3*	0.15 *3*	^{179}Lu(4.59 h)	214.335(11.3), 214.930(0.46), 123.3790(0.45)
• 122.8	>0.016	^{153}Tb(2.34 d)	212.038(31.0), 170.504(6.8), 109.758(6.4)
• 122.8 *1*	0.00082 *10*	^{229}Pa(1.50 d)	40.09(0.104), 64.70(0.045), 75.12(0.035)
• 122.821 *1*	0.00012 *3*	^{168}Tm(93.1 d)	198.241(52.39), 815.990(48.99), 447.515(23.05)
122.9 *3*	†2.00 *9*	^{111}Rh(11 s)	275.4(†100.0), 411.8(†9.42), 230.0(†8.9)
122.91 *8*		^{168}Lu(5.5 m)	1483.65(†100), 228.58(†97), 111.8(†68)
122.91 *8*		^{168}Lu(6.7 m)	198.82(28), 979.22(20), 896.12(15)
• 122.916 *3*	1.14 *11*	^{172}Hf(1.87 y)	23.9331(20.3), 125.812(11.3), 67.35(5.3)
122.95 *10*	†13	^{154}Nd(25.9 s)	151.703(†800), 799.55(†600), 180.693(†510)
122.9730 *15*	0.14	^{182}Hf(61.5 m)	942.80(18.8), 799.64(9.4), 114.3152(6.2)
123.0	>0.5	^{80}Zn(0.545 s)	712.53(45.1), 715.40(33.8), 964.93(15.6)
123.0 *1*	0.92 *3*	^{142}Ba(10.6 m)	255.300(20.5), 1204.3(14.23), 895.2(13.9)
• 123.01 *2*	$\dagger0.000\times10^{7}$ *10*	^{241}Am(432.2 y)	59.537(†60), 26.345(†1000×10^{9}), 33.195(†6000×10^{8})
• 123.071 *1*	40.79 *25*	^{154}Eu(8.593 y)	1274.436(35.19), 723.304(20.22), 1004.725(18.01)
123.071 *1*	30 *4*	^{154}Tb(9.4 h)	247.925(22.1), 540.18(20), 649.564(10.9)
123.071 *1*	26 *4*	^{154}Tb(21.5 h)	1274.436(10.5), 2187.10(9.9), 722.12(7.7)
123.071 *1*	43 *8*	^{154}Tb(22.7 h)	247.925(79), 346.643(69), 1419.81(46)
123.10 *6*	0.025	^{155}Ho(48 m)	240.19(12.5), 136.30(5.00), 45.38(5)
123.1 *1*	0.151 *13*	^{186}Hg(1.38 m)	112.1(63), 251.5(55), 191.6(3.7)
• 123.1		^{188}Ir(41.5 h)	155.032(29.7), 2214.62(18.7), 632.99(18)
123.1		^{225}Rn(4.5 m)	207.2, 178.7, 169.7

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
123.17 *5*	0.134 *16*	^{227}Fr(2.47 m)	90.035(39), 585.804(29.5), 64.267(14.5)
123.19 *3*	0.48 *7*	^{167}Lu(51.5 m)	29.66(14.4), 239.22(8.6), 213.19(3.6)
• 123.193 *13*	0.151 *7*	^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
123.2 *2*	1.2	^{145}Ba(4.31 s)	96.6(17), 91.9(7), 65.9(5)
123.2 *2*	†100 *13*	^{172}Ir(4.4 s)	136.3(†19), 89.7(†19)
123.2 *1*	†45 *5*	^{172}Re(15 s)	253.9(†100), 350.5(†55), 419.3(†10)
123.2 *1*	†100 *4*	^{172}Re(55 s)	253.9(†74), 743.0(†19), 350.5(†>3.7)
123.21 *2*	1.98 *7*	^{163}Yb(11.05 m)	860.28(10.1), 63.62(6.5), 1746.68(1.72)
• 123.226 *5*	1.6×10^{-9} *4*	^{239}Pu(24110 y)	51.624(0.007100), 38.661(0.000500), 129.297(0.00631)
123.25 *5*	1.48 *15*	^{164}Tb(3.0 m)	168.838(25.4), 754.80(23.3), 215.07(21)
123.3 *1*	8.4 *9*	^{74}Kr(11.50 m)	89.65(31), 203.0(18.0), 296.67(9.9)
123.3 *2*	34.0 *5*	^{164}Lu(3.14 m)	740.52(12.2), 262.22(10.8), 863.89(9.2)
123.3 *4*	0.062 *19*	^{208}At(1.63 h)	686.527(98), 660.040(89), 177.595(48.6)
123.35 *4*	0.086 *9*	^{205}At(26.2 m)	719.30(31), 669.41(8.6), 628.88(5.6)
123.3790 *20*	0.45 *5*	^{179}Lu(4.59 h)	214.335(11.3), 214.930(0.46), 337.713(0.181)
123.4 *3*	2.2 *4*	^{136}Sm(47 s)	114.4(36), 747.7(5.4), 485.3(5.0)
• 123.415 *30*	0.0227 *20*	^{206}Bi(6.243 d)	803.10(99), 881.01(66.2), 516.18(40.7)
123.42 *3*	0.41 *6*	^{208}Rn(24.35 m)	426.78(7.07), 251.05(5.02), 350.026(3.34)
123.5 *6*	†69 *6*	^{123}Ba(2.7 m)	94.6(†100), 30.6(†56), 116.1(†54)
123.5 *1*	0.09 *4*	^{159}Er(36 m)	624.5(33), 649.1(23.4), 205.92(9.7)
123.5 *1*	3.9 *4*	^{169}Hf(3.24 m)	492.86(84), 369.5(9.7), 68.4(1.6)
123.50 *16*	†28 *4*	^{181}Ir(4.90 m)	107.64(†100), 1639.6(†52), 318.9(†46)
123.5		^{212}Pb(10.64 h)	238.632(43.3), 300.087(3.28), 115.183(0.592)
123.52 *10*	0.00021 *6*	^{163}Er(75.0 m)	1113.5(0.0490), 436.1(0.0285), 439.94(0.0276)
• 123.52 *18*	†0.7 *3*	^{227}Th(18.72 d)	235.971(†813), 50.13(†528), 256.25(†463)
123.6 *5*	0.06 *3*	^{163}Tb(19.5 m)	351.138(26), 389.734(24.3), 494.534(23)
123.6 *3*	0.036	^{170}Hf(16.01 h)	164.78(33), 620.7(23), 120.17(19)
123.6 *1*	0.19 *3*	^{184}Pt(17.3 m)	154.90(31), 191.97(27), 548.36(23.1)
• 123.626 *20*	1.97×10^{-5} *12*	^{239}Pu(24110 y)	51.624(0.007100), 38.661(0.000500), 129.297(0.00631)
123.66 *9*	0.077 *8*	^{132}Ce(3.51 h)	182.11(77), 155.37(10.5), 216.83(4.95)
123.67 *6*	5.8 *4*	^{123}Ag(0.309 s)	263.87(35.9), 409.79(13.2), 591.30(8.2)
123.672 *13*	83 *3*	^{173}Hf(23.6 h)	296.974(33.9), 139.634(12.7), 311.239(10.75)
123.68 *5*	0.025 *4*	^{187}W(23.72 h)	685.774(27.3), 479.531(21.8), 72.001(11.14)
123.7 *2*	0.35 *4*	^{104}Cd(57.7 m)	83.7(47), 709.6(19.5), 559.1(6.3)
• 123.7 *5*	0.0051 *25*	^{131}Te(30 h)	773.67(49.9), 852.21(27.0), 793.75(18.10)
123.73 *17*	0.20 *3*	^{181}Au(11.4 s)	198.60(4.4), 2022.4(4.2), 79.40(4.2)
123.75 *5*	0.028	^{221}Rn(25 m)	186.38(21.6), 150.04(4.5), 216.90(2.6)
• 123.75 *5*	0.072 *7*	^{225}Ac(10.0 d)	99.91(1.01), 150.04(0.80), 99.63(0.62)
123.8 *3*	0.005 *3*	^{135}Ce(17.7 h)	265.56(41.8), 300.07(23.5), 606.76(18.8)
123.8 *1*	†27 *1*	^{155}Er(5.3 m)	110.12(†100), 241.5(†65), 234.0(†40.0)
123.80 *6*	0.35 *10*	^{161}Tm(33 m)	45.54(5.00), 1648.1(9.50), 84.40(9.4)
123.8 *3*	0.040	^{237}Am(73.0 m)	280.23(47.3), 438.4(8.3), 473.5(4.3)
• 123.805 *3*	28.97 *23*	^{131}Ba(11.50 d)	496.326(47), 216.078(19.66), 373.246(14.04)
• 123.893 *5*	0.00059 *9*	^{233}U(1.592×10^{5} y)	42.44(0.0862), 97.134(0.020), 54.699(0.0182)
123.9 *14*	3.5 *7*	^{170}Ho(2.76 m)	258.2(37.0), 931.3(36.1), 181.6(23.8)
123.95 *8*	0.65 *10*	^{183}Au(42.0 s)	161.18(9.4), 214.13(5.9), 313.08(5.0)
123.97 *7*	1.19 *9*	^{101}Sr(118 ms)	128.34(18.0), 1124.82(10.9), 510.73(8.5)
124.0 *3*	8.3 *10*	^{72}Kr(17.2 s)	415.1(34.7), 310.0(28.5), 162.2(16.3)
124.0 *4*	0.08 *4*	^{127}Sn(2.10 h)	1114.3(39), 1095.6(20), 823.1(10.9)
• 124.0 *5*		^{146}Eu(4.59 d)	747.2(98), 633.03(43), 634.07(37)
124.0 *2*	35.6 *14*	^{168}Ta(2.0 m)	261.6(22.7), 751.4(7.3), 907(5.0)
124.015 *6*	9.1 *3*	^{171}Er(7.516 h)	308.31(64.4), 295.901(28.9), 111.621(20.5)
124.060 *7*	0.50 *4*	^{184}Ta(8.7 h)	414.03(72), 252.848(43), 920.932(32.0)
• 124.060 *7*	0.0018 *3*	^{184}Re(38.0 d)	903.279(37.9), 792.071(37.5), 111.208(17.1)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
• 124.060 *7*	0.149 *8*	^{184}Re(169 d)	252.848(10.7), 216.548(9.43), 920.932(8.14)
124.1 *2*	0.025 *8*	^{183}Hf(1.067 h)	783.754(66), 73.174(38), 459.069(27)
124.1 *2*	†3.2 *11*	^{185}Hg(21.6 s)	222.8(†100.0), 258.7(†98), 212.5(†58)
124.1	>0.032	^{212}Bi(60.55 m)	39.858(1.091), 452.83(0.31), 288.07(0.31)
• 124.141 *23*	0.029 *3*	^{189}Re(24.3 h)	216.663(5.50), 219.395(4.54), 245.09(3.5)
• 124.141 *23*	0.0034 *4*	^{189}Ir(13.2 d)	245.09(6), 69.537(3.5), 59.053(1.20)
124.16 *3*	41.1 *3*	^{81}Y(72.4 s)	79.23(24.67), 408.36(15.3), 119.76(8.0)
124.2 *2*	0.044 *9*	^{201}Pb(9.33 h)	331.19(79), 361.27(9.9), 945.96(7.4)
124.2 *5*	1.77 *17*	^{212}Fr(20.0 m)	84.1(0.63), 71.7(0.55), 40.17(0.25)
124.240 *5*	0.0074 *11*	^{163}Tb(19.5 m)	351.138(26), 389.734(24.3), 494.534(23)
124.3 *2*	†0.8 *3*	^{75}Ga(126 s)	253.0(†100), 574.8(†31.6), 885.6(†11.1)
124.371 *3*		^{154}Tb(9.4 h)	123.071(30), 247.925(22.1), 540.18(20)
124.371 *3*		^{154}Tb(22.7 h)	247.925(79), 346.643(69), 1419.81(46)
124.4 *2*	0.30 *6*	^{101}Zr(2.1 s)	119.3(10.8), 205.6(6.0), 912.2(3.48)
124.40 *10*	0.115 *23*	^{159}Tm(9.13 m)	38.35(5.8), 84.8(5.8), 271.30(5.1)
124.4 *2*	†7	^{171}Hf(12.1 h)	122.0(†100), 662.2(†83), 347.18(†47)
• 124.4 *10*		^{247}Cm(1.56×10^{7} y)	402.6(72), 278.0(3.4), 287.4(2.0)
124.43 *3*	0.097 *12*	^{153}Dy(6.4 h)	80.723(11.10), 213.754(10.90), 99.659(10.51)
124.43 *4*	0.19	^{154}Pm(1.73 m)	2057.76(17.1), 1393.9(14.4), 81.99(12.6)
• 124.434 *8*	0.01	^{239}Np(2.3565 d)	106.125(27.2), 277.599(14.38), 228.183(10.76)
124.434 *8*	0.100 *10*	^{239}Am(11.9 h)	277.599(15.0), 228.183(11.3), 209.753(3.50)
124.453 *3*	98.6	^{52}Ti(1.7 m)	17.0(18)
124.5	†7	^{220}Fr(27.4 s)	45.0(†100), 106.0(†72), 161.5(†65)
124.5	†>7	^{220}Fr(27.4 s)	45.0(†100), 106.0(†72), 161.5(†65)
• 124.501 *11*	6.13×10^{-5} *25*	^{239}Pu(24110 y)	51.624(0.007100), 38.661(0.000500), 129.297(0.00631)
124.52 *18*	†8.6 *18*	^{142}Xe(1.22 s)	571.83(†100), 657.05(†79), 538.24(†77)
124.54 *5*	0.313 *13*	^{155}Ho(48 m)	240.19(12.5), 136.30(5.00), 45.38(5)
124.55 *5*	†9.2 *10*	^{225}Fr(4.0 m)	182.3(†100), 31.50(†91), 225.1(†55)
• 124.55 *5*	0.69 *6*	^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
• 124.58 *6*	0.0048 *12*	^{231}Pa(32760 y)	27.36(10.3), 300.07(2.46), 302.65(2.2)
124.6 *2*	0.24 *5*	^{95}Rb(377.5 ms)	352.02(49), 204.02(15.1), 680.7(14.8)
124.6 *2*	†5.0	^{171}Hf(12.1 h)	122.0(†100), 662.2(†83), 347.18(†47)
124.65 *5*	†2.3 *4*	^{225}Fr(4.0 m)	182.3(†100), 31.50(†91), 225.1(†55)
• 124.65 *5*	0.74 *6*	^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
• 124.67 *4*		^{206}Po(8.8 d)	1032.26(32.9), 511.36(24.1), 286.410(23.8)
124.70 *35*	65 *3*	^{96}Pd(122 s)	762.3(50.0), 499.7(17.9), 1098.7(17.3)
124.70 *10*	3.7 *3*	^{100}Cd(49.1 s)	936.55(66), 139.71(6.7), 582.5(6.3)
124.70 *5*	11.37 *13*	^{127}Cs(6.25 h)	411.95(62.8), 462.31(5.07), 587.01(4.21)
124.72 *3*	0.28 *5*	^{237}Am(73.0 m)	280.23(47.3), 438.4(8.3), 473.5(4.3)
124.75 *7*	0.010 *5*	^{116}In(54.41 m)	1293.54(84.4), 1097.3(56.2), 416.86(28.9)
124.77 *9*	0.38 *6*	^{183}Ir(58 m)	392.52(10.4), 228.70(6.9), 87.67(5.6)
124.798 *3*	0.14 *5*	^{163}Tb(19.5 m)	351.138(26), 389.734(24.3), 494.534(23)
124.8 *3*	0.144 *18*	^{120}Xe(40 m)	25.1(30), 72.6(9), 178.1(6.8)
124.8 *1*	0.089 *10*	^{223}Ac(2.10 m)	98.58(0.891), 191.3(0.58), 83.55(0.57)
• 124.8 *3*	†0.16	^{227}Th(18.72 d)	235.971(†813), 50.13(†528), 256.25(†463)
124.82 *5*	0.010	^{221}Rn(25 m)	186.38(21.6), 150.04(4.5), 216.90(2.6)
• 124.82 *5*	0.0262 *22*	^{225}Ac(10.0 d)	99.91(1.01), 150.04(0.80), 99.63(0.62)
124.89 *7*	0.00015 *5*	^{135}La(19.5 h)	480.51(1.5), 874.51(0.164), 587.83(0.1108)
124.9 *3*		^{122}Ba(1.95 m)	550.7, 388.7, 231.0
• 124.91 *40*	0.0089 *11*	^{153}Sm(46.27 h)	103.1807(31.4), 69.67340(4.85), 97.4316(0.847)
• 124.925 *4*	0.056 *3*	^{231}Th(25.52 h)	25.646(14.5), 84.216(6.6), 89.944(0.94)
• 124.925 *4*	†2.7×10^{3} *12*	^{235}Np(396.1 d)	25.646(†600000), 84.216(†265000), 81.227(†58000)
124.95 *20*	0.033 *13*	^{185}Ir(14.4 h)	254.4(13.3), 1828.8(10), 60.0(5.7)
• 125	0.0019 *10*	^{150}Eu(35.8 y)	333.971(96), 439.401(80.4), 584.274(52.6)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
125.0	†100	^{175}Os(1.4 m)	181(†10.8), 248(†8.6), 170.1(†6.2)
125.0 *4*		^{180}Hg(2.8 s)	300.5(†100), 381.2(†69), 479.9(†23.0)
125.0 *4*	†9.7 *20*	^{180}Hg(2.8 s)	300.5(†100), 381.2(†69), 479.9(†23.0)
125.0 *4*	3.3 *7*	^{181}Lu(3.5 m)	652.5(22.0), 205.94(16.1), 574.9(15.4)
125.1 *10*		^{129}Sb(4.40 h)	812.8(43), 914.6(20.0), 544.7(17.9)
125.1 *3*	0.13 *7*	^{153}Ho(2.0 m)	295.8(67), 637.0(5.36), 688.5(3.7)
• 125.1 *1*	0.0050 *25*	^{155}Tb(5.32 d)	86.545(32.0), 105.305(25), 180.103(7.45)
125.1 *2*	†2.5 *7*	^{185}Hg(21.6 s)	222.8(†100.0), 258.7(†98), 212.5(†58)
125.1 *1*	0.38 *6*	^{227}Pa(38.3 m)	64.62(6), 110.05(1.24), 84.8(0.86)
125.118 *29*	16.1 *10*	^{99}Sr(0.269 s)	536.12(14.0), 1198.12(9.2), 2279.42(7.6)
125.164 *19*	0.153 *17*	^{153}Dy(6.4 h)	80.723(11.10), 213.754(10.90), 99.659(10.51)
125.17 *3*	0.31 *3*	^{66}Ge(2.26 h)	43.89(28.7), 381.85(28), 272.97(10.4)
• 125.17 *4*		^{165}Tm(30.06 h)	242.917(35.5), 47.155(16.9), 297.369(12.71)
125.18 *5*	4.6 *4*	^{174}W(31 m)	35.42(14.1), 428.83(12.7), 328.68(9.5)
• 125.181 *9*	7.11×10^{-5} *20*	^{239}Pu(24110 y)	51.624(0.007100), 38.661(0.000500), 129.297(0.00631)
125.19 *9*		^{132}Ce(3.51 h)	182.11(77), 155.37(10.5), 216.83(4.95)
125.2 *2*	†40	^{99}Rb(59 ms)	90.8(†100), 1071.6(†26), 981.4(†21)
125.2 *2*	†54	^{100}Rb(51 ms)	90.8(†100)
• 125.2 *3*	0.011 *4*	^{131}Te(30 h)	773.67(49.9), 852.21(27.0), 793.75(18.10)
• 125.2 *3*	>0.012	^{151}Pm(28.40 h)	340.08(23), 167.75(8.3), 275.21(6.8)
125.21 *4*	1.19 *18*	^{202}Bi(1.72 h)	960.67(99), 422.18(83.7), 657.49(60.6)
125.3 *1*		^{145}Ce(3.01 m)	724.33(59), 62.54(13.33), 1148.03(9.15)
125.3	>0.07	^{190}Hg(20.0 m)	142.6(68), 171.5(4.8), 154.7(2.5)
125.3 *3*	†>0.27	^{230}Ra(93 m)	72.0(†100), 63.0(†35.4), 202.8(†27.3)
• 125.30 *2*	>0.00033	^{237}Pu(45.2 d)	59.537(3.28), 26.345(0.221), 33.195(0.0745)
• 125.30 *2*	$\dagger4.08\times10^{7}$ *3*	^{241}Am(432.2 y)	59.537(†60), 26.345(†1000×10^{9}), 33.195(†6000×10^{8})
• 125.3581 *9*	0.019	^{185}W(75.1 d)	
• 125.3581 *9*	0.342 *12*	^{185}Os(93.6 d)	646.116(78.0), 874.813(6.29), 880.523(5.17)
125.4	25.8 *24*	^{34}Al(60 ms)	3327.5(60), 929.6(56), 4257.0(12.0)
125.40 *28*	0.13	^{103}Ag(65.7 m)	118.72(31.2), 148.193(28.3), 266.86(13.3)
125.4 *2*	34 *3*	^{118}Pd(1.9 s)	125.4(34), 224.2(20.1), 151.6(15.0)
125.4 *3*	34 *3*	^{118}Pd(1.9 s)	125.4(34), 224.2(20.1), 151.6(15.0)
125.4 *3*	†6 *2*	^{155}Yb(1.75 s)	236.2(†100), 174.9(†55), 361.6(†46)
125.4 *2*	0.012 *4*	^{161}Er(3.21 h)	826.6(3.0), 211.15(12.2), 592.6(3.7)
125.4 *10*	>0.22	^{176}Ta(8.09 h)	1159.28(25), 88.34(12), 1224.93(6)
125.4 *3*	†63	^{177}Os(2.8 m)	84.7(†100), 195.8(†61), 1268.6(†33)
• 125.41 *6*	6.0×10^{-5} *9*	^{233}U(1.592×10^{5} y)	42.44(0.0862), 97.134(0.020), 54.699(0.0182)
125.444 *17*	0.087 *11*	^{179}Re(19.5 m)	430.221(28), 289.968(26.9), 1680.244(13.0)
125.46 *1*	0.78 *9*	^{234}Pa(6.70 h)	131.30(18), 946.00(13.4), 883.24(9.6)
125.5 *2*		^{108}Mo(1.5 s)	268.21, 258.53
125.52 *10*		^{115}Pd(25 s)	342.71(8), 303.87(7), 396.56(6)
• 125.55 *4*	0.0122 *18*	^{151}Pm(28.40 h)	340.08(23), 167.75(8.3), 275.21(6.8)
125.58 *3*	0.79 *8*	^{162}Yb(18.87 m)	163.35(40.0), 118.70(33.6), 576.10(3.24)
125.6 *1*	7.55 *15*	^{73}Br(3.4 m)	64.9(37.0), 336.0(10.4), 699.8(9.1)
125.6 *2*	33.3	^{115}Rh(0.99 s)	127.9(64.6), 296.5(17), 164.5(17)
125.60 *6*	1.58 *13*	^{161}Tm(33 m)	45.54(5.00), 1648.1(9.50), 84.40(9.4)
125.6	†0.6	^{171}Hf(12.1 h)	122.0(†100), 662.2(†83), 347.18(†47)
125.7 *4*	0.57 *19*	^{74}Zn(96 s)	56.7(70), 49.4(33.4), 143.5(21.7)
• 125.7 *3*	0.0119 *19*	^{152}Eu(13.542 y)	121.7824(28.4), 1408.011(20.87), 964.131(14.34)
125.7 *4*	0.07 *4*	^{185}Au(4.25 m)	310.6(13), 243.1(6.6), 77.7(6)
125.7 *3*	†0.3 *2*	^{200}At(43 s)	665.9(†100), 611.1(†85.0), 484.5(†49.8)
• 125.71 *7*	0.0036 *3*	^{229}Pa(1.50 d)	40.09(0.104), 64.70(0.045), 75.12(0.035)
125.73 *4*	0.44 *5*	^{157}Pm(10.56 s)	160.61(35), 188.052(13.5), 571.27(5.39)
125.74 *8*	0.027 *16*	^{151}Nd(12.44 m)	116.80(43.4), 255.68(16.4), 1180.89(14.8)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
125.76 *4*	†4.2×10^7	^{123}In(47.8 s)	3234(†130000), 1169.8(†100000), 3127(†100000)
125.76 *5*	†219 *38*	^{157}Ho(12.6 m)	279.97(†47600), 341.16(†37000), 193.41(†15200)
125.8 *3*	0.041 *4*	^{95}Tc(20.0 h)	765.794(93.82), 1073.71(3.74), 947.67(1.951)
125.8 *1*	0.06 *2*	^{159}Er(36 m)	624.5(33), 649.1(23.4), 205.92(9.7)
125.8 *1*	†100 *14*	^{160}Tm(9.4 m)	728.5(†37), 264.1(†27), 1368.5(†24.6)
125.8 *1*	6.5 *11*	^{160}Tm(74.5 s)	264.1(9), 375.8(2.4), 738.7(1.08)
125.8 *2*	310	^{166}W(18.8 s)	224.6(†24.0), 172.5(†17.8), 395.9(†17)
125.8 *2*	0.10 *4*	^{181}Re(19.9 h)	365.57(56), 360.70(20), 639.30(6.4)
• 125.812 *3*	11.3 *6*	^{172}Hf(1.87 y)	23.9331(20.3), 67.35(5.3), 81.7515(4.52)
• 125.8437 *17*	0.00119 *11*	^{77}As(38.83 h)	238.996(1.6), 520.639(0.558), 249.786(0.394)
• 125.8437 *17*	0.0092 *12*	^{77}Br(57.036 h)	238.996(23), 520.639(22.4), 297.215(4.16)
125.9 *3*	0.032 *13*	^{88}Br(16.5 s)	775.28(63), 802.14(13.13), 1440.69(4.72)
125.9 *2*	2.6 *8*	^{175}Ta(10.5 h)	207.4(14.0), 348.5(12.0), 266.9(10.8)
125.9 *2*	5.8 *12*	^{175}Ta(10.5 h)	207.4(14.0), 348.5(12.0), 266.9(10.8)
125.95 *1*	0.00174 *22*	^{55}Cr(3.497 m)	1528.3(0.037), 2252.4(0.0031), 1402.4(0.00133)
• 125.981 *10*	0.121 *3*	^{149}Gd(9.28 d)	149.735(48.2), 298.634(28.6), 346.651(23.9)
• 125.99 *9*		^{245}Cm(8500 y)	174.94(10), 132.99(2.77), 41.95(0.350)
126 *1*	75 *3*	^{58}Cr(7.0 s)	682.9(81), 289.5(18.8), 520.4(15.8)
126 *1*	>0.35	^{113}Ag(68.7 s)	316.3(18), 392.3(11), 298.58(10)
126		^{127}Pr	
126.0	0.5	^{134}Nd(8.5 m)	163.2(58), 288.9(13), 216.8(12)
126 *2*	0.6 *3*	^{168}Lu(6.7 m)	198.82(28), 979.22(20), 896.12(15)
126 *1*	0.22 *8*	^{196}Pb(37 m)	253.1(27.0), 502.1(26.5), 366.5(11.1)
• 126.0 *8*	0.00049 *20*	^{254}Es(39.3 h)	211.80(0.096), 177.30(0.056), 71.30(0.043)
126.0 *2*	†3.6	^{256}Es(7.6 h)	861.8(†100), 231.1(†61), 172.6(†49)
126.01 *3*	0.0063 *5*	^{250}Bk(3.217 h)	989.12(45), 1031.85(35.6), 1028.65(4.91)
126.03 *4*	0.0103 *9*	^{95}Tc(20.0 h)	765.794(93.82), 1073.71(3.74), 947.67(1.951)
• 126.05 *3*	8.10 *23*	^{100}Pd(3.63 d)	84.02(45), 74.78(36.5), 42.10(7.7)
126.07 *2*	0.490 *12*	^{145}Ce(3.01 m)	724.33(59), 62.54(13.33), 1148.03(9.15)
• 126.09 *6*	0.124 *9*	^{153}Tb(2.34 d)	212.038(31.0), 170.504(6.8), 109.758(6.4)
• 126.1 *3*	0.008 *4*	^{131}Te(30 h)	773.67(49.9), 852.21(27.0), 793.75(18.10)
126.1 *4*		^{172}W(6.6 m)	38.9(†100), 423.3(†44), 89.8(†33.0)
126.1 *4*	0.05 *3*	^{185}Au(4.25 m)	310.6(13), 243.1(6.6), 77.7(6)
126.14 *5*	0.107 *14*	^{138}Nd(5.04 h)	325.76(2.84), 199.50(0.53), 341.65(0.40)
126.15 *8*	†10	^{154}Nd(25.9 s)	151.703(†800), 799.55(†600), 180.693(†510)
126.15 *10*	0.24 *3*	^{221}Rn(25 m)	186.38(21.6), 150.04(4.5), 216.90(2.6)
• 126.15 *10*	0.0076 *22*	^{225}Ac(10.0 d)	99.91(1.01), 150.04(0.80), 99.63(0.62)
126.2 *4*	0.85 *10*	^{94}Rh(25.8 s)	756.23(100), 1430.50(100), 311.70(97.3)
126.2 *4*	4.5 *2*	^{94}Rh(70.6 s)	1430.50(100), 756.23(51), 1072.50(30.7)
126.2 *2*	5.3 *3*	^{196}Os(34.9 m)	407.9(5.9), 315.4(2.5), 207.1(2.4)
126.21 *14*	†3.8 *5*	^{189}Au(28.7 m)	713.17(†100), 812.68(†63), 447.65(†55)
126.30 *10*	84 *13*	^{103}Zr(1.3 s)	248(100), 164.05(94), 120.00(68)
126.3 *4*	†2.61 *24*	^{164}Hf(111 s)	122.1(†100), 153.3(†47), 313.7(†22)
126.4 *2*	†1.9	^{171}Hf(12.1 h)	122.0(†100), 662.2(†83), 347.18(†47)
126.4 *2*	0.010	^{223}Ac(2.10 m)	98.58(0.891), 191.3(0.58), 83.55(0.57)
126.4 *2*	0.17 *4*	^{225}Th(8.72 m)	321.4(23), 246.0(5.06), 359.0(4.1)
• 126.4 *2*	0.021 *10*	^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
126.4 *2*	†5.2 *12*	^{229}U(58 m)	122.51(†100), 88.43(†88), 198.83(†88)
126.44 *10*	†8.3 *9*	^{157}Yb(38.6 s)	230.92(†100), 340.7(†90), 241.7(†74)
126.5 *2*	0.45 *12*	^{126}Ba(100 m)	233.6(19.6), 257.6(7.6), 241.0(6.0)
• 126.5 *5*		^{146}Eu(4.59 d)	747.2(98), 633.03(43), 634.07(37)
126.5 *2*	0.92 *18*	^{152}Ho(49.5 s)	647.2(92), 613.8(88.4), 683.3(88)
126.5 *1*	0.075 *18*	^{188}Hg(3.25 m)	66.7(63), 190.1(4.40), 82.7(2.6)
126.5 *3*	1.2	^{203}Bi(11.76 h)	820.3(30), 825.2(14.6), 896.9(13)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
• 126.5 *3*	0.011 *5*	^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
126.55 *17*	0.9 *3*	^{184}Hg(30.6 s)	236.18(64), 156.24(58), 295.11(10.3)
126.56 *10*		^{193}Hg(3.80 h)	861.11(†100), 1118.84(†64), 789.21(†36)
126.6 *2*	0.36 *12*	^{175}Ta(10.5 h)	207.4(14.0), 348.5(12.0), 266.9(10.8)
126.6 *2*	0.28 *12*	^{175}Ta(10.5 h)	207.4(14.0), 348.5(12.0), 266.9(10.8)
126.6 *3*	2.2 *4*	^{184}Hg(30.6 s)	236.18(64), 156.24(58), 295.11(10.3)
126.6 *10*	0.110 *22*	^{199}Bi(27 m)	560.1(22.0), 424.85(22), 841.7(11)
126.630 *18*	0.111 *8*	^{149}Nd(1.728 h)	211.309(25.9), 114.314(19.2), 270.166(10.7)
126.7 *2*	0.08 *3*	^{97}Rb(169.9 ms)	167.1(26), 585.2(21.0), 600.5(10.6)
126.7 *2*	4.49 *20*	^{114}Pd(2.42 m)	232.0(4.90), 358.5(1.63), 136.7(0.90)
126.7 *3*		^{122}Ba(1.95 m)	550.7, 388.7, 231.0
126.7 *2*	†2.2 *4*	^{153}Yb(4.2 s)	547.4(†100), 674.1(†61), 369.6(†32)
126.78 *10*	0.48 *12*	^{162}Yb(18.87 m)	163.35(40.0), 118.70(33.6), 576.10(3.24)
126.79 *20*	†77 *4*	^{182}Ir(15 m)	273.23(†100), 236.3(†21.0), 912.02(†20.3)
• 126.8 *5*	0.0029 *14*	^{151}Pm(28.40 h)	340.08(23), 167.75(8.3), 275.21(6.8)
126.8 *1*	†0.15 *4*	^{160}Ho(5.02 h)	728.18(†100), 879.383(†65.9), 962.317(†59.1)
126.8 *1*	0.072 *17*	^{160}Ho(25.6 m)	728.18(46.9), 879.383(26.6), 962.317(25.6)
126.9 *2*	0.8 *4*	^{185}Ir(14.4 h)	254.4(13.3), 1828.8(10), 60.0(5.7)
126.9 *4*	0.28 *7*	^{186}Pt(2.0 h)	276.7(0), 611.5(6.0), 635.6(>3.8)
126.95 *4*	†619 *95*	^{157}Ho(12.6 m)	279.97(†47600), 341.16(†37000), 193.41(†15200)
126.97 *2*	0.153 *17*	^{191}Au(3.18 h)	586.45(17), 277.88(7.2), 674.19(6.8)
127.0 *3*	1 *1*	^{146}Ho(3.6 s)	682.9(100), 925.3(69), 673.7(55)
127 *1*	0.24 *11*	^{196}Pb(37 m)	253.1(27.0), 502.1(26.5), 366.5(11.1)
• 127.1 *3*	0.010 *5*	^{149}Gd(9.28 d)	149.735(48.2), 298.634(28.6), 346.651(23.9)
127.1 *4*		^{172}W(6.6 m)	38.9(†100), 423.3(†44), 89.8(†33.0)
127.126 *10*	0.322 *17*	^{153}Dy(6.4 h)	80.723(11.10), 213.754(10.90), 99.659(10.51)
• 127.164 *3*	16.7 *3*	^{57}Ni(35.60 h)	1377.63(81.7), 1919.52(12.26), 1757.55(5.75)
127.17 *14*	0.099 *20*	^{202}Bi(1.72 h)	960.67(99), 422.18(83.7), 657.49(60.6)
127.2 *7*	1.0 *3*	^{159}Tm(9.13 m)	38.35(5.8), 84.8(5.8), 271.30(5.1)
127.23 *3*	2.86 *14*	^{101}Tc(14.22 m)	306.85(88), 545.06(6.0), 184.10(1.69)
• 127.23 *3*	73	^{101}Rh(3.3 y)	197.6(70.8), 324.8(13.4), 295.0(0.73)
• 127.23 *3*	†0.85 *18*	^{101}Rh(4.34 d)	306.85(†115), 545.06(†6.1), 179.62(†0.77)
• 127.24 *4*	0.0031 *6*	^{205}Bi(15.31 d)	1764.36(1.368), 703.44(31), 987.62(0.585)
127.27 *6*	0.39 *3*	^{190}Re(3.2 h)	186.718(27.8), 605.24(14.9), 557.972(14.3)
127.298 *5*	†75 *4*	^{153}Pm(5.4 m)	35.842(†100), 28.309(†34.6), 119.763(†32.9)
127.33		^{138}Nd(5.04 h)	325.76(2.84), 199.50(0.53), 341.65(0.40)
127.38 *6*	0.47 *6*	^{148}Ba(0.607 s)	56.08(29.20), 133.53(3.88), 415.78(3.59)
• 127.4 *4*	0.03 *1*	^{131}Te(30 h)	773.67(49.9), 852.21(27.0), 793.75(18.10)
127.40 *6*	0.33 *4*	^{167}Lu(51.5 m)	29.66(14.4), 239.22(8.6), 213.19(3.6)
127.4 *3*	0.039	^{170}Hf(16.01 h)	164.78(33), 620.7(23), 120.17(19)
127.4 *5*	>3.2	^{246}Am(39 m)	679.0(53), 205.0(36), 152.9(25)
127.42 *14*	†0.5 *1*	^{187}Hg(1.9 m)	233.38(†100), 376.34(†38), 240.26(†33)
127.5 *3*	†0.13 *4*	^{184}Ir(3.09 h)	263.97(†100), 119.80(†45), 390.38(†38)
127.5 *2*	0.110 *20*	^{237}Am(73.0 m)	280.23(47.3), 438.4(8.3), 473.5(4.3)
127.52 *20*	†6 *1*	^{165}Lu(10.74 m)	132.49(†100), 120.60(†100), 174.25(†47.0)
127.6 *1*	46 *5*	^{53}Ti(32.7 s)	228.4(40), 1675.5(25), 100.8(20.3)
127.6		^{99}Y(1.470 s)	121.761(33), 724.30(14.9), 536.2(6.6)
127.6 *1*	3.5 *4*	^{118}Pd(1.9 s)	125.4(34), 125.4(34), 224.2(20.1)
127.65 *11*	0.029 *4*	^{100}Sr(202 ms)	963.85(22.0), 898.50(18.9), 65.46(15.2)
• 127.69 *4*		^{165}Tm(30.06 h)	242.917(35.5), 47.155(16.9), 297.369(12.71)
127.69 *9*	†425 *41*	^{179}Ir(79 s)	97.5(†1849), 86.31(†1370), 45.20(†1329)
127.7 *1*	0.070 *9*	^{86}Zr(16.5 h)	242.80(96), 29.10(21.6), 612.00(5.7)
127.7 *3*		^{118}Ag(3.76 s)	487.77(60), 677.13(11.9), 2788.7(11.8)

• $t_{1/2}$>1 d

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
127.72 *9*	0.093 *8*	^{132}Ce(3.51 h)	182.11(77), 155.37(10.5), 216.83(4.95)
127.74 *5*	4.0 *8*	^{159}Tm(9.13 m)	38.35(5.8), 84.8(5.8), 271.30(5.1)
127.8	0.13	^{147}Ba(0.893 s)	167.4(11), 105.2(4.8), 196.1(4.8)
127.8		^{161}Er(3.21 h)	826.6(3.0), 211.15(12.2), 592.6(3.7)
• 127.805 *3*	2.13 *5*	^{172}Er(49.3 h)	610.062(44.2), 407.338(42.1), 68.107(3.29)
127.871 *9*	0.0050 *22*	^{184}Ta(8.7 h)	414.03(72), 252.848(43), 920.932(32.0)
• 127.871 *9*	0.0016 *7*	^{184}Re(38.0 d)	903.279(37.9), 792.071(37.5), 111.208(17.1)
• 127.871 *9*	0.00059 *23*	^{184}Re(169 d)	252.848(10.7), 216.548(9.43), 920.932(8.14)
127.9 *2*	64.6	^{115}Rh(0.99 s)	125.6(33.3), 296.5(17), 164.5(17)
127.9 *1*	0.0025 *8*	^{121}I(2.12 h)	212.189(84), 532.08(6.07), 598.74(1.47)
127.9 *2*	0.7 *3*	^{185}Ir(14.4 h)	254.4(13.3), 1828.8(10), 60.0(5.7)
• 127.91 *10*	1.46 *15*	^{172}Hf(1.87 y)	23.9331(20.3), 125.812(11.3), 67.35(5.3)
127.919 *6*	6.0 *3*	^{147}Pr(13.4 m)	77.9921(15), 314.675(13.2), 641.380(10.0)
127.93 *4*	0.165 *12*	^{205}At(26.2 m)	719.30(31), 669.41(8.6), 628.88(5.6)
128.0 *4*	0.016 *10*	^{96}Nb(23.35 h)	778.224(96.45), 568.80(58.0), 459.88(26.62)
128.0 *3*	0.036 *14*	^{150}Tb(3.48 h)	638.05(72), 496.3(14.8), 792.5(4.39)
128.0 *1*	†21 *6*	^{173}Ir(2.20 s)	49.6(†100), 285.0(†76), 296.4(†48)
• 128.05		^{241}Am(432.2 y)	59.537(†60), 26.345(†1000×10^{9}), 33.195(†6000×10^{8})
• 128.09 *14*	0.0140 *9*	^{131}Ba(11.50 d)	496.326(47), 123.805(28.97), 216.078(19.66)
128.1 *1*		^{64}Ge(63.7 s)	427.03(37.4), 666.94(16.9), 128.2(10.7)
128.2 *2*	10.7 *7*	^{64}Ge(63.7 s)	427.03(37.4), 666.94(16.9), 774.5(7.0)
128.2 *2*	†1.0 *4*	^{131}Pr(1.53 m)	266.13(†100), 72.82(†64), 387.56(†38)
128.2		^{157}Lu(5.0 s)	967.5, 949.8, 880.5
128.21 *23*	†3.8 *6*	^{181}Pt(51 s)	289.29(†100), 111.97(†100), 230.15(†92)
128.236 *11*	0.316 *18*	^{153}Dy(6.4 h)	80.723(11.10), 213.754(10.90), 99.659(10.51)
128.3 *1*	0.087 *2*	^{240}U(14.1 h)	44.10(1.05), 189.7(0.24), 66.5(0.154)
128.34 *5*	18.0 *9*	^{101}Sr(118 ms)	1124.82(10.9), 510.73(8.5), 1211.28(6.1)
128.37 *4*	0.14 *3*	^{183}Os(9.9 h)	1101.94(49.0), 1107.92(22.36), 1034.85(6.02)
128.5	†14	^{224}Ac(2.9 h)	156.4(†100), 140.8(†55), 261.6(†28)
• 128.5030 *5*	15.5 *3*	^{177}Lu(160.4 d)	208.3664(57.7), 228.4838(37.0), 378.5029(29.7)
128.55 *12*	6.0×10^{-5} *12*	^{83}Br(2.40 h)	529.635(1.200), 520.39(0.0576), 552.63(0.0200)
• 128.55 *12*	0.00134 *22*	^{83}Rb(86.2 d)	520.39(44.7), 529.635(29.3), 552.63(16.0)
128.6 *2*	†24	^{71}Cu(19.5 s)	489.7(†100), 595.2(†30.5), 586.5(†30.2)
128.60 *20*	0.008 *3*	^{105}Cd(55.5 m)	961.84(4.69), 346.870(4.20), 1302.459(3.98)
128.6	>0.032	^{195}Tl(1.16 h)	563.52(10.5), 884.47(10.0), 1363.88(8.4)
128.69 *3*	0.038 *8*	^{140}Xe(13.60 s)	805.52(20), 1413.66(12.2), 1315.05(8.2)
128.7 *3*	†51	^{109}Tc(0.87 s)	194.6(†100), 96.2(†48), 68.8(†46)
128.7 *1*	†60 *15*	^{135}Pm(49 s)	198.5(†100), 207.2(†70), 463.5(†62)
128.74 *5*	†16 *1*	^{227}Rn(22.5 s)	162.14(†100), 739.2(†65), 686.2(†62)
• 128.75 *3*	0.0366 *24*	^{149}Gd(9.28 d)	149.735(48.2), 298.634(28.6), 346.651(23.9)
128.8 *1*	0.73 *10*	^{97}Rb(169.9 ms)	167.1(26), 585.2(21.0), 600.5(10.6)
128.8 *2*	1.57 *13*	^{120}Xe(40 m)	25.1(30), 72.6(9), 178.1(6.8)
128.8 *5*	0.22 *7*	^{136}Sm(47 s)	114.4(36), 747.7(5.4), 485.3(5.0)
128.8 *1*	0.39 *13*	^{151}Er(0.58 s)	789.4(5.1), 597.4(4.4), 297.2(3.7)
128.83 *7*	1.11 *7*	^{205}Po(1.66 h)	872.39(37), 1001.21(28.8), 849.83(25.5)
128.90 *25*	1.05 *7*	^{105}In(5.07 m)	131.37(41), 260.21(15.7), 604.11(9.2)
128.90 *7*	2.95 *25*	^{161}Tm(33 m)	45.54(5.00), 1648.1(9.50), 84.40(9.4)
128.9 *2*	0.14 *3*	^{225}Th(8.72 m)	321.4(23), 246.0(5.06), 359.0(4.1)
129 *1*	0.06	^{77}Rb(3.75 m)	66.52(57), 178.99(22.2), 393.37(9.7)
129		^{82}Zr(32 s)	525, 397, 278
129.0 *1*	2.40 *25*	^{105}Mo(35.6 s)	85.4(25.0), 76.50(19.3), 147.8(14.8)
129.0 *3*	†13.8 *19*	^{137}Te(2.49 s)	243.3(†100), 554.0(†34), 469.1(†21)
• 129.04 *3*	0.016 *10*	^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
129.065 *3*	2.45 *19*	^{228}Ac(6.15 h)	911.205(26.6), 968.971(16.2), 338.322(11.3)
129.065 *3*	2.97 *16*	^{228}Pa(22 h)	911.205(4.19), 463.005(1.250), 964.770(4.25)
• 129.065 *3*	0.0686 *8*	^{232}U(68.9 y)	57.762(0.200), 270.243(0.00316), 327.995(0.00282)
129.1 *1*	†13.9 *14*	^{185}Hg(21.6 s)	222.8(†100.0), 258.7(†98), 212.5(†58)
129.1 *1*	11.0 *8*	^{230}Fr(19.1 s)	711.0(13.6), 728.4(7.3), 677.4(6.7)
129.13 *9*	0.47 *7*	^{183}Ir(58 m)	392.52(10.4), 228.70(6.9), 87.67(5.6)
129.14 *9*	5.51 *17*	^{129}Ba(2.23 h)	6.545(23.7), 214.30(13.4), 220.83(8.54)
129.14 *9*	†11.8 *2*	^{129}Ba(2.17 h)	182.30(†100), 1459.1(†50.0), 202.38(†33.7)
• 129.182 *1*	0.0005 *1*	^{155}Tb(5.32 d)	86.545(32.0), 105.305(25), 180.103(7.45)
• 129.185 *30*	0.55 *3*	^{153}Tb(2.34 d)	212.038(31.0), 170.504(6.8), 109.758(6.4)
129.2 *5*	†100	^{100}Rb(51 ms)	288.4(†36)
129.2 *3*	†1.8	^{149}Ce(5.3 s)	57.7(†100), 380.0(†33.7), 86.4(†20.2)
• 129.2		^{241}Am(432.2 y)	59.537(†60), 26.345(†1000×10^{9}), 33.195(†6000×10^{8})
129.212 *26*	0.089 *15*	^{163}Tm(1.810 h)	104.320(18.6), 69.229(11.6), 241.305(10.9)
• 129.24 *20*	0.016 *4*	^{128}Ba(2.43 d)	273.44(15), 374.99(0.309), 229.50(0.106)
129.25 *10*	0.24 *3*	^{221}Rn(25 m)	186.38(21.6), 150.04(4.5), 216.90(2.6)
• 129.25 *10*	0.0033 *11*	^{225}Ac(10.0 d)	99.91(1.01), 150.04(0.80), 99.63(0.62)
• 129.25 *15*	6.4×10^{-5} *10*	^{233}U(1.592×10^{5} y)	42.44(0.0862), 97.134(0.020), 54.699(0.0182)
• 129.27 *3*	0.030 *6*	^{82}Br(35.30 h)	776.517(83.5), 554.348(70.8), 619.106(43.4)
129.27 *3*	0.127 *8*	^{82}Rb(6.472 h)	776.517(84), 554.348(62.4), 619.106(37.976)
• 129.297 *2*	0.00631 *6*	^{239}Pu(24110 y)	51.624(0.007100), 38.661(0.000500), 375.045(0.001554)
129.3 *4*	0.26 *16*	^{149}Pr(2.26 m)	138.447(11.0), 165.087(9.9), 108.520(9.5)
• 129.3 *1*	0.006 *4*	^{155}Tb(5.32 d)	86.545(32.0), 105.305(25), 180.103(7.45)
129.30 *10*	†46 *3*	^{157}Yb(38.6 s)	230.92(†100), 340.7(†90), 241.7(†74)
129.3	†100 *20*	^{182}Hg(10.83 s)	217.7(†75), 413.5(†53), 542.9
129.36 *1*	†4.63 *22*	^{153}Pm(5.4 m)	35.842(†100), 127.298(†75), 28.309(†34.6)
129.39 *3*	0.00050 *17*	^{165}Dy(2.334 h)	94.700(3.58), 361.68(0.84), 633.415(0.568)
129.4 *3*	0.045 *10*	^{87}Kr(76.3 m)	402.586(49.6), 2554.8(9.2), 845.43(7.34)
129.4 *2*		^{185}Ir(14.4 h)	254.4(13.3), 1828.8(10), 60.0(5.7)
• 129.419 *8*	29.0 *17*	^{191}Os(15.4 d)	82.407(0.0255), 41.86(0.00513), 47.05(0.00270)
• 129.419 *8*	3.2 *3*	^{191}Pt(2.9 d)	538.90(13.7), 409.44(8.0), 359.90(6.0)
129.49 *17*	0.29 *6*	^{70}Se(41.1 m)	49.51(35.8), 426.15(29), 376.65(9.43)
129.5 *2*	2.5 *4*	^{148}Tb(2.20 m)	784.430(100), 631.947(95), 882.3(92)
• 129.50 *7*	0.0004 *2*	^{149}Eu(93.1 d)	327.526(4.03), 277.089(3.56), 22.510(2.32)
• 129.5	0.0137 *21*	^{154}Eu(8.593 y)	123.071(40.79), 1274.436(35.19), 723.304(20.22)
129.5 *2*	0.012 *7*	^{157}Eu(15.18 h)	63.929(23.0), 410.723(17.5), 370.509(11.0)
129.5 *2*	0.037	^{195}Ir(3.8 h)	98.85(10), 684.88(9.4), 432.86(9)
129.50 *11*		^{202}Bi(1.72 h)	960.67(99), 422.18(83.7), 657.49(60.6)
129.59 *6*	0.40 *7*	^{165}Yb(9.9 m)	80.11(49), 68.86(9.1), 1090.28(4.4)
129.6 *4*	2.2 *3*	^{74}Kr(11.50 m)	89.65(31), 203.0(18.0), 296.67(9.9)
129.6 *5*	0.070 *5*	^{85}Y(4.86 h)	231.67(22.8), 2123.8(5.0), 767.40(3.6)
129.6	1.6	^{190}Hg(20.0 m)	142.6(68), 171.5(4.8), 154.7(2.5)
129.6	>0.5	^{190}Hg(20.0 m)	142.6(68), 171.5(4.8), 154.7(2.5)
• 129.62 *5*	0.0062 *6*	^{205}Bi(15.31 d)	1764.36(1.368), 703.44(31), 987.62(0.585)
129.64 *4*	81	^{77}Kr(74.4 m)	146.59(37.3), 312.0(3.7), 276.0(2.92)
• 129.644 *22*	0.036 *6*	^{206}Po(8.8 d)	1032.26(32.9), 511.36(24.1), 286.410(23.8)
129.7 *10*	0.015 *8*	^{101}Pd(8.47 h)	296.29(19), 590.44(12.06), 269.67(6.43)
129.70 *5*	1.2	^{195}Ir(2.5 h)	98.85(10), 211.407(2.4), 30.898(1.3)
129.70 *5*	1.7	^{195}Ir(3.8 h)	98.85(10), 684.88(9.4), 432.86(9)
• 129.70 *5*	0.817 *22*	^{195}Au(186.09 d)	98.85(10.9), 30.898(0.75), 211.407(0.0109)
129.72 *10*	10.74 *23*	^{79}Rb(22.9 m)	688.1(23), 182.77(19.2), 143.41(13.9)
129.75 *7*	0.117 *23*	^{159}Er(36 m)	624.5(33), 649.1(23.4), 205.92(9.7)
129.782 *4*	5.68 *14*	^{105}Ru(4.44 h)	724.21(47), 469.37(17.5), 676.36(15.7)
129.80 *5*	61 *4*	^{130}In(0.32 s)	1905.17(74), 1221.24(60), 774.37(50)

• $t_{1/2}$>1 d

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
129.80 *5*	8.3 *6*	^{130}In(0.55 s)	1221.24(89), 774.37(46), 89.23(20.2)
129.820 *12*	0.300 *8*	^{85}Kr(4.480 h)	151.159(75.0), 450.85(0.011), 731.812(0.007)
• 129.820 *12*	>4.3×10^{-7}	^{85}Kr(10.756 y)	514.0067(0.43), 362.81(2.2×10^{-6}), 151.159(2.2×10^{-6})
• 129.820 *12*	>0.00048	^{85}Sr(64.84 d)	514.0067(96), 868.5(0.0120), 151.159(0.0012)
129.820 *12*	†15 *4*	^{85}Sr(67.63 m)	151.159(†1272), 731.812(†1.45), 450.85(†1.06)
• 129.82 *4*		^{165}Tm(30.06 h)	242.917(35.5), 47.155(16.9), 297.369(12.71)
129.9 *3*	†100	^{119}Pd(0.92 s)	256.6(†63), 326.1(†52), 69.9(†12)
• 129.9 *1*	0.00103 *19*	^{177}Ta(56.56 h)	112.9498(7.2), 208.3664(0.94), 1057.8(0.29)
129.92 *10*	0.111 *16*	^{201}Pb(9.33 h)	331.19(79), 361.27(9.9), 945.96(7.4)
129.95 *2*	†1.86×10^{3} *19*	^{157}Ho(12.6 m)	279.97(†47600), 341.16(†37000), 193.41(†15200)
130.0 *19*		^{89}Se(0.41 s)	
130.0 *2*	0.77 *16*	^{126}Ba(100 m)	233.6(19.6), 257.6(7.6), 241.0(6.0)
130.0 *5*	0.061 *16*	^{142}Ba(10.6 m)	255.300(20.5), 1204.3(14.23), 895.2(13.9)
130.0 *1*	2.6 *3*	^{150}Er(18.5 s)	475.8(100), 1014.0(0.9), 1022.1(0.9)
130.0 *3*	†4.9 *4*	^{164}Hf(111 s)	122.1(†100), 153.3(†47), 313.7(†22)
130 *2*	†12	^{189}W(11.5 m)	258(†100), 417(†96), 550(†28)
130	>0.045	^{207}At(1.80 h)	814.41(44.5), 588.33(19.2), 300.654(12.8)
130		^{212}Bi(60.55 m)	727.330(6.58), 1620.50(1.49), 785.37(1.102)
130	†11	^{228}Pa(22 h)	95(†100), 310(†42), 240(†23)
130.002 *20*	†3.7×10^{2}	^{154}Nd(25.9 s)	151.703(†800), 799.55(†600), 180.693(†510)
• 130.10 *4*	0.0031 *8*	^{149}Eu(93.1 d)	327.526(4.03), 277.089(3.56), 22.510(2.32)
130.1 *3*	3.4 *7*	^{251}Bk(55.6 m)	177.7(6), 152.8(2.23), 163.8(0.35)
130.1 *3*	0.0013	^{255}Fm(20.07 h)	81.477(0.81), 58.477(0.67), 80.92(0.27)
130.18 *16*	0.6 *3*	^{168}Lu(6.7 m)	198.82(28), 979.22(20), 896.12(15)
130.19 *5*	†31.5 *16*	^{173}W(7.5 m)	457.68(†100), 174.8(†29.1), 623.48(†24.2)
130.2 *3*	32	^{150}Pr(6.19 s)	722.5(7.0), 852.7(6.1), 1141.26(5.3)
130.2 *1*	0.105 *4*	^{197}Pt(95.41 m)	279.01(2.4), 201.6(0.034), 77.351(0.0111)
130.2 *1*	†89 *3*	^{197}Hg(23.8 h)	279.01(†2000), 201.6(†29), 77.351(†9.4)
130.201 *4*	4.6	^{99}Y(1.470 s)	121.761(33), 724.30(14.9), 536.2(6.6)
130.22 *29*		^{156}Ho(56 m)	266.35(54.7), 137.83(51), 366.25(10.73)
130.26 *7*	0.29 *7*	^{165}Yb(9.9 m)	80.11(49), 68.86(9.1), 1090.28(4.4)
130.3 *2*	0.091 *14*	^{123}Cs(5.94 m)	97.3(23), 596.7(10.1), 83.3(4.1)
130.3 *5*	0.08 *5*	^{195}Ir(3.8 h)	98.85(10), 684.88(9.4), 432.86(9)
130.4 *2*	†42 *8*	^{174}Er(3.3 m)	100.4(†100), 708.4(†93), 766.9(†92)
• 130.414 *15*	209000 *15*	^{134}Ce(75.9 h)	162.306(†230000), 39.08(†>150000), 300.884(†88000)
• 130.43 *2*	0.068 *5*	^{151}Pm(28.40 h)	340.08(23), 167.75(8.3), 275.21(6.8)
• 130.5 *1*	0.091 *10*	^{131}Te(30 h)	773.67(49.9), 852.21(27.0), 793.75(18.10)
130.5	0.020 *10*	^{223}Ac(2.10 m)	98.58(0.891), 191.3(0.58), 83.55(0.57)
130.52 *7*	0.074 *22*	^{189}Pt(10.87 h)	721.41(9.3), 94.33(7.6), 568.84(7.1)
• 130.52368 *4*	11.31 *9*	^{169}Yb(32.026 d)	63.12077(44.2), 197.95788(35.8), 177.21402(22.16)
130.54 *13*	0.54 *5*	^{136}Nd(50.65 m)	108.90(32), 40.2(18.9), 574.8(10.4)
130.59 *3*	0.119 *11*	^{219}Rn(3.96 s)	271.23(10.8), 401.81(6.37), 293.54(0.073)
130.6	0.5	^{134}Nd(8.5 m)	163.2(58), 288.9(13), 216.8(12)
130.6	0.36	^{147}Ba(0.893 s)	167.4(11), 105.2(4.8), 196.1(4.8)
130.6	0.14 *7*	^{185}Au(4.25 m)	310.6(13), 243.1(6.6), 77.7(6)
130.6 *2*	†0.74 *21*	^{185}Hg(21.6 s)	222.8(†100.0), 258.7(†98), 212.5(†58)
130.7 *1*	0.26 *6*	^{227}Pa(38.3 m)	64.62(6), 110.05(1.24), 84.8(0.86)
130.73 *20*	0.028 *11*	^{199}Pb(90 m)	366.90(44.2), 353.39(9.5), 1135.04(7.8)
130.8 *4*	0.77 *7*	^{119}Cd(2.69 m)	292.9(36.8), 343.0(16.9), 1609.7(10.9)
130.8 *5*		^{130}Ce(25 m)	1072.6(†100), 997.7(†100), 920.5(†100)
• 130.80 *3*	7.5 *5*	^{182}Re(64.0 h)	229.3220(26), 67.75001(22.2), 1121.3007(22.0)
130.803 *10*	17.9 *4*	^{133}Ce(4.9 h)	477.22(39), 510.36(20.7), 58.39(19.2)
130.828 *10*	3.30 *16*	^{182}Os(22.10 h)	510.056(52), 180.230(33.5), 263.285(6.71)
130.85 *3*	0.60 *4*	^{161}Er(3.21 h)	826.6(3.0), 211.15(12.2), 592.6(3.7)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
130.86 *2*	1.32 *4*	^{163}Yb(11.05 m)	860.28(10.1), 63.62(6.5), 123.21(1.98)
130.9 *5*	†60	^{88}Mo(8.0 m)	170.5(†100), 79.8(†71), 90.7
130.9 *1*	†6.0 *20*	^{129}Sb(17.7 m)	759.8(†100.0), 657.78(†92), 433.76(†73)
130.90 *20*	0.51 *5*	^{166}Tm(7.70 h)	778.817(18.9), 2052.36(17.2), 184.410(16.1)
130.9 *2*	†21 *1*	^{171}W(2.38 m)	184.2(†100), 294.5(†89), 478.7(†83)
130.94		^{238}Pa(2.3 m)	1015.3(†<100), 1014.6(†<100), 635.18(†88)
130.95 *15*	0.00031 *16*	^{145}Pr(5.984 h)	748.278(0.5250), 675.795(0.514), 72.500(0.261)
131		^{58}Cr(7.0 s)	682.9(81), 126(75), 289.5(18.8)
131		^{119}Ag(2.1 s)	626.4(13), 366.2(12.1), 399.1(10.9)
131.00 *3*	0.038 *10*	^{153}Dy(6.4 h)	80.723(11.10), 213.754(10.90), 99.659(10.51)
131.0 *5*	0.32 *11*	^{164}Tb(3.0 m)	168.838(25.4), 754.80(23.3), 215.07(21)
131 *1*	0.045	^{167}Ho(3.1 h)	346.547(56), 321.336(23.5), 237.873(5.0)
131.0 *15*	0.022	^{176}Ta(8.09 h)	1159.28(25), 88.34(12), 1224.93(6)
131.0 *3*	0.018 *12*	^{183}Hf(1.067 h)	783.754(66), 73.174(38), 459.069(27)
131.0 *1*	0.111 *16*	^{227}Fr(2.47 m)	90.035(39), 585.804(29.5), 64.267(14.5)
131.0 *2*	0.028 *3*	^{255}Fm(20.07 h)	81.477(0.81), 58.477(0.67), 80.92(0.27)
131.02 *5*	0.66 *10*	^{222}Fr(14.2 m)	206.15(51), 111.12(12.5), 242.12(1.89)
131.02 *5*	0.278 *13*	^{226}Th(30.9 m)	111.12(3.29), 242.12(0.866), 206.15(0.189)
131.05 *20*	0.17 *6*	^{134}Te(41.8 m)	767.20(29.0), 210.465(22.3), 277.951(20.9)
131.1 *1*	0.37 *6*	^{143}Gd(112 s)	271.94(84), 588.00(15.7), 798.89(10.7)
131.1 *3*		^{148}Tm(0.7 s)	646.6(100), 877.4(72), 1002.9(55)
131.101 *25*	0.066	^{233}Th(22.3 m)	86.477(2.7), 29.374(2.5), 459.222(1.4)
• 131.101 *25*	0.085 *9*	^{237}Np(2.14×10^{6} y)	29.374(15.0), 86.477(12.4), 94.66(0.6)
• 131.117 *8*	0.467 *10*	^{140}La(1.6781 d)	1596.210(95), 487.021(45.5), 815.772(23.28)
131.14 *10*	†16 *2*	^{181}Pt(51 s)	289.29(†100), 111.97(†100), 230.15(†92)
131.14 *10*	0.15 *3*	^{195}Tl(1.16 h)	563.52(10.5), 884.47(10.0), 1363.88(8.4)
131.187 *7*	0.009 *3*	^{163}Tb(19.5 m)	351.138(26), 389.734(24.3), 494.534(23)
131.2 *3*	†2.6 *7*	^{155}Er(5.3 m)	110.12(†100), 241.5(†65), 234.0(†40.0)
131.20 *15*	3.7 *7*	^{157}Tm(3.63 m)	455.00(9.3), 385.5(8.8), 348.40(8.4)
• 131.2 *5*	0.005 *3*	^{223}Ra(11.435 d)	269.459(13.7), 154.21(5.62), 323.871(3.93)
• 131.2 *2*	3.0×10^{-5} *3*	^{233}U(1.592×10^{5} y)	42.44(0.0862), 97.134(0.020), 54.699(0.0182)
131.236 *10*	0.897 *21*	^{204}Po(3.53 h)	883.984(29.9), 270.068(27.8), 1016.31(24.1)
131.30 *1*	18	^{234}Pa(6.70 h)	946.00(13.4), 883.24(9.6), 569.5(8.2)
131.37 *12*	41	^{105}In(5.07 m)	260.21(15.7), 604.11(9.2), 668.23(7.8)
131.381 *2*	0.75 *16*	^{151}Pr(18.90 s)	880.19(13), 189.057(11.8), 484.501(11.3)
131.4 *2*	0.011 *6*	^{117}Cd(2.49 h)	273.349(28), 1303.27(18.4), 344.459(17.9)
131.4 *2*		^{117}Cd(3.36 h)	1997.33(26), 1065.98(23.1), 564.397(14.7)
131.4 *3*	3.2 *3*	^{171}Re(15.2 s)	568.4(16.1), 102.0(9.7), 1066.0(8.1)
131.4 *9*		^{175}Pt(2.52 s)	208.3, 76.4
131.438 *16*	0.056 *14*	^{157}Eu(15.18 h)	63.929(23.0), 410.723(17.5), 370.509(11.0)
131.5 *14*	0.109 *5*	^{180}Re(2.44 m)	902.795(90), 103.557(22.2), 825.357(9.9)
131.52 *12*	2.9 *7*	^{115}Ag(20.0 m)	229.08(18), 212.80(4.4), 472.70(4.0)
131.52 *12*	†77 *4*	^{115}Ag(18.0 s)	229.08(†100), 388.9(†52), 360.52(†16.3)
• 131.544 *5*	0.0112 *5*	^{154}Eu(8.593 y)	123.071(40.79), 1274.436(35.19), 723.304(20.22)
131.56 *14*	0.023 *14*	^{81}Sr(22.3 m)	153.54(33.8), 147.76(30.1), 443.34(17.5)
131.59		^{138}Nd(5.04 h)	325.76(2.84), 199.50(0.53), 341.65(0.40)
131.6 *2*	†28 *4*	^{84}Zr(25.9 m)	112.5(†100), 44.9(†48), 372.9(†41)
131.6 *1*	7.9 *8*	^{141}Tb(3.5 s)	293.3(16.8), 343.6(16.3), 198.4(14.8)
131.6 *3*	†79 *5*	^{178}Ir(12 s)	266.1(†100.0), 363.1(†39.9), 899.7(†16.9)
131.6 *10*	0.56 *28*	^{236}Th(37.5 m)	110.8(4.2), 646.6(0.72), 196.0(0.69)
131.613 *4*	16.3 *8*	^{224}Fr(3.30 m)	215.985(33.1), 836.90(9.8), 1340.70(4.8)
131.613 *4*	26	^{224}Ac(2.9 h)	215.985(53), 205.93(>0.40), 166.411(>0.27)
• 131.613 *4*	0.1355 *19*	^{228}Th(1.9131 y)	84.373(1.266), 215.985(0.263), 166.411(0.1075)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
131.7 *2*	0.47 *16*	^{105}Tc(7.6 m)	143.26(16), 107.945(14.1), 321.50(11.1)
131.7	0.0044	^{149}Nd(1.728 h)	211.309(25.9), 114.314(19.2), 270.166(10.7)
131.700 *4*	0.07	^{167}Ho(3.1 h)	346.547(56), 321.336(23.5), 237.873(5.0)
131.8 *3*	†100 *12*	^{117}Rh(0.44 s)	97.1(†33), 34.6(†32.7), 481.6
• 131.8 *1*	0.00010	^{161}Tb(6.88 d)	25.65150(23.2), 48.91562(17.0), 74.56711(10.2)
131.8 *1*	>0.0012	^{161}Ho(2.48 h)	25.65150(27), 103.062(3.9), 77.414(1.91)
131.8 *3*	†0.26 *4*	^{184}Ir(3.09 h)	263.97(†100), 119.80(†45), 390.38(†38)
131.8		^{225}Rn(4.5 m)	207.2, 178.7, 169.7
131.8		^{235}Pa(24.5 m)	652.053, 659.3, 645.896
• 131.83 *4*	0.0102 *12*	^{172}Tm(63.6 h)	78.7435(6.5), 1093.657(6.0), 1387.093(5.6)
131.9 *1*	†190 *48*	^{157}Ho(12.6 m)	279.97(†47600), 341.16(†37000), 193.41(†15200)
• 131.926 *5*	0.336 *12*	^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
• 131.93 *5*	†1.71×10^4 *17*	^{134}Ce(75.9 h)	162.306(†230000), 130.414(†209000), 39.08(†>150000)
131.946 *11*	0.021 *6*	^{155}Dy(9.9 h)	226.918(68.4), 184.564(3.37), 1089.8(>2.8)
131.973 *10*	23.6 *4*	^{159}Ho(33.05 m)	121.012(36.2), 309.594(17.2), 252.963(13.7)
132.0 *2*	<0.06	^{104}Mo(60 s)	68.8(55), 69.7(17.8), 36.3(14)
132.0 *3*		^{122}Ba(1.95 m)	550.7, 388.7, 231.0
• 132.0 *1*	0.0075 *25*	^{155}Tb(5.32 d)	86.545(32.0), 105.305(25), 180.103(7.45)
132.0 *2*		^{175}Ta(10.5 h)	207.4(14.0), 348.5(12.0), 266.9(10.8)
132.00 *5*	0.36 *3*	^{191}Au(3.18 h)	586.45(17), 277.88(7.2), 674.19(6.8)
132.0 *6*	0.48 *8*	^{228}Pa(22 h)	911.205(4.19), 463.005(1.250), 964.770(4.25)
• 132.006 *9*	0.075 *4*	^{149}Gd(9.28 d)	149.735(48.2), 298.634(28.6), 346.651(23.9)
132.02 *3*	2.79 *8*	^{167}Yb(17.5 m)	113.34(55.3), 106.18(22.5), 176.25(21)
132.1 *3*	0.33	^{159}Er(36 m)	624.5(33), 649.1(23.4), 205.92(9.7)
• 132.2 *1*	0.006 *4*	^{131}Te(30 h)	773.67(49.9), 852.21(27.0), 793.75(18.10)
132.2 *2*	14 *3*	^{139}Eu(17.9 s)	267.3(31), 155.3(31), 190.1(25)
132.2 *3*	0.06	^{170}Hf(16.01 h)	164.78(33), 620.7(23), 120.17(19)
132.2 *3*	38.1 *22*	^{180}Ir(1.5 m)	276.4(56), 699.0(13.4), 870.4(11.2)
132.2 *2*	†<12.7	^{182}Au(21 s)	154.76(†100), 264.33(†40.0), 855.41(†14.5)
132.22 *3*	1.96 *8*	^{157}Pm(10.56 s)	160.61(35), 188.052(13.5), 571.27(5.39)
132.23 *5*	5.9 *3*	^{160}Yb(4.8 m)	173.74(42.0), 215.78(20.2), 140.35(9.3)
• 132.27 *4*	0.0047 *14*	^{189}Re(24.3 h)	216.663(5.50), 219.395(4.54), 245.09(3.5)
132.28 *4*		^{167}Lu(51.5 m)	29.66(14.4), 239.22(8.6), 213.19(3.6)
• 132.28 *3*	0.0387 *19*	^{171}Lu(8.24 d)	739.78(47.8), 19.394(13.7), 667.404(11.04)
132.3 *3*	18.6 *20*	^{132}In(0.201 s)	374.3(62), 4040.8(61), 299.2(49)
132.3 *3*	0.73 *11*	^{158}Sm(5.30 m)	189.4(15.2), 363.6(12.4), 324.5(10.6)
• 132.3 *1*	0.013 *5*	^{232}Pa(1.31 d)	969.315(41.6), 894.351(19.8), 150.059(10.8)
132.32 *10*	0.10 *3*	^{165}Yb(9.9 m)	80.11(49), 68.86(9.1), 1090.28(4.4)
132.34 *10*	0.165 *8*	^{86}Y(14.74 h)	1076.64(83), 627.72(32.6), 1153.01(30.5)
132.40 *14*	†0.51 *7*	^{188}Au(8.84 m)	265.63(†100), 340.04(†23.9), 605.5(†16.3)
• 132.413 *7*	3.86 *20*	^{241}Cm(32.8 d)	471.805(71), 430.634(4.06), 165.049(2.97)
132.43 *8*	67	^{75}Kr(4.3 m)	154.66(20.8), 153.15(8.0), 88.29(3.44)
132.49 *6*	†100 *6*	^{165}Lu(10.74 m)	120.60(†100), 174.25(†47.0), 203.68(†38.0)
• 132.49 *11*	0.0028 *3*	^{238}Np(2.117 d)	984.45(27.8), 1028.54(20.3), 1025.87(9.6)
132.5	†8	^{220}Fr(27.4 s)	45.0(†100), 106.0(†72), 161.5(†65)
132.51 *10*	†14.0 *16*	^{229}U(58 m)	122.51(†100), 88.43(†88), 198.83(†88)
• 132.53 *6*	0.174 *12*	^{153}Tb(2.34 d)	212.038(31.0), 170.504(6.8), 109.758(6.4)
132.54 *5*	3.52 *6*	^{70}Se(41.1 m)	49.51(35.8), 426.15(29), 376.65(9.43)
132.6 *2*	0.65 *6*	^{74}Kr(11.50 m)	89.65(31), 203.0(18.0), 296.67(9.9)
• 132.6 *1*		^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
132.68 *13*	0.7 *3*	^{78}Zn(1.47 s)	224.75(43.9), 181.68(28.1), 860.30(24.5)
• 132.687 *1*	0.202 *5*	^{140}Ba(12.752 d)	537.261(24.39), 29.9640(14.1), 162.660(6.21)
132.7 *1*	56 *3*	^{104}Sn(20.8 s)	912.6(42), 401.2(16.2), 1407.3(15.1)
132.7 *1*	0.022 *11*	^{117}Cd(2.49 h)	273.349(28), 1303.27(18.4), 344.459(17.9)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
132.7 *1*		^{117}Cd(3.36 h)	1997.33(26), 1065.98(23.1), 564.397(14.7)
132.7 *3*	†>0.27	^{230}Ra(93 m)	72.0(†100), 63.0(†35.4), 202.8(†27.3)
132.716 *18*	4.13 *4*	^{90}Nb(14.60 h)	1129.224(92.7), 2318.968(82.03), 141.178(66.8)
132.73 *5*	0.170 *21*	^{138}Nd(5.04 h)	325.76(2.84), 199.50(0.53), 341.65(0.40)
132.79 *3*	0.202 *15*	^{109}Ru(34.5 s)	206.29(22.0), 225.98(19.6), 1929.05(13.7)
132.8	0.9	^{96}Y(9.6 s)	1750.42(89), 915.0(60), 617.1(56)
132.8 *7*	0.021 *8*	^{101}Pd(8.47 h)	296.29(19), 590.44(12.06), 269.67(6.43)
132.8 *2*	10.9 *9*	^{121}Xe(40.1 m)	252.7(13), 445.2(7.7), 310.5(5.4)
132.8 *1*	†1.6 *3*	^{169}Ta(4.9 m)	511.0(†20.6), 28.80(†18.3), 192.4(†8)
132.80 *11*	3.0 *7*	^{182}Hf(61.5 m)	942.80(18.8), 799.64(9.4), 114.3152(6.2)
132.83 *10*	0.26 *7*	^{125}Cd(0.57 s)	1027.53(25.8), 1173.16(25.1), 736.65(12.6)
• 132.86 *10*	0.25 *6*	^{188}Pt(10.2 d)	187.59(19.4), 195.05(18.6), 381.43(7.5)
132.88 *3*	0.113 *13*	^{135}Ce(17.7 h)	265.56(41.8), 300.07(23.5), 606.76(18.8)
132.89 *5*	†28 *2*	^{227}Rn(22.5 s)	162.14(†100), 739.2(†65), 686.2(†62)
132.90 *20*	0.019 *9*	^{105}Cd(55.5 m)	961.84(4.69), 346.870(4.20), 1302.459(3.98)
132.90 *20*	†23 *4*	^{112}Te(2.0 m)	372.70(†100), 296.20(†86), 418.9(†57)
132.90 *2*	1.22 *10*	^{191}Au(3.18 h)	586.45(17), 277.88(7.2), 674.19(6.8)
• 132.9		^{234}Th(24.10 d)	63.29(4.8), 92.38(2.81), 92.80(2.77)
132.990 *12*	0.37 *3*	^{153}Dy(6.4 h)	80.723(11.10), 213.754(10.90), 99.659(10.51)
132.99 *3*	0.86 *5*	^{241}Np(13.9 m)	174.94(3.1), 518.8(0.40), 362.4(0.19)
• 132.99 *3*	2.77 *14*	^{245}Cm(8500 y)	174.94(10), 41.95(0.350), 189.82(0.193)
133.0	>0.08	^{83}Zr(44 s)	55.55(8), 104.97(5.70), 475.1(5.1)
133.0 *3*	0.062 *10*	^{140}Xe(13.60 s)	805.52(20), 1413.66(12.2), 1315.05(8.2)
133.0 *1*	0.28 *3*	^{186}Hg(1.38 m)	112.1(63), 251.5(55), 191.6(3.7)
133.01 *5*	0.0085 *9*	^{255}Fm(20.07 h)	81.477(0.81), 58.477(0.67), 80.92(0.27)
• 133.024 *17*	43.3 *5*	^{181}Hf(42.39 d)	482.182(80.50), 345.916(15.12), 136.266(5.85)
133.043 *2*	0.023 *7*	^{178}Lu(28.4 m)	93.180(6.0), 1340.8(3.22), 1310.05(1.40)
133.08 *10*	†24 *1*	^{163}Hf(40.0 s)	70.98(†100), 62.14(†64), 45.39(†48)
133.1 *1*	†4.34 *23*	^{192}Tl(9.6 m)	422.8(†100), 634.8(†75.9), 786.3(†31.7)
133.19 *7*	3.13 *24*	^{167}Dy(6.20 m)	569.7(48), 259.33(27.9), 310.26(25.0)
133.2 *1*	†7.0 *9*	^{123}La(17 s)	92.5(†100), 937.3(†43), 153.6(†43)
133.2 *2*	†100	^{154}Yb(0.404 s)	
133.3 *3*	0.37 *5*	^{103}Tc(54.2 s)	346.380(17.5), 136.079(16.6), 562.90(7.0)
133.3		^{157}Eu(15.18 h)	63.929(23.0), 410.723(17.5), 370.509(11.0)
133.32 *14*	0.15 *4*	^{187}Au(8.4 m)	1331.81(7.0), 1408.23(3.06), 914.73(3.02)
• 133.333 *7*	0.072 *3*	^{110}Ag(249.79 d)	657.7622(94.0), 884.685(72.2), 937.493(34.13)
133.4 *2*	†2.9	^{171}Hf(12.1 h)	122.0(†100), 662.2(†83), 347.18(†47)
133.4 *3*	5.2 *3*	^{171}Re(15.2 s)	568.4(16.1), 102.0(9.7), 1066.0(8.1)
133.4 *4*	0.033 *16*	^{185}Au(4.25 m)	310.6(13), 243.1(6.6), 77.7(6)
133.4	0.34	^{190}Hg(20.0 m)	142.6(68), 171.5(4.8), 154.7(2.5)
133.5 *2*	0.066 *2*	^{113}Ag(5.37 h)	298.58(10), 258.8(1.64), 316.3(1.343)
133.5 *2*	0.25 *3*	^{120}Xe(40 m)	25.1(30), 72.6(9), 178.1(6.8)
133.51 *3*	†0.33 *4*	^{153}Pm(5.4 m)	35.842(†100), 127.298(†75), 28.309(†34.6)
133.51 *12*	†6.5 *9*	^{189}Au(28.7 m)	713.17(†100), 812.68(†63), 447.65(†55)
• 133.515 *2*	11.09 *11*	^{144}Ce(284.893 d)	80.120(1.36), 40.98(0.257), 33.568(0.200)
133.52 *4*	8.1 *4*	^{146}Ce(13.52 m)	316.74(56), 218.23(20.8), 264.56(9.0)
133.53 *4*	3.88 *6*	^{148}Ba(0.607 s)	56.08(29.20), 415.78(3.59), 98.5(2.89)
• 133.542 *4*	0.197 *5*	^{169}Lu(34.06 h)	960.622(23.4), 191.2137(20.6), 1449.74(9.92)
133.6 *4*	0.8 *3*	^{156}Er(19.5 m)	35.3(18), 29.9(3.1), 352.0(0.29)
133.6 *3*	36	^{172}Ho(25 s)	178.0(23), 757.2(18), 291.1(16)
• 133.609 *7*	2.12 *3*	^{131}Ba(11.50 d)	496.326(47), 123.805(28.97), 216.078(19.66)
133.64 *5*	0.57 *11*	^{221}Rn(25 m)	186.38(21.6), 150.04(4.5), 216.90(2.6)
• 133.64 *5*	0.0142 *22*	^{225}Ac(10.0 d)	99.91(1.01), 150.04(0.80), 99.63(0.62)
133.68 *2*	0.159 *20*	^{161}Gd(3.66 m)	360.94(0.59), 314.92(22.7), 102.315(13.9)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
133.70 *6*	4.4 *3*	^{81}Ge(7.6 s)	335.98(58.9), 792.94(34), 1495.53(19.9)
133.7 *1*	0.020 *5*	^{143}Ba(14.33 s)	211.475(25), 798.79(15.6), 980.45(11.55)
133.70 *5*	0.27 *3*	^{191}Au(3.18 h)	586.45(17), 277.88(7.2), 674.19(6.8)
133.74 *23*	†0.80 *16*	^{187}Hg(1.9 m)	233.38(†100), 376.34(†38), 240.26(†33)
• 133.771 *21*	2.39 *15*	^{182}Re(64.0 h)	229.3220(26), 67.75001(22.2), 1121.3007(22.0)
133.8 *2*	†18.8 *18*	^{101}Y(448 ms)	98.3(†100), 232.1(†11.9), 661.8(†11.3)
133.80 *17*	0.43 *7*	^{184}Au(53.0 s)	162.97(50), 272.98(40), 362.47(17.5)
133.84 *3*	0.47 *5*	^{167}Lu(51.5 m)	29.66(14.4), 239.22(8.6), 213.19(3.6)
133.84 *15*	0.111 *11*	^{179}W(37.05 m)	30.70(19)
133.99 *7*	2.00 *15*	^{197}Tl(2.84 h)	425.84(12.9), 152.22(7.2), 1411.34(4.5)
134.0 *1*	6.6 *5*	^{119}Cd(2.69 m)	292.9(36.8), 343.0(16.9), 1609.7(10.9)
134.0 *1*	0.0097 *20*	^{119}Cd(2.20 m)	1025.0(24.8), 2021.3(22.6), 720.7(17.9)
134.0 *1*		^{125}La(76 s)	67.6(34), 43.6(3.5), 985.2
• 134		^{227}Ac(21.773 y)	100(†110000), 69.21(†78000), 160.26(†70000)
134.0 *1*	†0.9 *3*	^{225}Fr(4.0 m)	182.3(†100), 31.50(†91), 225.1(†55)
• 134.025 *13*	0.024 *1*	^{231}Th(25.52 h)	25.646(14.5), 84.216(6.6), 89.944(0.94)
• 134.05 *15*	0.0125 *13*	^{170}Lu(2.00 d)	84.2551(4.256), 1280.25(3.450), 2041.88(1.434)
134.07 *25*	0.36 *14*	^{149}Pr(2.26 m)	138.447(11.0), 165.087(9.9), 108.520(9.5)
134.1 *1*		^{132}Ce(3.51 h)	182.11(77), 155.37(10.5), 216.83(4.95)
134.10 *16*	†4.6 *10*	^{165}Lu(10.74 m)	132.49(†100), 120.60(†100), 174.25(†47.0)
134.18 *8*	0.211 *20*	^{208}Rn(24.35 m)	426.78(7.07), 251.05(5.02), 350.026(3.34)
134.2 *2*	0.0013 *3*	^{109}Pd(13.7012 h)	88.04(1.171), 311.4(0.032), 647.3(0.024)
134.2 *2*	†4.8 *6*	^{206}Rn(5.67 m)	497.7(†100), 324.5(†96), 386.6(†61)
• 134.2 *1*	0.009 *5*	^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
• 134.2	>0.0031	^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
• 134.22 *4*	0.0203 *20*	^{151}Pm(28.40 h)	340.08(23), 167.75(8.3), 275.21(6.8)
134.243 *6*	8.85 *16*	^{187}W(23.72 h)	685.774(27.3), 479.531(21.8), 72.001(11.14)
134.285 *20*	0.0022	^{233}Th(22.3 m)	86.477(2.7), 29.374(2.5), 459.222(1.4)
• 134.285 *20*	0.067 *7*	^{237}Np(2.14×10^6 y)	29.374(15.0), 86.477(12.4), 94.66(0.6)
134.3	14	^{133}Pr(6.5 m)	74.0(10), 315.6(10), 465.0(7)
134.3 *1*	†4.0 *4*	^{230}Ra(93 m)	72.0(†100), 63.0(†35.4), 202.8(†27.3)
134.340 *20*	0.030 *6*	^{153}Dy(6.4 h)	80.723(11.10), 213.754(10.90), 99.659(10.51)
• 134.363 *18*	0.064 *4*	^{172}Lu(6.70 d)	1093.657(62.5), 900.724(29.8), 181.528(20.6)
134.4 *3*	†73 *3*	^{121}La(5.3 s)	139.3(†100), 97.8(†57), 213.3(†57)
134.4		^{130}Ce(25 m)	1072.6(†100), 997.7(†100), 920.5(†100)
134.4 *3*	†69 *5*	^{195}Bi(183 s)	807.6(†100), 831.7(†100), 776.2(†95)
134.44 *5*	3.52 *12*	^{103}Cd(7.3 m)	1461.81(12), 1448.70(5.55), 1079.90(5.44)
134.48 *15*	0.501 *15*	^{223}Fr(21.8 m)	50.13(36.0), 79.72(9.1), 234.81(3.0)
• 134.48 *15*	†1.9 *4*	^{227}Th(18.72 d)	235.971(†813), 50.13(†528), 256.25(†463)
134.5	0.044	^{147}Ba(0.893 s)	167.4(11), 105.2(4.8), 196.1(4.8)
134.52 *5*		^{223}Rn(23.2 m)	591.8(†100), 635.2(†76), 416.0(†55)
134.552 *14*	0.013 *4*	^{155}Dy(9.9 h)	226.918(68.4), 184.564(3.37), 1089.8(>2.8)
134.57 *8*	65.5 *19*	^{92}Ru(3.65 m)	213.81(96), 259.32(92), 47.46(28)
134.6 *5*	0.10 *2*	^{88}Nb(7.8 m)	1057.01(89.3), 1082.53(53.9), 399.41(45.7)
134.6 *5*	5.2 *8*	^{90}Tc(49.2 s)	1054.3(100), 948.1(100), 944.7(36.6)
134.6 *3*	0.66 *9*	^{121}Xe(40.1 m)	252.7(13), 132.8(10.9), 445.2(7.7)
134.6 *1*	2.5 *9*	^{131}Sb(23.03 m)	943.4(47), 933.1(26.1), 642.30(23)
• 134.6 *5*		^{146}Eu(4.59 d)	747.2(98), 633.03(43), 634.07(37)
134.6		^{161}Er(3.21 h)	826.6(3.0), 211.15(12.2), 592.6(3.7)
134.60 *8*	0.097 *20*	^{165}Yb(9.9 m)	80.11(49), 68.86(9.1), 1090.28(4.4)
134.6 *3*	0.010	^{223}Ac(2.10 m)	98.58(0.891), 191.3(0.58), 83.55(0.57)
134.61 *2*	0.113 *21*	^{234}Pa(6.70 h)	131.30(18), 946.00(13.4), 883.24(9.6)
• 134.68 *6*	0.0101 *4*	^{172}Er(49.3 h)	610.062(44.2), 407.338(42.1), 68.107(3.29)
134.7 *2*	0.118 *15*	^{132}Sn(39.7 s)	340.53(49), 85.58(48.2), 899.04(44.8)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
134.7 *2*	†26	^{256}Es(7.6 h)	861.8(†100), 231.1(†61), 172.6(†49)
134.8 *2*	27.5 *6*	^{87}Nb(3.7 m)	200.95(97.0)
134.8 *1*	0.66 *9*	^{188}Hg(3.25 m)	66.7(63), 190.1(4.40), 82.7(2.6)
• 134.8235 *12*	0.0072 *4*	^{154}Eu(8.593 y)	123.071(40.79), 1274.436(35.19), 723.304(20.22)
134.85 *12*	†4.3	^{154}Nd(25.9 s)	151.703(†800), 799.55(†600), 180.693(†510)
• 134.86 *2*	0.93 *3*	^{131}Te(30 h)	773.67(49.9), 852.21(27.0), 793.75(18.10)
134.86 *5*	0.69 *7*	^{221}Rn(25 m)	186.38(21.6), 150.04(4.5), 216.90(2.6)
• 134.86 *5*	0.031 *3*	^{225}Ac(10.0 d)	99.91(1.01), 150.04(0.80), 99.63(0.62)
134.87 *6*	3.1 *6*	^{79}Sr(2.25 m)	39.41(28), 105.00(21.8), 413.8(7.6)
• 134.88 *4*	0.0040 *20*	^{151}Pm(28.40 h)	340.08(23), 167.75(8.3), 275.21(6.8)
134.9 *2*	2.5 *3*	^{76}Kr(14.8 h)	315.7(39), 270.2(21.1), 45.48(19.5)
134.9 *4*	0.50 *7*	^{136}Sm(47 s)	114.4(36), 747.7(5.4), 485.3(5.0)
134.964 *7*	4.74 *12*	^{173}Hf(23.6 h)	123.672(83), 296.974(33.9), 139.634(12.7)
134.97 *6*	0.35 *3*	^{184}Pt(17.3 m)	154.90(31), 191.97(27), 548.36(23.1)
135.0 *2*	1.06 *11*	^{113}Rh(2.72 s)	189.7(17.0), 409.3(15.9), 219.6(3.88)
135.0 *1*	>0.022	^{164}Yb(75.8 m)	40.928(1.147), 675.41(0.38), 390.6(0.31)
• 135	0.1	^{251}Cf(898 y)	176.6(17.7), 227.0(6.3), 285.0(1.4)
• 135.05 *17*	0.012 *3*	^{150}Eu(35.8 y)	333.971(96), 439.401(80.4), 584.274(52.6)
135.067 *25*	0.11 *3*	^{179}Re(19.5 m)	430.221(28), 289.968(26.9), 1680.244(13.0)
135.09 *1*	1.8 *3*	^{180}Lu(5.7 m)	407.94(43.0), 1199.7(24.3), 1106.00(22.7)
135.10 *3*	†27	^{197}Ir(5.8 m)	469.72(†100), 430.56(†61), 815.92(†45)
• 135.17 *6*	0.011	^{242}Am(141 y)	49.367(0.19), 86.68(0.037), 109.69(0.024)
135.190 *6*	†12.7 *10*	^{94}Kr(0.20 s)	629.2(†100), 764.5(†71), 219.466(†67.4)
135.2 *5*	†4.1 *5*	^{106}Mo(8.4 s)	465.70(†100), 54.00(†54), 618.60(†25)
135.2 *2*	†0.8	^{171}Hf(12.1 h)	122.0(†100), 662.2(†83), 347.18(†47)
• 135.20 *7*	0.0035 *3*	^{229}Pa(1.50 d)	40.09(0.104), 64.70(0.045), 75.12(0.035)
135.26 *9*	0.036 *5*	^{132}Ce(3.51 h)	182.11(77), 155.37(10.5), 216.83(4.95)
135.280 *8*	0.71 *21*	^{227}Fr(2.47 m)	90.035(39), 585.804(29.5), 64.267(14.5)
• 135.282 *14*	0.096 *4*	^{166}Ho(1.20×10^3 y)	184.410(72.6), 810.276(58.08), 711.683(55.32)
135.3 *8*	0.18 *9*	^{104}Tc(18.3 m)	358.0(89), 530.5(15.6), 535.1(14.7)
135.3 *1*	†80 *10*	^{185}Pt(33.0 m)	229.60(†100), 197.4(†74), 255.10(†51)
• 135.3		^{241}Am(432.2 y)	59.537(†60), 26.345(†1000×10^9), 33.195(†6000×10^8)
135.32 *8*	†4.3 *5*	^{234}Pa(1.17 m)	1001.03(†837000), 766.38(†294000), 742.81(†80000)
• 135.32 *8*	0.020 *2*	^{234}Np(4.4 d)	1558.31(18.72), 1527.21(11.2), 1601.80(9.1)
135.34 *4*	0.22 *6*	^{201}Au(26 m)	542.6(1.2), 517.0(0.83), 613.2(0.77)
• 135.34 *4*	2.565 *18*	^{201}Tl(72.912 h)	167.43(10), 32.19(0.258), 30.60(0.253)
135.36 *3*	†34 *5*	^{229}Ac(62.7 m)	164.522(†100), 569.1(†91), 261.92(†39)
• 135.36 *3*	0.00232 *2*	^{233}U(1.592×10^5 y)	42.44(0.0862), 97.134(0.020), 54.699(0.0182)
135.385 *3*	2.8	^{136}Te(17.5 s)	2077.9(22), 333.99(19), 578.75(18)
135.385 *3*		^{137}Te(2.49 s)	738.2, 630.7, 578.75
135.399 *22*	4.1 *3*	^{134}I(52.6 m)	847.025(95.4), 884.090(64.9), 1072.547(15.0)
135.4 *2*	0.16 *3*	^{97}Rb(169.9 ms)	167.1(26), 585.2(21.0), 600.5(10.6)
135.4 *5*		^{113}Ru(0.80 s)	263.2(†100), 211.7(†31.0), 337.5(†27.9)
135.4 *1*	48	^{117}Ag(5.34 s)	386.8(39.9), 298.1(21.1), 522.1(9.4)
135.4 *1*	23	^{117}Ag(72.8 s)	337.7(10.3), 157.1(7.9), 426.2(6.9)
135.4	0.7	^{190}Hg(20.0 m)	142.6(68), 171.5(4.8), 154.7(2.5)
135.454 *13*		^{155}Dy(9.9 h)	226.918(68.4), 184.564(3.37), 1089.8(>2.8)
135.5 *2*		^{133}Ce(4.9 h)	477.22(39), 510.36(20.7), 58.39(19.2)
135.5 *5*	0.07 *7*	^{136}Sm(47 s)	114.4(36), 747.7(5.4), 485.3(5.0)
• 135.50 *5*	0.00015	^{253}Es(20.47 d)	41.79(0.050), 389.11(0.0264), 387.1(0.00810)
135.510 *20*	0.030 *6*	^{153}Dy(6.4 h)	80.723(11.10), 213.754(10.90), 99.659(10.51)
135.52 *3*	29 *3*	^{116}Sb(60.3 m)	1293.54(100), 972.550(72), 542.872(52)
135.525 *5*	1.0 *4*	^{227}Fr(2.47 m)	90.035(39), 585.804(29.5), 64.267(14.5)
135.54 *5*	0.018 *4*	^{228}Ac(6.15 h)	911.205(26.6), 968.971(16.2), 338.322(11.3)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
135.54 *5*	0.069 *13*	^{228}Pa(22 h)	911.205(4.19), 463.005(1.250), 964.770(4.25)
135.6 *1*	0.47 *5*	^{86}Zr(16.5 h)	242.80(96), 29.10(21.6), 612.00(5.7)
135.61 *9*	1.00 *3*	^{129}Ba(2.23 h)	6.545(23.7), 214.30(13.4), 220.83(8.54)
135.61 *9*	†1.64 *7*	^{129}Ba(2.17 h)	182.30(†100), 1459.1(†50.0), 202.38(†33.7)
135.63 *5*	2.62 *6*	^{70}Se(41.1 m)	49.51(35.8), 426.15(29), 376.65(9.43)
• 135.667 *11*	0.078 *5*	^{231}Th(25.52 h)	25.646(14.5), 84.216(6.6), 89.944(0.94)
• 135.667 *11*	†1×10^{03}	^{235}Np(396.1 d)	25.646(†600000), 84.216(†265000), 81.227(†58000)
135.7 *3*	0.15 *4*	^{149}Dy(4.20 m)	100.8(15.2), 789.4(11.8), 1776.3(11.1)
135.7 *3*		^{168}Lu(6.7 m)	198.82(28), 979.22(20), 896.12(15)
• 135.71 *7*		^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
135.9 *1*	1.04 *8*	^{101}Zr(2.1 s)	119.3(10.8), 205.6(6.0), 912.2(3.48)
135.9 *3*	0.87 *17*	^{192}Hg(4.85 h)	274.8(50.4), 157.2(7), 306.5(5.4)
135.90 *9*	3.24 *19*	^{200}Pt(12.5 h)	76.21(13), 243.71(2.49), 59.97(2.30)
136.00 *10*	73	^{99}Pd(21.4 m)	263.60(15.2), 673.38(6.9), 1335.6(4.65)
136.0 *3*		^{122}Ba(1.95 m)	550.7, 388.7, 231.0
136 *1*	0.11	^{142}Gd(70.2 s)	750.2(11.2), 178.90(11.20), 284.4(6.16)
136.0 *5*	0.06 *3*	^{174}Tm(5.4 m)	366.526(92), 992.128(87), 272.918(86)
136.0 *15*	†100.0 *45*	^{182}Pt(2.6 m)	146.0(†15.4), 210.0(†12.0), 186.0(†7.0)
• 136	0.00043 *12*	^{193}Os(30.5 h)	139.03(4.27), 460.50(3.95), 73.039(3.2)
• 136.000 *25*	0.010	^{242}Am(141 y)	49.367(0.19), 86.68(0.037), 109.69(0.024)
136.0008 *6*	>0.0008	^{75}Ge(82.78 m)	264.6584(11), 198.6031(1.19), 468.8(0.223)
136.0008 *6*	0.020 *4*	^{75}Ge(47.7 s)	121.1166(0.0050), 279.5441(0.0043), 400.6600(0.0039)
• 136.0008 *6*	58.3 *4*	^{75}Se(119.779 d)	264.6584(58.50), 279.5441(24.79), 121.1166(17.14)
136.02 *5*	0.232 *11*	^{102}Mo(11.3 m)	211.66(3.8), 148.19(3.76), 223.83(1.44)
• 136.06 *6*	0.112 *7*	^{245}Cm(8500 y)	174.94(10), 132.99(2.77), 41.95(0.350)
136.079 *3*	16.6 *9*	^{103}Tc(54.2 s)	346.380(17.5), 562.90(7.0), 210.21(6.8)
• 136.09 *10*	0.85 *11*	^{79}Kr(35.04 h)	261.29(13), 397.54(9.3), 606.09(8.12)
136.10 *10*	1.95 *14*	^{102}Zr(2.9 s)	599.60(13.9), 535.30(10.6), 64.50(8.9)
136.10 *1*	0.68 *7*	^{191}Au(3.18 h)	586.45(17), 277.88(7.2), 674.19(6.8)
136.1 *6*		^{192}Hg(4.85 h)	274.8(50.4), 157.2(7), 306.5(5.4)
• 136.1 *2*	0.027 *3*	^{223}Ra(11.435 d)	269.459(13.7), 154.21(5.62), 323.871(3.93)
• 136.2 *1*	0.0038 *25*	^{155}Tb(5.32 d)	86.545(32.0), 105.305(25), 180.103(7.45)
136.2 *2*	†1.1 *1*	^{182}Ir(15 m)	273.23(†100), 126.79(†77), 236.3(†21.0)
• 136.266 *13*	5.85 *19*	^{181}Hf(42.39 d)	482.182(80.50), 133.024(43.3), 345.916(15.12)
• 136.266 *13*	0.0311 *10*	^{181}W(121.2 d)	6.238(1.03), 152.315(0.0083)
• 136.3 *7*	4.0×10^{-7}	^{115}Cd(44.6 d)	933.8(2.000), 1290.580(0.890), 484.470(0.290)
136.30 *2*	5.00 *25*	^{155}Ho(48 m)	240.19(12.5), 45.38(5), 39.39(3.31)
136.3 *4*	†19 *6*	^{172}Ir(4.4 s)	123.2(†100), 89.7(†19)
• 136.325 *70*	0.0033 *7*	^{145}Eu(5.93 d)	893.73(66), 653.512(15.0), 1658.53(14.9)
• 136.34348 *25*	0.183 *8*	^{192}Ir(73.831 d)	316.50791(82.81), 468.07152(47.83), 308.45692(30.00)
136.37 *8*	0.065 *15*	^{249}Es(102.2 m)	379.5(40.4), 813.2(9.2), 375.1(3.3)
136.4 *2*	1.05 *12*	^{76}Kr(14.8 h)	315.7(39), 270.2(21.1), 45.48(19.5)
136.4 *3*	†1.0	^{111}Rh(11 s)	275.4(†100.0), 411.8(†9.42), 230.0(†8.9)
136.4 *2*	0.36	^{140}Sm(14.82 m)	225.5(>10), 225.4(10), 140.0(5.0)
136.438 *20*	0.416 *14*	^{159}Ho(33.05 m)	121.012(36.2), 131.973(23.6), 309.594(17.2)
136.4743 *5*	1.93 *6*	^{57}Mn(87.2 s)	122.0614(13.9), 14.41300(10.56), 692.03(5.50)
• 136.4743 *5*	10.68 *8*	^{57}Co(271.79 d)	122.0614(85.60), 14.41300(9.16), 692.03(0.157)
136.52 *5*	3.9 *3*	^{174}W(31 m)	35.42(14.1), 428.83(12.7), 328.68(9.5)
• 136.55 *5*	0.012	^{235}U(7.038×10^{8} y)	185.712(57.2), 143.764(10.96), 163.358(5.08)
136.6	0.17	^{157}Er(18.65 m)	53.05(24), 391.32(14.2), 121.57(10.1)
136.64 *5*	0.15 *4*	^{133}Te(55.4 m)	912.671(55.28), 647.51(19.4), 863.955(15.6)
136.68 *5*	0.55 *9*	^{159}Tm(9.13 m)	38.35(5.8), 84.8(5.8), 271.30(5.1)
136.7 *5*	†14.4 *10*	^{111}Ru(2.12 s)	303.8(†100), 211.7(†77.7), 382.0(†41.3)
136.7 *2*	0.90 *14*	^{114}Pd(2.42 m)	232.0(4.90), 126.7(4.49), 358.5(1.63)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
136.70 *11*	0.0007	^{115}Sb(32.1 m)	497.358(98), 489.27(1.3), 1236.52(0.58)
136.7 *4*	0.079 *10*	^{132}I(2.295 h)	667.718(99), 772.60(75.6), 954.55(17.6)
136.7 *2*	0.0020 *8*	^{133}La(3.912 h)	278.835(2.50), 302.353(1.648), 290.06(1.413)
136.7 *1*	14.3 *15*	^{141}Tb(3.5 s)	293.3(16.8), 343.6(16.3), 198.4(14.8)
136.70 *3*	0.226 *10*	^{163}Yb(11.05 m)	860.28(10.1), 63.62(6.5), 123.21(1.98)
• 136.7		^{241}Am(432.2 y)	59.537(†60), 26.345(†1000×10^9), 33.195(†6000×10^8)
• 136.7 *2*	0.060 *20*	^{257}Fm(100.5 d)	241.0(11.0), 179.4(8.7), 61.6(1.45)
• 136.714 *18*	0.0042 *2*	^{231}Th(25.52 h)	25.646(14.5), 84.216(6.6), 89.944(0.94)
• 136.7248 *12*	0.048 *2*	^{177}Lu(6.734 d)	208.3664(11.0), 112.9498(6.4), 321.3162(0.219)
• 136.7248 *12*	1.40 *5*	^{177}Lu(160.4 d)	208.3664(57.7), 228.4838(37.0), 378.5029(29.7)
• 136.7248 *12*	0.0077 *6*	^{177}Ta(56.56 h)	112.9498(7.2), 208.3664(0.94), 1057.8(0.29)
136.8 *10*		^{129}Sb(4.40 h)	812.8(43), 914.6(20.0), 544.7(17.9)
136.85 *7*	1.35 *21*	^{183}Ir(58 m)	392.52(10.4), 228.70(6.9), 87.67(5.6)
• 136.86 *4*	0.86 *19*	^{181}Hf(42.39 d)	482.182(80.50), 133.024(43.3), 345.916(15.12)
136.9	0.13	^{148}Dy(3.1 m)	620.24(96), 1247.2(1.4), 178.3(0.5)
136.9 *4*	0.25	^{203}Bi(11.76 h)	820.3(30), 825.2(14.6), 896.9(13)
136.90 *6*	0.039 *3*	^{249}Cm(64.15 m)	634.31(1.5), 560.45(0.84), 368.76(0.35)
136.990 *4*	†8.1 *6*	^{225}Fr(4.0 m)	182.3(†100), 31.50(†91), 225.1(†55)
• 136.990 *4*	1.18 *3*	^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
137.0 *6*	†23 *7*	^{123}Ba(2.7 m)	94.6(†100), 123.5(†69), 30.6(†56)
137 *1*		^{127}In(3.66 s)	252.3(38), 3074(2.85), 948.4(2.73)
137.0 *4*	0.09 *6*	^{134}Te(41.8 m)	767.20(29.0), 210.465(22.3), 277.951(20.9)
137.0 *1*	†42 *8*	^{171}Hf(12.1 h)	122.0(†100), 662.2(†83), 347.18(†47)
137.0 *2*	†4 *2*	^{185}Pt(33.0 m)	229.60(†100), 135.3(†80), 197.4(†74)
• 137.02 *6*		^{242}Am(141 y)	49.367(0.19), 86.68(0.037), 109.69(0.024)
137.024 *3*	9.72 *21*	^{204}Po(3.53 h)	883.984(29.9), 270.068(27.8), 1016.31(24.1)
137.05 *3*	0.062 *5*	^{149}Nd(1.728 h)	211.309(25.9), 114.314(19.2), 270.166(10.7)
137.08 *5*		^{152}Pm(13.8 m)	229.9, 200.6, 63.51
137.1	0.13	^{44}Ar(11.87 m)	182.6(66), 1703.4(57), 1886.0(31)
137.14 *5*	0.16 *9*	^{144}Ba(11.5 s)	103.855(23.30), 430.48(18.3), 172.828(15.4)
• 137.155 *7*	8.22 *8*	^{186}Re(90.64 h)	767.508(0.0255), 630.354(0.0230), 333.4(0.000058)
137.155 *7*	42 *3*	^{186}Ir(16.64 h)	296.911(64.0), 434.849(34.4), 773.276(9.1)
137.155 *7*	27 *3*	^{186}Ir(2.0 h)	767.508(21.2), 630.354(18.0), 773.276(13.5)
137.20 *20*	0.07 *4*	^{138}Xe(14.08 m)	258.411(31.5), 434.562(20.3), 1768.26(16.7)
137.2 *4*	1.00 *25*	^{183}Lu(58 s)	1125.3(25.0), 1056.8(16.5), 168.1(7.5)
137.23 *5*	0.027 *8*	^{234}Pa(6.70 h)	131.30(18), 946.00(13.4), 883.24(9.6)
137.23 *5*	†47 *18*	^{234}Pa(1.17 m)	1001.03(†837000), 766.38(†294000), 742.81(†80000)
137.25 *3*		^{223}Rn(23.2 m)	591.8(†100), 635.2(†76), 416.0(†55)
137.3	0.5	^{190}Hg(20.0 m)	142.6(68), 171.5(4.8), 154.7(2.5)
• 137.35 *10*	0.1520 *17*	^{82}Br(35.30 h)	776.517(83.5), 554.348(70.8), 619.106(43.4)
137.35 *10*	0.118 *8*	^{82}Rb(6.472 h)	776.517(84), 554.348(62.4), 619.106(37.976)
• 137.36 *4*	0.0374 *14*	^{131}Ba(11.50 d)	496.326(47), 123.805(28.97), 216.078(19.66)
137.39 *4*		^{157}Pm(10.56 s)	160.61(35), 188.052(13.5), 571.27(5.39)
137.41 *16*	0.05	^{183}Ir(58 m)	392.52(10.4), 228.70(6.9), 87.67(5.6)
137.45 *30*	0.06 *2*	^{214}Pb(26.8 m)	351.921(35.8), 295.213(18.5), 241.981(7.50)
137.46 *23*	0.07 *3*	^{181}Re(19.9 h)	365.57(56), 360.70(20), 639.30(6.4)
137.5 *2*	2.94 *11*	^{113}Rh(2.72 s)	189.7(17.0), 409.3(15.9), 219.6(3.88)
137.5 *2*	0.00627 *15*	^{159}Gd(18.479 h)	363.55(11.4), 58.00(2.15), 348.16(0.234)
• 137.5 *2*	0.00011 *3*	^{159}Dy(144.4 d)	58.00(2.22), 348.16(0.00095), 79.45(0.00048)
• 137.6 *5*	0.22 *7*	^{101}Rh(3.3 y)	127.23(73), 197.6(70.8), 324.8(13.4)
• 137.6 *2*	0.10 *5*	^{131}Te(30 h)	773.67(49.9), 852.21(27.0), 793.75(18.10)
137.63 *4*	0.82 *5*	^{141}Xe(1.73 s)	909.23(24.0), 118.705(16.1), 105.937(9.8)
• 137.658 *6*	0.103 *8*	^{175}Yb(4.185 d)	396.329(6.40), 282.522(3.01), 113.805(1.88)

• $t_{1/2}$>1 d

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
137.66 *10*	0.077 *8*	^{132}Ce(3.51 h)	182.11(77), 155.37(10.5), 216.83(4.95)
137.68 *13*	0.23 *3*	^{200}Pt(12.5 h)	76.21(13), 135.90(3.24), 243.71(2.49)
137.723 *7*	90.6	^{99}Nb(15.0 s)	97.785(43.1)
137.723 *7*	1.30 *7*	^{99}Nb(2.6 m)	97.785(7), 253.50(3.64), 2641.3(3.64)
137.76 *4*	0.31 *8*	^{155}Ho(48 m)	240.19(12.5), 136.30(5.00), 45.38(5)
137.8 *6*	7.2 *18*	^{172}Ho(25 s)	133.6(36), 178.0(23), 757.2(18)
137.83 *3*	51	^{156}Ho(56 m)	266.35(54.7), 366.25(10.73), 884.45(7.08)
137.9 *2*	0.12 *6*	^{101}Zr(2.1 s)	119.3(10.8), 205.6(6.0), 912.2(3.48)
137.9 *1*	†38.8 *16*	^{105}Nb(2.95 s)	94.8(†100), 246.9(†79), 309.9(†41.9)
137.9 *2*	†25.6 *21*	^{109}Tc(0.87 s)	194.6(†100), 128.7(†51), 96.2(†48)
137.9 *3*	0.13 *3*	^{149}Dy(4.20 m)	100.8(15.2), 789.4(11.8), 1776.3(11.1)
137.91 *5*	0.024 *5*	^{228}Ac(6.15 h)	911.205(26.6), 968.971(16.2), 338.322(11.3)
137.96 *5*	18.9 *15*	^{130}In(0.32 s)	1905.17(74), 129.80(61), 1221.24(60)
137.96 *5*	10.2 *7*	^{130}In(0.55 s)	1221.24(89), 774.37(46), 89.23(20.2)
138.0 *3*		^{122}Ba(1.95 m)	550.7, 388.7, 231.0
138.0 *3*	0.04	^{154}Pm(1.73 m)	2057.76(17.1), 1393.9(14.4), 81.99(12.6)
138.0 *3*	0.22	^{154}Pm(2.68 m)	184.810(32), 81.99(15.4), 546.66(14.5)
138	†25	^{174}Os(44 s)	118(†100), 325(†43), 302(†26)
138.01 *14*	0.18 *4*	^{187}Au(8.4 m)	1331.81(7.0), 1408.23(3.06), 914.73(3.02)
138.1 *2*		^{115}Rh(0.99 s)	127.9(64.6), 125.6(33.3), 296.5(17)
138.1 *2*	0.244 *24*	^{123}Xe(2.08 h)	148.9(49), 178.1(14.9), 330.2(8.6)
138.10 *6*	1.49 *8*	^{138}Cs(33.41 m)	1435.795(76.3), 462.796(30.7), 1009.78(29.8)
138.1	0.49	^{147}Ce(56.4 s)	268.80(7), 92.9(4.7), 374.23(3.5)
• 138.1	>0.023	^{172}Hf(1.87 y)	23.9331(20.3), 125.812(11.3), 67.35(5.3)
138.1	†2.3	^{198}Bi(693 s)	1063.5(†100), 197.6(†80), 562.4(†79)
• 138.13 *5*	0.087 *3*	^{149}Gd(9.28 d)	149.735(48.2), 298.634(28.6), 346.651(23.9)
138.170 *14*	0.07	^{174}Tm(5.4 m)	366.526(92), 992.128(87), 272.918(86)
138.2 *1*	†1.1 *3*	^{131}Pr(1.53 m)	266.13(†100), 72.82(†64), 387.56(†38)
138.2 *1*		^{131}Pr(5.7 s)	161.9
138.2 *3*	0.032 *8*	^{140}Xe(13.60 s)	805.52(20), 1413.66(12.2), 1315.05(8.2)
138.2 *4*	0.11 *5*	^{185}Au(4.25 m)	310.6(13), 243.1(6.6), 77.7(6)
• 138.2 *2*	0.024 *16*	^{191}Pt(2.9 d)	538.90(13.7), 409.44(8.0), 359.90(6.0)
• 138.2	0.022 *11*	^{225}Ac(10.0 d)	99.91(1.01), 150.04(0.80), 99.63(0.62)
• 138.285 *1*	0.0241 *23*	^{155}Tb(5.32 d)	86.545(32.0), 105.305(25), 180.103(7.45)
• 138.29 *3*	0.0247 *22*	^{189}Re(24.3 h)	216.663(5.50), 219.395(4.54), 245.09(3.5)
• 138.29 *3*	0.068 *8*	^{189}Ir(13.2 d)	245.09(6), 69.537(3.5), 59.053(1.20)
138.3	0.14	^{198}Pb(2.40 h)	290.3(36), 365.4(19), 173.4(18)
138.30 *10*	7.7 *4*	^{212}Fr(20.0 m)	1273.8(46), 227.72(43), 1185.6(14.1)
138.3 *2*	0.42 *6*	^{228}Pa(22 h)	911.205(4.19), 463.005(1.250), 964.770(4.25)
138.32 *2*	†0.20 *4*	^{153}Pm(5.4 m)	35.842(†100), 127.298(†75), 28.309(†34.6)
138.326 *8*	3.29 *12*	^{116}In(54.41 m)	1293.54(84.4), 1097.3(56.2), 416.86(28.9)
138.35 *11*	0.81 *14*	^{122}In(10.3 s)	1140.55(98), 1001.58(50.7), 1190.58(20.5)
138.3746 *5*	0.075 *19*	^{155}Sm(22.3 m)	104.3346(74.6), 245.771(3.7), 141.4428(1.98)
138.38 *10*	0.89 *15*	^{123}Cd(1.82 s)	1165.86(25.7), 1027.45(22.6), 2102.81(12.5)
• 138.385 *2*	0.00080 *12*	^{161}Tb(6.88 d)	25.65150(23.2), 48.91562(17.0), 74.56711(10.2)
138.385 *2*	0.0176 *16*	^{161}Ho(2.48 h)	25.65150(27), 103.062(3.9), 77.414(1.91)
• 138.40 *4*	0.041 *5*	^{151}Pm(28.40 h)	340.08(23), 167.75(8.3), 275.21(6.8)
138.41 *7*	†4.68 *19*	^{196}Bi(240 s)	1049.21(†21.1), 371.93(†20.8), 689.00(†19.2)
138.446 *7*	4.2 *5*	^{105}Tc(7.6 m)	143.26(16), 107.945(14.1), 321.50(11.1)
138.447 *1*	11.0 *3*	^{149}Pr(2.26 m)	165.087(9.9), 108.520(9.5), 332.944(6.15)
138.46 *4*	0.88 *9*	^{155}Ho(48 m)	240.19(12.5), 136.30(5.00), 45.38(5)
138.5 *1*	†13.5 *6*	^{103}Nb(1.5 s)	102.64(†100), 641.1(†55), 538.5(†34.0)
138.5 *1*	0.30 *7*	^{107}Tc(21.2 s)	102.70(21.0), 177.00(9.2), 106.31(7.6)
138.5 *1*	0.69 *20*	^{132}Sb(2.79 m)	973.9(99), 696.8(86), 989.6(14.9)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
138.50 *5*	0.0044 *11*	^{187}W(23.72 h)	685.774(27.3), 479.531(21.8), 72.001(11.14)
• 138.5	1.4×10^{-5}	^{233}U(1.592×10^{5} y)	42.44(0.0862), 97.134(0.020), 54.699(0.0182)
• 138.5		^{241}Am(432.2 y)	59.537(†60), 26.345(†1000×10^{9}), 33.195(†6000×10^{8})
138.6		^{147}Cs(0.225 s)	85.2(7.3), 245.8(4.5), 109.7(4.5)
138.606 *5*	1.34 *11*	^{177}Yb(1.911 h)	150.392(20.3), 1080.21(5.6), 1241.2(3.47)
138.64 *3*	†0.20 *4*	^{153}Pm(5.4 m)	35.842(†100), 127.298(†75), 28.309(†34.6)
138.68 *5*	1.72 *14*	^{144}Ba(11.5 s)	103.855(23.30), 430.48(18.3), 172.828(15.4)
138.68 *7*	0.60 *7*	^{161}Tm(33 m)	45.54(5.00), 1648.1(9.50), 84.40(9.4)
138.7 *1*	0.40 *5*	^{129}La(11.6 m)	278.6(25), 110.5(16.9), 457.0(8.0)
• 138.7 *2*	0.0079 *9*	^{156}Eu(15.19 d)	811.79(9.70), 88.9667(8.4), 1230.68(7.98)
138.7 *3*	0.19 *7*	^{167}Lu(51.5 m)	29.66(14.4), 239.22(8.6), 213.19(3.6)
138.7 *2*	†0.53 *18*	^{230}Ra(93 m)	72.0(†100), 63.0(†35.4), 202.8(†27.3)
138.77 *5*	0.050 *16*	^{153}Dy(6.4 h)	80.723(11.10), 213.754(10.90), 99.659(10.51)
138.8 *4*	0.101 *13*	^{83}Y(7.08 m)	35.50(0.44), 882.1(6.30), 489.90(5.53)
138.8 *10*	0.122 *24*	^{201}Bi(108 m)	629.1(24.0), 936.2(11.3), 1014.1(10.7)
138.89 *1*	7.84 *24*	^{151}Nd(12.44 m)	116.80(43.4), 255.68(16.4), 1180.89(14.8)
139.00 *19*	0.10 *5*	^{127}Ba(12.7 m)	180.8(12), 114.8(9.3), 66.06(2.12)
139.0	0.25 *13*	^{147}Cs(0.225 s)	85.2(7.3), 245.8(4.5), 109.7(4.5)
139.0 *3*	0.41 *12*	^{166}Lu(2.65 m)	228.12(77.3), 337.50(41), 367.95(31.4)
139.0	>0.028	^{179}Re(19.5 m)	430.221(28), 289.968(26.9), 1680.244(13.0)
139.0 *2*	0.025 *12*	^{183}Hf(1.067 h)	783.754(66), 73.174(38), 459.069(27)
139.0 *3*	1.0 *4*	^{192}Hg(4.85 h)	274.8(50.4), 157.2(7), 306.5(5.4)
139		^{202}At(184 s)	164
139.030 *30*	0.77 *5*	^{134}I(52.6 m)	847.025(95.4), 884.090(64.9), 1072.547(15.0)
• 139.03 *11*	4.27 *20*	^{193}Os(30.5 h)	460.50(3.95), 73.039(3.2), 557.36(1.30)
• 139.03 *5*	13.9 *10*	^{252}Es(471.7 d)	785.09(18.3), 924.12(2.41), 102.32(1.88)
• 139.04 *4*	0.027 *7*	^{151}Pm(28.40 h)	340.08(23), 167.75(8.3), 275.21(6.8)
139.1 *2*	44.6 *20*	^{184}Hf(4.12 h)	344.9(35.2), 181.0(13.8), 41.4(9.2)
139.2 *3*	0.022	^{170}Hf(16.01 h)	164.78(33), 620.7(23), 120.17(19)
139.2 *2*	0.033 *17*	^{173}Ta(3.14 h)	172.2(18), 69.70(5.9), 90.3(5.0)
139.210 *12*	0.508 *23*	^{149}Nd(1.728 h)	211.309(25.9), 114.314(19.2), 270.166(10.7)
139.21 *6*	0.90 *8*	^{184}Pt(17.3 m)	154.90(31), 191.97(27), 548.36(23.1)
• 139.2266 *20*	0.0099 *6*	^{77}As(38.83 h)	238.996(1.6), 520.639(0.558), 249.786(0.394)
• 139.2266 *20*	0.129 *5*	^{77}Br(57.036 h)	238.996(23), 520.639(22.4), 297.215(4.16)
139.25 *20*	0.23 *4*	^{206}At(30.0 m)	700.66(98), 477.10(86), 395.54(48)
• 139.29 *2*	0.50 *5*	^{151}Pm(28.40 h)	340.08(23), 167.75(8.3), 275.21(6.8)
139.3 *3*	†100	^{121}La(5.3 s)	134.4(†73), 97.8(†57), 213.3(†57)
139.3 *5*	0.20 *5*	^{136}Nd(50.65 m)	108.90(32), 40.2(18.9), 574.8(10.4)
139.33 *10*	0.047 *10*	^{105}Ru(4.44 h)	724.21(47), 469.37(17.5), 676.36(15.7)
139.35 *10*	0.21 *3*	^{157}Tm(3.63 m)	455.00(9.3), 385.5(8.8), 348.40(8.4)
139.4 *2*	0.35 *20*	^{110}Ru(14.6 s)	112.2(25.00), 166.1(0.65), 116.1(0.45)
139.4557 *16*	0.28	^{182}Hf(61.5 m)	942.80(18.8), 799.64(9.4), 114.3152(6.2)
139.47 *8*	0.114 *3*	^{73}Se(39.8 m)	67.03(2.59), 253.70(2.356), 84.0(2.03)
139.5 *4*	0.148 *11*	^{135}Te(19.0 s)	603.5(37.0), 266.8(10.36), 870.3(7.73)
139.5		^{167}Ta(1.4 m)	296.3, 278.0, 214.2
139.5 *6*	†3.1	^{177}Os(2.8 m)	84.7(†100), 125.4(†63), 195.8(†61)
139.6	>0.028	^{179}Re(19.5 m)	430.221(28), 289.968(26.9), 1680.244(13.0)
139.6 *4*	0.77 *15*	^{185}Au(4.25 m)	310.6(13), 243.1(6.6), 77.7(6)
139.6 *3*	0.13 *4*	^{204}Bi(11.22 h)	899.15(98), 374.72(82), 984.02(59)
• 139.6 *1*	0.58 *5*	^{232}Pa(1.31 d)	969.315(41.6), 894.351(19.8), 150.059(10.8)
139.61 *18*	0.08	^{167}Lu(51.5 m)	29.66(14.4), 239.22(8.6), 213.19(3.6)
139.62 *19*	2.55 *10*	^{164}Tm(5.1 m)	208.08(14.6), 314.97(10), 240.49(7.5)
139.634 *8*	12.7 *3*	^{173}Hf(23.6 h)	123.672(83), 296.974(33.9), 311.239(10.75)
139.64 *4*	0.0125 *8*	^{166}Tm(7.70 h)	778.817(18.9), 2052.36(17.2), 184.410(16.1)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
139.65 *10*	0.071 *16*	^{227}Fr(2.47 m)	90.035(39), 585.804(29.5), 64.267(14.5)
139.68 *3*		^{75}Ga(126 s)	253.0(†100), 574.8(†31.6), 885.6(†11.1)
139.7 *1*	†1.6 *2*	^{82}Ge(4.60 s)	1091.90(†100), 843.24(†9.3), 248.84(†4.0)
• 139.7 *3*	0.20 *3*	^{100}Pd(3.63 d)	84.02(45), 74.78(36.5), 126.05(8.10)
139.7	0.6	^{144}Tb(4.25 s)	743.0(12), 1001.6(7), 959.36(4.7)
139.7	0.00043	^{207}Po(5.80 h)	992.33(59.3), 742.64(28.2), 911.79(16.95)
139.71 *10*	6.7 *4*	^{100}Cd(49.1 s)	936.55(66), 582.5(6.3), 507.25(5.5)
• 139.742 *17*	0.077 *4*	^{143}Ce(33.039 h)	293.266(42.80), 57.356(11.7), 664.571(5.69)
139.76 *8*	0.98 *11*	^{184}Pt(17.3 m)	154.90(31), 191.97(27), 548.36(23.1)
• 139.76 *6*	9.6×10^{-5} *15*	^{233}U(1.592×10^{5} y)	42.44(0.0862), 97.134(0.020), 54.699(0.0182)
139.77 *9*	†3.2 *6*	^{159}Yb(1.58 m)	166.16(†500), 177.12(†159), 390.20(†113)
139.8 *5*	†3	^{106}Mo(8.4 s)	465.70(†100), 54.00(†54), 618.60(†25)
139.8 *5*	†5	^{106}Mo(8.4 s)	465.70(†100), 54.00(†54), 618.60(†25)
139.8 *1*	2.3 *2*	^{129}Sn(2.23 m)	645.13(100), 80.5(6.6), 913.2(5.0)
139.8 *1*	0.89 *3*	^{146}Ba(2.22 s)	140.7(20.2), 251.2(19.6), 121.2(14.2)
139.8 *1*	†11.1 *8*	^{225}Fr(4.0 m)	182.3(†100), 31.50(†91), 225.1(†55)
• 139.81 *6*	0.0057 *19*	^{245}Cm(8500 y)	174.94(10), 132.99(2.77), 41.95(0.350)
• 139.84 *2*	0.20 *3*	^{100}Pd(3.63 d)	84.02(45), 74.78(36.5), 126.05(8.10)
• 139.86 *7*	0.133 *9*	^{153}Tb(2.34 d)	212.038(31.0), 170.504(6.8), 109.758(6.4)
139.89 *9*	0.22 *4*	^{183}Au(42.0 s)	161.18(9.4), 214.13(5.9), 313.08(5.0)
139.9 *2*	0.66 *5*	^{120}Xe(40 m)	25.1(30), 72.6(9), 178.1(6.8)
139.9 *1*	27.46 *20*	^{147}Tb(1.7 h)	1152.4(100), 694.4(43), 119.7(6.1)
139.9 *2*	3.8 *8*	^{167}Hf(2.05 m)	315.24(100), 175.4(6)
139.9 *3*	0.10	^{181}Au(11.4 s)	198.60(4.4), 2022.4(4.2), 79.40(4.2)
• 139.9 *1*	0.005	^{237}Np(2.14×10^{6} y)	29.374(15.0), 86.477(12.4), 94.66(0.6)
139.9 *1*	0.24 *5*	^{240}Np(61.9 m)	566.34(25.3), 973.9(23.8), 600.57(18.4)
139.91 *10*	0.07 *3*	^{200}Pt(12.5 h)	76.21(13), 135.90(3.24), 243.71(2.49)
139.95 *5*	0.048 *3*	^{151}Tb(17.609 h)	287.357(28.3), 251.863(26.3), 108.088(24.3)
140.0 *1*	5.0	^{140}Sm(14.82 m)	225.5(>10), 225.4(10), 1138.1(1.8)
• 140 *5*		^{146}Eu(4.59 d)	747.2(98), 633.03(43), 634.07(37)
140.0 *2*	0.073 *23*	^{194}Pb(12.0 m)	581.82(18.8), 1519.45(16.4), 203.82(16.2)
140		^{217}At(32.3 ms)	258.5(0.056), 593.1(0.0120), 334
140.0	†>11	^{220}Fr(27.4 s)	45.0(†100), 106.0(†72), 161.5(†65)
140 *5*		^{245}Am(2.05 h)	252.80(6), 240.86(0.34), 295.72(0.22)
140.02 *9*		^{223}Th(0.60 s)	151.98, 97.10, 88.00
140.09 *12*	0.18 *7*	^{105}In(5.07 m)	131.37(41), 260.21(15.7), 604.11(9.2)
140.1 *3*	†<0.1	^{129}Ba(2.17 h)	182.30(†100), 1459.1(†50.0), 202.38(†33.7)
140.12 *19*	0.077 *14*	^{187}Au(8.4 m)	1331.81(7.0), 1408.23(3.06), 914.73(3.02)
140.15 *2*	0.50 *5*	^{234}Pa(6.70 h)	131.30(18), 946.00(13.4), 883.24(9.6)
140.15 *2*	$\dagger1.28\times10^{3}$ *15*	^{234}Pa(1.17 m)	1001.03(†837000), 766.38(†294000), 742.81(†80000)
• 140.15 *2*	0.029 *3*	^{234}Np(4.4 d)	1558.31(18.72), 1527.21(11.2), 1601.80(9.1)
• 140.15 *2*	$>2.0\times10^{-9}$	^{238}Pu(87.74 y)	43.498(0.0395), 99.853(0.00735), 152.720(0.000937)
140.2 *3*	†4 *1*	^{135}Pm(49 s)	198.5(†100), 207.2(†70), 463.5(†62)
140.2 *2*	0.27 *11*	^{203}Po(36.7 m)	908.64(55), 1090.95(19.2), 893.49(18.7)
140.25 *8*	2.8 *3*	^{161}Yb(4.2 m)	78.20(34), 599.88(25.9), 631.45(13.9)
140.3 *1*	8.1 *9*	^{74}Kr(11.50 m)	89.65(31), 203.0(18.0), 296.67(9.9)
140.3 *3*	0.82 *10*	^{98}Rb(114 ms)	144.224(24.5), 1693.3(5.9), 2171.7(5.7)
140.3 *3*	1.6 *5*	^{98}Rb(96 ms)	144.224(73), 289.4(68), 3010.5(23.4)
• 140.3 *2*		^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
140.35 *5*	9.3 *4*	^{160}Yb(4.8 m)	173.74(42.0), 215.78(20.2), 132.23(5.9)
• 140.35 *10*	2.33 *12*	^{188}Pt(10.2 d)	187.59(19.4), 195.05(18.6), 381.43(7.5)
140.385 *9*	0.75 *9*	^{195}Ir(3.8 h)	98.85(10), 684.88(9.4), 432.86(9)
140.4 *1*	†100	^{151}Yb(1.6 s)	1050.2(†100), 1245.6(†100), 624.8(†100)
140.40 *10*	>0.0023	^{161}Ho(2.48 h)	25.65150(27), 103.062(3.9), 77.414(1.91)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
140.40 *7*	0.42 *6*	^{161}Tm(33 m)	45.54(5.00), 1648.1(9.50), 84.40(9.4)
140.4 *2*	†0.80 *8*	^{171}Ta(23.3 m)	49.6(†100), 506.4(†54), 501.8(†22.6)
• 140.486 *28*	0.14 *3*	^{206}Po(8.8 d)	1032.26(32.9), 511.36(24.1), 286.410(23.8)
140.5 *3*		^{122}Ba(1.95 m)	550.7, 388.7, 231.0
140.5	2.3 *13*	^{147}Cs(0.225 s)	85.2(7.3), 245.8(4.5), 109.7(4.5)
• 140.511 *1*	4.52 *23*	^{99}Mo(65.94 h)	739.50(12.1), 181.063(6.08), 777.921(4.28)
• 140.54 *10*	0.057 *6*	^{194}Au(38.02 h)	328.455(60), 293.545(10.2), 1468.91(6.3)
140.544 *20*	0.00210 *25*	^{165}Dy(2.334 h)	94.700(3.58), 361.68(0.84), 633.415(0.568)
• 140.555 *20*	0.00071 *7*	^{231}Th(25.52 h)	25.646(14.5), 84.216(6.6), 89.944(0.94)
140.6 *1*	1.86 *12*	^{101}Zr(2.1 s)	119.3(10.8), 205.6(6.0), 912.2(3.48)
140.6 *2*	1.0	^{115}Pd(25 s)	342.71(8), 303.87(7), 396.56(6)
140.6 *3*	0.36	^{136}Sm(47 s)	114.4(36), 747.7(5.4), 485.3(5.0)
140.6	0.06	^{147}Ba(0.893 s)	167.4(11), 105.2(4.8), 196.1(4.8)
140.6 *2*	3.5 *4*	^{179}Yb(8.0 m)	592.1(75), 612.3(35.4), 381.4(9.6)
140.6 *3*	4.2	^{190}Pb(1.2 m)	942.20(34), 151.19(8.92), 598.3(8.0)
140.62 *10*	0.366 *18*	^{147}Pr(13.4 m)	77.9921(15), 314.675(13.2), 641.380(10.0)
140.694 *10*	4.6 *3*	^{250}Es(8.6 h)	828.82(72), 303.41(21.6), 349.4(19.8)
140.7 *1*	20.2 *4*	^{146}Ba(2.22 s)	251.2(19.6), 121.2(14.2), 197.0(12.6)
• 140.707 *24*	0.0436 *22*	^{166}Ho(1.20×10^{3} y)	184.410(72.6), 810.276(58.08), 711.683(55.32)
• 140.76 *4*	0.22 *2*	^{235}U(7.038×10^{8} y)	185.712(57.2), 143.764(10.96), 163.358(5.08)
140.8 *1*	1.9 *3*	^{152}Ho(49.5 s)	647.2(92), 613.8(88.4), 683.3(88)
140.8	†55	^{224}Ac(2.9 h)	156.4(†100), 261.6(†28), 83(†21)
140.81 *5*	0.94 *10*	^{204}Bi(11.22 h)	899.15(98), 374.72(82), 984.02(59)
• 140.85 *7*	0.00216 *24*	^{229}Pa(1.50 d)	40.09(0.104), 64.70(0.045), 75.12(0.035)
140.86 *2*	5.4 *5*	^{228}Fr(39 s)	473.7(10.2), 474.0(7.6), 410.40(6.3)
• 140.86 *2*	0.018 *3*	^{232}Th(1.405×10^{10} y)	63.83(0.267)
• 140.886 *15*	0.075 *11*	^{191}Pt(2.9 d)	538.90(13.7), 409.44(8.0), 359.90(6.0)
140.9 *2*	1.5	^{104}Zr(1.2 s)	100.9(6), 504.7(5), 445.0(5)
140.9 *5*	†86 *8*	^{125}Ba(3.5 m)	77.6(†100), 85.4(†82), 55.0(†48)
140.9 *2*	2.3 *3*	^{175}Ta(10.5 h)	207.4(14.0), 348.5(12.0), 266.9(10.8)
140.9 *10*	0.052 *5*	^{176}Ta(8.09 h)	1159.28(25), 88.34(12), 1224.93(6)
140.9 *2*	†2 *1*	^{185}Pt(33.0 m)	229.60(†100), 135.3(†80), 197.4(†74)
140.9 *3*	†26	^{223}Rn(23.2 m)	591.8(†100), 635.2(†76), 416.0(†55)
140.91 *3*	0.31 *3*	^{234}Pa(6.70 h)	131.30(18), 946.00(13.4), 883.24(9.6)
140.92 *8*	4.5 *6*	^{79}Sr(2.25 m)	39.41(28), 105.00(21.8), 413.8(7.6)
141.0 *1*	2.60 *21*	^{97}Rb(169.9 ms)	167.1(26), 585.2(21.0), 600.5(10.6)
141.0 *1*	1.0	^{98}Rb(114 ms)	167.1(3.4)
141.0 *5*	0.42 *11*	^{164}Tb(3.0 m)	168.838(25.4), 754.80(23.3), 215.07(21)
141.0 *15*	†0.46	^{256}Es(7.6 h)	861.8(†100), 231.1(†61), 172.6(†49)
141.02 *11*	0.0066 *22*	^{187}W(23.72 h)	685.774(27.3), 479.531(21.8), 72.001(11.14)
141.02 *3*	0.052 *8*	^{228}Ac(6.15 h)	911.205(26.6), 968.971(16.2), 338.322(11.3)
141.02 *3*	0.23 *6*	^{228}Pa(22 h)	911.205(4.19), 463.005(1.250), 964.770(4.25)
• 141.02 *3*	3.1×10^{-6} *13*	^{232}U(68.9 y)	57.762(0.200), 129.065(0.0686), 270.243(0.00316)
141.06 *7*	0.039 *3*	^{149}Nd(1.728 h)	211.309(25.9), 114.314(19.2), 270.166(10.7)
141.08 *6*	0.048 *16*	^{204}Bi(11.22 h)	899.15(98), 374.72(82), 984.02(59)
141.1	0.024	^{147}Ce(56.4 s)	268.80(7), 92.9(4.7), 374.23(3.5)
141.1 *2*	0.024 *8*	^{201}Au(26 m)	542.6(1.2), 517.0(0.83), 613.2(0.77)
• 141.1 *2*	0.0063 *20*	^{201}Tl(72.912 h)	167.43(10), 135.34(2.565), 32.19(0.258)
141.15 *3*	4.20 *21*	^{189}Pt(10.87 h)	721.41(9.3), 94.33(7.6), 568.84(7.1)
141.178 *15*	66.8 *7*	^{90}Nb(14.60 h)	1129.224(92.7), 2318.968(82.03), 2186.242(17.96)
141.20 *4*	0.028 *5*	^{131}Te(25.0 m)	149.716(69), 452.323(18.18), 1146.96(4.95)
141.2 *4*	†1.5 *4*	^{152}Pr(3.24 s)	164.2(†100), 284.9(†81.0), 72.40(†38.9)
141.2	60000	^{210}At(8.1 h)	82.802(†480000), 106(†170000), 167(†110000)

• $t_{1/2}$>1 d

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
141.21 *6*	0.111 *10*	^{163}Yb(11.05 m)	860.28(10.1), 63.62(6.5), 123.21(1.98)
141.29 *5*	3.26 *17*	^{146}Ce(13.52 m)	316.74(56), 218.23(20.8), 264.56(9.0)
141.3 *2*	0.30	^{140}Sm(14.82 m)	225.5(>10), 225.4(10), 140.0(5.0)
141.3 *6*	0.04	^{214}Pb(26.8 m)	351.921(35.8), 295.213(18.5), 241.981(7.50)
141.3147 *22*	6.6 *5*	^{75}Br(96.7 m)	286.572(88), 427.883(4.4), 377.385(3.93)
141.33 *3*	7.3 *7*	^{154}Tb(22.7 h)	247.925(79), 346.643(69), 1419.81(46)
141.34 *6*	0.066 *11*	^{69}As(15.2 m)	232.69(11), 145.95(4.96), 86.78(3.44)
• 141.36 *7*	0.029 *5*	^{165}Tm(30.06 h)	242.917(35.5), 47.155(16.9), 297.369(12.71)
• 141.36 *7*		^{165}Tm(30.06 h)	242.917(35.5), 47.155(16.9), 297.369(12.71)
141.4 *4*	0.43 *18*	^{136}Sm(47 s)	114.4(36), 747.7(5.4), 485.3(5.0)
141.40 *15*	0.084 *19*	^{157}Tm(3.63 m)	455.00(9.3), 385.5(8.8), 348.40(8.4)
141.4 *1*	0.14 *4*	^{188}Hg(3.25 m)	66.7(63), 190.1(4.40), 82.7(2.6)
141.4 *2*	†0.62 *18*	^{230}Ra(93 m)	72.0(†100), 63.0(†35.4), 202.8(†27.3)
141.43 *5*	†23 *2*	^{227}Rn(22.5 s)	162.14(†100), 739.2(†65), 686.2(†62)
141.4428 *6*	1.98 *8*	^{155}Sm(22.3 m)	104.3346(74.6), 245.771(3.7), 30.5(0.56)
• 141.49 *5*	†8 *5*	^{227}Th(18.72 d)	235.971(†813), 50.13(†528), 256.25(†463)
• 141.5 *1*	0.004 *2*	^{155}Tb(5.32 d)	86.545(32.0), 105.305(25), 180.103(7.45)
141.5 *9*	1.72 *22*	^{170}Ho(2.76 m)	258.2(37.0), 931.3(36.1), 181.6(23.8)
• 141.558 *3*	0.0025 *7*	^{77}Br(57.036 h)	238.996(23), 520.639(22.4), 297.215(4.16)
141.6 *3*	1.22 *19*	^{184}Hg(30.6 s)	236.18(64), 156.24(58), 295.11(10.3)
• 141.6		^{233}U(1.592×10^{5} y)	42.44(0.0862), 97.134(0.020), 54.699(0.0182)
141.65 *10*	0.670 *23*	^{79}Rb(22.9 m)	688.1(23), 182.77(19.2), 143.41(13.9)
• 141.655 *5*	3.20×10^{-5} *7*	^{239}Pu(24110 y)	51.624(0.007100), 38.661(0.000500), 129.297(0.00631)
141.7 *5*	>7	^{74}Zn(96 s)	56.7(70), 49.4(33.4), 143.5(21.7)
141.7 *6*	†11 *2*	^{119}Xe(5.8 m)	231.8(†100), 98.5(†95), 461.5(†91)
141.7	†100	^{148}Cs(158 ms)	687.2(†23), 545.5(†20), 633.2(†19)
141.7 *1*	4.26 *21*	^{148}Er(4.6 s)	1311.8(8.9), 244.0(7.1), 315.3(6.9)
• 141.7 *5*	0.010 *3*	^{151}Pm(28.40 h)	340.08(23), 167.75(8.3), 275.21(6.8)
141.7 *2*	†13 *1*	^{152}Yb(3.1 s)	482.4(†100), 316.9(†7), 949.2(†0.7)
141.74 *10*		^{233}Th(22.3 m)	86.477(2.7), 29.374(2.5), 459.222(1.4)
• 141.74 *10*		^{237}Np(2.14×10^{6} y)	29.374(15.0), 86.477(12.4), 94.66(0.6)
• 141.758 *5*	0.0064 *8*	^{188}W(69.4 d)	290.669(0.402), 227.083(0.221), 63.582(0.109)
141.8 *5*	0.00042 *17*	^{111}Pd(23.4 m)	580.00(0.8), 70.44(0.78), 1459.0(0.56)
141.8 *3*	0.67 *20*	^{153}Ho(2.0 m)	295.8(67), 637.0(5.36), 688.5(3.7)
141.8 *4*	0.07 *3*	^{185}Au(4.25 m)	310.6(13), 243.1(6.6), 77.7(6)
141.84 *2*	0.14 *4*	^{147}La(4.015 s)	117.718(12), 186.320(6.48), 438.30(5.04)
141.89 *3*		^{239}U(23.45 m)	74.664(48), 43.533(4.14), 662.24(0.18)
• 141.89 *3*	0.120 *11*	^{243}Am(7370 y)	74.664(68), 43.533(5.93), 117.84(0.57)
141.9 *3*	0.20 *6*	^{76}Kr(14.8 h)	315.7(39), 270.2(21.1), 45.48(19.5)
141.9 *4*	0.43 *4*	^{127}Sn(2.10 h)	1114.3(39), 1095.6(20), 823.1(10.9)
• 141.95 *2*	1.08 *6*	^{153}Tb(2.34 d)	212.038(31.0), 170.504(6.8), 109.758(6.4)
142.0 *3*	0.12 *3*	^{157}Er(18.65 m)	53.05(24), 391.32(14.2), 121.57(10.1)
142.00 *5*	0.092 *18*	^{159}Tm(9.13 m)	38.35(5.8), 84.8(5.8), 271.30(5.1)
142.0 *5*	0.078 *10*	^{224}Fr(3.30 m)	215.985(33.1), 131.613(16.3), 836.90(9.8)
• 142.0 *5*	1.4×10^{-6} *5*	^{228}Th(1.9131 y)	84.373(1.266), 215.985(0.263), 131.613(0.1355)
• 142.0 *1*	0.011 *3*	^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
142.07 *3*	3.0 *3*	^{107}Tc(21.2 s)	102.70(21.0), 177.00(9.2), 106.31(7.6)
142.1 *2*	4.7 *10*	^{117}Ag(5.34 s)	135.4(48), 386.8(39.9), 298.1(21.1)
142.1 *2*	1.9 *3*	^{117}Ag(72.8 s)	135.4(23), 337.7(10.3), 157.1(7.9)
142.1 *3*	0.072 *9*	^{120}Xe(40 m)	25.1(30), 72.6(9), 178.1(6.8)
142.1 *3*		^{122}Ba(1.95 m)	550.7, 388.7, 231.0
142.1 *5*	†>8	^{177}Os(2.8 m)	84.7(†100), 125.4(†63), 195.8(†61)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
142.1 *2*	0.042 *7*	^{185}Ir(14.4 h)	254.4(13.3), 1828.8(10), 60.0(5.7)
• 142.130 *8*	0.075 *8*	^{193}Os(30.5 h)	139.03(4.27), 460.50(3.95), 73.039(3.2)
142.15 *3*	3.03 *9*	^{81}Sr(22.3 m)	153.54(33.8), 147.76(30.1), 443.34(17.5)
142.18 *8*	0.50 *4*	^{132}Ce(3.51 h)	182.11(77), 155.37(10.5), 216.83(4.95)
142.20 *15*	2.9	^{113}Ag(68.7 s)	316.3(18), 392.3(11), 298.58(10)
142.2 *3*	7	^{190}Pb(1.2 m)	942.20(34), 151.19(8.92), 598.3(8.0)
142.26 *30*	†10 *5*	^{164}Tm(2.0 m)	91.40(†1500), 1154.66(†366), 768.91(†279)
• 142.269 *4*	0.362 *16*	^{183}Ta(5.1 d)	246.0591(27), 353.9912(11.2), 107.9322(11.0)
142.29 *2*	3.16 *17*	^{200}Pb(21.5 h)	147.63(37.7), 257.17(4.46), 235.63(4.30)
142.307 *6*	64 *3*	^{92}Kr(1.840 s)	1218.6(60), 812.6(14.6), 548.3(14.0)
• 142.4	>0.011	^{172}Hf(1.87 y)	23.9331(20.3), 125.812(11.3), 67.35(5.3)
• 142.4 *2*	0.00055 *9*	^{177}Ta(56.56 h)	112.9498(7.2), 208.3664(0.94), 1057.8(0.29)
142.4 *3*	†2.2 *4*	^{182}Ir(15 m)	273.23(†100), 126.79(†77), 236.3(†21.0)
142.4 *1*	0.24 *3*	^{188}Hg(3.25 m)	66.7(63), 190.1(4.40), 82.7(2.6)
• 142.40 *5*	0.005	^{235}U(7.038×10^{8} y)	185.712(57.2), 143.764(10.96), 163.358(5.08)
142.45	>0.028	^{179}Re(19.5 m)	430.221(28), 289.968(26.9), 1680.244(13.0)
142.46 *5*	4.3 *3*	^{79}Ga(2.847 s)	464.79(24.2), 516.41(21.5), 1187.28(12.8)
• 142.50 *15*	0.0094 *9*	^{170}Lu(2.00 d)	84.2551(4.256), 1280.25(3.450), 2041.88(1.434)
142.5 *3*	0.66 *13*	^{192}Hg(4.85 h)	274.8(50.4), 157.2(7), 306.5(5.4)
142.5	†>11	^{220}Fr(27.4 s)	45.0(†100), 106.0(†72), 161.5(†65)
142.51 *5*	0.238 *17*	^{191}Au(3.18 h)	586.45(17), 277.88(7.2), 674.19(6.8)
142.52 *5*	0.0109 *9*	^{72}Ga(14.10 h)	834.01(96), 2201.69(25.9), 629.95(24.8)
• 142.52 *5*	0.014 *5*	^{72}As(26.0 h)	834.01(80), 629.95(7.92), 1463.95(1.107)
• 142.56 *2*	0.101 *5*	^{172}Tm(63.6 h)	78.7435(6.5), 1093.657(6.0), 1387.093(5.6)
142.60 *5*	5.6 *6*	^{71}Zn(3.96 h)	386.28(93), 487.38(62), 620.18(57)
142.60 *5*	1.36 *10*	^{177}W(135 m)	115.65(50), 426.98(13.2), 1036.4(10.3)
142.6	68	^{190}Hg(20.0 m)	171.5(4.8), 154.7(2.5), 129.6(1.6)
142.6 *10*	0.041 *10*	^{201}Bi(108 m)	629.1(24.0), 936.2(11.3), 1014.1(10.7)
142.6		^{225}Rn(4.5 m)	207.2, 178.7, 169.7
• 142.628 *29*		^{99}Mo(65.94 h)	739.50(12.1), 181.063(6.08), 140.511(4.52)
142.64		^{238}Pa(2.3 m)	1015.3(†<100), 1014.6(†<100), 635.18(†88)
• 142.652 *2*	1.02 *4*	^{59}Fe(44.503 d)	1099.251(56.5), 1291.596(43.2), 192.349(3.08)
142.7 *3*	>0.8	^{105}Tc(7.6 m)	143.26(16), 107.945(14.1), 321.50(11.1)
142.8 *3*	†<0.1	^{129}Ba(2.17 h)	182.30(†100), 1459.1(†50.0), 202.38(†33.7)
142.878 *14*	†0.437 *20*	^{148}Tb(60 m)	784.430(†119.0), 489.049(†28.0), 1079.025(†16.2)
142.878 *14*	2.4 *3*	^{148}Tb(2.20 m)	784.430(100), 631.947(95), 882.3(92)
• 142.923 *16*	5.8×10^{-7} *25*	^{186}Re(90.64 h)	137.155(8.22), 767.508(0.0255), 630.354(0.0230)
142.923 *16*	0.301 *19*	^{186}Ir(16.64 h)	296.911(64.0), 137.155(42), 434.849(34.4)
142.923 *16*	0.45 *4*	^{186}Ir(2.0 h)	137.155(27), 767.508(21.2), 630.354(18.0)
142.94 *10*	0.28 *3*	^{194}Pb(12.0 m)	581.82(18.8), 1519.45(16.4), 203.82(16.2)
142.96 *11*	†2.7 *5*	^{187}Hg(1.9 m)	233.38(†100), 376.34(†38), 240.26(†33)
• 142.962 *5*	0.404 *12*	^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
143.0 *2*	0.180 *15*	^{117}Cs(8.4 s)	204.8(15.0), 29.7(9.9), 205.6(6.8)
• 143.0 *5*		^{146}Eu(4.59 d)	747.2(98), 633.03(43), 634.07(37)
143.0 *5*	0.020 *6*	^{151}Tb(17.609 h)	287.357(28.3), 251.863(26.3), 108.088(24.3)
143		^{185}Hg(21.6 s)	222.8(†100.0), 258.7(†98), 212.5(†58)
• 143.1 *8*		^{223}Ra(11.435 d)	269.459(13.7), 154.21(5.62), 323.871(3.93)
143.156 *7*	4.3 *5*	^{182}Hf(61.5 m)	942.80(18.8), 799.64(9.4), 114.3152(6.2)
143.166 *17*	0.82 *6*	^{205}At(26.2 m)	719.30(31), 669.41(8.6), 628.88(5.6)
143.166 *17*	0.0102 *25*	^{209}Rn(28.5 m)	154.198(0.0073), 384.61(0.0024), 230.12(0.00061)
• 143.18 *3*	0.214 *14*	^{151}Pm(28.40 h)	340.08(23), 167.75(8.3), 275.21(6.8)
143.2 *2*	0.035 *9*	^{49}Ca(8.715 m)	3084.4(92), 4071.9(7.0), 1408.9(0.63)
143.2 *3*	†10.1 *13*	^{71}Se(4.74 m)	147.50(†211), 1095.26(†43.6), 830.33(†43.2)
143.2 *5*	0.12 *4*	^{119}Cd(2.69 m)	292.9(36.8), 343.0(16.9), 1609.7(10.9)

• $t_{1/2}$>1 d

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
• 143.2 *3*	0.010 *3*	^{151}Pm(28.40 h)	340.08(23), 167.75(8.3), 275.21(6.8)
143.2 *6*	0.0025 *10*	^{166}Tm(7.70 h)	778.817(18.9), 2052.36(17.2), 184.410(16.1)
143.200 *12*	0.47 *5*	^{183}Hf(1.067 h)	783.754(66), 73.174(38), 459.069(27)
143.249 *20*	0.014	^{233}Th(22.3 m)	86.477(2.7), 29.374(2.5), 459.222(1.4)
• 143.249 *20*	0.43 *2*	^{237}Np(2.14×10^{6} y)	29.374(15.0), 86.477(12.4), 94.66(0.6)
143.26 *8*	16	^{105}Tc(7.6 m)	107.945(14.1), 321.50(11.1), 159.528(10.2)
143.299 *2*	0.60 *25*	^{149}Pr(2.26 m)	138.447(11.0), 165.087(9.9), 108.520(9.5)
143.3 *2*	1.5 *5*	^{103}Zr(1.3 s)	248(100), 164.05(94), 126.30(84)
143.3 *2*	†1.3 *3*	^{103}Nb(1.5 s)	102.64(†100), 641.1(†55), 538.5(†34.0)
143.3 *1*	1.26 *5*	^{129}La(11.6 m)	278.6(25), 110.5(16.9), 457.0(8.0)
143.33 *5*	12.9 *16*	^{124}Cd(0.9 s)	179.91(49.9), 62.80(22.7), 36.50(4.6)
143.37 *4*	0.109 *14*	^{153}Dy(6.4 h)	80.723(11.10), 213.754(10.90), 99.659(10.51)
143.4	>0.032	^{195}Tl(1.16 h)	563.52(10.5), 884.47(10.0), 1363.88(8.4)
143.4 *5*	0.42 *10*	^{232}Np(14.7 m)	327.3(52), 819.187(33.3), 866.760(24.4)
143.41 *10*	13.9 *3*	^{79}Rb(22.9 m)	688.1(23), 182.77(19.2), 129.72(10.74)
143.45 *7*		^{223}Rn(23.2 m)	591.8(†100), 635.2(†76), 416.0(†55)
143.46 *1*	2.11 *6*	^{167}Yb(17.5 m)	113.34(55.3), 106.18(22.5), 176.25(21)
143.493 *10*	0.084 *16*	^{182}Os(22.10 h)	510.056(52), 180.230(33.5), 263.285(6.71)
143.5 *4*	21.7 *10*	^{74}Zn(96 s)	56.7(70), 49.4(33.4)
143.5 *2*		^{146}Dy(29 s)	2156.8, 1915.7, 1876.7
143.5 *5*	†167 *57*	^{157}Ho(12.6 m)	279.97(†47600), 341.16(†37000), 193.41(†15200)
143.5 *2*	6.5 *5*	^{168}Dy(8.7 m)	192.5(32.8), 487.0(22.5), 443.3(15.5)
143.6 *3*		^{170}Hf(16.01 h)	164.78(33), 620.7(23), 120.17(19)
143.61 *14*	†2	^{181}Pt(51 s)	289.29(†100), 111.97(†100), 230.15(†92)
• 143.678 *6*	1.73×10^{-5} *7*	^{239}Pu(24110 y)	51.624(0.007100), 38.661(0.000500), 129.297(0.00631)
143.7 *4*	0.50 *4*	^{127}Sn(2.10 h)	1114.3(39), 1095.6(20), 823.1(10.9)
143.73 *8*	1.60 *10*	^{174}W(31 m)	35.42(14.1), 428.83(12.7), 328.68(9.5)
143.74 *15*	0.48	^{154}Pm(2.68 m)	184.810(32), 81.99(15.4), 546.66(14.5)
143.764 *2*	3.3 *3*	^{231}Ac(7.5 m)	282.471(39.0), 307.063(30.4), 221.399(16.8)
• 143.764 *2*	10.96 *8*	^{235}U(7.038×10^{8} y)	185.712(57.2), 163.358(5.08), 205.309(5.01)
143.78 *2*	0.32 *3*	^{234}Pa(6.70 h)	131.30(18), 946.00(13.4), 883.24(9.6)
• 143.80 *20*	0.010 *4*	^{128}Ba(2.43 d)	273.44(15), 374.99(0.309), 229.50(0.106)
143.8 *2*	†0.08	^{152}Tb(17.5 h)	344.281(†1500), 586.294(†223), 271.135(†203)
143.83 *8*	0.036 *6*	^{157}Dy(8.14 h)	326.16(92), 182.20(1.84), 83.01(0.62)
143.87 *1*	0.55 *5*	^{226}Fr(48 s)	253.73(22.3), 186.05(16.3), 253.9(2.5)
• 143.87 *1*	0.0486 *22*	^{230}Th(7.538×10^{4} y)	67.67(0.376), 253.73(0.0111), 186.05(0.0088)
• 143.89 *10*		^{175}Hf(70 d)	343.40(84), 89.36(2.40), 433.0(1.436)
143.90 *12*	0.97 *14*	^{159}Sm(11.37 s)	189.79(46), 861.97(18.2), 254.43(9.8)
143.92 *8*	3.8	^{161}Tm(33 m)	45.54(5.00), 1648.1(9.50), 84.40(9.4)
143.98 *8*	0.29 *3*	^{184}Pt(17.3 m)	154.90(31), 191.97(27), 548.36(23.1)
144		^{82}Zr(32 s)	525, 397, 278
144.0 *3*	0.10 *5*	^{127}In(1.09 s)	1597.7(49), 646.1(6.2), 805.1(5.6)
144.0	0.6	^{147}Ba(0.893 s)	167.4(11), 105.2(4.8), 196.1(4.8)
144.0 *2*	0.010 *4*	^{212}Bi(60.55 m)	39.858(1.091), 452.83(0.31), 288.07(0.31)
144.0 *5*	0.00011 *2*	^{222}Ra(38.0 s)	324.22(2.77), 328.9(0.0043), 472.5(0.0040)
• 144	0.1	^{251}Cf(898 y)	176.6(17.7), 227.0(6.3), 285.0(1.4)
• 144 *3*		^{252}Es(471.7 d)	52.33(0.55), 64.42(0.274), 418.5(0.220)
144.05 *5*	1.98 *18*	^{159}Tm(9.13 m)	38.35(5.8), 84.8(5.8), 271.30(5.1)
• 144.08 *4*		^{165}Tm(30.06 h)	242.917(35.5), 47.155(16.9), 297.369(12.71)
144.1 *1*	0.31 *4*	^{146}Ba(2.22 s)	140.7(20.2), 251.2(19.6), 121.2(14.2)
• 144.1 *5*		^{146}Eu(4.59 d)	747.2(98), 633.03(43), 634.07(37)
144.1 *1*	†1.9 *5*	^{152}Pr(3.24 s)	164.2(†100), 284.9(†81.0), 72.40(†38.9)
144.1 *1*	0.00168 *21*	^{223}Fr(21.8 m)	50.13(36.0), 79.72(9.1), 234.81(3.0)
144.122 *21*	0.18 *3*	^{153}Dy(6.4 h)	80.723(11.10), 213.754(10.90), 99.659(10.51)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
• 144.1252 *7*	2.49 *8*	^{183}Ta(5.1 d)	246.0591(27), 353.9912(11.2), 107.9322(11.0)
• 144.1252 *7*	0.1167 *23*	^{183}Re(70.0 d)	162.3219(23.3), 46.4839(7.97), 291.7238(3.05)
• 144.166 *28*	0.054 *9*	^{206}Po(8.8 d)	1032.26(32.9), 511.36(24.1), 286.410(23.8)
144.2 *3*		^{122}Ba(1.95 m)	550.7, 388.7, 231.0
• 144.201 *3*	0.000283 *6*	^{239}Pu(24110 y)	51.624(0.007100), 38.661(0.000500), 129.297(0.00631)
144.22 *11*	0.37 *15*	^{181}Re(19.9 h)	365.57(56), 360.70(20), 639.30(6.4)
144.224 *6*	24.5 *10*	^{98}Rb(114 ms)	1693.3(5.9), 2171.7(5.7), 2316.0(3.5)
144.224 *6*	73 *8*	^{98}Rb(96 ms)	289.4(68), 3010.5(23.4), 3030.5(17.7)
144.224 *6*	900	^{99}Rb(59 ms)	289.4(†270), 1079.8(†90), 655.9(†81)
144.224 *6*		^{100}Rb(51 ms)	
• 144.232 *10*	3.22 *7*	^{223}Ra(11.435 d)	269.459(13.7), 154.21(5.62), 323.871(3.93)
144.28 *15*	1.26 *19*	^{136}Nd(50.65 m)	108.90(32), 40.2(18.9), 574.8(10.4)
144.29 *20*	†6.3 *13*	^{171}Hf(12.1 h)	122.0(†100), 662.2(†83), 347.18(†47)
144.3	1.6	^{134}Nd(8.5 m)	163.2(58), 288.9(13), 216.8(12)
144.3 *3*	0.24 *4*	^{157}Er(18.65 m)	53.05(24), 391.32(14.2), 121.57(10.1)
144.3	†19	^{224}Ac(2.9 h)	156.4(†100), 140.8(†55), 261.6(†28)
144.39 *3*	0.495 *20*	^{163}Yb(11.05 m)	860.28(10.1), 63.62(6.5), 123.21(1.98)
• 144.39 *6*	0.0119 *10*	^{231}Pa(32760 y)	27.36(10.3), 300.07(2.46), 302.65(2.2)
• 144.4 *2*	0.00027 *4*	^{233}U(1.592×10^5 y)	42.44(0.0862), 97.134(0.020), 54.699(0.0182)
144.41 *6*	3.1 *14*	^{79}Sr(2.25 m)	39.41(28), 105.00(21.8), 413.8(7.6)
144.43 *6*	4.6 *5*	^{161}Yb(4.2 m)	78.20(34), 599.88(25.9), 631.45(13.9)
144.44 *3*	0.50 *9*	^{208}Rn(24.35 m)	426.78(7.07), 251.05(5.02), 350.026(3.34)
144.46 *7*	1.01 *11*	^{184}Pt(17.3 m)	154.90(31), 191.97(27), 548.36(23.1)
• 144.5 *1*	0.0058 *12*	^{77}Br(57.036 h)	238.996(23), 520.639(22.4), 297.215(4.16)
144.5 *3*	0.031 *3*	^{86}Y(14.74 h)	1076.64(83), 627.72(32.6), 1153.01(30.5)
144.5 *5*	>0.06	^{137}Nd(38.5 m)	75.5(17.0), 580.6(13), 306.60(10.0)
144.5 *3*	1.41 *23*	^{192}Pb(3.5 m)	1195.4(47), 608.2(17.9), 167.5(13.6)
144.5 *3*	†6.5 *6*	^{244}Bk(4.35 h)	891.5(†100), 217.6(†88), 921.5(†19)
• 144.5758 *9*	0.564 *14*	^{169}Lu(34.06 h)	960.622(23.4), 191.2137(20.6), 1449.74(9.92)
144.58 *5*	0.090 *5*	^{121}I(2.12 h)	212.189(84), 532.08(6.07), 598.74(1.47)
144.6 *3*	0.08	^{181}Au(11.4 s)	198.60(4.4), 2022.4(4.2), 79.40(4.2)
144.68 *10*	†16 *2*	^{229}U(58 m)	122.51(†100), 88.43(†88), 198.83(†88)
144.7 *1*	2.70 *7*	^{146}Ba(2.22 s)	140.7(20.2), 251.2(19.6), 121.2(14.2)
144.7 *3*	†2.7	^{149}Ce(5.3 s)	57.7(†100), 380.0(†33.7), 86.4(†20.2)
144.70 *5*	0.059 *8*	^{179}Re(19.5 m)	430.221(28), 289.968(26.9), 1680.244(13.0)
144.7 *2*	0.58 *22*	^{221}Rn(25 m)	186.38(21.6), 150.04(4.5), 216.90(2.6)
• 144.7 *2*	0.0005	^{225}Ac(10.0 d)	99.91(1.01), 150.04(0.80), 99.63(0.62)
144.78 *6*	0.35 *4*	^{140}Pm(5.95 m)	1028.19(100), 773.74(100), 419.57(92)
144.8 *1*	†3.1 *8*	^{105}Nb(2.95 s)	94.8(†100), 246.9(†79), 309.9(†41.9)
• 144.8 *5*		^{146}Eu(4.59 d)	747.2(98), 633.03(43), 634.07(37)
144.82 *3*	6.8 *4*	^{77}Sr(9.0 s)	146.94(86.1), 160.10(9.2), 1234.2(2.4)
• 144.863 *5*	0.328 *11*	^{175}Yb(4.185 d)	396.329(6.40), 282.522(3.01), 113.805(1.88)
144.9 *1*	†100 *10*	^{130}Sn(1.7 m)	899.2(†49), 84.7(†42), 311.3(†41)
144.97 *3*	1.58 *22*	^{167}Lu(51.5 m)	29.66(14.4), 239.22(8.6), 213.19(3.6)
144.99 *6*	1.4 *3*	^{181}Os(105 m)	238.75(44), 826.77(20), 118.03(12.9)
144.99 *6*	†100	^{181}Os(2.7 m)	118.03(†28.3), 1118.8(†4.2), 1468.0(†1.3)
144.99 *6*	0.179 *20*	^{249}Es(102.2 m)	379.5(40.4), 813.2(9.2), 375.1(3.3)
• 144.99 *6*	0.192 *24*	^{253}Fm(3.00 d)	271.8(2.6), 62.47(0.16), 405(0.08)
145.00 *4*	0.35	^{83}Zr(44 s)	55.55(8), 104.97(5.70), 475.1(5.1)
145.0 *1*	†46 *15*	^{141}Gd(24.5 s)	198.4(†208), 258.2(†177), 113.2(†69)
145.0 *1*	3.7 *5*	^{141}Tb(3.5 s)	293.3(16.8), 343.6(16.3), 198.4(14.8)
• 145.04 *13*	83	^{72}Zn(46.5 h)	191.96(9.37), 16.4(8.3), 103.14(2.32)
• 145.052 *6*	0.0058 *4*	^{231}Th(25.52 h)	25.646(14.5), 84.216(6.6), 89.944(0.94)
145.07 *9*	†6.5 *11*	^{168}Lu(5.5 m)	1483.65(†100), 228.58(†97), 111.8(†68)

• $t_{1/2}$>1 d

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
145.1 *2*	0.00112 *20*	^{109}Pd(13.7012 h)	88.04(1.171), 311.4(0.032), 647.3(0.024)
145.1 *15*		^{199}Pb(12.2 m)	366.90(7), 382.8, 2751.9
145.139 *16*	0.071 *8*	^{227}Fr(2.47 m)	90.035(39), 585.804(29.5), 64.267(14.5)
145.17 *5*	0.68 *22*	^{221}Rn(25 m)	186.38(21.6), 150.04(4.5), 216.90(2.6)
• 145.17 *5*	0.146 *7*	^{225}Ac(10.0 d)	99.91(1.01), 150.04(0.80), 99.63(0.62)
145.2 *5*	†70 *13*	^{190}Bi(6.3 s)	773.8(†100), 455.0(†94), 506.2(†92)
• 145.21 *5*	0.037 *6*	^{172}Lu(6.70 d)	1093.657(62.5), 900.724(29.8), 181.528(20.6)
145.213 *11*	0.125 *6*	^{163}Tm(1.810 h)	104.320(18.6), 69.229(11.6), 241.305(10.9)
145.252 *10*	0.0033 *3*	^{127}Te(9.35 h)	417.95(1.0), 360.32(0.1346), 202.860(0.0580)
• 145.252 *10*	4.29 *13*	^{127}Xe(36.4 d)	202.860(68), 172.132(25.5), 374.991(17.2)
145.3 *1*	0.24 *4*	^{146}Ba(2.22 s)	140.7(20.2), 251.2(19.6), 121.2(14.2)
• 145.337 *4*	0.0015 *3*	^{233}U(1.592×10^5 y)	42.44(0.0862), 97.134(0.020), 54.699(0.0182)
145.399 *11*	1.534 *13*	^{183}Os(13.0 h)	381.768(89.6), 114.463(20.63), 167.844(8.81)
145.4 *1*	1.26 *7*	^{200}Po(11.5 m)	671.0(34.0), 617.7(19.7), 434.4(9.3)
145.4 *3*	0.032 *8*	^{204}Bi(11.22 h)	899.15(98), 374.72(82), 984.02(59)
145.4 *1*	0.081 *2*	^{240}U(14.1 h)	44.10(1.05), 189.7(0.24), 66.5(0.154)
145.41 *5*	†9.2 *10*	^{131}Ce(10.3 m)	169.42(†100), 414.25(†68), 119.18(†44)
• 145.42 *3*	0.67 *5*	^{182}Re(64.0 h)	229.3220(26), 67.75001(22.2), 1121.3007(22.0)
• 145.43 *5*	0.00028 *3*	^{253}Es(20.47 d)	41.79(0.050), 389.11(0.0264), 387.1(0.00810)
• 145.4405 *28*	48.2 *3*	^{141}Ce(32.501 d)	
145.4405 *28*	0.239 *24*	^{141}Nd(2.49 h)	1126.8(0.8), 1292.6(0.46), 1147.2(0.306)
145.48 *5*	1.75 *6*	^{148}Ba(0.607 s)	56.08(29.20), 133.53(3.88), 415.78(3.59)
145.5 *3*	†<0.1	^{129}Ba(2.17 h)	182.30(†100), 1459.1(†50.0), 202.38(†33.7)
145.5 *3*	†<2	^{168}W(51 s)	178.5(†100), 352.2(†1.8), 181.8(†1.7)
145.5 *1*	0.13 *3*	^{184}Pt(17.3 m)	154.90(31), 191.97(27), 548.36(23.1)
145.544 *10*	0.48 *4*	^{237}Am(73.0 m)	280.23(47.3), 438.4(8.3), 473.5(4.3)
• 145.544 *10*		^{241}Cm(32.8 d)	
145.55 *3*	2.3 *2*	^{107}Tc(21.2 s)	102.70(21.0), 177.00(9.2), 106.31(7.6)
145.6 *2*	13.1 *8*	^{118}Pd(1.9 s)	125.4(34), 125.4(34), 224.2(20.1)
145.7 *2*	0.26	^{140}Sm(14.82 m)	225.5(>10), 225.4(10), 140.0(5.0)
145.70 *20*	3.8	^{199}Po(4.13 m)	1002.19(19), 1034.3(16), 362.01(7)
• 145.7694 *20*	0.91 *4*	^{177}Lu(160.4 d)	208.3664(57.7), 228.4838(37.0), 378.5029(29.7)
145.8		^{225}Rn(4.5 m)	207.2, 178.7, 169.7
• 145.83 *15*	0.0013 *8*	^{172}Er(49.3 h)	610.062(44.2), 407.338(42.1), 68.107(3.29)
145.849 *10*	0.162 *11*	^{228}Ac(6.15 h)	911.205(26.6), 968.971(16.2), 338.322(11.3)
145.849 *10*	0.34 *4*	^{228}Pa(22 h)	911.205(4.19), 463.005(1.250), 964.770(4.25)
145.86 *9*	0.034 *4*	^{187}Ir(10.5 h)	912.95(4.79), 427.12(4.12), 400.89(3.94)
145.91 *3*	0.102 *17*	^{191}Au(3.18 h)	586.45(17), 277.88(7.2), 674.19(6.8)
• 145.912 *6*	0.032 *2*	^{231}Th(25.52 h)	25.646(14.5), 84.216(6.6), 89.944(0.94)
145.92 *20*	0.40 *16*	^{149}Pr(2.26 m)	138.447(11.0), 165.087(9.9), 108.520(9.5)
145.95 *2*	4.96 *7*	^{69}As(15.2 m)	232.69(11), 86.78(3.44), 287.18(1.420)
145.97 *4*	0.008	^{135}Ce(17.7 h)	265.56(41.8), 300.07(23.5), 606.76(18.8)
146.0 *3*		^{122}Ba(1.95 m)	550.7, 388.7, 231.0
146.0 *2*	†1.8 *5*	^{129}Sb(17.7 m)	759.8(†100.0), 657.78(†92), 433.76(†73)
146.00 *3*	0.403 *25*	^{143}Cs(1.78 s)	195.554(13), 232.421(8.32), 306.424(6.80)
146.0 *15*	†15.4 *16*	^{182}Pt(2.6 m)	136.0(†100.0), 210.0(†12.0), 186.0(†7.0)
146.0 *3*	1.22 *19*	^{184}Hg(30.6 s)	236.18(64), 156.24(58), 295.11(10.3)
146.0 *3*	0.99 *21*	^{192}Hg(4.85 h)	274.8(50.4), 157.2(7), 306.5(5.4)
• 146 *5*	0.0035	^{246}Cf(35.7 h)	42.13(0.014), 96(0.012)
• 146.03 *4*	0.073 *10*	^{172}Lu(6.70 d)	1093.657(62.5), 900.724(29.8), 181.528(20.6)
• 146.05 *5*	0.0260 *11*	^{154}Eu(8.593 y)	123.071(40.79), 1274.436(35.19), 723.304(20.22)
• 146.071 *1*	0.052 *3*	^{155}Eu(4.7611 y)	86.545(30.7), 105.305(21.2), 45.2972(1.326)
• 146.071 *1*	0.048 *10*	^{155}Tb(5.32 d)	86.545(32.0), 105.305(25), 180.103(7.45)
• 146.08 *10*	0.00059 *15*	^{125}Sb(2.7582 y)	427.875(30), 600.600(17.86), 635.954(11.31)

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
• 146.095 *6*	0.000119 *3*	^{239}Pu(24110 y)	51.624(0.007100), 38.661(0.000500), 129.297(0.00631)
146.1 *2*		^{186}Ir(16.64 h)	296.911(64.0), 137.155(42), 434.849(34.4)
146.11 *6*	75 *5*	^{94}Rh(25.8 s)	756.23(100), 1430.50(100), 311.70(97.3)
146.11 *6*		^{95}Pd(13.3 s)	311.70, 756.23, 1430.50
• 146.180 *26*	0.11 *3*	^{206}Po(8.8 d)	1032.26(32.9), 511.36(24.1), 286.410(23.8)
• 146.2 *4*	0.017 *3*	^{151}Pm(28.40 h)	340.08(23), 167.75(8.3), 275.21(6.8)
• 146.212	0.089 *6*	^{44}Ti(49 y)	78.337(96), 67.875(94.4)
• 146.3 *5*		^{146}Eu(4.59 d)	747.2(98), 633.03(43), 634.07(37)
146.3 *3*	1.5	^{170}Hf(16.01 h)	164.78(33), 620.7(23), 120.17(19)
146.345 *2*	†35 *5*	^{229}Ac(62.7 m)	164.522(†100), 569.1(†91), 261.92(†39)
• 146.345 *2*	0.098 *6*	^{229}Pa(1.50 d)	118.968(0.130), 117.159(0.047), 42.44(0.044)
• 146.345 *2*	0.00657 *6*	^{233}U(1.592×10^5 y)	42.44(0.0862), 97.134(0.020), 54.699(0.0182)
146.38 *20*	2.2 *4*	^{125}Cd(0.57 s)	1027.53(25.8), 1173.16(25.1), 736.65(12.6)
146.4 *5*	0.045 *4*	^{146}Pr(24.15 m)	453.88(48.0), 1523.7(15.6), 735.72(7.5)
• 146.4 *5*	0.21 *3*	^{146}Pm(5.53 y)	453.88(65), 735.72(22.5), 589.3(0.42)
146.4 *1*	3.3	^{159}Eu(18.1 m)	67.8(19), 78.6(9.1), 95.7(7.0)
146.4 *2*	†2.1 *7*	^{185}Hg(21.6 s)	222.8(†100.0), 258.7(†98), 212.5(†58)
146.4 *5*		^{239}Cm(2.9 h)	187.1, 41
146.4 *5*	0.012 *5*	^{243}Bk(4.5 h)	187.1(0.060), 536(>0.015), 41(0.006)
146.5 *3*		^{175}Tm(15.2 m)	514.868(65), 941.23(15), 363.942(12.7)
146.5	0.34	^{190}Hg(20.0 m)	142.6(68), 171.5(4.8), 154.7(2.5)
• 146.55 *3*	†4.61×10^6 *5*	^{241}Am(432.2 y)	59.537(†60), 26.345(†1000×10^9), 33.195(†6000×10^8)
146.57 *2*	0.69 *8*	^{155}Ho(48 m)	240.19(12.5), 136.30(5.00), 45.38(5)
146.59 *4*	37.3 *16*	^{77}Kr(74.4 m)	129.64(81), 312.0(3.7), 276.0(2.92)
146.59 *12*		^{156}Ho(56 m)	266.35(54.7), 137.83(51), 366.25(10.73)
146.6 *3*	0.13 *5*	^{98}Nb(51.3 m)	787.374(93), 722.645(73.8), 1168.830(17.8)
146.6 *6*	†8 *1*	^{119}Xe(5.8 m)	231.8(†100), 98.5(†95), 461.5(†91)
146.6 *7*	0.21 *4*	^{129}Sb(4.40 h)	812.8(43), 914.6(20.0), 544.7(17.9)
146.647 *9*	0.20 *6*	^{163}Tb(19.5 m)	351.138(26), 389.734(24.3), 494.534(23)
146.65 *8*	4.8 *4*	^{161}Tm(33 m)	45.54(5.00), 1648.1(9.50), 84.40(9.4)
146.653 *10*	0.075 *5*	^{96}Y(5.34 s)	1750.42(2.350), 2225.93(0.322), 475.33(0.188)
146.653 *10*	34	^{96}Y(9.6 s)	1750.42(89), 915.0(60), 617.1(56)
146.66 *10*	0.49 *4*	^{200}Pt(12.5 h)	76.21(13), 135.90(3.24), 243.71(2.49)
146.7		^{230}Ac(122 s)	454.95(8), 508.20(5.15), 1243.9(3.50)
• 146.7		^{230}Pa(17.4 d)	951.95(1.65), 918.48(8.2), 454.95(6.27)
146.74 *5*	0.21	^{176}Ta(8.09 h)	1159.28(25), 88.34(12), 1224.93(6)
146.775 *3*	4.7 *5*	^{182}Hf(61.5 m)	942.80(18.8), 799.64(9.4), 114.3152(6.2)
146.8 *4*	0.53 *9*	^{188}Tl(71 s)	412.7(88), 592.0(61), 504.2(23.3)
146.8 *2*	0.94 *23*	^{225}Th(8.72 m)	321.4(23), 246.0(5.06), 359.0(4.1)
• 146.8	0.016 *8*	^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
146.85 *10*	0.21 *6*	^{250}Es(8.6 h)	828.82(72), 303.41(21.6), 349.4(19.8)
146.9 *2*	†1.3	^{101}Y(448 ms)	98.3(†100), 133.8(†18.8), 232.1(†11.9)
146.9 *2*	0.28 *3*	^{120}Xe(40 m)	25.1(30), 72.6(9), 178.1(6.8)
146.9 *1*	0.21 *4*	^{146}Ba(2.22 s)	140.7(20.2), 251.2(19.6), 121.2(14.2)
• 146.9 *5*		^{146}Eu(4.59 d)	747.2(98), 633.03(43), 634.07(37)
146.9 *5*	>0.27	^{227}Ra(42.2 m)	27.36(16), 300.07(4.6), 302.65(4.3)
146.94 *2*	86.1 *20*	^{77}Sr(9.0 s)	160.10(9.2), 144.82(6.8), 1234.2(2.4)
147 *1*	4.2	^{72}Kr(17.2 s)	415.1(34.7), 310.0(28.5), 162.2(16.3)
147.0 *3*	0.56 *19*	^{102}Cd(5.5 m)	481.0(63), 1036.6(12.8), 505.1(9.6)
147	>0.11	^{209}Rn(28.5 m)	408.32(50.3), 745.78(22.8), 337.45(14.5)
• 147.0		^{235}U(7.038×10^8 y)	185.712(57.2), 143.764(10.96), 163.358(5.08)
147		^{234}Am(2.32 m)	185, 168, 112
147.05 *10*	†13.4 *13*	^{171}Hf(12.1 h)	122.0(†100), 662.2(†83), 347.18(†47)
147.06 *10*	10.49 *23*	^{79}Rb(22.9 m)	688.1(23), 182.77(19.2), 143.41(13.9)

• $t_{1/2}$>1 d

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
147.06 *1*	†1.88 *10*	^{153}Pm(5.4 m)	35.842(†100), 127.298(†75), 28.309(†34.6)
147.08 *5*	0.45 *12*	^{183}Os(9.9 h)	1101.94(49.0), 1107.92(22.36), 1034.85(6.02)
147.10 *10*	0.22 *3*	^{121}Ag(0.78 s)	314.55(32.1), 353.43(19.9), 500.61(9.3)
• 147.126 *25*	1.24 *3*	^{189}Re(24.3 h)	216.663(5.50), 219.395(4.54), 245.09(3.5)
• 147.126 *25*	0.108 *8*	^{189}Ir(13.2 d)	245.09(6), 69.537(3.5), 59.053(1.20)
147.13 *5*	0.13 *3*	^{204}Bi(11.22 h)	899.15(98), 374.72(82), 984.02(59)
147.1640 *7*	0.17 *3*	^{177}Yb(1.911 h)	150.392(20.3), 1080.21(5.6), 1241.2(3.47)
147.2 *1*	1.18 *13*	^{240}Np(61.9 m)	566.34(25.3), 973.9(23.8), 600.57(18.4)
147.29 *5*	1.03 *5*	^{165}Yb(9.9 m)	80.11(49), 68.86(9.1), 1090.28(4.4)
147.3 *3*	†7 *1*	^{117}Pd(4.3 s)	247.5(†100), 649.9(†41), 323.9(†37)
147.3 *3*	0.028 *8*	^{140}Xe(13.60 s)	805.52(20), 1413.66(12.2), 1315.05(8.2)
147.3 *1*	1.18 *13*	^{185}Ta(49.4 m)	177.59(25.7), 173.68(22.6), 65.86(3.9)
147.3 *1*	0.0158 *15*	^{210}Rn(2.4 h)	458.25(1.7), 648.70(0.843), 570.95(0.840)
147.301 *20*	0.338 *13*	^{166}Tm(7.70 h)	778.817(18.9), 2052.36(17.2), 184.410(16.1)
147.38 *4*		^{187}W(23.72 h)	685.774(27.3), 479.531(21.8), 72.001(11.14)
147.4 *2*	0.237 *20*	^{132}I(2.295 h)	667.718(99), 772.60(75.6), 954.55(17.6)
147.4 *1*		^{132}Ce(3.51 h)	182.11(77), 155.37(10.5), 216.83(4.95)
147.4 *10*		^{181}Hg(3.6 s)	239.8, 158.7, 92.4
147.44 *8*	†12	^{114}Te(15.2 m)	90.28(†100), 83.8(†67), 1417.6(†32)
• 147.48 *4*	37000 *4*	^{227}Ac(21.773 y)	100(†110000), 69.21(†78000), 160.26(†70000)
147.49 *2*	0.87 *5*	^{191}Au(3.18 h)	586.45(17), 277.88(7.2), 674.19(6.8)
147.50 *22*	†211 *4*	^{71}Se(4.74 m)	1095.26(†43.6), 830.33(†43.2), 1242.59(†31.9)
147.5 *5*	0.074 *12*	^{142}Ba(10.6 m)	255.300(20.5), 1204.3(14.23), 895.2(13.9)
147.5		^{151}Ho(35.2 s)	527.4(63), 775.53(9.2), 209.5(5.69)
147.5 *2*	3.2 *4*	^{179}Yb(8.0 m)	592.1(75), 612.3(35.4), 381.4(9.6)
• 147.55 *4*	0.153 *9*	^{151}Pm(28.40 h)	340.08(23), 167.75(8.3), 275.21(6.8)
147.560 *3*	3.9 *3*	^{153}Dy(6.4 h)	80.723(11.10), 213.754(10.90), 99.659(10.51)
147.6 *3*	†2.8 *7*	^{155}Er(5.3 m)	110.12(†100), 241.5(†65), 234.0(†40.0)
147.60 *15*	0.09 *3*	^{195}Ir(3.8 h)	98.85(10), 684.88(9.4), 432.86(9)
147.6 *1*	4.45 *24*	^{200}Po(11.5 m)	671.0(34.0), 617.7(19.7), 434.4(9.3)
147.6 *3*	†4	^{223}Rn(23.2 m)	591.8(†100), 635.2(†76), 416.0(†55)
• 147.61 *15*	0.047 *16*	^{153}Tb(2.34 d)	212.038(31.0), 170.504(6.8), 109.758(6.4)
147.63 *17*	0.039 *10*	^{85}Br(2.90 m)	802.41(2.56), 924.63(1.63), 919.06(0.65)
147.63 *6*	0.052 *8*	^{155}Ho(48 m)	240.19(12.5), 136.30(5.00), 45.38(5)
147.63 *2*	37.7 *10*	^{200}Pb(21.5 h)	257.17(4.46), 235.63(4.30), 268.38(3.96)
147.63 *8*	0.011 *2*	^{213}Bi(45.59 m)	440.46(26.1), 292.80(0.429), 807.36(0.292)
147.64 *10*	0.77 *15*	^{168}Lu(6.7 m)	198.82(28), 979.22(20), 896.12(15)
• 147.64 *5*	0.205 *21*	^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
147.67 *12*	†2.5 *8*	^{131}Ce(10.3 m)	169.42(†100), 414.25(†68), 119.18(†44)
• 147.67 *3*	0.020 *8*	^{241}Cm(32.8 d)	471.805(71), 430.634(4.06), 132.413(3.86)
• 147.683 *25*	0.90 *8*	^{182}Re(64.0 h)	229.3220(26), 67.75001(22.2), 1121.3007(22.0)
147.7 *1*	0.92 *22*	^{158}Yb(1.49 m)	74.1(54), 252.6(1.8), 160.3(1.13)
147.7 *3*		^{170}Hf(16.01 h)	164.78(33), 620.7(23), 120.17(19)
147.7 *2*	†48 *6*	^{173}Ir(2.20 s)	49.6(†100), 285.0(†76), 296.4(†48)
147.7 *2*	†24 *3*	^{173}Ir(9.8 s)	49.6(†100), 285.0(†37), 91.6(†30)
147.7 *2*	†0.3 *2*	^{192}Bi(37 s)	853.8(†100.0), 501.8(†80), 504.3(†39)
147.7 *5*	0.21	^{212}Fr(20.0 m)	124.2(1.77), 84.1(0.63), 71.7(0.55)
147.73 *20*	0.17	^{113}Pd(93 s)	95.74(3.3), 643.7(3.0), 739.63(2.4)
147.73 *1*	†4.3×10^3 *4*	^{157}Ho(12.6 m)	279.97(†47600), 341.16(†37000), 193.41(†15200)
147.76 *3*	30.1 *9*	^{81}Sr(22.3 m)	153.54(33.8), 443.34(17.5), 188.27(15.4)
147.79 *3*	1.28 *25*	^{66}Ge(2.26 h)	43.89(28.7), 381.85(28), 272.97(10.4)
147.80 *22*	71 *4*	^{92}Tc(4.23 m)	1509.48(101), 773.04(100), 329.71(79.9)
147.8 *1*	14.8 *13*	^{105}Mo(35.6 s)	85.4(25.0), 76.50(19.3), 160.5(9.5)
147.8	1.3	^{134}Nd(8.5 m)	163.2(58), 288.9(13), 216.8(12)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
147.8 *2*	†100 *15*	^{181}Hg(3.6 s)	42.5(†25), 1986.7(†17), 185.0(†11)
147.9 *1*	0.12 *4*	^{107}Tc(21.2 s)	102.70(21.0), 177.00(9.2), 106.31(7.6)
147.9 *2*	0.013 *3*	^{112}Ag(3.130 h)	617.27(43), 1387.67(5.4), 606.49(3.1)
147.9 *1*	0.62 *8*	^{139}Nd(5.50 h)	113.94(40), 737.96(35), 982.2(26.4)
147.9 *1*	†5.0 *3*	^{230}Ra(93 m)	72.0(†100), 63.0(†35.4), 202.8(†27.3)
148.0 *3*	>0.31	^{148}Pr(2.27 m)	301.702(61), 1357.78(5.5), 1023.18(4.8)
148.0 *2*	†100 *13*	^{177}Pt(11 s)	85.4(†62), 223.1(†52), 157.2(†24)
148.0 *2*		^{181}Au(11.4 s)	
• 148.013 *17*	0.040 *8*	^{152}Eu(13.542 y)	121.7824(28.4), 1408.011(20.87), 964.131(14.34)
• 148.028 *4*	0.013 *4*	^{200}Tl(26.1 h)	367.943(87), 1205.717(29.9), 579.298(13.8)
148.1 *1*	8.1 *6*	^{104}Sn(20.8 s)	132.7(56), 912.6(42), 401.2(16.2)
148.12 *3*	0.134 *11*	^{109}Ru(34.5 s)	206.29(22.0), 225.98(19.6), 1929.05(13.7)
148.15 *3*	0.23 *7*	^{161}Er(3.21 h)	826.6(3.0), 211.15(12.2), 592.6(3.7)
148.15 *4*	†14.5 *11*	^{225}Fr(4.0 m)	182.3(†100), 31.50(†91), 225.1(†55)
• 148.15 *4*	0.88 *6*	^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
• 148.156 *8*	0.0183 *18*	^{229}Pa(1.50 d)	118.968(0.130), 146.345(0.098), 117.159(0.047)
• 148.156 *8*	0.00033 *5*	^{233}U(1.592×10^5 y)	42.44(0.0862), 97.134(0.020), 54.699(0.0182)
148.19 *3*	3.76 *19*	^{102}Mo(11.3 m)	211.66(3.8), 223.83(1.44), 359.9(0.27)
148.193 *27*	28.3 *5*	^{103}Ag(65.7 m)	118.72(31.2), 266.86(13.3), 1273.83(9.3)
• 148.2		^{146}Eu(4.59 d)	747.2(98), 633.03(43), 634.07(37)
148.2 *2*		^{171}Hf(12.1 h)	122.0(†100), 662.2(†83), 347.18(†47)
148.3 *3*	1.05 *16*	^{118}Cs(14 s)	337.4(100), 472.8(37.4), 586.6(15.4)
148.3	†929 *51*	^{177}Ir(30 s)	183.6(†1010), 75.6(†>900), 88.1(†>300)
148.394 *6*	0.11 *6*	^{167}Ho(3.1 h)	346.547(56), 321.336(23.5), 237.873(5.0)
148.4 *3*	0.17 *4*	^{149}Dy(4.20 m)	100.8(15.2), 789.4(11.8), 1776.3(11.1)
148.5 *3*	0.14 *3*	^{100}Cd(49.1 s)	936.55(66), 139.71(6.7), 582.5(6.3)
148.5	0.18 *9*	^{225}Th(8.72 m)	321.4(23), 246.0(5.06), 359.0(4.1)
148.52 *12*	0.16 *6*	^{181}Os(105 m)	238.75(44), 826.77(20), 118.03(12.9)
• 148.567 *10*	309000 *3*	^{241}Pu(14.35 y)	103.680(†69400), 77.10(†35100), 159.955(†900)
• 148.59 *5*	0.054 *5*	^{151}Pm(28.40 h)	340.08(23), 167.75(8.3), 275.21(6.8)
148.612 *4*	2.62 *9*	^{122}Xe(20.1 h)	350.065(7.80), 416.633(1.87), 90.596(0.563)
• 148.650 *1*	2.648 *23*	^{155}Tb(5.32 d)	86.545(32.0), 105.305(25), 180.103(7.45)
148.696 *10*	3.9 *3*	^{164}Tb(3.0 m)	168.838(25.4), 754.80(23.3), 215.07(21)
148.7	0.085 *14*	^{146}Ba(2.22 s)	140.7(20.2), 251.2(19.6), 121.2(14.2)
• 148.7		^{185}Os(93.6 d)	646.116(78.0), 874.813(6.29), 880.523(5.17)
148.8		^{99}Y(1.470 s)	121.761(33), 724.30(14.9), 536.2(6.6)
148.8 *1*	1.18 *17*	^{129}Sn(6.9 m)	1161.31(56.0), 1128.44(50), 760.8(16.8)
• 148.8	>0.011	^{172}Hf(1.87 y)	23.9331(20.3), 125.812(11.3), 67.35(5.3)
148.8 *3*	†7	^{177}Os(2.8 m)	84.7(†100), 125.4(†63), 195.8(†61)
148.8 *4*	1.25 *25*	^{183}Lu(58 s)	1125.3(25.0), 1056.8(16.5), 168.1(7.5)
148.8 *2*	0.22 *8*	^{202}Pb(3.53 h)	490.47(9.1), 459.72(8.6), 389.94(6.2)
• 148.8 *2*	0.0053 *16*	^{205}Bi(15.31 d)	1764.36(1.368), 703.44(31), 987.62(0.585)
148.83 *8*	0.0009 *4*	^{137}Ce(9.0 h)	447.15(1.8), 10.6(0.8), 436.59(0.265)
• 148.84 *3*	1.75 *13*	^{182}Re(64.0 h)	229.3220(26), 67.75001(22.2), 1121.3007(22.0)
148.9 *2*	49	^{123}Xe(2.08 h)	178.1(14.9), 330.2(8.6), 1093.4(2.79)
148.918 *11*	0.357 *14*	^{151}Tb(17.609 h)	287.357(28.3), 251.863(26.3), 108.088(24.3)
148.96 *36*	0.14 *4*	^{137}Nd(38.5 m)	75.5(17.0), 580.6(13), 306.60(10.0)
149.0 *3*	0.17 *7*	^{61}Zn(89.1 s)	475.0(16.85), 1660.5(7.80), 970.0(2.57)
149.0 *3*	4.9 *3*	^{158}Sm(5.30 m)	189.4(15.2), 363.6(12.4), 324.5(10.6)
149		^{186}Ir(16.64 h)	296.911(64.0), 137.155(42), 434.849(34.4)
149.0 *1*	9.0 *9*	^{221}Ra(28 s)	93.1(2.1), 174.1(1.6), 320(0.7)
149.010 *5*	0.97 *9*	^{153}Dy(6.4 h)	80.723(11.10), 213.754(10.90), 99.659(10.51)
149.05 *8*	†1.03 *5*	^{129}Ba(2.17 h)	182.30(†100), 1459.1(†50.0), 202.38(†33.7)
149.10 *7*	1.75 *19*	^{105}Ru(4.44 h)	724.21(47), 469.37(17.5), 676.36(15.7)

• $t_{1/2}$>1 d

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
149.1 *1*	6.9 *6*	^{136}Nd(50.65 m)	108.90(32), 40.2(18.9), 574.8(10.4)
149.1 *3*	0.28 *8*	^{141}Sm(22.6 m)	196.88(74), 431.6(40.4), 777.6(20.3)
149.1 *2*	0.019 *10*	^{183}Hf(1.067 h)	783.754(66), 73.174(38), 459.069(27)
• 149.1 *2*	0.020 *3*	^{252}Es(471.7 d)	52.33(0.55), 64.42(0.274), 418.5(0.220)
149.16 *9*	0.56 *8*	^{177}W(135 m)	115.65(50), 426.98(13.2), 1036.4(10.3)
149.17	3.6 *7*	^{175}W(35.2 m)	270.25(12.6), 166.69(9.0), 121.16(1.8)
149.2	1.1	^{133}Pr(6.5 m)	134.3(14), 74.0(10), 315.6(10)
149.2 *2*	0.00065 *6*	^{255}Fm(20.07 h)	81.477(0.81), 58.477(0.67), 80.92(0.27)
149.24 *4*	0.125 *13*	^{155}Ho(48 m)	240.19(12.5), 136.30(5.00), 45.38(5)
• 149.3 *2*	0.40 *20*	^{126}Sb(12.46 d)	695.03(100), 666.331(100), 414.81(83.3)
• 149.3 *3*	0.101 *25*	^{131}Te(30 h)	773.67(49.9), 852.21(27.0), 793.75(18.10)
149.3 *3*	†1.3 *5*	^{171}Hf(12.1 h)	122.0(†100), 662.2(†83), 347.18(†47)
149.3 *3*	†0.54 *19*	^{198}Tl(1.87 h)	636.4(†202), 411.8044(†202), 587.2(†185)
149.3	†13	^{224}Ac(2.9 h)	156.4(†100), 140.8(†55), 261.6(†28)
149.3 *1*	0.150 *16*	^{227}Fr(2.47 m)	90.035(39), 585.804(29.5), 64.267(14.5)
149.32 *8*	1.25 *13*	^{184}Pt(17.3 m)	154.90(31), 191.97(27), 548.36(23.1)
149.34 *10*	0.670 *23*	^{79}Rb(22.9 m)	688.1(23), 182.77(19.2), 143.41(13.9)
149.36 *20*	0.029	^{119}Te(16.03 h)	644.01(84), 699.85(10.1), 1749.65(3.95)
• 149.42 *3*	0.06 *5*	^{246}Pu(10.84 d)	43.81(25.0), 223.75(23.5), 179.94(9.7)
• 149.44 *3*	0.90 *8*	^{182}Re(64.0 h)	229.3220(26), 67.75001(22.2), 1121.3007(22.0)
149.6 *1*	6.0 *3*	^{130}Sn(3.72 m)	192.5(70), 779.8(59), 70.0(35.5)
149.6 *2*	1.4 *3*	^{169}Ho(4.7 m)	788.4(21.2), 853.0(11.2), 760.8(10)
149.6 *4*	0.42 *7*	^{186}Pt(2.0 h)	276.7(0), 611.5(6.0), 635.6(>3.8)
149.6 *3*	0.071 *24*	^{204}Bi(11.22 h)	899.15(98), 374.72(82), 984.02(59)
149.61 *1*	0.326 *15*	^{151}Nd(12.44 m)	116.80(43.4), 255.68(16.4), 1180.89(14.8)
• 149.63 *5*	0.0045 *7*	^{171}Lu(8.24 d)	739.78(47.8), 19.394(13.7), 667.404(11.04)
• 149.65 *6*	0.029 *5*	^{165}Tm(30.06 h)	242.917(35.5), 47.155(16.9), 297.369(12.71)
149.697 *7*	0.106 *12*	^{207}Po(5.80 h)	992.33(59.3), 742.64(28.2), 911.79(16.95)
149.7 *4*	0.031 *7*	^{63}Fe(6.1 s)	994.8(14.0), 1427.2(4.6), 1299.0(1.23)
149.716 *5*	69	^{131}Te(25.0 m)	452.323(18.18), 1146.96(4.95), 492.66(4.826)
• 149.716 *5*	6.6 *9*	^{131}Te(30 h)	773.67(49.9), 852.21(27.0), 793.75(18.10)
149.72 *15*	2.14 *12*	^{74}Kr(11.50 m)	89.65(31), 203.0(18.0), 296.67(9.9)
• 149.735 *3*	48.2 *3*	^{149}Gd(9.28 d)	298.634(28.6), 346.651(23.9), 748.601(8.22)
149.790 *8*	0.26 *16*	^{149}Pr(2.26 m)	138.447(11.0), 165.087(9.9), 108.520(9.5)
149.8 *4*	1.71 *19*	^{74}Zn(96 s)	56.7(70), 49.4(33.4), 143.5(21.7)
• 149.83 *12*	0.000117 *18*	^{233}U(1.592×10^5 y)	42.44(0.0862), 97.134(0.020), 54.699(0.0182)
149.832 *7*	0.026	^{174}Tm(5.4 m)	366.526(92), 992.128(87), 272.918(86)
149.854 *3*	0.59 *5*	^{109}Rh(80 s)	326.868(54), 426.135(7.7), 178.034(7.6)
• 149.858 *22*	0.787 *17*	^{189}Re(24.3 h)	216.663(5.50), 219.395(4.54), 245.09(3.5)
• 149.858 *22*	0.085 *6*	^{189}Ir(13.2 d)	245.09(6), 69.537(3.5), 59.053(1.20)
149.88 *3*	0.072 *21*	^{234}Pa(6.70 h)	131.30(18), 946.00(13.4), 883.24(9.6)
149.9	1.1	^{147}Ba(0.893 s)	167.4(11), 105.2(4.8), 196.1(4.8)
149.93 *9*	4.3 *3*	^{77}Rb(3.75 m)	66.52(57), 178.99(22.2), 393.37(9.7)
150.0 *1*	†12.0 *12*	^{105}Nb(2.95 s)	94.8(†100), 246.9(†79), 309.9(†41.9)
150.0 *5*	†>0.8	^{183}Hg(9.4 s)	60.5(†100), 159.91(†21), 172.70(†17)
150 *10*		^{201}Pt(2.5 m)	1760, 230, 70
150.0 *2*	0.07 *3*	^{221}Fr(4.9 m)	218.19(11.6), 410.7(0.14), 99.5(0.11)
150	†14	^{228}Pa(22 h)	95(†100), 310(†42), 240(†23)
• 150 *2*	0.020 *3*	^{254}Es(275.7 d)	63.0(2.0), 316(0.15), 304(0.07)
150.0 *2*	†6	^{256}Es(7.6 h)	861.8(†100), 231.1(†61), 172.6(†49)
150.04 *2*	4.5 *3*	^{221}Rn(25 m)	186.38(21.6), 216.90(2.6), 111.54(2.29)
• 150.04 *2*	0.80 *3*	^{225}Ac(10.0 d)	99.91(1.01), 99.63(0.62), 188.00(0.54)
150.04 *3*	†0.8 *2*	^{225}Fr(4.0 m)	182.3(†100), 31.50(†91), 225.1(†55)

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
• 150.04 *3*	>0.06	^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
• 150.04 *3*	†7.40×10^5 *15*	^{241}Am(432.2 y)	59.537(†60), 26.345(†1000×10^9), 33.195(†6000×10^8)
150.05 *2*	†1.76×10^3 *19*	^{157}Ho(12.6 m)	279.97(†47600), 341.16(†37000), 193.41(†15200)
• 150.059 *3*	10.8 *5*	^{232}Pa(1.31 d)	969.315(41.6), 894.351(19.8), 453.655(8.61)
150.09 *6*	0.050 *13*	^{155}Ho(48 m)	240.19(12.5), 136.30(5.00), 45.38(5)
• 150.1 *4*	0.0090 *22*	^{151}Pm(28.40 h)	340.08(23), 167.75(8.3), 275.21(6.8)
150.11 *15*	0.17 *4*	^{195}Ir(3.8 h)	98.85(10), 684.88(9.4), 432.86(9)
150.15 *10*	18.0 *10*	^{102}Sr(69 ms)	243.80(53), 93.89(13.4), 253.95(12.6)
• 150.16 *17*	†0.9 *7*	^{227}Th(18.72 d)	235.971(†813), 50.13(†528), 256.25(†463)
• 150.20 *4*	†3.8×10^3 *4*	^{134}Ce(75.9 h)	162.306(†230000), 130.414(†209000), 39.08(†>150000)
• 150.21 *3*	0.51 *5*	^{182}Re(64.0 h)	229.3220(26), 67.75001(22.2), 1121.3007(22.0)
150.3 *3*	0.060 *15*	^{117}Cs(8.4 s)	204.8(15.0), 29.7(9.9), 205.6(6.8)
150.3 *2*		^{133}Ce(4.9 h)	477.22(39), 510.36(20.7), 58.39(19.2)
150.3 *2*	0.12 *3*	^{185}Ta(49.4 m)	177.59(25.7), 173.68(22.6), 65.86(3.9)
150.3 *2*	†0.6 *3*	^{192}Bi(37 s)	853.8(†100.0), 501.8(†80), 504.3(†39)
150.39	0.030 *6*	^{133}I(20.8 h)	529.872(87.0), 875.329(4.51), 1298.223(2.35)
150.39 *8*	0.33 *7*	^{205}Po(1.66 h)	872.39(37), 1001.21(28.8), 849.83(25.5)
150.392 *3*	20.3 *11*	^{177}Yb(1.911 h)	1080.21(5.6), 1241.2(3.47), 121.6211(3.42)
150.4 *1*		^{111}Tc(0.30 s)	104.0
150.4 *2*	0.10	^{140}Sm(14.82 m)	225.5(>10), 225.4(10), 140.0(5.0)
150.4 *1*	†100	^{156}Nd(5.47 s)	157.3(†78), 84.6(†63), 274.0(†36)
150.4 *1*	3.0 *6*	^{157}Er(18.65 m)	53.05(24), 391.32(14.2), 121.57(10.1)
150.40 *3*	0.037 *10*	^{167}Yb(17.5 m)	113.34(55.3), 106.18(22.5), 176.25(21)
• 150.4	>0.011	^{172}Hf(1.87 y)	23.9331(20.3), 125.812(11.3), 67.35(5.3)
150.4 *3*	†15.2 *16*	^{233}Pu(20.9 m)	235.4(†100), 534.8(†90.2), 500.3(†38.6)
150.46 *15*	7.8 *3*	^{108}Ru(4.55 m)	164.95(28.0), 91.33(2.38), 73.67(1.1)
150.5 *2*	>0.19	^{76}Kr(14.8 h)	315.7(39), 270.2(21.1), 45.48(19.5)
150.5 *3*	0.113 *14*	^{104}Cd(57.7 m)	83.7(47), 709.6(19.5), 559.1(6.3)
150.5 *6*	†44 *6*	^{118}Xe(6 m)	53.5(†100), 60.0(†82), 119.9(†76)
150.5 *3*	†3	^{135}Pm(49 s)	198.5(†100), 207.2(†70), 463.5(†62)
• 150.5		^{188}Ir(41.5 h)	155.032(29.7), 2214.62(18.7), 632.99(18)
150.51 *5*	†100	^{159}Lu(12.1 s)	187.5(†25), 369.3(†19)
150.58 *8*	0.67 *10*	^{167}Dy(6.20 m)	569.7(48), 259.33(27.9), 310.26(25.0)
150.6 *15*	0.038 *11*	^{77}Ge(11.30 h)	264.44(54), 211.03(30.8), 215.50(28.6)
150.60 *10*	30 *2*	^{103}Zr(1.3 s)	248(100), 164.05(94), 126.30(84)
150.6 *1*	66 *7*	^{132}Sb(4.10 m)	696.8(100), 973.9(100), 103.4(35)
150.6 *4*	0.00216 *15*	^{223}Fr(21.8 m)	50.13(36.0), 79.72(9.1), 234.81(3.0)
• 150.630 *2*	0.0299 *18*	^{155}Tb(5.32 d)	86.545(32.0), 105.305(25), 180.103(7.45)
150.67 *9*	0.25 *4*	^{200}Pt(12.5 h)	76.21(13), 135.90(3.24), 243.71(2.49)
150.7 *2*	0.29 *8*	^{119}Ag(2.1 s)	626.4(13), 366.2(12.1), 399.1(10.9)
150.74 *5*	†45 *5*	^{163}Lu(238 s)	163.08(†100), 54.00(†88), 396.34(†63)
150.8 *5*	†11.1 *12*	^{103}Mo(67.5 s)	83.4(†100), 423.91(†69), 45.8(†57)
150.8 *7*	0.44 *9*	^{104}Tc(18.3 m)	358.0(89), 530.5(15.6), 535.1(14.7)
150.80 *2*	0.33 *11*	^{133}Te(55.4 m)	912.671(55.28), 647.51(19.4), 863.955(15.6)
150.80	0.66 *6*	^{133}Te(55.4 m)	912.671(55.28), 647.51(19.4), 863.955(15.6)
150.8 *1*	0.208 *19*	^{186}Hg(1.38 m)	112.1(63), 251.5(55), 191.6(3.7)
150.81 *14*	0.0079 *15*	^{246}Am(25.0 m)	1078.86(27.7), 798.80(25), 1062.04(17.1)
• 150.824 *17*	0.0028	^{111}In(2.8049 d)	245.422(94), 171.28(90)
• 150.894 *5*	0.564 *14*	^{165}Tm(30.06 h)	242.917(35.5), 47.155(16.9), 297.369(12.71)
150.9 *5*	†2.8 *7*	^{106}Mo(8.4 s)	465.70(†100), 54.00(†54), 618.60(†25)
150.9 *3*	0.041 *15*	^{161}Er(3.21 h)	826.6(3.0), 211.15(12.2), 592.6(3.7)
• 150.93 *2*	0.076 *10*	^{235}U(7.038×10^8 y)	185.712(57.2), 143.764(10.96), 163.358(5.08)
150.97 *4*	†0.30 *6*	^{158}Ho(11.3 m)	218.21(†100.0), 98.91(†70), 945.7(†37)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
150.970 *18*	0.175 *13*	^{183}Os(13.0 h)	381.768(89.6), 114.463(20.63), 167.844(8.81)
151.0 *10*	0.020 *8*	^{85}Y(4.86 h)	231.67(22.8), 2123.8(5.0), 767.40(3.6)
151 *1*	1.5 *3*	^{102}Nb(4.3 s)	296.611(79), 1633.10(41), 551.54(30)
151.0 *2*	0.73 *25*	^{104}Mo(60 s)	68.8(55), 69.7(17.8), 36.3(14)
151.1		^{26}Ne(197 ms)	233.6, 82.5
151.1 *4*	12.5 *13*	^{73}Kr(27.0 s)	177.8(65.8), 62.5(19.1), 454.8(15)
151.1 *1*	0.17 *6*	^{131}Te(25.0 m)	149.716(69), 452.323(18.18), 1146.96(4.95)
• 151.1 *5*		^{146}Eu(4.59 d)	747.2(98), 633.03(43), 634.07(37)
151.1 *3*	†4.6 *8*	^{159}Yb(1.58 m)	166.16(†500), 177.12(†159), 390.20(†113)
• 151.10 *4*	0.44 *5*	^{182}Re(64.0 h)	229.3220(26), 67.75001(22.2), 1121.3007(22.0)
151.1 *3*	†1.3 *3*	^{203}At(7.4 m)	639.4(†100), 641.5(†55.8), 738.1(†38.4)
151.153 *11*	0.16 *3*	^{184}Ta(8.7 h)	414.03(72), 252.848(43), 920.932(32.0)
• 151.153 *11*	0.049 *5*	^{184}Re(169 d)	252.848(10.7), 216.548(9.43), 920.932(8.14)
151.159 *6*	75.0 *4*	^{85}Kr(4.480 h)	129.820(0.300), 450.85(0.011), 731.812(0.007)
• 151.159 *6*	2.2×10^{-6} *13*	^{85}Kr(10.756 y)	514.0067(0.43), 362.81(2.2×10^{-6}), 129.820(>4.3×10^{-7})
• 151.159 *6*	0.0012 *9*	^{85}Sr(64.84 d)	514.0067(96), 868.5(0.0120), 362.81(>0.0010)
151.159 *6*	†1272 *30*	^{85}Sr(67.63 m)	129.820(†15), 731.812(†1.45), 450.85(†1.06)
151.177 *21*	0.30 *21*	^{227}Fr(2.47 m)	90.035(39), 585.804(29.5), 64.267(14.5)
151.19 *10*	8.92 *18*	^{190}Pb(1.2 m)	942.20(34), 598.3(8.0), 142.2(7)
• 151.2 *2*	0.10 *4*	^{131}Te(30 h)	773.67(49.9), 852.21(27.0), 793.75(18.10)
151.2 *3*	†2.5 *5*	^{148}Er(4.6 s)	1653.4(†100), 387.7(†88), 197.1(†71)
151.2 *3*	0.066 *24*	^{178}Lu(28.4 m)	93.180(6.0), 1340.8(3.22), 1310.05(1.40)
151.2 *3*	0.0048 *10*	^{178}Ta(9.31 m)	93.180(1.78), 1350.68(1.18), 1340.8(1.027)
151.2 *2*	0.61 *5*	^{225}Th(8.72 m)	321.4(23), 246.0(5.06), 359.0(4.1)
151.3 *1*	0.0110 *17*	^{121}I(2.12 h)	212.189(84), 532.08(6.07), 598.74(1.47)
151.3		^{194}Bi(92 s)	
• 151.3 *1*	0.073 *7*	^{252}Es(471.7 d)	52.33(0.55), 64.42(0.274), 418.5(0.220)
151.35 *20*	†0.86 *19*	^{189}Hg(7.6 m)	320.99(†100), 78.21(†63), 565.42(†48)
151.38 *7*	1.33 *7*	^{205}Po(1.66 h)	872.39(37), 1001.21(28.8), 849.83(25.5)
151.4 *2*	>0.07	^{139}Nd(5.50 h)	113.94(40), 737.96(35), 982.2(26.4)
151.4 *2*	0.082 *11*	^{209}At(5.41 h)	545.0(91), 781.9(83.5), 790.2(63.5)
• 151.4 *4*	0.020	^{241}Cm(32.8 d)	471.805(71), 430.634(4.06), 132.413(3.86)
151.414 *20*	0.009	^{233}Th(22.3 m)	86.477(2.7), 29.374(2.5), 459.222(1.4)
• 151.414 *20*	0.232 *12*	^{237}Np(2.14×10^{6} y)	29.374(15.0), 86.477(12.4), 94.66(0.6)
151.5 *3*		^{122}Ba(1.95 m)	550.7, 388.7, 231.0
151.5 *2*	5.6 *6*	^{169}Ho(4.7 m)	788.4(21.2), 853.0(11.2), 760.8(10)
151.5 *2*	†1.5 *3*	^{171}Hf(12.1 h)	122.0(†100), 662.2(†83), 347.18(†47)
151.5 *1*	†1.77 *18*	^{230}Ra(93 m)	72.0(†100), 63.0(†35.4), 202.8(†27.3)
• 151.55 *6*	0.040 *7*	^{172}Lu(6.70 d)	1093.657(62.5), 900.724(29.8), 181.528(20.6)
151.553 *25*	0.126 *16*	^{227}Fr(2.47 m)	90.035(39), 585.804(29.5), 64.267(14.5)
151.6 *2*	15.0 *14*	^{118}Pd(1.9 s)	125.4(34), 125.4(34), 224.2(20.1)
• 151.6 *3*	0.0115 *14*	^{148}Eu(54.5 d)	550.284(98.5), 629.987(71.9), 611.293(20.5)
151.6 *1*	†3.9 *7*	^{155}Tm(21.6 s)	226.8(†100), 531.7(†20), 88.1(†17)
151.6 *1*	†22 *5*	^{155}Tm(45 s)	88.1(†100), 323.2(†65), 507.0(†40)
• 151.6 *3*	0.026	^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
• 151.61	0.012	^{153}Sm(46.27 h)	103.1807(31.4), 69.67340(4.85), 97.4316(0.847)
• 151.61	0.0033 *6*	^{153}Gd(241.6 d)	97.4316(30), 103.1807(21.4), 69.67340(2.54)
151.7		^{225}Rn(4.5 m)	207.2, 178.7, 169.7
151.703 *20*	800	^{154}Nd(25.9 s)	799.55(†600), 180.693(†510), 83.697(†410)
151.73 *14*	†100 *13*	^{102}Y(0.36 s)	326.64(†53), 1091.3(†42), 579.4(†35)
151.73 *14*	†100 *4*	^{102}Y(0.30 s)	1211.08(†40), 1059.21(†29), 743.01(†17)
151.77		^{138}Nd(5.04 h)	325.76(2.84), 199.50(0.53), 341.65(0.40)
• 151.79 *2*	0.364 *18*	^{100}Pd(3.63 d)	84.02(45), 74.78(36.5), 126.05(8.10)
• 151.79 *10*	0.078 *16*	^{153}Tb(2.34 d)	212.038(31.0), 170.504(6.8), 109.758(6.4)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
151.8 *3*	2.79 *15*	^{113}Rh(2.72 s)	189.7(17.0), 409.3(15.9), 219.6(3.88)
151.8 *2*	†91 *15*	^{174}Er(3.3 m)	100.4(†100), 708.4(†93), 766.9(†92)
151.8 *9*	0.24 *7*	^{200}Po(11.5 m)	671.0(34.0), 617.7(19.7), 434.4(9.3)
• 151.83 *10*	0.055 *7*	^{194}Au(38.02 h)	328.455(60), 293.545(10.2), 1468.91(6.3)
151.87 *9*	0.048 *7*	^{183}Ir(58 m)	392.52(10.4), 228.70(6.9), 87.67(5.6)
151.9		^{43}Ti(509 ms)	2288.2(4.40), 845.2(2.77), 2458.5(0.91)
151.9 *2*	0.019 *9*	^{98}Nb(51.3 m)	787.374(93), 722.645(73.8), 1168.830(17.8)
151.93 *8*	†0.31 *5*	^{129}Ba(2.17 h)	182.30(†100), 1459.1(†50.0), 202.38(†33.7)
151.96 *3*	0.227 *18*	^{167}Lu(51.5 m)	29.66(14.4), 239.22(8.6), 213.19(3.6)
151.98 *15*	0.106 *11*	^{134}I(52.6 m)	847.025(95.4), 884.090(64.9), 1072.547(15.0)
151.98 *12*		^{223}Th(0.60 s)	97.10, 88.00, 75.2
152.0 *5*	5.5 *5*	^{68}Cu(3.75 m)	1339.96(12.0), 1077.35(12), 1041.3(9.6)
152	0.47	^{204}At(9.2 m)	684.341(95), 516.318(90), 426.253(67.5)
152	>0.11	^{209}Rn(28.5 m)	408.32(50.3), 745.78(22.8), 337.45(14.5)
152 *3*	†0.21 *5*	^{228}U(9.1 m)	98.0(†1.8), 246(†0.42), 185.7(†0.32)
• 152.0 *1*	0.00053 *10*	^{229}Pa(1.50 d)	40.09(0.104), 64.70(0.045), 75.12(0.035)
• 152.02 *4*	0.0259 *22*	^{189}Re(24.3 h)	216.663(5.50), 219.395(4.54), 245.09(3.5)
152.1		^{147}La(4.015 s)	117.718(12), 186.320(6.48), 438.30(5.04)
152.1 *3*	0.19 *10*	^{147}La(4.015 s)	117.718(12), 186.320(6.48), 438.30(5.04)
152.14 *20*	0.062 *22*	^{199}Pb(90 m)	366.90(44.2), 353.39(9.5), 1135.04(7.8)
152.2 *5*	0.040 *15*	^{163}Yb(11.05 m)	860.28(10.1), 63.62(6.5), 123.21(1.98)
152.22 *7*	7.2 *5*	^{197}Tl(2.84 h)	425.84(12.9), 1411.34(4.5), 577.97(4.4)
152.23 *9*	0.19 *6*	^{177}W(135 m)	115.65(50), 426.98(13.2), 1036.4(10.3)
152.3 *3*	†0.5 *2*	^{131}Pr(1.53 m)	266.13(†100), 72.82(†64), 387.56(†38)
152.3	†15	^{177}Ir(30 s)	183.6(†1010), 148.3(†929), 75.6(†>900)
152.3 *1*	0.097 *22*	^{188}Hg(3.25 m)	66.7(63), 190.1(4.40), 82.7(2.6)
• 152.31 *5*	0.045 *7*	^{206}Po(8.8 d)	1032.26(32.9), 511.36(24.1), 286.410(23.8)
• 152.315 *17*	0.0083 *3*	^{181}W(121.2 d)	6.238(1.03), 136.266(0.0311)
152.321 *19*	0.266 *21*	^{204}Po(3.53 h)	883.984(29.9), 270.068(27.8), 1016.31(24.1)
152.375 *13*	1.06 *6*	^{159}Ho(33.05 m)	121.012(36.2), 131.973(23.6), 309.594(17.2)
152.38 *7*	0.147 *18*	^{205}At(26.2 m)	719.30(31), 669.41(8.6), 628.88(5.6)
152.4 *1*	†5.8 *6*	^{171}Ta(23.3 m)	49.6(†100), 506.4(†54), 501.8(†22.6)
152.43 *6*	4.2 *4*	^{77}Zn(2.08 s)	189.49(28.1), 473.94(19.7), 1832.0(12.4)
• 152.4308 *2*	6.93 *5*	^{182}Ta(114.43 d)	67.75001(41.2), 1121.3007(34.9), 1221.4066(26.98)
152.4308 *2*	7.0 *6*	^{182}Re(12.7 h)	67.75001(38.2), 1121.3007(32), 1221.4066(24.8)
• 152.4308 *2*	8.5 *5*	^{182}Re(64.0 h)	229.3220(26), 67.75001(22.2), 1121.3007(22.0)
• 152.48 *20*	0.047 *16*	^{153}Tb(2.34 d)	212.038(31.0), 170.504(6.8), 109.758(6.4)
152.49 *13*	1.43 *11*	^{166}Lu(1.41 m)	228.12(15), 102.38(13), 285.07(11.0)
152.6 *3*	0.5 *1*	^{128}Sb(9.01 h)	753.82(100), 743.22(100), 314.12(61)
152.6 *1*	0.122 *24*	^{161}Er(3.21 h)	826.6(3.0), 211.15(12.2), 592.6(3.7)
152.6 *5*	0.8 *4*	^{164}Tb(3.0 m)	168.838(25.4), 754.80(23.3), 215.07(21)
• 152.60 *3*	0.273 *9*	^{170}Lu(2.00 d)	84.2551(4.256), 1280.25(3.450), 2041.88(1.434)
152.6 *3*		^{207}Hg(2.9 m)	351.059(77), 997.1(69), 1637.1(30)
152.6		^{229}Ac(62.7 m)	164.522(†100), 569.1(†91), 261.92(†39)
• 152.6		^{233}U(1.592×10^5 y)	42.44(0.0862), 97.134(0.020), 54.699(0.0182)
152.63 *5*	0.22	^{221}Rn(25 m)	186.38(21.6), 150.04(4.5), 216.90(2.6)
• 152.63 *5*	0.0174 *22*	^{225}Ac(10.0 d)	99.91(1.01), 150.04(0.80), 99.63(0.62)
152.63 *2*	6.7 *4*	^{240}Np(61.9 m)	566.34(25.3), 973.9(23.8), 600.57(18.4)
152.63 *2*	>0.020	^{240}Np(7.22 m)	554.60(20.9), 597.40(11.7), 1496.9(1.33)
• 152.63 *2*	0.012 *3*	^{240}Am(50.8 h)	987.76(73.2), 888.80(25.1), 98.860(1.5)
• 152.63 *2*	<4.9×10^{-7}	^{244}Cm(18.10 y)	42.824(.0044100), 98.860(.0001470), 554.60(0.000079)
152.7 *5*	0.18 *4*	^{98}Y(0.548 s)	1223.0(36.0), 2941.3(16.7), 1590.9(14.7)
152.7 *2*	6.5 *6*	^{128}Sn(59.07 m)	482.3(59), 75.1(27.7), 557.3(16.5)
• 152.7 *5*		^{146}Eu(4.59 d)	747.2(98), 633.03(43), 634.07(37)

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
152.7 *3*	0.50 *8*	^{154}Ho(11.76 m)	334.6(84), 412.4(15.0), 873.4(12.5)
152.720 *2*	6.0 *4*	^{234}Pa(6.70 h)	131.30(18), 946.00(13.4), 883.24(9.6)
• 152.720 *2*	0.000937 *10*	^{238}Pu(87.74 y)	43.498(0.0395), 99.853(0.00735), 766.38(0.000022)
• 152.75 *6*	0.0014	^{242}Am(141 y)	49.367(0.19), 86.68(0.037), 109.69(0.024)
152.8		^{157}Eu(15.18 h)	63.929(23.0), 410.723(17.5), 370.509(11.0)
152.8 *1*	†6.1 *10*	^{185}Pt(33.0 m)	229.60(†100), 135.3(†80), 197.4(†74)
152.8		^{185}Pt(33.0 m)	229.60(†100), 135.3(†80), 197.4(†74)
152.8 *2*	†3.2 *10*	^{185}Hg(21.6 s)	222.8(†100.0), 258.7(†98), 212.5(†58)
152.8 *2*	2.23 *15*	^{251}Bk(55.6 m)	177.7(6), 130.1(3.4), 163.8(0.35)
• 152.8 *2*	0.91 *10*	^{251}Es(33 h)	177.7(2.4), 163.8(0.10), 34.0
152.8 *2*	0.0019	^{255}Fm(20.07 h)	81.477(0.81), 58.477(0.67), 80.92(0.27)
152.8 *2*	0.0002	^{255}Fm(20.07 h)	81.477(0.81), 58.477(0.67), 80.92(0.27)
152.82 *10*	†5.0 *15*	^{163}Lu(238 s)	163.08(†100), 54.00(†88), 396.34(†63)
152.85 *5*	0.98 *5*	^{144}Ba(11.5 s)	103.855(23.30), 430.48(18.3), 172.828(15.4)
152.90 *10*	0.83 *14*	^{102}Zr(2.9 s)	599.60(13.9), 535.30(10.6), 64.50(8.9)
152.9 *3*	0.0015 *4*	^{152}Eu(9.274 h)	841.586(14.6), 963.37(12.01), 121.7824(7.21)
152.9 *2*	0.0044 *15*	^{246}Am(25.0 m)	1078.86(27.7), 798.80(25), 1062.04(17.1)
152.9 *2*	25 *3*	^{246}Am(39 m)	679.0(53), 205.0(36), 756(13.3)
152.928 *2*	30.32 *11*	^{49}Cr(42.3 m)	90.639(53.20), 62.289(16.39), 1361.61(0.045)
152.942 *1*	0.65 *5*	^{109}Rh(80 s)	326.868(54), 426.135(7.7), 178.034(7.6)
153.0 *2*	8.9 *9*	^{65}Ga(15.2 m)	115.09(54), 61.20(11.4), 751.8(8.1)
• 153		^{127}Sb(3.85 d)	685.7(37), 473.0(25.7), 783.7(15.0)
153.0 *1*	0.051 *10*	^{161}Er(3.21 h)	826.6(3.0), 211.15(12.2), 592.6(3.7)
153.0 *4*	0.97 *9*	^{188}Tl(71 s)	412.7(88), 592.0(61), 504.2(23.3)
153 *5*		^{245}Am(2.05 h)	252.80(6), 240.86(0.34), 295.72(0.22)
153.074 *20*	0.31 *6*	^{174}Tm(5.4 m)	366.526(92), 992.128(87), 272.918(86)
153.09 *1*	†6.4×10^{3} *7*	^{157}Ho(12.6 m)	279.97(†47600), 341.16(†37000), 193.41(†15200)
153.1 *1*	0.086 *20*	^{142}Ba(10.6 m)	255.300(20.5), 1204.3(14.23), 895.2(13.9)
153.1	†16.2	^{158}Ho(21.3 m)	406.14(†100), 838.9(†84.3), 1484.1(†66.2)
• 153.1 *2*	5.0×10^{-5} *8*	^{233}U(1.592×10^{5} y)	42.44(0.0862), 97.134(0.020), 54.699(0.0182)
153.15 *5*	8.0 *5*	^{75}Kr(4.3 m)	132.43(67), 154.66(20.8), 88.29(3.44)
153.20 *15*	0.44 *6*	^{70}Se(41.1 m)	49.51(35.8), 426.15(29), 376.65(9.43)
153.22 *21*	2.6 *11*	^{181}Lu(3.5 m)	652.5(22.0), 205.94(16.1), 574.9(15.4)
• 153.246 *4*	†5.77 *18*	^{136}Cs(13.16 d)	818.514(†100), 1048.073(†80), 340.547(†42.3)
153.272 *15*	0.111 *16*	^{227}Fr(2.47 m)	90.035(39), 585.804(29.5), 64.267(14.5)
• 153.2843 *5*	16.9 *3*	^{177}Lu(160.4 d)	208.3664(57.7), 228.4838(37.0), 378.5029(29.7)
153.3 *3*	†47 *4*	^{164}Hf(111 s)	122.1(†100), 313.7(†22), 31.4(†12)
153.3 *1*	†100 *10*	^{180}Au(8.1 s)	524.3(†29), 257.6(†26), 861.3(†22.6)
153.3 *1*		^{181}Hg(3.6 s)	
153.37 *3*	0.046 *7*	^{155}Dy(9.9 h)	226.918(68.4), 184.564(3.37), 1089.8(>2.8)
153.37 *8*	3.00 *25*	^{161}Tm(33 m)	45.54(5.00), 1648.1(9.50), 84.40(9.4)
• 153.37 *10*	0.0050 *10*	^{237}Np(2.14×10^{6} y)	29.374(15.0), 86.477(12.4), 94.66(0.6)
153.39 *8*	0.35 *6*	^{148}Ba(0.607 s)	56.08(29.20), 133.53(3.88), 415.78(3.59)
153.4 *8*	0.27 *9*	^{104}Tc(18.3 m)	358.0(89), 530.5(15.6), 535.1(14.7)
153.4 *5*	0.06 *4*	^{181}Os(105 m)	238.75(44), 826.77(20), 118.03(12.9)
153.5 *3*	0.07 *3*	^{119}Cd(2.69 m)	292.9(36.8), 343.0(16.9), 1609.7(10.9)
153.5 *3*	0.0124 *25*	^{119}Cd(2.20 m)	1025.0(24.8), 2021.3(22.6), 720.7(17.9)
153.5 *1*	†6.3 *6*	^{169}Ta(4.9 m)	511.0(†20.6), 28.80(†18.3), 192.4(†8)
153.5 *5*	7.9 *22*	^{172}Ho(25 s)	133.6(36), 178.0(23), 757.2(18)
153.54 *3*	33.8 *10*	^{81}Sr(22.3 m)	147.76(30.1), 443.34(17.5), 188.27(15.4)
• 153.56 *4*	6.20 *3*	^{151}Gd(124 d)	243.28(5.60), 174.70(2.96), 21.531(2.85)
153.57 *20*	†0.62 *5*	^{184}Ir(3.09 h)	263.97(†100), 119.80(†45), 390.38(†38)
• 153.59 *3*	66 *3*	^{119}Te(4.70 d)	1212.73(66), 270.53(28.0), 1136.75(7.66)
153.6 *1*	†43 *4*	^{123}La(17 s)	92.5(†100), 937.3(†43), 120.9(†31)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
153.6 *2*	2.03 *21*	^{185}Ir(14.4 h)	254.4(13.3), 1828.8(10), 60.0(5.7)
153.6 *2*	0.066	^{233}Th(22.3 m)	86.477(2.7), 29.374(2.5), 459.222(1.4)
• 153.6 *2*		^{237}Np(2.14×10^{6} y)	29.374(15.0), 86.477(12.4), 94.66(0.6)
153.7 *1*	0.157 *19*	^{186}Hg(1.38 m)	112.1(63), 251.5(55), 191.6(3.7)
153.75 *15*	0.034 *7*	^{183}Hf(1.067 h)	783.754(66), 73.174(38), 459.069(27)
153.78 *20*	0.23 *10*	^{125}Cd(0.57 s)	1027.53(25.8), 1173.16(25.1), 736.65(12.6)
• 153.79 *5*	0.0046	^{242}Am(141 y)	49.367(0.19), 86.68(0.037), 109.69(0.024)
153.8 *3*	0.045 *9*	^{120}Xe(40 m)	25.1(30), 72.6(9), 178.1(6.8)
153.8 *10*		^{183}Hg(9.4 s)	87.4, 71.4
153.8 *2*	†8.8 *18*	^{187}Hg(1.9 m)	233.38(†100), 376.34(†38), 240.26(†33)
153.8 *2*	0.24 *3*	^{194}Pb(12.0 m)	581.82(18.8), 1519.45(16.4), 203.82(16.2)
153.803 *6*	0.0057 *4*	^{165}Dy(2.334 h)	94.700(3.58), 361.68(0.84), 633.415(0.568)
153.803 *6*	0.242 *7*	^{165}Dy(1.257 m)	515.467(1.53), 361.68(0.534), 95.931(0.039)
153.858 *3*	5.95 *13*	^{138}Xe(14.08 m)	258.411(31.5), 434.562(20.3), 1768.26(16.7)
153.86 *17*	0.022 *9*	^{183}Os(13.0 h)	381.768(89.6), 114.463(20.63), 167.844(8.81)
153.863 *2*	16 *3*	^{244}Am(10.1 h)	743.971(66), 897.848(28), 99.383(4.6)
153.9 *2*	15.2 *5*	^{121}Cs(155 s)	239.6(7.7), 427.1(3.63), 179.4(2.7)
153.9 *2*	1.17 *13*	^{121}Cs(122 s)	179.4(30.2), 196.0(24.1), 459.7(12.0)
153.9 *3*	1.0 *1*	^{150}Tb(5.8 m)	638.05(100), 650.4(70), 438.37(42)
153.9 *3*	0.072 *14*	^{150}Tb(3.48 h)	638.05(72), 496.3(14.8), 792.5(4.39)
153.9 *3*	0.08	^{170}Hf(16.01 h)	164.78(33), 620.7(23), 120.17(19)
153.92 *5*	0.86 *7*	^{221}Rn(25 m)	186.38(21.6), 150.04(4.5), 216.90(2.6)
• 153.92 *5*	0.187 *9*	^{225}Ac(10.0 d)	99.91(1.01), 150.04(0.80), 99.63(0.62)
153.977 *10*	0.74 *3*	^{228}Ac(6.15 h)	911.205(26.6), 968.971(16.2), 338.322(11.3)
153.977 *10*	0.38 *5*	^{228}Pa(22 h)	911.205(4.19), 463.005(1.250), 964.770(4.25)
• 154 *1*	>0.06	^{147}Nd(10.98 d)	91.105(28), 531.016(13.1), 319.411(1.95)
154.0	†43	^{220}Fr(27.4 s)	45.0(†100), 106.0(†72), 161.5(†65)
154.0 *3*	†3.2 *4*	^{244}Bk(4.35 h)	891.5(†100), 217.6(†88), 921.5(†19)
• 154	0.2	^{251}Cf(898 y)	176.6(17.7), 227.0(6.3), 285.0(1.4)
154.019 *6*	0.27 *7*	^{163}Tb(19.5 m)	351.138(26), 389.734(24.3), 494.534(23)
• 154.09 *4*	0.23 *8*	^{182}Re(64.0 h)	229.3220(26), 67.75001(22.2), 1121.3007(22.0)
154.15 *22*	0.28 *10*	^{105}In(5.07 m)	131.37(41), 260.21(15.7), 604.11(9.2)
154.18 *4*	0.059 *22*	^{164}Yb(75.8 m)	40.928(1.147), 675.41(0.38), 390.6(0.31)
154.198 *12*	2.57 *18*	^{205}At(26.2 m)	719.30(31), 669.41(8.6), 628.88(5.6)
154.198 *12*	0.0073 *12*	^{209}Rn(28.5 m)	143.166(0.0102), 384.61(0.0024), 230.12(0.00061)
154.2 *4*	3.01 *17*	^{86}Se(15.3 s)	2441.1(43.0), 2660.0(21.6), 48.3(15.4)
• 154.20	0.072 *14*	^{100}Pd(3.63 d)	84.02(45), 74.78(36.5), 126.05(8.10)
154.2 *2*	†4.7 *12*	^{105}Nb(2.95 s)	94.8(†100), 246.9(†79), 309.9(†41.9)
154.2 *1*	0.0084 *17*	^{121}I(2.12 h)	212.189(84), 532.08(6.07), 598.74(1.47)
154.2	0.16	^{147}Ce(56.4 s)	268.80(7), 92.9(4.7), 374.23(3.5)
• 154.21 *1*	5.62 *14*	^{223}Ra(11.435 d)	269.459(13.7), 323.871(3.93), 144.232(3.22)
154.22 *18*		^{156}Ho(56 m)	266.35(54.7), 137.83(51), 366.25(10.73)
• 154.23 *3*	0.00075 *19*	^{226}Ac(29 h)	230.37(27), 158.18(17.5), 72.20(0.56)
• 154.23 *3*	0.125 *7*	^{230}U(20.8 d)	72.20(0.60), 230.37(0.122), 158.18(0.070)
• 154.27 *20*	†5×10^{03}	^{241}Am(432.2 y)	59.537(†60), 26.345(†1000×10^{9}), 33.195(†6000×10^{8})
• 154.3 *5*	0.15 *7*	^{127}Sb(3.85 d)	685.7(37), 473.0(25.7), 783.7(15.0)
154.3	0.8	^{199}Po(4.13 m)	1002.19(19), 1034.3(16), 362.01(7)
154.31	†3	^{238}Pa(2.3 m)	1015.3(†<100), 1014.6(†<100), 635.18(†88)
154.336 *10*	†4.8 *4*	^{225}Fr(4.0 m)	182.3(†100), 31.50(†91), 225.1(†55)
• 154.336 *10*	0.770 *21*	^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
154.35 *10*	0.30 *5*	^{157}Tm(3.63 m)	455.00(9.3), 385.5(8.8), 348.40(8.4)
154.35 *6*	0.30 *7*	^{250}Es(8.6 h)	828.82(72), 303.41(21.6), 349.4(19.8)
154.35 *6*	0.0010 *3*	^{254}Fm(3.240 h)	99.163(0.031), 42.723(0.0130)
154.4	0.17	^{157}Er(18.65 m)	53.05(24), 391.32(14.2), 121.57(10.1)

• $t_{1/2}$>1 d

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
154.4 *3*	0.34 *3*	^{200}Po(11.5 m)	671.0(34.0), 617.7(19.7), 434.4(9.3)
154.48 *3*	71 *3*	^{111}Sb(75 s)	489.1(42), 1032.6(10.0), 755.4(5.1)
154.48 *14*	0.27 *10*	^{181}Re(19.9 h)	365.57(56), 360.70(20), 639.30(6.4)
154.5 *5*	0.29 *7*	^{98}Y(0.548 s)	1223.0(36.0), 2941.3(16.7), 1590.9(14.7)
154.508 *25*	0.204 *17*	^{166}Tm(7.70 h)	778.817(18.9), 2052.36(17.2), 184.410(16.1)
154.53 *4*	0.0158 *6*	^{187}W(23.72 h)	685.774(27.3), 479.531(21.8), 72.001(11.14)
• 154.57 *2*	47	^{146}Gd(48.27 d)	115.51(44.0), 114.71(44.0), 576.0(0.065)
154.6 *1*	0.48 *3*	^{142}Ba(10.6 m)	255.300(20.5), 1204.3(14.23), 895.2(13.9)
154.66 *9*	20.8 *10*	^{75}Kr(4.3 m)	132.43(67), 153.15(8.0), 88.29(3.44)
154.7 *1*	4.9 *5*	^{104}Sn(20.8 s)	132.7(56), 912.6(42), 401.2(16.2)
154.7 *3*	†2.6 *8*	^{155}Nd(8.9 s)	180.574(†100), 418.99(†75), 955.08(†50)
154.7 *3*	†1.7 *2*	^{182}Ir(15 m)	273.23(†100), 126.79(†77), 236.3(†21.0)
154.7	2.5	^{190}Hg(20.0 m)	142.6(68), 171.5(4.8), 129.6(1.6)
• 154.72 *10*	0.147 *23*	^{172}Hf(1.87 y)	23.9331(20.3), 125.812(11.3), 67.35(5.3)
• 154.73 *3*	0.030 *4*	^{193}Os(30.5 h)	139.03(4.27), 460.50(3.95), 73.039(3.2)
154.74 *3*	0.31 *3*	^{66}Ge(2.26 h)	43.89(28.7), 381.85(28), 272.97(10.4)
• 154.753 *15*	0.0478 *14*	^{171}Lu(8.24 d)	739.78(47.8), 19.394(13.7), 667.404(11.04)
154.76 *13*	†100	^{182}Au(21 s)	264.33(†40.0), 855.41(†14.5), 787.15(†13.5)
• 154.77 *12*	0.00014 *2*	^{233}U(1.592×10^5 y)	42.44(0.0862), 97.134(0.020), 54.699(0.0182)
154.8 *3*	0.068 *23*	^{123}Cs(5.94 m)	97.3(23), 596.7(10.1), 83.3(4.1)
154.8 *1*	0.5 *3*	^{184}Pt(17.3 m)	154.90(31), 191.97(27), 548.36(23.1)
154.82 *10*	7.90 *18*	^{79}Rb(22.9 m)	688.1(23), 182.77(19.2), 143.41(13.9)
154.90 *7*	31 *3*	^{184}Pt(17.3 m)	191.97(27), 548.36(23.1), 70.75(22.6)
155.0 *4*	0.039 *20*	^{185}Au(4.25 m)	310.6(13), 243.1(6.6), 77.7(6)
155.0	0.0061 *5*	^{188}Re(16.98 h)	155.032(14.9), 632.99(1.25), 477.99(1.0)
• 155.0 *4*	0.0019	^{252}Cf(2.645 y)	43.38(0.0148), 100.4(0.013)
155.01 *22*	0.5 *3*	^{184}Pt(17.3 m)	154.90(31), 191.97(27), 548.36(23.1)
155.032 *12*	14.9 *5*	^{188}Re(16.98 h)	632.99(1.25), 477.99(1.0), 931.34(0.545)
• 155.032 *12*	29.7 *24*	^{188}Ir(41.5 h)	2214.62(18.7), 632.99(18), 477.99(15)
155.1	0.034 *16*	^{149}Nd(1.728 h)	211.309(25.9), 114.314(19.2), 270.166(10.7)
155.1	†0.11	^{152}Tb(17.5 h)	344.281(†1500), 586.294(†223), 271.135(†203)
• 155.1651 *13*	1.58 *12*	^{156}Tb(5.35 d)	534.318(66.6), 199.2132(40.9), 1222.36(31.00)
155.20 *10*	3.2 *4*	^{81}Y(72.4 s)	124.16(41.1), 79.23(24.67), 408.36(15.3)
155.2 *1*	1.30 *15*	^{117}Xe(61 s)	28.5(7.0), 221.3(10.0), 32.3(7.6)
155.2 *2*	†<0.1	^{129}Ba(2.17 h)	182.30(†100), 1459.1(†50.0), 202.38(†33.7)
155.2 *2*	†1.8 *7*	^{131}Ce(10.3 m)	169.42(†100), 414.25(†68), 119.18(†44)
155.239 *20*	0.0009	^{233}Th(22.3 m)	86.477(2.7), 29.374(2.5), 459.222(1.4)
• 155.239 *20*	0.092 *9*	^{237}Np(2.14×10^6 y)	29.374(15.0), 86.477(12.4), 94.66(0.6)
155.29 *17*	0.027 *13*	^{183}Os(13.0 h)	381.768(89.6), 114.463(20.63), 167.844(8.81)
155.29 *10*	0.047 *17*	^{200}Pb(21.5 h)	147.63(37.7), 257.17(4.46), 235.63(4.30)
155.3	0.44	^{96}Y(9.6 s)	1750.42(89), 915.0(60), 617.1(56)
155.3 *2*	31 *3*	^{139}Eu(17.9 s)	267.3(31), 190.1(25), 111.9(21.3)
155.31 *10*	0.142 *24*	^{201}Pb(9.33 h)	331.19(79), 361.27(9.9), 945.96(7.4)
155.37 *4*	10.5 *5*	^{132}Ce(3.51 h)	182.11(77), 216.83(4.95), 190.04(2.67)
• 155.39 *6*	0.44 *3*	^{105}Ag(41.29 d)	344.520(41), 280.41(30.2), 644.55(11.1)
155.4 *3*		^{122}Ba(1.95 m)	550.7, 388.7, 231.0
155.4 *3*	0.11 *4*	^{157}Tm(3.63 m)	455.00(9.3), 385.5(8.8), 348.40(8.4)
155.4	>0.028	^{179}Re(19.5 m)	430.221(28), 289.968(26.9), 1680.244(13.0)
• 155.5 *2*	0.025 *5*	^{151}Pm(28.40 h)	340.08(23), 167.75(8.3), 275.21(6.8)
155.6 *2*	1.60 *6*	^{63}Co(27.4 s)	87.13(48.7), 981.7(2.11), 1364.5(1.43)
155.6 *4*	0.23 *4*	^{127}Sn(2.10 h)	1114.3(39), 1095.6(20), 823.1(10.9)
155.6	0.07 *4*	^{185}Au(4.25 m)	310.6(13), 243.1(6.6), 77.7(6)
155.60	>0.039	^{197}Tl(2.84 h)	425.84(12.9), 152.22(7.2), 1411.34(4.5)
• 155.65 *7*	0.0010	^{229}Pa(1.50 d)	40.09(0.104), 64.70(0.045), 75.12(0.035)

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
155.68 *4*	0.35 *8*	^{193}Au(17.65 h)	186.17(10.1), 255.57(6.7), 268.22(3.9)
155.76 *7*	0.71 *8*	^{160}Yb(4.8 m)	173.74(42.0), 215.78(20.2), 140.35(9.3)
155.765 *9*	0.207 *8*	^{155}Dy(9.9 h)	226.918(68.4), 184.564(3.37), 1089.8(>2.8)
155.8 *1*	0.57 *9*	^{188}Hg(3.25 m)	66.7(63), 190.1(4.40), 82.7(2.6)
155.84 *9*	0.010 *3*	^{93}Mo(6.85 h)	949.82(0.120), 689.07(0.070), 541.32(0.060)
155.851 *13*	1.94 *7*	^{159}Ho(33.05 m)	121.012(36.2), 131.973(23.6), 309.594(17.2)
155.86 *2*	>0.12	^{147}La(4.015 s)	117.718(12), 186.320(6.48), 438.30(5.04)
• 155.87 *7*	0.020 *4*	^{172}Lu(6.70 d)	1093.657(62.5), 900.724(29.8), 181.528(20.6)
155.873 *9*	5.93 *21*	^{149}Nd(1.728 h)	211.309(25.9), 114.314(19.2), 270.166(10.7)
155.9 *2*	0.68 *7*	^{101}Sr(118 ms)	128.34(18.0), 1124.82(10.9), 510.73(8.5)
155.9 *2*	0.10 *3*	^{101}Sr(118 ms)	128.34(18.0), 1124.82(10.9), 510.73(8.5)
155.9 *6*		^{131}Sn(56.0 s)	3267.5, 2470.5, 2039.25
155.9 *6*	†1.4 *5*	^{131}Sn(56.0 s)	1226.03(†100), 450.03(†90), 798.50(†86)
• 155.9 *2*	0.05 *3*	^{131}Te(30 h)	773.67(49.9), 852.21(27.0), 793.75(18.10)
155.94 *5*	17.2 *7*	^{75}Zn(10.2 s)	228.67(28.9), 432.29(20.2), 606.43(9.0)
155.95 *9*	3.94 *20*	^{177}W(135 m)	115.65(50), 426.98(13.2), 1036.4(10.3)
156.0 *1*	0.17 *8*	^{105}Mo(35.6 s)	85.4(25.0), 76.50(19.3), 147.8(14.8)
156.0	0.008	^{135}Ce(17.7 h)	265.56(41.8), 300.07(23.5), 606.76(18.8)
156.0	0.010	^{148}Dy(3.1 m)	620.24(96), 1247.2(1.4), 178.3(0.5)
156.0 *15*	†0.41	^{256}Es(7.6 h)	861.8(†100), 231.1(†61), 172.6(†49)
156.02 *3*		^{117}In(43.2 m)	553.00(100), 158.562(87), 396.6(0.174)
156.05 *8*	0.086 *12*	^{183}Ir(58 m)	392.52(10.4), 228.70(6.9), 87.67(5.6)
156.061 *2*	1.40 *14*	^{149}Pr(2.26 m)	138.447(11.0), 165.087(9.9), 108.520(9.5)
• 156.088 *2*	7.0 *10*	^{182}Hf(9×10^{6} y)	270.4031(80), 114.3152(2.6), 172.5708(0.20)
156.1 *2*	0.90 *17*	^{129}Sn(6.9 m)	1161.31(56.0), 1128.44(50), 760.8(16.8)
• 156.100 *31*	0.012 *6*	^{165}Tm(30.06 h)	242.917(35.5), 47.155(16.9), 297.369(12.71)
156.1 *1*	0.055 *7*	^{207}Po(5.80 h)	992.33(59.3), 742.64(28.2), 911.79(16.95)
156.12 *18*	0.28 *4*	^{81}As(33.3 s)	467.72(20), 491.20(8.5), 521.10(1.40)
156.14 *16*	†0.09 *3*	^{229}Ac(62.7 m)	164.522(†100), 569.1(†91), 261.92(†39)
• 156.14 *16*	5.3×10^{-5} *8*	^{233}U(1.592×10^{5} y)	42.44(0.0862), 97.134(0.020), 54.699(0.0182)
• 156.17	0.0099 *4*	^{154}Eu(8.593 y)	123.071(40.79), 1274.436(35.19), 723.304(20.22)
156.17 *3*	†6.7 *5*	^{224}Rn(107 m)	260.581(†100), 265.806(†93), 202.21(†21.9)
• 156.19 *5*	0.149 *14*	^{151}Pm(28.40 h)	340.08(23), 167.75(8.3), 275.21(6.8)
156.2 *2*	0.160 *23*	^{108}In(39.6 m)	632.96(76), 1986.8(12.4), 3452.2(9.2)
• 156.208 *31*	0.017 *6*	^{165}Tm(30.06 h)	242.917(35.5), 47.155(16.9), 297.369(12.71)
156.23 *12*	0.43 *7*	^{183}Au(42.0 s)	161.18(9.4), 214.13(5.9), 313.08(5.0)
156.24 *10*	†49 *5*	^{161}Lu(77 s)	110.78(†100), 100.32(†95), 43.7(†70)
156.24 *16*	58 *6*	^{184}Hg(30.6 s)	236.18(64), 295.11(10.3), 392.42(7.1)
156.3 *5*	0.28 *5*	^{105}In(5.07 m)	131.37(41), 260.21(15.7), 604.11(9.2)
156.34 *2*	0.48 *6*	^{145}Cs(0.594 s)	175.36(20), 198.93(10.9), 112.46(10.71)
156.36 *3*	0.803 *22*	^{77}Ge(11.30 h)	264.44(54), 211.03(30.8), 215.50(28.6)
• 156.38760 *22*	2.642 *17*	^{182}Ta(114.43 d)	67.75001(41.2), 1121.3007(34.9), 1221.4066(26.98)
156.38760 *22*	2.54 *10*	^{182}Re(12.7 h)	67.75001(38.2), 1121.3007(32), 1221.4066(24.8)
• 156.38760 *22*	2.2 *5*	^{182}Re(64.0 h)	229.3220(26), 67.75001(22.2), 1121.3007(22.0)
156.4	>0.028	^{179}Re(19.5 m)	430.221(28), 289.968(26.9), 1680.244(13.0)
156.4	†100	^{224}Ac(2.9 h)	140.8(†55), 261.6(†28), 83(†21)
• 156.4 *3*		^{241}Am(432.2 y)	59.537(†60), 26.345(†1000×10^{9}), 33.195(†6000×10^{8})
• 156.409 *9*	1.19 *3*	^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
156.41 *2*	0.61 *7*	^{147}La(4.015 s)	117.718(12), 186.320(6.48), 438.30(5.04)
156.41 *12*	0.30 *7*	^{197}Tl(2.84 h)	425.84(12.9), 152.22(7.2), 1411.34(4.5)
156.42 *6*	1.46 *9*	^{148}Ba(0.607 s)	56.08(29.20), 133.53(3.88), 415.78(3.59)
156.51 *15*	0.136 *13*	^{165}Yb(9.9 m)	80.11(49), 68.86(9.1), 1090.28(4.4)
156.52 *8*	0.71 *7*	^{161}Tm(33 m)	45.54(5.00), 1648.1(9.50), 84.40(9.4)
156.54 *5*	0.080 *13*	^{207}At(1.80 h)	814.41(44.5), 588.33(19.2), 300.654(12.8)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
156.6 *3*	0.092 *22*	^{78}As(90.7 m)	613.725(54), 694.916(16.7), 1308.59(13.0)
156.60 *10*	2.92 *14*	^{102}Zr(2.9 s)	599.60(13.9), 535.30(10.6), 64.50(8.9)
156.600 *7*	15.1 *4*	^{144}Ba(11.5 s)	103.855(23.30), 430.48(18.3), 172.828(15.4)
156.6 *3*	†1.7 *2*	^{168}W(51 s)	178.5(†100), 145.5(†<2), 352.2(†1.8)
156.61 *10*	†43 *6*	^{168}Lu(5.5 m)	1483.65(†100), 228.58(†97), 111.8(†68)
156.62 *8*	0.050 *4*	^{187}Ir(10.5 h)	912.95(4.79), 427.12(4.12), 400.89(3.94)
156.7 *3*	57 *4*	^{170}Re(8.0 s)	305.8(86), 413.2(51)
• 156.725 *11*	0.0100 *3*	^{169}Yb(32.026 d)	63.12077(44.2), 197.95788(35.8), 177.21402(22.16)
• 156.8 *3*	0.039 *18*	^{83}Sr(32.41 h)	762.65(30), 381.53(14.1), 418.37(4.41)
156.8 *5*	3.2	^{124}Ba(11.9 m)	169.3(20), 1216(12), 188.98(10)
156.83 *3*	0.36	^{176}Ta(8.09 h)	1159.28(25), 88.34(12), 1224.93(6)
• 156.8977 *10*	1.41 *3*	^{169}Lu(34.06 h)	960.622(23.4), 191.2137(20.6), 1449.74(9.92)
156.9 *4*	0.27 *4*	^{127}Sn(2.10 h)	1114.3(39), 1095.6(20), 823.1(10.9)
156.90 *5*	0.30 *5*	^{157}Tm(3.63 m)	455.00(9.3), 385.5(8.8), 348.40(8.4)
156.94 *10*	†8.3 *14*	^{157}Yb(38.6 s)	230.92(†100), 340.7(†90), 241.7(†74)
156.94 *2*	0.49 *7*	^{191}Au(3.18 h)	586.45(17), 277.88(7.2), 674.19(6.8)
157.0 *3*	0.081 *9*	^{120}Xe(40 m)	25.1(30), 72.6(9), 178.1(6.8)
157.0 *2*	0.32 *4*	^{121}Xe(40.1 m)	252.7(13), 132.8(10.9), 445.2(7.7)
157 *1*		^{122}Ba(1.95 m)	550.7, 388.7, 231.0
157.0 *3*	†3.0 *7*	^{155}Er(5.3 m)	110.12(†100), 241.5(†65), 234.0(†40.0)
157.0 *4*	0.05 *3*	^{185}Au(4.25 m)	310.6(13), 243.1(6.6), 77.7(6)
• 157.0		^{188}Ir(41.5 h)	155.032(29.7), 2214.62(18.7), 632.99(18)
• 157.08 *10*	0.00074 *25*	^{151}Gd(124 d)	153.56(6.20), 243.28(5.60), 174.70(2.96)
157.1 *3*	2.15 *15*	^{113}Rh(2.72 s)	189.7(17.0), 409.3(15.9), 219.6(3.88)
157.1 *1*	6.2 *14*	^{117}Ag(5.34 s)	135.4(48), 386.8(39.9), 298.1(21.1)
157.1 *1*	7.9 *9*	^{117}Ag(72.8 s)	135.4(23), 337.7(10.3), 426.2(6.9)
157.1 *3*	4.5 *14*	^{118}Pd(1.9 s)	125.4(34), 125.4(34), 224.2(20.1)
157.1	>0.016	^{195}Tl(1.16 h)	563.52(10.5), 884.47(10.0), 1363.88(8.4)
157.1 *5*	0.06	^{203}Bi(11.76 h)	820.3(30), 825.2(14.6), 896.9(13)
• 157.151 *9*	0.175 *6*	^{131}Ba(11.50 d)	496.326(47), 123.805(28.97), 216.078(19.66)
157.20 *30*	0.44	^{116}Te(2.49 h)	93.70(31.4), 628.63(3.22), 102.97(1.95)
157.2	†68	^{168}Hf(25.95 m)	183.8(†100), 324.1, 248.4
157.2 *2*	†20	^{177}Os(2.8 m)	84.7(†100), 125.4(†63), 195.8(†61)
157.2 *2*	†24 *4*	^{177}Pt(11 s)	148.0(†100), 85.4(†62), 223.1(†52)
157.2 *3*	7	^{192}Hg(4.85 h)	274.8(50.4), 306.5(5.4), 186.4(3.3)
157.26 *2*	0.24 *4*	^{221}Rn(25 m)	186.38(21.6), 150.04(4.5), 216.90(2.6)
• 157.26 *2*	0.360 *22*	^{225}Ac(10.0 d)	99.91(1.01), 150.04(0.80), 99.63(0.62)
157.267 *1*	0.49 *4*	^{161}Ho(2.48 h)	25.65150(27), 103.062(3.9), 77.414(1.91)
157.3 *1*	†78 *16*	^{156}Nd(5.47 s)	150.4(†100), 84.6(†63), 274.0(†36)
157.3 *3*	†1.0 *5*	^{164}Hf(111 s)	122.1(†100), 153.3(†47), 313.7(†22)
157.30 *2*	0.68 *10*	^{191}Au(3.18 h)	586.45(17), 277.88(7.2), 674.19(6.8)
157.32 *3*		^{101}Pd(8.47 h)	296.29(19), 590.44(12.06), 269.67(6.43)
157.38 *19*	†3.9	^{197}Ir(5.8 m)	469.72(†100), 430.56(†61), 815.92(†45)
157.4 *3*	0.050 *20*	^{95}Ru(1.643 h)	336.43(70.2), 1096.76(21.0), 626.77(17.8)
157.4 *4*	10	^{102}In(24 s)	776.6(100), 861.1(96), 593.1(30)
157.4 *2*	†5.3 *7*	^{181}Hg(3.6 s)	147.8(†100), 42.5(†25), 1986.7(†17)
157.40 *10*		^{193}Hg(3.80 h)	861.11(†100), 1118.84(†64), 789.21(†36)
• 157.42 *5*	0.001	^{238}Np(2.117 d)	984.45(27.8), 1028.54(20.3), 1025.87(9.6)
• 157.42 *5*	0.0014 *2*	^{242}Cm(162.8 d)	44.08(0.0325), 101.90(0.0025), 561.11(0.00015)
157.466 *12*	†32 *2*	^{101}Nb(7.1 s)	276.10(†100), 13.5(†32), 441.01(†22)
157.485 *7*	†17.4 *11*	^{142}Xe(1.22 s)	571.83(†100), 657.05(†79), 538.24(†77)
157.5	†<0.9	^{198}Bi(693 s)	1063.5(†100), 197.6(†80), 562.4(†79)
• 157.504 *28*	0.036 *4*	^{206}Bi(6.243 d)	803.10(99), 881.01(66.2), 516.18(40.7)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
157.6 *1*	0.11 *3*	^{133}Te(55.4 m)	912.671(55.28), 647.51(19.4), 863.955(15.6)
157.6 *1*	39 *4*	^{190}W(30.0 m)	162.1(11)
157.7 *5*	0.15 *7*	^{98}Sr(0.653 s)	119.353(73), 444.628(39), 428.4(31)
157.7	0.7	^{147}Ba(0.893 s)	167.4(11), 105.2(4.8), 196.1(4.8)
• 157.7		^{185}Os(93.6 d)	646.116(78.0), 874.813(6.29), 880.523(5.17)
157.7 *3*		^{207}Hg(2.9 m)	351.059(77), 997.1(69), 1637.1(30)
157.778 *18*	0.085 *19*	^{153}Dy(6.4 h)	80.723(11.10), 213.754(10.90), 99.659(10.51)
• 157.8 *5*	0.010 *5*	^{148}Eu(54.5 d)	550.284(98.5), 629.987(71.9), 611.293(20.5)
157.8 *2*	0.16 *3*	^{157}Er(18.65 m)	53.05(24), 391.32(14.2), 121.57(10.1)
157.80 *8*	1.80 *16*	^{161}Tm(33 m)	45.54(5.00), 1648.1(9.50), 84.40(9.4)
157.82 *4*	2.6 *3*	^{105}Tc(7.6 m)	143.26(16), 107.945(14.1), 321.50(11.1)
157.82 *8*	0.069 *5*	^{131}La(59 m)	108.081(25.0), 417.783(18.0), 365.162(16.9)
157.85 *12*	0.018 *9*	^{187}Pt(2.35 h)	106.46(9), 201.52(6.4), 110.04(5.7)
157.88 *10*	0.383 *9*	^{98}Nb(51.3 m)	787.374(93), 722.645(73.8), 1168.830(17.8)
157.90 *15*	0.033 *12*	^{183}Hf(1.067 h)	783.754(66), 73.174(38), 459.069(27)
157.9 *1*	†1.3 *3*	^{225}Fr(4.0 m)	182.3(†100), 31.50(†91), 225.1(†55)
158.0 *5*	0.023 *10*	^{101}Pd(8.47 h)	296.29(19), 590.44(12.06), 269.67(6.43)
158		^{131}Sm(1.2 s)	
158.0 *10*	0.11 *5*	^{138}Pr(2.12 h)	1037.8(101), 788.742(100), 302.7(80)
• 158.0 *5*	0.07 *4*	^{146}Eu(4.59 d)	747.2(98), 633.03(43), 634.07(37)
158	†15	^{174}Os(44 s)	118(†100), 325(†43), 302(†26)
158.0 *5*	0.24 *10*	^{181}Os(105 m)	238.75(44), 826.77(20), 118.03(12.9)
• 158.0		^{188}Ir(41.5 h)	155.032(29.7), 2214.62(18.7), 632.99(18)
158	2.8 *10*	^{227}U(1.1 m)	247(20), 310(3.6), 259(3.0)
• 158.030 *20*	0.01702 *18*	^{115}Cd(44.6 d)	933.8(2.000), 1290.580(0.890), 484.470(0.290)
158.084 *7*	0.45 *3*	^{207}Po(5.80 h)	992.33(59.3), 742.64(28.2), 911.79(16.95)
158.15 *2*	0.025	^{167}Lu(51.5 m)	29.66(14.4), 239.22(8.6), 213.19(3.6)
158.15 *15*	1.70 *15*	^{190}Pb(1.2 m)	942.20(34), 151.19(8.92), 598.3(8.0)
158.16 *15*	0.35 *5*	^{202}Bi(1.72 h)	960.67(99), 422.18(83.7), 657.49(60.6)
• 158.18 *3*	17.5 *5*	^{226}Ac(29 h)	230.37(27), 72.20(0.56), 574.8(0.070)
• 158.18 *3*	0.070 *5*	^{230}U(20.8 d)	72.20(0.60), 154.23(0.125), 230.37(0.122)
158.19 *7*	0.23	^{176}Ta(8.09 h)	1159.28(25), 88.34(12), 1224.93(6)
• 158.2 *5*		^{146}Eu(4.59 d)	747.2(98), 633.03(43), 634.07(37)
158.20 *25*	0.073 *9*	^{165}Yb(9.9 m)	80.11(49), 68.86(9.1), 1090.28(4.4)
158.2 *2*	2.4 *3*	^{185}Ir(14.4 h)	254.4(13.3), 1828.8(10), 60.0(5.7)
158.260 *4*	0.290 *10*	^{135}Xe(9.14 h)	249.770(90), 608.151(2.90), 408.009(0.359)
158.26 *20*	†0.75 *6*	^{184}Ir(3.09 h)	263.97(†100), 119.80(†45), 390.38(†38)
158.269 *25*	0.0352 *17*	^{166}Tm(7.70 h)	778.817(18.9), 2052.36(17.2), 184.410(16.1)
158.3 *3*		^{200}At(4.3 s)	102.0
158.3 *3*		^{200}At(44.0 s)	102.0
158.3 *3*	0.070 *20*	^{237}Am(73.0 m)	280.23(47.3), 438.4(8.3), 473.5(4.3)
• 158.347 *4*	1.0×10^{-6} *1*	^{239}Pu(24110 y)	51.624(0.007100), 38.661(0.000500), 129.297(0.00631)
• 158.35 *2*	4.0	^{236}Np(1.54×10^{5} y)	102.82(0.85), 44.63(0.0167)
• 158.37947 *9*	40.0 *3*	^{199}Au(3.139 d)	208.20597(8.732), 49.82680(0.360)
158.37947 *9*	4.96 *25*	^{199}Tl(7.42 h)	455.46(12.4), 208.20597(12.3), 247.26(9.3)
• 158.38 *3*	†98.8 *10*	^{56}Ni(5.9 d)	811.85(†86.0), 749.95(†49.5), 269.50(†36.5)
158.38 *15*	15 *4*	^{131}In(0.32 s)	4273.20(99), 2095.5(44), 284.48(44)
• 158.386 *21*	0.082 *8*	^{206}Bi(6.243 d)	803.10(99), 881.01(66.2), 516.18(40.7)
158.4 *3*	0.0017 *8*	^{133}La(3.912 h)	278.835(2.50), 302.353(1.648), 290.06(1.413)
158.4 *1*	0.155 *18*	^{205}Po(1.66 h)	872.39(37), 1001.21(28.8), 849.83(25.5)
• 158.4 *1*	0.00024 *5*	^{229}Pa(1.50 d)	40.09(0.104), 64.70(0.045), 75.12(0.035)
158.41 *3*	0.024 *7*	^{157}Eu(15.18 h)	63.929(23.0), 410.723(17.5), 370.509(11.0)
• 158.42 *12*	0.048 *5*	^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
• 158.42 *3*	0.035 *8*	^{246}Pu(10.84 d)	43.81(25.0), 223.75(23.5), 179.94(9.7)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
158.43 *9*	0.33 *3*	^{101}Sr(118 ms)	128.34(18.0), 1124.82(10.9), 510.73(8.5)
158.468 *5*	55.6 *11*	^{148}La(1.05 s)	989.85(9.3), 760.30(8.6), 601.88(7.62)
158.5 *2*	0.6	^{140}Sm(14.82 m)	225.5(>10), 225.4(10), 140.0(5.0)
158.5 *3*	0.029 *6*	^{145}Ce(3.01 m)	724.33(59), 62.54(13.33), 1148.03(9.15)
158.5 *3*	53 *18*	^{166}Ta(34.4 s)	311.8(28.2), 810.1(9.8), 651.4(8.5)
158.5 *5*		^{191}Hg(50.8 m)	252.5(57), 420.1(18.6), 578.6(17.6)
158.562 *12*	87 *9*	^{117}In(43.2 m)	553.00(100), 396.6(0.174), 156.02
158.562 *12*	16	^{117}In(116.2 m)	861.35(0.019), 1020.6(0.0068), 1004.51(0.0062)
158.562 *12*	86	^{117}Sb(2.80 h)	861.35(0.31), 1004.51(0.21), 1021.0(0.112)
158.6 *3*	0.09 *3*	^{109}Sn(18.0 m)	1099.4(30), 649.90(28.0), 1321.3(11.9)
158.6	0.6	^{147}Ba(0.893 s)	167.4(11), 105.2(4.8), 196.1(4.8)
158.6 *4*	1.5 *7*	^{181}Lu(3.5 m)	652.5(22.0), 205.94(16.1), 574.9(15.4)
• 158.612 *1*	0.0434 *23*	^{155}Tb(5.32 d)	86.545(32.0), 105.305(25), 180.103(7.45)
158.62 *9*	0.0029 *4*	^{249}Cm(64.15 m)	634.31(1.5), 560.45(0.84), 368.76(0.35)
158.63 *4*	1.72 *11*	^{99}Sr(0.269 s)	125.118(16.1), 536.12(14.0), 1198.12(9.2)
• 158.633 *10*	0.685 *14*	^{223}Ra(11.435 d)	269.459(13.7), 154.21(5.62), 323.871(3.93)
158.7 *2*	0.10	^{115}Pd(25 s)	342.71(8), 303.87(7), 396.56(6)
158.7 *2*	0.108 *14*	^{140}Xe(13.60 s)	805.52(20), 1413.66(12.2), 1315.05(8.2)
158.7 *2*	0.13 *5*	^{178}Pt(21.1 s)	
158.7 *10*		^{181}Hg(3.6 s)	239.8, 92.4, 214.2
• 158.782 *15*	0.0169 *9*	^{99}Mo(65.94 h)	739.50(12.1), 181.063(6.08), 140.511(4.52)
• 158.785 *10*	†3.9×10^4 *3*	^{134}Ce(75.9 h)	162.306(†230000), 130.414(†209000), 39.08(†>150000)
158.79 *6*	0.104 *10*	^{151}Nd(12.44 m)	116.80(43.4), 255.68(16.4), 1180.89(14.8)
• 158.8 *3*	1.51 *6*	^{100}Pd(3.63 d)	84.02(45), 74.78(36.5), 126.05(8.10)
158.80 *18*	0.020 *7*	^{130}I(12.36 h)	536.09(99), 668.54(96), 739.48(82)
158.8 *1*	12.3 *25*	^{149}Tm(0.9 s)	796.2(18), 416.7(11), 907.3(8)
158.80 *8*	†4	^{238}Pa(2.3 m)	1015.3(†<100), 1014.6(†<100), 635.18(†88)
• 158.80 *8*	0.00045 *15*	^{242}Pu(3.733×10^5 y)	44.915(0.036), 103.50(0.0078)
158.81 *3*	1.48 *10*	^{191}Au(3.18 h)	586.45(17), 277.88(7.2), 674.19(6.8)
158.90 *10*	33 *2*	^{103}Zr(1.3 s)	248(100), 164.05(94), 126.30(84)
158.9 *1*	0.37 *3*	^{146}Ba(2.22 s)	140.7(20.2), 251.2(19.6), 121.2(14.2)
158.9 *3*	†4	^{223}Rn(23.2 m)	591.8(†100), 635.2(†76), 416.0(†55)
158.9 *2*	†1.5	^{256}Es(7.6 h)	861.8(†100), 231.1(†61), 172.6(†49)
• 158.92 *8*	0.023 *5*	^{105}Ag(41.29 d)	344.520(41), 280.41(30.2), 644.55(11.1)
158.96 *6*	0.122 *19*	^{81}Sr(22.3 m)	153.54(33.8), 147.76(30.1), 443.34(17.5)
158.97 *5*	83	^{123}I(13.27 h)	528.96(1.39), 440.02(0.428), 538.54(0.382)
159.0 *3*	0.027 *9*	^{120}Xe(40 m)	25.1(30), 72.6(9), 178.1(6.8)
159.0 *1*	†1.35 *13*	^{123}La(17 s)	92.5(†100), 937.3(†43), 153.6(†43)
159	0.07	^{157}Tm(3.63 m)	455.00(9.3), 385.5(8.8), 348.40(8.4)
159.0 *1*	19.2 *12*	^{242}Np(5.5 m)	785.7(60), 944.8(37.8), 265.1(14.4)
159.0 *2*	0.0036 *4*	^{255}Fm(20.07 h)	81.477(0.81), 58.477(0.67), 80.92(0.27)
159.029 *12*	†8.9 *16*	^{105}Nb(2.95 s)	94.8(†100), 246.9(†79), 309.9(†41.9)
• 159.1 *1*	0.0075 *25*	^{155}Tb(5.32 d)	86.545(32.0), 105.305(25), 180.103(7.45)
159.1 *1*	0.13 *3*	^{177}W(135 m)	115.65(50), 426.98(13.2), 1036.4(10.3)
159.11 *15*	0.230 *9*	^{77}Ge(11.30 h)	264.44(54), 211.03(30.8), 215.50(28.6)
159.2 *3*	†100 *10*	^{88}Se(1.52 s)	259.2(†82), 1903.7(†64), 1744.5(†62)
159.2 *3*	0.10 *3*	^{92}Kr(1.840 s)	142.307(64), 1218.6(60), 812.6(14.6)
159.2 *3*	†5	^{177}Os(2.8 m)	84.7(†100), 125.4(†63), 195.8(†61)
159.2 *3*	0.64 *19*	^{184}Hg(30.6 s)	236.18(64), 156.24(58), 295.11(10.3)
• 159.26 *20*	†1.4×10^4 *5*	^{241}Am(432.2 y)	59.537(†60), 26.345(†1000×10^9), 33.195(†6000×10^8)
159.3 *3*	0.45 *17*	^{129}Sn(6.9 m)	1161.31(56.0), 1128.44(50), 760.8(16.8)
159.32 *25*	†<3	^{184}Tl(11 s)	366.51(†100), 286.80(†39), 340.0(†25)
159.33 *17*	3.9 *6*	^{184}Hg(30.6 s)	236.18(64), 156.24(58), 295.11(10.3)
• 159.369 *20*	67.9 *15*	^{47}Sc(3.345 d)	

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
159.369 *20*	0.107 *5*	^{47}V(32.6 m)	1793.9(0.19), 244.4(0.094), 1390.4(0.0793)
159.37 *5*	0.221 *24*	^{227}Fr(2.47 m)	90.035(39), 585.804(29.5), 64.267(14.5)
• 159.4		^{185}Os(93.6 d)	646.116(78.0), 874.813(6.29), 880.523(5.17)
159.42 *9*	2.3 *4*	^{181}Au(11.4 s)	198.60(4.4), 2022.4(4.2), 79.40(4.2)
159.42 *9*		^{185}Hg(21.6 s)	106, 118.88, 61
159.426 *16*	0.362 *18*	^{159}Ho(33.05 m)	121.012(36.2), 131.973(23.6), 309.594(17.2)
159.45 *20*	0.42 *11*	^{164}Tb(3.0 m)	168.838(25.4), 754.80(23.3), 215.07(21)
159.48 *2*	0.65 *7*	^{234}Pa(6.70 h)	131.30(18), 946.00(13.4), 883.24(9.6)
159.5 *2*	0.44 *12*	^{104}Mo(60 s)	68.8(55), 69.7(17.8), 36.3(14)
159.5 *3*	0.013 *3*	^{112}Ag(3.130 h)	617.27(43), 1387.67(5.4), 606.49(3.1)
159.5		^{168}Hf(25.95 m)	183.8(†100), 157.2(†68), 324.1
159.51 *7*	0.40 *7*	^{187}Pt(2.35 h)	106.46(9), 201.52(6.4), 110.04(5.7)
159.528 *6*	10.2 *11*	^{105}Tc(7.6 m)	143.26(16), 107.945(14.1), 321.50(11.1)
159.547 *13*	8.8 *5*	^{100}Nb(1.5 s)	535.60(45.7), 528.24(9.1), 1022.5(4.9)
159.547 *13*	5.3 *9*	^{100}Nb(2.99 s)	535.60(97.0), 600.5(65.0), 1280.6(23.8)
159.56 *18*	0.012 *4*	^{133}Ce(4.9 h)	477.22(39), 510.36(20.7), 58.39(19.2)
159.59 *9*	1.3 *4*	^{169}Ho(4.7 m)	788.4(21.2), 853.0(11.2), 760.8(10)
• 159.66 *4*	0.167 *20*	^{131}Te(30 h)	773.67(49.9), 852.21(27.0), 793.75(18.10)
159.67 *19*	0.59 *13*	^{161}Yb(4.2 m)	78.20(34), 599.88(25.9), 631.45(13.9)
159.7 *1*		^{77}Ga(13.2 s)	469.4(†100), 458.6(†48), 2187.3
159.7 *2*	1.66 *10*	^{121}Cs(155 s)	153.9(15.2), 239.6(7.7), 427.1(3.63)
• 159.71 *10*	0.013 *4*	^{128}Ba(2.43 d)	273.44(15), 374.99(0.309), 229.50(0.106)
159.71 *8*	0.48	^{167}Dy(6.20 m)	569.7(48), 259.33(27.9), 310.26(25.0)
• 159.7342 *17*	0.530 *24*	^{177}Lu(160.4 d)	208.3664(57.7), 228.4838(37.0), 378.5029(29.7)
159.742 *41*	0.07 *3*	^{227}Fr(2.47 m)	90.035(39), 585.804(29.5), 64.267(14.5)
• 159.75 *10*	0.110 *9*	^{83}Sr(32.41 h)	762.65(30), 381.53(14.1), 418.37(4.41)
159.8 *5*	†10.1 *10*	^{102}Y(0.36 s)	151.73(†100), 326.64(†53), 1091.3(†42)
159.8 *3*	0.95 *25*	^{140}Pm(9.2 s)	773.74(5.0), 477.1(2.6), 1204.8(1.9)
159.8 *2*	1.36 *10*	^{159}Eu(18.1 m)	67.8(19), 78.6(9.1), 95.7(7.0)
159.85 *2*	0.64 *7*	^{147}La(4.015 s)	117.718(12), 186.320(6.48), 438.30(5.04)
159.85 *3*	0.094 *12*	^{153}Dy(6.4 h)	80.723(11.10), 213.754(10.90), 99.659(10.51)
159.9 *3*	1.81 *19*	^{113}Rh(2.72 s)	189.7(17.0), 409.3(15.9), 219.6(3.88)
159.9 *1*	5.0 *5*	^{117}Cs(8.4 s)	204.8(15.0), 29.7(9.9), 205.6(6.8)
159.9 *5*	†<0.1	^{129}Ba(2.17 h)	182.30(†100), 1459.1(†50.0), 202.38(†33.7)
159.9 *5*	0.47 *14*	^{131}Sb(23.03 m)	943.4(47), 933.1(26.1), 642.30(23)
159.90 *9*	0.077 *15*	^{131}La(59 m)	108.081(25.0), 417.783(18.0), 365.162(16.9)
• 159.9	0.0011 *5*	^{154}Eu(8.593 y)	123.071(40.79), 1274.436(35.19), 723.304(20.22)
159.91 *17*	†21 *4*	^{183}Hg(9.4 s)	60.5(†100), 172.70(†17), 305.14(†16)
159.93 *28*	†6.0 *15*	^{164}Tm(2.0 m)	91.40(†1500), 1154.66(†366), 768.91(†279)
• 159.955 *20*	900 *24*	^{241}Pu(14.35 y)	148.567(†309000), 103.680(†69400), 77.10(†35100)
160.0 *2*	†14 *2*	^{113}I(6.6 s)	462.5(†100), 622.4(†74), 351.5(†43)
160.00 *5*	0.441 *25*	^{143}Cs(1.78 s)	195.554(13), 232.421(8.32), 306.424(6.80)
160.0 *5*	0.0007 *4*	^{152}Eu(9.274 h)	841.586(14.6), 963.37(12.01), 121.7824(7.21)
160.0		^{157}Eu(15.18 h)	63.929(23.0), 410.723(17.5), 370.509(11.0)
160.0 *6*	0.25 *12*	^{166}Lu(2.65 m)	228.12(77.3), 337.50(41), 367.95(31.4)
160.0 *4*	0.31 *7*	^{175}Tm(15.2 m)	514.868(65), 941.23(15), 363.942(12.7)
• 160	>0.0016	^{191}Pt(2.9 d)	538.90(13.7), 409.44(8.0), 359.90(6.0)
160.022 *15*	0.060 *5*	^{186}Ir(16.64 h)	296.911(64.0), 137.155(42), 434.849(34.4)
160.022 *15*	0.020 *3*	^{186}Ir(2.0 h)	137.155(27), 767.508(21.2), 630.354(18.0)
160.03 *15*	0.33 *6*	^{125}Cd(0.57 s)	1027.53(25.8), 1173.16(25.1), 736.65(12.6)
• 160.087 *14*	0.094 *6*	^{166}Ho(1.20×10^3 y)	184.410(72.6), 810.276(58.08), 711.683(55.32)
160.10 *3*	9.2 *5*	^{77}Sr(9.0 s)	146.94(86.1), 144.82(6.8), 1234.2(2.4)
• 160.16 *12*	0.239 *15*	^{182}Re(64.0 h)	229.3220(26), 67.75001(22.2), 1121.3007(22.0)
160.18 *7*	0.062 *4*	^{119}I(19.1 m)	257.52(87), 635.86(2.69), 320.53(2.17)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
• 160.19 *7*	0.239 *15*	^{182}Re(64.0 h)	229.3220(26), 67.75001(22.2), 1121.3007(22.0)
• 160.19 *5*	6.2×10^{-6} *12*	^{239}Pu(24110 y)	51.624(0.007100), 38.661(0.000500), 129.297(0.00631)
• 160.2 *2*	0.0103 *11*	^{156}Eu(15.19 d)	811.79(9.70), 88.9667(8.4), 1230.68(7.98)
• 160.26 *5*	70000 *7*	^{227}Ac(21.773 y)	100(†110000), 69.21(†78000), 147.48(†37000)
160.26 *4*	0.0284 *18*	^{250}Bk(3.217 h)	989.12(45), 1031.85(35.6), 1028.65(4.91)
160.3 *1*	1.13 *22*	^{158}Yb(1.49 m)	74.1(54), 252.6(1.8), 147.7(0.92)
• 160.308 *3*	32	^{236}Np(1.54×10^5 y)	104.234(7.2), 45.242(0.13), 104.1
• 160.308 *3*	0.000402 *3*	^{240}Pu(6563 y)	45.242(0.0450), 104.234(0.00708), 212.46(0.000029)
160.32 *9*	0.97 *11*	^{137}Pr(1.28 h)	836.7(1.8), 433.9(1.28), 514.0(1.08)
• 160.33 *5*	0.00191 *9*	^{123}Sn(129.2 d)	1088.64(0.6), 1030.23(0.0310), 1021.00(0.00193)
160.33 *5*	86	^{123}Sn(40.06 m)	381.4(0.042), 541.8(0.020), 552.5(0.0103)
160.4 *3*	1.9 *4*	^{104}Tc(18.3 m)	358.0(89), 530.5(15.6), 535.1(14.7)
160.40 *2*	0.39 *4*	^{151}Dy(17.9 m)	386.10(19.4), 49.46(18.0), 546.31(14.3)
160.4 *1*	4.9 *5*	^{173}Ta(3.14 h)	172.2(18), 69.70(5.9), 90.3(5.0)
160.4 *3*	†5	^{223}Rn(23.2 m)	591.8(†100), 635.2(†76), 416.0(†55)
160.4 *1*	0.78 *21*	^{242}U(16.8 m)	67.60(9.6), 55.58(3.90), 585.0(1.92)
160.49 *5*	0.45 *3*	^{133}Sb(2.5 m)	1096.22(43.0), 817.8(18.5), 2755(12.5)
160.49 *3*	0.256 *18*	^{167}Lu(51.5 m)	29.66(14.4), 239.22(8.6), 213.19(3.6)
160.5 *1*	9.5 *8*	^{105}Mo(35.6 s)	85.4(25.0), 76.50(19.3), 147.8(14.8)
160.5 *4*	1.64 *4*	^{137}Pm(2.4 m)	177.5(40.29), 108.6(35), 233.6(29.57)
160.5 *8*	0.14 *3*	^{208}Rn(24.35 m)	426.78(7.07), 251.05(5.02), 350.026(3.34)
• 160.5276 *4*	2.92 *8*	^{183}Ta(5.1 d)	246.0591(27), 353.9912(11.2), 107.9322(11.0)
• 160.5276 *4*	0.594 *14*	^{183}Re(70.0 d)	162.3219(23.3), 46.4839(7.97), 291.7238(3.05)
160.55	0.25 *5*	^{155}Ho(48 m)	240.19(12.5), 136.30(5.00), 45.38(5)
160.55 *8*	0.14 *2*	^{179}Re(19.5 m)	430.221(28), 289.968(26.9), 1680.244(13.0)
• 160.589 *2*	0.781 *15*	^{155}Tb(5.32 d)	86.545(32.0), 105.305(25), 180.103(7.45)
160.6 *1*	3.2 *3*	^{117}Xe(61 s)	28.5(7.0), 221.3(10.0), 32.3(7.6)
160.6 *3*	0.64 *7*	^{157}Er(18.65 m)	53.05(24), 391.32(14.2), 121.57(10.1)
• 160.6		^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
160.61 *3*	35	^{157}Pm(10.56 s)	188.052(13.5), 571.27(5.39), 850.50(4.76)
• 160.613 *8*	0.066 *5*	^{133}Xe(5.243 d)	80.997(38.0), 79.623(0.27), 302.853(0.0048)
• 160.613 *8*	0.645 *8*	^{133}Ba(10.52 y)	356.017(62.05), 80.997(34.06), 302.853(18.33)
160.687 *7*	1.80 *5*	^{131}La(59 m)	108.081(25.0), 417.783(18.0), 365.162(16.9)
160.7 *1*	0.096 *10*	^{86}Zr(16.5 h)	242.80(96), 29.10(21.6), 612.00(5.7)
• 160.70 *6*	0.0158 *13*	^{145}Eu(5.93 d)	893.73(66), 653.512(15.0), 1658.53(14.9)
160.73 *4*	0.74 *6*	^{99}Sr(0.269 s)	125.118(16.1), 536.12(14.0), 1198.12(9.2)
160.73 *15*	0.55 *6*	^{121}Cd(8.3 s)	2059.41(21.0), 1020.89(18.9), 987.81(13.6)
160.75 *25*	1.75 *21*	^{185}Ir(14.4 h)	254.4(13.3), 1828.8(10), 60.0(5.7)
160.76 *10*	8.59 *18*	^{79}Rb(22.9 m)	688.1(23), 182.77(19.2), 143.41(13.9)
160.76 *4*	0.94 *19*	^{155}Ho(48 m)	240.19(12.5), 136.30(5.00), 45.38(5)
160.762 *10*	0.481 *17*	^{151}Tb(17.609 h)	287.357(28.3), 251.863(26.3), 108.088(24.3)
160.78 *2*	0.53 *5*	^{183}Hf(1.067 h)	783.754(66), 73.174(38), 459.069(27)
160.79 *10*	0.79 *6*	^{70}Se(41.1 m)	49.51(35.8), 426.15(29), 376.65(9.43)
160.8 *3*	0.25 *11*	^{117}Cd(2.49 h)	273.349(28), 1303.27(18.4), 344.459(17.9)
160.8 *3*		^{117}Cd(3.36 h)	1997.33(26), 1065.98(23.1), 564.397(14.7)
160.82 *24*	0.061 *17*	^{103}Tc(54.2 s)	346.380(17.5), 136.079(16.6), 562.90(7.0)
160.82 *5*		^{155}Ho(48 m)	240.19(12.5), 136.30(5.00), 45.38(5)
• 160.91 *5*	0.028 *3*	^{189}Re(24.3 h)	216.663(5.50), 219.395(4.54), 245.09(3.5)
160.93 *5*	8.4 *8*	^{77}Zn(2.08 s)	189.49(28.1), 473.94(19.7), 1832.0(12.4)
160.93 *5*	3.1 *3*	^{159}Tm(9.13 m)	38.35(5.8), 84.8(5.8), 271.30(5.1)
161	<2	^{50}Mn(1.75 m)	783.29(100), 1097.97(98.5), 1443.28(69)
161.0 *5*	†6	^{99}Rb(59 ms)	90.8(†100), 125.2(†40), 1071.6(†26)
• 161.00 *6*	0.0288 *14*	^{148}Eu(54.5 d)	550.284(98.5), 629.987(71.9), 611.293(20.5)

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
161.0 *3*	†35 *5*	^{156}Nd(5.47 s)	150.4(†100), 157.3(†78), 84.6(†63)
161 *1*	†>1.0	^{183}Hg(9.4 s)	60.5(†100), 159.91(†21), 172.70(†17)
161 *1*		^{187}Tl(15.60 s)	
161.05 *14*	0.50 *10*	^{106}In(6.2 m)	632.66(100), 861.16(92), 997.87(48)
161.052 *13*	0.43 *4*	^{227}Fr(2.47 m)	90.035(39), 585.804(29.5), 64.267(14.5)
161.08 *8*	0.25 *5*	^{155}Ho(48 m)	240.19(12.5), 136.30(5.00), 45.38(5)
161.1	0.8	^{147}Ce(56.4 s)	268.80(7), 92.9(4.7), 374.23(3.5)
161.18 *7*	9.4 *14*	^{183}Au(42.0 s)	214.13(5.9), 313.08(5.0), 179.54(4.6)
161.2 *3*	0.09 *3*	^{162}Ho(67.0 m)	185.005(28.6), 1220.0(22.5), 282.864(11.3)
• 161.20 *10*	0.023 *8*	^{175}Hf(70 d)	343.40(84), 89.36(2.40), 433.0(1.436)
161.269 *9*	3.2 *9*	^{184}Ta(8.7 h)	414.03(72), 252.848(43), 920.932(32.0)
• 161.269 *9*	6.49 *12*	^{184}Re(169 d)	252.848(10.7), 216.548(9.43), 920.932(8.14)
161.29 *7*	0.035 *10*	^{167}Yb(17.5 m)	113.34(55.3), 106.18(22.5), 176.25(21)
161.3	0.073 *5*	^{155}Dy(9.9 h)	226.918(68.4), 184.564(3.37), 1089.8(>2.8)
161.30 *17*	1.04 *6*	^{205}At(26.2 m)	719.30(31), 669.41(8.6), 628.88(5.6)
161.31 *3*	0.160 *11*	^{163}Tm(1.810 h)	104.320(18.6), 69.229(11.6), 241.305(10.9)
• 161.334 *1*	2.76 *3*	^{155}Tb(5.32 d)	86.545(32.0), 105.305(25), 180.103(7.45)
• 161.3467 *5*	8.9 *3*	^{183}Ta(5.1 d)	246.0591(27), 353.9912(11.2), 107.9322(11.0)
• 161.3467 *5*	0.61 *14*	^{183}Re(70.0 d)	162.3219(23.3), 46.4839(7.97), 291.7238(3.05)
161.36 *4*	0.30 *3*	^{200}Pb(21.5 h)	147.63(37.7), 257.17(4.46), 235.63(4.30)
161.4 *2*	0.36 *18*	^{97}Y(3.75 s)	3287.6(18.1), 3401.3(14.1), 1996.6(7.4)
161.4 *2*	71.8 *9*	^{97}Y(1.17 s)	1103.0(92.6), 1091(56), 970.0(39.9)
161.4 *3*		^{122}Ba(1.95 m)	550.7, 388.7, 231.0
161.4 *1*	1.2 *3*	^{206}Fr(15.9 s)	575.3(12), 559.0(8.19), 628.6(3.6)
161.41 *7*	1.46 *16*	^{184}Pt(17.3 m)	154.90(31), 191.97(27), 548.36(23.1)
161.443 *4*	1.149 *21*	^{155}Dy(9.9 h)	226.918(68.4), 184.564(3.37), 1089.8(>2.8)
• 161.450 *3*	0.000123 *2*	^{239}Pu(24110 y)	51.624(0.007100), 38.661(0.000500), 129.297(0.00631)
161.49 *3*	1.07 *4*	^{163}Yb(11.05 m)	860.28(10.1), 63.62(6.5), 123.21(1.98)
161.5		^{147}La(4.015 s)	117.718(12), 186.320(6.48), 438.30(5.04)
161.5 *2*	†83 *5*	^{153}Ho(9.3 m)	108.7(†100), 365.9(†92), 270.6(†72)
161.5 *2*	0.7	^{153}Ho(2.0 m)	295.8(67), 637.0(5.36), 688.5(3.7)
161.50 *15*	†1.4 *4*	^{185}Pt(33.0 m)	229.60(†100), 135.3(†80), 197.4(†74)
161.5	†65	^{220}Fr(27.4 s)	45.0(†100), 106.0(†72), 154.0(†43)
161.53 *21*	0.133 *7*	^{187}Au(8.4 m)	1331.81(7.0), 1408.23(3.06), 914.73(3.02)
• 161.54 *10*	†1.5×10^4	^{241}Am(432.2 y)	59.537(†60), 26.345(†1000×10^9), 33.195(†6000×10^8)
161.6 *2*	†64 *19*	^{114}Xe(10.0 s)	308.5(†100), 103.1(†48)
161.6 *3*	7 *3*	^{152}Ho(161.8 s)	613.8(73), 613.8(14), 1098.0(12)
161.6 *3*	0.28 *6*	^{208}Fr(59.1 s)	635.8(10), 778.5(6.8), 325.3(5.2)
• 161.6 *3*		^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
161.6 *1*	0.07 *1*	^{241}Np(13.9 m)	174.94(3.1), 132.99(0.86), 518.8(0.40)
• 161.6 *1*	0.009 *4*	^{245}Cm(8500 y)	174.94(10), 132.99(2.77), 41.95(0.350)
• 161.6513 *15*	0.173 *9*	^{169}Lu(34.06 h)	960.622(23.4), 191.2137(20.6), 1449.74(9.92)
161.70 *23*	†3.3 *5*	^{142}Xe(1.22 s)	571.83(†100), 657.05(†79), 538.24(†77)
• 161.775 *14*	0.103 *4*	^{166}Ho(1.20×10^3 y)	184.410(72.6), 810.276(58.08), 711.683(55.32)
161.8 *3*	0.88 *15*	^{98}Sr(0.653 s)	119.353(73), 444.628(39), 428.4(31)
161.820 *13*	0.085 *17*	^{157}Eu(15.18 h)	63.929(23.0), 410.723(17.5), 370.509(11.0)
161.85 *15*	0.69 *13*	^{161}Yb(4.2 m)	78.20(34), 599.88(25.9), 631.45(13.9)
• 161.86 *3*	0.0227 *7*	^{57}Ni(35.60 h)	1377.63(81.7), 127.164(16.7), 1919.52(12.26)
161.9 *2*	0.227 *24*	^{77}Kr(74.4 m)	129.64(81), 146.59(37.3), 312.0(3.7)
161.9 *1*	†17.1 *15*	^{131}Pr(1.53 m)	266.13(†100), 72.82(†64), 387.56(†38)
161.9 *1*		^{131}Pr(5.7 s)	138.2
• 161.9194 *15*	0.146 *8*	^{77}As(38.83 h)	238.996(1.6), 520.639(0.558), 249.786(0.394)
• 161.9194 *15*	1.102 *18*	^{77}Br(57.036 h)	238.996(23), 520.639(22.4), 297.215(4.16)
162.0 *2*	7.3 *5*	^{150}Tb(5.8 m)	638.05(100), 650.4(70), 438.37(42)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
162.0 *2*	0.8 *4*	^{175}Ta(10.5 h)	207.4(14.0), 348.5(12.0), 266.9(10.8)
162.011 *9*	6.46 *17*	^{173}Hf(23.6 h)	123.672(83), 296.974(33.9), 139.634(12.7)
162.06 *8*	0.45 *5*	^{184}Pt(17.3 m)	154.90(31), 191.97(27), 548.36(23.1)
162.1 *2*	†100 *9*	^{172}Ir(2.0 s)	
162.1 *1*	11 *1*	^{190}W(30.0 m)	157.6(39)
• 162.1 *3*	†0.6	^{227}Th(18.72 d)	235.971(†813), 50.13(†528), 256.25(†463)
162.11 *12*	1.67 *19*	^{77}Sr(9.0 s)	146.94(86.1), 160.10(9.2), 144.82(6.8)
162.14 *5*	†100	^{227}Rn(22.5 s)	739.2(†65), 686.2(†62), 805.0(†33)
162.16 *7*	1.7 *7*	^{184}Ta(8.7 h)	414.03(72), 252.848(43), 920.932(32.0)
162.2 *3*	16.3 *17*	^{72}Kr(17.2 s)	415.1(34.7), 310.0(28.5), 576.5(12.1)
162.2		^{130}Ce(25 m)	1072.6(†100), 997.7(†100), 920.5(†100)
162.2 *2*	0.040 *10*	^{161}Er(3.21 h)	826.6(3.0), 211.15(12.2), 592.6(3.7)
• 162.2		^{188}Ir(41.5 h)	155.032(29.7), 2214.62(18.7), 632.99(18)
162.2 *2*	0.49 *17*	^{190}Pb(1.2 m)	942.20(34), 151.19(8.92), 598.3(8.0)
162.25 *8*	0.58 *14*	^{105}Tc(7.6 m)	143.26(16), 107.945(14.1), 321.50(11.1)
162.25 *15*	†16 *1*	^{163}Hf(40.0 s)	70.98(†100), 62.14(†64), 45.39(†48)
162.3 *1*	0.113 *8*	^{142}Ba(10.6 m)	255.300(20.5), 1204.3(14.23), 895.2(13.9)
162.3 *2*	3.8	^{145}Ba(4.31 s)	96.6(17), 91.9(7), 65.9(5)
162.3 *2*	>3.8	^{145}Ba(4.31 s)	96.6(17), 91.9(7), 65.9(5)
• 162.306 *10*	230000 *16*	^{134}Ce(75.9 h)	130.414(†209000), 39.08(†>150000), 300.884(†88000)
• 162.3219 *5*	4.88 *16*	^{183}Ta(5.1 d)	246.0591(27), 353.9912(11.2), 107.9322(11.0)
• 162.3219 *5*	23.3 *4*	^{183}Re(70.0 d)	46.4839(7.97), 291.7238(3.05), 208.8057(2.95)
162.338 *2*	3.1 *2*	^{149}Pr(2.26 m)	138.447(11.0), 165.087(9.9), 108.520(9.5)
162.35 *2*	†3.0×10^{3} *3*	^{157}Ho(12.6 m)	279.97(†47600), 341.16(†37000), 193.41(†15200)
• 162.370 *15*	0.0118 *5*	^{99}Mo(65.94 h)	739.50(12.1), 181.063(6.08), 140.511(4.52)
162.4 *1*	15	^{154}Pr(2.3 s)	932.1(11.7), 70.8(11.22), 956.9(6.8)
162.40 *15*	0.09 *4*	^{187}Pt(2.35 h)	106.46(9), 201.52(6.4), 110.04(5.7)
162.4	0.31	^{199}Po(4.13 m)	1002.19(19), 1034.3(16), 362.01(7)
• 162.4		^{233}U(1.592×10^{5} y)	42.44(0.0862), 97.134(0.020), 54.699(0.0182)
• 162.4 *2*	6.9×10^{-5} *11*	^{233}U(1.592×10^{5} y)	42.44(0.0862), 97.134(0.020), 54.699(0.0182)
162.4 *4*	52 *4*	^{244}Np(2.29 m)	217.1(59), 110.8(12)
162.41	0.17	^{233}Th(22.3 m)	86.477(2.7), 29.374(2.5), 459.222(1.4)
• 162.41		^{237}Np(2.14×10^{6} y)	29.374(15.0), 86.477(12.4), 94.66(0.6)
162.42 *4*	0.032 *11*	^{167}Lu(51.5 m)	29.66(14.4), 239.22(8.6), 213.19(3.6)
162.44 *8*	0.038 *10*	^{168}Ho(2.99 m)	741.356(36.6), 821.164(34.5), 815.990(18.6)
162.48 *7*	0.30 *4*	^{134}I(52.6 m)	847.025(95.4), 884.090(64.9), 1072.547(15.0)
162.492 *4*	0.067 *11*	^{177}Yb(1.911 h)	150.392(20.3), 1080.21(5.6), 1241.2(3.47)
162.5 *2*	0.025 *4*	^{135}Ce(17.7 h)	265.56(41.8), 300.07(23.5), 606.76(18.8)
162.5 *5*	†8×10^{02} *3*	^{158}Er(2.29 h)	71.91(†23300), 386.84(†111000), 248.58(†42000)
162.5 *3*	†1.7 *3*	^{172}W(6.6 m)	38.9(†100), 423.3(†44), 89.8(†33.0)
162.5 *2*	1.5 *3*	^{175}Ta(10.5 h)	207.4(14.0), 348.5(12.0), 266.9(10.8)
162.5 *2*	0.17 *3*	^{175}Ta(10.5 h)	207.4(14.0), 348.5(12.0), 266.9(10.8)
162.5	>0.028	^{179}Re(19.5 m)	430.221(28), 289.968(26.9), 1680.244(13.0)
162.5	0.07	^{190}Hg(20.0 m)	142.6(68), 171.5(4.8), 154.7(2.5)
162.5 *3*	†4	^{223}Rn(23.2 m)	591.8(†100), 635.2(†76), 416.0(†55)
• 162.5		^{242}Am(141 y)	49.367(0.19), 86.68(0.037), 109.69(0.024)
162.504 *12*	0.15	^{233}Th(22.3 m)	86.477(2.7), 29.374(2.5), 459.222(1.4)
• 162.504 *12*	0.032 *4*	^{237}Np(2.14×10^{6} y)	29.374(15.0), 86.477(12.4), 94.66(0.6)
162.53 *15*	0.019 *9*	^{98}Nb(51.3 m)	787.374(93), 722.645(73.8), 1168.830(17.8)
• 162.57 *10*	0.021 *4*	^{194}Au(38.02 h)	328.455(60), 293.545(10.2), 1468.91(6.3)
• 162.58 *12*	0.0011 *4*	^{154}Eu(8.593 y)	123.071(40.79), 1274.436(35.19), 723.304(20.22)
• 162.599 *30*	0.064 *14*	^{165}Tm(30.06 h)	242.917(35.5), 47.155(16.9), 297.369(12.71)
162.6 *5*	0.07 *2*	^{116}In(54.41 m)	1293.54(84.4), 1097.3(56.2), 416.86(28.9)
162.6	†19.6	^{158}Ho(21.3 m)	406.14(†100), 838.9(†84.3), 1484.1(†66.2)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
162.6 *3*	1.7	^{170}Hf(16.01 h)	164.78(33), 620.7(23), 120.17(19)
162.6 *3*	0.107 *17*	^{181}Au(11.4 s)	198.60(4.4), 2022.4(4.2), 79.40(4.2)
162.6 *2*	†2.4 *10*	^{192}Bi(37 s)	853.8(†100.0), 501.8(†80), 504.3(†39)
• 162.6	1.4×10^{-5}	^{253}Es(20.47 d)	41.79(0.050), 389.11(0.0264), 387.1(0.00810)
• 162.62 *3*		^{206}Po(8.8 d)	1032.26(32.9), 511.36(24.1), 286.410(23.8)
• 162.631 *1*	0.018	^{155}Tb(5.32 d)	86.545(32.0), 105.305(25), 180.103(7.45)
162.65 *11*	0.010 *3*	^{135}I(6.57 h)	1260.409(28.90), 1131.511(22.74), 1678.027(9.62)
162.65 *9*	0.71 *11*	^{183}Au(42.0 s)	161.18(9.4), 214.13(5.9), 313.08(5.0)
• 162.660 *1*	6.21 *8*	^{140}Ba(12.752 d)	537.261(24.39), 29.9640(14.1), 304.849(4.30)
162.68 *7*	0.107 *10*	^{187}Ir(10.5 h)	912.95(4.79), 427.12(4.12), 400.89(3.94)
162.69 *8*	0.65 *6*	^{174}W(31 m)	35.42(14.1), 428.83(12.7), 328.68(9.5)
162.7 *2*	1.11 *18*	^{152}Ho(49.5 s)	647.2(92), 613.8(88.4), 683.3(88)
162.8 *2*	0.07 *3*	^{132}Sn(39.7 s)	340.53(49), 85.58(48.2), 899.04(44.8)
162.8 *4*		^{165}Ta(31.0 s)	311.0, 199.4, 94.1
• 162.852 *7*	0.566 *17*	^{185}Os(93.6 d)	646.116(78.0), 874.813(6.29), 880.523(5.17)
162.86 *7*	1.33 *23*	^{159}Tm(9.13 m)	38.35(5.8), 84.8(5.8), 271.30(5.1)
162.9 *3*	†3.7	^{177}Os(2.8 m)	84.7(†100), 125.4(†63), 195.8(†61)
162.93 *9*	6.0 *5*	^{90}Mo(5.67 h)	257.34(78), 122.370(64.2), 203.13(6.4)
• 162.93 *2*	0.88 *7*	^{151}Pm(28.40 h)	340.08(23), 167.75(8.3), 275.21(6.8)
162.97 *8*	50	^{184}Au(53.0 s)	272.98(40), 362.47(17.5), 777.13(6.6)
163.0 *4*	0.050 *17*	^{105}In(5.07 m)	131.37(41), 260.21(15.7), 604.11(9.2)
163.0	0.29 *3*	^{141}Ba(18.27 m)	190.328(46.0), 304.194(25.4), 276.948(23.4)
163	†0.8	^{181}Os(2.7 m)	144.99(†100), 118.03(†28.3), 1118.8(†4.2)
163.0 *2*	†1.2 *2*	^{182}Au(21 s)	154.76(†100), 264.33(†40.0), 855.41(†14.5)
163		^{219}Fr(20 ms)	530, 493, 352
163.02 *2*	0.99 *5*	^{155}Ho(48 m)	240.19(12.5), 136.30(5.00), 45.38(5)
163.04 *4*	0.18 *4*	^{151}Dy(17.9 m)	386.10(19.4), 49.46(18.0), 546.31(14.3)
163.052 *22*	0.133 *6*	^{122}Xe(20.1 h)	350.065(7.80), 148.612(2.62), 416.633(1.87)
163.08 *5*	†100 *10*	^{163}Lu(238 s)	54.00(†88), 396.34(†63), 371.73(†62)
163.1 *10*	0.37	^{149}Er(8.9 s)	1171.0(9.4), 171.5(6.5), 343.9(6.3)
• 163.105 *5*	0.155 *9*	^{231}Th(25.52 h)	25.646(14.5), 84.216(6.6), 89.944(0.94)
• 163.105 *5*	$\dagger1.9\times10^{3}$ *12*	^{235}Np(396.1 d)	25.646(†600000), 84.216(†265000), 81.227(†58000)
163.12 *5*	0.56 *5*	^{144}Ba(11.5 s)	103.855(23.30), 430.48(18.3), 172.828(15.4)
163.14 *6*	0.53 *3*	^{190}Re(3.2 h)	186.718(27.8), 605.24(14.9), 557.972(14.3)
• 163.165 *20*	0.067 *4*	^{172}Lu(6.70 d)	1093.657(62.5), 900.724(29.8), 181.528(20.6)
163.2 *8*	0.36 *9*	^{104}Tc(18.3 m)	358.0(89), 530.5(15.6), 535.1(14.7)
163.2	58	^{134}Nd(8.5 m)	288.9(13), 216.8(12), 1000(4.1)
163.2 *1*	†0.105 *23*	^{160}Ho(5.02 h)	728.18(†100), 879.383(†65.9), 962.317(†59.1)
163.2 *4*	0.15 *4*	^{208}Rn(24.35 m)	426.78(7.07), 251.05(5.02), 350.026(3.34)
163.21 *10*	0.0057 *8*	^{166}Tm(7.70 h)	778.817(18.9), 2052.36(17.2), 184.410(16.1)
• 163.24 *4*	0.024	^{242}Am(141 y)	49.367(0.19), 86.68(0.037), 109.69(0.024)
163.269 *13*	0.0036 *16*	^{163}Tb(19.5 m)	351.138(26), 389.734(24.3), 494.534(23)
163.3 *4*	0.54 *11*	^{136}Sm(47 s)	114.4(36), 747.7(5.4), 485.3(5.0)
163.3 *3*	†3.6 *4*	^{172}W(6.6 m)	38.9(†100), 423.3(†44), 89.8(†33.0)
• 163.311 *1*	4.44 *5*	^{155}Tb(5.32 d)	86.545(32.0), 105.305(25), 180.103(7.45)
• 163.34 *17*	0.021 *7*	^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
163.35 *5*	3.44 *18*	^{101}Sr(118 ms)	128.34(18.0), 1124.82(10.9), 510.73(8.5)
163.35 *3*	40.0 *16*	^{162}Yb(18.87 m)	118.70(33.6), 576.10(3.24), 44.65(3.04)
• 163.358 *2*	5.08 *4*	^{235}U(7.038×10^{8} y)	185.712(57.2), 143.764(10.96), 205.309(5.01)
163.4 *3*	0.11 *3*	^{93}Rb(5.84 s)	432.61(17.4), 986.05(6.8), 213.429(6.7)
163.40 *10*	0.074 *7*	^{187}Ir(10.5 h)	912.95(4.79), 427.12(4.12), 400.89(3.94)
163.46 *10*	0.156 *19*	^{105}Ru(4.44 h)	724.21(47), 469.37(17.5), 676.36(15.7)
163.48 *20*	0.20 *10*	^{122}In(10.3 s)	1140.55(98), 1001.58(50.7), 1190.58(20.5)
163.48 *20*	66 *5*	^{122}In(10.8 s)	1140.55(100), 1001.58(98.4), 103.74(81)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
163.5 *3*	0.14	^{101}Cd(1.2 m)	98.0(47), 1722.5(11), 1259.3(8)
163.5 *4*	0.083 *24*	^{208}At(1.63 h)	686.527(98), 660.040(89), 177.595(48.6)
163.563 *7*	1.56 *15*	^{227}Fr(2.47 m)	90.035(39), 585.804(29.5), 64.267(14.5)
• 163.58 *2*	1.55 *11*	^{151}Pm(28.40 h)	340.08(23), 167.75(8.3), 275.21(6.8)
163.6 *2*	†11	^{99}Cd(16 s)	342.6(†100), 671.8(†31), 1583.3(†28)
163.6 *2*	0.09	^{140}Sm(14.82 m)	225.5(>10), 225.4(10), 140.0(5.0)
163.6 *2*	0.022 *7*	^{151}Nd(12.44 m)	116.80(43.4), 255.68(16.4), 1180.89(14.8)
163.63 *11*	†0.28 *3*	^{184}Ir(3.09 h)	263.97(†100), 119.80(†45), 390.38(†38)
163.7 *3*	†85 *9*	^{137}Sm(45 s)	380.5(†100), 408.3(†40), 531.2(†37)
163.7 *2*	0.008 *4*	^{157}Eu(15.18 h)	63.929(23.0), 410.723(17.5), 370.509(11.0)
163.7 *2*		^{161}Eu(26 s)	314.3, 91.9, 71.9
163.7	0.039 *20*	^{185}Au(4.25 m)	310.6(13), 243.1(6.6), 77.7(6)
163.7 *5*	0.24	^{208}Fr(59.1 s)	635.8(10), 778.5(6.8), 325.3(5.2)
163.8 *6*	0.23 *7*	^{96}Pd(122 s)	124.70(65), 762.3(50.0), 499.7(17.9)
163.8 *2*	0.35 *7*	^{251}Bk(55.6 m)	177.7(6), 130.1(3.4), 152.8(2.23)
• 163.8 *2*	0.10	^{251}Es(33 h)	177.7(2.4), 152.8(0.91), 34.0
163.8 *2*	0.0020 *2*	^{255}Fm(20.07 h)	81.477(0.81), 58.477(0.67), 80.92(0.27)
• 163.848 *10*	0.089 *7*	^{171}Lu(8.24 d)	739.78(47.8), 19.394(13.7), 667.404(11.04)
• 163.848 *10*	0.167 *19*	^{171}Lu(8.24 d)	739.78(47.8), 19.394(13.7), 667.404(11.04)
163.85 *11*	0.13 *5*	^{181}Re(19.9 h)	365.57(56), 360.70(20), 639.30(6.4)
163.88 *4*	0.20 *5*	^{207}At(1.80 h)	814.41(44.5), 588.33(19.2), 300.654(12.8)
163.9 *2*	†762 *95*	^{157}Ho(12.6 m)	279.97(†47600), 341.16(†37000), 193.41(†15200)
163.90 *10*	0.416 *10*	^{194}Pb(12.0 m)	581.82(18.8), 1519.45(16.4), 203.82(16.2)
163.9	>0.016	^{195}Tl(1.16 h)	563.52(10.5), 884.47(10.0), 1363.88(8.4)
• 163.920 *2*	†3.40 *12*	^{136}Cs(13.16 d)	818.514(†100), 1048.073(†80), 340.547(†42.3)
• 163.930 *8*		^{131}I(8.02070 d)	364.489(81.7), 636.989(7.17), 284.305(6.14)
• 163.95 *10*	0.126 *12*	^{194}Au(38.02 h)	328.455(60), 293.545(10.2), 1468.91(6.3)
164		^{202}At(184 s)	139
164.0 *6*	0.005 *3*	^{212}Bi(60.55 m)	39.858(1.091), 452.83(0.31), 288.07(0.31)
164.0 *2*	0.38 *14*	^{225}Th(8.72 m)	321.4(23), 246.0(5.06), 359.0(4.1)
• 164.01 *3*	0.0209 *22*	^{189}Re(24.3 h)	216.663(5.50), 219.395(4.54), 245.09(3.5)
• 164.01 *3*	0.074 *4*	^{189}Ir(13.2 d)	245.09(6), 69.537(3.5), 59.053(1.20)
• 164.013 *5*	0.674 *25*	^{172}Er(49.3 h)	610.062(44.2), 407.338(42.1), 68.107(3.29)
164.036 *12*	4.09 *14*	^{157}Pm(10.56 s)	160.61(35), 188.052(13.5), 571.27(5.39)
164.05 *14*	94 *15*	^{103}Zr(1.3 s)	248(100), 126.30(84), 120.00(68)
164.09 *6*	†25 *3*	^{131}Nd(27 s)	87.8(†100), 174.42(†34), 668.0(†21)
164.1 *3*	7.0 *7*	^{118}I(8.5 m)	605.71(99), 600.71(92), 614.42(65)
164.1 *2*	2.7	^{145}La(24.8 s)	70.0(11), 355.8(3.8), 118.2(3.6)
164.1 *3*	0.37 *5*	^{148}Ho(9.59 s)	1687.5(82.47), 660.8(58.94), 504.3(18.62)
164.12 *16*	0.43 *9*	^{136}I(46.9 s)	1313.02(100), 381.359(100), 197.316(78)
164.2 *1*	†100	^{152}Pr(3.24 s)	284.9(†81.0), 72.40(†38.9), 1363.8(†36.6)
164.2		^{212}Pb(10.64 h)	238.632(43.3), 300.087(3.28), 115.183(0.592)
164.3 *4*	0.059 *20*	^{100}Cd(49.1 s)	936.55(66), 139.71(6.7), 582.5(6.3)
164.3 *3*	0.16 *6*	^{125}Cd(0.57 s)	1027.53(25.8), 1173.16(25.1), 736.65(12.6)
164.33 *2*	0.12 *5*	^{185}Ta(49.4 m)	177.59(25.7), 173.68(22.6), 65.86(3.9)
• 164.34 *5*	1.30 *5*	^{119}Te(4.70 d)	153.59(66), 1212.73(66), 270.53(28.0)
164.36 *10*	†53 *4*	^{157}Yb(38.6 s)	230.92(†100), 340.7(†90), 241.7(†74)
164.40 *1*	0.97 *5*	^{133}Te(55.4 m)	912.671(55.28), 647.51(19.4), 863.955(15.6)
164.4		^{225}Rn(4.5 m)	207.2, 178.7, 169.7
164.419 *8*	0.90 *3*	^{163}Tm(1.810 h)	104.320(18.6), 69.229(11.6), 241.305(10.9)
164.45 *3*	0.123 *16*	^{164}Yb(75.8 m)	40.928(1.147), 675.41(0.38), 390.6(0.31)
164.5	>0.08	^{83}Zr(44 s)	55.55(8), 104.97(5.70), 475.1(5.1)
164.5 *2*	17	^{115}Rh(0.99 s)	127.9(64.6), 125.6(33.3), 296.5(17)
164.5 *5*		^{185}Hf(3.5 m)	

• $t_{1/2}$>1 d

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
164.5 *2*	†0.60 *9*	^{196}Bi(240 s)	1049.21(†21.1), 371.93(†20.8), 689.00(†19.2)
164.522 *2*	†100 *10*	^{229}Ac(62.7 m)	569.1(†91), 261.92(†39), 146.345(†35)
• 164.522 *2*	0.00623 *5*	^{233}U(1.592×10^5 y)	42.44(0.0862), 97.134(0.020), 54.699(0.0182)
164.56 *8*	†0.73 *4*	^{129}Ba(2.17 h)	182.30(†100), 1459.1(†50.0), 202.38(†33.7)
164.563 *7*	†21.8 *13*	^{142}Xe(1.22 s)	571.83(†100), 657.05(†79), 538.24(†77)
164.6 *1*	1.17 *13*	^{97}Rb(169.9 ms)	167.1(26), 585.2(21.0), 600.5(10.6)
164.60 *8*	4.1 *3*	^{135}Nd(12.4 m)	204.02(52), 41.43(23), 441.2(14.9)
164.6 *1*	0.41 *6*	^{146}Ba(2.22 s)	140.7(20.2), 251.2(19.6), 121.2(14.2)
• 164.6 *1*	0.040 *17*	^{147}Gd(38.06 h)	229.32(63), 396.00(34.3), 929.01(20.2)
164.6 *2*	0.00046 *6*	^{163}Er(75.0 m)	1113.5(0.0490), 436.1(0.0285), 439.94(0.0276)
• 164.61 *2*	1.852 *18*	^{237}U(6.75 d)	59.537(34.5), 208.00(21.14), 26.345(2.43)
• 164.61 *2*	†6.67×10^5 *20*	^{241}Am(432.2 y)	59.537(†60), 26.345(†1000×10^9), 33.195(†6000×10^8)
164.64 *2*	1.49 *12*	^{145}Cs(0.594 s)	175.36(20), 198.93(10.9), 112.46(10.71)
164.64 *14*	0.13 *5*	^{181}Re(19.9 h)	365.57(56), 360.70(20), 639.30(6.4)
164.68 *12*	0.30 *6*	^{105}Tc(7.6 m)	143.26(16), 107.945(14.1), 321.50(11.1)
164.7 *5*	†1.40 *18*	^{110}Tc(0.92 s)	240.67(†100), 372.1(†17.0), 613.0(†16.0)
164.7 *3*	†2.9 *7*	^{155}Er(5.3 m)	110.12(†100), 241.5(†65), 234.0(†40.0)
164.7 *2*	0.018 *6*	^{161}Er(3.21 h)	826.6(3.0), 211.15(12.2), 592.6(3.7)
164.71 *13*	0.21 *3*	^{183}Au(42.0 s)	161.18(9.4), 214.13(5.9), 313.08(5.0)
164.78 *10*	33	^{170}Hf(16.01 h)	620.7(23), 120.17(19), 572.9(18)
164.8	†8	^{224}Ac(2.9 h)	156.4(†100), 140.8(†55), 261.6(†28)
• 164.8 *2*	0.44 *9*	^{241}Cm(32.8 d)	471.805(71), 430.634(4.06), 132.413(3.86)
• 164.8 *2*	0.0084 *18*	^{245}Bk(4.94 d)	205.879(0.040), 471.805(0.026), 430.634(0.0015)
164.9 *5*	0.44 *15*	^{98}Sr(0.653 s)	119.353(73), 444.628(39), 428.4(31)
164.9 *2*	0.30 *3*	^{120}Xe(40 m)	25.1(30), 72.6(9), 178.1(6.8)
164.9 *2*	†2.5 *7*	^{185}Hg(21.6 s)	222.8(†100.0), 258.7(†98), 212.5(†58)
164.90 *12*	0.28 *3*	^{187}Au(8.4 m)	1331.81(7.0), 1408.23(3.06), 914.73(3.02)
164.90	†2	^{238}Pa(2.3 m)	1015.3(†<100), 1014.6(†<100), 635.18(†88)
164.92 *15*	0.13 *3*	^{204}Bi(11.22 h)	899.15(98), 374.72(82), 984.02(59)
164.94 *5*	0.052 *21*	^{234}Pa(6.70 h)	131.30(18), 946.00(13.4), 883.24(9.6)
164.95 *22*	28.0 *8*	^{108}Ru(4.55 m)	150.46(7.8), 91.33(2.38), 73.67(1.1)
• 164.95 *3*	0.0039 *4*	^{231}Th(25.52 h)	25.646(14.5), 84.216(6.6), 89.944(0.94)
164.96 *15*	†0.2 *1*	^{101}Nb(7.1 s)	276.10(†100), 157.466(†32), 13.5(†32)
164.98 *2*	26.4 *3*	^{149}Tb(4.118 h)	352.24(29.43), 388.57(18.37), 652.12(16.25)
164.98 *2*	†8.3 *6*	^{149}Tb(4.16 m)	795.9(†111), 651(†37), 773(†3.9)
165.0 *10*	0.034 *9*	^{129}Sb(4.40 h)	812.8(43), 914.6(20.0), 544.7(17.9)
165.0	>0.028	^{179}Re(19.5 m)	430.221(28), 289.968(26.9), 1680.244(13.0)
• 165.0134 *15*	1.97 *4*	^{169}Lu(34.06 h)	960.622(23.4), 191.2137(20.6), 1449.74(9.92)
• 165.02 *7*	0.144 *16*	^{252}Es(471.7 d)	785.09(18.3), 139.03(13.9), 924.12(2.41)
165.03 *7*	0.063 *20*	^{200}Pt(12.5 h)	76.21(13), 135.90(3.24), 243.71(2.49)
• 165.049 *8*	2.97 *20*	^{241}Cm(32.8 d)	471.805(71), 430.634(4.06), 132.413(3.86)
• 165.05 *4*	0.0155 *9*	^{205}Bi(15.31 d)	1764.36(1.368), 703.44(31), 987.62(0.585)
165.087 *1*	9.9 *4*	^{149}Pr(2.26 m)	138.447(11.0), 108.520(9.5), 332.944(6.15)
• 165.2 *5*		^{146}Eu(4.59 d)	747.2(98), 633.03(43), 634.07(37)
165.20 *15*	0.036 *12*	^{183}Hf(1.067 h)	783.754(66), 73.174(38), 459.069(27)
165.2		^{225}Rn(4.5 m)	207.2, 178.7, 169.7
165.2 *2*	†2.5	^{256}Es(7.6 h)	861.8(†100), 231.1(†61), 172.6(†49)
165.21 *5*	†102	^{154}Nd(25.9 s)	151.703(†800), 799.55(†600), 180.693(†510)
165.213 *15*	2.58 *20*	^{161}Gd(3.66 m)	360.94(0.59), 314.92(22.7), 102.315(13.9)
165.3 *3*	3.7 *3*	^{170}Ho(2.76 m)	258.2(37.0), 931.3(36.1), 181.6(23.8)
• 165.3 *1*	0.009 *4*	^{245}Cm(8500 y)	174.94(10), 132.99(2.77), 41.95(0.350)
165.4	1.0	^{190}Hg(20.0 m)	142.6(68), 171.5(4.8), 154.7(2.5)
165.44 *15*	0.00135 *18*	^{250}Bk(3.217 h)	989.12(45), 1031.85(35.6), 1028.65(4.91)
165.5	0.00049	^{116}In(54.41 m)	1293.54(84.4), 1097.3(56.2), 416.86(28.9)

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
165.5	>0.33	^{159}Er(36 m)	624.5(33), 649.1(23.4), 205.92(9.7)
• 165.5 *5*	0.005 *3*	^{223}Ra(11.435 d)	269.459(13.7), 154.21(5.62), 323.871(3.93)
165.53 *4*	0.35 *23*	^{193}Hg(11.8 h)	257.97(61), 407.63(25), 573.25(14.2)
• 165.558 *28*	0.0111 *5*	^{147}Eu(24.1 d)	197.299(27), 121.220(22.9), 677.516(9.8)
165.60 *6*	0.071 *15*	^{163}Tm(1.810 h)	104.320(18.6), 69.229(11.6), 241.305(10.9)
165.61 *5*	0.072 *21*	^{234}Pa(6.70 h)	131.30(18), 946.00(13.4), 883.24(9.6)
• 165.659 *15*	0.156 *21*	^{165}Tm(30.06 h)	242.917(35.5), 47.155(16.9), 297.369(12.71)
165.7 *1*	0.30 *12*	^{101}Zr(2.1 s)	119.3(10.8), 205.6(6.0), 912.2(3.48)
165.70 *10*	26.7 *21*	^{103}Zr(1.3 s)	248(100), 164.05(94), 126.30(84)
• 165.7	0.0025 *5*	^{154}Eu(8.593 y)	123.071(40.79), 1274.436(35.19), 723.304(20.22)
165.7 *2*	†7	^{179}Os(6.5 m)	65.39(†100), 218.6(†17), 32.3(†17)
165.7 *2*	†174 *9*	^{202}Po(44.7 m)	688.6(†1000), 316.0(†286), 790.5(†145)
• 165.7 *3*		^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
• 165.7 *1*	0.00035 *6*	^{233}U(1.592×10^5 y)	42.44(0.0862), 97.134(0.020), 54.699(0.0182)
165.72 *18*	0.24 *8*	^{133}Ce(4.9 h)	477.22(39), 510.36(20.7), 58.39(19.2)
165.74 *6*	0.032 *3*	^{135}I(6.57 h)	1260.409(28.90), 1131.511(22.74), 1678.027(9.62)
165.74 *9*	0.93 *15*	^{183}Ir(58 m)	392.52(10.4), 228.70(6.9), 87.67(5.6)
165.8 *2*	†8	^{139}I(2.29 s)	527.7(†100), 571.2(†98), 536.6(†67)
165.8 *2*	†5.3 *7*	^{181}Hg(3.6 s)	147.8(†100), 42.5(†25), 1986.7(†17)
165.8 *2*	†2.9 *9*	^{185}Hg(21.6 s)	222.8(†100.0), 258.7(†98), 212.5(†58)
165.8 *4*	0.0009 *4*	^{187}W(23.72 h)	685.774(27.3), 479.531(21.8), 72.001(11.14)
165.81 *11*	0.13 *5*	^{181}Re(19.9 h)	365.57(56), 360.70(20), 639.30(6.4)
• 165.81 *6*	†2.32×10^5 *10*	^{241}Am(432.2 y)	59.537(†60), 26.345(†1000×10^9), 33.195(†6000×10^8)
165.84 *13*	0.070 *21*	^{187}Au(8.4 m)	1331.81(7.0), 1408.23(3.06), 914.73(3.02)
165.8452 *24*	12.7 *20*	^{156}Sm(9.4 h)	87.4897(24), 203.818(20.6), 37.9681(>2.9)
165.864 *6*	0.23 *24*	^{139}Ba(83.06 m)	1420.5(0.26), 1254.7(0.026), 1310.6(0.0159)
• 165.864 *6*	80	^{139}Ce(137.640 d)	
165.88 *7*	0.0114 *18*	^{201}Au(26 m)	542.6(1.2), 517.0(0.83), 613.2(0.77)
• 165.88 *7*	0.155 *5*	^{201}Tl(72.912 h)	167.43(10), 135.34(2.565), 32.19(0.258)
165.90 *7*	0.28 *5*	^{144}Ba(11.5 s)	103.855(23.30), 430.48(18.3), 172.828(15.4)
165.9 *3*	5.0 *5*	^{159}Er(36 m)	624.5(33), 649.1(23.4), 205.92(9.7)
165.98 *4*	3.104 *14*	^{88}Kr(2.84 h)	2392.11(34.6), 196.301(25.98), 2195.842(13.18)
165.99 *4*	0.068 *10*	^{151}Nd(12.44 m)	116.80(43.4), 255.68(16.4), 1180.89(14.8)
166.0 *10*	0.013 *8*	^{111}Pd(23.4 m)	580.00(0.8), 70.44(0.78), 1459.0(0.56)
166 *1*	0.10 *6*	^{111}Pd(5.5 h)	70.44(8.3), 391.25(5.4), 632.80(3.6)
166 *1*		^{181}Ir(4.90 m)	107.64(†100), 1639.6(†52), 318.9(†46)
166.0 *3*	†1.5 *2*	^{182}Ir(15 m)	273.23(†100), 126.79(†77), 236.3(†21.0)
166.0 *1*	†20.0 *6*	^{194}Bi(92 s)	965.4(†100.0), 575.1(†98.0), 280.1(†73.7)
166.00 *13*	0.51 *5*	^{200}Pt(12.5 h)	76.21(13), 135.90(3.24), 243.71(2.49)
166		^{217}At(32.3 ms)	258.5(0.056), 593.1(0.0120), 334
• 166.0 *3*	0.029 *5*	^{232}Pa(1.31 d)	969.315(41.6), 894.351(19.8), 150.059(10.8)
166.0 *3*	0.31 *10*	^{232}Np(14.7 m)	327.3(52), 819.187(33.3), 866.760(24.4)
• 166.0 *3*	0.00066	^{236}Pu(2.858 y)	47.574(0.066), 108.96(0.012), 643.5(0.00024)
166.06 *3*	0.62	^{154}Pm(1.73 m)	2057.76(17.1), 1393.9(14.4), 81.99(12.6)
166.08 *5*	†13.2 *10*	^{173}W(7.5 m)	457.68(†100), 130.19(†31.5), 174.8(†29.1)
166.1 *1*	0.48 *7*	^{73}Br(3.4 m)	64.9(37.0), 336.0(10.4), 699.8(9.1)
166.1 *5*	0.34 *7*	^{98}Rb(114 ms)	144.224(24.5), 1693.3(5.9), 2171.7(5.7)
166.1 *2*	0.25 *6*	^{108}In(58.0 m)	875.46(100), 632.96(100), 242.84(41)
166.1 *2*	0.65 *20*	^{110}Ru(14.6 s)	112.2(25.00), 116.1(0.45), 415.4(0.43)
166.1	2.7	^{149}Ho(58 s)	1034.6(99.7), 1736.4(28.0), 372.1(25.3)
• 166.15 *3*	0.0676 *22*	^{148}Eu(54.5 d)	550.284(98.5), 629.987(71.9), 611.293(20.5)
166.16 *5*	500	^{159}Yb(1.58 m)	177.12(†159), 390.20(†113), 330.24(†100)
166.2 *1*	†19.2 *19*	^{171}Ta(23.3 m)	49.6(†100), 506.4(†54), 501.8(†22.6)
166.23	0.09	^{203}Bi(11.76 h)	820.3(30), 825.2(14.6), 896.9(13)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
166.26 *20*	0.0038 *15*	^{166}Tm(7.70 h)	778.817(18.9), 2052.36(17.2), 184.410(16.1)
166.26 *15*	0.044 *18*	^{187}Pt(2.35 h)	106.46(9), 201.52(6.4), 110.04(5.7)
166.306 *4*	0.05 *3*	^{109}Rh(80 s)	326.868(54), 426.135(7.7), 178.034(7.6)
166.32 *25*	†10.6 *21*	^{183}Hg(9.4 s)	60.5(†100), 159.91(†21), 172.70(†17)
• 166.34 *10*	0.32 *8*	^{147}Gd(38.06 h)	229.32(63), 396.00(34.3), 929.01(20.2)
• 166.369 *2*	0.017 *7*	^{239}Np(2.3565 d)	106.125(27.2), 277.599(14.38), 228.183(10.76)
166.369 *2*	0.013	^{239}Am(11.9 h)	277.599(15.0), 228.183(11.3), 209.753(3.50)
• 166.369 *2*	0.017 *9*	^{243}Cm(29.1 y)	277.599(14.0), 228.183(10.6), 209.753(3.29)
166.4	†55.4	^{158}Ho(21.3 m)	406.14(†100), 838.9(†84.3), 1484.1(†66.2)
166.4 *3*		^{171}Er(7.516 h)	308.31(64.4), 295.901(28.9), 111.621(20.5)
166.40 *9*	59 *3*	^{189}Au(4.59 m)	320.2(11.8), 19.0, 6.22
166.411 *4*	0.380 *18*	^{224}Fr(3.30 m)	215.985(33.1), 131.613(16.3), 836.90(9.8)
166.411 *4*	>0.27	^{224}Ac(2.9 h)	215.985(53), 131.613(26), 205.93(>0.40)
• 166.411 *4*	0.1075 *15*	^{228}Th(1.9131 y)	84.373(1.266), 215.985(0.263), 131.613(0.1355)
166.50 *1*	3.31 *24*	^{191}Au(3.18 h)	586.45(17), 277.88(7.2), 674.19(6.8)
166.5 *1*	†0.24 *7*	^{234}Pa(1.17 m)	1001.03(†837000), 766.38(†294000), 742.81(†80000)
• 166.5 *1*	0.006 *1*	^{234}Np(4.4 d)	1558.31(18.72), 1527.21(11.2), 1601.80(9.1)
• 166.509 *19*	0.128 *6*	^{169}Lu(34.06 h)	960.622(23.4), 191.2137(20.6), 1449.74(9.92)
166.52 *9*	†36 *4*	^{189}Hg(7.6 m)	320.99(†100), 78.21(†63), 565.42(†48)
166.55 *23*	0.40 *5*	^{105}In(5.07 m)	131.37(41), 260.21(15.7), 604.11(9.2)
• 166.5534 *15*	0.0006	^{153}Sm(46.27 h)	103.1807(31.4), 69.67340(4.85), 97.4316(0.847)
• 166.5534 *15*	0.0003 *3*	^{153}Gd(241.6 d)	97.4316(30), 103.1807(21.4), 69.67340(2.54)
• 166.576 *6*	†0.37 *4*	^{136}Cs(13.16 d)	818.514(†100), 1048.073(†80), 340.547(†42.3)
166.6 *3*	0.62 *16*	^{93}Sr(7.423 m)	590.238(67), 875.73(24.1), 888.13(21.8)
166.6		^{166}Lu(2.65 m)	228.12(77.3), 337.50(41), 367.95(31.4)
166.603 *1*	3.6 *8*	^{151}Pr(18.90 s)	880.19(13), 189.057(11.8), 484.501(11.3)
166.64 *1*	†1.87 *10*	^{153}Pm(5.4 m)	35.842(†100), 127.298(†75), 28.309(†34.6)
166.69	9.0 *16*	^{175}W(35.2 m)	270.25(12.6), 149.17(3.6), 121.16(1.8)
166.7 *2*	0.16 *4*	^{76}Kr(14.8 h)	315.7(39), 270.2(21.1), 45.48(19.5)
• 166.70 *20*	0.0060 *7*	^{170}Lu(2.00 d)	84.2551(4.256), 1280.25(3.450), 2041.88(1.434)
166.74 *6*	0.27 *3*	^{184}Pt(17.3 m)	154.90(31), 191.97(27), 548.36(23.1)
• 166.76 *15*	0.062 *16*	^{153}Tb(2.34 d)	212.038(31.0), 170.504(6.8), 109.758(6.4)
166.8 *3*	0.37 *12*	^{74}Kr(11.50 m)	89.65(31), 203.0(18.0), 296.67(9.9)
166.8 *4*	0.162 *24*	^{77}Kr(74.4 m)	129.64(81), 146.59(37.3), 312.0(3.7)
166.82 *2*	†100	^{162}Lu(1.37 m)	631.87(†26.6), 798.76(†16.9), 320.72(†15.19)
• 166.94 *4*	0.0077 *17*	^{189}Re(24.3 h)	216.663(5.50), 219.395(4.54), 245.09(3.5)
166.976 *7*	†0.63 *10*	^{225}Fr(4.0 m)	182.3(†100), 31.50(†91), 225.1(†55)
• 166.976 *7*	0.205 *10*	^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
167.0		^{156}Ho(56 m)	266.35(54.7), 137.83(51), 366.25(10.73)
167.0 *1*	0.12 *3*	^{188}Hg(3.25 m)	66.7(63), 190.1(4.40), 82.7(2.6)
167 *2*	110000	^{210}At(8.1 h)	82.802(†480000), 106(†170000), 141.2(†60000)
167.01 *4*	84 *3*	^{67}Ge(18.9 m)	1472.48(4.9), 910.92(3.1), 914.68(3.0)
167.05 *20*		^{186}Ir(16.64 h)	296.911(64.0), 137.155(42), 434.849(34.4)
167.07 *10*	†2.5 *4*	^{165}Lu(10.74 m)	132.49(†100), 120.60(†100), 174.25(†47.0)
167.092 *10*	1.24 *12*	^{140}Xe(13.60 s)	805.52(20), 1413.66(12.2), 1315.05(8.2)
167.1 *1*	26	^{97}Rb(169.9 ms)	585.2(21.0), 600.5(10.6), 520.0(6.3)
167.1 *1*	3.4	^{98}Rb(114 ms)	141.0(1.0)
167.1482 *11*	0.037 *8*	^{155}Sm(22.3 m)	104.3346(74.6), 245.771(3.7), 141.4428(1.98)
167.15 *10*	0.30 *3*	^{159}Er(36 m)	624.5(33), 649.1(23.4), 205.92(9.7)
167.19 *5*	3.0 *4*	^{181}Os(105 m)	238.75(44), 826.77(20), 118.03(12.9)
167.2	0.08	^{43}Ar(5.37 m)	975.0(34), 738.1(15), 1439.5(13)
167.2 *2*	0.91 *10*	^{58}Cu(3.204 s)	1454.45(16.0), 1448.2(11.5), 40.3(4.8)
167.2 *3*	0.026 *7*	^{69}Cu(2.85 m)	1007.5(23.4), 834.4(13.1), 531.2(6.0)
167.20 *28*	0.051 *9*	^{103}Ag(65.7 m)	118.72(31.2), 148.193(28.3), 266.86(13.3)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
167.26 *5*	†22 *3*	^{163}Lu(238 s)	163.08(†100), 54.00(†88), 396.34(†63)
167.3		^{41}Cl(38.4 s)	1353, 834, 515
167.3 *1*	†31 *5*	^{94}Kr(0.20 s)	629.2(†100), 764.5(†71), 219.466(†67.4)
167.3 *3*	0.55 *18*	^{152}Ho(49.5 s)	647.2(92), 613.8(88.4), 683.3(88)
167.30 *14*	0.10 *3*	^{181}Re(19.9 h)	365.57(56), 360.70(20), 639.30(6.4)
167.3 *4*	0.44 *9*	^{188}Tl(71 s)	412.7(88), 592.0(61), 504.2(23.3)
167.34 *10*	0.38 *5*	^{200}Pt(12.5 h)	76.21(13), 135.90(3.24), 243.71(2.49)
167.341 *5*	0.56 *11*	^{163}Tb(19.5 m)	351.138(26), 389.734(24.3), 494.534(23)
167.4 *2*	†7 *2*	^{112}Te(2.0 m)	372.70(†100), 296.20(†86), 418.9(†57)
167.4 *6*	†1.7 *6*	^{142}Xe(1.22 s)	571.83(†100), 657.05(†79), 538.24(†77)
167.4	11	^{147}Ba(0.893 s)	105.2(4.8), 196.1(4.8), 249.3(3.6)
167.4 *1*	0.76 *22*	^{169}Ho(4.7 m)	788.4(21.2), 853.0(11.2), 760.8(10)
• 167.40 *7*	0.0072 *8*	^{172}Er(49.3 h)	610.062(44.2), 407.338(42.1), 68.107(3.29)
167.43 *6*	0.6 *3*	^{79}Sr(2.25 m)	39.41(28), 105.00(21.8), 413.8(7.6)
167.43 *7*	0.64 *6*	^{201}Au(26 m)	542.6(1.2), 517.0(0.83), 613.2(0.77)
• 167.43 *7*	10	^{201}Tl(72.912 h)	135.34(2.565), 32.19(0.258), 30.60(0.253)
• 167.45 *5*	0.051 *10*	^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
• 167.50 *20*	0.015 *8*	^{105}Ag(41.29 d)	344.520(41), 280.41(30.2), 644.55(11.1)
167.5 *5*	>0.19	^{137}Nd(38.5 m)	75.5(17.0), 580.6(13), 306.60(10.0)
167.5 *3*		^{192}Hg(4.85 h)	274.8(50.4), 157.2(7), 306.5(5.4)
167.5 *1*	13.6 *9*	^{192}Pb(3.5 m)	1195.4(47), 608.2(17.9), 781.6(8.5)
167.6 *4*	0.046 *14*	^{141}Xe(1.73 s)	909.23(24.0), 118.705(16.1), 105.937(9.8)
167.73 *9*	0.21 *3*	^{183}Ir(58 m)	392.52(10.4), 228.70(6.9), 87.67(5.6)
• 167.75 *2*	8.3 *5*	^{151}Pm(28.40 h)	340.08(23), 275.21(6.8), 717.72(4.05)
167.79 *5*	0.61 *5*	^{144}Ba(11.5 s)	103.855(23.30), 430.48(18.3), 172.828(15.4)
167.8 *2*	1.10 *12*	^{148}Ce(56 s)	269.519(17.0), 291.724(16.7), 121.169(13.2)
167.81 *20*	†0.40 *3*	^{184}Ir(3.09 h)	263.97(†100), 119.80(†45), 390.38(†38)
• 167.81 *5*	2.9×10^{-6} *7*	^{239}Pu(24110 y)	51.624(0.007100), 38.661(0.000500), 129.297(0.00631)
167.844 *12*	8.81 *8*	^{183}Os(13.0 h)	381.768(89.6), 114.463(20.63), 851.474(4.56)
167.88 *7*	0.117 *12*	^{151}Nd(12.44 m)	116.80(43.4), 255.68(16.4), 1180.89(14.8)
167.89 *8*	†17	^{154}Nd(25.9 s)	151.703(†800), 799.55(†600), 180.693(†510)
167.89 *21*		^{184}Tl(11 s)	366.51(†100), 286.80(†39), 340.0(†25)
167.9 *2*	0.128 *19*	^{92}Kr(1.840 s)	142.307(64), 1218.6(60), 812.6(14.6)
167.90 *2*	1.00 *5*	^{207}At(1.80 h)	814.41(44.5), 588.33(19.2), 300.654(12.8)
167.90 *2*	0.07	^{211}Rn(14.6 h)	68.573(0.42), 236.48(0.063)
168 *1*	0.014 *5*	^{138}Nd(5.04 h)	325.76(2.84), 199.50(0.53), 341.65(0.40)
168.0 *3*	0.50	^{170}Hf(16.01 h)	164.78(33), 620.7(23), 120.17(19)
168		^{234}Am(2.32 m)	185, 147, 112
168.09 *5*	0.37 *8*	^{77}Zn(2.08 s)	189.49(28.1), 473.94(19.7), 1832.0(12.4)
168.1 *1*	1.28 *5*	^{129}La(11.6 m)	278.6(25), 110.5(16.9), 457.0(8.0)
168.1 *3*	7.5 *8*	^{183}Lu(58 s)	1125.3(25.0), 1056.8(16.5), 248.4(5.0)
168.11	4.8 *3*	^{202}Bi(1.72 h)	960.67(99), 422.18(83.7), 657.49(60.6)
168.23 *12*	0.08	^{183}Ir(58 m)	392.52(10.4), 228.70(6.9), 87.67(5.6)
168.24 *6*	0.0079 *16*	^{163}Tb(19.5 m)	351.138(26), 389.734(24.3), 494.534(23)
• 168.29 *13*	†0.94 *19*	^{227}Th(18.72 d)	235.971(†813), 50.13(†528), 256.25(†463)
168.3 *3*		^{122}Ba(1.95 m)	550.7, 388.7, 231.0
• 168.3 *5*	5.0×10^{-5}	^{253}Es(20.47 d)	41.79(0.050), 389.11(0.0264), 387.1(0.00810)
168.371 *14*	2.24 *11*	^{179}Re(19.5 m)	430.221(28), 289.968(26.9), 1680.244(13.0)
168.4	0.11	^{147}Ba(0.893 s)	167.4(11), 105.2(4.8), 196.1(4.8)
168.4		^{176}Au(1.08 s)	
• 168.41 *5*	0.92 *9*	^{151}Pm(28.40 h)	340.08(23), 167.75(8.3), 275.21(6.8)
• 168.453 *25*	†1.22×10^{4} *9*	^{134}Ce(75.9 h)	162.306(†230000), 130.414(†209000), 39.08(†>150000)
168.47 *7*	0.081 *12*	^{161}Gd(3.66 m)	360.94(0.59), 314.92(22.7), 102.315(13.9)
168.499 *4*	18.2 *10*	^{93}Sr(7.423 m)	590.238(67), 875.73(24.1), 888.13(21.8)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
168.5 *2*	>0.007	^{88}Kr(2.84 h)	2392.11(34.6), 196.301(25.98), 2195.842(13.18)
168.52 *4*	0.33 *5*	^{148}Ce(56 s)	269.519(17.0), 291.724(16.7), 121.169(13.2)
168.6 *1*		^{125}La(76 s)	67.6(34), 43.6(3.5), 985.2
168.62 *3*	19.9 *4*	^{108}Sn(10.30 m)	396.44(64.3), 272.75(45.5), 669.08(22.6)
168.63 *5*	0.29 *5*	^{117}Cd(3.36 h)	1997.33(26), 1065.98(23.1), 564.397(14.7)
168.65 *10*	0.013 *3*	^{228}Ac(6.15 h)	911.205(26.6), 968.971(16.2), 338.322(11.3)
168.68 *5*	1.34 *9*	^{148}Ba(0.607 s)	56.08(29.20), 133.53(3.88), 415.78(3.59)
168.684 *2*	99.2	^{52}Fe(8.275 h)	377.738(1.68), 1039.902
168.7 *1*	6.7 *4*	^{211}Rn(14.6 h)	674.1(45), 1362.9(32.5), 678.4(28.9)
168.74 *5*	0.13 *4*	^{204}Bi(11.22 h)	899.15(98), 374.72(82), 984.02(59)
168.80 *15*	†1.4 *4*	^{185}Pt(33.0 m)	229.60(†100), 135.3(†80), 197.4(†74)
168.83 *12*	0.0022 *2*	^{249}Cm(64.15 m)	634.31(1.5), 560.45(0.84), 368.76(0.35)
168.838 *6*	25.4 *13*	^{164}Tb(3.0 m)	754.80(23.3), 215.07(21), 688.44(21.2)
168.86 *13*	0.28 *3*	^{221}Rn(25 m)	186.38(21.6), 150.04(4.5), 216.90(2.6)
• 168.86 *13*	0.0185 *22*	^{225}Ac(10.0 d)	99.91(1.01), 150.04(0.80), 99.63(0.62)
168.88 *8*	0.0025 *11*	^{187}W(23.72 h)	685.774(27.3), 479.531(21.8), 72.001(11.14)
168.9 *1*	†13.1 *10*	^{95}Pd(13.3 s)	1350.9(†105), 716.6(†70.63), 381.8(†50.8)
168.9 *1*		^{132}Ce(3.51 h)	182.11(77), 155.37(10.5), 216.83(4.95)
168.9	0.21	^{157}Er(18.65 m)	53.05(24), 391.32(14.2), 121.57(10.1)
168.98 *10*	1.24 *8*	^{127}Cd(0.43 s)	1235.07(8.3), 376.28(7.5), 523.60(5.15)
169.0 *3*	0.024 *9*	^{101}Mo(14.61 m)	191.92(19), 590.91(16.4), 1012.47(12.8)
169.0 *1*	†26	^{123}La(17 s)	92.5(†100), 937.3(†43), 153.6(†43)
169 *1*	†13	^{137}Sm(45 s)	380.5(†100), 163.7(†85), 408.3(†40)
• 169.0 *1*	0.0025 *25*	^{155}Tb(5.32 d)	86.545(32.0), 105.305(25), 180.103(7.45)
169.0 *3*	0.8	^{170}Hf(16.01 h)	164.78(33), 620.7(23), 120.17(19)
169.0 *3*	†2 *1*	^{225}Fr(4.0 m)	182.3(†100), 31.50(†91), 225.1(†55)
169.0067 *9*	0.037 *11*	^{155}Sm(22.3 m)	104.3346(74.6), 245.771(3.7), 141.4428(1.98)
169.01 *5*	†0.18 *4*	^{229}Ac(62.7 m)	164.522(†100), 569.1(†91), 261.92(†39)
• 169.01 *5*	6.2×10^{-5} *10*	^{233}U(1.592×10^{5} y)	42.44(0.0862), 97.134(0.020), 54.699(0.0182)
169.025 *5*	5.25 *11*	^{133}Te(55.4 m)	912.671(55.28), 647.51(19.4), 863.955(15.6)
169.04 *3*	0.158 *14*	^{167}Yb(17.5 m)	113.34(55.3), 106.18(22.5), 176.25(21)
169.08 *3*	0.134 *13*	^{207}At(1.80 h)	814.41(44.5), 588.33(19.2), 300.654(12.8)
• 169.09 *3*		^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
169.1	2.8	^{144}Tb(4.25 s)	743.0(12), 1001.6(7), 959.36(4.7)
• 169.151 *25*	11.3 *8*	^{182}Re(64.0 h)	229.3220(26), 67.75001(22.2), 1121.3007(22.0)
169.159 *10*	0.34	^{233}Th(22.3 m)	86.477(2.7), 29.374(2.5), 459.222(1.4)
• 169.159 *10*	0.073 *7*	^{237}Np(2.14×10^{6} y)	29.374(15.0), 86.477(12.4), 94.66(0.6)
169.18 *5*	0.60 *14*	^{105}Tc(7.6 m)	143.26(16), 107.945(14.1), 321.50(11.1)
169.2 *4*	2.06 *19*	^{127}Sn(2.10 h)	1114.3(39), 1095.6(20), 823.1(10.9)
169.2 *5*	†5 *1*	^{134}Pr(11 m)	293.5(†100), 299.0(†100), 1196.8(†100)
169.2 *5*	†5 *1*	^{134}Pr(17 m)	1964.1(†100), 1904.3(†100), 1579.9(†100)
169.20 *6*	0.083 *12*	^{151}Nd(12.44 m)	116.80(43.4), 255.68(16.4), 1180.89(14.8)
169.2 *4*	0.20 *10*	^{185}Au(4.25 m)	310.6(13), 243.1(6.6), 77.7(6)
169.2	>0.016	^{195}Tl(1.16 h)	563.52(10.5), 884.47(10.0), 1363.88(8.4)
169.2 *1*	0.115 *8*	^{240}U(14.1 h)	44.10(1.05), 189.7(0.24), 66.5(0.154)
169.25 *25*	0.19 *5*	^{167}Lu(51.5 m)	29.66(14.4), 239.22(8.6), 213.19(3.6)
• 169.26 *4*	0.44 *3*	^{137}Ce(34.4 h)	824.82(0.44), 762.3(0.192), 835.38(0.103)
169.300 *4*	<0.009	^{13}B(17.36 ms)	3683.921(7.6), 3089.049(<0.7), 3853.170(<0.5)
169.3 *1*	0.21 *4*	^{107}Tc(21.2 s)	102.70(21.0), 177.00(9.2), 106.31(7.6)
169.3 *1*	2.4 *11*	^{119}Cs(43.0 s)	176.05(29.7), 225.13(26), 257.9(17.4)
169.3 *1*	†>100	^{119}Cs(30.4 s)	314.0(†47), 245.9(†40)
169.3 *2*	20	^{124}Ba(11.9 m)	1216(12), 188.98(10), 271.6(8)
• 169.3 *5*		^{146}Eu(4.59 d)	747.2(98), 633.03(43), 634.07(37)
169.36 *19*	0.033 *14*	^{111}Pd(23.4 m)	580.00(0.8), 70.44(0.78), 1459.0(0.56)

• $t_{1/2}$>1 d

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
169.36 *19*	0.44 *14*	^{111}Pd(5.5 h)	70.44(8.3), 391.25(5.4), 632.80(3.6)
169.4 *3*	†15 *2*	^{121}La(5.3 s)	139.3(†100), 134.4(†73), 97.8(†57)
169.42 *5*	†100	^{131}Ce(10.3 m)	414.25(†68), 119.18(†44), 26.2(†43)
169.47 *10*	0.17 *8*	^{66}Ge(2.26 h)	43.89(28.7), 381.85(28), 272.97(10.4)
169.55 *7*		^{126}Pr(3.1 s)	495.88, 349.40
169.56 *4*	0.52 *5*	^{99}Sr(0.269 s)	125.118(16.1), 536.12(14.0), 1198.12(9.2)
• 169.56 *3*	†0.730×10^6 *20*	^{241}Am(432.2 y)	59.537(†60), 26.345(†1000×10^9), 33.195(†6000×10^8)
• 169.635 *17*	0.0012 *1*	^{231}Th(25.52 h)	25.646(14.5), 84.216(6.6), 89.944(0.94)
169.70 *17*	1.04 *23*	^{80}Zn(0.545 s)	712.53(45.1), 715.40(33.8), 964.93(15.6)
• 169.7 *2*	0.04 *1*	^{131}Te(30 h)	773.67(49.9), 852.21(27.0), 793.75(18.10)
169.7 *5*	0.14 *4*	^{208}Rn(24.35 m)	426.78(7.07), 251.05(5.02), 350.026(3.34)
169.7		^{225}Rn(4.5 m)	207.2, 178.7, 115.8
169.72 *6*	0.067 *6*	^{73}Se(39.8 m)	67.03(2.59), 253.70(2.356), 84.0(2.03)
169.78 *7*	0.93 *11*	^{184}Pt(17.3 m)	154.90(31), 191.97(27), 548.36(23.1)
169.8 *2*	3.2	^{145}La(24.8 s)	70.0(11), 355.8(3.8), 118.2(3.6)
169.80 *5*	1.72 *19*	^{157}Tm(3.63 m)	455.00(9.3), 385.5(8.8), 348.40(8.4)
169.81 *5*	0.28 *4*	^{204}Bi(11.22 h)	899.15(98), 374.72(82), 984.02(59)
169.9 *2*	0.84 *17*	^{104}Sn(20.8 s)	132.7(56), 912.6(42), 401.2(16.2)
169.9 *1*	†20 *2*	^{225}Fr(4.0 m)	182.3(†100), 31.50(†91), 225.1(†55)
• 169.9 *1*	0.00192 *24*	^{229}Pa(1.50 d)	40.09(0.104), 64.70(0.045), 75.12(0.035)
170.0 *7*	0.27 *9*	^{104}Tc(18.3 m)	358.0(89), 530.5(15.6), 535.1(14.7)
170.0 *5*	0.22 *4*	^{136}Sm(47 s)	114.4(36), 747.7(5.4), 485.3(5.0)
170.0 *7*	0.14 *7*	^{138}Pr(2.12 h)	1037.8(101), 788.742(100), 302.7(80)
170.0 *6*	0.45 *16*	^{166}Hf(6.77 m)	78.76(41), 341.82(4.7), 407.91(4.5)
170		^{180}Hg(2.8 s)	263.9
• 170.00 *10*	†0.24	^{227}Th(18.72 d)	235.971(†813), 50.13(†528), 256.25(†463)
170	†4.6	^{228}Pa(22 h)	95(†100), 310(†42), 240(†23)
170.08 *20*	†14 *4*	^{161}Lu(77 s)	110.78(†100), 100.32(†95), 43.7(†70)
170.1	†6.2	^{175}Os(1.4 m)	125.0(†100), 181(†10.8), 248(†8.6)
170.1	†100 *28*	^{182}Hg(10.83 s)	251.2(†100)
170.16 *19*	1.35 *19*	^{184}Hg(30.6 s)	236.18(64), 156.24(58), 295.11(10.3)
170.20 *45*	0.09 *6*	^{137}Nd(38.5 m)	75.5(17.0), 580.6(13), 306.60(10.0)
170.2 *4*		^{230}Ac(122 s)	454.95(8), 508.20(5.15), 1243.9(3.50)
• 170.2 *4*		^{230}Pa(17.4 d)	951.95(1.65), 918.48(8.2), 454.95(6.27)
170.22 *3*	0.0030 *3*	^{165}Dy(2.334 h)	94.700(3.58), 361.68(0.84), 633.415(0.568)
170.25 *5*	0.58 *3*	^{165}Yb(9.9 m)	80.11(49), 68.86(9.1), 1090.28(4.4)
170.26 *5*	†1.5 *5*	^{163}Lu(238 s)	163.08(†100), 54.00(†88), 396.34(†63)
170.3 *4*	0.08 *8*	^{127}Sn(2.10 h)	1114.3(39), 1095.6(20), 823.1(10.9)
• 170.325 *16*	0.0134 *8*	^{166}Ho(1.20×10^3 y)	184.410(72.6), 810.276(58.08), 711.683(55.32)
170.325 *16*	0.074 *4*	^{166}Tm(7.70 h)	778.817(18.9), 2052.36(17.2), 184.410(16.1)
170.4 *1*	†1.4 *3*	^{169}Ta(4.9 m)	511.0(†20.6), 28.80(†18.3), 192.4(†8)
170.439 *20*	0.21 *3*	^{182}Os(22.10 h)	510.056(52), 180.230(33.5), 263.285(6.71)
170.5	†100	^{88}Mo(8.0 m)	79.8(†71), 130.9(†60), 90.7
170.5 *1*	1.7	^{181}Au(11.4 s)	198.60(4.4), 2022.4(4.2), 79.40(4.2)
• 170.501 *21*	0.32 *3*	^{206}Po(8.8 d)	1032.26(32.9), 511.36(24.1), 286.410(23.8)
• 170.504 *20*	6.8 *4*	^{153}Tb(2.34 d)	212.038(31.0), 109.758(6.4), 102.263(6.0)
170.54 *2*	>0.12	^{147}La(4.015 s)	117.718(12), 186.320(6.48), 438.30(5.04)
• 170.59 *6*	0.020 *4*	^{237}Np(2.14×10^6 y)	29.374(15.0), 86.477(12.4), 94.66(0.6)
170.6 *10*	0.022 *12*	^{199}Pt(30.80 m)	542.993(15), 493.772(5.59), 317.056(4.95)
170.677 *7*	†1.5 *4*	^{142}Xe(1.22 s)	571.83(†100), 657.05(†79), 538.24(†77)
170.68 *5*	0.8 *1*	^{27}Mg(9.458 m)	843.74(71.8), 1014.42(28.0)
170.68 *5*	0.0005	^{27}Si(4.16 s)	2211.0(0.180), 2981.82(0.026), 1014.42(0.0172)
170.7 *3*	3.1 *3*	^{98}Sr(0.653 s)	119.353(73), 444.628(39), 428.4(31)
170.70 *15*	0.23 *5*	^{159}Tm(9.13 m)	38.35(5.8), 84.8(5.8), 271.30(5.1)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
170.7 *3*	0.13	^{233}Th(22.3 m)	86.477(2.7), 29.374(2.5), 459.222(1.4)
• 170.7 *3*		^{237}Np(2.14×10^6 y)	29.374(15.0), 86.477(12.4), 94.66(0.6)
170.71 *9*	1.7 *4*	^{78}Zn(1.47 s)	224.75(43.9), 181.68(28.1), 860.30(24.5)
170.71 *5*		^{183}Ir(58 m)	392.52(10.4), 228.70(6.9), 87.67(5.6)
• 170.728 *15*	0.0693 *19*	^{171}Lu(8.24 d)	739.78(47.8), 19.394(13.7), 667.404(11.04)
170.76	0.44 *7*	^{151}Nd(12.44 m)	116.80(43.4), 255.68(16.4), 1180.89(14.8)
170.76 *2*	3.20 *12*	^{151}Nd(12.44 m)	116.80(43.4), 255.68(16.4), 1180.89(14.8)
• 170.79 *4*	0.0040 *9*	^{205}Bi(15.31 d)	1764.36(1.368), 703.44(31), 987.62(0.585)
170.80 *20*	0.20 *4*	^{126}In(1.64 s)	1141.11(100), 908.58(99), 111.79(88)
• 170.80 *20*	0.0031 *5*	^{170}Lu(2.00 d)	84.2551(4.256), 1280.25(3.450), 2041.88(1.434)
170.84 *5*	†0.38 *8*	^{229}Ac(62.7 m)	164.522(†100), 569.1(†91), 261.92(†39)
• 170.84 *5*	0.00013 *2*	^{233}U(1.592×10^5 y)	42.44(0.0862), 97.134(0.020), 54.699(0.0182)
170.85 *2*	0.50 *5*	^{234}Pa(6.70 h)	131.30(18), 946.00(13.4), 883.24(9.6)
170.9 *3*		^{122}Ba(1.95 m)	550.7, 388.7, 231.0
170.9 *7*	0.007 *4*	^{123}Sn(40.06 m)	160.33(86), 381.4(0.042), 541.8(0.020)
170.91 *13*	0.09 *3*	^{133}Te(12.5 m)	312.072(62), 407.63(27.1), 1333.21(10.67)
170.98 *20*	0.50 *4*	^{221}Rn(25 m)	186.38(21.6), 150.04(4.5), 216.90(2.6)
• 170.98 *20*	0.008 *3*	^{225}Ac(10.0 d)	99.91(1.01), 150.04(0.80), 99.63(0.62)
171 *1*	0.11	^{75}Rb(19.0 s)	178.98(<63), 178.97(>51), 187.21(8.7)
171.0	0.14 *4*	^{76}Kr(14.8 h)	315.7(39), 270.2(21.1), 45.48(19.5)
171 *2*	>0.13	^{93}Tc(2.75 h)	1363.02(66), 1520.37(24.4), 1477.13(8.7)
171.0 *5*	0.017 *10*	^{101}Pd(8.47 h)	296.29(19), 590.44(12.06), 269.67(6.43)
171.0 *4*	†1.3 *5*	^{171}Hf(12.1 h)	122.0(†100), 662.2(†83), 347.18(†47)
171.0		^{171}W(2.38 m)	184.2(†100), 294.5(†89), 478.7(†83)
171		^{238}Pa(2.3 m)	1015.3(†<100), 1014.6(†<100), 635.18(†88)
171.02 *11*	0.049 *20*	^{246}Am(25.0 m)	1078.86(27.7), 798.80(25), 1062.04(17.1)
171.05 *7*	0.025 *11*	^{117}Cd(2.49 h)	273.349(28), 1303.27(18.4), 344.459(17.9)
171.05 *7*		^{117}Cd(3.36 h)	1997.33(26), 1065.98(23.1), 564.397(14.7)
171.1 *16*	4.8 *4*	^{31}Na(17.0 ms)	2243.9(10.4), 2022.2(3.8), 623.5(3.2)
171.1 *16*	5.4 *15*	^{32}Na(13.2 ms)	221.6(2.6), 895.0(2.6)
171.1	†3	^{238}Pa(2.3 m)	1015.3(†<100), 1014.6(†<100), 635.18(†88)
• 171.1 *2*	†1.1 *4*	^{258}Md(51.5 d)	367.8(†100), 447.9(†37), 276.8(†20.2)
171.28 *3*	0.12 *6*	^{111}Ag(64.8 s)	245.422(0.50), 620.3(0.121), 752.7(0.043)
• 171.28 *3*	90	^{111}In(2.8049 d)	245.422(94), 150.824(0.0028)
171.3	0.07 *3*	^{221}Fr(4.9 m)	218.19(11.6), 410.7(0.14), 99.5(0.11)
171.34 *16*	0.056 *19*	^{105}Cd(55.5 m)	961.84(4.69), 346.870(4.20), 1302.459(3.98)
• 171.34	0.100 *9*	^{206}Po(8.8 d)	1032.26(32.9), 511.36(24.1), 286.410(23.8)
• 171.388 *4*	0.000110 *2*	^{239}Pu(24110 y)	51.624(0.007100), 38.661(0.000500), 129.297(0.00631)
• 171.393 *13*	2.90 *11*	^{173}Lu(1.37 y)	272.105(21.2), 78.63(11.87), 100.724(5.24)
171.4 *2*	0.79 *5*	^{108}In(39.6 m)	632.96(76), 1986.8(12.4), 3452.2(9.2)
171.4 *1*	0.16 *4*	^{151}Nd(12.44 m)	116.80(43.4), 255.68(16.4), 1180.89(14.8)
171.4 *1*	0.098 *11*	^{228}Fr(39 s)	473.7(10.2), 474.0(7.6), 410.40(6.3)
• 171.41 *10*	0.011 *2*	^{234}Np(4.4 d)	1558.31(18.72), 1527.21(11.2), 1601.80(9.1)
171.45 *1*	†0.22 *3*	^{153}Pm(5.4 m)	35.842(†100), 127.298(†75), 28.309(†34.6)
171.5 *2*	0.36 *5*	^{117}Cs(8.4 s)	204.8(15.0), 29.7(9.9), 205.6(6.8)
171.5 *3*	>0.31	^{148}Pr(2.27 m)	301.702(61), 1357.78(5.5), 1023.18(4.8)
171.5 *1*	14 *6*	^{149}Er(4 s)	1748.4(71), 1577.9(20), 1233.0(4.0)
171.5 *1*	6.5 *8*	^{149}Er(8.9 s)	1171.0(9.4), 343.9(6.3), 1530.9(4.4)
171.5 *1*		^{150}Tm(2.2 s)	436.7, 343.9
171.5 *1*		^{153}Tm(1.48 s)	343.9
171.5 *1*		^{153}Tm(2.5 s)	343.9
171.5 *2*	†16 *6*	^{155}Tm(45 s)	88.1(†100), 323.2(†65), 507.0(†40)
171.5	4.8	^{190}Hg(20.0 m)	142.6(68), 154.7(2.5), 129.6(1.6)
• 171.5 *2*	0.18 *5*	^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
171.548 *8*	†100 *2*	^{106}Nb(1.02 s)	350.70(†39), 714.00(†30), 725.10(†17)
171.580 *3*	3.8 *10*	^{182}Hf(61.5 m)	942.80(18.8), 799.64(9.4), 114.3152(6.2)
171.6 *1*	6.2 *5*	^{71}Br(21.4 s)	260.5(8.0), 233.7(6.5), 122.72(5.1)
171.6 *2*	1.3	^{145}Ba(4.31 s)	96.6(17), 91.9(7), 65.9(5)
171.6 *1*	0.38 *6*	^{146}Ba(2.22 s)	140.7(20.2), 251.2(19.6), 121.2(14.2)
171.6 *3*	7.1	^{154}Pm(2.68 m)	184.810(32), 81.99(15.4), 546.66(14.5)
171.606 *8*	0.169 *8*	^{173}Hf(23.6 h)	123.672(83), 296.974(33.9), 139.634(12.7)
171.7	16	^{179}Pt(21.2 s)	193.1(14.2), 99.8(13.2), 1565.4(11.1)
171.7 *5*	2.50 *12*	^{201}Bi(108 m)	629.1(24.0), 936.2(11.3), 1014.1(10.7)
171.7 *3*	0.020 *10*	^{223}Ac(2.10 m)	98.58(0.891), 191.3(0.58), 83.55(0.57)
• 171.75 *2*	>0.041	^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
171.76 *5*	0.037 *10*	^{167}Yb(17.5 m)	113.34(55.3), 106.18(22.5), 176.25(21)
171.8 *3*	0.32	^{154}Pm(2.68 m)	184.810(32), 81.99(15.4), 546.66(14.5)
171.8 *3*	†12	^{223}Rn(23.2 m)	591.8(†100), 635.2(†76), 416.0(†55)
• 171.84 *10*	0.060 *6*	^{194}Au(38.02 h)	328.455(60), 293.545(10.2), 1468.91(6.3)
171.867 *7*	0.14	^{182}Hf(61.5 m)	942.80(18.8), 799.64(9.4), 114.3152(6.2)
171.9 *2*	0.0104 *4*	^{66}Ga(9.49 h)	1039.30(37), 2752.01(23.38), 833.50(5.89)
• 171.90 *8*	†1.53×10^{4} *17*	^{227}Ac(21.773 y)	100(†110000), 69.21(†78000), 160.26(†70000)
171.97 *2*	0.85 *6*	^{145}Cs(0.594 s)	175.36(20), 198.93(10.9), 112.46(10.71)
171.99 *4*	4.6 *4*	^{154}Tb(22.7 h)	247.925(79), 346.643(69), 1419.81(46)
172 *2*		^{89}Nb(1.9 h)	1627.20(3.4), 1833.46(3.16), 3092.7(3.0)
172 *1*	†9 *3*	^{103}Mo(67.5 s)	83.4(†100), 423.91(†69), 45.8(†57)
172.0 *10*	0.067 *5*	^{103}Tc(54.2 s)	346.380(17.5), 136.079(16.6), 562.90(7.0)
• 172.0 *2*	0.015 *5*	^{131}Te(30 h)	773.67(49.9), 852.21(27.0), 793.75(18.10)
172.0		^{151}Ho(35.2 s)	527.4(63), 775.53(9.2), 209.5(5.69)
172.0 *3*	0.074 *19*	^{158}Tm(3.98 m)	192.13(62), 335.10(16.8), 1149.83(7.6)
172.00 *6*	1.56 *18*	^{159}Sm(11.37 s)	189.79(46), 861.97(18.2), 254.43(9.8)
172.05 *6*	5.1 *4*	^{161}Tm(33 m)	45.54(5.00), 1648.1(9.50), 84.40(9.4)
172.1 *2*	>0.07	^{139}Nd(5.50 h)	113.94(40), 737.96(35), 982.2(26.4)
• 172.1 *5*		^{146}Eu(4.59 d)	747.2(98), 633.03(43), 634.07(37)
• 172.1 *4*	0.00042 *21*	^{152}Eu(13.542 y)	344.281(26.58), 778.91(12.96), 411.115(2.231)
172.1 *1*	0.079 *18*	^{188}Hg(3.25 m)	66.7(63), 190.1(4.40), 82.7(2.6)
172.132 *10*	0.00030 *20*	^{127}Te(9.35 h)	417.95(1.0), 360.32(0.1346), 202.860(0.0580)
• 172.132 *10*	25.5 *8*	^{127}Xe(36.4 d)	202.860(68), 374.991(17.2), 145.252(4.29)
172.167 *4*	0.22 *6*	^{175}Tm(15.2 m)	514.868(65), 941.23(15), 363.942(12.7)
• 172.18 *2*	3.52 *16*	^{191}Pt(2.9 d)	538.90(13.7), 409.44(8.0), 359.90(6.0)
172.2 *1*	0.008 *6*	^{117}Cd(2.49 h)	273.349(28), 1303.27(18.4), 344.459(17.9)
172.2 *2*	0.36 *7*	^{120}Xe(40 m)	25.1(30), 72.6(9), 178.1(6.8)
172.2 *2*	0.99 *20*	^{120}Xe(40 m)	25.1(30), 72.6(9), 178.1(6.8)
• 172.2	>0.011	^{172}Hf(1.87 y)	23.9331(20.3), 125.812(11.3), 67.35(5.3)
172.2 *1*	18	^{173}Ta(3.14 h)	69.70(5.9), 90.3(5.0), 160.4(4.9)
172.2 *1*	0.32 *3*	^{184}Pt(17.3 m)	154.90(31), 191.97(27), 548.36(23.1)
172.3 *3*	0.00020 *2*	^{226}Th(30.9 m)	111.12(3.29), 242.12(0.866), 131.02(0.278)
• 172.3020 *20*	0.00042	^{153}Sm(46.27 h)	103.1807(31.4), 69.67340(4.85), 97.4316(0.847)
• 172.3020 *20*	>0.00048	^{153}Gd(241.6 d)	97.4316(30), 103.1807(21.4), 69.67340(2.54)
• 172.31 *11*	0.053 *8*	^{195}Hg(41.6 h)	261.75(30.9), 560.27(7), 387.87(2.15)
172.36 *12*	†0.055 *13*	^{229}Ac(62.7 m)	164.522(†100), 569.1(†91), 261.92(†39)
• 172.36 *12*	3.2×10^{-5} *5*	^{233}U(1.592×10^{5} y)	42.44(0.0862), 97.134(0.020), 54.699(0.0182)
172.4 *1*	0.019 *13*	^{127}Cs(6.25 h)	411.95(62.8), 124.70(11.37), 462.31(5.07)
172.4 *3*	0.83 *18*	^{136}Sm(47 s)	114.4(36), 747.7(5.4), 485.3(5.0)
172.4 *10*	0.28	^{149}Er(8.9 s)	1171.0(9.4), 171.5(6.5), 343.9(6.3)
172.40 *3*	0.35 *5*	^{182}Os(22.10 h)	510.056(52), 180.230(33.5), 263.285(6.71)
172.4 *4*	†0.9 *4*	^{191}Tl(5.22 m)	452.6(†100), 470.1(†98), 391.6(†96)
172.4 *2*	0.033 *5*	^{228}Fr(39 s)	473.7(10.2), 474.0(7.6), 410.40(6.3)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
172.44 *10*	0.81 *8*	^{98}Nb(51.3 m)	787.374(93), 722.645(73.8), 1168.830(17.8)
172.5 *10*		^{76}Zn(5.7 s)	281.7, 1030.6, 831.2
172.5 *5*	0.34 *6*	^{88}Nb(14.5 m)	1082.53(103), 1057.01(100), 671.20(64)
172.5 *3*	†2.8	^{149}Ce(5.3 s)	57.7(†100), 380.0(†33.7), 86.4(†20.2)
172.5 *3*	†17.8 *22*	^{166}W(18.8 s)	125.8(†310), 224.6(†24.0), 395.9(†17)
172.5 *2*	0.13 *3*	^{177}W(135 m)	115.65(50), 426.98(13.2), 1036.4(10.3)
172.53 *7*	2.6 *4*	^{78}Zn(1.47 s)	224.75(43.9), 181.68(28.1), 860.30(24.5)
• 172.560 *8*	3.0×10^{-9}	^{239}Pu(24110 y)	51.624(0.007100), 38.661(0.000500), 129.297(0.00631)
• 172.5708 *22*	0.20 *4*	^{182}Hf(9×10^{6} y)	270.4031(80), 156.088(7.0), 114.3152(2.6)
172.6 *3*	0.037 *14*	^{142}Ba(10.6 m)	255.300(20.5), 1204.3(14.23), 895.2(13.9)
172.6 *2*	†49	^{256}Es(7.6 h)	861.8(†100), 231.1(†61), 1092.9(†47)
172.70 *19*	†17 *3*	^{183}Hg(9.4 s)	60.5(†100), 159.91(†21), 305.14(†16)
172.7 *7*	0.12 *3*	^{208}At(1.63 h)	686.527(98), 660.040(89), 177.595(48.6)
172.71 *3*	0.48 *3*	^{109}Ru(34.5 s)	206.29(22.0), 225.98(19.6), 1929.05(13.7)
• 172.719 *8*	0.198 *12*	^{125}Sb(2.7582 y)	427.875(30), 600.600(17.86), 635.954(11.31)
172.77 *15*	0.112 *7*	^{187}Au(8.4 m)	1331.81(7.0), 1408.23(3.06), 914.73(3.02)
172.8 *1*	0.92 *10*	^{176}Tm(1.9 m)	189.57(44.5), 1069.3(34), 381.8(21.8)
172.82 *13*	0.075 *14*	^{105}Cd(55.5 m)	961.84(4.69), 346.870(4.20), 1302.459(3.98)
172.828 *7*	15.4 *4*	^{144}Ba(11.5 s)	103.855(23.30), 430.48(18.3), 156.600(15.1)
• 172.8541 *5*	0.0801 *11*	^{153}Sm(46.27 h)	103.1807(31.4), 69.67340(4.85), 97.4316(0.847)
• 172.8541 *5*	0.044 *5*	^{153}Gd(241.6 d)	97.4316(30), 103.1807(21.4), 69.67340(2.54)
172.86 *8*	†6.5 *7*	^{165}Lu(10.74 m)	132.49(†100), 120.60(†100), 174.25(†47.0)
• 172.882 *20*	3.57 *23*	^{182}Re(64.0 h)	229.3220(26), 67.75001(22.2), 1121.3007(22.0)
172.9 *2*	†100 *5*	^{180}Yb(2.4 m)	375.0(†87), 419.8(†56), 339.2(†44)
172.9	>0.05	^{195}Tl(1.16 h)	563.52(10.5), 884.47(10.0), 1363.88(8.4)
172.9 *2*	0.00030 *3*	^{255}Fm(20.07 h)	81.477(0.81), 58.477(0.67), 80.92(0.27)
172.906 *3*	4.89 *19*	^{195}Ir(3.8 h)	98.85(10), 684.88(9.4), 432.86(9)
172.92 *6*	0.60 *7*	^{149}Pr(2.26 m)	138.447(11.0), 165.087(9.9), 108.520(9.5)
172.92 *7*	0.55 *15*	^{161}Tm(33 m)	45.54(5.00), 1648.1(9.50), 84.40(9.4)
• 172.926 *18*	0.113 *10*	^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
172.95 *5*	1.35 *8*	^{98}Nb(51.3 m)	787.374(93), 722.645(73.8), 1168.830(17.8)
173.0 *3*	†0.38 *25*	^{171}Hf(12.1 h)	122.0(†100), 662.2(†83), 347.18(†47)
173.0 *3*	†1.5 *7*	^{171}Hf(12.1 h)	122.0(†100), 662.2(†83), 347.18(†47)
173.00 *7*	0.0151 *22*	^{176}Ta(8.09 h)	1159.28(25), 88.34(12), 1224.93(6)
• 173.0 *1*	<0.04	^{231}Th(25.52 h)	25.646(14.5), 84.216(6.6), 89.944(0.94)
173.1 *5*	0.023 *10*	^{101}Pd(8.47 h)	296.29(19), 590.44(12.06), 269.67(6.43)
173.1 *1*	2.3 *3*	^{105}Mo(35.6 s)	85.4(25.0), 76.50(19.3), 147.8(14.8)
173.1 *1*	2.9 *10*	^{141}Gd(14 s)	215.8(54), 525.9(17), 336.2(17.1)
173.155 *17*	2.14 *5*	^{159}Ho(33.05 m)	121.012(36.2), 131.973(23.6), 309.594(17.2)
173.185 *23*	29 *3*	^{131}In(0.32 s)	4273.20(99), 2095.5(44), 284.48(44)
173.19 *9*	†100	^{160}Eu(38 s)	513.6(†60), 412.56(†56), 822.04(†49)
173.2 *2*	0.50 *4*	^{100}Cd(49.1 s)	936.55(66), 139.71(6.7), 582.5(6.3)
173.2 *8*	0.22 *12*	^{104}In(1.8 m)	658.0(100), 834.1(99), 878.1(29.4)
173.20 *12*	>0.09	^{133}Ce(4.9 h)	477.22(39), 510.36(20.7), 58.39(19.2)
173.2	0.25 *13*	^{147}Cs(0.225 s)	85.2(7.3), 245.8(4.5), 109.7(4.5)
173.3	0.128 *14*	^{146}Ba(2.22 s)	140.7(20.2), 251.2(19.6), 121.2(14.2)
173.3 *5*	†0.83 *21*	^{183}Hg(9.4 s)	60.5(†100), 159.91(†21), 172.70(†17)
• 173.30 *10*	0.0048 *18*	^{194}Au(38.02 h)	328.455(60), 293.545(10.2), 1468.91(6.3)
• 173.3 *10*	0.010 *5*	^{235}U(7.038×10^{8} y)	185.712(57.2), 143.764(10.96), 163.358(5.08)
173.34 *1*	†0.50 *4*	^{153}Pm(5.4 m)	35.842(†100), 127.298(†75), 28.309(†34.6)
173.4 *2*	0.257 *23*	^{69}Cu(2.85 m)	1007.5(23.4), 834.4(13.1), 531.2(6.0)
173.4 *2*	>0.047	^{69}Cu(2.85 m)	1007.5(23.4), 834.4(13.1), 531.2(6.0)
173.4 *3*	0.33 *8*	^{119}Ag(2.1 s)	626.4(13), 366.2(12.1), 399.1(10.9)
173.4 *1*	2.8 *9*	^{182}Hf(61.5 m)	942.80(18.8), 799.64(9.4), 114.3152(6.2)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
173.4 *1*	18	^{198}Pb(2.40 h)	290.3(36), 365.4(19), 865.3(5.9)
173.41 *9*	0.1110 *9*	^{223}Fr(21.8 m)	50.13(36.0), 79.72(9.1), 234.81(3.0)
• 173.41 *9*	†0.98 *24*	^{227}Th(18.72 d)	235.971(†813), 50.13(†528), 256.25(†463)
173.5 *3*	0.09 *5*	^{142}La(91.1 m)	641.285(47), 2397.8(13.3), 2542.7(10.00)
173.50 *6*	0.83 *9*	^{208}Rn(24.35 m)	426.78(7.07), 251.05(5.02), 350.026(3.34)
173.509 *12*	0.323 *18*	^{153}Dy(6.4 h)	80.723(11.10), 213.754(10.90), 99.659(10.51)
173.52 *2*	†1.38×10^{3} *14*	^{157}Ho(12.6 m)	279.97(†47600), 341.16(†37000), 193.41(†15200)
173.52 *5*	2.9	^{193}Au(17.65 h)	186.17(10.1), 255.57(6.7), 268.22(3.9)
• 173.543 *9*	0.127 *4*	^{140}La(1.6781 d)	1596.210(95), 487.021(45.5), 815.772(23.28)
• 173.577 *1*	0.0403 *21*	^{168}Tm(93.1 d)	198.241(52.39), 815.990(48.99), 447.515(23.05)
173.6 *1*	0.49 *10*	^{129}La(11.6 m)	278.6(25), 110.5(16.9), 457.0(8.0)
173.68 *2*	22.6 *15*	^{185}Ta(49.4 m)	177.59(25.7), 65.86(3.9), 243.7(3.8)
173.7 *1*	0.070 *9*	^{86}Zr(16.5 h)	242.80(96), 29.10(21.6), 612.00(5.7)
173.7 *1*	8.8 *6*	^{132}I(1.387 h)	600.1(14.0), 614.0(2.5), 610.0(1.47)
173.7 *1*	†18.1 *6*	^{194}Bi(92 s)	965.4(†100.0), 575.1(†98.0), 280.1(†73.7)
• 173.715 *5*	3.1×10^{-6} *8*	^{239}Pu(24110 y)	51.624(0.007100), 38.661(0.000500), 129.297(0.00631)
173.74 *6*	42.0 *17*	^{160}Yb(4.8 m)	215.78(20.2), 140.35(9.3), 132.23(5.9)
173.75 *5*	52.0 *20*	^{156}Pm(26.70 s)	1147.84(20.5), 117.42(13.8), 267.32(13.3)
173.78 *10*	0.246 *18*	^{197}Tl(2.84 h)	425.84(12.9), 152.22(7.2), 1411.34(4.5)
173.8 *5*	1.3 *5*	^{98}Rb(96 ms)	144.224(73), 289.4(68), 3010.5(23.4)
173.8 *5*	†8.5 *17*	^{183}Hg(9.4 s)	60.5(†100), 159.91(†21), 172.70(†17)
173.84 *15*	0.230 *11*	^{146}Ce(13.52 m)	316.74(56), 218.23(20.8), 264.56(9.0)
173.9 *1*	2.5 *3*	^{141}Tb(3.5 s)	293.3(16.8), 343.6(16.3), 198.4(14.8)
173.90 *5*	†100	^{162}Hf(37.6 s)	196.34(†25), 410.12(†16.8), 22.48
173.9 *3*	†1.4 *2*	^{168}W(51 s)	178.5(†100), 145.5(†<2), 352.2(†1.8)
173.9 *3*	†4	^{223}Rn(23.2 m)	591.8(†100), 635.2(†76), 416.0(†55)
173.9 *3*	0.071 *16*	^{227}Fr(2.47 m)	90.035(39), 585.804(29.5), 64.267(14.5)
173.91 *10*	0.090 *18*	^{180}Re(2.44 m)	902.795(90), 103.557(22.2), 825.357(9.9)
173.96 *16*	0.44 *9*	^{174}W(31 m)	35.42(14.1), 428.83(12.7), 328.68(9.5)
173.964 *13*	0.036 *5*	^{228}Ac(6.15 h)	911.205(26.6), 968.971(16.2), 338.322(11.3)
174 *1*	1.1	^{58}Cr(7.0 s)	682.9(81), 126(75), 289.5(18.8)
174.0 *2*	0.06 *3*	^{133}Ce(4.9 h)	477.22(39), 510.36(20.7), 58.39(19.2)
174.0 *5*	0.40 *9*	^{133}Ce(97 m)	97.261(<0.22), 76.9(15.8), 557.7(11.3)
174.0 *1*	†9.61 *51*	^{192}Tl(9.6 m)	422.8(†100), 634.8(†75.9), 786.3(†31.7)
• 174.0 *2*	0.026 *1*	^{238}Np(2.117 d)	984.45(27.8), 1028.54(20.3), 1025.87(9.6)
174.04 *8*	3.5 *4*	^{80}Zn(0.545 s)	712.53(45.1), 715.40(33.8), 964.93(15.6)
174.1 *2*	1.6 *4*	^{221}Ra(28 s)	149.0(9.0), 93.1(2.1), 320(0.7)
• 174.160 *5*	0.0181 *11*	^{231}Th(25.52 h)	25.646(14.5), 84.216(6.6), 89.944(0.94)
• 174.160 *5*	†>2.7×10^{2}	^{235}Np(396.1 d)	25.646(†600000), 84.216(†265000), 81.227(†58000)
174.18 *6*	0.19 *3*	^{123}In(5.98 s)	1130.5(63), 1019.7(32), 618.8(2.6)
174.19 *5*	†0.36 *10*	^{229}Ac(62.7 m)	164.522(†100), 569.1(†91), 261.92(†39)
• 174.19 *5*	0.00021 *4*	^{233}U(1.592×10^{5} y)	42.44(0.0862), 97.134(0.020), 54.699(0.0182)
174.2 *3*	0.18 *4*	^{78}As(90.7 m)	613.725(54), 694.916(16.7), 1308.59(13.0)
174.2	2.1	^{96}Y(9.6 s)	1750.42(89), 915.0(60), 617.1(56)
174.2 *3*	0.00083 *25*	^{123}I(13.27 h)	158.97(83), 528.96(1.39), 440.02(0.428)
174.2 *3*		^{141}Eu(40.0 s)	394.0(9), 384.5(5.6), 382.9(2.97)
174.2 *3*		^{141}Eu(2.7 s)	394.0(0.60), 882.9(0.54), 518.8(0.45)
174.22 *5*	4.8 *4*	^{75}Zn(10.2 s)	228.67(28.9), 432.29(20.2), 155.94(17.2)
• 174.22 *22*		^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
• 174.22 *11*	0.009 *5*	^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
174.23 *10*	†0.24 *2*	^{184}Ir(3.09 h)	263.97(†100), 119.80(†45), 390.38(†38)
174.25 *6*	†47.0 *25*	^{165}Lu(10.74 m)	132.49(†100), 120.60(†100), 203.68(†38.0)
174.25 *7*	0.013 *5*	^{167}Yb(17.5 m)	113.34(55.3), 106.18(22.5), 176.25(21)
174.276 *24*	74.4 *7*	^{45}K(17.3 m)	1705.6(53), 2353.6(14.12), 1260.53(8)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
174.29 *5*	2.8 *4*	^{103}Tc(54.2 s)	346.380(17.5), 136.079(16.6), 562.90(7.0)
174.3 *5*	0.06 *5*	^{150}Pr(6.19 s)	130.2(32), 722.5(7.0), 852.7(6.1)
174.32 *14*	0.269 *20*	^{99}Nb(2.6 m)	97.785(7), 253.50(3.64), 2641.3(3.64)
174.35 *25*	0.058 *12*	^{44}K(22.13 m)	1157.031(58), 2150.76(22.7), 2518.95(9.69)
• 174.3991 *5*	12.61 *24*	^{177}Lu(160.4 d)	208.3664(57.7), 228.4838(37.0), 378.5029(29.7)
174.4 *1*	7.0 *6*	^{98}Pd(17.7 m)	112.0(58), 662.2(19.7), 106.75(13.9)
174.4 *1*	†11.3 *13*	^{123}La(17 s)	92.5(†100), 937.3(†43), 153.6(†43)
174.40 *10*	5.5 *6*	^{160}Yb(4.8 m)	173.74(42.0), 215.78(20.2), 140.35(9.3)
174.4 *3*	0.21 *11*	^{164}Tb(3.0 m)	168.838(25.4), 754.80(23.3), 215.07(21)
174.42 *8*	†34 *4*	^{131}Nd(27 s)	87.8(†100), 164.09(†25), 668.0(†21)
• 174.44 *3*	0.74 *16*	^{153}Tb(2.34 d)	212.038(31.0), 170.504(6.8), 109.758(6.4)
• 174.440 *25*	0.84 *12*	^{153}Tb(2.34 d)	212.038(31.0), 170.504(6.8), 109.758(6.4)
174.452 *26*	0.144 *6*	^{122}Xe(20.1 h)	350.065(7.80), 148.612(2.62), 416.633(1.87)
174.5 *4*	0.40 *13*	^{120}Xe(40 m)	25.1(30), 72.6(9), 178.1(6.8)
174.5 *1*	†4 *1*	^{227}Rn(22.5 s)	162.14(†100), 739.2(†65), 686.2(†62)
174.55 *5*	0.85 *9*	^{148}Ba(0.607 s)	56.08(29.20), 133.53(3.88), 415.78(3.59)
174.55 *3*	0.165 *21*	^{234}Pa(6.70 h)	131.30(18), 946.00(13.4), 883.24(9.6)
174.6 *1*	0.132 *5*	^{143}Ba(14.33 s)	211.475(25), 798.79(15.6), 980.45(11.55)
174.6	0.28	^{157}Er(18.65 m)	53.05(24), 391.32(14.2), 121.57(10.1)
174.6	>0.026	^{197}Tl(2.84 h)	425.84(12.9), 152.22(7.2), 1411.34(4.5)
• 174.671 *19*	0.112 *5*	^{172}Lu(6.70 d)	1093.657(62.5), 900.724(29.8), 181.528(20.6)
• 174.7 *5*		^{146}Eu(4.59 d)	747.2(98), 633.03(43), 634.07(37)
• 174.70 *1*	2.96 *6*	^{151}Gd(124 d)	153.56(6.20), 243.28(5.60), 21.531(2.85)
174.79 *6*	2.2 *3*	^{123}Cd(1.82 s)	1165.86(25.7), 1027.45(22.6), 2102.81(12.5)
174.8 *5*	0.055 *15*	^{135}Te(19.0 s)	603.5(37.0), 266.8(10.36), 870.3(7.73)
174.8 *2*	76 *13*	^{140}Gd(15.8 s)	749.9(70), 379.0(38), 191.2(34)
174.8 *4*	†29.1 *13*	^{173}W(7.5 m)	457.68(†100), 130.19(†31.5), 623.48(†24.2)
174.8 *2*	0.152 *22*	^{235}Th(7.1 m)	417.0(2), 727.2(0.87), 696.1(0.64)
• 174.82 *2*	>0.031	^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
174.9 *1*	†55 *6*	^{155}Yb(1.75 s)	236.2(†100), 361.6(†46), 378.0(†26)
174.94 *4*	3.1 *2*	^{241}Np(13.9 m)	132.99(0.86), 518.8(0.40), 362.4(0.19)
• 174.94 *4*	10	^{245}Cm(8500 y)	132.99(2.77), 41.95(0.350), 189.82(0.193)
• 174.954 *5*	82.00 *25*	^{71}As(65.28 h)	1095.490(4.08), 499.876(3.624), 326.785(3.034)
174.96 *3*	0.00109 *25*	^{165}Dy(2.334 h)	94.700(3.58), 361.68(0.84), 633.415(0.568)
174.96 *5*	0.70 *7*	^{187}Pt(2.35 h)	106.46(9), 201.52(6.4), 110.04(5.7)
174.97 *4*	11.3 *7*	^{139}Xe(39.68 s)	218.59(56), 296.53(21.7), 289.78(9.2)
174.97 *4*	8.6 *8*	^{139}Xe(39.68 s)	218.59(56), 296.53(21.7), 174.97(11.3)
174.989 *17*	0.27 *5*	^{182}Os(22.10 h)	510.056(52), 180.230(33.5), 263.285(6.71)
175.0	68 *4*	^{36}Si(0.45 s)	249.9(68), 878.2(44), 424.9(32)
175.0	0.6	^{147}Ba(0.893 s)	167.4(11), 105.2(4.8), 196.1(4.8)
175.0	†1.06 *11*	^{152}Tb(17.5 h)	344.281(†1500), 586.294(†223), 271.135(†203)
175.0 *3*	0.056 *19*	^{158}Tm(3.98 m)	192.13(62), 335.10(16.8), 1149.83(7.6)
• 175.0 *2*	0.038 *6*	^{188}Ir(41.5 h)	155.032(29.7), 2214.62(18.7), 632.99(18)
175 *2*	0.8 *3*	^{196}Pb(37 m)	253.1(27.0), 502.1(26.5), 366.5(11.1)
175.01 *8*	0.13 *3*	^{123}In(5.98 s)	1130.5(63), 1019.7(32), 618.8(2.6)
175.07 *1*	7.04 *24*	^{151}Nd(12.44 m)	116.80(43.4), 255.68(16.4), 1180.89(14.8)
• 175.07 *4*	†1.82×10^5 *10*	^{241}Am(432.2 y)	59.537(†60), 26.345(†1000×10^9), 33.195(†6000×10^8)
175.1 *3*		^{147}La(4.015 s)	117.718(12), 186.320(6.48), 438.30(5.04)
• 175.1 *5*	0.028 *11*	^{189}Re(24.3 h)	216.663(5.50), 219.395(4.54), 245.09(3.5)
175.11 *5*	0.1168 *19*	^{127}Cs(6.25 h)	411.95(62.8), 124.70(11.37), 462.31(5.07)
175.11 *11*		^{223}Rn(23.2 m)	591.8(†100), 635.2(†76), 416.0(†55)
175.16 *7*	3.0 *3*	^{203}Po(36.7 m)	908.64(55), 1090.95(19.2), 893.49(18.7)
• 175.2 *4*	0.0097 *19*	^{232}Pa(1.31 d)	969.315(41.6), 894.351(19.8), 150.059(10.8)
175.228 *14*	0.5 *3*	^{227}Fr(2.47 m)	90.035(39), 585.804(29.5), 64.267(14.5)

• $t_{1/2}$>1 d

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
175.27 *10*	0.44 *22*	^{181}Re(19.9 h)	365.57(56), 360.70(20), 639.30(6.4)
175.3 *5*	0.07 *1*	^{107}Rh(21.7 m)	302.77(66), 392.47(8.8), 312.21(4.8)
175.30 *25*	0.034 *10*	^{126}In(1.60 s)	1141.11(55.9), 3344.61(21.6), 969.61(14.9)
175.30 *25*	0.16 *4*	^{126}In(1.64 s)	1141.11(100), 908.58(99), 111.79(88)
175.3 *1*	4.80 *11*	^{146}Ba(2.22 s)	140.7(20.2), 251.2(19.6), 121.2(14.2)
175.3	0.7	^{147}Ce(56.4 s)	268.80(7), 92.9(4.7), 374.23(3.5)
175.3		^{225}Rn(4.5 m)	207.2, 178.7, 169.7
• 175.310 *1*	0.044 *5*	^{155}Tb(5.32 d)	86.545(32.0), 105.305(25), 180.103(7.45)
175.36 *2*	20	^{145}Cs(0.594 s)	198.93(10.9), 112.46(10.71), 435.63(5.74)
• 175.361 *5*	7.48 *9*	^{48}Sc(43.67 h)	1312.096(100.1), 983.517(100.1), 1037.599(97.6)
175.370 *11*	†9.2 *5*	^{153}Pm(5.4 m)	35.842(†100), 127.298(†75), 28.309(†34.6)
175.373 *14*	0.209 *13*	^{183}Os(13.0 h)	381.768(89.6), 114.463(20.63), 167.844(8.81)
175.4 *3*	10.1 *12*	^{80}Sr(106.3 m)	589.0(39), 553.4(6.9), 378.8(4.2)
• 175.4 *5*		^{146}Eu(4.59 d)	747.2(98), 633.03(43), 634.07(37)
175.40 *15*	2.8 *5*	^{157}Tm(3.63 m)	455.00(9.3), 385.5(8.8), 348.40(8.4)
175.4 *2*	6 *1*	^{167}Hf(2.05 m)	315.24(100), 139.9(3.8)
175.4 *2*	†16.0 *16*	^{171}Ta(23.3 m)	49.6(†100), 506.4(†54), 501.8(†22.6)
175.4 *1*	4.7 *3*	^{240}Np(61.9 m)	566.34(25.3), 973.9(23.8), 600.57(18.4)
• 175.43 *10*	1.75 *10*	^{99}Rh(16.1 d)	528.24(33), 353.05(30.0), 89.65(29.0)
175.433 *2*	0.43 *4*	^{161}Ho(2.48 h)	25.65150(27), 103.062(3.9), 77.414(1.91)
175.45 *10*	0.10 *3*	^{159}Er(36 m)	624.5(33), 649.1(23.4), 205.92(9.7)
175.50 *7*	0.42	^{176}Ta(8.09 h)	1159.28(25), 88.34(12), 1224.93(6)
• 175.5 *4*		^{230}Pa(17.4 d)	951.95(1.65), 918.48(8.2), 454.95(6.27)
175.53 *13*	0.089 *9*	^{171}Er(7.516 h)	308.31(64.4), 295.901(28.9), 111.621(20.5)
175.582 *14*	0.261 *11*	^{122}Xe(20.1 h)	350.065(7.80), 148.612(2.62), 416.633(1.87)
175.59 *10*	0.052 *9*	^{87}Br(55.60 s)	1419.71(22.0), 1476.04(7.9), 1577.60(6.0)
175.68 *12*	0.343 *16*	^{194}Pb(12.0 m)	581.82(18.8), 1519.45(16.4), 203.82(16.2)
175.70 *14*	0.25 *5*	^{149}Pr(2.26 m)	138.447(11.0), 165.087(9.9), 108.520(9.5)
• 175.7 *3*	0.0028 *6*	^{254}Es(39.3 h)	211.80(0.096), 177.30(0.056), 71.30(0.043)
175.8 *3*	4.2 *6*	^{121}Xe(40.1 m)	252.7(13), 132.8(10.9), 445.2(7.7)
• 175.8 *2*	0.019 *4*	^{223}Ra(11.435 d)	269.459(13.7), 154.21(5.62), 323.871(3.93)
• 175.8 *3*	†<2.9	^{227}Th(18.72 d)	235.971(†813), 50.13(†528), 256.25(†463)
• 175.86 *7*	0.0224 *25*	^{165}Tm(30.06 h)	242.917(35.5), 47.155(16.9), 297.369(12.71)
175.867 *4*	1.03 *24*	^{227}Fr(2.47 m)	90.035(39), 585.804(29.5), 64.267(14.5)
175.91 *7*	0.058 *3*	^{85}Br(2.90 m)	802.41(2.56), 924.63(1.63), 919.06(0.65)
176 *1*	†16 *4*	^{103}Mo(67.5 s)	83.4(†100), 423.91(†69), 45.8(†57)
176.0 *2*	†7.4 *8*	^{105}Nb(2.95 s)	94.8(†100), 246.9(†79), 309.9(†41.9)
176.0 *3*	4.5 *9*	^{120}Xe(40 m)	25.1(30), 72.6(9), 178.1(6.8)
176.0 *3*	0.94 *19*	^{120}Xe(40 m)	25.1(30), 72.6(9), 178.1(6.8)
176 *2*	>2.2	^{152}Nd(11.4 m)	278.5(32), 250.1(21.8), 16.0(8.0)
176.0 *1*	0.32 *3*	^{184}Pt(17.3 m)	154.90(31), 191.97(27), 548.36(23.1)
176.0 *1*	0.063 *14*	^{211}Rn(14.6 h)	674.1(45), 1362.9(32.5), 678.4(28.9)
176.01 *5*	†71 *7*	^{159}Yb(1.58 m)	166.16(†500), 177.12(†159), 390.20(†113)
176.04 *16*	0.028 *17*	^{131}La(59 m)	108.081(25.0), 417.783(18.0), 365.162(16.9)
176.05 *5*	29.7 *18*	^{119}Cs(43.0 s)	225.13(26), 257.9(17.4), 259.4(7)
176.09 *8*	0.311 *15*	^{151}Nd(12.44 m)	116.80(43.4), 255.68(16.4), 1180.89(14.8)
176.1 *2*	†1.5 *2*	^{131}Pr(1.53 m)	266.13(†100), 72.82(†64), 387.56(†38)
176.12 *4*	1.12 *8*	^{204}Bi(11.22 h)	899.15(98), 374.72(82), 984.02(59)
• 176.12 *6*	0.018 *3*	^{237}Np(2.14×10^{6} y)	29.374(15.0), 86.477(12.4), 94.66(0.6)
• 176.13 *7*	3.6×10^{-5} *6*	^{233}U(1.592×10^{5} y)	42.44(0.0862), 97.134(0.020), 54.699(0.0182)
176.17 *2*	†0.29 *1*	^{70}Ga(21.14 m)	1039.20(†0.65)
176.17 *2*	2.69 *25*	^{70}As(52.6 m)	1039.20(81), 1114.1(21.8), 668.3(21.8)
176.2 *2*	†2.7 *8*	^{101}Y(448 ms)	98.3(†100), 133.8(†18.8), 232.1(†11.9)
176.2 *5*	6	^{101}Cd(1.2 m)	98.0(47), 1722.5(11), 1259.3(8)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
176.2 *4*	1.3 *3*	^{185}Au(4.25 m)	310.6(13), 243.1(6.6), 77.7(6)
176.2 *10*	0.028 *15*	^{199}Pt(30.80 m)	542.993(15), 493.772(5.59), 317.056(4.95)
176.24 *11*		^{189}Au(28.7 m)	713.17(†100), 812.68(†63), 447.65(†55)
176.25 *2*	21	^{167}Yb(17.5 m)	113.34(55.3), 106.18(22.5), 62.91(4.9)
176.25 *13*	†5.2 *5*	^{189}Hg(7.6 m)	320.99(†100), 78.21(†63), 565.42(†48)
176.27	0.049 *10*	^{149}Nd(1.728 h)	211.309(25.9), 114.314(19.2), 270.166(10.7)
176.3 *2*	0.109 *20*	^{223}Ac(2.10 m)	98.58(0.891), 191.3(0.58), 83.55(0.57)
• 176.313 *2*	6.823 *24*	^{125}Sb(2.7582 y)	427.875(30), 600.600(17.86), 635.954(11.31)
176.4 *2*	0.116 *14*	^{140}Xe(13.60 s)	805.52(20), 1413.66(12.2), 1315.05(8.2)
176.40 *1*	10.60 *14*	^{151}Dy(17.9 m)	386.10(19.4), 49.46(18.0), 546.31(14.3)
176.48 *10*	0.29 *3*	^{184}Pt(17.3 m)	154.90(31), 191.97(27), 548.36(23.1)
• 176.49 *3*	0.0064 *5*	^{160}Tb(72.3 d)	879.383(30.01), 298.580(25.51), 966.171(25.21)
176.5 *3*	†8	^{154}Nd(25.9 s)	151.703(†800), 799.55(†600), 180.693(†510)
176.5 *3*	†1.1	^{154}Nd(25.9 s)	151.703(†800), 799.55(†600), 180.693(†510)
• 176.52 *3*	0.85 *7*	^{151}Pm(28.40 h)	340.08(23), 167.75(8.3), 275.21(6.8)
176.520 *25*	0.99 *5*	^{189}Pt(10.87 h)	721.41(9.3), 94.33(7.6), 568.84(7.1)
176.6		^{131}La(59 m)	108.081(25.0), 417.783(18.0), 365.162(16.9)
• 176.6 *1*	17.7 *15*	^{251}Cf(898 y)	227.0(6.3), 285.0(1.4), 61.5(0.56)
• 176.602 *4*	†10.0 *4*	^{136}Cs(13.16 d)	818.514(†100), 1048.073(†80), 340.547(†42.3)
• 176.62 *9*	0.0079 *7*	^{145}Eu(5.93 d)	893.73(66), 653.512(15.0), 1658.53(14.9)
176.645 *2*	66.2 *21*	^{174}Tm(5.4 m)	366.526(92), 992.128(87), 272.918(86)
• 176.645 *2*	0.0108 *5*	^{174}Lu(3.31 y)	76.471(5.9), 1241.847(5.14), 1318.296(0.035)
• 176.645 *2*	0.470 *11*	^{174}Lu(142 d)	272.918(0.550), 992.128(0.546), 76.471(0.0638)
176.68 *5*	0.052 *6*	^{212}Pb(10.64 h)	238.632(43.3), 300.087(3.28), 115.183(0.592)
• 176.7 *1*	0.034 *8*	^{147}Gd(38.06 h)	229.32(63), 396.00(34.3), 929.01(20.2)
176.7 *3*	0.21 *11*	^{164}Tb(3.0 m)	168.838(25.4), 754.80(23.3), 215.07(21)
176.71 *7*	5.1 *4*	^{80}Zn(0.545 s)	712.53(45.1), 715.40(33.8), 964.93(15.6)
176.71 *17*	0.024 *7*	^{88}Kr(2.84 h)	2392.11(34.6), 196.301(25.98), 2195.842(13.18)
176.76 *12*	0.081 *12*	^{183}Ir(58 m)	392.52(10.4), 228.70(6.9), 87.67(5.6)
176.8 *4*	0.62 *18*	^{104}Tc(18.3 m)	358.0(89), 530.5(15.6), 535.1(14.7)
176.8		^{157}Lu(5.0 s)	967.5, 949.8, 880.5
• 176.8 *2*	0.0039 *19*	^{232}Pa(1.31 d)	969.315(41.6), 894.351(19.8), 150.059(10.8)
176.84 *7*	0.193 *10*	^{132}Ce(3.51 h)	182.11(77), 155.37(10.5), 216.83(4.95)
176.89 *2*	1.208 *12*	^{143}Ba(14.33 s)	211.475(25), 798.79(15.6), 980.45(11.55)
176.9 *5*	0.22 *11*	^{133}Te(55.4 m)	912.671(55.28), 647.51(19.4), 863.955(15.6)
176.9 *1*	1.30 *7*	^{159}Eu(18.1 m)	67.8(19), 78.6(9.1), 95.7(7.0)
176.9 *3*	0.8 *3*	^{184}Hg(30.6 s)	236.18(64), 156.24(58), 295.11(10.3)
176.97 *7*	0.078 *17*	^{133}I(20.8 h)	529.872(87.0), 875.329(4.51), 1298.223(2.35)
• 176.98 *4*	0.0043 *12*	^{192}Ir(73.831 d)	316.50791(82.81), 468.07152(47.83), 308.45692(30.00)
176.98 *4*	0.128 *12*	^{192}Au(4.94 h)	316.50791(58.0), 295.95827(22.3), 2236.89(5.6)
177.0 *1*	†10.7 *8*	^{75}Ga(126 s)	253.0(†100), 574.8(†31.6), 885.6(†11.1)
177.0	0.06 *6*	^{88}Nb(14.5 m)	1082.53(103), 1057.01(100), 671.20(64)
177.00 *3*	9.2 *8*	^{107}Tc(21.2 s)	102.70(21.0), 106.31(7.6), 458.7(5.6)
177		^{119}Ag(2.1 s)	626.4(13), 366.2(12.1), 399.1(10.9)
177.0 *5*		^{127}Ce(32 s)	58.4(7.3), 253.0, 114.8
177.0 *1*	1.72 *4*	^{142}Ba(10.6 m)	255.300(20.5), 1204.3(14.23), 895.2(13.9)
177	†100	^{173}Os(16 s)	187(†50), 285(†30), 276(†25)
177.0 *3*	†3.7 *4*	^{244}Bk(4.35 h)	891.5(†100), 217.6(†88), 921.5(†19)
• 177.0008 *5*	3.43 *12*	^{177}Lu(160.4 d)	208.3664(57.7), 228.4838(37.0), 378.5029(29.7)
• 177.0008 *5*	0.0021 *3*	^{177}Ta(56.56 h)	112.9498(7.2), 208.3664(0.94), 1057.8(0.29)
177.02 *8*	†7.52 *15*	^{129}Ba(2.17 h)	182.30(†100), 1459.1(†50.0), 202.38(†33.7)
• 177.035 *24*		^{206}Po(8.8 d)	1032.26(32.9), 511.36(24.1), 286.410(23.8)
• 177.036 *10*	0.269 *3*	^{129}Cs(32.06 h)	371.918(30.60), 411.490(22.31), 548.945(3.40)
177.06 *6*	0.70 *6*	^{148}Ba(0.607 s)	56.08(29.20), 133.53(3.88), 415.78(3.59)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
177.1 *1*	†1.9 *4*	^{169}Ta(4.9 m)	511.0(†20.6), 28.80(†18.3), 192.4(†8)
177.1 *2*	†1.6 *5*	^{171}Hf(12.1 h)	122.0(†100), 662.2(†83), 347.18(†47)
• 177.1 *5*	0.004 *3*	^{223}Ra(11.435 d)	269.459(13.7), 154.21(5.62), 323.871(3.93)
177.12 *5*	†159 *10*	^{159}Yb(1.58 m)	166.16(†500), 390.20(†113), 330.24(†100)
177.13 *20*	†14 *4*	^{161}Lu(77 s)	110.78(†100), 100.32(†95), 43.7(†70)
• 177.16 *1*	3.83 *23*	^{151}Pm(28.40 h)	340.08(23), 167.75(8.3), 275.21(6.8)
• 177.16 *15*	0.0010 *3*	^{172}Er(49.3 h)	610.062(44.2), 407.338(42.1), 68.107(3.29)
177.186 *16*	0.153 *15*	^{131}La(59 m)	108.081(25.0), 417.783(18.0), 365.162(16.9)
• 177.2 *2*	0.086 *15*	^{131}Te(30 h)	773.67(49.9), 852.21(27.0), 793.75(18.10)
177.2 *2*	0.22 *6*	^{133}Te(55.4 m)	912.671(55.28), 647.51(19.4), 863.955(15.6)
177.2 *1*	0.97 *5*	^{225}Th(8.72 m)	321.4(23), 246.0(5.06), 359.0(4.1)
• 177.214 *2*	0.270 *3*	^{131}I(8.02070 d)	364.489(81.7), 636.989(7.17), 284.305(6.14)
• 177.21402 *6*	22.16 *18*	^{169}Yb(32.026 d)	63.12077(44.2), 197.95788(35.8), 109.77987(17.47)
177.26 *3*	2.73 *10*	^{167}Yb(17.5 m)	113.34(55.3), 106.18(22.5), 176.25(21)
177.28 *5*	0.179 *7*	^{77}Ge(11.30 h)	264.44(54), 211.03(30.8), 215.50(28.6)
177.3 *2*	0.051 *20*	^{133}Ce(4.9 h)	477.22(39), 510.36(20.7), 58.39(19.2)
177.3 *2*	†14 *2*	^{135}Pm(49 s)	198.5(†100), 207.2(†70), 463.5(†62)
177.3	0.12	^{185}Ir(14.4 h)	254.4(13.3), 1828.8(10), 60.0(5.7)
• 177.30 *10*	0.056 *6*	^{254}Es(39.3 h)	211.80(0.096), 71.30(0.043), 104.0(0.0102)
177.32 *16*	1.6 *7*	^{181}Re(19.9 h)	365.57(56), 360.70(20), 639.30(6.4)
177.4 *2*	0.013 *6*	^{98}Nb(51.3 m)	787.374(93), 722.645(73.8), 1168.830(17.8)
• 177.4 *2*	0.047 *4*	^{223}Ra(11.435 d)	269.459(13.7), 154.21(5.62), 323.871(3.93)
177.439 *5*	0.65 *14*	^{163}Tb(19.5 m)	351.138(26), 389.734(24.3), 494.534(23)
177.5 *2*	40.29 *11*	^{137}Pm(2.4 m)	108.6(35), 233.6(29.57), 286.0(16.06)
177.5 *10*	0.064 *14*	^{138}Pr(2.12 h)	1037.8(101), 788.742(100), 302.7(80)
177.5 *3*	†0.53 *18*	^{230}Ra(93 m)	72.0(†100), 63.0(†35.4), 202.8(†27.3)
177.59 *8*	25.7 *4*	^{185}Ta(49.4 m)	173.68(22.6), 65.86(3.9), 243.7(3.8)
177.595 *17*	48.6 *20*	^{208}At(1.63 h)	686.527(98), 660.040(89), 845.044(19.7)
177.608 *10*	5.36 *22*	^{159}Ho(33.05 m)	121.012(36.2), 131.973(23.6), 309.594(17.2)
177.61 *12*	2.01 *17*	^{61}Fe(5.98 m)	1205.07(44), 1027.42(42.7), 297.90(22.2)
177.65 *4*	2.47 *9*	^{187}Ir(10.5 h)	912.95(4.79), 427.12(4.12), 400.89(3.94)
177.7 *3*	1.07 *13*	^{121}Xe(40.1 m)	252.7(13), 132.8(10.9), 445.2(7.7)
177.7 *3*		^{122}Ba(1.95 m)	550.7, 388.7, 231.0
177.7 *3*	3.96 *21*	^{158}Sm(5.30 m)	189.4(15.2), 363.6(12.4), 324.5(10.6)
177.7	0.016 *4*	^{207}Po(5.80 h)	992.33(59.3), 742.64(28.2), 911.79(16.95)
177.7 *2*	6	^{251}Bk(55.6 m)	130.1(3.4), 152.8(2.23), 163.8(0.35)
• 177.7 *2*	2.4	^{251}Es(33 h)	152.8(0.91), 163.8(0.10), 34.0
177.7 *2*	0.0048 *4*	^{255}Fm(20.07 h)	81.477(0.81), 58.477(0.67), 80.92(0.27)
177.783 *10*	0.50 *5*	^{149}Pr(2.26 m)	138.447(11.0), 165.087(9.9), 108.520(9.5)
177.8 *3*	65.8 *7*	^{73}Kr(27.0 s)	62.5(19.1), 454.8(15), 151.1(12.5)
• 177.81 *6*	1.8×10^{-5} *3*	^{233}U(1.592×10^{5} y)	42.44(0.0862), 97.134(0.020), 54.699(0.0182)
177.818 *18*	0.155 *16*	^{149}Nd(1.728 h)	211.309(25.9), 114.314(19.2), 270.166(10.7)
177.9 *4*	0.062 *19*	^{158}Tm(3.98 m)	192.13(62), 335.10(16.8), 1149.83(7.6)
177.99 *6*	0.059 *4*	^{135}Ce(17.7 h)	265.56(41.8), 300.07(23.5), 606.76(18.8)
178.0 *3*	0.049 *10*	^{97}Nb(72.1 m)	658.08(98), 1024.49(1.09), 1268.68(0.148)
178.0 *4*	0.12 *4*	^{127}Sn(2.10 h)	1114.3(39), 1095.6(20), 823.1(10.9)
178.0 *2*	0.33 *11*	^{133}Te(55.4 m)	912.671(55.28), 647.51(19.4), 863.955(15.6)
• 178.0 *1*	0.008 *5*	^{155}Tb(5.32 d)	86.545(32.0), 105.305(25), 180.103(7.45)
178.0 *3*	23 *4*	^{172}Ho(25 s)	133.6(36), 757.2(18), 291.1(16)
178 *1*	0.28 *4*	^{175}Ta(10.5 h)	207.4(14.0), 348.5(12.0), 266.9(10.8)
178 *2*	†13	^{189}W(11.5 m)	258(†100), 417(†96), 550(†28)
178.0 *2*	>0.09	^{228}Pa(22 h)	911.205(4.19), 463.005(1.250), 964.770(4.25)
178.0 *2*	†6	^{256}Es(7.6 h)	861.8(†100), 231.1(†61), 172.6(†49)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
178.034 *1*	7.6 *4*	^{109}Rh(80 s)	326.868(54), 426.135(7.7), 291.430(7.5)
178.1 *2*	6.8 *5*	^{120}Xe(40 m)	25.1(30), 72.6(9), 762.5(4.5)
178.1 *2*	14.9 *7*	^{123}Xe(2.08 h)	148.9(49), 330.2(8.6), 1093.4(2.79)
178.1	>0.05	^{195}Tl(1.16 h)	563.52(10.5), 884.47(10.0), 1363.88(8.4)
178.1 *2*	>0.050	^{220}Fr(27.4 s)	
178.1 *2*	9 *2*	^{224}Th(1.05 s)	410(0.8), 234.4(0.4), 295.7(0.3)
• 178.18	0.124 *16*	^{153}Tb(2.34 d)	212.038(31.0), 170.504(6.8), 109.758(6.4)
178.2 *3*	0.035 *7*	^{69}Cu(2.85 m)	1007.5(23.4), 834.4(13.1), 531.2(6.0)
178.2 *2*	0.45 *20*	^{105}Mo(35.6 s)	85.4(25.0), 76.50(19.3), 147.8(14.8)
• 178.2 *5*	0.053 *18*	^{106}Ag(8.28 d)	511.842(88), 1045.83(29.6), 717.24(28.9)
178.2 *4*	0.06 *3*	^{185}Au(4.25 m)	310.6(13), 243.1(6.6), 77.7(6)
178.2	†11	^{238}Pa(2.3 m)	1015.3(†<100), 1014.6(†<100), 635.18(†88)
• 178.203 *20*	0.043 *9*	^{206}Po(8.8 d)	1032.26(32.9), 511.36(24.1), 286.410(23.8)
178.26 *12*	0.0058 *6*	^{81}Se(18.45 m)	275.988(0.7), 290.03(0.55), 828.27(0.280)
178.28 *7*	0.58 *14*	^{75}Zn(10.2 s)	228.67(28.9), 432.29(20.2), 155.94(17.2)
178.3 *2*	0.37 *8*	^{104}Mo(60 s)	68.8(55), 69.7(17.8), 36.3(14)
178.3 *3*		^{116}Pd(12.4 s)	569, 279.3, 215.8
178.3 *3*	0.124 *25*	^{129}La(11.6 m)	278.6(25), 110.5(16.9), 457.0(8.0)
178.3 *3*	0.19 *5*	^{142}La(91.1 m)	641.285(47), 2397.8(13.3), 2542.7(10.00)
178.3	0.5	^{148}Dy(3.1 m)	620.24(96), 1247.2(1.4), 950.8(0.39)
178.3		^{152}Ho(161.8 s)	102.3, 85.8, 109.4
• 178.34 *11*		^{105}Ag(41.29 d)	344.520(41), 280.41(30.2), 644.55(11.1)
178.36 *4*	0.91 *7*	^{221}Rn(25 m)	186.38(21.6), 150.04(4.5), 216.90(2.6)
• 178.36 *4*	0.0142 *11*	^{225}Ac(10.0 d)	99.91(1.01), 150.04(0.80), 99.63(0.62)
178.46 *25*	0.085 *19*	^{195}Ir(3.8 h)	98.85(10), 684.88(9.4), 432.86(9)
• 178.463 *24*	2.26 *13*	^{182}Re(64.0 h)	229.3220(26), 67.75001(22.2), 1121.3007(22.0)
178.47 *10*	3.3 *3*	^{121}Ag(0.78 s)	314.55(32.1), 353.43(19.9), 500.61(9.3)
178.47 *10*	0.22 *3*	^{227}Fr(2.47 m)	90.035(39), 585.804(29.5), 64.267(14.5)
178.485 *23*	0.071 *5*	^{125}Xe(16.9 h)	188.418(54), 243.378(30.1), 54.968(6.81)
178.5	0.010	^{113}Pd(93 s)	95.74(3.3), 643.7(3.0), 739.63(2.4)
178.5 *10*	0.028 *9*	^{138}Nd(5.04 h)	325.76(2.84), 199.50(0.53), 341.65(0.40)
178.5 *3*	†100	^{168}W(51 s)	145.5(†<2), 352.2(†1.8), 181.8(†1.7)
• 178.5	>0.011	^{172}Hf(1.87 y)	23.9331(20.3), 125.812(11.3), 67.35(5.3)
178.5	>0.028	^{179}Re(19.5 m)	430.221(28), 289.968(26.9), 1680.244(13.0)
178.5 *1*	†4.8 *5*	^{185}Hg(21.6 s)	222.8(†100.0), 258.7(†98), 212.5(†58)
178.5 *2*	†2.9 *3*	^{194}Bi(92 s)	965.4(†100.0), 575.1(†98.0), 280.1(†73.7)
178.51 *2*	3.013 *25*	^{143}Ba(14.33 s)	211.475(25), 798.79(15.6), 980.45(11.55)
178.517 *7*	0.071 *7*	^{180}Re(2.44 m)	902.795(90), 103.557(22.2), 825.357(9.9)
178.572 *7*	0.0019 *4*	^{155}Sm(22.3 m)	104.3346(74.6), 245.771(3.7), 141.4428(1.98)
• 178.580 *16*	0.0185 *12*	^{149}Eu(93.1 d)	327.526(4.03), 277.089(3.56), 22.510(2.32)
178.6 *1*	0.92 *12*	^{119}Cd(2.20 m)	1025.0(24.8), 2021.3(22.6), 720.7(17.9)
178.6 *3*	0.028 *7*	^{162}Tm(21.70 m)	102.00(17.5), 798.68(8.4), 227.52(7)
178.6262 *20*	1.1	^{182}Hf(61.5 m)	942.80(18.8), 799.64(9.4), 114.3152(6.2)
178.65 *3*	1.22 *4*	^{133}Ce(4.9 h)	477.22(39), 510.36(20.7), 58.39(19.2)
178.7	0.38	^{147}Ce(56.4 s)	268.80(7), 92.9(4.7), 374.23(3.5)
178.7		^{225}Rn(4.5 m)	207.2, 169.7, 115.8
• 178.842 *5*	0.0287 *24*	^{125}Sb(2.7582 y)	427.875(30), 600.600(17.86), 635.954(11.31)
178.86 *3*	0.014 *6*	^{187}W(23.72 h)	685.774(27.3), 479.531(21.8), 72.001(11.14)
178.87 *4*	2.8 *3*	^{167}Lu(51.5 m)	29.66(14.4), 239.22(8.6), 213.19(3.6)
178.90 *5*	11.20 *17*	^{142}Gd(70.2 s)	750.2(11.2), 284.4(6.16), 526.2(5.90)
178.93 *5*	0.019 *6*	^{155}Dy(9.9 h)	226.918(68.4), 184.564(3.37), 1089.8(>2.8)
178.95 *10*	4.6 *3*	^{100}Cd(49.1 s)	936.55(66), 139.71(6.7), 582.5(6.3)
178.97 *6*	>51	^{75}Rb(19.0 s)	178.98(<63), 187.21(8.7), 671.8(8.0)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
178.98 *5*	<63	^{75}Rb(19.0 s)	178.97(>51), 187.21(8.7), 671.8(8.0)
178.980 *10*	5.4 *6*	^{99}Zr(2.1 s)	469.140(55), 546.13(48.6), 593.990(27.4)
• 178.98 *5*	1.02 *5*	^{191}Pt(2.9 d)	538.90(13.7), 409.44(8.0), 359.90(6.0)
178.99 *13*	22.2 *8*	^{77}Rb(3.75 m)	66.52(57), 393.37(9.7), 149.93(4.3)
179.0 *4*	0.105 *14*	^{187}Au(8.4 m)	1331.81(7.0), 1408.23(3.06), 914.73(3.02)
179.0 *2*	0.038	^{233}Th(22.3 m)	86.477(2.7), 29.374(2.5), 459.222(1.4)
179.05 *4*	0.029 *4*	^{135}Ce(17.7 h)	265.56(41.8), 300.07(23.5), 606.76(18.8)
179.09 *9*	5.8 *3*	^{159}Sm(11.37 s)	189.79(46), 861.97(18.2), 254.43(9.8)
179.1 *7*	0.44 *18*	^{104}Tc(18.3 m)	358.0(89), 530.5(15.6), 535.1(14.7)
179.1 *3*	1.28 *20*	^{175}Ta(10.5 h)	207.4(14.0), 348.5(12.0), 266.9(10.8)
179.10 *6*	0.039 *4*	^{176}Ta(8.09 h)	1159.28(25), 88.34(12), 1224.93(6)
179.1 *3*	†0.63 *21*	^{183}Hg(9.4 s)	60.5(†100), 159.91(†21), 172.70(†17)
179.2 *3*	1.4 *6*	^{192}Pb(3.5 m)	1195.4(47), 608.2(17.9), 167.5(13.6)
• 179.212 *8*	6.6×10^{-5} *1*	^{239}Pu(24110 y)	51.624(0.007100), 38.661(0.000500), 129.297(0.00631)
179.250 *22*	0.127 *14*	^{159}Ho(33.05 m)	121.012(36.2), 131.973(23.6), 309.594(17.2)
179.3 *4*	0.34 *6*	^{74}Kr(11.50 m)	89.65(31), 203.0(18.0), 296.67(9.9)
179.3 *3*	0.93 *19*	^{104}Ag(69.2 m)	555.796(92.6), 767.72(65.7), 941.7(25.0)
179.32 *9*	0.25 *3*	^{75}Kr(4.3 m)	132.43(67), 154.66(20.8), 153.15(8.0)
179.35 *8*	0.10 *3*	^{117}Cd(2.49 h)	273.349(28), 1303.27(18.4), 344.459(17.9)
• 179.365 *11*	1.376 *25*	^{173}Lu(1.37 y)	272.105(21.2), 78.63(11.87), 100.724(5.24)
• 179.39449 *13*	3.082 *21*	^{182}Ta(114.43 d)	67.75001(41.2), 1121.3007(34.9), 1221.4066(26.98)
179.39449 *13*	3.29 *5*	^{182}Re(12.7 h)	67.75001(38.2), 1121.3007(32), 1221.4066(24.8)
• 179.39449 *13*	3.01 *18*	^{182}Re(64.0 h)	229.3220(26), 67.75001(22.2), 1121.3007(22.0)
179.4 *2*	2.7 *3*	^{121}Cs(155 s)	153.9(15.2), 239.6(7.7), 427.1(3.63)
179.4 *2*	30.2 *5*	^{121}Cs(122 s)	196.0(24.1), 459.7(12.0), 234.5(4.7)
179.4 *3*	1.4 *7*	^{150}Tb(5.8 m)	638.05(100), 650.4(70), 438.37(42)
179.4	9	^{152}Er(10.3 s)	
• 179.4 *1*	8.7 *7*	^{257}Fm(100.5 d)	241.0(11.0), 61.6(1.45), 104.4(0.62)
179.5 *3*	0.17 *3*	^{237}Pa(8.7 m)	853.6(34), 865.1(15.5), 529.26(14.9)
179.54 *8*	4.6 *7*	^{183}Au(42.0 s)	161.18(9.4), 214.13(5.9), 313.08(5.0)
• 179.54 *5*	0.151 *14*	^{223}Ra(11.435 d)	269.459(13.7), 154.21(5.62), 323.871(3.93)
179.57 *9*	0.047 *8*	^{200}Pt(12.5 h)	76.21(13), 135.90(3.24), 243.71(2.49)
179.60 *20*	0.092 *18*	^{159}Tm(9.13 m)	38.35(5.8), 84.8(5.8), 271.30(5.1)
179.60 *8*	†35 *4*	^{168}Lu(5.5 m)	1483.65(†100), 228.58(†97), 111.8(†68)
• 179.6 *4*	0.0010 *4*	^{172}Er(49.3 h)	610.062(44.2), 407.338(42.1), 68.107(3.29)
179.6 *3*	0.128 *14*	^{190}Au(42.8 m)	295.78(71.0), 301.82(23.4), 597.67(9.4)
179.62 *4*	0.64 *5*	^{101}Tc(14.22 m)	306.85(88), 545.06(6.0), 127.23(2.86)
• 179.62 *4*	†0.77 *8*	^{101}Rh(4.34 d)	306.85(†115), 545.06(†6.1), 127.23(†0.85)
179.69 *4*	>0.28	^{167}Lu(51.5 m)	29.66(14.4), 239.22(8.6), 213.19(3.6)
179.757 *7*	†1.4 *3*	^{225}Fr(4.0 m)	182.3(†100), 31.50(†91), 225.1(†55)
• 179.757 *7*	0.197 *15*	^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
• 179.80 *20*	0.010 *8*	^{82}Br(35.30 h)	776.517(83.5), 554.348(70.8), 619.106(43.4)
179.8 *5*	0.089 *4*	^{85}Y(4.86 h)	231.67(22.8), 2123.8(5.0), 767.40(3.6)
179.8 *2*	1.18 *6*	^{157}Er(18.65 m)	53.05(24), 391.32(14.2), 121.57(10.1)
179.8 *3*	†2.6 *3*	^{182}Ir(15 m)	273.23(†100), 126.79(†77), 236.3(†21.0)
• 179.8 *2*	0.0076 *22*	^{225}Ac(10.0 d)	99.91(1.01), 150.04(0.80), 99.63(0.62)
179.80 *8*	0.044 *15*	^{234}Pa(6.70 h)	131.30(18), 946.00(13.4), 883.24(9.6)
• 179.84	0.32 *3*	^{100}Pd(3.63 d)	84.02(45), 74.78(36.5), 126.05(8.10)
179.9	0.17 *4*	^{76}Kr(14.8 h)	315.7(39), 270.2(21.1), 45.48(19.5)
179.9 *2*	14	^{115}Rh(0.99 s)	127.9(64.6), 125.6(33.3), 296.5(17)
• 179.9 *1*	0.00038 *10*	^{229}Pa(1.50 d)	40.09(0.104), 64.70(0.045), 75.12(0.035)
179.91 *5*	49.9 *50*	^{124}Cd(0.9 s)	62.80(22.7), 143.33(12.9), 36.50(4.6)
179.94 *2*	0.24 *5*	^{237}Am(73.0 m)	280.23(47.3), 438.4(8.3), 473.5(4.3)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
• 179.94 *2*	9.7 *5*	^{246}Pu(10.84 d)	43.81(25.0), 223.75(23.5), 27.58(3.5)
180.0	†0.42	^{152}Tb(17.5 h)	344.281(†1500), 586.294(†223), 271.135(†203)
180.0 *3*	100	^{165}Hf(76 s)	772.7(1.4)
180.0 *2*	0.06 *4*	^{193}Au(17.65 h)	186.17(10.1), 255.57(6.7), 268.22(3.9)
180.02 *7*	0.32 *5*	^{183}Ir(58 m)	392.52(10.4), 228.70(6.9), 87.67(5.6)
• 180.05 *3*	0.182 *20*	^{193}Os(30.5 h)	139.03(4.27), 460.50(3.95), 73.039(3.2)
180.1 *1*	0.3 *1*	^{107}Tc(21.2 s)	102.70(21.0), 177.00(9.2), 106.31(7.6)
180.1 *2*	†5	^{181}Hg(3.6 s)	147.8(†100), 42.5(†25), 1986.7(†17)
• 180.103 *1*	7.45 *15*	^{155}Tb(5.32 d)	86.545(32.0), 105.305(25), 262.322(5.29)
180.11 *4*	1.90 *9*	^{195}Hg(9.9 h)	779.80(7), 61.46(6.2), 585.13(1.99)
180.186 *10*	11.5 *4*	^{151}Tb(17.609 h)	287.357(28.3), 251.863(26.3), 108.088(24.3)
180.20 *10*	0.153 *4*	^{81}Rb(4.576 h)	190.38(64.0), 446.15(23.2), 510.31(5.3)
180.2 *1*	0.032 *3*	^{141}Pm(20.90 m)	1223.26(4.74), 886.22(2.44), 193.68(1.61)
180.2	0.0032 *13*	^{212}Bi(60.55 m)	727.330(6.58), 1620.50(1.49), 785.37(1.102)
180.230 *11*	33.5 *16*	^{182}Os(22.10 h)	510.056(52), 263.285(6.71), 55.506(5.8)
• 180.25 *15*	0.10 *5*	^{79}Kr(35.04 h)	261.29(13), 397.54(9.3), 606.09(8.12)
• 180.277 *8*	0.48 *4*	^{241}Cm(32.8 d)	471.805(71), 430.634(4.06), 132.413(3.86)
180.3	0.17 *3*	^{146}Ba(2.22 s)	140.7(20.2), 251.2(19.6), 121.2(14.2)
180.34 *4*	0.32 *11*	^{167}Lu(51.5 m)	29.66(14.4), 239.22(8.6), 213.19(3.6)
180.4 *3*	†13 *2*	^{137}Sm(45 s)	380.5(†100), 163.7(†85), 408.3(†40)
180.4 *2*	0.031 *12*	^{183}Hf(1.067 h)	783.754(66), 73.174(38), 459.069(27)
180.5 *1*	0.64 *11*	^{123}Cs(5.94 m)	97.3(23), 596.7(10.1), 83.3(4.1)
180.5 *2*		^{185}Hg(21.6 s)	222.8(†100.0), 258.7(†98), 212.5(†58)
180.5 *4*	1.19 *14*	^{186}Pt(2.0 h)	276.7(0), 611.5(6.0), 635.6(>3.8)
180.52 *6*	0.020 *2*	^{249}Cm(64.15 m)	634.31(1.5), 560.45(0.84), 368.76(0.35)
180.574 *20*	†100 *10*	^{155}Nd(8.9 s)	418.99(†75), 955.08(†50), 67.432(†38)
180.6 *1*	2.22 *5*	^{173}Ta(3.14 h)	172.2(18), 69.70(5.9), 90.3(5.0)
• 180.650 *24*	0.0193 *22*	^{189}Re(24.3 h)	216.663(5.50), 219.395(4.54), 245.09(3.5)
• 180.650 *24*	0.029 *3*	^{189}Ir(13.2 d)	245.09(6), 69.537(3.5), 59.053(1.20)
180.66 *15*	0.039 *19*	^{90}Kr(32.32 s)	1118.69(39.0), 121.82(35.5), 539.49(30.8)
180.693 *22*	510	^{154}Nd(25.9 s)	151.703(†800), 799.55(†600), 83.697(†410)
180.7 *2*	0.26 *11*	^{101}Ag(11.1 m)	261.0(53), 588.0(10.0), 667.3(9.8)
• 180.7	0.0040 *5*	^{154}Eu(8.593 y)	123.071(40.79), 1274.436(35.19), 723.304(20.22)
180.703 *19*	†8.8 *6*	^{101}Nb(7.1 s)	276.10(†100), 157.466(†32), 13.5(†32)
• 180.746 *5*	0.284 *7*	^{77}Br(57.036 h)	238.996(23), 520.639(22.4), 297.215(4.16)
• 180.791 *19*	0.100 *11*	^{206}Po(8.8 d)	1032.26(32.9), 511.36(24.1), 286.410(23.8)
180.8 *3*	12	^{127}Ba(12.7 m)	114.8(9.3), 66.06(2.12), 1201.0(1.61)
180.8 *5*	2.54 *13*	^{129}Sb(4.40 h)	812.8(43), 914.6(20.0), 544.7(17.9)
180.8 *5*	0.13 *3*	^{137}Nd(38.5 m)	75.5(17.0), 580.6(13), 306.60(10.0)
180.8	0.52 *16*	^{141}Ba(18.27 m)	190.328(46.0), 304.194(25.4), 276.948(23.4)
180.8 *4*	†12.0 *25*	^{233}Pu(20.9 m)	235.4(†100), 534.8(†90.2), 500.3(†38.6)
180.81 *10*	0.0007	^{233}Th(22.3 m)	86.477(2.7), 29.374(2.5), 459.222(1.4)
• 180.81 *10*	0.020 *4*	^{237}Np(2.14×10^6 y)	29.374(15.0), 86.477(12.4), 94.66(0.6)
180.83 *9*	0.42 *5*	^{144}Ba(11.5 s)	103.855(23.30), 430.48(18.3), 172.828(15.4)
180.86 *7*	0.190 *18*	^{187}Ir(10.5 h)	912.95(4.79), 427.12(4.12), 400.89(3.94)
180.891 *15*	18.0 *9*	^{134}Te(41.8 m)	767.20(29.0), 210.465(22.3), 277.951(20.9)
180.90 *30*	0.234 *11*	^{116}Te(2.49 h)	93.70(31.4), 628.63(3.22), 102.97(1.95)
180.9 *3*	1.4 *7*	^{150}Tb(5.8 m)	638.05(100), 650.4(70), 438.37(42)
180.9 *3*	0.012 *4*	^{161}Er(3.21 h)	826.6(3.0), 211.15(12.2), 592.6(3.7)
181.0 *3*	†1.20 *13*	^{111}Rh(11 s)	275.4(†100.0), 411.8(†9.42), 230.0(†8.9)
181	†10.8	^{175}Os(1.4 m)	125.0(†100), 248(†8.6), 170.1(†6.2)
181.0 *2*	13.8 *13*	^{184}Hf(4.12 h)	139.1(44.6), 344.9(35.2), 41.4(9.2)
181.0 *1*	†9.1 *10*	^{185}Hg(21.6 s)	222.8(†100.0), 258.7(†98), 212.5(†58)
• 181	>0.00032	^{193}Os(30.5 h)	139.03(4.27), 460.50(3.95), 73.039(3.2)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
181.01 *5*	0.059 *13*	^{183}Os(13.0 h)	381.768(89.6), 114.463(20.63), 167.844(8.81)
181.02 *5*	57.0 *6*	^{146}Cs(0.343 s)	557.76(9.18), 332.38(6.44), 738.97(3.02)
181.06 *7*	0.457 *9*	^{73}Se(39.8 m)	67.03(2.59), 253.70(2.356), 84.0(2.03)
• 181.063 *8*	6.08 *9*	^{99}Mo(65.94 h)	739.50(12.1), 140.511(4.52), 777.921(4.28)
181.1 *4*	0.16 *4*	^{127}Sn(2.10 h)	1114.3(39), 1095.6(20), 823.1(10.9)
181.1 *3*	0.61 *19*	^{178}Re(13.2 m)	237.3(45), 105.9(23.0), 939.1(8.9)
181.17 *3*	0.54 *3*	^{100}Sr(202 ms)	963.85(22.0), 898.50(18.9), 65.46(15.2)
181.17 *11*	1.20 *8*	^{187}Au(8.4 m)	1331.81(7.0), 1408.23(3.06), 914.73(3.02)
181.18 *2*	†94 *8*	^{200}Au(18.7 h)	497.77(†123), 367.943(†123), 579.298(†121)
181.2 *10*	0.062 *12*	^{201}Bi(108 m)	629.1(24.0), 936.2(11.3), 1014.1(10.7)
181.23 *7*	0.112 *17*	^{189}Pt(10.87 h)	721.41(9.3), 94.33(7.6), 568.84(7.1)
181.232 *12*	0.74 *3*	^{161}Gd(3.66 m)	360.94(0.59), 314.92(22.7), 102.315(13.9)
181.3		^{130}Ce(25 m)	1072.6(†100), 997.7(†100), 920.5(†100)
181.3 *1*	0.140 *6*	^{139}Xe(39.68 s)	218.59(56), 296.53(21.7), 174.97(11.3)
181.3 *5*	0.41 *11*	^{257}Md(5.52 h)	371.4(11.7), 325.1(2.5), 388.5(0.07)
181.41 *9*	>2.0	^{174}W(31 m)	35.42(14.1), 428.83(12.7), 328.68(9.5)
181.5	6.4 *9*	^{173}Re(1.98 m)	190.7(1.71), 373.6(1.64)
181.5 *6*	†0.8	^{179}Os(6.5 m)	65.39(†100), 218.6(†17), 32.3(†17)
181.5		^{214}Pb(26.8 m)	351.921(35.8), 295.213(18.5), 241.981(7.50)
181.5 *2*	†1.5	^{256}Es(7.6 h)	861.8(†100), 231.1(†61), 172.6(†49)
• 181.528 *4*	2.75 *14*	^{172}Tm(63.6 h)	78.7435(6.5), 1093.657(6.0), 1387.093(5.6)
• 181.528 *4*	20.6 *4*	^{172}Lu(6.70 d)	1093.657(62.5), 900.724(29.8), 810.064(16.63)
181.6 *3*	†9.6 *10*	^{170}Ho(43 s)	812.3(†100.0), 1894.5(†45.2), 78.6(†40)
181.6 *3*	23.8 *22*	^{170}Ho(2.76 m)	258.2(37.0), 931.3(36.1), 890.2(22)
181.6 *3*		^{177}Re(14 m)	196.85(†1200), 79.65(†1010), 84.3(†890)
• 181.61 *4*	0.0174 *18*	^{165}Tm(30.06 h)	242.917(35.5), 47.155(16.9), 297.369(12.71)
181.62 *3*	0.762 *8*	^{143}Ba(14.33 s)	211.475(25), 798.79(15.6), 980.45(11.55)
181.68 *5*	28.1 *13*	^{78}Zn(1.47 s)	224.75(43.9), 860.30(24.5), 635.56(20.9)
• 181.694 *1*	0.422 *5*	^{155}Tb(5.32 d)	86.545(32.0), 105.305(25), 180.103(7.45)
• 181.711 *7*	0.081 *4*	^{239}Np(2.3565 d)	106.125(27.2), 277.599(14.38), 228.183(10.76)
181.711 *7*	1.08 *6*	^{239}Am(11.9 h)	277.599(15.0), 228.183(11.3), 209.753(3.50)
181.79 *8*	1.05 *5*	^{144}Ba(11.5 s)	103.855(23.30), 430.48(18.3), 172.828(15.4)
181.8 *4*	0.06 *3*	^{109}Sn(18.0 m)	1099.4(30), 649.90(28.0), 1321.3(11.9)
181.8		^{157}Eu(15.18 h)	63.929(23.0), 410.723(17.5), 370.509(11.0)
181.8 *3*	†1.7 *2*	^{168}W(51 s)	178.5(†100), 145.5(†<2), 352.2(†1.8)
• 181.80 *2*	0.194 *20*	^{193}Os(30.5 h)	139.03(4.27), 460.50(3.95), 73.039(3.2)
• 181.8 *10*	†9×10^{04}	^{237}Pu(45.2 d)	280.40(†870000), 298.89(†7.85×10^{6}), 320.75(†6.48×10^{6})
181.84 *5*	0.242 *15*	^{163}Yb(11.05 m)	860.28(10.1), 63.62(6.5), 123.21(1.98)
181.85 *15*	0.034 *7*	^{187}Ir(10.5 h)	912.95(4.79), 427.12(4.12), 400.89(3.94)
181.88 *5*	0.0025 *8*	^{95}Tc(20.0 h)	765.794(93.82), 1073.71(3.74), 947.67(1.951)
181.9 *2*	0.90 *16*	^{108}Tc(5.17 s)	242.25(82), 465.6(14.3), 707.81(11.4)
181.9 *1*	4.2	^{142}Dy(2.3 s)	
181.930 *4*	1.95 *20*	^{158}Eu(45.9 m)	944.09(25), 977.131(13.6), 79.5104(11)
• 181.930 *4*	9.9 *3*	^{158}Tb(180 y)	944.09(44), 962.06(20.3), 79.5104(11.6)
• 181.98 *10*	0.124 *12*	^{177}Lu(160.4 d)	208.3664(57.7), 228.4838(37.0), 378.5029(29.7)
182 *3*		^{120}Ba(32 s)	51
182.0 *4*	0.4 *1*	^{147}Tb(1.7 h)	1152.4(100), 694.4(43), 139.9(27.46)
182.0 *4*	0.64 *13*	^{154}Ho(11.76 m)	334.6(84), 412.4(15.0), 873.4(12.5)
182.00 *9*	0.12 *3*	^{161}Tm(33 m)	45.54(5.00), 1648.1(9.50), 84.40(9.4)
182.0 *1*	0.73 *5*	^{242}U(16.8 m)	67.60(9.6), 55.58(3.90), 585.0(1.92)
182.02 *5*	5.4 *3*	^{93}Kr(1.286 s)	253.42(41.2), 323.89(24.1), 266.83(20.6)
182.02 *18*	†1.4 *2*	^{181}Pt(51 s)	289.29(†100), 111.97(†100), 230.15(†92)
182.03 *4*	5.6 *3*	^{66}Ge(2.26 h)	43.89(28.7), 381.85(28), 272.97(10.4)
182.04 *16*	0.25 *5*	^{209}Rn(28.5 m)	408.32(50.3), 745.78(22.8), 337.45(14.5)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
182.07 *5*	1.91 *11*	^{167}Lu(51.5 m)	29.66(14.4), 239.22(8.6), 213.19(3.6)
• 182.078 *1*	0.110 *5*	^{155}Tb(5.32 d)	86.545(32.0), 105.305(25), 180.103(7.45)
182.09 *9*	0.18 *3*	^{183}Ir(58 m)	392.52(10.4), 228.70(6.9), 87.67(5.6)
182.1 *3*	0.78 *8*	^{190}Re(3.2 h)	186.718(27.8), 605.24(14.9), 557.972(14.3)
• 182.1		^{235}U(7.038×10^{8} y)	185.712(57.2), 143.764(10.96), 163.358(5.08)
182.11 *3*	77	^{132}Ce(3.51 h)	155.37(10.5), 216.83(4.95), 190.04(2.67)
• 182.136 *9*	0.052 *17*	^{200}Tl(26.1 h)	367.943(87), 1205.717(29.9), 579.298(13.8)
182.2 *1*	0.7 *1*	^{129}Sn(2.23 m)	645.13(100), 80.5(6.6), 913.2(5.0)
182.2 *2*	0.27 *7*	^{146}Ba(2.22 s)	140.7(20.2), 251.2(19.6), 121.2(14.2)
182.20 *20*	1.84 *18*	^{157}Dy(8.14 h)	326.16(92), 83.01(0.62), 60.82(0.5)
182.25 *2*	0.06	^{131}Sb(23.03 m)	943.4(47), 933.1(26.1), 642.30(23)
• 182.25 *2*	0.96 *25*	^{131}Te(30 h)	773.67(49.9), 852.21(27.0), 793.75(18.10)
182.30 *7*	†100	^{129}Ba(2.17 h)	1459.1(†50.0), 202.38(†33.7), 419.83(†26.7)
182.3	0.5	^{157}Er(18.65 m)	53.05(24), 391.32(14.2), 121.57(10.1)
182.3 *3*	0.10 *4*	^{158}Tm(3.98 m)	192.13(62), 335.10(16.8), 1149.83(7.6)
182.3	0.27	^{190}Hg(20.0 m)	142.6(68), 171.5(4.8), 154.7(2.5)
182.30 *10*	0.30 *4*	^{224}Fr(3.30 m)	215.985(33.1), 131.613(16.3), 836.90(9.8)
• 182.30 *10*	5.4×10^{-6} *19*	^{228}Th(1.9131 y)	84.373(1.266), 215.985(0.263), 131.613(0.1355)
182.3 *1*	†100	^{225}Fr(4.0 m)	31.50(†91), 225.1(†55), 75.1(†45)
182.31 *7*	0.11 *6*	^{203}Po(36.7 m)	908.64(55), 1090.95(19.2), 893.49(18.7)
182.34 *20*	0.11 *3*	^{86}Y(14.74 h)	1076.64(83), 627.72(32.6), 1153.01(30.5)
182.36 *2*	41 *2*	^{130}Sb(6.3 m)	839.49(100), 793.53(86), 1018.01(30)
182.36 *2*	65 *4*	^{130}Sb(39.5 m)	793.53(100), 839.49(100), 331.05(78)
182.388 *10*	0.376 *23*	^{153}Dy(6.4 h)	80.723(11.10), 213.754(10.90), 99.659(10.51)
182.394 *15*	0.27 *3*	^{227}Fr(2.47 m)	90.035(39), 585.804(29.5), 64.267(14.5)
182.4 *3*	0.054 *9*	^{120}Xe(40 m)	25.1(30), 72.6(9), 178.1(6.8)
182.4 *2*	0.240 *24*	^{140}Xe(13.60 s)	805.52(20), 1413.66(12.2), 1315.05(8.2)
• 182.52 *2*	0.34 *2*	^{235}U(7.038×10^{8} y)	185.712(57.2), 143.764(10.96), 163.358(5.08)
182.6	66	^{44}Ar(11.87 m)	1703.4(57), 1886.0(31), 408.2(4.1)
182.61 *6*	0.0129 *6*	^{123}I(13.27 h)	158.97(83), 528.96(1.39), 440.02(0.428)
182.62 *18*	†0.37 *8*	^{188}Au(8.84 m)	265.63(†100), 340.04(†23.9), 605.5(†16.3)
182.694 *2*	1.00 *5*	^{149}Pr(2.26 m)	138.447(11.0), 165.087(9.9), 108.520(9.5)
182.7 *2*	0.74 *9*	^{136}I(46.9 s)	1313.02(100), 381.359(100), 197.316(78)
182.75 *7*	1.97 *19*	^{184}Pt(17.3 m)	154.90(31), 191.97(27), 548.36(23.1)
182.77 *10*	19.2 *4*	^{79}Rb(22.9 m)	688.1(23), 143.41(13.9), 129.72(10.74)
• 182.83 *3*	0.15 *3*	^{148}Eu(54.5 d)	550.284(98.5), 629.987(71.9), 611.293(20.5)
• 182.89 *4*	0.352 *25*	^{105}Ag(41.29 d)	344.520(41), 280.41(30.2), 644.55(11.1)
182.9 *5*	0.032 *7*	^{97}Zr(16.91 h)	743.36(93), 507.64(5.03), 1147.97(2.61)
182.900 *8*	†11.3 *6*	^{153}Pm(5.4 m)	35.842(†100), 127.298(†75), 28.309(†34.6)
182.9 *3*	0.34 *4*	^{188}Hg(3.25 m)	66.7(63), 190.1(4.40), 82.7(2.6)
183.0 *6*	0.06 *3*	^{159}Tm(9.13 m)	38.35(5.8), 84.8(5.8), 271.30(5.1)
183.05 *12*	0.6 *3*	^{134}Te(41.8 m)	767.20(29.0), 210.465(22.3), 277.951(20.9)
183.05 *22*	0.45 *5*	^{162}Yb(18.87 m)	163.35(40.0), 118.70(33.6), 576.10(3.24)
183.09 *18*	2.13 *4*	^{82}Rb(6.472 h)	776.517(84), 554.348(62.4), 619.106(37.976)
183.1 *1*	0.042 *5*	^{107}Ru(3.75 m)	194.05(9.9), 847.93(5.3), 462.61(3.66)
• 183.11 *8*	0.202 *25*	^{131}Te(30 h)	773.67(49.9), 852.21(27.0), 793.75(18.10)
183.179 *1*	0.0082 *12*	^{161}Ho(2.48 h)	25.65150(27), 103.062(3.9), 77.414(1.91)
183.18 *10*	0.72 *8*	^{184}Pt(17.3 m)	154.90(31), 191.97(27), 548.36(23.1)
183.19 *2*	0.503 *15*	^{151}Nd(12.44 m)	116.80(43.4), 255.68(16.4), 1180.89(14.8)
183.2 *5*	4.0 *4*	^{69}Ni(11.4 s)	1871.1(40.9), 679.7(39.7), 1213.0(39.3)
183.2 *3*	0.46 *9*	^{104}Ag(69.2 m)	555.796(92.6), 767.72(65.7), 941.7(25.0)
183.2 *3*	0.76 *18*	^{136}Sm(47 s)	114.4(36), 747.7(5.4), 485.3(5.0)
183.2 *5*	8	^{146}La(10.0 s)	258.47(93), 409.86(81), 514.75(31)
183.2 *2*	0.034 *5*	^{183}Ir(58 m)	392.52(10.4), 228.70(6.9), 87.67(5.6)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
183.25 *8*	3.0 *5*	^{186}Ta(10.5 m)	197.93(50), 214.87(42.3), 510.82(37.5)
183.3 *1*	0.11 *2*	^{107}Tc(21.2 s)	102.70(21.0), 177.00(9.2), 106.31(7.6)
183.3 *4*	0.019 *12*	^{133}Te(12.5 m)	312.072(62), 407.63(27.1), 1333.21(10.67)
183.4	0.49	^{133}Pr(6.5 m)	134.3(14), 74.0(10), 315.6(10)
183.4 *5*	0.0019 *4*	^{155}Sm(22.3 m)	104.3346(74.6), 245.771(3.7), 141.4428(1.98)
183.4 *2*	†9 *3*	^{177}Pt(11 s)	148.0(†100), 85.4(†62), 223.1(†52)
• 183.495 *3*	0.0329 *13*	^{231}Th(25.52 h)	25.646(14.5), 84.216(6.6), 89.944(0.94)
• 183.495 *3*	†1.5×10^{3} *12*	^{235}Np(396.1 d)	25.646(†600000), 84.216(†265000), 81.227(†58000)
183.5	0.8	^{134}Nd(8.5 m)	163.2(58), 288.9(13), 216.8(12)
• 183.51 *3*	1.01 *6*	^{153}Tb(2.34 d)	212.038(31.0), 170.504(6.8), 109.758(6.4)
183.58 *9*	0.060 *8*	^{200}Pt(12.5 h)	76.21(13), 135.90(3.24), 243.71(2.49)
183.6 *4*	0.18 *6*	^{101}Zr(2.1 s)	119.3(10.8), 205.6(6.0), 912.2(3.48)
183.60 *12*	0.099 *10*	^{105}Ru(4.44 h)	724.21(47), 469.37(17.5), 676.36(15.7)
183.6 *3*	0.138 *20*	^{132}I(2.295 h)	667.718(99), 772.60(75.6), 954.55(17.6)
183.6	0.37	^{157}Er(18.65 m)	53.05(24), 391.32(14.2), 121.57(10.1)
183.6	†1010 *51*	^{177}Ir(30 s)	148.3(†929), 75.6(†>900), 88.1(†>300)
183.6 *7*	0.165 *22*	^{199}Bi(27 m)	560.1(22.0), 424.85(22), 841.7(11)
183.6 *4*		^{230}Ac(122 s)	454.95(8), 508.20(5.15), 1243.9(3.50)
• 183.6 *4*		^{230}Pa(17.4 d)	951.95(1.65), 918.48(8.2), 454.95(6.27)
183.61 *5*	0.13	^{167}Lu(51.5 m)	29.66(14.4), 239.22(8.6), 213.19(3.6)
183.7 *2*	0.19 *5*	^{237}Am(73.0 m)	280.23(47.3), 438.4(8.3), 473.5(4.3)
183.8	†100 *10*	^{168}Hf(25.95 m)	157.2(†68), 324.1, 248.4
183.8		^{180}Os(21.5 m)	20.1(†100), 717.4, 667.0
• 183.83 *9*	0.0010 *5*	^{140}Ba(12.752 d)	537.261(24.39), 29.9640(14.1), 162.660(6.21)
183.85	1.77 *9*	^{109}Ru(34.5 s)	206.29(22.0), 225.98(19.6), 1929.05(13.7)
183.9 *3*	0.039	^{170}Hf(16.01 h)	164.78(33), 620.7(23), 120.17(19)
• 183.928 *8*	0.142 *7*	^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
• 183.977 *16*	15.8 *3*	^{206}Bi(6.243 d)	803.10(99), 881.01(66.2), 516.18(40.7)
184.0 *4*	0.47 *8*	^{127}Sn(2.10 h)	1114.3(39), 1095.6(20), 823.1(10.9)
184.0 *10*	0.053 *16*	^{138}Pr(2.12 h)	1037.8(101), 788.742(100), 302.7(80)
184.0 *2*	†4.3 *10*	^{192}Bi(37 s)	853.8(†100.0), 501.8(†80), 504.3(†39)
184.01 *15*	0.014 *8*	^{167}Yb(17.5 m)	113.34(55.3), 106.18(22.5), 176.25(21)
184.10 *3*	1.69 *9*	^{101}Tc(14.22 m)	306.85(88), 545.06(6.0), 127.23(2.86)
• 184.10 *3*	0.09 *4*	^{101}Rh(3.3 y)	127.23(73), 197.6(70.8), 324.8(13.4)
• 184.10 *3*	†0.28 *6*	^{101}Rh(4.34 d)	306.85(†115), 545.06(†6.1), 127.23(†0.85)
184.1 *1*	0.21 *4*	^{119}Cd(2.69 m)	292.9(36.8), 343.0(16.9), 1609.7(10.9)
184.1 *1*	†10.2 *3*	^{230}Ra(93 m)	72.0(†100), 63.0(†35.4), 202.8(†27.3)
• 184.101 *9*	1.3 *3*	^{232}Pa(1.31 d)	969.315(41.6), 894.351(19.8), 150.059(10.8)
• 184.11 *20*	0.026 *13*	^{119}Te(4.70 d)	153.59(66), 1212.73(66), 270.53(28.0)
184.17 *20*	0.09 *3*	^{187}Au(8.4 m)	1331.81(7.0), 1408.23(3.06), 914.73(3.02)
184.2 *3*	0.054 *9*	^{120}Xe(40 m)	25.1(30), 72.6(9), 178.1(6.8)
184.2 *2*	†100	^{171}W(2.38 m)	294.5(†89), 478.7(†83), 52.1(†51)
184.2 *2*	0.46 *7*	^{250}Es(8.6 h)	828.82(72), 303.41(21.6), 349.4(19.8)
184.23 *24*	0.50 *25*	^{186}Ta(10.5 m)	197.93(50), 214.87(42.3), 510.82(37.5)
184.255 *5*	6.1 *13*	^{165}Tb(2.11 m)	1178.53(13.2), 538.51(7.2), 1292.05(7.0)
184.285 *1*	5.6 *8*	^{168}Ho(2.99 m)	741.356(36.6), 821.164(34.5), 815.990(18.6)
• 184.285 *1*	17.45 *16*	^{168}Tm(93.1 d)	198.241(52.39), 815.990(48.99), 447.515(23.05)
184.3 *5*	†15 *3*	^{134}Pr(11 m)	293.5(†100), 299.0(†100), 1196.8(†100)
184.3 *1*	0.76 *8*	^{139}Nd(29.7 m)	405.12(7), 1074.2(2.5), 669.0(1.52)
184.3 *5*	†0.26 *13*	^{180}Au(8.1 s)	153.3(†100), 524.3(†29), 257.6(†26)
• 184.3 *2*	2.3×10^{-5} *4*	^{233}U(1.592×10^{5} y)	42.44(0.0862), 97.134(0.020), 54.699(0.0182)
184.34 *9*	0.62 *10*	^{181}Au(11.4 s)	198.60(4.4), 2022.4(4.2), 79.40(4.2)
• 184.410 *6*	0.0020 *2*	^{166}Ho(26.83 h)	80.574(6.71), 1379.40(0.93), 1581.89(0.187)
• 184.410 *6*	72.6 *7*	^{166}Ho(1.20×10^{3} y)	810.276(58.08), 711.683(55.32), 280.459(29.77)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
184.410 *6*	16.1 *3*	^{166}Tm(7.70 h)	778.817(18.9), 2052.36(17.2), 1273.540(14.9)
184.49 *8*	0.0237 *23*	^{135}I(6.57 h)	1260.409(28.90), 1131.511(22.74), 1678.027(9.62)
184.5 *4*	6.2 *5*	^{117}Ag(5.34 s)	135.4(48), 386.8(39.9), 298.1(21.1)
184.5 *4*	0.5 *4*	^{117}Ag(72.8 s)	135.4(23), 337.7(10.3), 157.1(7.9)
184.5 *2*	0.47 *10*	^{136}Nd(50.65 m)	108.90(32), 40.2(18.9), 574.8(10.4)
184.5	4.8 *12*	^{175}Re(5.89 m)	280.9(0.35)
• 184.512 *10*	0.0468 *14*	^{149}Gd(9.28 d)	149.735(48.2), 298.634(28.6), 346.651(23.9)
184.53 *4*	1.65 *8*	^{148}Ce(56 s)	269.519(17.0), 291.724(16.7), 121.169(13.2)
184.544 *19*	0.072 *8*	^{228}Ac(6.15 h)	911.205(26.6), 968.971(16.2), 338.322(11.3)
184.544 *19*	0.017 *7*	^{228}Pa(22 h)	911.205(4.19), 463.005(1.250), 964.770(4.25)
• 184.55 *5*	2.1×10^{-6} *7*	^{239}Pu(24110 y)	51.624(0.007100), 38.661(0.000500), 129.297(0.00631)
184.56 *5*	0.42 *7*	^{208}Rn(24.35 m)	426.78(7.07), 251.05(5.02), 350.026(3.34)
184.564 *4*	3.37 *6*	^{155}Dy(9.9 h)	226.918(68.4), 1089.8(>2.8), 1090.0(>2.8)
• 184.577 *10*	48.7 *3*	^{67}Cu(61.83 h)	93.311(16.1), 91.266(7.0), 300.219(0.797)
• 184.577 *10*	21.2 *3*	^{67}Ga(3.2612 d)	93.311(39.2), 300.219(16.80), 393.529(4.68)
184.6	2.5 *1*	^{36}P(5.6 s)	3290.7(100), 901.8(70.4), 1638.2(35.3)
184.6		^{131}Sn(58.4 s)	367.40, 285.0, 62.9
184.6		^{131}Sn(56.0 s)	1226.03(†100), 450.03(†90), 798.50(†86)
184.6 *2*	†28 *3*	^{181}Ir(4.90 m)	107.64(†100), 1639.6(†52), 318.9(†46)
184.65 *5*	0.2196 *18*	^{223}Fr(21.8 m)	50.13(36.0), 79.72(9.1), 234.81(3.0)
• 184.65 *5*	†2.5 *4*	^{227}Th(18.72 d)	235.971(†813), 50.13(†528), 256.25(†463)
184.7 *3*	0.05 *5*	^{127}In(1.09 s)	1597.7(49), 646.1(6.2), 805.1(5.6)
184.7 *4*	1.13 *23*	^{127}Sn(2.10 h)	1114.3(39), 1095.6(20), 823.1(10.9)
• 184.7	0.0038 *7*	^{154}Eu(8.593 y)	123.071(40.79), 1274.436(35.19), 723.304(20.22)
184.7 *5*	$\dagger1.70\times10^{3}$ *15*	^{234}Pa(1.17 m)	1001.03(†837000), 766.38(†294000), 742.81(†80000)
184.77 *10*	0.17 *6*	^{133}Te(55.4 m)	912.671(55.28), 647.51(19.4), 863.955(15.6)
184.8 *3*	†5.4 *15*	^{71}Cu(19.5 s)	489.7(†100), 595.2(†30.5), 586.5(†30.2)
• 184.8	0.013 *7*	^{234}Th(24.10 d)	63.29(4.8), 92.38(2.81), 92.80(2.77)
184.8 *3*	0.00080 *8*	^{255}Fm(20.07 h)	81.477(0.81), 58.477(0.67), 80.92(0.27)
184.810 *25*	3.1	^{154}Pm(1.73 m)	2057.76(17.1), 1393.9(14.4), 81.99(12.6)
184.810 *25*	32	^{154}Pm(2.68 m)	81.99(15.4), 546.66(14.5), 1440.24(12.2)
• 184.810 *25*	0.0042 *11*	^{154}Eu(8.593 y)	81.99(0.0034)
184.9 *4*	0.31 *8*	^{162}Yb(18.87 m)	163.35(40.0), 118.70(33.6), 576.10(3.24)
184.9 *3*	†2.8	^{179}Os(6.5 m)	65.39(†100), 218.6(†17), 32.3(†17)
184.953 *18*	2.2 *9*	^{182}Hf(61.5 m)	942.80(18.8), 799.64(9.4), 114.3152(6.2)
185.0 *1*	†6.53 *21*	^{95}Pd(13.3 s)	1350.9(†105), 716.6(†70.63), 381.8(†50.8)
• 185.00 *1*	0.0046 *21*	^{97}Ru(2.9 d)	215.718(86), 324.48(10.79), 569.31(0.873)
185.0 *10*	0.010 *4*	^{101}Pd(8.47 h)	296.29(19), 590.44(12.06), 269.67(6.43)
185.0 *3*	0.68 *18*	^{136}Sm(47 s)	114.4(36), 747.7(5.4), 485.3(5.0)
185.0	0.35 *20*	^{148}Ba(0.607 s)	56.08(29.20), 133.53(3.88), 415.78(3.59)
185.0 *3*	†12	^{154}Nd(25.9 s)	151.703(†800), 799.55(†600), 180.693(†510)
185.0 *2*	†11	^{181}Hg(3.6 s)	147.8(†100), 42.5(†25), 1986.7(†17)
185.0 *2*	0.86 *8*	^{185}Ir(14.4 h)	254.4(13.3), 1828.8(10), 60.0(5.7)
185.0 *5*		^{188}Pb(24.2 s)	758.2
185.0 *5*		^{192}Bi(37 s)	
185		^{234}Am(2.32 m)	168, 147, 112
185.005 *3*	2.70 *13*	^{162}Tb(7.60 m)	260.070(37.2), 807.53(42.8), 888.20(38.7)
185.005 *3*	0.42	^{162}Ho(15.0 m)	80.660(8.0), 1319.3(3.8), 1372.8(0.81)
185.005 *3*	28.6 *17*	^{162}Ho(67.0 m)	1220.0(22.5), 282.864(11.3), 937.2(10.8)
185.03 *10*	2.8 *3*	^{135}Nd(12.4 m)	204.02(52), 41.43(23), 441.2(14.9)
185.1 *1*	†19.5 *7*	^{155}Er(5.3 m)	110.12(†100), 241.5(†65), 234.0(†40.0)
185.13 *2*	2.25 *13*	^{155}Ho(48 m)	240.19(12.5), 136.30(5.00), 45.38(5)
185.2 *1*	0.65 *7*	^{107}Tc(21.2 s)	102.70(21.0), 177.00(9.2), 106.31(7.6)
185.20 *5*	0.097 *17*	^{153}Dy(6.4 h)	80.723(11.10), 213.754(10.90), 99.659(10.51)

• $t_{1/2}$>1 d

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
185.21 *12*	0.21 *4*	^{179}Re(19.5 m)	430.221(28), 289.968(26.9), 1680.244(13.0)
• 185.22 *4*	0.095 *6*	^{205}Bi(15.31 d)	1764.36(1.368), 703.44(31), 987.62(0.585)
185.289 *5*	14.4 *9*	^{162}Tb(7.60 m)	260.070(37.2), 807.53(42.8), 888.20(38.7)
185.29 *18*	0.77 *7*	^{187}Au(8.4 m)	1331.81(7.0), 1408.23(3.06), 914.73(3.02)
• 185.3 *1*	0.008 *5*	^{155}Tb(5.32 d)	86.545(32.0), 105.305(25), 180.103(7.45)
185.3		^{161}Er(3.21 h)	826.6(3.0), 211.15(12.2), 592.6(3.7)
• 185.4 *1*	0.039 *10*	^{124}Sb(60.20 d)	602.730(97.8), 1690.980(47.3), 722.786(10.76)
185.4 *3*	0.27	^{170}Hf(16.01 h)	164.78(33), 620.7(23), 120.17(19)
185.4 *4*	0.039 *20*	^{185}Au(4.25 m)	310.6(13), 243.1(6.6), 77.7(6)
185.489 *25*	0.104 *5*	^{149}Nd(1.728 h)	211.309(25.9), 114.314(19.2), 270.166(10.7)
185.49 *5*	0.013 *6*	^{153}Dy(6.4 h)	80.723(11.10), 213.754(10.90), 99.659(10.51)
185.5 *10*	0.082 *17*	^{201}Bi(108 m)	629.1(24.0), 936.2(11.3), 1014.1(10.7)
185.6 *7*	†30	^{91}Br(0.541 s)	262.7(†100), 803.3(†80), 364.8(†40)
185.6 *2*	0.109 *19*	^{92}Kr(1.840 s)	142.307(64), 1218.6(60), 812.6(14.6)
185.6 *3*	0.29 *10*	^{121}Cd(8.3 s)	2059.41(21.0), 1020.89(18.9), 987.81(13.6)
185.7 *3*	†6.6 *8*	^{113}Ru(0.80 s)	263.2(†100), 211.7(†31.0), 337.5(†27.9)
185.70 *4*	†19.9 *20*	^{155}Nd(8.9 s)	180.574(†100), 418.99(†75), 955.08(†50)
• 185.7		^{185}Os(93.6 d)	646.116(78.0), 874.813(6.29), 880.523(5.17)
185.7 *2*	0.058 *6*	^{192}Au(4.94 h)	316.50791(58.0), 295.95827(22.3), 2236.89(5.6)
185.7 *3*	†0.32 *11*	^{228}U(9.1 m)	98.0(†1.8), 246(†0.42), 152(†0.21)
185.7 *2*	†1.3	^{256}Es(7.6 h)	861.8(†100), 231.1(†61), 172.6(†49)
185.712 *1*	16.4 *12*	^{231}Ac(7.5 m)	282.471(39.0), 307.063(30.4), 221.399(16.8)
• 185.712 *1*	57.2 *5*	^{235}U(7.038×10^{8} y)	143.764(10.96), 163.358(5.08), 205.309(5.01)
185.72 *9*	0.08 *4*	^{144}Ba(11.5 s)	103.855(23.30), 430.48(18.3), 172.828(15.4)
185.72 *6*	0.027 *3*	^{176}Ta(8.09 h)	1159.28(25), 88.34(12), 1224.93(6)
185.768 *1*	3.32 *15*	^{199}Pt(30.80 m)	542.993(15), 493.772(5.59), 317.056(4.95)
185.8	2 *1*	^{147}Cs(0.225 s)	85.2(7.3), 245.8(4.5), 109.7(4.5)
185.8 *3*	0.64 *8*	^{175}Ta(10.5 h)	207.4(14.0), 348.5(12.0), 266.9(10.8)
185.8 *1*	0.41 *4*	^{188}Hg(3.25 m)	66.7(63), 190.1(4.40), 82.7(2.6)
185.8 *5*	0.024 *21*	^{195}Tl(1.16 h)	563.52(10.5), 884.47(10.0), 1363.88(8.4)
• 185.8 *1*	0.010 *4*	^{245}Cm(8500 y)	174.94(10), 132.99(2.77), 41.95(0.350)
• 185.81 *2*	3.7×10^{-5} *6*	^{233}U(1.592×10^{5} y)	42.44(0.0862), 97.134(0.020), 54.699(0.0182)
185.83	†2.8	^{131}Sn(56.0 s)	1226.03(†100), 450.03(†90), 798.50(†86)
185.83 *22*	†2.2 *4*	^{187}Hg(1.9 m)	233.38(†100), 376.34(†38), 240.26(†33)
185.84 *7*	†1.4 *3*	^{184}Ir(3.09 h)	263.97(†100), 119.80(†45), 390.38(†38)
• 185.85 *3*	1.89 *4*	^{189}Re(24.3 h)	216.663(5.50), 219.395(4.54), 245.09(3.5)
• 185.85 *3*	0.180 *18*	^{189}Ir(13.2 d)	245.09(6), 69.537(3.5), 59.053(1.20)
185.86 *5*	0.32 *11*	^{164}Tb(3.0 m)	168.838(25.4), 754.80(23.3), 215.07(21)
185.88 *6*	0.58 *3*	^{165}Yb(9.9 m)	80.11(49), 68.86(9.1), 1090.28(4.4)
185.89 *2*	0.338 *25*	^{155}Ho(48 m)	240.19(12.5), 136.30(5.00), 45.38(5)
185.9 *1*	1.51 *4*	^{146}Ba(2.22 s)	140.7(20.2), 251.2(19.6), 121.2(14.2)
185.91 *5*	0.18 *4*	^{153}Dy(6.4 h)	80.723(11.10), 213.754(10.90), 99.659(10.51)
185.93 *12*	1.74 *10*	^{187}Au(8.4 m)	1331.81(7.0), 1408.23(3.06), 914.73(3.02)
185.95 *3*	0.103 *22*	^{109}Ru(34.5 s)	206.29(22.0), 225.98(19.6), 1929.05(13.7)
185.96 *5*	†2.6 *2*	^{101}Nb(7.1 s)	276.10(†100), 157.466(†32), 13.5(†32)
186.0 *3*	0.10 *5*	^{97}Sr(426 ms)	1905.0(25), 953.8(21.4), 652.2(11.4)
186.0		^{99}Y(1.470 s)	121.761(33), 724.30(14.9), 536.2(6.6)
186.0 *1*	0.30 *6*	^{101}Zr(2.1 s)	119.3(10.8), 205.6(6.0), 912.2(3.48)
186.0 *4*	†1.7 *5*	^{129}Sb(17.7 m)	759.8(†100.0), 657.78(†92), 433.76(†73)
• 186.0 *1*	0.0013 *13*	^{155}Tb(5.32 d)	86.545(32.0), 105.305(25), 180.103(7.45)
186.0 *5*	0.27 *11*	^{156}Er(19.5 m)	35.3(18), 29.9(3.1), 133.6(0.8)
186.00 *16*	0.25 *10*	^{157}Sm(482 s)	197.870(56.00), 196.461(16.8), 394.351(11.93)
186.0 *15*	†7.0 *17*	^{182}Pt(2.6 m)	136.0(†100.0), 146.0(†15.4), 210.0(†12.0)
186.01 *7*	0.059 *9*	^{103}Ag(65.7 m)	118.72(31.2), 148.193(28.3), 266.86(13.3)

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
186.02 *7*	0.145 *24*	^{79}Ga(2.847 s)	464.79(24.2), 516.41(21.5), 1187.28(12.8)
186.05 *1*	16.3 *8*	^{226}Fr(48 s)	253.73(22.3), 253.9(2.5), 1322.5(2.18)
• 186.05 *1*	4.8 *3*	^{226}Ac(29 h)	253.73(5.7), 67.67(0.11)
• 186.05 *1*	0.0088 *4*	^{230}Th(7.538×10^4 y)	67.67(0.376), 143.87(0.0486), 253.73(0.0111)
• 186.08 *20*	0.025 *12*	^{153}Tb(2.34 d)	212.038(31.0), 170.504(6.8), 109.758(6.4)
186.1 *5*		^{82}As(19.1 s)	654.6(15), 1731.3(4.1), 755.2(1.81)
186.1 *4*	0.22 *4*	^{136}Sm(47 s)	114.4(36), 747.7(5.4), 485.3(5.0)
186.1	0.25	^{147}Ce(56.4 s)	268.80(7), 92.9(4.7), 374.23(3.5)
• 186.10 *10*	3.50 *5*	^{226}Ra(1600 y)	262.27(0.0049), 600.66(0.00049), 414.60(0.00030)
186.11 *5*	>0.06	^{153}Dy(6.4 h)	80.723(11.10), 213.754(10.90), 99.659(10.51)
• 186.11 *20*	0.0022 *7*	^{172}Tm(63.6 h)	78.7435(6.5), 1093.657(6.0), 1387.093(5.6)
186.12 *13*	0.18 *7*	^{181}Re(19.9 h)	365.57(56), 360.70(20), 639.30(6.4)
186.15 *15*	3.7 *4*	^{102}Sr(69 ms)	243.80(53), 150.15(18.0), 93.89(13.4)
186.15 *4*	1.3 *4*	^{187}Pt(2.35 h)	106.46(9), 201.52(6.4), 110.04(5.7)
186.15 *2*	1.76 *10*	^{234}Pa(6.70 h)	131.30(18), 946.00(13.4), 883.24(9.6)
186.15 *2*	0.032	^{239}U(23.45 m)	74.664(48), 43.533(4.14), 662.24(0.18)
186.17 *3*	10.1 *6*	^{193}Au(17.65 h)	255.57(6.7), 268.22(3.9), 173.52(2.9)
186.2		^{131}Sn(58.4 s)	367.40, 285.0, 62.9
186.2	†0.95	^{131}Sn(56.0 s)	1226.03(†100), 450.03(†90), 798.50(†86)
186.2	8.5 *16*	^{177}W(135 m)	115.65(50), 426.98(13.2), 1036.4(10.3)
186.24 *23*	0.043 *11*	^{118}In(4.45 m)	1229.68(96), 1050.69(81.0), 683.08(54.3)
186.274 *9*	3.37 *14*	^{159}Ho(33.05 m)	121.012(36.2), 131.973(23.6), 309.594(17.2)
186.3 *5*	†1.2 *8*	^{105}Nb(2.95 s)	94.8(†100), 246.9(†79), 309.9(†41.9)
186.320 *7*	†36.7 *22*	^{94}Kr(0.20 s)	629.2(†100), 764.5(†71), 219.466(†67.4)
186.320 *7*	6.48 *12*	^{147}La(4.015 s)	117.718(12), 438.30(5.04), 215.52(3.48)
186.38 *4*	21.6 *13*	^{221}Rn(25 m)	150.04(4.5), 216.90(2.6), 111.54(2.29)
• 186.38 *4*	0.020 *4*	^{225}Ac(10.0 d)	99.91(1.01), 150.04(0.80), 99.63(0.62)
186.4 *3*	0.08 *3*	^{179}Re(19.5 m)	430.221(28), 289.968(26.9), 1680.244(13.0)
186.4 *3*	3.3 *6*	^{192}Hg(4.85 h)	274.8(50.4), 157.2(7), 306.5(5.4)
186.42 *3*	7.8 *18*	^{177}W(135 m)	115.65(50), 426.98(13.2), 1036.4(10.3)
186.5 *3*	0.08	^{170}Hf(16.01 h)	164.78(33), 620.7(23), 120.17(19)
186.5 *4*	0.56 *14*	^{186}Pt(2.0 h)	276.7(0), 611.5(6.0), 635.6(>3.8)
186.5 *5*		^{189}Au(28.7 m)	713.17(†100), 812.68(†63), 447.65(†55)
186.5 *3*	3.11 *15*	^{203}Bi(11.76 h)	820.3(30), 825.2(14.6), 896.9(13)
186.5 *3*	†6.5 *8*	^{206}Rn(5.67 m)	497.7(†100), 324.5(†96), 386.6(†61)
186.55 *3*	0.81 *4*	^{157}Sm(482 s)	197.870(56.00), 196.461(16.8), 394.351(11.93)
186.56 *3*		^{193}Hg(3.80 h)	861.11(†100), 1118.84(†64), 789.21(†36)
• 186.59 *2*	0.180 *23*	^{151}Pm(28.40 h)	340.08(23), 167.75(8.3), 275.21(6.8)
• 186.64 *13*		^{105}Ag(41.29 d)	344.520(41), 280.41(30.2), 644.55(11.1)
186.68 *3*	2.23 *22*	^{189}Pt(10.87 h)	721.41(9.3), 94.33(7.6), 568.84(7.1)
186.7	>0.08	^{83}Zr(44 s)	55.55(8), 104.97(5.70), 475.1(5.1)
186.7 *3*	2.7 *9*	^{140}Gd(15.8 s)	174.8(76), 749.9(70), 379.0(38)
186.718 *2*	48.4 *18*	^{190}Re(3.1 m)	557.972(28.2), 223.811(26.0), 569.310(25.1)
186.718 *2*	27.8 *12*	^{190}Re(3.2 h)	605.24(14.9), 557.972(14.3), 569.310(13.7)
• 186.718 *2*	52.4 *21*	^{190}Ir(11.78 d)	605.24(39.9), 518.55(34.0), 557.972(30.1)
186.718 *2*	66.3 *6*	^{190}Ir(3.25 h)	616.08(93.10), 502.53(92.31), 361.136(89.57)
• 186.74 *5*	0.0094 *8*	^{149}Gd(9.28 d)	149.735(48.2), 298.634(28.6), 346.651(23.9)
186.752 *6*	0.492 *24*	^{147}Pr(13.4 m)	77.9921(15), 314.675(13.2), 641.380(10.0)
186.8 *2*	†1.7 *6*	^{131}Ce(10.3 m)	169.42(†100), 414.25(†68), 119.18(†44)
• 186.8 *5*		^{146}Eu(4.59 d)	747.2(98), 633.03(43), 634.07(37)
186.8 *1*	†0.30 *8*	^{158}Ho(11.3 m)	218.21(†100.0), 98.91(†70), 945.7(†37)
186.8 *3*	†0.8	^{179}Os(6.5 m)	65.39(†100), 218.6(†17), 32.3(†17)
• 186.8	0.040 *24*	^{191}Pt(2.9 d)	538.90(13.7), 409.44(8.0), 359.90(6.0)
186.8 *2*	0.034	^{233}Th(22.3 m)	86.477(2.7), 29.374(2.5), 459.222(1.4)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
• 186.8 *2*		^{237}Np(2.14×10^6 y)	29.374(15.0), 86.477(12.4), 94.66(0.6)
186.8 *3*	0.00010 *2*	^{255}Fm(20.07 h)	81.477(0.81), 58.477(0.67), 80.92(0.27)
• 186.86 *35*	0.003 *3*	^{237}Np(2.14×10^6 y)	29.374(15.0), 86.477(12.4), 94.66(0.6)
• 186.88 *15*	0.152 *16*	^{153}Tb(2.34 d)	212.038(31.0), 170.504(6.8), 109.758(6.4)
186.9 *2*	†14.9 *15*	^{109}Tc(0.87 s)	194.6(†100), 128.7(†51), 96.2(†48)
186.9 *10*	0.082 *17*	^{201}Bi(108 m)	629.1(24.0), 936.2(11.3), 1014.1(10.7)
186.94 *14*	†5.6 *8*	^{181}Pt(51 s)	289.29(†100), 111.97(†100), 230.15(†92)
186.978 *10*	0.558 *18*	^{122}Xe(20.1 h)	350.065(7.80), 148.612(2.62), 416.633(1.87)
• 187 *1*	0.038 *22*	^{128}Ba(2.43 d)	273.44(15), 374.99(0.309), 229.50(0.106)
187.0	†37.2	^{158}Ho(21.3 m)	406.14(†100), 838.9(†84.3), 1484.1(†66.2)
187	†50	^{173}Os(16 s)	177(†100), 285(†30), 276(†25)
• 187.013 *12*	†2.18×10^4 *15*	^{134}Ce(75.9 h)	162.306(†230000), 130.414(†209000), 39.08(†>150000)
187.02 *15*	2.3 *5*	^{186}Tl(27.5 s)	405.43(92), 402.72(45.9), 356.84(29.3)
187.1 *3*	†1.25 *7*	^{111}Rh(11 s)	275.4(†100.0), 411.8(†9.42), 230.0(†8.9)
187.10 *15*	†0.4 *2*	^{185}Pt(33.0 m)	229.60(†100), 135.3(†80), 197.4(†74)
187.1 *2*	0.033	^{185}Au(4.25 m)	310.6(13), 243.1(6.6), 77.7(6)
187.1 *5*		^{239}Cm(2.9 h)	146.4, 41
187.1 *5*	0.060 *15*	^{243}Bk(4.5 h)	536(>0.015), 146.4(0.012), 41(0.006)
187.15 *15*	0.08 *3*	^{207}At(1.80 h)	814.41(44.5), 588.33(19.2), 300.654(12.8)
187.2 *5*	0.51 *15*	^{98}Sr(0.653 s)	119.353(73), 444.628(39), 428.4(31)
187.2 *2*	†100 *45*	^{255}No(3.1 m)	192
187.21 *14*	8.7 *17*	^{75}Rb(19.0 s)	178.98(<63), 178.97(>51), 671.8(8.0)
187.21 *9*	0.021 *4*	^{135}Ce(17.7 h)	265.56(41.8), 300.07(23.5), 606.76(18.8)
187.22 *2*	4.30 *5*	^{149}Tb(4.118 h)	352.24(29.43), 164.98(26.4), 388.57(18.37)
187.274 *35*	0.071 *24*	^{227}Fr(2.47 m)	90.035(39), 585.804(29.5), 64.267(14.5)
187.28 *7*	3.9 *4*	^{187}Pt(2.35 h)	106.46(9), 201.52(6.4), 110.04(5.7)
• 187.285 *6*	†0.36 *4*	^{136}Cs(13.16 d)	818.514(†100), 1048.073(†80), 340.547(†42.3)
• 187.3 *2*		^{161}Tb(6.88 d)	25.65150(23.2), 48.91562(17.0), 74.56711(10.2)
187.3 *2*	0.0017 *3*	^{161}Ho(2.48 h)	25.65150(27), 103.062(3.9), 77.414(1.91)
• 187.323 *5*	0.0578 *23*	^{77}Br(57.036 h)	238.996(23), 520.639(22.4), 297.215(4.16)
• 187.36 *4*	0.32 *3*	^{182}Re(64.0 h)	229.3220(26), 67.75001(22.2), 1121.3007(22.0)
• 187.37 *21*		^{105}Ag(41.29 d)	344.520(41), 280.41(30.2), 644.55(11.1)
• 187.4 *4*	0.0008 *8*	^{172}Er(49.3 h)	610.062(44.2), 407.338(42.1), 68.107(3.29)
187.40 *4*	1.66 *6*	^{187}Ir(10.5 h)	912.95(4.79), 427.12(4.12), 400.89(3.94)
187.40 *4*	0.006	^{239}U(23.45 m)	74.664(48), 43.533(4.14), 662.24(0.18)
187.41 *20*	0.47 *6*	^{101}Mo(14.61 m)	191.92(19), 590.91(16.4), 1012.47(12.8)
187.5 *1*	†25 *5*	^{159}Lu(12.1 s)	150.51(†100), 369.3(†19)
187.50 *25*	0.10	^{208}At(1.63 h)	686.527(98), 660.040(89), 177.595(48.6)
187.52 *5*	0.26 *4*	^{208}Rn(24.35 m)	426.78(7.07), 251.05(5.02), 350.026(3.34)
• 187.59 *10*	19.4 *10*	^{188}Pt(10.2 d)	195.05(18.6), 381.43(7.5), 423.34(4.36)
187.6 *3*	†14.5 *13*	^{244}Bk(4.35 h)	891.5(†100), 217.6(†88), 921.5(†19)
187.63 *3*	52 *6*	^{125}In(12.2 s)	
187.69 *4*	2.83 *19*	^{141}Xe(1.73 s)	909.23(24.0), 118.705(16.1), 105.937(9.8)
• 187.69 *4*	0.416 *24*	^{191}Pt(2.9 d)	538.90(13.7), 409.44(8.0), 359.90(6.0)
187.7 *2*	0.80 *13*	^{105}Mo(35.6 s)	85.4(25.0), 76.50(19.3), 147.8(14.8)
187.8 *4*	0.09 *5*	^{164}Yb(75.8 m)	40.928(1.147), 675.41(0.38), 390.6(0.31)
187.8 *2*	†0.95 *16*	^{169}Ta(4.9 m)	511.0(†20.6), 28.80(†18.3), 192.4(†8)
187.8 *4*	0.09 *5*	^{185}Au(4.25 m)	310.6(13), 243.1(6.6), 77.7(6)
187.81 *7*	2.3 *3*	^{78}Zn(1.47 s)	224.75(43.9), 181.68(28.1), 860.30(24.5)
187.83 *4*	0.9 *4*	^{193}Au(17.65 h)	186.17(10.1), 255.57(6.7), 268.22(3.9)
187.87 *13*	1.26 *4*	^{86}Y(14.74 h)	1076.64(83), 627.72(32.6), 1153.01(30.5)
187.88 *2*	0.123 *21*	^{185}Ta(49.4 m)	177.59(25.7), 173.68(22.6), 65.86(3.9)
187.90 *20*	2.7 *8*	^{103}Zr(1.3 s)	248(100), 164.05(94), 126.30(84)
187.9 *2*	1.50 *8*	^{148}Ce(56 s)	269.519(17.0), 291.724(16.7), 121.169(13.2)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
187.9 *3*	0.11	^{170}Hf(16.01 h)	164.78(33), 620.7(23), 120.17(19)
• 187.969 *2*	0.0019 *3*	^{233}U(1.592×10^5 y)	42.44(0.0862), 97.134(0.020), 54.699(0.0182)
187.97 *11*	55	^{103}In(65 s)	720.32(13.9), 739.95(10.1), 201.80(9.5)
188.0 *2*	3.7 *6*	^{103}Zr(1.3 s)	248(100), 164.05(94), 126.30(84)
188 *1*	>0.35	^{113}Ag(68.7 s)	316.3(18), 392.3(11), 298.58(10)
188		^{126}Ce(50 s)	120, 116.4, 82.0
188.0 *3*	†32 *3*	^{137}Sm(45 s)	380.5(†100), 163.7(†85), 408.3(†40)
188.0 *3*	0.26 *5*	^{207}Rn(9.25 m)	344.53(46), 747.15(14.2), 402.68(11.9)
188.00 *5*	0.22	^{221}Rn(25 m)	186.38(21.6), 150.04(4.5), 216.90(2.6)
• 188.00 *5*	0.54 *3*	^{225}Ac(10.0 d)	99.91(1.01), 150.04(0.80), 99.63(0.62)
188.05 *4*	†8.8×10^3 *9*	^{157}Ho(12.6 m)	279.97(†47600), 341.16(†37000), 193.41(†15200)
188.052 *16*	13.5 *4*	^{157}Pm(10.56 s)	160.61(35), 571.27(5.39), 850.50(4.76)
188.06 *4*	0.021 *13*	^{153}Dy(6.4 h)	80.723(11.10), 213.754(10.90), 99.659(10.51)
• 188.1 *5*	0.096 *22*	^{146}Eu(4.59 d)	747.2(98), 633.03(43), 634.07(37)
188.1 *2*	†5.0 *6*	^{155}Er(5.3 m)	110.12(†100), 241.5(†65), 234.0(†40.0)
188.1 *5*	†4.0 *8*	^{183}Hg(9.4 s)	60.5(†100), 159.91(†21), 172.70(†17)
• 188.10 *2*	1.09×10^{-5} *11*	^{239}Pu(24110 y)	51.624(0.007100), 38.661(0.000500), 129.297(0.00631)
• 188.13 *5*	0.278 *15*	^{131}Te(30 h)	773.67(49.9), 852.21(27.0), 793.75(18.10)
188.14 *8*	†18 *2*	^{114}Te(15.2 m)	90.28(†100), 83.8(†67), 1417.6(†32)
188.2 *1*	2.25 *23*	^{117}Cs(8.4 s)	204.8(15.0), 29.7(9.9), 205.6(6.8)
• 188.254 *4*	0.241 *4*	^{154}Eu(8.593 y)	123.071(40.79), 1274.436(35.19), 723.304(20.22)
188.27 *3*	15.4 *5*	^{81}Sr(22.3 m)	153.54(33.8), 147.76(30.1), 443.34(17.5)
188.28 *5*	3.6 *3*	^{161}Yb(4.2 m)	78.20(34), 599.88(25.9), 631.45(13.9)
188.3 *6*	0.234 *12*	^{103}Cd(7.3 m)	1461.81(12), 1448.70(5.55), 1079.90(5.44)
188.30 *8*	†4 *1*	^{114}Te(15.2 m)	90.28(†100), 83.8(†67), 1417.6(†32)
• 188.3 *1*	0.0025 *10*	^{155}Tb(5.32 d)	86.545(32.0), 105.305(25), 180.103(7.45)
188.4 *1*		^{127}Cs(6.25 h)	411.95(62.8), 124.70(11.37), 462.31(5.07)
188.4 *2*	0.15 *4*	^{149}Dy(4.20 m)	100.8(15.2), 789.4(11.8), 1776.3(11.1)
188.4 *1*	†6.3 *8*	^{171}Hf(12.1 h)	122.0(†100), 662.2(†83), 347.18(†47)
• 188.40 *4*	0.131 *13*	^{182}Re(64.0 h)	229.3220(26), 67.75001(22.2), 1121.3007(22.0)
188.4 *3*	0.12 *3*	^{209}Rn(28.5 m)	408.32(50.3), 745.78(22.8), 337.45(14.5)
188.418 *4*	54	^{125}Xe(16.9 h)	243.378(30.1), 54.968(6.81), 453.796(4.69)
188.47 *4*	0.79 *6*	^{134}I(52.6 m)	847.025(95.4), 884.090(64.9), 1072.547(15.0)
188.5 *3*	1.15 *12*	^{148}Ce(56 s)	269.519(17.0), 291.724(16.7), 121.169(13.2)
• 188.581 *25*	0.498 *10*	^{189}Re(24.3 h)	216.663(5.50), 219.395(4.54), 245.09(3.5)
• 188.581 *25*	0.052 *4*	^{189}Ir(13.2 d)	245.09(6), 69.537(3.5), 59.053(1.20)
188.6		^{157}Eu(15.18 h)	63.929(23.0), 410.723(17.5), 370.509(11.0)
188.6 *3*	†7.7 *3*	^{201}Po(15.3 m)	890.1(†100), 240.1(†71.0), 904.2(†54.8)
188.640 *8*	1.79 *8*	^{149}Nd(1.728 h)	211.309(25.9), 114.314(19.2), 270.166(10.7)
188.66 *5*	2.02 *22*	^{167}Lu(51.5 m)	29.66(14.4), 239.22(8.6), 213.19(3.6)
188.7 *3*	0.063 *9*	^{120}Xe(40 m)	25.1(30), 72.6(9), 178.1(6.8)
188.7 *3*	2.5	^{139}Sm(10.7 s)	
188.7 *2*	0.119 *14*	^{185}Ir(14.4 h)	254.4(13.3), 1828.8(10), 60.0(5.7)
188.72 *3*	0.23 *12*	^{162}Ho(67.0 m)	185.005(28.6), 1220.0(22.5), 282.864(11.3)
• 188.750 *6*	0.0032 *2*	^{231}Th(25.52 h)	25.646(14.5), 84.216(6.6), 89.944(0.94)
188.8 *1*	0.40 *4*	^{107}Tc(21.2 s)	102.70(21.0), 177.00(9.2), 106.31(7.6)
188.8	0.010	^{149}Nd(1.728 h)	211.309(25.9), 114.314(19.2), 270.166(10.7)
188.85 *1*	0.637 *18*	^{145}Ce(3.01 m)	724.33(59), 62.54(13.33), 1148.03(9.15)
188.88 *20*	0.0091 *17*	^{139}Cs(9.27 m)	1283.23(8.3), 627.24(1.78), 1420.66(0.91)
188.9 *5*	†100 *14*	^{134}Pr(11 m)	293.5(†100), 299.0(†100), 1196.8(†100)
188.9 *1*	2.70 *15*	^{139}Sm(2.57 m)	273.7(37), 306.7(28.5), 596.3(8.0)
188.92 *9*	0.180 *12*	^{83}Se(70.1 s)	1030.86(21.2), 356.687(18), 987.96(16.1)
188.98 *5*	10	^{124}Ba(11.9 m)	169.3(20), 1216(12), 271.6(8)
• 189	0.0009 *9*	^{59}Fe(44.503 d)	1099.251(56.5), 1291.596(43.2), 192.349(3.08)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
189.0 *3*	0.24 *4*	^{98}Nb(51.3 m)	787.374(93), 722.645(73.8), 1168.830(17.8)
189.0 *3*	0.005 *4*	^{98}Nb(51.3 m)	787.374(93), 722.645(73.8), 1168.830(17.8)
189.0 *4*	0.11	^{194}Pb(12.0 m)	581.82(18.8), 1519.45(16.4), 203.82(16.2)
189		^{219}Fr(20 ms)	530, 493, 352
• 189.00 *4*	0.047 *8*	^{246}Pu(10.84 d)	43.81(25.0), 223.75(23.5), 179.94(9.7)
189.053 *3*	7.5 *4*	^{179}Re(19.5 m)	430.221(28), 289.968(26.9), 1680.244(13.0)
189.057 *2*	11.8 *23*	^{151}Pr(18.90 s)	880.19(13), 484.501(11.3), 495.309(11.2)
189.06 *6*	0.11 *4*	^{200}Pt(12.5 h)	76.21(13), 135.90(3.24), 243.71(2.49)
189.07 *3*	0.027 *8*	^{153}Dy(6.4 h)	80.723(11.10), 213.754(10.90), 99.659(10.51)
189.09 *2*	0.250 *25*	^{155}Ho(48 m)	240.19(12.5), 136.30(5.00), 45.38(5)
189.1 *3*	0.32 *4*	^{88}Nb(7.8 m)	1057.01(89.3), 1082.53(53.9), 399.41(45.7)
189.1 *3*	†16.6 *9*	^{111}Ru(2.12 s)	303.8(†100), 211.7(†77.7), 382.0(†41.3)
189.1 *4*	†6.2 *9*	^{111}Ru(2.12 s)	303.8(†100), 211.7(†77.7), 382.0(†41.3)
189.1 *3*	†100 *9*	^{147}Ho(5.8 s)	883.9(†100), 486.7(†61), 1263.7(†36)
189.1 *3*	†15 *5*	^{157}Yb(38.6 s)	230.92(†100), 340.7(†90), 241.7(†74)
• 189.1		^{185}Os(93.6 d)	646.116(78.0), 874.813(6.29), 880.523(5.17)
• 189.1 *2*	†1.0 *4*	^{258}Md(51.5 d)	367.8(†100), 447.9(†37), 276.8(†20.2)
• 189.11 *10*	0.0038 *7*	^{194}Au(38.02 h)	328.455(60), 293.545(10.2), 1468.91(6.3)
189.2 *5*	†4	^{106}Mo(8.4 s)	465.70(†100), 54.00(†54), 618.60(†25)
189.2 *3*	†0.4	^{111}Rh(11 s)	275.4(†100.0), 411.8(†9.42), 230.0(†8.9)
189.2 *3*	0.206 *6*	^{145}Ce(3.01 m)	724.33(59), 62.54(13.33), 1148.03(9.15)
189.2 *1*	†14.8 *4*	^{230}Ra(93 m)	72.0(†100), 63.0(†35.4), 202.8(†27.3)
189.21 *15*	1.0 *3*	^{97}Rh(30.7 m)	421.55(75), 840.13(12.0), 878.80(9.0)
189.21 *15*	49	^{97}Rh(46.2 m)	2245.6(14), 421.55(12.7), 1586.66(8.9)
189.3 *2*	0.75 *20*	^{104}Mo(60 s)	68.8(55), 69.7(17.8), 36.3(14)
189.3		^{168}Hf(25.95 m)	183.8(†100), 157.2(†68), 324.1
189.3 *3*	0.07	^{170}Hf(16.01 h)	164.78(33), 620.7(23), 120.17(19)
• 189.3		^{188}Ir(41.5 h)	155.032(29.7), 2214.62(18.7), 632.99(18)
• 189.349 *9*	8.3×10^{-5} *1*	^{239}Pu(24110 y)	51.624(0.007100), 38.661(0.000500), 129.297(0.00631)
189.4	1.0	^{134}Nd(8.5 m)	163.2(58), 288.9(13), 216.8(12)
189.4 *4*		^{139}Eu(17.9 s)	267.3(31), 155.3(31), 190.1(25)
189.4 *3*	15.2 *10*	^{158}Sm(5.30 m)	363.6(12.4), 324.5(10.6), 224.1(8.5)
189.40 *10*	0.26 *5*	^{163}Yb(11.05 m)	860.28(10.1), 63.62(6.5), 123.21(1.98)
189.4	0.22	^{185}Ir(14.4 h)	254.4(13.3), 1828.8(10), 60.0(5.7)
189.4		^{238}Pa(2.3 m)	1015.3(†<100), 1014.6(†<100), 635.18(†88)
189.44 *5*	1.51 *21*	^{194}Pb(12.0 m)	581.82(18.8), 1519.45(16.4), 203.82(16.2)
189.49 *4*	28.1 *11*	^{77}Zn(2.08 s)	473.94(19.7), 1832.0(12.4), 160.93(8.4)
189.5 *5*	0.22 *7*	^{98}Sr(0.653 s)	119.353(73), 444.628(39), 428.4(31)
189.5 *2*	1.9	^{145}Ba(4.31 s)	96.6(17), 91.9(7), 65.9(5)
189.51 *8*	3.8 *3*	^{203}Po(36.7 m)	908.64(55), 1090.95(19.2), 893.49(18.7)
189.57 *5*	44.5 *20*	^{176}Tm(1.9 m)	1069.3(34), 381.8(21.8), 82.13(11.6)
189.57 *4*	0.95 *9*	^{187}Pt(2.35 h)	106.46(9), 201.52(6.4), 110.04(5.7)
189.6	0.36	^{96}Y(9.6 s)	1750.42(89), 915.0(60), 617.1(56)
189.6 *2*	0.04	^{140}Sm(14.82 m)	225.5(>10), 225.4(10), 140.0(5.0)
189.6 *2*	0.033	^{185}Au(4.25 m)	310.6(13), 243.1(6.6), 77.7(6)
• 189.62 *3*	0.39 *18*	^{182}Re(64.0 h)	229.3220(26), 67.75001(22.2), 1121.3007(22.0)
• 189.663 *4*	0.0023 *12*	^{77}Br(57.036 h)	238.996(23), 520.639(22.4), 297.215(4.16)
189.7 *2*	17.0 *3*	^{113}Rh(2.72 s)	409.3(15.9), 219.6(3.88), 116.8(3.66)
189.7 *1*	3.4 *10*	^{141}Gd(14 s)	215.8(54), 525.9(17), 336.2(17.1)
• 189.70 *20*	0.010 *5*	^{149}Gd(9.28 d)	149.735(48.2), 298.634(28.6), 346.651(23.9)
189.7 *1*	†>0.18	^{160}Ho(5.02 h)	728.18(†100), 879.383(†65.9), 962.317(†59.1)
189.7 *1*	0.24 *1*	^{240}U(14.1 h)	44.10(1.05), 66.5(0.154), 169.2(0.115)
• 189.721 *16*	1.10 *3*	^{148}Pm(41.29 d)	550.284(94.5), 629.987(89), 725.673(32.7)
• 189.721 *16*	0.178 *4*	^{148}Eu(54.5 d)	550.284(98.5), 629.987(71.9), 611.293(20.5)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
• 189.76 *4*	0.66 *5*	^{131}Te(30 h)	773.67(49.9), 852.21(27.0), 793.75(18.10)
189.79 *9*	46	^{159}Sm(11.37 s)	861.97(18.2), 254.43(9.8), 797.2(6.1)
189.8	>0.016	^{195}Tl(1.16 h)	563.52(10.5), 884.47(10.0), 1363.88(8.4)
• 189.82 *6*	0.193 *12*	^{245}Cm(8500 y)	174.94(10), 132.99(2.77), 41.95(0.350)
189.83 *7*	0.0020 *3*	^{163}Tb(19.5 m)	351.138(26), 389.734(24.3), 494.534(23)
• 189.84 *10*	0.0036 *24*	^{194}Au(38.02 h)	328.455(60), 293.545(10.2), 1468.91(6.3)
189.9 *2*	†4 *1*	^{181}Ir(4.90 m)	107.64(†100), 1639.6(†52), 318.9(†46)
190 *1*	0.22 *11*	^{83}Se(22.3 m)	356.687(70), 510.17(43), 224.8(32.7)
190.006 *6*	1.43 *3*	^{163}Tm(1.810 h)	104.320(18.6), 69.229(11.6), 241.305(10.9)
190.04 *5*	2.67 *12*	^{132}Ce(3.51 h)	182.11(77), 155.37(10.5), 216.83(4.95)
• 190.04 *3*		^{206}Bi(6.243 d)	803.10(99), 881.01(66.2), 516.18(40.7)
190.1 *4*	0.58 *8*	^{127}Sn(2.10 h)	1114.3(39), 1095.6(20), 823.1(10.9)
190.1 *2*	25	^{139}Eu(17.9 s)	267.3(31), 155.3(31), 111.9(21.3)
190.1 *1*	†52 *5*	^{185}Hg(21.6 s)	222.8(†100.0), 258.7(†98), 212.5(†58)
190.1 *1*	4.40 *22*	^{188}Hg(3.25 m)	66.7(63), 82.7(2.6), 114.8(1.14)
190.1 *2*	†3.0	^{256}Es(7.6 h)	861.8(†100), 231.1(†61), 172.6(†49)
• 190.16 *8*	0.0165 *16*	^{156}Eu(15.19 d)	811.79(9.70), 88.9667(8.4), 1230.68(7.98)
190.20 *3*	5.7 *4*	^{66}Ge(2.26 h)	43.89(28.7), 381.85(28), 272.97(10.4)
190.2 *3*		^{122}Ba(1.95 m)	550.7, 388.7, 231.0
190.2 *2*	0.5 *1*	^{129}Sn(2.23 m)	645.13(100), 80.5(6.6), 913.2(5.0)
190.2 *5*	†7×10^{02} *3*	^{158}Er(2.29 h)	71.91(†23300), 386.84(†111000), 248.58(†42000)
190.2 *1*		^{186}Hg(1.38 m)	112.1(63), 251.5(55), 191.6(3.7)
• 190.2 *2*		^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
190.24 *6*	3.4 *3*	^{161}Tm(33 m)	45.54(5.00), 1648.1(9.50), 84.40(9.4)
190.273 *17*	1.13 *4*	^{157}Sm(482 s)	197.870(56.00), 196.461(16.8), 394.351(11.93)
190.29 *7*	0.078 *10*	^{87}Br(55.60 s)	1419.71(22.0), 1476.04(7.9), 1577.60(6.0)
190.3		^{138}Nd(5.04 h)	325.76(2.84), 199.50(0.53), 341.65(0.40)
190.30 *5*	0.51 *8*	^{222}Fr(14.2 m)	206.15(51), 111.12(12.5), 242.12(1.89)
190.30 *5*	0.109 *6*	^{226}Th(30.9 m)	111.12(3.29), 242.12(0.866), 131.02(0.278)
190.328 *5*	46.0 *14*	^{141}Ba(18.27 m)	304.194(25.4), 276.948(23.4), 343.673(14.4)
190.35 *7*	0.146 *7*	^{210}Rn(2.4 h)	458.25(1.7), 648.70(0.843), 570.95(0.840)
190.36 *7*	0.41	^{176}Ta(8.09 h)	1159.28(25), 88.34(12), 1224.93(6)
190.38 *6*	64.0 *14*	^{81}Rb(4.576 h)	446.15(23.2), 510.31(5.3), 456.76(3.02)
190.38 *6*	0.0142 *14*	^{81}Rb(30.5 m)	49.56(0.78), 643.6(0.115), 1194.9(0.112)
190.4	>0.016	^{195}Tl(1.16 h)	563.52(10.5), 884.47(10.0), 1363.88(8.4)
• 190.40	†2.2×10^{4} *5*	^{241}Am(432.2 y)	59.537(†60), 26.345(†1000×10^{9}), 33.195(†6000×10^{8})
190.43 *11*	1.32 *8*	^{187}Au(8.4 m)	1331.81(7.0), 1408.23(3.06), 914.73(3.02)
190.46 *24*	0.056 *11*	^{103}Tc(54.2 s)	346.380(17.5), 136.079(16.6), 562.90(7.0)
190.46 *12*	>0.00050	^{130}I(12.36 h)	536.09(99), 668.54(96), 739.48(82)
190.47 *8*	0.63 *4*	^{147}Pr(13.4 m)	77.9921(15), 314.675(13.2), 641.380(10.0)
190.495 *7*	0.983 *22*	^{153}Dy(6.4 h)	80.723(11.10), 213.754(10.90), 99.659(10.51)
190.5 *5*	0.43 *4*	^{100}Ag(2.01 m)	665.54(99), 750.67(78), 773.20(24.2)
190.5 *1*	0.056 *25*	^{133}Te(12.5 m)	312.072(62), 407.63(27.1), 1333.21(10.67)
190.5	0.6	^{147}Ba(0.893 s)	167.4(11), 105.2(4.8), 196.1(4.8)
• 190.52 *6*	0.152 *20*	^{131}Te(30 h)	773.67(49.9), 852.21(27.0), 793.75(18.10)
• 190.52 *20*	0.135 *25*	^{190}Ir(11.78 d)	186.718(52.4), 605.24(39.9), 518.55(34.0)
• 190.54 *20*	0.033 *13*	^{119}Te(4.70 d)	153.59(66), 1212.73(66), 270.53(28.0)
190.552 *14*	0.13	^{233}Th(22.3 m)	86.477(2.7), 29.374(2.5), 459.222(1.4)
190.60 *3*	>0.14	^{179}Re(19.5 m)	430.221(28), 289.968(26.9), 1680.244(13.0)
190.62 *10*	0.081 *12*	^{183}Ir(58 m)	392.52(10.4), 228.70(6.9), 87.67(5.6)
190.7 *1*	0.00050 *17*	^{123}I(13.27 h)	158.97(83), 528.96(1.39), 440.02(0.428)
190.7 *3*	4.1 *4*	^{158}Sm(5.30 m)	189.4(15.2), 363.6(12.4), 324.5(10.6)
190.7	1.71 *24*	^{173}Re(1.98 m)	181.5(6.4), 373.6(1.64)
190.7 *1*	0.20 *5*	^{188}Hg(3.25 m)	66.7(63), 190.1(4.40), 82.7(2.6)

• $t_{1/2}$>1 d

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
190.73 *13*		^{131}Sn(58.4 s)	367.40, 285.0, 62.9
190.73 *13*	†8.0 *10*	^{131}Sn(56.0 s)	1226.03(†100), 450.03(†90), 798.50(†86)
• 190.774 *23*	0.219 *7*	^{166}Ho(1.20×10^3 y)	184.410(72.6), 810.276(58.08), 711.683(55.32)
190.79 *13*	1.01 *3*	^{86}Y(14.74 h)	1076.64(83), 627.72(32.6), 1153.01(30.5)
190.8 *2*	10.3 *6*	^{65}Ge(30.9 s)	649.7(33), 62.0(27), 809.1(21.5)
190.8 *4*	0.10 *5*	^{164}Yb(75.8 m)	40.928(1.147), 675.41(0.38), 390.6(0.31)
190.8 *1*	†24 *2*	^{225}Fr(4.0 m)	182.3(†100), 31.50(†91), 225.1(†55)
190.84 *6*	0.11 *3*	^{189}Pt(10.87 h)	721.41(9.3), 94.33(7.6), 568.84(7.1)
190.9 *1*	0.340 *23*	^{144}Ba(11.5 s)	103.855(23.30), 430.48(18.3), 172.828(15.4)
190.9 *2*	†4.8 *12*	^{155}Nd(8.9 s)	180.574(†100), 418.99(†75), 955.08(†50)
191.0 *3*	0.08	^{170}Hf(16.01 h)	164.78(33), 620.7(23), 120.17(19)
191.0 *2*	0.41 *5*	^{209}At(5.41 h)	545.0(91), 781.9(83.5), 790.2(63.5)
191.0 *3*	†13.0 *18*	^{233}Pu(20.9 m)	235.4(†100), 534.8(†90.2), 500.3(†38.6)
191.05 *3*		^{187}W(23.72 h)	685.774(27.3), 479.531(21.8), 72.001(11.14)
191.06 *8*	0.077 *7*	^{93}Kr(1.286 s)	253.42(41.2), 323.89(24.1), 266.83(20.6)
191.069 *7*	†35.7 *20*	^{142}Xe(1.22 s)	571.83(†100), 657.05(†79), 538.24(†77)
191.1 *1*	0.83 *6*	^{92}Kr(1.840 s)	142.307(64), 1218.6(60), 812.6(14.6)
191.10 *15*	0.21 *4*	^{159}Tm(9.13 m)	38.35(5.8), 84.8(5.8), 271.30(5.1)
191.1 *2*	0.051 *8*	^{183}Au(42.0 s)	161.18(9.4), 214.13(5.9), 313.08(5.0)
191.1 *8*	0.21	^{186}Pt(2.0 h)	276.7(0), 611.5(6.0), 635.6(>3.8)
191.1 *3*		^{192}Hg(4.85 h)	274.8(50.4), 157.2(7), 306.5(5.4)
191.1 *2*	†8.6 *12*	^{192}Bi(37 s)	853.8(†100.0), 501.8(†80), 504.3(†39)
191.1		^{214}Bi(19.9 m)	62.5
191.2 *1*	34 *6*	^{140}Gd(15.8 s)	174.8(76), 749.9(70), 379.0(38)
191.2 *8*	0.015 *7*	^{146}Pr(24.15 m)	453.88(48.0), 1523.7(15.6), 735.72(7.5)
191.2 *5*	0.21 *4*	^{151}Tb(17.609 h)	287.357(28.3), 251.863(26.3), 108.088(24.3)
191.2 *3*		^{207}Hg(2.9 m)	351.059(77), 997.1(69), 1637.1(30)
• 191.2137 *15*	20.6 *5*	^{169}Lu(34.06 h)	960.622(23.4), 1449.74(9.92), 889.753(5.36)
191.26 *1*	0.53 *3*	^{207}At(1.80 h)	814.41(44.5), 588.33(19.2), 300.654(12.8)
191.3 *3*	†1.95 *15*	^{111}Rh(11 s)	275.4(†100.0), 411.8(†9.42), 230.0(†8.9)
191.3 *3*	†1.4	^{111}Rh(11 s)	275.4(†100.0), 411.8(†9.42), 230.0(†8.9)
191.3 *1*	0.58 *4*	^{223}Ac(2.10 m)	98.58(0.891), 83.55(0.57), 434.2(0.52)
191.349 *10*	0.128 *8*	^{228}Ac(6.15 h)	911.205(26.6), 968.971(16.2), 338.322(11.3)
191.349 *10*	0.28 *4*	^{228}Pa(22 h)	911.205(4.19), 463.005(1.250), 964.770(4.25)
• 191.349 *10*	3.1×10^{-5} *3*	^{232}U(68.9 y)	57.762(0.200), 129.065(0.0686), 270.243(0.00316)
• 191.38 *3*	0.60 *3*	^{145}Eu(5.93 d)	893.73(66), 653.512(15.0), 1658.53(14.9)
191.38 *3*	0.63 *3*	^{161}Gd(3.66 m)	360.94(0.59), 314.92(22.7), 102.315(13.9)
• 191.38 *3*	6.7 *5*	^{182}Re(64.0 h)	229.3220(26), 67.75001(22.2), 1121.3007(22.0)
• 191.4 *1*	0.0009 *4*	^{155}Tb(5.32 d)	86.545(32.0), 105.305(25), 180.103(7.45)
191.40 *15*	†2.2 *4*	^{185}Pt(33.0 m)	229.60(†100), 135.3(†80), 197.4(†74)
191.437 *10*	3.7	^{197}Pt(18.3 h)	77.351(17.0), 268.78(0.231)
• 191.437 *10*	0.608 *20*	^{197}Hg(64.14 h)	77.351(18.0), 268.78(0.0378)
• 191.46 *5*	0.025 *4*	^{237}Np(2.14×10^6 y)	29.374(15.0), 86.477(12.4), 94.66(0.6)
191.48 *7*	0.036 *14*	^{184}Ta(8.7 h)	414.03(72), 252.848(43), 920.932(32.0)
191.5 *10*	†5.1 *5*	^{94}Kr(0.20 s)	629.2(†100), 764.5(†71), 219.466(†67.4)
191.5 *2*	0.136 *23*	^{123}Cs(5.94 m)	97.3(23), 596.7(10.1), 83.3(4.1)
191.56 *14*	62 *4*	^{186}Au(10.7 m)	298.67(25.4), 764.89(10.5), 415.61(8.5)
191.59 *7*	0.0100 *9*	^{249}Cm(64.15 m)	634.31(1.5), 560.45(0.84), 368.76(0.35)
191.6 *2*	†38 *5*	^{116}Xe(56 s)	104.5(†100), 310.7(†42), 247.7(†40)
191.6 *1*	1.65 *10*	^{148}Ce(56 s)	269.519(17.0), 291.724(16.7), 121.169(13.2)
191.6 *3*	0.0007 *4*	^{152}Eu(9.274 h)	344.281(2.44), 1314.67(0.956), 970.38(0.604)
191.6	0.08 *4*	^{185}Au(4.25 m)	310.6(13), 243.1(6.6), 77.7(6)
191.6 *1*	3.7 *4*	^{186}Hg(1.38 m)	112.1(63), 251.5(55), 227.7(3.0)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
191.6 *1*	0.40 *3*	^{249}Es(102.2 m)	379.5(40.4), 813.2(9.2), 375.1(3.3)
191.6 *1*	>0.40	^{249}Es(102.2 m)	379.5(40.4), 813.2(9.2), 375.1(3.3)
191.7 *5*	11.1 *16*	^{196}Pb(37 m)	253.1(27.0), 502.1(26.5), 366.5(11.1)
191.709 *1*	2.34 *10*	^{199}Pt(30.80 m)	542.993(15), 493.772(5.59), 317.056(4.95)
191.78 *30*	0.49 *8*	^{166}Lu(2.65 m)	228.12(77.3), 337.50(41), 367.95(31.4)
191.79 *12*	†22.0 *25*	^{159}Yb(1.58 m)	166.16(†500), 177.12(†159), 390.20(†113)
191.8 *1*	0.90 *5*	^{211}Rn(14.6 h)	674.1(45), 1362.9(32.5), 678.4(28.9)
191.88 *15*	1.9 *3*	^{125}Cd(0.57 s)	1027.53(25.8), 1173.16(25.1), 736.65(12.6)
191.92 *28*	19	^{101}Mo(14.61 m)	590.91(16.4), 1012.47(12.8), 695.60(7.2)
• 191.96 *9*	9.37 *17*	^{72}Zn(46.5 h)	145.04(83), 16.4(8.3), 103.14(2.32)
191.96 *6*	0.50 *4*	^{138}Cs(33.41 m)	1435.795(76.3), 462.796(30.7), 1009.78(29.8)
191.96 *6*	15.4 *6*	^{138}Cs(2.91 m)	1435.795(19), 462.796(18.6), 112.60(1.52)
191.96 *2*	3.62 *11*	^{151}Tb(17.609 h)	287.357(28.3), 251.863(26.3), 108.088(24.3)
• 191.96 *4*	†2.16×10^5 *9*	^{241}Am(432.2 y)	59.537(†60), 26.345(†1000×10^9), 33.195(†6000×10^8)
191.97 *8*	27 *3*	^{184}Pt(17.3 m)	154.90(31), 548.36(23.1), 70.75(22.6)
191.97 *6*	0.0027	^{239}U(23.45 m)	74.664(48), 43.533(4.14), 662.24(0.18)
192.0 *4*	0.043 *12*	^{76}Kr(14.8 h)	315.7(39), 270.2(21.1), 45.48(19.5)
192.0 *5*	0.07 *4*	^{119}Ag(2.1 s)	626.4(13), 366.2(12.1), 399.1(10.9)
192.0 *4*	0.32 *7*	^{136}Sm(47 s)	114.4(36), 747.7(5.4), 485.3(5.0)
192.0 *1*	†11 *1*	^{227}Rn(22.5 s)	162.14(†100), 739.2(†65), 686.2(†62)
192		^{255}No(3.1 m)	187.2(†100)
192.0 *15*	†0.6	^{256}Es(7.6 h)	861.8(†100), 231.1(†61), 172.6(†49)
192.02 *5*	4.49 *10*	^{194}Pb(12.0 m)	581.82(18.8), 1519.45(16.4), 203.82(16.2)
192.026 *9*	0.570 *18*	^{149}Nd(1.728 h)	211.309(25.9), 114.314(19.2), 270.166(10.7)
192.1 *2*	†0.54 *14*	^{103}Nb(1.5 s)	102.64(†100), 641.1(†55), 538.5(†34.0)
192.1 *9*	0.37 *17*	^{105}In(5.07 m)	131.37(41), 260.21(15.7), 604.11(9.2)
192.1		^{168}Hf(25.95 m)	183.8(†100), 157.2(†68), 324.1
192.13 *3*	62	^{158}Tm(3.98 m)	335.10(16.8), 1149.83(7.6), 628.03(6.7)
• 192.13 *4*	3.7×10^{-5} *6*	^{233}U(1.592×10^5 y)	42.44(0.0862), 97.134(0.020), 54.699(0.0182)
192.17 *7*	0.0198 *9*	^{123}I(13.27 h)	158.97(83), 528.96(1.39), 440.02(0.428)
192.2 *1*	†100 *20*	^{104}Nb(0.92 s)	368.4(†20), 620.2(†19.2), 836.3(†18.4)
192.2 *3*	0.085 *7*	^{190}Au(42.8 m)	295.78(71.0), 301.82(23.4), 597.67(9.4)
192.24 *19*	†0.76 *10*	^{162}Lu(1.37 m)	166.82(†100), 631.87(†26.6), 798.76(†16.9)
192.26 *14*	0.58 *5*	^{161}Yb(4.2 m)	78.20(34), 599.88(25.9), 631.45(13.9)
192.27 *9*	0.089 *9*	^{105}Cd(55.5 m)	961.84(4.69), 346.870(4.20), 1302.459(3.98)
192.3 *3*	0.083 *15*	^{123}Xe(2.08 h)	148.9(49), 178.1(14.9), 330.2(8.6)
• 192.349 *5*	3.08 *10*	^{59}Fe(44.503 d)	1099.251(56.5), 1291.596(43.2), 142.652(1.02)
192.36 *14*		^{98}Nb(51.3 m)	787.374(93), 722.645(73.8), 1168.830(17.8)
192.36 *14*	0.028 *9*	^{98}Nb(51.3 m)	787.374(93), 722.645(73.8), 1168.830(17.8)
192.367 *21*	0.95 *10*	^{208}Rn(24.35 m)	426.78(7.07), 251.05(5.02), 350.026(3.34)
192.4 *1*	0.11 *4*	^{73}Br(3.4 m)	64.9(37.0), 336.0(10.4), 699.8(9.1)
192.4 *2*	†0.9 *2*	^{136}Pm(107 s)	373.8(†100), 602.7(†38.4), 857.2(†23.4)
192.4 *1*	†8	^{169}Ta(4.9 m)	511.0(†20.6), 28.80(†18.3), 153.5(†6.3)
192.5 *3*	19.0 *10*	^{74}Zn(96 s)	56.7(70), 49.4(33.4), 143.5(21.7)
192.5 *2*	†16.7 *12*	^{105}Nb(2.95 s)	94.8(†100), 246.9(†79), 309.9(†41.9)
192.5 *5*		^{126}Ba(100 m)	233.6(19.6), 257.6(7.6), 241.0(6.0)
192.5 *1*	70 *4*	^{130}Sn(3.72 m)	779.8(59), 70.0(35.5), 229.2(23.4)
192.5 *2*	32.8 *20*	^{168}Dy(8.7 m)	487.0(22.5), 443.3(15.5), 630.4(13.6)
192.5 *1*	1.87 *19*	^{230}Fr(19.1 s)	711.0(13.6), 129.1(11.0), 728.4(7.3)
192.6 *3*	0.050 *13*	^{121}Xe(40.1 m)	252.7(13), 132.8(10.9), 445.2(7.7)
192.6 *2*	0.5 *1*	^{129}Sn(2.23 m)	645.13(100), 80.5(6.6), 913.2(5.0)
192.6 *5*	1.14 *23*	^{132}La(4.8 h)	464.55(76), 567.14(15.7), 1909.91(9.0)
• 192.60 *4*	0.00688 *21*	^{152}Eu(13.542 y)	344.281(26.58), 778.91(12.96), 411.115(2.231)
192.6 *2*	0.00051 *5*	^{163}Er(75.0 m)	1113.5(0.0490), 436.1(0.0285), 439.94(0.0276)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
192.6 *3*		^{207}Hg(2.9 m)	351.059(77), 997.1(69), 1637.1(30)
192.6 *1*	†1.2 *3*	^{230}Ra(93 m)	72.0(†100), 63.0(†35.4), 202.8(†27.3)
• 192.61 *6*	0.0074 *22*	^{151}Pm(28.40 h)	340.08(23), 167.75(8.3), 275.21(6.8)
• 192.6446 *5*	0.351 *11*	^{183}Ta(5.1 d)	246.0591(27), 353.9912(11.2), 107.9322(11.0)
• 192.6446 *5*	0.260 *5*	^{183}Re(70.0 d)	162.3219(23.3), 46.4839(7.97), 291.7238(3.05)
192.68 *16*	0.08 *3*	^{181}Re(19.9 h)	365.57(56), 360.70(20), 639.30(6.4)
192.7 *3*	0.36 *5*	^{175}Ta(10.5 h)	207.4(14.0), 348.5(12.0), 266.9(10.8)
192.79 *2*	0.25 *3*	^{191}Au(3.18 h)	586.45(17), 277.88(7.2), 674.19(6.8)
192.8 *2*	0.40 *13*	^{153}Ho(2.0 m)	295.8(67), 637.0(5.36), 688.5(3.7)
192.8 *2*	47 *5*	^{173}Er(1.4 m)	895.2(54), 199.2(48), 122.40(20.6)
192.80 *8*	0.0130 *22*	^{176}Ta(8.09 h)	1159.28(25), 88.34(12), 1224.93(6)
192.8	>0.014	^{179}Re(19.5 m)	430.221(28), 289.968(26.9), 1680.244(13.0)
192.89 *19*	†0.17 *4*	^{188}Au(8.84 m)	265.63(†100), 340.04(†23.9), 605.5(†16.3)
192.9 *5*	<0.20	^{108}Tc(5.17 s)	242.25(82), 465.6(14.3), 707.81(11.4)
192.9 *4*	0.56 *4*	^{137}Pm(2.4 m)	177.5(40.29), 108.6(35), 233.6(29.57)
192.9 *3*	†17	^{137}Sm(45 s)	380.5(†100), 163.7(†85), 408.3(†40)
192.9 *1*	0.092 *22*	^{188}Hg(3.25 m)	66.7(63), 190.1(4.40), 82.7(2.6)
192.91 *7*	†5.6×10^{2} *16*	^{234}Pa(1.17 m)	1001.03(†837000), 766.38(†294000), 742.81(†80000)
192.91 *7*	†150 *30*	^{234}Pa(1.17 m)	1001.03(†837000), 766.38(†294000), 742.81(†80000)
• 192.91 *7*	0.0011 *4*	^{234}Np(4.4 d)	1558.31(18.72), 1527.21(11.2), 1601.80(9.1)
• 192.91 *7*	0.065 *8*	^{234}Np(4.4 d)	1558.31(18.72), 1527.21(11.2), 1601.80(9.1)
• 192.91 *7*	7.0×10^{-1}	^{238}Pu(87.74 y)	43.498(0.0395), 99.853(0.00735), 152.720(0.000937)
192.929 *8*	0.122 *23*	^{131}La(59 m)	108.081(25.0), 417.783(18.0), 365.162(16.9)
192.94 *6*	5.7 *5*	^{63}Ga(32.4 s)	637.04(11), 627.10(10.3), 650.14(4.9)
193.0 *1*	2.44 *13*	^{151}Ho(35.2 s)	527.4(63), 775.53(9.2), 209.5(5.69)
193.0 *3*	†6	^{171}Hf(12.1 h)	122.0(†100), 662.2(†83), 347.18(†47)
193.0 *1*	†45 *4*	^{185}Hg(21.6 s)	222.8(†100.0), 258.7(†98), 212.5(†58)
193.0 *3*	†15 *1*	^{187}Pb(18.3 s)	393.4(†100), 331.4(†75), 343.5(†75)
• 193.0 *10*	0.010	^{223}Ra(11.435 d)	269.459(13.7), 154.21(5.62), 323.871(3.93)
193.01 *8*	0.30 *6*	^{105}Tc(7.6 m)	143.26(16), 107.945(14.1), 321.50(11.1)
193.01 *7*	0.112 *12*	^{145}Ce(3.01 m)	724.33(59), 62.54(13.33), 1148.03(9.15)
193.04 *8*	5.2 *4*	^{174}W(31 m)	35.42(14.1), 428.83(12.7), 328.68(9.5)
193.1	14.2 *8*	^{179}Pt(21.2 s)	171.7(16), 99.8(13.2), 1565.4(11.1)
193.1 *1*	0.202 *19*	^{186}Hg(1.38 m)	112.1(63), 251.5(55), 191.6(3.7)
• 193.13 *5*	0.282 *7*	^{170}Lu(2.00 d)	84.2551(4.256), 1280.25(3.450), 2041.88(1.434)
• 193.13 *12*	8.9×10^{-6} *9*	^{239}Pu(24110 y)	51.624(0.007100), 38.661(0.000500), 129.297(0.00631)
• 193.15 *5*	0.0074 *10*	^{169}Yb(32.026 d)	63.12077(44.2), 197.95788(35.8), 177.21402(22.16)
• 193.157 *12*	†4.0×10^{4} *3*	^{134}Ce(75.9 h)	162.306(†230000), 130.414(†209000), 39.08(†>150000)
193.16 *15*	1.29 *18*	^{190}Pb(1.2 m)	942.20(34), 151.19(8.92), 598.3(8.0)
193.2 *2*	0.13 *8*	^{105}Mo(35.6 s)	85.4(25.0), 76.50(19.3), 147.8(14.8)
• 193.26 *5*	0.049 *5*	^{237}Np(2.14×10^{6} y)	29.374(15.0), 86.477(12.4), 94.66(0.6)
193.3	0.071 *14*	^{146}Ba(2.22 s)	140.7(20.2), 251.2(19.6), 121.2(14.2)
193.3	†2	^{238}Pa(2.3 m)	1015.3(†<100), 1014.6(†<100), 635.18(†88)
193.3 *1*	5.6 *3*	^{240}Np(61.9 m)	566.34(25.3), 973.9(23.8), 600.57(18.4)
• 193.310 *4*	0.00095 *18*	^{155}Tb(5.32 d)	86.545(32.0), 105.305(25), 180.103(7.45)
193.34 *7*	0.045 *5*	^{119}I(19.1 m)	257.52(87), 635.86(2.69), 320.53(2.17)
193.35 *4*	0.033 *13*	^{200}Pb(21.5 h)	147.63(37.7), 257.17(4.46), 235.63(4.30)
193.36 *6*	†5.6 *5*	^{131}Pr(1.53 m)	266.13(†100), 72.82(†64), 387.56(†38)
193.39 *2*	0.59 *3*	^{133}Te(55.4 m)	912.671(55.28), 647.51(19.4), 863.955(15.6)
193.4 *4*	0.346 *16*	^{85}Y(4.86 h)	231.67(22.8), 2123.8(5.0), 767.40(3.6)
193.4 *4*	0.43 *18*	^{123}Cd(1.82 s)	1165.86(25.7), 1027.45(22.6), 2102.81(12.5)
193.4 *3*	1.1 *3*	^{157}Sm(482 s)	197.870(56.00), 196.461(16.8), 394.351(11.93)
193.4 *3*	0.09 *3*	^{237}Am(73.0 m)	280.23(47.3), 438.4(8.3), 473.5(4.3)
193.41 *4*	15200 *15*	^{157}Ho(12.6 m)	279.97(†47600), 341.16(†37000), 86.55(†12200)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
193.5 *7*	1.0 *5*	^{128}Sb(10.4 m)	753.82(96.4), 743.22(96), 314.12(89)
193.5		^{131}La(59 m)	108.081(25.0), 417.783(18.0), 365.162(16.9)
193.5 *3*	†15 *3*	^{225}Fr(4.0 m)	182.3(†100), 31.50(†91), 225.1(†55)
• 193.5 *1*	0.052 *6*	^{252}Es(471.7 d)	52.33(0.55), 64.42(0.274), 418.5(0.220)
193.509 *4*	†14 *3*	^{225}Fr(4.0 m)	182.3(†100), 31.50(†91), 225.1(†55)
• 193.509 *4*	4.4	^{229}Th(7340 y)	210.853(2.8), 86.40(2.57), 86.25(1.33)
193.6 *1*	†10.7 *6*	^{155}Er(5.3 m)	110.12(†100), 241.5(†65), 234.0(†40.0)
193.6	0.07	^{185}Ir(14.4 h)	254.4(13.3), 1828.8(10), 60.0(5.7)
193.68 *1*	1.61 *8*	^{141}Pm(20.90 m)	1223.26(4.74), 886.22(2.44), 1345.52(1.33)
193.7 *1*		^{125}La(76 s)	67.6(34), 43.6(3.5), 985.2
193.7 *3*	†<0.15	^{129}Ba(2.17 h)	182.30(†100), 1459.1(†50.0), 202.38(†33.7)
193.7 *3*	†8	^{154}Nd(25.9 s)	151.703(†800), 799.55(†600), 180.693(†510)
193.7 *1*	†14.3 *15*	^{185}Hg(21.6 s)	222.8(†100.0), 258.7(†98), 212.5(†58)
193.72 *8*	†35 *4*	^{159}Yb(1.58 m)	166.16(†500), 177.12(†159), 390.20(†113)
193.73 *3*	0.49 *6*	^{234}Pa(6.70 h)	131.30(18), 946.00(13.4), 883.24(9.6)
193.8 *2*	0.33 *7*	^{148}Ce(56 s)	269.519(17.0), 291.724(16.7), 121.169(13.2)
• 193.84 *7*	0.335 *19*	^{153}Tb(2.34 d)	212.038(31.0), 170.504(6.8), 109.758(6.4)
193.89 *8*	0.328 *23*	^{138}Cs(33.41 m)	1435.795(76.3), 462.796(30.7), 1009.78(29.8)
193.93 *14*	†>1.9	^{189}Hg(7.6 m)	320.99(†100), 78.21(†63), 565.42(†48)
193.94 *12*	0.181 *17*	^{151}Tb(17.609 h)	287.357(28.3), 251.863(26.3), 108.088(24.3)
194.0 *3*	1.39 *13*	^{99}Y(1.470 s)	121.761(33), 724.30(14.9), 536.2(6.6)
194	†1.3	^{224}Ac(2.9 h)	156.4(†100), 140.8(†55), 261.6(†28)
194.019 *11*	0.410 *22*	^{153}Dy(6.4 h)	80.723(11.10), 213.754(10.90), 99.659(10.51)
194.05 *5*	9.9 *11*	^{107}Ru(3.75 m)	847.93(5.3), 462.61(3.66), 374.28(3.0)
194.1 *5*	0.019 *9*	^{98}Nb(51.3 m)	787.374(93), 722.645(73.8), 1168.830(17.8)
194.10 *5*	2.0 *3*	^{109}Ru(34.5 s)	206.29(22.0), 225.98(19.6), 1929.05(13.7)
194.1 *1*	0.045 *15*	^{163}Yb(11.05 m)	860.28(10.1), 63.62(6.5), 123.21(1.98)
194.12 *2*	2.74 *19*	^{191}Au(3.18 h)	586.45(17), 277.88(7.2), 674.19(6.8)
194.20 *11*	0.06	^{205}Po(1.66 h)	872.39(37), 1001.21(28.8), 849.83(25.5)
194.21 *5*	0.247 *14*	^{138}Nd(5.04 h)	325.76(2.84), 199.50(0.53), 341.65(0.40)
194.255 *10*	0.150 *16*	^{227}Fr(2.47 m)	90.035(39), 585.804(29.5), 64.267(14.5)
194.29 *6*	0.16	^{154}Pm(1.73 m)	2057.76(17.1), 1393.9(14.4), 81.99(12.6)
194.3 *3*	†7	^{154}Nd(25.9 s)	151.703(†800), 799.55(†600), 180.693(†510)
194.3 *3*	†4.4	^{171}Hf(12.1 h)	122.0(†100), 662.2(†83), 347.18(†47)
194.3 *8*	0.21	^{186}Pt(2.0 h)	276.7(0), 611.5(6.0), 635.6(>3.8)
• 194.3 *3*	0.031 *21*	^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
194.43 *15*	0.070 *14*	^{187}Au(8.4 m)	1331.81(7.0), 1408.23(3.06), 914.73(3.02)
194.5	†242 *10*	^{177}Ir(30 s)	183.6(†1010), 148.3(†929), 75.6(†>900)
194.56 *2*	0.67 *8*	^{145}Cs(0.594 s)	175.36(20), 198.93(10.9), 112.46(10.71)
194.6 *3*	†100 *10*	^{109}Tc(0.87 s)	128.7(†51), 96.2(†48), 68.8(†46)
194.6 *3*	0.25 *4*	^{121}Cd(8.3 s)	2059.41(21.0), 1020.89(18.9), 987.81(13.6)
194.60 *4*	0.13	^{167}Lu(51.5 m)	29.66(14.4), 239.22(8.6), 213.19(3.6)
194.6 *3*	†2.7 *6*	^{198}Tl(1.87 h)	636.4(†202), 411.8044(†202), 587.2(†185)
• 194.6		^{230}Pa(17.4 d)	951.95(1.65), 918.48(8.2), 454.95(6.27)
• 194.63 *5*		^{242}Am(141 y)	49.367(0.19), 86.68(0.037), 109.69(0.024)
194.64 *5*	0.80 *16*	^{107}Ru(3.75 m)	194.05(9.9), 847.93(5.3), 462.61(3.66)
194.64 *9*	0.192 *20*	^{162}Yb(18.87 m)	163.35(40.0), 118.70(33.6), 576.10(3.24)
194.66 *3*	†0.09 *6*	^{153}Pm(5.4 m)	35.842(†100), 127.298(†75), 28.309(†34.6)
194.678 *15*	0.8	^{166}Tm(7.70 h)	778.817(18.9), 2052.36(17.2), 184.410(16.1)
194.678	0.07	^{166}Tm(7.70 h)	778.817(18.9), 2052.36(17.2), 184.410(16.1)
194.69 *5*	4.01 *5*	^{148}Ce(56 s)	269.519(17.0), 291.724(16.7), 121.169(13.2)
194.7 *2*	†3.3 *7*	^{181}Hg(3.6 s)	147.8(†100), 42.5(†25), 1986.7(†17)
• 194.7 *2*		^{237}Np(2.14×10^6 y)	29.374(15.0), 86.477(12.4), 94.66(0.6)
194.72 *6*	1.56 *24*	^{183}Ir(58 m)	392.52(10.4), 228.70(6.9), 87.67(5.6)

• $t_{1/2}$>1 d

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
194.76 *3*	1.77 *7*	^{77}Ge(11.30 h)	264.44(54), 211.03(30.8), 215.50(28.6)
194.76 *3*	0.408 *17*	^{77}Ge(52.9 s)	215.50(21), 419.75(0.094), 614.39(0.044)
194.8 *5*	0.033 *16*	^{146}La(6.27 s)	258.47(64), 924.58(7.45), 702.28(6.43)
194.89 *11*	0.16 *7*	^{181}Re(19.9 h)	365.57(56), 360.70(20), 639.30(6.4)
• 194.891 *15*	0.177 *19*	^{171}Lu(8.24 d)	739.78(47.8), 19.394(13.7), 667.404(11.04)
194.9 *3*	†4.0 *8*	^{189}Au(28.7 m)	713.17(†100), 812.68(†63), 447.65(†55)
194.9 *2*	0.125 *19*	^{194}Pb(12.0 m)	581.82(18.8), 1519.45(16.4), 203.82(16.2)
194.9 *1*	†15 *1*	^{227}Rn(22.5 s)	162.14(†100), 739.2(†65), 686.2(†62)
• 194.94 *1*	0.63 *1*	^{235}U(7.038×10^{8} y)	185.712(57.2), 143.764(10.96), 163.358(5.08)
194.95 *3*	0.16	^{233}Th(22.3 m)	86.477(2.7), 29.374(2.5), 459.222(1.4)
• 194.95 *3*	0.184 *10*	^{237}Np(2.14×10^{6} y)	29.374(15.0), 86.477(12.4), 94.66(0.6)
195.0 *2*	0.34 *8*	^{77}Zn(2.08 s)	189.49(28.1), 473.94(19.7), 1832.0(12.4)
195.0 *4*	0.08 *4*	^{127}Sn(2.10 h)	1114.3(39), 1095.6(20), 823.1(10.9)
195.0 *1*	0.75 *25*	^{186}Ta(10.5 m)	197.93(50), 214.87(42.3), 510.82(37.5)
195.0 *1*	22.6 *10*	^{209}At(5.41 h)	545.0(91), 781.9(83.5), 790.2(63.5)
• 195 *3*	0.0010	^{243}Am(7370 y)	74.664(68), 43.533(5.93), 117.84(0.57)
• 195 *1*	0.0012	^{245}Bk(4.94 d)	205.879(0.040), 471.805(0.026), 164.8(0.0084)
195.01 *3*	3.50 *15*	^{100}Sr(202 ms)	963.85(22.0), 898.50(18.9), 65.46(15.2)
• 195.05 *10*	18.6 *10*	^{188}Pt(10.2 d)	187.59(19.4), 381.43(7.5), 423.34(4.36)
195.06 *15*	0.60 *9*	^{106}Rh(131 m)	511.842(85), 1045.83(30.4), 717.24(28.9)
• 195.06 *15*	0.31 *4*	^{106}Ag(8.28 d)	511.842(88), 1045.83(29.6), 717.24(28.9)
195.1 *3*	†1.4 *2*	^{111}Rh(11 s)	275.4(†100.0), 411.8(†9.42), 230.0(†8.9)
195.1 *3*		^{122}Ba(1.95 m)	550.7, 388.7, 231.0
195.1		^{171}Hf(12.1 h)	122.0(†100), 662.2(†83), 347.18(†47)
195.1089 *21*	0.9	^{182}Hf(61.5 m)	942.80(18.8), 799.64(9.4), 114.3152(6.2)
• 195.18 *14*	0.0009 *3*	^{151}Gd(124 d)	153.56(6.20), 243.28(5.60), 174.70(2.96)
195.2 *2*	†9.7 *17*	^{152}Tb(17.5 h)	344.281(†1500), 586.294(†223), 271.135(†203)
195.2 *2*	†1.3 *2*	^{185}Pt(33.0 m)	229.60(†100), 135.3(†80), 197.4(†74)
• 195.22 *15*	0.008 *4*	^{71}As(65.28 h)	174.954(82.00), 1095.490(4.08), 499.876(3.624)
• 195.22 *3*	0.79 *4*	^{153}Tb(2.34 d)	212.038(31.0), 170.504(6.8), 109.758(6.4)
195.3 *3*	0.126 *9*	^{120}Xe(40 m)	25.1(30), 72.6(9), 178.1(6.8)
195.30 *5*	0.260 *25*	^{199}Tl(7.42 h)	455.46(12.4), 208.20597(12.3), 247.26(9.3)
195.324 *4*	0.17	^{182}Hf(61.5 m)	942.80(18.8), 799.64(9.4), 114.3152(6.2)
195.4 *4*	0.158 *19*	^{83}Y(7.08 m)	35.50(0.44), 882.1(6.30), 489.90(5.53)
195.4 *2*	0.10	^{140}Sm(14.82 m)	225.5(>10), 225.4(10), 140.0(5.0)
195.40 *5*	0.044 *6*	^{159}Ho(33.05 m)	121.012(36.2), 131.973(23.6), 309.594(17.2)
195.4 *2*	0.119 *20*	^{223}Ac(2.10 m)	98.58(0.891), 191.3(0.58), 83.55(0.57)
195.43 *1*	†2.02×10^{4} *9*	^{158}Er(2.29 h)	71.91(†23300), 386.84(†111000), 248.58(†42000)
• 195.5 *5*	0.0021 *11*	^{154}Eu(8.593 y)	123.071(40.79), 1274.436(35.19), 723.304(20.22)
195.5 *7*	0.220 *22*	^{199}Bi(27 m)	560.1(22.0), 424.85(22), 841.7(11)
195.5	0.23	^{199}Po(4.13 m)	1002.19(19), 1034.3(16), 362.01(7)
195.5 *2*	†11.2 *14*	^{206}Rn(5.67 m)	497.7(†100), 324.5(†96), 386.6(†61)
195.54 *15*	0.86 *12*	^{166}Lu(2.65 m)	228.12(77.3), 337.50(41), 367.95(31.4)
195.554 *10*	13	^{143}Cs(1.78 s)	232.421(8.32), 306.424(6.80), 660.06(4.79)
• 195.56 *6*	0.027 *7*	^{151}Pm(28.40 h)	340.08(23), 167.75(8.3), 275.21(6.8)
195.5812 *24*	0.09 *3*	^{75}Br(96.7 m)	286.572(88), 141.3147(6.6), 427.883(4.4)
195.6 *3*	2.7 *21*	^{74}Zn(96 s)	56.7(70), 49.4(33.4), 143.5(21.7)
195.6 *4*	0.11 *5*	^{185}Au(4.25 m)	310.6(13), 243.1(6.6), 77.7(6)
195.624 *6*	0.0086 *19*	^{155}Sm(22.3 m)	104.3346(74.6), 245.771(3.7), 141.4428(1.98)
195.63 *6*	†3.6 *6*	^{131}Ce(10.3 m)	169.42(†100), 414.25(†68), 119.18(†44)
195.63 *10*	0.29 *5*	^{202}Bi(1.72 h)	960.67(99), 422.18(83.7), 657.49(60.6)
195.66 *10*	0.065 *9*	^{98}Nb(51.3 m)	787.374(93), 722.645(73.8), 1168.830(17.8)
195.68 *4*	0.021 *6*	^{155}Dy(9.9 h)	226.918(68.4), 184.564(3.37), 1089.8(>2.8)
• 195.683 *5*	0.000107 *1*	^{239}Pu(24110 y)	51.624(0.007100), 38.661(0.000500), 129.297(0.00631)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
195.7 *1*	0.11 *4*	^{107}Tc(21.2 s)	102.70(21.0), 177.00(9.2), 106.31(7.6)
• 195.773 *7*	0.575 *14*	^{165}Tm(30.06 h)	242.917(35.5), 47.155(16.9), 297.369(12.71)
195.78 *5*	0.108 *22*	^{221}Rn(25 m)	186.38(21.6), 150.04(4.5), 216.90(2.6)
• 195.78 *5*	0.163 *11*	^{225}Ac(10.0 d)	99.91(1.01), 150.04(0.80), 99.63(0.62)
195.8		^{138}Nd(5.04 h)	325.76(2.84), 199.50(0.53), 341.65(0.40)
195.8 *2*	†61	^{177}Os(2.8 m)	84.7(†100), 125.4(†63), 1268.6(†33)
195.8 *6*	0.09	^{203}Bi(11.76 h)	820.3(30), 825.2(14.6), 896.9(13)
195.9 *3*	†0.42 *7*	^{201}Po(15.3 m)	890.1(†100), 240.1(†71.0), 904.2(†54.8)
195.95 *6*	2.86 *15*	^{101}Mo(14.61 m)	191.92(19), 590.91(16.4), 1012.47(12.8)
195.977 *14*	6.5 *3*	^{148}Ce(56 s)	269.519(17.0), 291.724(16.7), 121.169(13.2)
196.0 *2*	2.46 *23*	^{121}Cs(155 s)	153.9(15.2), 239.6(7.7), 427.1(3.63)
196.0 *2*	24.1 *5*	^{121}Cs(122 s)	179.4(30.2), 459.7(12.0), 234.5(4.7)
196.0 *10*	0.083 *17*	^{138}Pr(2.12 h)	1037.8(101), 788.742(100), 302.7(80)
• 196	>0.029	^{151}Gd(124 d)	153.56(6.20), 243.28(5.60), 174.70(2.96)
196.00 *5*	2.7 *5*	^{157}Tm(3.63 m)	455.00(9.3), 385.5(8.8), 348.40(8.4)
• 196	0.0032 *8*	^{191}Pt(2.9 d)	538.90(13.7), 409.44(8.0), 359.90(6.0)
196.0 *5*	0.69 *14*	^{236}Th(37.5 m)	110.8(4.2), 646.6(0.72), 340.1(0.67)
196.1 *3*	0.06 *6*	^{66}Ge(2.26 h)	43.89(28.7), 381.85(28), 272.97(10.4)
196.1 *2*	0.37 *8*	^{104}Mo(60 s)	68.8(55), 69.7(17.8), 36.3(14)
196.1	4.8	^{147}Ba(0.893 s)	167.4(11), 105.2(4.8), 249.3(3.6)
196.1 *2*	†3.4 *3*	^{194}Bi(92 s)	965.4(†100.0), 575.1(†98.0), 280.1(†73.7)
196.1 *5*	†7.5 *14*	^{195}Pb(15 m)	883.1(†100), 393.7(†42), 871.0(†36)
196.181 *8*	0.07	^{175}Tm(15.2 m)	514.868(65), 941.23(15), 363.942(12.7)
196.187	0.083 *25*	^{38}S(170.3 m)	1941.944(83), 1745.77(2.44), 2750.97(1.38)
196.2 *5*	0.22 *12*	^{89}Kr(3.15 m)	220.948(20.1), 586.03(16.6), 904.27(7.2)
196.2	0.20 *3*	^{130}La(8.7 m)	357.4(81.0), 550.7(25.9), 908.0(17.0)
196.2 *2*	0.220 *14*	^{140}Xe(13.60 s)	805.52(20), 1413.66(12.2), 1315.05(8.2)
196.21 *11*	5.91 *25*	^{105}In(5.07 m)	131.37(41), 260.21(15.7), 604.11(9.2)
196.3 *2*	2.6 *3*	^{191}Hg(50.8 m)	252.5(57), 420.1(18.6), 578.6(17.6)
196.3 *2*	†65 *7*	^{191}Hg(49 m)	252.5(†100), 224.7(†60), 240.9(†44)
196.3 *1*	0.333 *17*	^{210}Rn(2.4 h)	458.25(1.7), 648.70(0.843), 570.95(0.840)
196.3 *5*	0.06 *2*	^{214}Pb(26.8 m)	351.921(35.8), 295.213(18.5), 241.981(7.50)
196.301 *10*	25.98 *17*	^{88}Kr(2.84 h)	2392.11(34.6), 2195.842(13.18), 834.830(12.98)
196.34 *5*	†25 *5*	^{162}Hf(37.6 s)	173.90(†100), 410.12(†16.8), 22.48
• 196.38 *4*	0.101 *6*	^{172}Lu(6.70 d)	1093.657(62.5), 900.724(29.8), 181.528(20.6)
196.4 *3*	0.16 *4*	^{175}Ta(10.5 h)	207.4(14.0), 348.5(12.0), 266.9(10.8)
196.4 *1*	0.044 *6*	^{186}Hg(1.38 m)	112.1(63), 251.5(55), 191.6(3.7)
196.41 *4*	†1.38×10^3 *14*	^{157}Ho(12.6 m)	279.97(†47600), 341.16(†37000), 193.41(†15200)
196.461 *9*	16.8 *22*	^{157}Sm(482 s)	197.870(56.00), 394.351(11.93), 121.147(4.76)
196.5 *5*	0.050 *20*	^{116}In(54.41 m)	1293.54(84.4), 1097.3(56.2), 416.86(28.9)
196.5	11	^{144}Dy(9.1 s)	298.6(10), 475.5(5.0), 321.5(2.2)
196.50 *5*	2.2 *3*	^{159}Tm(9.13 m)	38.35(5.8), 84.8(5.8), 271.30(5.1)
196.51 *18*	0.0100 *17*	^{139}Cs(9.27 m)	1283.23(8.3), 627.24(1.78), 1420.66(0.91)
• 196.53 *4*	0.0285 *12*	^{151}Gd(124 d)	153.56(6.20), 243.28(5.60), 174.70(2.96)
196.6 *2*	0.039	^{185}Au(4.25 m)	310.6(13), 243.1(6.6), 77.7(6)
196.6 *1*	0.15 *4*	^{188}Hg(3.25 m)	66.7(63), 190.1(4.40), 82.7(2.6)
• 196.64 *4*	0.204 *17*	^{147}Nd(10.98 d)	91.105(28), 531.016(13.1), 319.411(1.95)
196.7 *10*		^{77}Ga(13.2 s)	469.4(†100), 458.6(†48), 2187.3
196.7 *2*	†0.27 *8*	^{155}Tm(21.6 s)	226.8(†100), 531.7(†20), 88.1(†17)
196.7 *2*	†28 *6*	^{156}Nd(5.47 s)	150.4(†100), 157.3(†78), 84.6(†63)
196.73 *5*	0.379 *5*	^{127}Cs(6.25 h)	411.95(62.8), 124.70(11.37), 462.31(5.07)
196.75 *15*	0.21 *11*	^{164}Tb(3.0 m)	168.838(25.4), 754.80(23.3), 215.07(21)
196.8 *2*	0.34 *8*	^{77}Zn(2.08 s)	189.49(28.1), 473.94(19.7), 1832.0(12.4)
196.8 *4*	0.067 *11*	^{90}Rb(158 s)	831.69(28), 1060.70(6.69), 4365.90(5.6)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
196.8 *2*	4.6 *5*	^{190}Tl(3.7 m)	416.4(91), 625.4(82), 731.1(37)
196.80 *5*	0.072 *21*	^{234}Pa(6.70 h)	131.30(18), 946.00(13.4), 883.24(9.6)
196.82 *14*	0.025 *7*	^{176}Ta(8.09 h)	1159.28(25), 88.34(12), 1224.93(6)
196.85 *20*	1200	^{177}Re(14 m)	79.65(†1010), 84.3(†890), 94.9(†550)
196.85 *15*	0.38 *4*	^{190}Re(3.2 h)	186.718(27.8), 605.24(14.9), 557.972(14.3)
• 196.85 *15*	3.4 *3*	^{190}Ir(11.78 d)	186.718(52.4), 605.24(39.9), 518.55(34.0)
196.85 *10*	0.0021	^{239}U(23.45 m)	74.664(48), 43.533(4.14), 662.24(0.18)
196.86 *12*	0.52 *22*	^{181}Re(19.9 h)	365.57(56), 360.70(20), 639.30(6.4)
• 196.86 *5*	0.020 *3*	^{237}Np(2.14×10^{6} y)	29.374(15.0), 86.477(12.4), 94.66(0.6)
196.866 *11*	†0.51 *5*	^{153}Pm(5.4 m)	35.842(†100), 127.298(†75), 28.309(†34.6)
• 196.87 *5*	3.7×10^{-6} *4*	^{239}Pu(24110 y)	51.624(0.007100), 38.661(0.000500), 129.297(0.00631)
196.88 *5*	74 *7*	^{141}Sm(22.6 m)	431.6(40.4), 777.6(20.3), 1786.4(10.9)
196.9 *4*	†6.4 *3*	^{173}W(7.5 m)	457.68(†100), 130.19(†31.5), 174.8(†29.1)
197.0 *5*	<0.1	^{100}Zr(7.1 s)	504.25(31), 400.48(19.2), 498.0(0.72)
197.0 *4*	0.34 *11*	^{113}Rh(2.72 s)	189.7(17.0), 409.3(15.9), 219.6(3.88)
197		^{138}Xe(14.08 m)	258.411(31.5), 434.562(20.3), 1768.26(16.7)
197.0 *1*	12.6 *4*	^{146}Ba(2.22 s)	140.7(20.2), 251.2(19.6), 121.2(14.2)
• 197.0 *2*	†4.9×10^{3}	^{241}Am(432.2 y)	59.537(†60), 26.345(†1000×10^{9}), 33.195(†6000×10^{8})
• 197.02 *15*	0.062 *16*	^{153}Tb(2.34 d)	212.038(31.0), 170.504(6.8), 109.758(6.4)
• 197.02 *6*	0.0060 *6*	^{172}Tm(63.6 h)	78.7435(6.5), 1093.657(6.0), 1387.093(5.6)
• 197.0352 *10*	5.20 *4*	^{160}Tb(72.3 d)	879.383(30.01), 298.580(25.51), 966.171(25.21)
197.0352 *10*	†45.5 *5*	^{160}Ho(5.02 h)	728.18(†100), 879.383(†65.9), 962.317(†59.1)
197.0352 *10*	16.6 *9*	^{160}Ho(25.6 m)	728.18(46.9), 879.383(26.6), 962.317(25.6)
197.081 *22*	0.131 *15*	^{183}Os(13.0 h)	381.768(89.6), 114.463(20.63), 167.844(8.81)
197.1 *2*	3.7 *3*	^{119}Cs(43.0 s)	176.05(29.7), 225.13(26), 257.9(17.4)
197.1	†71 *3*	^{148}Er(4.6 s)	1653.4(†100), 387.7(†88), 256.9(†65)
• 197.1 *1*	0.0029 *3*	^{177}Ta(56.56 h)	112.9498(7.2), 208.3664(0.94), 1057.8(0.29)
197.10 *10*	0.243 *21*	^{195}Tl(1.16 h)	563.52(10.5), 884.47(10.0), 1363.88(8.4)
197.1 *2*	†1.15 *18*	^{230}Ra(93 m)	72.0(†100), 63.0(†35.4), 202.8(†27.3)
• 197.1		^{230}Pa(17.4 d)	951.95(1.65), 918.48(8.2), 454.95(6.27)
197.142 *4*	95.9 *19*	^{19}O(26.91 s)	1356.843(50.4), 109.894(2.71), 1444.085(2.64)
197.142 *4*	0.00206 *20*	^{19}Ne(17.34 s)	109.894(0.012), 1356.843(0.00206), 1444.085(0.000108)
197.19 *7*	0.033 *3*	^{135}I(6.57 h)	1260.409(28.90), 1131.511(22.74), 1678.027(9.62)
197.194 *2*	0.27 *7*	^{149}Pr(2.26 m)	138.447(11.0), 165.087(9.9), 108.520(9.5)
197.20 *20*	†7.4 *8*	^{106}Mo(8.4 s)	465.70(†100), 54.00(†54), 618.60(†25)
197.2 *4*	6.0 *23*	^{139}Eu(17.9 s)	267.3(31), 155.3(31), 190.1(25)
197.2 *4*	†1.00 *10*	^{182}Ir(15 m)	273.23(†100), 126.79(†77), 236.3(†21.0)
197.22	0.00033 *17*	^{123}I(13.27 h)	158.97(83), 528.96(1.39), 440.02(0.428)
197.27 *1*	0.237 *15*	^{151}Nd(12.44 m)	116.80(43.4), 255.68(16.4), 1180.89(14.8)
• 197.299 *12*	3.4×10^{-7} *6*	^{147}Pm(2.6234 y)	121.220(0.0028), 76.073(1.17×10^{-8})
• 197.299 *12*	27	^{147}Eu(24.1 d)	121.220(22.9), 677.516(9.8), 1077.043(6.15)
197.30 *5*	9.5 *7*	^{81}Ge(7.6 s)	335.98(58.9), 792.94(34), 1495.53(19.9)
197.30 *5*	12.3 *8*	^{81}Ge(7.6 s)	93.10(26), 335.98(12.8), 737.74(10.5)
197.3 *3*	80.6 *31*	^{120}In(47.3 s)	1171.3(100), 1023.1(97.4), 89.9(77.6)
• 197.3 *3*	87.0 *11*	^{120}Sb(5.76 d)	1171.3(100), 1023.1(99.4), 89.9(79.5)
197.3 *3*	0.027 *9*	^{120}Xe(40 m)	25.1(30), 72.6(9), 178.1(6.8)
197.316 *7*	78 *5*	^{136}I(46.9 s)	1313.02(100), 381.359(100), 369.813(17.5)
197.32 *8*	0.089 *24*	^{81}Sr(22.3 m)	153.54(33.8), 147.76(30.1), 443.34(17.5)
• 197.34 *3*	0.108 *3*	^{189}Re(24.3 h)	216.663(5.50), 219.395(4.54), 245.09(3.5)
• 197.34 *3*	0.264 *12*	^{189}Ir(13.2 d)	245.09(6), 69.537(3.5), 59.053(1.20)
197.35 *15*	†0.63 *5*	^{184}Ir(3.09 h)	263.97(†100), 119.80(†45), 390.38(†38)
197.38 *8*	0.12 *6*	^{161}Tm(33 m)	45.54(5.00), 1648.1(9.50), 84.40(9.4)
197.40 *14*	0.242 *20*	^{99}Nb(2.6 m)	97.785(7), 253.50(3.64), 2641.3(3.64)
197.4 *10*	0.065 *22*	^{129}Sb(4.40 h)	812.8(43), 914.6(20.0), 544.7(17.9)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
• 197.4 *2*	0.17 *4*	^{146}Eu(4.59 d)	747.2(98), 633.03(43), 634.07(37)
197.4	0.013	^{149}Nd(1.728 h)	211.309(25.9), 114.314(19.2), 270.166(10.7)
197.4 *3*	0.303 *25*	^{152}Tb(4.2 m)	344.281(20.8), 411.115(18.8), 471.9(12.2)
197.4 *1*	†74 *10*	^{185}Pt(33.0 m)	229.60(†100), 135.3(†80), 255.10(†51)
• 197.4 *2*	0.0047 *16*	^{193}Os(30.5 h)	139.03(4.27), 460.50(3.95), 73.039(3.2)
197.4 *2*	†4.1	^{256}Es(7.6 h)	861.8(†100), 231.1(†61), 172.6(†49)
197.44 *14*	†6.8 *8*	^{142}Xe(1.22 s)	571.83(†100), 657.05(†79), 538.24(†77)
197.44 *25*	0.094 *19*	^{195}Ir(3.8 h)	98.85(10), 684.88(9.4), 432.86(9)
197.45 *13*	0.41 *4*	^{144}Ba(11.5 s)	103.855(23.30), 430.48(18.3), 172.828(15.4)
197.45 *9*	0.55 *16*	^{203}Po(36.7 m)	908.64(55), 1090.95(19.2), 893.49(18.7)
197.5 *2*	†13.3 *15*	^{71}Cu(19.5 s)	489.7(†100), 595.2(†30.5), 586.5(†30.2)
197.5 *3*	1.83 *14*	^{89}Kr(3.15 m)	220.948(20.1), 586.03(16.6), 904.27(7.2)
197.5 *5*	0.102 *22*	^{153}Dy(6.4 h)	80.723(11.10), 213.754(10.90), 99.659(10.51)
197.5 *2*	†20 *5*	^{159}Yb(1.58 m)	166.16(†500), 177.12(†159), 390.20(†113)
• 197.6 *2*	70.8 *15*	^{101}Rh(3.3 y)	127.23(73), 324.8(13.4), 295.0(0.73)
• 197.6 *2*	0.0026 *13*	^{143}Ce(33.039 h)	293.266(42.80), 57.356(11.7), 664.571(5.69)
197.6 *2*	†80	^{198}Bi(693 s)	1063.5(†100), 562.4(†79), 317.9(†37.5)
• 197.61 *10*	†0.89 *24*	^{227}Th(18.72 d)	235.971(†813), 50.13(†528), 256.25(†463)
197.7 *5*	0.039	^{161}Yb(4.2 m)	78.20(34), 599.88(25.9), 631.45(13.9)
• 197.70 *4*		^{165}Tm(30.06 h)	242.917(35.5), 47.155(16.9), 297.369(12.71)
197.74 *2*	0.027 *5*	^{171}Er(7.516 h)	308.31(64.4), 295.901(28.9), 111.621(20.5)
• 197.77 *10*	0.0066 *12*	^{194}Au(38.02 h)	328.455(60), 293.545(10.2), 1468.91(6.3)
197.77 *12*		^{221}Rn(25 m)	186.38(21.6), 150.04(4.5), 216.90(2.6)
197.77 *12*	0.78 *10*	^{221}Rn(25 m)	186.38(21.6), 150.04(4.5), 216.90(2.6)
• 197.77 *12*		^{225}Ac(10.0 d)	99.91(1.01), 150.04(0.80), 99.63(0.62)
• 197.77 *12*	0.060 *5*	^{225}Ac(10.0 d)	99.91(1.01), 150.04(0.80), 99.63(0.62)
197.8 *3*	†6.7 *15*	^{109}Tc(0.87 s)	194.6(†100), 128.7(†51), 96.2(†48)
197.8 *3*		^{122}Ba(1.95 m)	550.7, 388.7, 231.0
197.8 *2*	†2.4 *5*	^{131}Sn(56.0 s)	1226.03(†100), 450.03(†90), 798.50(†86)
197.80 *5*	0.16	^{167}Lu(51.5 m)	29.66(14.4), 239.22(8.6), 213.19(3.6)
• 197.8 *4*	>0.06	^{188}Pt(10.2 d)	187.59(19.4), 195.05(18.6), 381.43(7.5)
197.8 *1*	0.57 *12*	^{206}Fr(15.9 s)	575.3(12), 559.0(8.19), 628.6(3.6)
197.870 *8*	56.00 *17*	^{157}Sm(482 s)	196.461(16.8), 394.351(11.93), 121.147(4.76)
• 197.891 *25*	†1.36×10^4 *10*	^{134}Ce(75.9 h)	162.306(†230000), 130.414(†209000), 39.08(†>150000)
197.9 *2*	†4.7 *12*	^{105}Nb(2.95 s)	94.8(†100), 246.9(†79), 309.9(†41.9)
197.9 *2*	3.5 *10*	^{105}Mo(35.6 s)	85.4(25.0), 76.50(19.3), 147.8(14.8)
197.9 *3*	†>2.3	^{154}Nd(25.9 s)	151.703(†800), 799.55(†600), 180.693(†510)
197.91 *15*	†27 *7*	^{234}Pa(1.17 m)	1001.03(†837000), 766.38(†294000), 742.81(†80000)
• 197.91 *15*	0.018 *4*	^{234}Np(4.4 d)	1558.31(18.72), 1527.21(11.2), 1601.80(9.1)
197.93 *9*	50	^{186}Ta(10.5 m)	214.87(42.3), 510.82(37.5), 737.86(29)
• 197.95788 *6*	35.8 *3*	^{169}Yb(32.026 d)	63.12077(44.2), 177.21402(22.16), 109.77987(17.47)
197.98 *12*	1.56 *20*	^{206}At(30.0 m)	700.66(98), 477.10(86), 395.54(48)
198.0	>0.0011	^{116}Sb(15.8 m)	1293.54(85), 931.800(24.7), 2225.33(14.2)
198.00	0.049 *5*	^{149}Nd(1.728 h)	211.309(25.9), 114.314(19.2), 270.166(10.7)
198.0 *1*	0.033	^{245}Am(2.05 h)	252.80(6), 240.86(0.34), 295.72(0.22)
• 198.0 *1*	0.158 *19*	^{245}Bk(4.94 d)	252.80(29.1), 380.8(2.40), 385.0(0.57)
• 198.0 *1*	0.0132 *20*	^{249}Cf(351 y)	388.16(66), 333.37(14.6), 252.80(2.50)
198.07 *12*	0.038 *8*	^{176}Ta(8.09 h)	1159.28(25), 88.34(12), 1224.93(6)
198.08 *20*	1.67 *22*	^{190}Re(3.1 m)	186.718(48.4), 557.972(28.2), 223.811(26.0)
198.08 *20*	0.99 *22*	^{190}Re(3.2 h)	186.718(27.8), 605.24(14.9), 557.972(14.3)
• 198.08 *20*	1.94 *23*	^{190}Ir(11.78 d)	186.718(52.4), 605.24(39.9), 518.55(34.0)
198.09 *15*	0.089 *20*	^{202}Bi(1.72 h)	960.67(99), 422.18(83.7), 657.49(60.6)
198.1 *1*	2.2 *2*	^{129}Sn(2.23 m)	645.13(100), 80.5(6.6), 913.2(5.0)
198.1 *2*	0.56 *4*	^{140}Xe(13.60 s)	805.52(20), 1413.66(12.2), 1315.05(8.2)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
198.1 *4*	†0.21 *7*	^{188}Au(8.84 m)	265.63(†100), 340.04(†23.9), 605.5(†16.3)
198.18 *8*	0.17 *11*	^{133}Te(55.4 m)	912.671(55.28), 647.51(19.4), 863.955(15.6)
198.2 *1*	0.224 *12*	^{145}Ce(3.01 m)	724.33(59), 62.54(13.33), 1148.03(9.15)
198.2	0.13	^{147}Ba(0.893 s)	167.4(11), 105.2(4.8), 196.1(4.8)
198.2 *2*	0.056 *8*	^{183}Ir(58 m)	392.52(10.4), 228.70(6.9), 87.67(5.6)
198.2 *3*	†3.1 *6*	^{183}Hg(9.4 s)	60.5(†100), 159.91(†21), 172.70(†17)
198.20 *3*	0.0017 *4*	^{187}W(23.72 h)	685.774(27.3), 479.531(21.8), 72.001(11.14)
198.2 *1*	†3.0 *4*	^{230}Ra(93 m)	72.0(†100), 63.0(†35.4), 202.8(†27.3)
198.23	0.0033 *8*	^{123}I(13.27 h)	158.97(83), 528.96(1.39), 440.02(0.428)
198.241 *1*	2.6 *4*	^{168}Ho(2.99 m)	741.356(36.6), 821.164(34.5), 815.990(18.6)
• 198.241 *1*	52.39 *16*	^{168}Tm(93.1 d)	815.990(48.99), 447.515(23.05), 184.285(17.45)
• 198.3136 *17*	0.77 *3*	^{169}Lu(34.06 h)	960.622(23.4), 191.2137(20.6), 1449.74(9.92)
198.34 *13*	†9	^{181}Pt(51 s)	289.29(†100), 111.97(†100), 230.15(†92)
198.35 *7*	1.12 *4*	^{180}Lu(5.7 m)	407.94(43.0), 1199.7(24.3), 1106.00(22.7)
• 198.35324 *10*	13.441 *14*	^{182}Ta(114.43 d)	67.75001(41.2), 1121.3007(34.9), 1221.4066(26.98)
198.35324 *10*	3.175 *25*	^{182}Re(12.7 h)	67.75001(38.2), 1121.3007(32), 1221.4066(24.8)
• 198.35324 *10*	4.0 *3*	^{182}Re(64.0 h)	229.3220(26), 67.75001(22.2), 1121.3007(22.0)
198.4 *1*	†208 *23*	^{141}Gd(24.5 s)	258.2(†177), 113.2(†69), 145.0(†46)
198.4 *1*	14.8 *15*	^{141}Tb(3.5 s)	293.3(16.8), 343.6(16.3), 136.7(14.3)
198.4	0.114 *14*	^{146}Ba(2.22 s)	140.7(20.2), 251.2(19.6), 121.2(14.2)
198.49 *9*	0.11 *3*	^{99}Sr(0.269 s)	125.118(16.1), 536.12(14.0), 1198.12(9.2)
198.5 *2*	†100	^{135}Pm(49 s)	207.2(†70), 463.5(†62), 128.7(†60)
198.5 *1*	0.64 *6*	^{137}Nd(38.5 m)	75.5(17.0), 580.6(13), 306.60(10.0)
198.5 *5*	>0.06	^{143}Cs(1.78 s)	195.554(13), 232.421(8.32), 306.424(6.80)
198.5 *3*	0.17	^{170}Hf(16.01 h)	164.78(33), 620.7(23), 120.17(19)
198.534 *12*	2.1	^{147}Ce(56.4 s)	268.80(7), 92.9(4.7), 374.23(3.5)
198.6 *1*	†88 *23*	^{171}Ho(53 s)	903.3(†100), 279.2(†60), 532.2(†58)
198.60 *9*	4.4 *7*	^{181}Au(11.4 s)	2022.4(4.2), 79.40(4.2), 94.00(3.7)
198.60 *10*	0.078 *4*	^{187}Ir(10.5 h)	912.95(4.79), 427.12(4.12), 400.89(3.94)
198.6 *3*	†9	^{238}Pa(2.3 m)	1015.3(†<100), 1014.6(†<100), 635.18(†88)
198.6031 *10*	1.19 *3*	^{75}Ge(82.78 m)	264.6584(11), 468.8(0.223), 419.1(0.185)
198.6031 *10*		^{75}Ge(47.7 s)	136.0008(0.020), 121.1166(0.0050), 279.5441(0.0043)
• 198.6031 *10*	1.468 *18*	^{75}Se(119.779 d)	264.6584(58.50), 136.0008(58.3), 279.5441(24.79)
• 198.61 *20*	†7.9×10^5 *11*	^{237}Pu(45.2 d)	280.40(†870000), 298.89(†7.85×10^6), 320.75(†6.48×10^6)
• 198.654 *11*	0.0136 *15*	^{125}Sb(2.7582 y)	427.875(30), 600.600(17.86), 635.954(11.31)
198.7 *3*	0.17 *6*	^{70}Se(41.1 m)	49.51(35.8), 426.15(29), 376.65(9.43)
198.7 *5*	0.04 *1*	^{107}Rh(21.7 m)	302.77(66), 392.47(8.8), 312.21(4.8)
198.7 *1*	0.010	^{221}Rn(25 m)	186.38(21.6), 150.04(4.5), 216.90(2.6)
• 198.7 *1*	0.024 *5*	^{225}Ac(10.0 d)	99.91(1.01), 150.04(0.80), 99.63(0.62)
• 198.771 *5*	0.042 *9*	^{169}Lu(34.06 h)	960.622(23.4), 191.2137(20.6), 1449.74(9.92)
198.82 *2*		^{168}Lu(5.5 m)	1483.65(†100), 228.58(†97), 111.8(†68)
198.82 *2*	28 *3*	^{168}Lu(6.7 m)	979.22(20), 896.12(15), 884.64(13.9)
198.83 *10*	†88 *8*	^{229}U(58 m)	122.51(†100), 88.43(†88), 247.82(†58)
198.89 *9*	0.027	^{227}Ra(42.2 m)	27.36(16), 300.07(4.6), 302.65(4.3)
• 198.89 *9*	0.0049 *7*	^{231}Pa(32760 y)	27.36(10.3), 300.07(2.46), 302.65(2.2)
198.9	2.75 *25*	^{147}Cs(0.225 s)	85.2(7.3), 245.8(4.5), 109.7(4.5)
198.9 *2*	†7.3 *18*	^{153}Ho(9.3 m)	108.7(†100), 365.9(†92), 161.5(†83)
198.90 *5*	1.15 *18*	^{159}Tm(9.13 m)	38.35(5.8), 84.8(5.8), 271.30(5.1)
198.9		^{171}Ta(23.3 m)	49.6(†100), 506.4(†54), 501.8(†22.6)
• 198.9	>0.011	^{172}Hf(1.87 y)	23.9331(20.3), 125.812(11.3), 67.35(5.3)
198.928 *8*	1.39 *4*	^{149}Nd(1.728 h)	211.309(25.9), 114.314(19.2), 270.166(10.7)
198.928 *2*	2.8 *3*	^{231}Ac(7.5 m)	282.471(39.0), 307.063(30.4), 221.399(16.8)
• 198.928 *2*	0.042 *6*	^{235}U(7.038×10^8 y)	185.712(57.2), 143.764(10.96), 163.358(5.08)
198.93 *2*	10.9 *18*	^{145}Cs(0.594 s)	175.36(20), 112.46(10.71), 435.63(5.74)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
198.96 *15*	0.226 *20*	^{208}Rn(24.35 m)	426.78(7.07), 251.05(5.02), 350.026(3.34)
199.0 *1*	8.0 *9*	^{119}Ag(2.1 s)	626.4(13), 366.2(12.1), 399.1(10.9)
199.0 *5*		^{137}Pm(2.4 m)	177.5(40.29), 108.6(35), 233.6(29.57)
199.0 *2*	0.06	^{157}Er(18.65 m)	53.05(24), 391.32(14.2), 121.57(10.1)
199.0 *5*	†1.6 *5*	^{180}Au(8.1 s)	153.3(†100), 524.3(†29), 257.6(†26)
199.1		^{80}Ge(29.5 s)	265.36(27.0), 110.4(6.5), 1564.3(4.9)
199.1 *2*	0.22 *5*	^{104}Mo(60 s)	68.8(55), 69.7(17.8), 36.3(14)
199.1 *2*	0.40 *4*	^{117}Xe(61 s)	28.5(7.0), 221.3(10.0), 32.3(7.6)
199.1 *4*	0.039 *14*	^{164}Yb(75.8 m)	40.928(1.147), 675.41(0.38), 390.6(0.31)
199.1		^{185}Hg(21.6 s)	222.8(†100.0), 258.7(†98), 212.5(†58)
199.12 *5*	1.08 *18*	^{167}Lu(51.5 m)	29.66(14.4), 239.22(8.6), 213.19(3.6)
• 199.14 *3*	0.030 *3*	^{145}Eu(5.93 d)	893.73(66), 653.512(15.0), 1658.53(14.9)
199.2 *3*	†17 *2*	^{73}Cu(3.9 s)	449.7(†100), 502.0(†12), 306.8(†10)
• 199.2	0.0050	^{153}Tb(2.34 d)	212.038(31.0), 170.504(6.8), 109.758(6.4)
199.2 *3*	0.08 *3*	^{164}Tm(5.1 m)	208.08(14.6), 314.97(10), 240.49(7.5)
199.2 *2*	48	^{173}Er(1.4 m)	895.2(54), 192.8(47), 122.40(20.6)
• 199.2132 *10*	0.74 *4*	^{156}Eu(15.19 d)	811.79(9.70), 88.9667(8.4), 1230.68(7.98)
• 199.2132 *10*	40.9 *22*	^{156}Tb(5.35 d)	534.318(66.6), 1222.36(31.00), 88.9667(17.7)
199.23 *7*	0.75 *9*	^{187}Pt(2.35 h)	106.46(9), 201.52(6.4), 110.04(5.7)
199.3		^{168}Hf(25.95 m)	183.8(†100), 157.2(†68), 324.1
199.3 *2*	†100 *4*	^{168}Re(4.4 s)	363.2(†95), 479.8(†62.8), 558.2(†10.6)
199.3 *1*	0.132 *13*	^{186}Hg(1.38 m)	112.1(63), 251.5(55), 191.6(3.7)
199.3 *3*	0.26 *9*	^{190}Re(3.1 m)	186.718(48.4), 557.972(28.2), 223.811(26.0)
199.3 *3*	0.28 *10*	^{190}Re(3.2 h)	186.718(27.8), 605.24(14.9), 557.972(14.3)
• 199.3 *3*	0.23 *7*	^{190}Ir(11.78 d)	186.718(52.4), 605.24(39.9), 518.55(34.0)
199.3 *4*	0.030 *20*	^{223}Ac(2.10 m)	98.58(0.891), 191.3(0.58), 83.55(0.57)
199.3	†4.7	^{224}Ac(2.9 h)	156.4(†100), 140.8(†55), 261.6(†28)
199.3 *2*	†7	^{256}Es(7.6 h)	861.8(†100), 231.1(†61), 172.6(†49)
199.326 *5*	†100.0 *13*	^{144}Cs(1.01 s)	639.00(†21.2), 758.96(†20.6), 559.57(†20.2)
199.35 *10*	0.27 *7*	^{159}Er(36 m)	624.5(33), 649.1(23.4), 205.92(9.7)
199.4		^{165}Ta(31.0 s)	311.0, 162.8, 94.1
199.4 *4*	0.26 *13*	^{185}Au(4.25 m)	310.6(13), 243.1(6.6), 77.7(6)
• 199.4 *5*	0.0027 *14*	^{223}Ra(11.435 d)	269.459(13.7), 154.21(5.62), 323.871(3.93)
199.407 *10*	0.325 *19*	^{228}Ac(6.15 h)	911.205(26.6), 968.971(16.2), 338.322(11.3)
199.407 *10*	0.31 *4*	^{228}Pa(22 h)	911.205(4.19), 463.005(1.250), 964.770(4.25)
199.50 *5*	0.53 *3*	^{138}Nd(5.04 h)	325.76(2.84), 341.65(0.40), 215.31(0.28)
199.533 *2*	0.56 *9*	^{195}Ir(3.8 h)	98.85(10), 684.88(9.4), 432.86(9)
• 199.533 *2*	0.0086 *7*	^{195}Au(186.09 d)	98.85(10.9), 129.70(0.817), 30.898(0.75)
199.6 *10*		^{76}Zn(5.7 s)	281.7, 1030.6, 831.2
199.6 *3*	0.037 *12*	^{133}Te(12.5 m)	312.072(62), 407.63(27.1), 1333.21(10.67)
• 199.6 *1*	<0.1	^{235}U(7.038×10^8 y)	185.712(57.2), 143.764(10.96), 163.358(5.08)
• 199.65 *15*	0.0090 *9*	^{170}Lu(2.00 d)	84.2551(4.256), 1280.25(3.450), 2041.88(1.434)
199.68 *2*	0.296 *15*	^{151}Nd(12.44 m)	116.80(43.4), 255.68(16.4), 1180.89(14.8)
199.7 *1*	2.1 *2*	^{107}Tc(21.2 s)	102.70(21.0), 177.00(9.2), 106.31(7.6)
199.7 *1*	†35 *3*	^{225}Fr(4.0 m)	182.3(†100), 31.50(†91), 225.1(†55)
199.72 *20*	0.00108 *14*	^{250}Bk(3.217 h)	989.12(45), 1031.85(35.6), 1028.65(4.91)
199.78 *5*	0.133 *13*	^{132}Ce(3.51 h)	182.11(77), 155.37(10.5), 216.83(4.95)
199.8 *2*	1.17 *12*	^{76}Kr(14.8 h)	315.7(39), 270.2(21.1), 45.48(19.5)
199.8 *2*	3.3 *7*	^{103}Zr(1.3 s)	248(100), 164.05(94), 126.30(84)
199.8 *2*	0.054 *8*	^{183}Ir(58 m)	392.52(10.4), 228.70(6.9), 87.67(5.6)
199.9 *2*	0.7	^{140}Sm(14.82 m)	225.5(>10), 225.4(10), 140.0(5.0)
• 199.95		^{237}Np(2.14×10^6 y)	29.374(15.0), 86.477(12.4), 94.66(0.6)
• 199.95 *6*	0.004 *1*	^{237}Np(2.14×10^6 y)	29.374(15.0), 86.477(12.4), 94.66(0.6)
199.95 *5*	0.072 *21*	^{234}Pa(6.70 h)	131.30(18), 946.00(13.4), 883.24(9.6)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
199.95 *5*	†5.7×10^{2} *12*	^{234}Pa(1.17 m)	1001.03(†837000), 766.38(†294000), 742.81(†80000)
• 200.0 *10*	0.025 *4*	^{69}Ge(39.05 h)	1107.01(36), 574.17(13.3), 872.14(11.9)
200.0 *1*	†6.3 *6*	^{171}Hf(12.1 h)	122.0(†100), 662.2(†83), 347.18(†47)
200.0 *3*	1.27 *8*	^{190}Re(3.2 h)	186.718(27.8), 605.24(14.9), 557.972(14.3)
200	†0.7	^{224}Ac(2.9 h)	156.4(†100), 140.8(†55), 261.6(†28)
200	†6	^{228}Pa(22 h)	95(†100), 310(†42), 240(†23)
200.04 *4*	0.67 *4*	^{200}Pt(12.5 h)	76.21(13), 135.90(3.24), 243.71(2.49)
200.1		^{180}Os(21.5 m)	20.1(†100), 717.4, 667.0
200.153 *4*	0.49 *5*	^{109}Rh(80 s)	326.868(54), 426.135(7.7), 178.034(7.6)
200.17 *2*	0.43 *4*	^{155}Ho(48 m)	240.19(12.5), 136.30(5.00), 45.38(5)
200.19 *10*	0.012 *5*	^{135}Xe(9.14 h)	249.770(90), 608.151(2.90), 408.009(0.359)
200.2 *3*	†>7×10^{02}	^{158}Er(2.29 h)	71.91(†23300), 386.84(†111000), 248.58(†42000)
200.38 *4*	0.035 *3*	^{195}Hg(9.9 h)	779.80(7), 61.46(6.2), 585.13(1.99)
• 200.38 *4*	0.79 *8*	^{195}Hg(41.6 h)	261.75(30.9), 560.27(7), 387.87(2.15)
200.4 *4*	†1.0 *2*	^{185}Pt(33.0 m)	229.60(†100), 135.3(†80), 197.4(†74)
200.43 *17*	†2.9 *3*	^{189}Hg(7.6 m)	320.99(†100), 78.21(†63), 565.42(†48)
• 200.451 *3*	0.00107 *11*	^{77}As(38.83 h)	238.996(1.6), 520.639(0.558), 249.786(0.394)
• 200.451 *3*	1.21 *5*	^{77}Br(57.036 h)	238.996(23), 520.639(22.4), 297.215(4.16)
• 200.459 *1*	0.230 *5*	^{155}Tb(5.32 d)	86.545(32.0), 105.305(25), 180.103(7.45)
200.5 *5*	†4.0 *9*	^{103}Mo(67.5 s)	83.4(†100), 423.91(†69), 45.8(†57)
200.50 *15*	0.42 *21*	^{164}Tb(3.0 m)	168.838(25.4), 754.80(23.3), 215.07(21)
• 200.5 *4*	0.049 *10*	^{172}Lu(6.70 d)	1093.657(62.5), 900.724(29.8), 181.528(20.6)
200.5 *4*	0.13 *6*	^{185}Au(4.25 m)	310.6(13), 243.1(6.6), 77.7(6)
200.5 *2*	0.0054 *9*	^{223}Fr(21.8 m)	50.13(36.0), 79.72(9.1), 234.81(3.0)
• 200.5 *2*		^{227}Th(18.72 d)	235.971(†813), 50.13(†528), 256.25(†463)
• 200.58 *4*	†0.076 *2*	^{52}Mn(5.591 d)	1434.068(†100.0), 935.538(†94.9), 744.233(†90.6)
• 200.60 *8*	†1.61×10^{3} *24*	^{134}Ce(75.9 h)	162.306(†230000), 130.414(†209000), 39.08(†>150000)
200.6	7.2 *7*	^{145}Tb(29.5 s)	257.8(39), 987.8(37), 537.0(23)
200.6 *1*		^{152}Pm(13.8 m)	229.9, 63.51, 137.08
• 200.63 *2*	9.86 *15*	^{131}Te(30 h)	773.67(49.9), 852.21(27.0), 793.75(18.10)
200.65 *8*	0.44 *11*	^{133}Te(55.4 m)	912.671(55.28), 647.51(19.4), 863.955(15.6)
200.7 *2*	0.6	^{115}Pd(25 s)	342.71(8), 303.87(7), 396.56(6)
200.7 *5*	0.25 *4*	^{136}Sm(47 s)	114.4(36), 747.7(5.4), 485.3(5.0)
• 200.7 *1*	1.0×10^{-6}	^{233}U(1.592×10^{5} y)	42.44(0.0862), 97.134(0.020), 54.699(0.0182)
200.74 *3*	0.44 *4*	^{109}Ru(34.5 s)	206.29(22.0), 225.98(19.6), 1929.05(13.7)
200.75 *5*	0.83 *18*	^{161}Tm(33 m)	45.54(5.00), 1648.1(9.50), 84.40(9.4)
200.76 *4*	0.048 *4*	^{135}Ce(17.7 h)	265.56(41.8), 300.07(23.5), 606.76(18.8)
200.8 *2*	0.31 *4*	^{120}Xe(40 m)	25.1(30), 72.6(9), 178.1(6.8)
200.8 *2*	0.11 *4*	^{187}Pt(2.35 h)	106.46(9), 201.52(6.4), 110.04(5.7)
200.8 *3*	0.56 *5*	^{196}Os(34.9 m)	407.9(5.9), 126.2(5.3), 315.4(2.5)
• 200.807 *16*	0.069 *3*	^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
200.85 *5*	0.59 *6*	^{227}Fr(2.47 m)	90.035(39), 585.804(29.5), 64.267(14.5)
200.86 *7*	1.52 *6*	^{155}Ho(48 m)	240.19(12.5), 136.30(5.00), 45.38(5)
200.9 *3*	0.13 *4*	^{109}Ru(34.5 s)	206.29(22.0), 225.98(19.6), 1929.05(13.7)
200.9 *5*	1.1 *2*	^{142}Eu(1.22 m)	768.1(100), 1023.3(92.0), 556.6(86.6)
200.95 *14*	†100 *4*	^{87}Nb(2.6 m)	470.63(†73), 1066.8(†37), 1884.5(†35)
200.95 *14*	97.0 *19*	^{87}Nb(3.7 m)	134.8(27.5)
200.97 *3*	0.90 *9*	^{234}Pa(6.70 h)	131.30(18), 946.00(13.4), 883.24(9.6)
• 200.97 *3*	3.9×10^{-6} *2*	^{238}Pu(87.74 y)	43.498(0.0395), 99.853(0.00735), 152.720(0.000937)
201		^{81}Se(57.28 m)	275.988(0.049), 260.21(0.048), 767.1(0.00061)
201.0 *1*	0.17 *6*	^{133}Te(55.4 m)	912.671(55.28), 647.51(19.4), 863.955(15.6)
• 201.0 *10*	0.013 *8*	^{155}Tb(5.32 d)	86.545(32.0), 105.305(25), 180.103(7.45)
201.0 *3*	0.18 *6*	^{181}Re(19.9 h)	365.57(56), 360.70(20), 639.30(6.4)
201.1 *3*	0.08 *3*	^{66}Ge(2.26 h)	43.89(28.7), 381.85(28), 272.97(10.4)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
201.1 *2*	0.61 *16*	^{126}Ba(100 m)	233.6(19.6), 257.6(7.6), 241.0(6.0)
201.1 *1*	†26.0 *10*	^{155}Er(5.3 m)	110.12(†100), 241.5(†65), 234.0(†40.0)
201.11 *17*	0.9 *2*	^{200}Bi(36.4 m)	1026.5(100), 462.34(98), 419.70(91)
• 201.17 *20*	0.013 *7*	^{119}Te(4.70 d)	153.59(66), 1212.73(66), 270.53(28.0)
201.19 *7*	0.0020	^{239}U(23.45 m)	74.664(48), 43.533(4.14), 662.24(0.18)
201.2 *2*	0.178 *18*	^{79}Rb(22.9 m)	688.1(23), 182.77(19.2), 143.41(13.9)
201.235 *15*	8.7 *3*	^{134}Te(41.8 m)	767.20(29.0), 210.465(22.3), 277.951(20.9)
• 201.24 *22*	0.0104 *25*	^{146}Eu(4.59 d)	747.2(98), 633.03(43), 634.07(37)
• 201.263 *4*		^{156}Tb(5.35 d)	534.318(66.6), 199.2132(40.9), 1222.36(31.00)
201.28 *11*		^{187}W(23.72 h)	685.774(27.3), 479.531(21.8), 72.001(11.14)
201.30 *5*	0.10 *3*	^{157}Tm(3.63 m)	455.00(9.3), 385.5(8.8), 348.40(8.4)
• 201.3112 *7*	0.472 *6*	^{192}Ir(73.831 d)	205.79549(3.300), 484.5780(3.184), 374.4852(0.721)
201.4 *2*	0.21 *6*	^{157}Er(18.65 m)	53.05(24), 391.32(14.2), 121.57(10.1)
201.43 *5*	0.116 *13*	^{122}Xe(20.1 h)	350.065(7.80), 148.612(2.62), 416.633(1.87)
201.47 *3*	1.12 *5*	^{161}Er(3.21 h)	826.6(3.0), 211.15(12.2), 592.6(3.7)
• 201.5 *3*	0.0028 *16*	^{193}Os(30.5 h)	139.03(4.27), 460.50(3.95), 73.039(3.2)
201.52 *6*	6.4 *18*	^{187}Pt(2.35 h)	106.46(9), 110.04(5.7), 709.17(5.2)
201.56 *5*	0.12 *3*	^{167}Lu(51.5 m)	29.66(14.4), 239.22(8.6), 213.19(3.6)
201.6 *1*	0.0088 *25*	^{127}Cs(6.25 h)	411.95(62.8), 124.70(11.37), 462.31(5.07)
201.6 *3*	0.034 *5*	^{197}Pt(95.41 m)	279.01(2.4), 130.2(0.105), 77.351(0.0111)
201.6 *3*	†29 *4*	^{197}Hg(23.8 h)	279.01(†2000), 130.2(†89), 77.351(†9.4)
• 201.60 *9*	†2.0 *5*	^{227}Th(18.72 d)	235.971(†813), 50.13(†528), 256.25(†463)
201.61 *5*	0.69 *13*	^{187}Pt(2.35 h)	106.46(9), 201.52(6.4), 110.04(5.7)
201.62 *5*	0.031	^{233}Th(22.3 m)	86.477(2.7), 29.374(2.5), 459.222(1.4)
• 201.62 *5*	0.044 *5*	^{237}Np(2.14×10^{6} y)	29.374(15.0), 86.477(12.4), 94.66(0.6)
201.65 *15*	1.41 *9*	^{195}Ir(3.8 h)	98.85(10), 684.88(9.4), 432.86(9)
201.7 *3*	†0.33 *5*	^{192}Tl(9.6 m)	422.8(†100), 634.8(†75.9), 786.3(†31.7)
• 201.70 *14*	†8×10^{03}	^{241}Am(432.2 y)	59.537(†60), 26.345(†1000×10^{9}), 33.195(†6000×10^{8})
• 201.75 *15*	0.0157 *13*	^{170}Lu(2.00 d)	84.2551(4.256), 1280.25(3.450), 2041.88(1.434)
201.80 *12*	9.5 *7*	^{103}In(65 s)	187.97(55), 720.32(13.9), 739.95(10.1)
201.8 *2*	0.149 *20*	^{210}At(8.1 h)	1181.39(99.3), 245.31(79), 1483.39(46.5)
• 201.83 *3*	86 *5*	^{176}Lu(3.78×10^{10} y)	306.78(94), 88.34(13.3), 400.99(0.329)
201.83 *3*	>0.0007	^{176}Lu(3.635 h)	88.34(0.55640), 1159.28(0.00139), 1061.61(0.000762)
201.83 *3*	6	^{176}Ta(8.09 h)	1159.28(25), 88.34(12), 1224.93(6)
201.84 *12*	5.4 *6*	^{206}At(30.0 m)	700.66(98), 477.10(86), 395.54(48)
201.87 *9*	0.0236 *18*	^{85}Br(2.90 m)	802.41(2.56), 924.63(1.63), 919.06(0.65)
• 201.96 *2*	0.88 *5*	^{151}Pm(28.40 h)	340.08(23), 167.75(8.3), 275.21(6.8)
• 202.0 *2*	0.0048 *19*	^{237}Np(2.14×10^{6} y)	29.374(15.0), 86.477(12.4), 94.66(0.6)
202.04 *8*	2.70 *20*	^{174}W(31 m)	35.42(14.1), 428.83(12.7), 328.68(9.5)
• 202.111 *3*	1.08 *2*	^{235}U(7.038×10^{8} y)	185.712(57.2), 143.764(10.96), 163.358(5.08)
• 202.13 *16*	0.013 *6*	^{105}Ag(41.29 d)	344.520(41), 280.41(30.2), 644.55(11.1)
202.17 *12*	1.244 *21*	^{144}Ba(11.5 s)	103.855(23.30), 430.48(18.3), 172.828(15.4)
202.2 *4*	0.0100 *25*	^{111}Pd(23.4 m)	580.00(0.8), 70.44(0.78), 1459.0(0.56)
202.2 *3*	0.63 *24*	^{117}Ag(5.34 s)	135.4(48), 386.8(39.9), 298.1(21.1)
202.2 *3*	0.69 *16*	^{117}Ag(72.8 s)	135.4(23), 337.7(10.3), 157.1(7.9)
202.2 *4*	0.05 *3*	^{185}Au(4.25 m)	310.6(13), 243.1(6.6), 77.7(6)
202.2 *3*	0.028 *11*	^{199}Pb(90 m)	366.90(44.2), 353.39(9.5), 1135.04(7.8)
202.21 *5*	†21.9 *23*	^{224}Rn(107 m)	260.581(†100), 265.806(†93), 328.331(†17.2)
202.27 *9*	0.043 *6*	^{121}I(2.12 h)	212.189(84), 532.08(6.07), 598.74(1.47)
202.3 *3*	0.17 *5*	^{141}Eu(40.0 s)	394.0(9), 384.5(5.6), 382.9(2.97)
202.3 *4*	>0.11	^{209}Rn(28.5 m)	408.32(50.3), 745.78(22.8), 337.45(14.5)
202.38 *7*	0.30 *3*	^{129}Ba(2.23 h)	6.545(23.7), 214.30(13.4), 220.83(8.54)
202.38 *7*	†33.7 *6*	^{129}Ba(2.17 h)	182.30(†100), 1459.1(†50.0), 419.83(†26.7)
202.394 *4*	0.079 *16*	^{227}Fr(2.47 m)	90.035(39), 585.804(29.5), 64.267(14.5)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
202.4 *2*	1.8	^{104}Zr(1.2 s)	100.9(6), 504.7(5), 445.0(5)
202.41 *2*	1.70 *9*	^{155}Ho(48 m)	240.19(12.5), 136.30(5.00), 45.38(5)
202.43 *4*	0.102 *17*	^{191}Au(3.18 h)	586.45(17), 277.88(7.2), 674.19(6.8)
• 202.44 *3*	0.044 *4*	^{206}Bi(6.243 d)	803.10(99), 881.01(66.2), 516.18(40.7)
202.5 *6*	0.029 *8*	^{97}Zr(16.91 h)	743.36(93), 507.64(5.03), 1147.97(2.61)
• 202.5		^{172}Hf(1.87 y)	23.9331(20.3), 125.812(11.3), 67.35(5.3)
• 202.5 *5*	†0.41 *16*	^{227}Th(18.72 d)	235.971(†813), 50.13(†528), 256.25(†463)
202.538 *17*	0.057 *9*	^{182}Os(22.10 h)	510.056(52), 180.230(33.5), 263.285(6.71)
202.60 *15*	†0.7 *2*	^{185}Pt(33.0 m)	229.60(†100), 135.3(†80), 197.4(†74)
202.60 *20*	0.33 *4*	^{205}At(26.2 m)	719.30(31), 669.41(8.6), 628.88(5.6)
202.63 *11*	0.33 *4*	^{101}Sr(118 ms)	128.34(18.0), 1124.82(10.9), 510.73(8.5)
202.67 *6*	0.0109 *13*	^{62}Zn(9.186 h)	596.56(26), 40.84(25.5), 548.35(15.3)
202.69 *6*	0.76 *12*	^{183}Au(42.0 s)	161.18(9.4), 214.13(5.9), 313.08(5.0)
202.7 *5*	0.07	^{203}Bi(11.76 h)	820.3(30), 825.2(14.6), 896.9(13)
• 202.724 *5*	1.03 *3*	^{172}Er(49.3 h)	610.062(44.2), 407.338(42.1), 68.107(3.29)
202.73 *6*	4.89 *6*	^{70}Se(41.1 m)	49.51(35.8), 426.15(29), 376.65(9.43)
202.79 *10*	0.070 *9*	^{201}Pb(9.33 h)	331.19(79), 361.27(9.9), 945.96(7.4)
202.8 *4*	0.78 *8*	^{127}Sn(2.10 h)	1114.3(39), 1095.6(20), 823.1(10.9)
202.8 *2*	0.096 *12*	^{140}Xe(13.60 s)	805.52(20), 1413.66(12.2), 1315.05(8.2)
202.8		^{168}Hf(25.95 m)	183.8(†100), 157.2(†68), 324.1
202.8 *1*	†27.3 *9*	^{230}Ra(93 m)	72.0(†100), 63.0(†35.4), 469.7(†25.9)
202.84 *10*	0.0030 *7*	^{194}Ir(19.15 h)	328.455(13.1), 293.545(2.55), 645.157(1.17)
• 202.84 *10*	0.32 *3*	^{194}Au(38.02 h)	328.455(60), 293.545(10.2), 1468.91(6.3)
202.860 *10*	0.0580 *21*	^{127}Te(9.35 h)	417.95(1.0), 360.32(0.1346), 215.17(0.0387)
• 202.860 *10*	68	^{127}Xe(36.4 d)	172.132(25.5), 374.991(17.2), 145.252(4.29)
• 202.88 *16*	0.0038 *19*	^{152}Eu(13.542 y)	121.7824(28.4), 1408.011(20.87), 964.131(14.34)
202.9 *2*	0.9 *1*	^{129}Sn(2.23 m)	645.13(100), 80.5(6.6), 913.2(5.0)
202.9 *3*	0.20 *7*	^{129}La(11.6 m)	278.6(25), 110.5(16.9), 457.0(8.0)
202.9 *2*	0.033 *8*	^{135}Ce(17.7 h)	265.56(41.8), 300.07(23.5), 606.76(18.8)
202.9 *5*	0.10 *5*	^{167}Lu(51.5 m)	29.66(14.4), 239.22(8.6), 213.19(3.6)
202.9 *1*	0.101 *13*	^{186}Hg(1.38 m)	112.1(63), 251.5(55), 191.6(3.7)
203.0 *1*	18.0 *15*	^{74}Kr(11.50 m)	89.65(31), 296.67(9.9), 62.84(9.6)
203 *1*	0.09	^{142}Gd(70.2 s)	750.2(11.2), 178.90(11.20), 284.4(6.16)
• 203		^{172}Lu(6.70 d)	1093.657(62.5), 900.724(29.8), 181.528(20.6)
203.03 *5*	0.42 *5*	^{237}Am(73.0 m)	280.23(47.3), 438.4(8.3), 473.5(4.3)
203.048 *3*	0.037 *4*	^{155}Sm(22.3 m)	104.3346(74.6), 245.771(3.7), 141.4428(1.98)
203.1 *7*	4.9 *15*	^{132}In(0.201 s)	374.3(62), 4040.8(61), 299.2(49)
203.1 *2*	0.143 *23*	^{143}Eu(2.63 m)	1107.3(8), 1536.8(3.29), 1912.7(2.13)
203.1	0.46 *18*	^{152}Ho(49.5 s)	647.2(92), 613.8(88.4), 683.3(88)
203.1 *1*	†35 *2*	^{210}Fr(3.18 m)	643.8(†100), 817.6(†60), 901.3(†30)
203.12 *3*	1.23 *10*	^{234}Pa(6.70 h)	131.30(18), 946.00(13.4), 883.24(9.6)
203.12 *3*	†1.02×10^{3} *20*	^{234}Pa(1.17 m)	1001.03(†837000), 766.38(†294000), 742.81(†80000)
• 203.12 *3*	0.041 *4*	^{234}Np(4.4 d)	1558.31(18.72), 1527.21(11.2), 1601.80(9.1)
• 203.12 *3*	>8.0×10^{-9}	^{238}Pu(87.74 y)	43.498(0.0395), 99.853(0.00735), 152.720(0.000937)
• 203.129 *6*	0.0078 *17*	^{200}Tl(26.1 h)	367.943(87), 1205.717(29.9), 579.298(13.8)
203.13 *10*	6.4 *5*	^{90}Mo(5.67 h)	257.34(78), 122.370(64.2), 323.20(6.3)
203.2 *5*	†1.0 *5*	^{131}Sn(56.0 s)	1226.03(†100), 450.03(†90), 798.50(†86)
203.2 *2*	1.14 *9*	^{188}Tl(71 s)	412.7(88), 592.0(61), 504.2(23.3)
203.25 *9*	†0.25 *3*	^{184}Ir(3.09 h)	263.97(†100), 119.80(†45), 390.38(†38)
• 203.2894 *6*	0.383 *11*	^{183}Ta(5.1 d)	246.0591(27), 353.9912(11.2), 107.9322(11.0)
• 203.2894 *6*	0.045 *3*	^{183}Re(70.0 d)	162.3219(23.3), 46.4839(7.97), 291.7238(3.05)
203.3	0.06	^{147}Ba(0.893 s)	167.4(11), 105.2(4.8), 196.1(4.8)
203.3	2.45 *16*	^{179}Pt(21.2 s)	171.7(16), 193.1(14.2), 99.8(13.2)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
203.3	0.07	^{185}Ir(14.4 h)	254.4(13.3), 1828.8(10), 60.0(5.7)
203.32 *7*	0.365 *20*	^{165}Yb(9.9 m)	80.11(49), 68.86(9.1), 1090.28(4.4)
• 203.382 *1*	0.029 *3*	^{155}Tb(5.32 d)	86.545(32.0), 105.305(25), 180.103(7.45)
203.4 *10*	†3.6 *4*	^{94}Kr(0.20 s)	629.2(†100), 764.5(†71), 219.466(†67.4)
203.4 *2*	0.57 *6*	^{117}Xe(61 s)	28.5(7.0), 221.3(10.0), 32.3(7.6)
• 203.4 *4*	0.025 *10*	^{131}Te(30 h)	773.67(49.9), 852.21(27.0), 793.75(18.10)
• 203.438 *5*	5.02 *11*	^{172}Lu(6.70 d)	1093.657(62.5), 900.724(29.8), 181.528(20.6)
203.5 *2*	74	^{109}In(4.2 h)	623.7(5.5), 1148.9(4.3), 426.25(4.12)
203.5 *3*	0.22 *3*	^{120}Xe(40 m)	25.1(30), 72.6(9), 178.1(6.8)
203.5 *1*	0.13 *3*	^{184}Pt(17.3 m)	154.90(31), 191.97(27), 548.36(23.1)
203.52 *18*	†19 *4*	^{187}Hg(1.9 m)	233.38(†100), 376.34(†38), 240.26(†33)
• 203.545 *3*	0.000569 *3*	^{239}Pu(24110 y)	51.624(0.007100), 38.661(0.000500), 129.297(0.00631)
• 203.55 *3*	0.49 *5*	^{182}Re(64.0 h)	229.3220(26), 67.75001(22.2), 1121.3007(22.0)
203.564 *10*	2.81 *9*	^{204}Po(3.53 h)	883.984(29.9), 270.068(27.8), 1016.31(24.1)
203.6 *1*	0.110 *22*	^{109}Ru(34.5 s)	206.29(22.0), 225.98(19.6), 1929.05(13.7)
203.6	†0.13	^{144}Gd(4.5 m)	333.3(†100), 2432.6(†94.8), 629.5(†32.4)
203.60 *4*	0.55 *3*	^{163}Yb(11.05 m)	860.28(10.1), 63.62(6.5), 123.21(1.98)
203.68 *6*	†38.0 *25*	^{165}Lu(10.74 m)	132.49(†100), 120.60(†100), 174.25(†47.0)
203.693 *15*	0.029 *14*	^{184}Ta(8.7 h)	414.03(72), 252.848(43), 920.932(32.0)
203.7 *2*	15.9 *16*	^{103}Zr(1.3 s)	248(100), 164.05(94), 126.30(84)
203.7	0.0043	^{133}I(20.8 h)	529.872(87.0), 875.329(4.51), 1298.223(2.35)
203.7 *3*	0.03 *3*	^{182}Os(22.10 h)	510.056(52), 180.230(33.5), 263.285(6.71)
203.75 *4*		^{167}Yb(17.5 m)	113.34(55.3), 106.18(22.5), 176.25(21)
203.750 *9*	2.2	^{205}Hg(5.2 m)	415.70(0.0130), 1218.96(0.0062), 1136.56(0.0046)
203.79 *7*	†65 *3*	^{142}Xe(1.22 s)	571.83(†100), 657.05(†79), 538.24(†77)
203.8 *3*	0.33 *8*	^{126}Ba(100 m)	233.6(19.6), 257.6(7.6), 241.0(6.0)
203.8 *4*	0.13	^{153}Ho(2.0 m)	295.8(67), 637.0(5.36), 688.5(3.7)
203.8 *5*	0.23 *5*	^{178}Lu(28.4 m)	93.180(6.0), 1340.8(3.22), 1310.05(1.40)
203.8 *5*	0.0074 *7*	^{178}Ta(9.31 m)	93.180(1.78), 1350.68(1.18), 1340.8(1.027)
203.81 *4*	0.044 *13*	^{183}Os(13.0 h)	381.768(89.6), 114.463(20.63), 167.844(8.81)
203.818 *3*	20.6 *20*	^{156}Sm(9.4 h)	87.4897(24), 165.8452(12.7), 37.9681(>2.9)
203.82 *14*	†28.6 *19*	^{189}Hg(7.6 m)	320.99(†100), 78.21(†63), 565.42(†48)
203.82 *6*	16.2 *7*	^{194}Pb(12.0 m)	581.82(18.8), 1519.45(16.4), 367.80(8.1)
203.85 *3*	0.48 *5*	^{189}Pt(10.87 h)	721.41(9.3), 94.33(7.6), 568.84(7.1)
203.9 *1*	†5.3 *8*	^{75}Ga(126 s)	253.0(†100), 574.8(†31.6), 885.6(†11.1)
203.9 *3*	0.101 *18*	^{101}Sr(118 ms)	128.34(18.0), 1124.82(10.9), 510.73(8.5)
203.9 *1*	1.7 *3*	^{105}Mo(35.6 s)	85.4(25.0), 76.50(19.3), 147.8(14.8)
204.0 *2*	†6 *2*	^{91}Ru(7.6 s)	393.7(†100), 1096.9(†24), 892.8(†15)
204.0 *5*	0.44 *15*	^{98}Sr(0.653 s)	119.353(73), 444.628(39), 428.4(31)
204	0.6	^{104}Ag(69.2 m)	555.796(92.6), 767.72(65.7), 941.7(25.0)
204.02 *9*	15.1 *7*	^{95}Rb(377.5 ms)	352.02(49), 680.7(14.8), 328.7(9.3)
204.02 *9*	†2.0×10^{2}	^{96}Rb(0.199 s)	352.02(†700), 680.7(†121), 328.7(†71)
204.02 *10*	52	^{135}Nd(12.4 m)	41.43(23), 441.2(14.9), 501.7(10.0)
204.028 *10*	0.120 *13*	^{228}Ac(6.15 h)	911.205(26.6), 968.971(16.2), 338.322(11.3)
204.028 *10*	0.50 *4*	^{228}Pa(22 h)	911.205(4.19), 463.005(1.250), 964.770(4.25)
204.03 *2*	0.70 *8*	^{151}Dy(17.9 m)	386.10(19.4), 49.46(18.0), 546.31(14.3)
204.034 *6*	†27.6 *14*	^{142}Xe(1.22 s)	571.83(†100), 657.05(†79), 538.24(†77)
• 204.06 *6*	†2.90×10^{4} *18*	^{241}Am(432.2 y)	59.537(†60), 26.345(†1000×10^{9}), 33.195(†6000×10^{8})
204.07	0.035 *12*	^{145}Ce(3.01 m)	724.33(59), 62.54(13.33), 1148.03(9.15)
204.09 *5*	0.334 *21*	^{107}Ru(3.75 m)	194.05(9.9), 847.93(5.3), 462.61(3.66)
204.1 *4*	0.23 *4*	^{127}Sn(2.10 h)	1114.3(39), 1095.6(20), 823.1(10.9)
204.1 *2*	0.024 *2*	^{255}Fm(20.07 h)	81.477(0.81), 58.477(0.67), 80.92(0.27)
• 204.1052 *5*	13.8 *3*	^{177}Lu(160.4 d)	208.3664(57.7), 228.4838(37.0), 378.5029(29.7)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
204.11 *8*	0.057 *9*	^{100}Sr(202 ms)	963.85(22.0), 898.50(18.9), 65.46(15.2)
• 204.117 *2*	†4.29×10^3 *13*	^{95}Nb(86.6 h)	582.082(†101), 786.198(†29), 820.624(†0.7)
• 204.117 *2*	0.028 *9*	^{95}Nb(34.975 d)	765.794(100), 561.67(0.013)
204.117 *2*	0.304 *23*	^{95}Tc(20.0 h)	765.794(93.82), 1073.71(3.74), 947.67(1.951)
• 204.117 *2*	63.25 *13*	^{95}Tc(61 d)	582.082(29.96), 835.149(26.63), 786.198(8.66)
204.12 *3*	0.23 *5*	^{178}Lu(28.4 m)	93.180(6.0), 1340.8(3.22), 1310.05(1.40)
204.12 *3*	0.0038 *19*	^{178}Ta(9.31 m)	93.180(1.78), 1350.68(1.18), 1340.8(1.027)
204.13 *7*	†2.2×10^3 *6*	^{158}Er(2.29 h)	71.91(†23300), 386.84(†111000), 248.58(†42000)
• 204.139 *8*	0.3262 *24*	^{125}Sb(2.7582 y)	427.875(30), 600.600(17.86), 635.954(11.31)
204.16 *12*	0.051 *16*	^{133}Ce(4.9 h)	477.22(39), 510.36(20.7), 58.39(19.2)
• 204.18 *3*	0.131 *11*	^{151}Pm(28.40 h)	340.08(23), 167.75(8.3), 275.21(6.8)
204.19 *3*	0.53 *3*	^{179}Re(19.5 m)	430.221(28), 289.968(26.9), 1680.244(13.0)
204.2 *3*	3.5 *10*	^{150}Tb(5.8 m)	638.05(100), 650.4(70), 438.37(42)
204.26	>0.0011	^{75}Ge(82.78 m)	264.6584(11), 198.6031(1.19), 468.8(0.223)
• 204.27 *17*	†13 *3*	^{227}Th(18.72 d)	235.971(†813), 50.13(†528), 256.25(†463)
204.3 *6*	0.22 *10*	^{105}In(5.07 m)	131.37(41), 260.21(15.7), 604.11(9.2)
204.3 *2*	0.69 *7*	^{127}Cd(0.43 s)	1235.07(8.3), 376.28(7.5), 523.60(5.15)
204.3		^{131}La(59 m)	108.081(25.0), 417.783(18.0), 365.162(16.9)
204.3 *2*		^{131}Ce(10.3 m)	169.42(†100), 414.25(†68), 119.18(†44)
204.3 *2*	†1.2 *6*	^{131}Ce(5.0 m)	230.43(†100), 436.85(†7.3), 462.9(†6.9)
204.3 *5*	0.14 *3*	^{136}Nd(50.65 m)	108.90(32), 40.2(18.9), 574.8(10.4)
204.3 *1*	0.076 *13*	^{143}Cs(1.78 s)	195.554(13), 232.421(8.32), 306.424(6.80)
204.30 *1*	2.92 *24*	^{227}Fr(2.47 m)	90.035(39), 585.804(29.5), 64.267(14.5)
204.4 *6*	0.035 *10*	^{121}Ag(0.78 s)	314.55(32.1), 353.43(19.9), 500.61(9.3)
204.4 *10*	1.0 *2*	^{128}Sb(9.01 h)	753.82(100), 743.22(100), 314.12(61)
204.4	†21.2	^{158}Ho(21.3 m)	406.14(†100), 838.9(†84.3), 1484.1(†66.2)
204.406 *11*	0.383 *21*	^{153}Dy(6.4 h)	80.723(11.10), 213.754(10.90), 99.659(10.51)
204.45 *13*	†1.0 *2*	^{181}Pt(51 s)	289.29(†100), 111.97(†100), 230.15(†92)
204.5 *5*	†10.3 *12*	^{103}Mo(67.5 s)	83.4(†100), 423.91(†69), 45.8(†57)
204.5 *4*	0.252 *21*	^{187}Au(8.4 m)	1331.81(7.0), 1408.23(3.06), 914.73(3.02)
204.5 *3*	†0.16 *5*	^{192}Tl(9.6 m)	422.8(†100), 634.8(†75.9), 786.3(†31.7)
204.57 *20*	†30 *6*	^{161}Lu(77 s)	110.78(†100), 100.32(†95), 43.7(†70)
204.6 *2*	5.6 *10*	^{117}Ag(5.34 s)	135.4(48), 386.8(39.9), 298.1(21.1)
204.6 *3*	0.101 *25*	^{121}Xe(40.1 m)	252.7(13), 132.8(10.9), 445.2(7.7)
204.6 *3*	0.83 *17*	^{192}Hg(4.85 h)	274.8(50.4), 157.2(7), 306.5(5.4)
204.62 *10*	†24 *4*	^{229}U(58 m)	122.51(†100), 88.43(†88), 198.83(†88)
204.65 *7*	0.49 *16*	^{203}Po(36.7 m)	908.64(55), 1090.95(19.2), 893.49(18.7)
204.68 *5*	0.62 *5*	^{79}Ga(2.847 s)	464.79(24.2), 516.41(21.5), 1187.28(12.8)
204.68 *5*	0.069 *6*	^{80}Ga(1.697 s)	
204.690 *5*	†4.1 *4*	^{225}Fr(4.0 m)	182.3(†100), 31.50(†91), 225.1(†55)
• 204.690 *5*	0.60 *3*	^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
204.75 *15*	0.27 *4*	^{202}Bi(1.72 h)	960.67(99), 422.18(83.7), 657.49(60.6)
204.77 *5*	19.4 *14*	^{143}Gd(39 s)	258.81(75), 463.7(9.9), 812.9(5.4)
204.8 *2*	15.0 *12*	^{117}Cs(8.4 s)	29.7(9.9), 205.6(6.8), 159.9(5.0)
204.9 *2*	0.10	^{140}Sm(14.82 m)	225.5(>10), 225.4(10), 140.0(5.0)
204.97 *3*	47	^{107}In(32.4 m)	505.51(11.9), 320.92(10.2), 1268.33(5.43)
204.98 *3*	†93 *6*	^{231}Ra(103 s)	409.92(†100), 469.3(†75), 456.2(†59)
205 *1*	†2.2 *10*	^{103}Mo(67.5 s)	83.4(†100), 423.91(†69), 45.8(†57)
205.0 *1*	1.50 *7*	^{200}Po(11.5 m)	671.0(34.0), 617.7(19.7), 434.4(9.3)
205.0 *10*	36 *4*	^{246}Am(39 m)	679.0(53), 152.9(25), 756(13.3)
205.03 *20*	0.125 *24*	^{89}Kr(3.15 m)	220.948(20.1), 586.03(16.6), 904.27(7.2)
205.03 *9*	0.948 *12*	^{223}Fr(21.8 m)	50.13(36.0), 79.72(9.1), 234.81(3.0)
• 205.03 *9*	†9.8 *24*	^{227}Th(18.72 d)	235.971(†813), 50.13(†528), 256.25(†463)
• 205.05 *20*	†3.5×10^5 *9*	^{237}Pu(45.2 d)	280.40(†870000), 298.89(†7.85×10^6), 320.75(†6.48×10^6)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
• 205.0837 *6*	0.879 *24*	^{183}Ta(5.1 d)	246.0591(27), 353.9912(11.2), 107.9322(11.0)
• 205.0837 *6*	0.110 *3*	^{183}Re(70.0 d)	162.3219(23.3), 46.4839(7.97), 291.7238(3.05)
205.1 *2*	†18 *4*	^{155}Yb(1.75 s)	236.2(†100), 174.9(†55), 361.6(†46)
• 205.1 *5*	5.1×10^{-6} *12*	^{230}Th(7.538×10^{4} y)	67.67(0.376), 143.87(0.0486), 253.73(0.0111)
205.11 *19*	2.05 *12*	^{186}Au(10.7 m)	191.56(62), 298.67(25.4), 764.89(10.5)
205.13 *9*	0.58 *6*	^{148}Ba(0.607 s)	56.08(29.20), 133.53(3.88), 415.78(3.59)
205.19 *5*	0.84 *9*	^{187}Pt(2.35 h)	106.46(9), 201.52(6.4), 110.04(5.7)
205.2 *6*	0.10 *5*	^{93}Rb(5.84 s)	432.61(17.4), 986.05(6.8), 213.429(6.7)
205.2 *2*	2.6 *7*	^{118}Pd(1.9 s)	125.4(34), 125.4(34), 224.2(20.1)
205.2 *1*	†5.7 *4*	^{123}La(17 s)	92.5(†100), 937.3(†43), 153.6(†43)
205.2 *4*	0.23 *4*	^{127}Sn(2.10 h)	1114.3(39), 1095.6(20), 823.1(10.9)
205.2 *2*	0.61 *6*	^{153}Tm(1.48 s)	299.3(6), 765.5(1.92), 965.3(0.82)
205.2 *2*	†8.9 *9*	^{185}Hg(21.6 s)	222.8(†100.0), 258.7(†98), 212.5(†58)
205.2 *2*	0.018 *3*	^{207}Po(5.80 h)	992.33(59.3), 742.64(28.2), 911.79(16.95)
• 205.21 *2*	0.030 *4*	^{150}Eu(35.8 y)	333.971(96), 439.401(80.4), 584.274(52.6)
• 205.27 *6*	$\dagger4.2\times10^{3}$ *5*	^{134}Ce(75.9 h)	162.306(†230000), 130.414(†209000), 39.08(†>150000)
205.3 *2*	0.16 *5*	^{173}Ta(3.14 h)	172.2(18), 69.70(5.9), 90.3(5.0)
205.3 *4*	0.0231 *21*	^{233}Np(36.2 m)	312.17(0.7), 298.89(0.44), 546.9(0.280)
• 205.309 *2*	5.01 *5*	^{235}U(7.038×10^{8} y)	185.712(57.2), 143.764(10.96), 163.358(5.08)
205.4 *2*	26.6 *8*	^{69}Ni(11.4 s)	1871.1(40.9), 679.7(39.7), 1213.0(39.3)
205.40 *9*	0.36 *4*	^{167}Lu(51.5 m)	29.66(14.4), 239.22(8.6), 213.19(3.6)
205.4 *4*	0.16 *9*	^{185}Au(4.25 m)	310.6(13), 243.1(6.6), 77.7(6)
205.4 *3*	1.54 *21*	^{186}Pt(2.0 h)	276.7(0), 611.5(6.0), 635.6(>3.8)
205.40 *3*	6.3 *3*	^{208}At(1.63 h)	686.527(98), 660.040(89), 177.595(48.6)
• 205.402 *11*	0.427 *10*	^{165}Tm(30.06 h)	242.917(35.5), 47.155(16.9), 297.369(12.71)
205.5 *3*	0.046 *14*	^{162}Ho(67.0 m)	185.005(28.6), 1220.0(22.5), 282.864(11.3)
205.5 *2*	†10.4 *21*	^{187}Hg(1.9 m)	233.38(†100), 376.34(†38), 240.26(†33)
• 205.55 *20*	0.0078 *7*	^{170}Lu(2.00 d)	84.2551(4.256), 1280.25(3.450), 2041.88(1.434)
205.575 *4*	0.34 *8*	^{244}Am(10.1 h)	743.971(66), 897.848(28), 153.863(16)
205.583 *9*	0.356 *14*	^{155}Dy(9.9 h)	226.918(68.4), 184.564(3.37), 1089.8(>2.8)
205.59	<0.015	^{214}Pb(26.8 m)	351.921(35.8), 295.213(18.5), 241.981(7.50)
205.6 *4*	0.049 *16*	^{91}Tc(3.14 m)	2450.90(13.5), 1639.90(9.2), 1605.20(7.77)
205.6 *4*	0.027	^{91}Tc(3.3 m)	502.90(51.4), 927.60(3.79), 1328.40(2.55)
205.6 *1*	6.0 *3*	^{101}Zr(2.1 s)	119.3(10.8), 912.2(3.48), 2009.5(3.4)
205.6 *2*	6.8 *11*	^{117}Cs(8.4 s)	204.8(15.0), 29.7(9.9), 159.9(5.0)
205.6 *2*	0.27 *5*	^{129}La(11.6 m)	278.6(25), 110.5(16.9), 457.0(8.0)
205.6	0.37	^{157}Er(18.65 m)	53.05(24), 391.32(14.2), 121.57(10.1)
205.6 *1*	0.010 *4*	^{199}Tl(7.42 h)	455.46(12.4), 208.20597(12.3), 247.26(9.3)
205.7 *4*	0.012 *6*	^{89}Rb(15.15 m)	1031.94(58), 1248.19(42.6), 2196.02(13.3)
205.7 *4*	2.5 *8*	^{183}Lu(58 s)	1125.3(25.0), 1056.8(16.5), 168.1(7.5)
205.7 *2*	†6.8 *6*	^{185}Hg(21.6 s)	222.8(†100.0), 258.7(†98), 212.5(†58)
205.7 *3*	0.040 *20*	^{223}Ac(2.10 m)	98.58(0.891), 191.3(0.58), 83.55(0.57)
• 205.7 *2*	†1.2 *4*	^{258}Md(51.5 d)	367.8(†100), 447.9(†37), 276.8(†20.2)
205.79549 *6*		^{192}Re(16 s)	467.47(†100), 750.96(†25), 489.039
• 205.79549 *6*	3.300 *17*	^{192}Ir(73.831 d)	484.5780(3.184), 374.4852(0.721), 201.3112(0.472)
205.8 *3*	2.92 *18*	^{57}Cr(21.1 s)	83.16(8.3), 850.2(8.2), 1752.1(5)
205.8 *3*	0.34 *4*	^{120}Xe(40 m)	25.1(30), 72.6(9), 178.1(6.8)
205.80 *8*	0.139 *14*	^{132}Ce(3.51 h)	182.11(77), 155.37(10.5), 216.83(4.95)
205.8 *2*	†12 *3*	^{157}Yb(38.6 s)	230.92(†100), 340.7(†90), 241.7(†74)
205.8	0.07	^{185}Ir(14.4 h)	254.4(13.3), 1828.8(10), 60.0(5.7)
• 205.84 *4*	0.025 *3*	^{205}Bi(15.31 d)	1764.36(1.368), 703.44(31), 987.62(0.585)
205.87 *20*	0.04	^{113}Pd(93 s)	95.74(3.3), 643.7(3.0), 739.63(2.4)
• 205.87 *6*	0.0090 *22*	^{151}Pm(28.40 h)	340.08(23), 167.75(8.3), 275.21(6.8)
• 205.879 *13*	2.67 *15*	^{241}Cm(32.8 d)	471.805(71), 430.634(4.06), 132.413(3.86)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
• 205.879 *13*	0.040 *6*	^{245}Bk(4.94 d)	471.805(0.026), 164.8(0.0084), 430.634(0.0015)
205.92 *5*	9.7 *10*	^{159}Er(36 m)	624.5(33), 649.1(23.4), 165.9(5.0)
205.93 *5*	2.28 *16*	^{224}Fr(3.30 m)	215.985(33.1), 131.613(16.3), 836.90(9.8)
205.93 *5*	>0.40	^{224}Ac(2.9 h)	215.985(53), 131.613(26), 166.411(>0.27)
• 205.93 *5*	0.0204 *6*	^{228}Th(1.9131 y)	84.373(1.266), 215.985(0.263), 131.613(0.1355)
205.94 *20*	16.1 *13*	^{181}Lu(3.5 m)	652.5(22.0), 574.9(15.4), 805.7(8.8)
• 205.94 *5*		^{206}Po(8.8 d)	1032.26(32.9), 511.36(24.1), 286.410(23.8)
• 205.99 *6*	0.00408 *4*	^{169}Yb(32.026 d)	63.12077(44.2), 197.95788(35.8), 177.21402(22.16)
206 *1*	0.06 *3*	^{89}Nb(1.9 h)	1627.20(3.4), 1833.46(3.16), 3092.7(3.0)
206.0 *10*	0.16 *7*	^{138}Pr(2.12 h)	1037.8(101), 788.742(100), 302.7(80)
• 206.00 *3*	0.51 *5*	^{182}Re(64.0 h)	229.3220(26), 67.75001(22.2), 1121.3007(22.0)
• 206.00 *12*	6.0×10^{-5} *9*	^{233}U(1.592×10^{5} y)	42.44(0.0862), 97.134(0.020), 54.699(0.0182)
206.05 *15*	3.1 *3*	^{135}Nd(12.4 m)	204.02(52), 41.43(23), 441.2(14.9)
206.08 *8*	0.19	^{155}Ho(48 m)	240.19(12.5), 136.30(5.00), 45.38(5)
• 206.09 *10*	0.0029 *4*	^{172}Er(49.3 h)	610.062(44.2), 407.338(42.1), 68.107(3.29)
206.1 *2*	0.51 *10*	^{108}In(58.0 m)	875.46(100), 632.96(100), 242.84(41)
206.1 *3*	†2.4 *6*	^{113}Ru(0.80 s)	263.2(†100), 211.7(†31.0), 337.5(†27.9)
206.10 *15*	0.235 *14*	^{144}Ba(11.5 s)	103.855(23.30), 430.48(18.3), 172.828(15.4)
206.1		^{157}Lu(5.0 s)	967.5, 949.8, 880.5
206.1 *3*	0.071 *7*	^{190}Au(42.8 m)	295.78(71.0), 301.82(23.4), 597.67(9.4)
• 206.11 *5*	†14 *4*	^{227}Th(18.72 d)	235.971(†813), 50.13(†528), 256.25(†463)
206.15 *8*	51	^{222}Fr(14.2 m)	111.12(12.5), 242.12(1.89), 317.8(0.8)
206.15 *8*	0.189 *8*	^{226}Th(30.9 m)	111.12(3.29), 242.12(0.866), 131.02(0.278)
206.16 *10*	0.047 *4*	^{151}Nd(12.44 m)	116.80(43.4), 255.68(16.4), 1180.89(14.8)
• 206.19 *10*	0.229 *22*	^{153}Tb(2.34 d)	212.038(31.0), 170.504(6.8), 109.758(6.4)
206.2 *4*	>0.11	^{209}Rn(28.5 m)	408.32(50.3), 745.78(22.8), 337.45(14.5)
206.244 *7*	0.143 *4*	^{187}W(23.72 h)	685.774(27.3), 479.531(21.8), 72.001(11.14)
206.29 *3*	22.0 *11*	^{109}Ru(34.5 s)	225.98(19.6), 1929.05(13.7), 358.79(13.6)
206.3 *5*	0.06 *4*	^{98}Nb(51.3 m)	787.374(93), 722.645(73.8), 1168.830(17.8)
206.3 *3*	†13	^{223}Rn(23.2 m)	591.8(†100), 635.2(†76), 416.0(†55)
206.32 *21*	0.133 *14*	^{187}Au(8.4 m)	1331.81(7.0), 1408.23(3.06), 914.73(3.02)
• 206.34 *5*		^{242}Am(141 y)	49.367(0.19), 86.68(0.037), 109.69(0.024)
• 206.368 *23*	0.067 *9*	^{189}Re(24.3 h)	216.663(5.50), 219.395(4.54), 245.09(3.5)
• 206.368 *23*	0.080 *3*	^{189}Ir(13.2 d)	245.09(6), 69.537(3.5), 59.053(1.20)
206.39 *2*	0.8 *3*	^{191}Au(3.18 h)	586.45(17), 277.88(7.2), 674.19(6.8)
206.4 *2*	0.020 *2*	^{113}Ag(5.37 h)	298.58(10), 258.8(1.64), 316.3(1.343)
206.4 *2*	0.73 *17*	^{129}Sn(6.9 m)	1161.31(56.0), 1128.44(50), 760.8(16.8)
206.4 *1*		^{167}Lu(51.5 m)	29.66(14.4), 239.22(8.6), 213.19(3.6)
206.4		^{168}Hf(25.95 m)	183.8(†100), 157.2(†68), 324.1
206.4 *3*	0.0058 *15*	^{187}Ir(10.5 h)	912.95(4.79), 427.12(4.12), 400.89(3.94)
206.40 *2*	1.4 *3*	^{191}Au(3.18 h)	586.45(17), 277.88(7.2), 674.19(6.8)
206.50 *2*	7.77 *21*	^{135}Ce(17.7 h)	265.56(41.8), 300.07(23.5), 606.76(18.8)
206.5	†21.4	^{158}Ho(21.3 m)	406.14(†100), 838.9(†84.3), 1484.1(†66.2)
206.50 *4*	58	^{174}Ta(1.05 h)	91.00(16.0), 1205.92(4.9), 1228.33(1.4)
206.5 *5*	†0.42 *21*	^{183}Hg(9.4 s)	60.5(†100), 159.91(†21), 172.70(†17)
206.52 *2*	0.50 *13*	^{155}Ho(48 m)	240.19(12.5), 136.30(5.00), 45.38(5)
206.53 *11*	0.37 *3*	^{184}Pt(17.3 m)	154.90(31), 191.97(27), 548.36(23.1)
206.539 *5*	0.53 *6*	^{227}Fr(2.47 m)	90.035(39), 585.804(29.5), 64.267(14.5)
206.6 *2*	†1.7 *5*	^{130}Cs(3.46 m)	536.09(†100), 470.8(†8.6), 510.35
206.6 *1*		^{190}Ir(3.25 h)	616.08(93.10), 502.53(92.31), 361.136(89.57)
• 206.635 *3*	0.171 *13*	^{155}Tb(5.32 d)	86.545(32.0), 105.305(25), 180.103(7.45)
• 206.67 *6*	0.036 *7*	^{151}Pm(28.40 h)	340.08(23), 167.75(8.3), 275.21(6.8)
206.69 *15*	†8.2 *20*	^{163}Lu(238 s)	163.08(†100), 54.00(†88), 396.34(†63)
206.7 *2*	0.7 *5*	^{141}Tb(3.5 s)	293.3(16.8), 343.6(16.3), 198.4(14.8)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
206.7 *2*	5.1	^{199}Po(5.48 m)	246.0(28), 845.7(23), 545.8(4.6)
206.7 *1*	0.33 *4*	^{237}Am(73.0 m)	280.23(47.3), 438.4(8.3), 473.5(4.3)
206.72 *6*	†11.1 *8*	^{131}Pr(1.53 m)	266.13(†100), 72.82(†64), 387.56(†38)
206.79	0.0033 *8*	^{123}I(13.27 h)	158.97(83), 528.96(1.39), 440.02(0.428)
206.8 *2*	8.2 *5*	^{61}Mn(0.71 s)	628.6(16.7), 391.0(1.1), 422.0(0.68)
206.8 *5*		^{134}Pr(11 m)	293.5(†100), 299.0(†100), 1196.8(†100)
206.8 *5*		^{134}Pr(17 m)	1964.1(†100), 1904.3(†100), 1579.9(†100)
206.8 *3*	0.28 *9*	^{159}Tm(9.13 m)	38.35(5.8), 84.8(5.8), 271.30(5.1)
206.80 *5*	1.67 *21*	^{164}Tb(3.0 m)	168.838(25.4), 754.80(23.3), 215.07(21)
206.80 *15*	†6.5 *10*	^{185}Pt(33.0 m)	229.60(†100), 135.3(†80), 197.4(†74)
206.8	>0.013	^{197}Tl(2.84 h)	425.84(12.9), 152.22(7.2), 1411.34(4.5)
206.82 *12*	0.29 *3*	^{162}Yb(18.87 m)	163.35(40.0), 118.70(33.6), 576.10(3.24)
206.85 *6*	0.37 *3*	^{184}Pt(17.3 m)	154.90(31), 191.97(27), 548.36(23.1)
206.85 *6*	0.090 *20*	^{193}Au(17.65 h)	186.17(10.1), 255.57(6.7), 268.22(3.9)
206.88 *9*	1.09 *17*	^{181}Au(11.4 s)	198.60(4.4), 2022.4(4.2), 79.40(4.2)
206.9 *2*	2.5 *3*	^{65}Ga(15.2 m)	115.09(54), 61.20(11.4), 153.0(8.9)
206.9 *5*	0.54 *18*	^{136}Sm(47 s)	114.4(36), 747.7(5.4), 485.3(5.0)
206.9 *4*	1.6 *3*	^{185}Au(4.25 m)	310.6(13), 243.1(6.6), 77.7(6)
206.95 *5*	0.303 *17*	^{119}I(19.1 m)	257.52(87), 635.86(2.69), 320.53(2.17)
206.95 *5*	0.60 *18*	^{161}Tm(33 m)	45.54(5.00), 1648.1(9.50), 84.40(9.4)
206.98 *7*	0.30 *3*	^{81}Sr(22.3 m)	153.54(33.8), 147.76(30.1), 443.34(17.5)
206.98 *4*	0.256 *22*	^{228}Fr(39 s)	473.7(10.2), 474.0(7.6), 410.40(6.3)
207.0 *1*	†7.0 *9*	^{123}La(17 s)	92.5(†100), 937.3(†43), 153.6(†43)
207.0	†2.1	^{220}Fr(27.4 s)	45.0(†100), 106.0(†72), 161.5(†65)
207.0 *2*	0.19 *4*	^{223}Ac(2.10 m)	98.58(0.891), 191.3(0.58), 83.55(0.57)
207.1 *1*	0.192 *17*	^{94}Rb(2.702 s)	1309.1(87), 836.9(87.10), 1577.5(31.8)
207.10 *4*	1.57 *18*	^{195}Hg(9.9 h)	779.80(7), 61.46(6.2), 585.13(1.99)
• 207.10 *4*	0.36 *7*	^{195}Hg(41.6 h)	261.75(30.9), 560.27(7), 387.87(2.15)
207.1 *2*	2.4 *1*	^{196}Os(34.9 m)	407.9(5.9), 126.2(5.3), 315.4(2.5)
207.12 *10*	1.38 *25*	^{123}Cd(1.82 s)	1165.86(25.7), 1027.45(22.6), 2102.81(12.5)
207.12 *2*	3.21 *8*	^{145}Cs(0.594 s)	175.36(20), 198.93(10.9), 112.46(10.71)
207.12 *6*	2.4 *3*	^{161}Tm(33 m)	45.54(5.00), 1648.1(9.50), 84.40(9.4)
207.2 *1*	†70 *4*	^{135}Pm(49 s)	198.5(†100), 463.5(†62), 128.7(†60)
207.2		^{147}Cs(0.225 s)	85.2(7.3), 245.8(4.5), 109.7(4.5)
207.2		^{225}Rn(4.5 m)	178.7, 169.7, 115.8
207.3 *5*		^{128}Pr(3.1 s)	550.6, 873, 799
207.3	†5	^{224}Ac(2.9 h)	156.4(†100), 140.8(†55), 261.6(†28)
• 207.34 *6*	0.0074 *18*	^{151}Pm(28.40 h)	340.08(23), 167.75(8.3), 275.21(6.8)
207.4 *1*	0.025 *12*	^{133}Te(12.5 m)	312.072(62), 407.63(27.1), 1333.21(10.67)
207.4 *3*	14.0 *8*	^{175}Ta(10.5 h)	348.5(12.0), 266.9(10.8), 81.5(6)
207.4 *3*	†23.8 *20*	^{233}Pu(20.9 m)	235.4(†100), 534.8(†90.2), 500.3(†38.6)
207.48 *2*	<0.08	^{147}La(4.015 s)	117.718(12), 186.320(6.48), 438.30(5.04)
207.5 *3*	7.8 *4*	^{86}Se(15.3 s)	2441.1(43.0), 2660.0(21.6), 48.3(15.4)
• 207.5 *1*	0.051 *15*	^{131}Te(30 h)	773.67(49.9), 852.21(27.0), 793.75(18.10)
207.5 *10*	>0.08	^{176}Ta(8.09 h)	1159.28(25), 88.34(12), 1224.93(6)
207.5 *3*	†1.2 *5*	^{191}Tl(5.22 m)	452.6(†100), 470.1(†98), 391.6(†96)
207.6 *2*	82 *5*	^{150}Tm(2.2 s)	1578.9(91), 474.5(86), 594.1(13.6)
207.6 *2*		^{151}Yb(1.6 s)	1578.9
207.6 *3*	3.1 *6*	^{171}Re(15.2 s)	568.4(16.1), 102.0(9.7), 1066.0(8.1)
207.6 *5*	†1.25 *21*	^{183}Hg(9.4 s)	60.5(†100), 159.91(†21), 172.70(†17)
207.61	1.086 *24*	^{145}Ce(3.01 m)	724.33(59), 62.54(13.33), 1148.03(9.15)
207.614 *16*	2.40 *5*	^{144}Ba(11.5 s)	103.855(23.30), 430.48(18.3), 172.828(15.4)
207.7 *1*	0.050 *7*	^{151}Nd(12.44 m)	116.80(43.4), 255.68(16.4), 1180.89(14.8)
207.710 *3*	2.75 *14*	^{149}Pr(2.26 m)	138.447(11.0), 165.087(9.9), 108.520(9.5)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
• 207.71 *15*	0.0044 *13*	^{152}Eu(13.542 y)	121.7824(28.4), 1408.011(20.87), 964.131(14.34)
• 207.713 *3*	0.431 *14*	^{169}Lu(34.06 h)	960.622(23.4), 191.2137(20.6), 1449.74(9.92)
207.74 *20*	†19.5 *10*	^{193}Tl(21.6 m)	324.37(†100), 1044.7(†59), 676.10(†48)
207.8 *3*	>0.06	^{88}Br(16.5 s)	775.28(63), 802.14(13.13), 1440.69(4.72)
207.8 *2*	1.17 *22*	^{105}Mo(35.6 s)	85.4(25.0), 76.50(19.3), 147.8(14.8)
207.8 *5*	†60 *5*	^{119}Xe(5.8 m)	231.8(†100), 98.5(†95), 461.5(†91)
207.8 *3*		^{122}Ba(1.95 m)	550.7, 388.7, 231.0
207.80	0.0011 *3*	^{123}I(13.27 h)	158.97(83), 528.96(1.39), 440.02(0.428)
207.8 *2*	†8.9×10^{2} *22*	^{158}Er(2.29 h)	71.91(†23300), 386.84(†111000), 248.58(†42000)
207.801 *5*	4.9 *3*	^{167}Ho(3.1 h)	346.547(56), 321.336(23.5), 237.873(5.0)
• 207.801 *5*	41 *6*	^{167}Tm(9.25 d)	57.0723(4.6), 531.54(1.6), 264.9(>0.07)
207.81 *7*	0.107 *6*	^{121}I(2.12 h)	212.189(84), 532.08(6.07), 598.74(1.47)
• 207.849 *5*	0.0080 *16*	^{188}W(69.4 d)	290.669(0.402), 227.083(0.221), 63.582(0.109)
207.852 *20*	0.063 *16*	^{227}Fr(2.47 m)	90.035(39), 585.804(29.5), 64.267(14.5)
207.9 *2*	0.082 *9*	^{86}Zr(16.5 h)	242.80(96), 29.10(21.6), 612.00(5.7)
207.9 *1*	0.47 *10*	^{129}La(11.6 m)	278.6(25), 110.5(16.9), 457.0(8.0)
207.91 *8*	0.56 *7*	^{186}Ir(16.64 h)	296.911(64.0), 137.155(42), 434.849(34.4)
207.91 *6*	1.01 *18*	^{190}Re(3.1 m)	186.718(48.4), 557.972(28.2), 223.811(26.0)
207.91 *6*	0.13 *4*	^{190}Re(3.1 m)	186.718(48.4), 557.972(28.2), 223.811(26.0)
207.91 *6*	0.40 *14*	^{190}Re(3.2 h)	186.718(27.8), 605.24(14.9), 557.972(14.3)
207.91 *6*	0.14 *6*	^{190}Re(3.2 h)	186.718(27.8), 605.24(14.9), 557.972(14.3)
• 207.91 *6*	1.19 *16*	^{190}Ir(11.78 d)	186.718(52.4), 605.24(39.9), 518.55(34.0)
• 207.91 *6*	0.34 *11*	^{190}Ir(11.78 d)	186.718(52.4), 605.24(39.9), 518.55(34.0)
208.0 *2*	†23 *3*	^{109}Tc(0.87 s)	194.6(†100), 128.7(†51), 96.2(†48)
208.0 *4*	0.16 *4*	^{127}Sn(2.10 h)	1114.3(39), 1095.6(20), 823.1(10.9)
208.0 *3*		^{187}Pb(15.2 s)	275.5, 67.4
• 208.00 *1*	21.14 *23*	^{237}U(6.75 d)	59.537(34.5), 26.345(2.43), 164.61(1.852)
• 208.00 *1*	†7.91×10^{6} *4*	^{241}Am(432.2 y)	59.537(†60), 26.345(†1000×10^{9}), 33.195(†6000×10^{8})
• 208.079 *4*	0.241 *3*	^{125}Sb(2.7582 y)	427.875(30), 600.600(17.86), 635.954(11.31)
208.08 *3*	†254 *21*	^{164}Tm(2.0 m)	91.40(†1500), 1154.66(†366), 768.91(†279)
208.08 *3*	14.6 *4*	^{164}Tm(5.1 m)	314.97(10), 240.49(7.5), 547.17(4.44)
• 208.089 *2*	0.231 *13*	^{155}Tb(5.32 d)	86.545(32.0), 105.305(25), 180.103(7.45)
208.1 *3*	3.4	^{170}Hf(16.01 h)	164.78(33), 620.7(23), 120.17(19)
208.1		^{170}Hf(16.01 h)	164.78(33), 620.7(23), 120.17(19)
208.1 *2*	†25 *3*	^{206}Rn(5.67 m)	497.7(†100), 324.5(†96), 386.6(†61)
• 208.11 *7*	0.60 *4*	^{153}Tb(2.34 d)	212.038(31.0), 170.504(6.8), 109.758(6.4)
208.120 *8*	0.019 *7*	^{163}Tb(19.5 m)	351.138(26), 389.734(24.3), 494.534(23)
208.147 *9*	2.546 *10*	^{149}Nd(1.728 h)	211.309(25.9), 114.314(19.2), 270.166(10.7)
208.16 *13*	7.9 *6*	^{102}Sr(69 ms)	243.80(53), 150.15(18.0), 93.89(13.4)
• 208.171 *2*	0.00229 *3*	^{233}U(1.592×10^{5} y)	42.44(0.0862), 97.134(0.020), 54.699(0.0182)
208.2 *2*	0.53 *12*	^{126}Ba(100 m)	233.6(19.6), 257.6(7.6), 241.0(6.0)
• 208.20597 *18*	8.732 *12*	^{199}Au(3.139 d)	158.37947(40.0), 49.82680(0.360)
208.20597 *11*	12.3 *6*	^{199}Tl(7.42 h)	455.46(12.4), 247.26(9.3), 158.37947(4.96)
• 208.262 *25*	0.62 *5*	^{182}Re(64.0 h)	229.3220(26), 67.75001(22.2), 1121.3007(22.0)
• 208.283 *21*	0.00146 *9*	^{149}Pm(53.08 h)	285.95(3.1), 859.46(0.109), 590.88(0.069)
• 208.283 *21*	0.0121 *8*	^{149}Eu(93.1 d)	327.526(4.03), 277.089(3.56), 22.510(2.32)
208.295 *16*	0.14 *8*	^{179}Re(19.5 m)	430.221(28), 289.968(26.9), 1680.244(13.0)
208.30 *9*	1.94 *12*	^{83}Se(22.3 m)	356.687(70), 510.17(43), 224.8(32.7)
208.3 *10*		^{175}Pt(2.52 s)	131.4, 76.4
208.35 *2*	1.071 *25*	^{143}Ba(14.33 s)	211.475(25), 798.79(15.6), 980.45(11.55)
• 208.3664 *5*	11.0 *6*	^{177}Lu(6.734 d)	112.9498(6.4), 321.3162(0.219), 249.6741(0.212)
• 208.3664 *5*	57.7 *11*	^{177}Lu(160.4 d)	228.4838(37.0), 378.5029(29.7), 418.5391(21.3)
• 208.3664 *5*	0.94 *8*	^{177}Ta(56.56 h)	112.9498(7.2), 1057.8(0.29), 745.9(0.207)
208.4		^{70}Cu(4.5 s)	884.9(54), 1876(2.2), 1654.1

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
208.4		^{70}Cu(47 s)	884.9(100), 901.7(87), 1251.7(57)
208.41 *2*	1.61 *8*	^{155}Ho(48 m)	240.19(12.5), 136.30(5.00), 45.38(5)
208.43 *11*	0.0007 *3*	^{187}W(23.72 h)	685.774(27.3), 479.531(21.8), 72.001(11.14)
208.462 *9*		^{131}Sn(56.0 s)	3267.5, 2470.5, 2039.25
208.462 *9*	†1.4 *5*	^{131}Sn(56.0 s)	1226.03(†100), 450.03(†90), 798.50(†86)
• 208.48 *10*	0.77 *5*	^{79}Kr(35.04 h)	261.29(13), 397.54(9.3), 606.09(8.12)
208.5 *1*	2.70 *12*	^{101}Zr(2.1 s)	119.3(10.8), 205.6(6.0), 912.2(3.48)
208.5 *2*	0.16 *4*	^{146}Ba(2.22 s)	140.7(20.2), 251.2(19.6), 121.2(14.2)
208.5 *5*	0.065 *22*	^{165}Yb(9.9 m)	80.11(49), 68.86(9.1), 1090.28(4.4)
208.509 *8*	3.03 *8*	^{131}La(59 m)	108.081(25.0), 417.783(18.0), 365.162(16.9)
208.52 *2*	2.60 *8*	^{118}In(4.45 m)	1229.68(96), 1050.69(81.0), 683.08(54.3)
208.583 *14*	0.0246 *21*	^{155}Dy(9.9 h)	226.918(68.4), 184.564(3.37), 1089.8(>2.8)
• 208.6 *3*	0.50 *20*	^{126}Sb(12.46 d)	695.03(100), 666.331(100), 414.81(83.3)
• 208.614 *3*	0.058 *13*	^{155}Tb(5.32 d)	86.545(32.0), 105.305(25), 180.103(7.45)
208.621 *11*	0.147 *14*	^{157}Eu(15.18 h)	63.929(23.0), 410.723(17.5), 370.509(11.0)
208.65 *10*	3.7 *4*	^{166}Lu(2.65 m)	228.12(77.3), 337.50(41), 367.95(31.4)
208.68 *14*	0.119 *14*	^{187}Au(8.4 m)	1331.81(7.0), 1408.23(3.06), 914.73(3.02)
208.70 *6*	†2.7×10^{3} *3*	^{157}Ho(12.6 m)	279.97(†47600), 341.16(†37000), 193.41(†15200)
208.7 *4*	0.17 *8*	^{167}Ho(3.1 h)	346.547(56), 321.336(23.5), 237.873(5.0)
• 208.78	>0.0006	^{173}Lu(1.37 y)	272.105(21.2), 78.63(11.87), 100.724(5.24)
208.8 *3*	0.11 *3*	^{120}Xe(40 m)	25.1(30), 72.6(9), 178.1(6.8)
208.802 *14*	†0.284 *22*	^{153}Pm(5.4 m)	35.842(†100), 127.298(†75), 28.309(†34.6)
• 208.8057 *6*	0.595 *24*	^{183}Ta(5.1 d)	246.0591(27), 353.9912(11.2), 107.9322(11.0)
• 208.8057 *6*	2.95 *5*	^{183}Re(70.0 d)	162.3219(23.3), 46.4839(7.97), 291.7238(3.05)
208.82 *9*	†0.67 *5*	^{184}Ir(3.09 h)	263.97(†100), 119.80(†45), 390.38(†38)
208.89 *4*	1.32 *14*	^{105}Tc(7.6 m)	143.26(16), 107.945(14.1), 321.50(11.1)
208.9	0.13	^{147}Ba(0.893 s)	167.4(11), 105.2(4.8), 196.1(4.8)
208.90 *18*	6.1 *15*	^{194}Tl(32.8 m)	636.5(99), 428.0(99), 748.9(76)
• 208.951 *10*	0.115 *5*	^{67}Cu(61.83 h)	184.577(48.7), 93.311(16.1), 91.266(7.0)
• 208.951 *10*	2.40 *7*	^{67}Ga(3.2612 d)	93.311(39.2), 184.577(21.2), 300.219(16.80)
208.96 *5*	0.180 *5*	^{129}Te(69.6 m)	27.81(16.3), 459.60(7.70), 487.39(1.42)
• 208.96 *5*	2.8×10^{-5} *5*	^{129}Te(33.6 d)	695.88(2.988), 729.57(0.70), 556.65(0.118)
208.98 *6*	0.94 *3*	^{77}Ge(11.30 h)	264.44(54), 211.03(30.8), 215.50(28.6)
• 208.99 *1*	1.73 *11*	^{151}Pm(28.40 h)	340.08(23), 167.75(8.3), 275.21(6.8)
209.0		^{147}Cs(0.225 s)	85.2(7.3), 245.8(4.5), 109.7(4.5)
209.0 *2*	0.017 *9*	^{157}Eu(15.18 h)	63.929(23.0), 410.723(17.5), 370.509(11.0)
209	2.8 *10*	^{227}U(1.1 m)	247(20), 310(3.6), 259(3.0)
• 209.03 *8*	0.136 *24*	^{191}Pt(2.9 d)	538.90(13.7), 409.44(8.0), 359.90(6.0)
209.1		^{130}Ce(25 m)	1072.6(†100), 997.7(†100), 920.5(†100)
209.10 *52*	0.136 *14*	^{142}Cs(1.70 s)	359.598(27.2), 1326.46(12.92), 966.89(9.0)
209.1	0.14 *3*	^{146}Ba(2.22 s)	140.7(20.2), 251.2(19.6), 121.2(14.2)
• 209.19 *5*	0.016 *2*	^{237}Np(2.14×10^{6} y)	29.374(15.0), 86.477(12.4), 94.66(0.6)
• 209.2 *1*		^{147}Gd(38.06 h)	229.32(63), 396.00(34.3), 929.01(20.2)
209.20 *19*	0.031 *10*	^{168}Ho(2.99 m)	741.356(36.6), 821.164(34.5), 815.990(18.6)
209.2 *1*	†2.9 *3*	^{171}Ta(23.3 m)	49.6(†100), 506.4(†54), 501.8(†22.6)
209.25 *12*	0.45 *4*	^{187}Au(8.4 m)	1331.81(7.0), 1408.23(3.06), 914.73(3.02)
209.253 *6*	3.88 *11*	^{228}Ac(6.15 h)	911.205(26.6), 968.971(16.2), 338.322(11.3)
209.253 *6*	1.74 *16*	^{228}Pa(22 h)	911.205(4.19), 463.005(1.250), 964.770(4.25)
• 209.253 *6*	1.1×10^{-5} *3*	^{232}U(68.9 y)	57.762(0.200), 129.065(0.0686), 270.243(0.00316)
209.269 *27*	0.32 *3*	^{131}La(59 m)	108.081(25.0), 417.783(18.0), 365.162(16.9)
209.3 *2*	†0.62 *15*	^{152}Tb(17.5 h)	344.281(†1500), 586.294(†223), 271.135(†203)
209.3 *3*	0.6	^{170}Hf(16.01 h)	164.78(33), 620.7(23), 120.17(19)
209.32 *8*	1.60 *16*	^{184}Pt(17.3 m)	154.90(31), 191.97(27), 548.36(23.1)
209.36 *2*	0.061 *14*	^{150}Pm(2.68 h)	333.971(68), 1324.51(17.5), 1165.739(15.8)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
209.36 *2*	0.022 *3*	^{150}Eu(12.8 h)	333.971(4.0), 406.52(2.81), 1165.739(0.257)
209.36 *3*	0.95 *20*	^{161}Er(3.21 h)	826.6(3.0), 211.15(12.2), 592.6(3.7)
• 209.4 *4*	0.0025 *5*	^{154}Eu(8.593 y)	123.071(40.79), 1274.436(35.19), 723.304(20.22)
209.40 *15*	†2.6 *8*	^{163}Lu(238 s)	163.08(†100), 54.00(†88), 396.34(†63)
• 209.42 *3*	0.49 *5*	^{182}Re(64.0 h)	229.3220(26), 67.75001(22.2), 1121.3007(22.0)
• 209.49 *19*	0.0044 *13*	^{152}Eu(13.542 y)	344.281(26.58), 778.91(12.96), 411.115(2.231)
209.5 *3*	2.22 *13*	^{97}Pd(3.10 m)	265.26(56), 475.2(26.7), 792.70(13.8)
209.5 *2*	0.204 *23*	^{123}Cs(5.94 m)	97.3(23), 596.7(10.1), 83.3(4.1)
209.5 *2*	5.69 *25*	^{151}Ho(35.2 s)	527.4(63), 775.53(9.2), 1549.7(4.6)
209.5 *3*	0.24 *3*	^{204}At(9.2 m)	684.341(95), 516.318(90), 426.253(67.5)
209.58 *7*	0.78 *6*	^{167}Lu(51.5 m)	29.66(14.4), 239.22(8.6), 213.19(3.6)
209.6 *2*	0.10	^{227}Ra(42.2 m)	27.36(16), 300.07(4.6), 302.65(4.3)
209.65 *7*	1.80 *18*	^{139}Nd(5.50 h)	113.94(40), 737.96(35), 982.2(26.4)
209.7 *2*	0.06	^{76}Br(16.2 h)	559.101(74), 657.041(15.9), 1853.67(14.7)
209.70 *25*	0.0010 *5*	^{165}Dy(2.334 h)	94.700(3.58), 361.68(0.84), 633.415(0.568)
• 209.753 *2*	3.42 *5*	^{239}Np(2.3565 d)	106.125(27.2), 277.599(14.38), 228.183(10.76)
209.753 *2*	3.50 *20*	^{239}Am(11.9 h)	277.599(15.0), 228.183(11.3), 226.378(3.30)
• 209.753 *2*	3.29 *10*	^{243}Cm(29.1 y)	277.599(14.0), 228.183(10.6), 285.460(0.728)
209.78 *10*	†9.8 *14*	^{224}Rn(107 m)	260.581(†100), 265.806(†93), 202.21(†21.9)
209.79 *3*	1.48 *7*	^{157}Pm(10.56 s)	160.61(35), 188.052(13.5), 571.27(5.39)
209.80 *23*	0.396 *16*	^{86}Y(14.74 h)	1076.64(83), 627.72(32.6), 1153.01(30.5)
209.8 *3*	†393 *71*	^{177}Re(14 m)	196.85(†1200), 79.65(†1010), 84.3(†890)
209.841 *20*	0.63 *8*	^{204}Po(3.53 h)	883.984(29.9), 270.068(27.8), 1016.31(24.1)
• 209.8661 *7*	4.48 *11*	^{183}Ta(5.1 d)	246.0591(27), 353.9912(11.2), 107.9322(11.0)
• 209.8661 *7*	0.261 *7*	^{183}Re(70.0 d)	162.3219(23.3), 46.4839(7.97), 291.7238(3.05)
• 209.90 *20*	0.0074 *7*	^{170}Lu(2.00 d)	84.2551(4.256), 1280.25(3.450), 2041.88(1.434)
209.9 *4*	†1.31×10^3 *15*	^{234}Pa(1.17 m)	1001.03(†837000), 766.38(†294000), 742.81(†80000)
209.92 *2*	0.006 *4*	^{167}Yb(17.5 m)	113.34(55.3), 106.18(22.5), 176.25(21)
209.98 *25*	0.017 *12*	^{44}K(22.13 m)	1157.031(58), 2150.76(22.7), 2518.95(9.69)
210.0 *6*	0.09 *5*	^{74}Kr(11.50 m)	89.65(31), 203.0(18.0), 296.67(9.9)
210.0	†50	^{163}Ta(10.6 s)	396.0(†100), 451.1(†70), 448.7(†60)
210.0 *15*	†12.0 *35*	^{182}Pt(2.6 m)	136.0(†100.0), 146.0(†15.4), 186.0(†7.0)
210.0 *8*	0.38	^{228}Pa(22 h)	911.205(4.19), 463.005(1.250), 964.770(4.25)
• 210.0 *2*	0.000015	^{242}Cm(162.8 d)	44.08(0.0325), 101.90(0.0025), 157.42(0.0014)
210.05 *20*	0.129 *16*	^{99}Sr(0.269 s)	125.118(16.1), 536.12(14.0), 1198.12(9.2)
• 210.053 *7*	0.838 *18*	^{165}Tm(30.06 h)	242.917(35.5), 47.155(16.9), 297.369(12.71)
210.1 *2*	0.73 *7*	^{121}Cs(155 s)	153.9(15.2), 239.6(7.7), 427.1(3.63)
210.1 *2*	0.22 *5*	^{121}Cs(122 s)	179.4(30.2), 196.0(24.1), 459.7(12.0)
210.10 *4*	0.59 *5*	^{191}Au(3.18 h)	586.45(17), 277.88(7.2), 674.19(6.8)
210.14 *13*	0.298 *14*	^{144}Ba(11.5 s)	103.855(23.30), 430.48(18.3), 172.828(15.4)
• 210.15 *8*	0.19 *4*	^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
210.16 *5*	0.007	^{171}Er(7.516 h)	308.31(64.4), 295.901(28.9), 111.621(20.5)
210.2	0.013	^{135}Ce(17.7 h)	265.56(41.8), 300.07(23.5), 606.76(18.8)
• 210.2	0.0046	^{177}Ta(56.56 h)	112.9498(7.2), 208.3664(0.94), 1057.8(0.29)
210.21 *27*	6.8 *4*	^{103}Tc(54.2 s)	346.380(17.5), 136.079(16.6), 562.90(7.0)
210.21 *10*	3.12 *20*	^{121}Cd(13.5 s)	324.976(49.5), 1040.26(16.8), 349.937(12.9)
• 210.28 *3*	0.088 *7*	^{172}Lu(6.70 d)	1093.657(62.5), 900.724(29.8), 181.528(20.6)
• 210.3 *3*	0.020 *5*	^{131}Te(30 h)	773.67(49.9), 852.21(27.0), 793.75(18.10)
210.3 *3*	1.82 *21*	^{186}Pt(2.0 h)	276.7(0), 611.5(6.0), 635.6(>3.8)
• 210.39 *8*	1.55 *9*	^{153}Tb(2.34 d)	212.038(31.0), 170.504(6.8), 109.758(6.4)
• 210.4 *1*		^{147}Gd(38.06 h)	229.32(63), 396.00(34.3), 929.01(20.2)
210.4 *1*	†13.1 *13*	^{185}Hg(21.6 s)	222.8(†100.0), 258.7(†98), 212.5(†58)
210.418 *21*	0.075 *3*	^{125}Xe(16.9 h)	188.418(54), 243.378(30.1), 54.968(6.81)
210.46 *6*	4.95 *22*	^{146}Ce(13.52 m)	316.74(56), 218.23(20.8), 264.56(9.0)

• $t_{1/2}$>1 d

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
210.465 *16*	22.3 *9*	^{134}Te(41.8 m)	767.20(29.0), 277.951(20.9), 79.445(20.9)
210.5 *3*	0.14	^{101}Cd(1.2 m)	98.0(47), 1722.5(11), 1259.3(8)
210.5 *2*	2.2	^{104}Zr(1.2 s)	100.9(6), 504.7(5), 445.0(5)
210.5 *5*	†167 *48*	^{157}Ho(12.6 m)	279.97(†47600), 341.16(†37000), 193.41(†15200)
210.54 *6*	0.0050 *12*	^{133}La(3.912 h)	278.835(2.50), 302.353(1.648), 290.06(1.413)
210.55 *13*	3.6 *9*	^{190}Pb(1.2 m)	942.20(34), 151.19(8.92), 598.3(8.0)
210.60 *3*	0.642 *19*	^{171}Er(7.516 h)	308.31(64.4), 295.901(28.9), 111.621(20.5)
210.6 *1*	0.21 *3*	^{184}Pt(17.3 m)	154.90(31), 191.97(27), 548.36(23.1)
210.60 *5*	0.0093 *3*	^{223}Fr(21.8 m)	50.13(36.0), 79.72(9.1), 234.81(3.0)
210.6 *2*	0.035	^{233}Th(22.3 m)	86.477(2.7), 29.374(2.5), 459.222(1.4)
• 210.6 *2*	0.0066 *19*	^{245}Cm(8500 y)	174.94(10), 132.99(2.77), 41.95(0.350)
210.6 *3*	0.00030 *4*	^{255}Fm(20.07 h)	81.477(0.81), 58.477(0.67), 80.92(0.27)
210.64 *5*	3.1 *4*	^{103}Tc(54.2 s)	346.380(17.5), 136.079(16.6), 562.90(7.0)
• 210.65 *5*	†73 *14*	^{227}Th(18.72 d)	235.971(†813), 50.13(†528), 256.25(†463)
210.66 *19*	0.0013 *7*	^{129}Te(69.6 m)	27.81(16.3), 459.60(7.70), 487.39(1.42)
• 210.67 *5*	0.041 *14*	^{206}Po(8.8 d)	1032.26(32.9), 511.36(24.1), 286.410(23.8)
210.68 *8*	0.42 *4*	^{162}Yb(18.87 m)	163.35(40.0), 118.70(33.6), 576.10(3.24)
• 210.7 *5*	0.010 *5*	^{158}Tb(180 y)	944.09(44), 962.06(20.3), 79.5104(11.6)
210.7 *2*	†1.5 *7*	^{192}Bi(37 s)	853.8(†100.0), 501.8(†80), 504.3(†39)
210.8 *3*	0.072 *18*	^{120}Xe(40 m)	25.1(30), 72.6(9), 178.1(6.8)
210.8 *4*	†61 *6*	^{121}Ba(29.7 s)	111.6(†100), 99.2(†86), 110.6(†39)
210.8 *3*	0.0203 *5*	^{159}Gd(18.479 h)	363.55(11.4), 58.00(2.15), 348.16(0.234)
• 210.8 *3*	0.00004 *2*	^{159}Dy(144.4 d)	58.00(2.22), 348.16(0.00095), 79.45(0.00048)
210.8 *4*	0.033 *16*	^{185}Au(4.25 m)	310.6(13), 243.1(6.6), 77.7(6)
210.853 *3*	†8.5 *7*	^{225}Fr(4.0 m)	182.3(†100), 31.50(†91), 225.1(†55)
• 210.853 *3*	2.8 *3*	^{229}Th(7340 y)	193.509(4.4), 86.40(2.57), 86.25(1.33)
210.9 *1*	1.10 *8*	^{143}Gd(112 s)	271.94(84), 588.00(15.7), 798.89(10.7)
210.9 *7*		^{144}Cs(1.01 s)	199.326(†100.0), 639.00(†21.2), 758.96(†20.6)
210.9 *2*	†6.3 *10*	^{181}Hg(3.6 s)	147.8(†100), 42.5(†25), 1986.7(†17)
210.92 *12*	0.16 *6*	^{181}Os(105 m)	238.75(44), 826.77(20), 118.03(12.9)
211		^{202}Rn(9.85 s)	
211		^{256}Es(7.6 h)	861.8(†100), 231.1(†61), 172.6(†49)
211.03 *3*	30.8 *9*	^{77}Ge(11.30 h)	264.44(54), 215.50(28.6), 416.33(21.8)
211.05 *5*	74 *1*	^{164}Ta(14.2 s)	376.8(22), 605.0(14), 862.0(10.0)
211.09 *5*	†17.2 *16*	^{229}U(58 m)	122.51(†100), 88.43(†88), 198.83(†88)
211.10 *20*	†20 *10*	^{161}Lu(77 s)	110.78(†100), 100.32(†95), 43.7(†70)
211.108 *15*	6.1 *6*	^{164}Tb(3.0 m)	168.838(25.4), 754.80(23.3), 215.07(21)
211.15 *3*	12.2 *5*	^{161}Er(3.21 h)	826.6(3.0), 592.6(3.7), 314.77(2.49)
211.2 *1*	†50 *5*	^{185}Hg(21.6 s)	222.8(†100.0), 258.7(†98), 212.5(†58)
211.2 *3*		^{204}Bi(11.22 h)	899.15(98), 374.72(82), 984.02(59)
211.2 *2*	†4.6	^{256}Es(7.6 h)	861.8(†100), 231.1(†61), 172.6(†49)
211.23 *10*	0.20 *3*	^{183}Ir(58 m)	392.52(10.4), 228.70(6.9), 87.67(5.6)
• 211.26 *4*	0.0138 *22*	^{189}Re(24.3 h)	216.663(5.50), 219.395(4.54), 245.09(3.5)
211.3	0.25	^{195}Ir(3.8 h)	98.85(10), 684.88(9.4), 432.86(9)
211.3 *2*	0.019	^{233}Th(22.3 m)	86.477(2.7), 29.374(2.5), 459.222(1.4)
211.309 *7*	25.9 *10*	^{149}Nd(1.728 h)	114.314(19.2), 270.166(10.7), 654.831(8.0)
211.36 *8*	0.075 *12*	^{151}Nd(12.44 m)	116.80(43.4), 255.68(16.4), 1180.89(14.8)
211.4 *5*	0.15 *7*	^{98}Sr(0.653 s)	119.353(73), 444.628(39), 428.4(31)
211.4 *3*	†2.0	^{149}Ce(5.3 s)	57.7(†100), 380.0(†33.7), 86.4(†20.2)
211.40 *15*	0.178 *20*	^{208}Tl(3.053 m)	2614.533(99), 583.191(84.5), 510.77(22.6)
211.407 *2*	2.4	^{195}Ir(2.5 h)	98.85(10), 30.898(1.3), 129.70(1.2)
211.407 *2*	1.9	^{195}Ir(3.8 h)	98.85(10), 684.88(9.4), 432.86(9)
• 211.407 *2*	0.0109 *11*	^{195}Au(186.09 d)	98.85(10.9), 129.70(0.817), 30.898(0.75)
211.46 *3*	0.0472 *18*	^{145}Ce(3.01 m)	724.33(59), 62.54(13.33), 1148.03(9.15)

• $t_{1/2}$>1 d

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
211.475 *7*	25	^{143}Ba(14.33 s)	798.79(15.6), 980.45(11.55), 1010.29(9.54)
211.48 *10*	1.17 *23*	^{159}Er(36 m)	624.5(33), 649.1(23.4), 205.92(9.7)
211.5 *4*	0.12 *4*	^{127}Sn(2.10 h)	1114.3(39), 1095.6(20), 823.1(10.9)
211.55	72 *7*	^{40}S(8.8 s)	431.5(37), 888.4(36), 676.8(27)
211.57 *5*	0.082 *3*	^{127}Cs(6.25 h)	411.95(62.8), 124.70(11.37), 462.31(5.07)
211.6 *4*	4	^{124}Ba(11.9 m)	169.3(20), 1216(12), 188.98(10)
211.6 *5*	0.16 *5*	^{136}Nd(50.65 m)	108.90(32), 40.2(18.9), 574.8(10.4)
211.65 *6*	0.274 *20*	^{133}Ce(4.9 h)	477.22(39), 510.36(20.7), 58.39(19.2)
211.66 *3*	3.8	^{102}Mo(11.3 m)	148.19(3.76), 223.83(1.44), 359.9(0.27)
211.7 *2*	†77.7 *15*	^{111}Ru(2.12 s)	303.8(†100), 382.0(†41.3), 1515.9(†28)
211.7 *3*	†31.0 *15*	^{113}Ru(0.80 s)	263.2(†100), 337.5(†27.9), 657.9(†24.0)
211.7 *4*	†3.9 *9*	^{142}Xe(1.22 s)	571.83(†100), 657.05(†79), 538.24(†77)
211.7	0.8	^{147}Ba(0.893 s)	167.4(11), 105.2(4.8), 196.1(4.8)
211.7 *3*	0.09 *3*	^{181}Re(19.9 h)	365.57(56), 360.70(20), 639.30(6.4)
211.7 *4*	>0.11	^{209}Rn(28.5 m)	408.32(50.3), 745.78(22.8), 337.45(14.5)
211.76 *7*	1.20 *13*	^{184}Pt(17.3 m)	154.90(31), 191.97(27), 548.36(23.1)
211.8 *4*	†2.5 *5*	^{136}Eu(3.3 s)	254.9(†100), 431.4(†34), 458.0(†20)
211.8	0.26	^{157}Er(18.65 m)	53.05(24), 391.32(14.2), 121.57(10.1)
211.8 *1*	†10.0 *3*	^{230}Ra(93 m)	72.0(†100), 63.0(†35.4), 202.8(†27.3)
• 211.80 *10*	0.096 *10*	^{254}Es(39.3 h)	177.30(0.056), 71.30(0.043), 104.0(0.0102)
211.81 *40*	0.06 *4*	^{174}Ta(1.05 h)	206.50(58), 91.00(16.0), 1205.92(4.9)
211.884 *3*	0.65 *11*	^{109}Rh(80 s)	326.868(54), 426.135(7.7), 178.034(7.6)
211.887 *20*	2.3 *3*	^{140}Xe(13.60 s)	805.52(20), 1413.66(12.2), 1315.05(8.2)
• 211.9 *4*	0.015 *5*	^{131}Te(30 h)	773.67(49.9), 852.21(27.0), 793.75(18.10)
211.9 *3*		^{147}La(4.015 s)	117.718(12), 186.320(6.48), 438.30(5.04)
211.92 *7*	0.75 *15*	^{202}Pb(3.53 h)	490.47(9.1), 459.72(8.6), 389.94(6.2)
211.96 *15*	0.0086 *15*	^{187}Ir(10.5 h)	912.95(4.79), 427.12(4.12), 400.89(3.94)
212.0 *4*	0.51 *6*	^{101}Mo(14.61 m)	191.92(19), 590.91(16.4), 1012.47(12.8)
212.00 *10*	1.24 *18*	^{159}Tm(9.13 m)	38.35(5.8), 84.8(5.8), 271.30(5.1)
212.0	0.18 *9*	^{225}Th(8.72 m)	321.4(23), 246.0(5.06), 359.0(4.1)
212.01 *7*	3.59 *18*	^{205}Po(1.66 h)	872.39(37), 1001.21(28.8), 849.83(25.5)
• 212.038 *15*	31.0 *16*	^{153}Tb(2.34 d)	170.504(6.8), 109.758(6.4), 102.263(6.0)
212.050 *25*	0.061 *9*	^{157}Eu(15.18 h)	63.929(23.0), 410.723(17.5), 370.509(11.0)
212.06 *7*	†2.75 *19*	^{184}Ir(3.09 h)	263.97(†100), 119.80(†45), 390.38(†38)
212.140 *8*	0.68 *14*	^{163}Tb(19.5 m)	351.138(26), 389.734(24.3), 494.534(23)
212.189 *27*	84	^{121}I(2.12 h)	532.08(6.07), 598.74(1.47), 475.28(1.02)
212.2 *1*	0.171 *17*	^{142}Gd(70.2 s)	750.2(11.2), 178.90(11.20), 284.4(6.16)
212.29 *5*	0.0015	^{233}Th(22.3 m)	86.477(2.7), 29.374(2.5), 459.222(1.4)
• 212.29 *5*	0.155 *10*	^{237}Np(2.14×10^6 y)	29.374(15.0), 86.477(12.4), 94.66(0.6)
212.3 *5*	0.73 *24*	^{108}Tc(5.17 s)	242.25(82), 465.6(14.3), 707.81(11.4)
212.3 *3*	†0.9 *5*	^{171}Hf(12.1 h)	122.0(†100), 662.2(†83), 347.18(†47)
212.3 *5*	0.0015 *3*	^{240}U(14.1 h)	44.10(1.05), 189.7(0.24), 66.5(0.154)
212.32 *10*	0.13 *2*	^{126}In(1.60 s)	1141.11(55.9), 3344.61(21.6), 969.61(14.9)
212.32 *10*	0.61 *7*	^{126}In(1.64 s)	1141.11(100), 908.58(99), 111.79(88)
212.32 *8*	0.175 *14*	^{138}Cs(33.41 m)	1435.795(76.3), 462.796(30.7), 1009.78(29.8)
212.32 *8*	0.53 *10*	^{138}Cs(2.91 m)	1435.795(19), 462.796(18.6), 191.96(15.4)
• 212.34 *5*	0.000126 *19*	^{233}U(1.592×10^5 y)	42.44(0.0862), 97.134(0.020), 54.699(0.0182)
212.4 *2*	0.44 *14*	^{105}Tc(7.6 m)	143.26(16), 107.945(14.1), 321.50(11.1)
• 212.40 *15*	0.00138 *24*	^{147}Eu(24.1 d)	197.299(27), 121.220(22.9), 677.516(9.8)
212.4 *3*	1.15 *12*	^{166}Lu(2.65 m)	228.12(77.3), 337.50(41), 367.95(31.4)
• 212.46 *5*	0.000029 *3*	^{240}Pu(6563 y)	45.242(0.0450), 104.234(0.00708), 160.308(0.000402)
212.5 *2*	88 *9*	^{132}Pm(6.3 s)	397.2(23), 610.4(12.3), 823.5(11.4)
212.5 *1*	0.11 *3*	^{184}Pt(17.3 m)	154.90(31), 191.97(27), 548.36(23.1)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
212.5 *1*	†58 *5*	^{185}Hg(21.6 s)	222.8(†100.0), 258.7(†98), 190.1(†52)
212.5 *6*	0.27	^{203}Bi(11.76 h)	820.3(30), 825.2(14.6), 896.9(13)
212.531 *9*	73 *4*	^{100}Y(735 ms)	118.59(15.4), 665.98(7.7), 616.67(6.9)
212.531 *9*	†100	^{100}Y(0.94 s)	351.960(†33), 878.54(†18), 665.98(†13)
212.55 *7*	†11.8 *8*	^{131}Pr(1.53 m)	266.13(†100), 72.82(†64), 387.56(†38)
• 212.569 *15*	0.0196 *6*	^{152}Eu(13.542 y)	121.7824(28.4), 1408.011(20.87), 964.131(14.34)
212.58 *7*	0.10 *3*	^{189}Pt(10.87 h)	721.41(9.3), 94.33(7.6), 568.84(7.1)
212.6 *1*	†12 *2*	^{185}Pt(33.0 m)	229.60(†100), 135.3(†80), 197.4(†74)
212.61 *29*	0.017 *7*	^{200}Pt(12.5 h)	76.21(13), 135.90(3.24), 243.71(2.49)
212.613 *4*	1.00 *5*	^{149}Pr(2.26 m)	138.447(11.0), 165.087(9.9), 108.520(9.5)
212.64 *25*	0.29 *9*	^{122}In(10.3 s)	1140.55(98), 1001.58(50.7), 1190.58(20.5)
212.65 *10*	0.29 *6*	^{204}Bi(11.22 h)	899.15(98), 374.72(82), 984.02(59)
• 212.65 *4*	†4.1 *24*	^{227}Th(18.72 d)	235.971(†813), 50.13(†528), 256.25(†463)
212.70 *2*	0.425 *25*	^{155}Ho(48 m)	240.19(12.5), 136.30(5.00), 45.38(5)
• 212.7 *3*	†1.2 *4*	^{227}Th(18.72 d)	235.971(†813), 50.13(†528), 256.25(†463)
• 212.740 *13*	0.040 *9*	^{156}Tb(5.35 d)	534.318(66.6), 199.2132(40.9), 1222.36(31.00)
212.77 *3*	0.83 *5*	^{161}Er(3.21 h)	826.6(3.0), 211.15(12.2), 592.6(3.7)
212.8 *2*	0.96 *9*	^{74}Kr(11.50 m)	89.65(31), 203.0(18.0), 296.67(9.9)
212.80 *10*	4.4 *5*	^{115}Ag(20.0 m)	229.08(18), 472.70(4.0), 649.10(3.0)
212.8 *3*	0.18 *5*	^{129}In(0.61 s)	2118.0(45), 1865.0(32), 769.3(9.1)
• 212.80 *15*	3.9×10^{-5} *18*	^{161}Tb(6.88 d)	25.65150(23.2), 48.91562(17.0), 74.56711(10.2)
212.80 *15*	0.0009 *3*	^{161}Ho(2.48 h)	25.65150(27), 103.062(3.9), 77.414(1.91)
212.88 *8*	3.2 *3*	^{161}Tm(33 m)	45.54(5.00), 1648.1(9.50), 84.40(9.4)
212.9 *3*	1.1 *3*	^{112}Rh(6.8 s)	348.70(87), 560.5(49), 1098.6(39)
212.9 *4*	0.12 *4*	^{127}Sn(2.10 h)	1114.3(39), 1095.6(20), 823.1(10.9)
212.9		^{238}Pa(2.3 m)	1015.3(†<100), 1014.6(†<100), 635.18(†88)
• 212.94 *6*	0.0210 *13*	^{145}Eu(5.93 d)	893.73(66), 653.512(15.0), 1658.53(14.9)
212.95 *7*	0.73 *9*	^{148}Ba(0.607 s)	56.08(29.20), 133.53(3.88), 415.78(3.59)
213.0 *1*	0.76 *15*	^{96}Sr(1.07 s)	122.297(76.50), 809.401(71.9), 931.7(11.8)
213.0 *2*	3.2	^{104}Zr(1.2 s)	100.9(6), 504.7(5), 445.0(5)
213.0 *2*	0.38 *22*	^{105}Mo(35.6 s)	85.4(25.0), 76.50(19.3), 147.8(14.8)
213.0 *4*	0.083 *21*	^{105}In(5.07 m)	131.37(41), 260.21(15.7), 604.11(9.2)
213.0 *5*	>0.35	^{137}Pm(2.4 m)	177.5(40.29), 108.6(35), 233.6(29.57)
213.0 *3*	0.11 *4*	^{181}Re(19.9 h)	365.57(56), 360.70(20), 639.30(6.4)
213.1 *3*	3.6 *3*	^{192}Pb(3.5 m)	1195.4(47), 608.2(17.9), 167.5(13.6)
213.17 *16*	0.152 *9*	^{103}Tc(54.2 s)	346.380(17.5), 136.079(16.6), 562.90(7.0)
213.19 *4*	3.6 *4*	^{167}Lu(51.5 m)	29.66(14.4), 239.22(8.6), 1267.26(3.25)
213.2	0.35	^{83}Zr(44 s)	55.55(8), 104.97(5.70), 475.1(5.1)
213.3 *2*	4.6 *4*	^{102}Cd(5.5 m)	481.0(63), 1036.6(12.8), 505.1(9.6)
213.3		^{115}Ag(18.0 s)	229.08(†100), 131.52(†77), 388.9(†52)
213.3 *4*	†57 *3*	^{121}La(5.3 s)	139.3(†100), 134.4(†73), 97.8(†57)
213.4 *1*	8.8 *10*	^{119}Ag(2.1 s)	626.4(13), 366.2(12.1), 399.1(10.9)
213.4 *3*	>0.08	^{175}Ta(10.5 h)	207.4(14.0), 348.5(12.0), 266.9(10.8)
213.4 *4*	†10.6 *16*	^{206}Rn(5.67 m)	497.7(†100), 324.5(†96), 386.6(†61)
213.429 *11*	6.7 *4*	^{93}Rb(5.84 s)	432.61(17.4), 986.05(6.8), 1385.21(5.7)
213.429 *11*	$\dagger6\times10^{03}$	^{94}Rb(2.702 s)	432.61(†9000), 986.05(†4100), 709.95(†2500)
213.440 *3*	0.12 *6*	^{178}Lu(28.4 m)	93.180(6.0), 1340.8(3.22), 1310.05(1.40)
213.440 *3*	81.4 *11*	^{178}Lu(23.1 m)	426.383(97.0), 325.562(94.1), 88.867(64.4)
213.440 *3*	0.086 *12*	^{178}Ta(9.31 m)	93.180(1.78), 1350.68(1.18), 1340.8(1.027)
213.440 *3*	81.4 *11*	^{178}Ta(2.36 h)	426.383(97.0), 325.562(94.1), 88.867(64.4)
213.45 *6*	13.0 *13*	^{135}Pr(24 m)	296.12(24), 82.64(13.7), 538.2(8.1)
213.45 *6*		^{135}Pr(24 m)	296.12(24), 82.64(13.7), 213.45(13.0)
213.48 *1*	2.16 *6*	^{133}Te(55.4 m)	912.671(55.28), 647.51(19.4), 863.955(15.6)
213.5 *3*	0.18 *8*	^{126}Ba(100 m)	233.6(19.6), 257.6(7.6), 241.0(6.0)

• $t_{1/2}$>1 d

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
213.5 *3*	0.12 *5*	^{141}Eu(40.0 s)	394.0(9), 384.5(5.6), 382.9(2.97)
• 213.5 *2*		^{147}Gd(38.06 h)	229.32(63), 396.00(34.3), 929.01(20.2)
213.50 *6*	0.42 *8*	^{176}Ta(8.09 h)	1159.28(25), 88.34(12), 1224.93(6)
213.5 *4*	0.0001	^{255}Fm(20.07 h)	81.477(0.81), 58.477(0.67), 80.92(0.27)
213.6 *4*	8.6 *13*	^{73}Kr(27.0 s)	177.8(65.8), 62.5(19.1), 454.8(15)
213.6 *2*	†1.5 *4*	^{158}Ho(11.3 m)	218.21(†100.0), 98.91(†70), 945.7(†37)
213.60 *17*	0.12	^{181}Au(11.4 s)	198.60(4.4), 2022.4(4.2), 79.40(4.2)
213.61 *10*	0.44 *5*	^{208}Rn(24.35 m)	426.78(7.07), 251.05(5.02), 350.026(3.34)
213.65 *15*	0.36 *6*	^{208}At(1.63 h)	686.527(98), 660.040(89), 177.595(48.6)
213.66 *4*	1.32 *14*	^{105}Tc(7.6 m)	143.26(16), 107.945(14.1), 321.50(11.1)
213.7 *2*	†67 *5*	^{202}Po(44.7 m)	688.6(†1000), 316.0(†286), 165.7(†174)
213.754 *5*	10.90 *22*	^{153}Dy(6.4 h)	80.723(11.10), 99.659(10.51), 254.259(8.58)
213.77 *13*	0.65 *4*	^{187}Au(8.4 m)	1331.81(7.0), 1408.23(3.06), 914.73(3.02)
213.806 *4*	0.54 *11*	^{109}Rh(80 s)	326.868(54), 426.135(7.7), 178.034(7.6)
213.81 *10*	96 *3*	^{92}Ru(3.65 m)	259.32(92), 134.57(65.5), 47.46(28)
• 213.87 *6*	0.0088 *24*	^{191}Pt(2.9 d)	538.90(13.7), 409.44(8.0), 359.90(6.0)
213.87 *7*	0.11 *3*	^{207}At(1.80 h)	814.41(44.5), 588.33(19.2), 300.654(12.8)
213.9 *2*	†2.6 *5*	^{131}Sn(56.0 s)	1226.03(†100), 450.03(†90), 798.50(†86)
213.90 *15*	0.18 *7*	^{159}Tm(9.13 m)	38.35(5.8), 84.8(5.8), 271.30(5.1)
213.9 *5*	0.057 *20*	^{179}W(6.40 m)	238.61(0.218), 281.70(0.186), 222.5(0.057)
• 213.936 *17*	0.00290 *21*	^{169}Yb(32.026 d)	63.12077(44.2), 197.95788(35.8), 177.21402(22.16)
213.947 *16*	0.40 *3*	^{149}Nd(1.728 h)	211.309(25.9), 114.314(19.2), 270.166(10.7)
213.948 *22*	4.07 *22*	^{98}Y(0.548 s)	1223.0(36.0), 2941.3(16.7), 1590.9(14.7)
• 213.98 *3*	0.556 *25*	^{131}Te(30 h)	773.67(49.9), 852.21(27.0), 793.75(18.10)
213.99 *8*	0.52 *8*	^{183}Ir(58 m)	392.52(10.4), 228.70(6.9), 87.67(5.6)
214 *1*	4.1 *4*	^{105}Mo(35.6 s)	85.4(25.0), 76.50(19.3), 147.8(14.8)
214.0 *3*		^{122}Ba(1.95 m)	550.7, 388.7, 231.0
214.0 *1*	0.22 *6*	^{133}Te(55.4 m)	912.671(55.28), 647.51(19.4), 863.955(15.6)
214.0 *3*	0.32	^{154}Pm(2.68 m)	184.810(32), 81.99(15.4), 546.66(14.5)
214.0 *2*	11.5 *8*	^{163}Gd(68 s)	287.79(25), 1562.1(9.0), 1684.5(8.0)
214	†1.8	^{177}Os(2.8 m)	84.7(†100), 125.4(†63), 195.8(†61)
• 214	0.2	^{251}Cf(898 y)	176.6(17.7), 227.0(6.3), 285.0(1.4)
• 214.01 *5*	0.045 *9*	^{237}Np(2.14×10^6 y)	29.374(15.0), 86.477(12.4), 94.66(0.6)
214.02 *4*	46	^{172}Ta(36.8 m)	95.23(17.5), 1109.27(12.4), 1330.41(6.76)
214.1 *4*		^{172}W(6.6 m)	38.9(†100), 423.3(†44), 89.8(†33.0)
214.1 *2*	†4.3	^{181}Hg(3.6 s)	147.8(†100), 42.5(†25), 1986.7(†17)
214.1	>0.026	^{195}Tl(1.16 h)	563.52(10.5), 884.47(10.0), 1363.88(8.4)
214.1	>0.013	^{197}Tl(2.84 h)	425.84(12.9), 152.22(7.2), 1411.34(4.5)
214.1 *2*		^{219}Ra(10 ms)	805.2, 592.0, 489
214.13 *6*	0.070 *19*	^{138}Nd(5.04 h)	325.76(2.84), 199.50(0.53), 341.65(0.40)
214.13 *7*	5.9 *9*	^{183}Au(42.0 s)	161.18(9.4), 313.08(5.0), 179.54(4.6)
214.2		^{167}Ta(1.4 m)	296.3, 278.0, 139.5
214.2 *10*		^{181}Hg(3.6 s)	239.8, 158.7, 92.4
• 214.277 *15*	0.194 *4*	^{149}Gd(9.28 d)	149.735(48.2), 298.634(28.6), 346.651(23.9)
214.3 *2*	0.10 *3*	^{97}Rb(169.9 ms)	167.1(26), 585.2(21.0), 600.5(10.6)
214.30 *7*	13.4 *3*	^{129}Ba(2.23 h)	6.545(23.7), 220.83(8.54), 129.14(5.51)
214.30 *7*	†8.71 *16*	^{129}Ba(2.17 h)	182.30(†100), 1459.1(†50.0), 202.38(†33.7)
214.3 *1*	0.053 *14*	^{173}Ta(3.14 h)	172.2(18), 69.70(5.9), 90.3(5.0)
214.3 *1*	0.0018 *3*	^{223}Fr(21.8 m)	50.13(36.0), 79.72(9.1), 234.81(3.0)
• 214.32 *5*	1.11 *8*	^{182}Re(64.0 h)	229.3220(26), 67.75001(22.2), 1121.3007(22.0)
214.335 *3*	11.3 *11*	^{179}Lu(4.59 h)	214.930(0.46), 123.3790(0.45), 337.713(0.181)
214.4	>0.034	^{207}Po(5.80 h)	992.33(59.3), 742.64(28.2), 911.79(16.95)
• 214.4339 *6*	6.59 *16*	^{177}Lu(160.4 d)	208.3664(57.7), 228.4838(37.0), 378.5029(29.7)
214.5 *3*	0.30 *3*	^{76}Kr(14.8 h)	315.7(39), 270.2(21.1), 45.48(19.5)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
214.52 *2*	0.24 *4*	^{145}Cs(0.594 s)	175.36(20), 198.93(10.9), 112.46(10.71)
214.594 *6*	1.01 *5*	^{147}Pr(13.4 m)	77.9921(15), 314.675(13.2), 641.380(10.0)
214.6 *3*	0.58 *8*	^{121}Xe(40.1 m)	252.7(13), 132.8(10.9), 445.2(7.7)
214.6 *1*	0.49 *7*	^{139}Nd(5.50 h)	113.94(40), 737.96(35), 982.2(26.4)
214.66 *5*	0.212 *16*	^{107}Ru(3.75 m)	194.05(9.9), 847.93(5.3), 462.61(3.66)
214.7 *3*	†1.2 *5*	^{131}Pr(1.53 m)	266.13(†100), 72.82(†64), 387.56(†38)
• 214.7 *5*	>0.0026	^{192}Ir(73.831 d)	205.79549(3.300), 484.5780(3.184), 374.4852(0.721)
• 214.7 *5*	>0.0026	^{192}Ir(73.831 d)	316.50791(82.81), 468.07152(47.83), 308.45692(30.00)
214.7 *2*	†1.5 *4*	^{213}Ra(2.74 m)	110.1(†10.0), 104.6(†0.52)
214.7 *2*	†100 *30*	^{213}Ra(2.1 ms)	110.1(†50), 104.6(†12)
• 214.7 *2*	†1.2 *5*	^{258}Md(51.5 d)	367.8(†100), 447.9(†37), 276.8(†20.2)
214.72 *7*	0.052 *4*	^{119}I(19.1 m)	257.52(87), 635.86(2.69), 320.53(2.17)
214.78 *7*	14.3 *11*	^{203}Po(36.7 m)	908.64(55), 1090.95(19.2), 893.49(18.7)
• 214.786 *14*	0.440 *15*	^{166}Ho(1.20×10^3 y)	184.410(72.6), 810.276(58.08), 711.683(55.32)
214.8 *2*	1.0 *2*	^{128}Sb(9.01 h)	753.82(100), 743.22(100), 314.12(61)
214.8 *2*	0.31 *5*	^{140}Xe(13.60 s)	805.52(20), 1413.66(12.2), 1315.05(8.2)
214.85 *10*	0.030 *5*	^{228}Ac(6.15 h)	911.205(26.6), 968.971(16.2), 338.322(11.3)
214.87 *8*	42.3 *15*	^{186}Ta(10.5 m)	197.93(50), 510.82(37.5), 737.86(29)
214.88 *4*	0.25 *3*	^{179}Re(19.5 m)	430.221(28), 289.968(26.9), 1680.244(13.0)
214.9 *1*	0.082 *9*	^{86}Zr(16.5 h)	242.80(96), 29.10(21.6), 612.00(5.7)
214.9 *1*	0.36 *3*	^{92}Kr(1.840 s)	142.307(64), 1218.6(60), 812.6(14.6)
• 214.9 *1*	0.26 *8*	^{147}Gd(38.06 h)	229.32(63), 396.00(34.3), 929.01(20.2)
214.9 *3*	5 *4*	^{192}Pb(3.5 m)	1195.4(47), 608.2(17.9), 167.5(13.6)
214.9 *2*	0.24 *5*	^{237}Am(73.0 m)	280.23(47.3), 438.4(8.3), 473.5(4.3)
214.930 *3*	0.46 *16*	^{179}Lu(4.59 h)	214.335(11.3), 123.3790(0.45), 337.713(0.181)
214.96 *5*	2.34 *9*	^{148}Ba(0.607 s)	56.08(29.20), 133.53(3.88), 415.78(3.59)
215.0 *1*	†0.54 *14*	^{103}Nb(1.5 s)	102.64(†100), 641.1(†55), 538.5(†34.0)
215.0 *7*	0.08 *4*	^{127}Sn(2.10 h)	1114.3(39), 1095.6(20), 823.1(10.9)
215.0 *2*	†7.9 *5*	^{152}Pr(3.24 s)	164.2(†100), 284.9(†81.0), 72.40(†38.9)
215.03 *2*	0.262 *13*	^{155}Ho(48 m)	240.19(12.5), 136.30(5.00), 45.38(5)
215.07 *5*	21	^{164}Tb(3.0 m)	168.838(25.4), 754.80(23.3), 688.44(21.2)
215.1 *3*	†3.1 *8*	^{105}Nb(2.95 s)	94.8(†100), 246.9(†79), 309.9(†41.9)
• 215.100 *10*	0.137 *10*	^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
215.17 *13*	0.0387 *17*	^{127}Te(9.35 h)	417.95(1.0), 360.32(0.1346), 202.860(0.0580)
215.18 *13*	0.21 *5*	^{144}Ba(11.5 s)	103.855(23.30), 430.48(18.3), 172.828(15.4)
215.185 *14*	5.24 *17*	^{166}Tm(7.70 h)	778.817(18.9), 2052.36(17.2), 184.410(16.1)
215.256 *2*	22.1 *11*	^{180}Lu(5.7 m)	407.94(43.0), 1199.7(24.3), 1106.00(22.7)
• 215.26 *6*	0.009 *4*	^{151}Pm(28.40 h)	340.08(23), 167.75(8.3), 275.21(6.8)
• 215.28 *3*	0.027 *3*	^{235}U(7.038×10^8 y)	185.712(57.2), 143.764(10.96), 163.358(5.08)
215.3 *3*	0.68 *19*	^{117}Ag(5.34 s)	135.4(48), 386.8(39.9), 298.1(21.1)
215.3 *2*	†43 *5*	^{134}Pr(11 m)	293.5(†100), 299.0(†100), 1196.8(†100)
215.3 *2*	†43 *5*	^{134}Pr(17 m)	1964.1(†100), 1904.3(†100), 1579.9(†100)
215.3 *2*	0.13 *3*	^{177}W(135 m)	115.65(50), 426.98(13.2), 1036.4(10.3)
215.3 *5*	†1.17 *25*	^{183}Hg(9.4 s)	60.5(†100), 159.91(†21), 172.70(†17)
215.3 *1*	>1.3	^{203}Po(36.7 m)	908.64(55), 1090.95(19.2), 893.49(18.7)
215.31 *6*	0.28 *3*	^{138}Nd(5.04 h)	325.76(2.84), 199.50(0.53), 341.65(0.40)
215.326 *6*	11.4 *12*	^{184}Ta(8.7 h)	414.03(72), 252.848(43), 920.932(32.0)
• 215.326 *6*	2.78 *8*	^{184}Re(169 d)	252.848(10.7), 216.548(9.43), 920.932(8.14)
215.37 *2*	2.76 *24*	^{147}La(4.015 s)	117.718(12), 186.320(6.48), 438.30(5.04)
215.390 *2*	1.73 *11*	^{109}Rh(80 s)	326.868(54), 426.135(7.7), 178.034(7.6)
215.4 *3*	0.37 *6*	^{176}Tm(1.9 m)	189.57(44.5), 1069.3(34), 381.8(21.8)
215.4 *4*	†3.8 *8*	^{206}Rn(5.67 m)	497.7(†100), 324.5(†96), 386.6(†61)
• 215.4		^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
215.41 *10*	0.10 *3*	^{193}Au(17.65 h)	186.17(10.1), 255.57(6.7), 268.22(3.9)

• $t_{1/2}$>1 d

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
215.42 *4*	0.163 *20*	^{153}Dy(6.4 h)	80.723(11.10), 213.754(10.90), 99.659(10.51)
215.46 *22*	0.18 *4*	^{91}Kr(8.57 s)	108.788(43.5), 506.592(19.1), 612.87(7.7)
• 215.47 *4*	0.070 *6*	^{128}Ba(2.43 d)	273.44(15), 374.99(0.309), 229.50(0.106)
215.50 *3*	28.6 *9*	^{77}Ge(11.30 h)	264.44(54), 211.03(30.8), 416.33(21.8)
215.50 *3*	21	^{77}Ge(52.9 s)	194.76(0.408), 419.75(0.094), 614.39(0.044)
215.5 *4*	0.07 *4*	^{144}Ba(11.5 s)	103.855(23.30), 430.48(18.3), 172.828(15.4)
215.52 *2*	3.48 *24*	^{147}La(4.015 s)	117.718(12), 186.320(6.48), 438.30(5.04)
215.52 *2*	0.53 *10*	^{147}La(4.015 s)	117.718(12), 186.320(6.48), 438.30(5.04)
215.55 *18*	0.021 *7*	^{61}Cu(3.333 h)	282.956(12.2), 656.008(10.77), 67.412(4.23)
• 215.57 *10*	0.0084 *24*	^{194}Au(38.02 h)	328.455(60), 293.545(10.2), 1468.91(6.3)
215.6	†90 *7*	^{189}Tl(1.4 m)	317.5(†100), 335(†63), 228.4(†50)
215.6 *3*	†4.4 *7*	^{198}Tl(1.87 h)	636.4(†202), 411.8044(†202), 587.2(†185)
• 215.646 *1*	4.00 *3*	^{160}Tb(72.3 d)	879.383(30.01), 298.580(25.51), 966.171(25.21)
215.646 *1*	†0.45 *9*	^{160}Ho(5.02 h)	728.18(†100), 879.383(†65.9), 962.317(†59.1)
215.680 *18*	0.102 *8*	^{186}Ir(16.64 h)	296.911(64.0), 137.155(42), 434.849(34.4)
215.69 *13*	3.8 *3*	^{186}Tl(27.5 s)	405.43(92), 402.72(45.9), 356.84(29.3)
215.7 *2*	0.10 *4*	^{142}Ba(10.6 m)	255.300(20.5), 1204.3(14.23), 895.2(13.9)
215.7 *2*	†16 *3*	^{151}Yb(1.6 s)	1050.2(†100), 1245.6(†100), 624.8(†100)
• 215.7 *2*	0.013 *3*	^{156}Eu(15.19 d)	811.79(9.70), 88.9667(8.4), 1230.68(7.98)
215.70 *6*	1.57 *15*	^{161}Tm(33 m)	45.54(5.00), 1648.1(9.50), 84.40(9.4)
215.7 *1*	0.53 *9*	^{188}Tl(71 s)	412.7(88), 592.0(61), 504.2(23.3)
215.71 *12*	†16.6 *23*	^{189}Au(28.7 m)	713.17(†100), 812.68(†63), 447.65(†55)
• 215.718 *24*	86	^{97}Ru(2.9 d)	324.48(10.79), 569.31(0.873), 460.57(0.121)
215.724 *4*	0.40 *8*	^{149}Pr(2.26 m)	138.447(11.0), 165.087(9.9), 108.520(9.5)
• 215.733 *22*	0.77 *5*	^{182}Re(64.0 h)	229.3220(26), 67.75001(22.2), 1121.3007(22.0)
215.78 *6*	20.2 *8*	^{160}Yb(4.8 m)	173.74(42.0), 140.35(9.3), 132.23(5.9)
215.80 *30*	0.039 *10*	^{114}Sb(3.49 m)	1299.90(99), 887.60(17.4), 327.18(7.0)
215.8 *2*		^{116}Pd(12.4 s)	569, 279.3, 178.3
215.8 *1*	54 *6*	^{141}Gd(14 s)	525.9(17), 336.2(17.1), 120.6(9.3)
• 215.89 *2*	2.61 *5*	^{166}Ho(1.20×10^3 y)	184.410(72.6), 810.276(58.08), 711.683(55.32)
215.89 *2*	0.0548 *25*	^{166}Tm(7.70 h)	778.817(18.9), 2052.36(17.2), 184.410(16.1)
215.9 *4*	0.192 *18*	^{85}Y(2.68 h)	231.67(84), 504.45(60), 913.93(9.0)
215.9 *1*		^{193}Au(17.65 h)	186.17(10.1), 255.57(6.7), 268.22(3.9)
215.9 *2*	†32.7 *20*	^{202}Po(44.7 m)	688.6(†1000), 316.0(†286), 165.7(†174)
215.985 *5*	33.1 *16*	^{224}Fr(3.30 m)	131.613(16.3), 836.90(9.8), 1340.70(4.8)
215.985 *5*	53	^{224}Ac(2.9 h)	131.613(26), 205.93(>0.40), 166.411(>0.27)
• 215.985 *5*	0.263 *3*	^{228}Th(1.9131 y)	84.373(1.266), 131.613(0.1355), 166.411(0.1075)
216.0 *15*	0.06	^{77}Rb(3.75 m)	66.52(57), 178.99(22.2), 393.37(9.7)
216.0 *2*	†13	^{99}Rb(59 ms)	90.8(†100), 125.2(†40), 1071.6(†26)
216 *1*	0.06	^{142}Gd(70.2 s)	750.2(11.2), 178.90(11.20), 284.4(6.16)
• 216.00 *15*	0.050 *16*	^{153}Tb(2.34 d)	212.038(31.0), 170.504(6.8), 109.758(6.4)
216.00 *7*	0.12	^{176}Ta(8.09 h)	1159.28(25), 88.34(12), 1224.93(6)
216.0 *2*	†96	^{191}Tl(5.22 m)	452.6(†100), 470.1(†98), 391.6(†96)
216.00 *10*	0.23 *3*	^{202}Bi(1.72 h)	960.67(99), 422.18(83.7), 657.49(60.6)
216.0 *1*	0.37 *4*	^{223}Ac(2.10 m)	98.58(0.891), 191.3(0.58), 83.55(0.57)
216.0 *3*	†4	^{223}Rn(23.2 m)	591.8(†100), 635.2(†76), 416.0(†55)
216.01 *6*	1.43 *16*	^{204}Bi(11.22 h)	899.15(98), 374.72(82), 984.02(59)
216.012 *9*	0.85 *9*	^{195}Ir(3.8 h)	98.85(10), 684.88(9.4), 432.86(9)
216.04 *3*	0.122 *6*	^{151}Tb(17.609 h)	287.357(28.3), 251.863(26.3), 108.088(24.3)
• 216.069 *1*	0.136 *10*	^{155}Tb(5.32 d)	86.545(32.0), 105.305(25), 180.103(7.45)
• 216.078 *8*	19.66 *23*	^{131}Ba(11.50 d)	496.326(47), 123.805(28.97), 373.246(14.04)
• 216.08 *10*	0.00061 *9*	^{233}U(1.592×10^5 y)	42.44(0.0862), 97.134(0.020), 54.699(0.0182)
216.1 *2*	0.040 *20*	^{223}Ac(2.10 m)	98.58(0.891), 191.3(0.58), 83.55(0.57)
• 216.16 *6*	0.029 *3*	^{148}Eu(54.5 d)	550.284(98.5), 629.987(71.9), 611.293(20.5)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
• 216.16 *6*	0.020 *3*	^{148}Eu(54.5 d)	550.284(98.5), 629.987(71.9), 611.293(20.5)
• 216.17 *15*	0.023 *5*	^{105}Ag(41.29 d)	344.520(41), 280.41(30.2), 644.55(11.1)
216.17 *15*	†11.3 *25*	^{105}Ag(7.23 m)	319.14(†63000), 306.25(†12800), 442.37(†5900)
216.17 *10*	0.36 *3*	^{204}Bi(11.22 h)	899.15(98), 374.72(82), 984.02(59)
216.18 *6*	2.7 *3*	^{184}Pt(17.3 m)	154.90(31), 191.97(27), 548.36(23.1)
216.3 *4*	0.096 *24*	^{73}Ga(4.86 h)	297.32(79.8), 325.70(11.17), 739.42(4.23)
216.3 *1*	0.40 *4*	^{107}Tc(21.2 s)	102.70(21.0), 177.00(9.2), 106.31(7.6)
216.3 *1*		^{125}La(76 s)	67.6(34), 43.6(3.5), 985.2
216.3 *7*	0.64 *7*	^{199}Bi(27 m)	560.1(22.0), 424.85(22), 841.7(11)
216.36 *19*	0.66 *12*	^{174}W(31 m)	35.42(14.1), 428.83(12.7), 328.68(9.5)
216.4 *2*	0.114 *20*	^{75}Kr(4.3 m)	132.43(67), 154.66(20.8), 153.15(8.0)
216.4 *4*	11.7 *18*	^{79}Ge(39.0 s)	230.62(61), 542.27(32.6), 755(18)
216.4 *3*	0.55 *10*	^{97}Sr(426 ms)	1905.0(25), 953.8(21.4), 652.2(11.4)
216.40 *10*	†19	^{154}Nd(25.9 s)	151.703(†800), 799.55(†600), 180.693(†510)
216.4 *3*	0.188 *24*	^{175}Ta(10.5 h)	207.4(14.0), 348.5(12.0), 266.9(10.8)
216.47 *3*	37.4 *15*	^{81}Ga(1.221 s)	828.26(22.1), 711.18(17.6), 936.62(9.6)
216.47 *3*	†41 *4*	^{82}Ga(0.602 s)	711.18(†100), 530.22(†14)
216.5 *2*	†7 *2*	^{113}I(6.6 s)	462.5(†100), 622.4(†74), 351.5(†43)
216.5	0.041	^{198}Pb(2.40 h)	290.3(36), 365.4(19), 173.4(18)
216.548 *9*	1.73 *22*	^{184}Ta(8.7 h)	414.03(72), 252.848(43), 920.932(32.0)
• 216.548 *9*	9.43 *20*	^{184}Re(169 d)	252.848(10.7), 920.932(8.14), 161.269(6.49)
• 216.55 *4*	0.112 *17*	^{246}Pu(10.84 d)	43.81(25.0), 223.75(23.5), 179.94(9.7)
216.6 *1*	0.21 *4*	^{142}Ba(10.6 m)	255.300(20.5), 1204.3(14.23), 895.2(13.9)
216.6 *2*	0.015	^{233}Th(22.3 m)	86.477(2.7), 29.374(2.5), 459.222(1.4)
• 216.663 *24*	5.50 *14*	^{189}Re(24.3 h)	219.395(4.54), 245.09(3.5), 185.85(1.89)
• 216.663 *24*	0.516 *24*	^{189}Ir(13.2 d)	245.09(6), 69.537(3.5), 59.053(1.20)
216.668 *7*	2.48 *16*	^{178}Lu(23.1 m)	426.383(97.0), 325.562(94.1), 213.440(81.4)
216.668 *7*	0.24 *9*	^{178}Ta(2.36 h)	426.383(97.0), 325.562(94.1), 213.440(81.4)
216.7 *4*	>0.8	^{81}Y(72.4 s)	124.16(41.1), 79.23(24.67), 408.36(15.3)
216.7 *3*	†0.40 *4*	^{104}Nb(0.92 s)	192.2(†100), 368.4(†20), 620.2(†19.2)
216.7 *3*	†36 *4*	^{137}Sm(45 s)	380.5(†100), 163.7(†85), 408.3(†40)
216.8	12	^{134}Nd(8.5 m)	163.2(58), 288.9(13), 1000(4.1)
216.82 *3*	†1.2 *2*	^{101}Nb(7.1 s)	276.10(†100), 157.466(†32), 13.5(†32)
216.83 *4*	4.95 *23*	^{132}Ce(3.51 h)	182.11(77), 155.37(10.5), 190.04(2.67)
216.85 *4*	0.13 *3*	^{155}Dy(9.9 h)	226.918(68.4), 184.564(3.37), 1089.8(>2.8)
216.90 *15*	8.1 *22*	^{74}Kr(11.50 m)	89.65(31), 203.0(18.0), 296.67(9.9)
• 216.9 *3*	†0.01 *1*	^{102}Rh(207 d)	475.070(†47), 628.05(†4.6), 1103.16(†2.99)
216.9 *3*	0.06 *3*	^{109}Sn(18.0 m)	1099.4(30), 649.90(28.0), 1321.3(11.9)
• 216.9 *1*	1.29 *18*	^{147}Gd(38.06 h)	229.32(63), 396.00(34.3), 929.01(20.2)
216.90 *5*	2.6 *4*	^{221}Rn(25 m)	186.38(21.6), 150.04(4.5), 111.54(2.29)
• 216.90 *5*	0.32 *7*	^{225}Ac(10.0 d)	99.91(1.01), 150.04(0.80), 99.63(0.62)
216.90 *5*	†24.4 *24*	^{229}U(58 m)	122.51(†100), 88.43(†88), 198.83(†88)
216.922 *20*	0.74 *4*	^{182}Os(22.10 h)	510.056(52), 180.230(33.5), 263.285(6.71)
216.93 *8*	2.42 *24*	^{184}Pt(17.3 m)	154.90(31), 191.97(27), 548.36(23.1)
216.95 *6*	0.32 *4*	^{157}Sm(482 s)	197.870(56.00), 196.461(16.8), 394.351(11.93)
217.0 *2*	3.43 *15*	^{113}Rh(2.72 s)	189.7(17.0), 409.3(15.9), 219.6(3.88)
217.0 *1*	0.33 *3*	^{117}Cs(8.4 s)	204.8(15.0), 29.7(9.9), 205.6(6.8)
217.0 *2*	0.25 *3*	^{134}I(52.6 m)	847.025(95.4), 884.090(64.9), 1072.547(15.0)
217.03 *5*	0.0039 *5*	^{137}Ce(9.0 h)	447.15(1.8), 10.6(0.8), 436.59(0.265)
• 217.07 *10*	2.37 *10*	^{79}Kr(35.04 h)	261.29(13), 397.54(9.3), 606.09(8.12)
217.1 *1*	59 *4*	^{244}Np(2.29 m)	162.4(52), 110.8(12)
• 217.159 *2*	0.0032 *5*	^{233}U(1.592×10^5 y)	42.44(0.0862), 97.134(0.020), 54.699(0.0182)
217.17 *5*	0.43 *4*	^{163}Yb(11.05 m)	860.28(10.1), 63.62(6.5), 123.21(1.98)
217.185 *13*	†2.5 *5*	^{131}Sn(56.0 s)	1226.03(†100), 450.03(†90), 798.50(†86)

• $t_{1/2}$>1 d

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
217.2 *4*	†2.7 *8*	^{105}Nb(2.95 s)	94.8(†100), 246.9(†79), 309.9(†41.9)
217.2 *1*	0.028 *2*	^{113}Ag(5.37 h)	298.58(10), 258.8(1.64), 316.3(1.343)
217.2 *10*	0.013 *9*	^{129}Sb(4.40 h)	812.8(43), 914.6(20.0), 544.7(17.9)
• 217.2 *1*	0.52 *18*	^{147}Gd(38.06 h)	229.32(63), 396.00(34.3), 929.01(20.2)
217.30 *5*	0.350 *21*	^{107}Ru(3.75 m)	194.05(9.9), 847.93(5.3), 462.61(3.66)
217.3 *4*	†14.0 *20*	^{172}W(6.6 m)	38.9(†100), 423.3(†44), 89.8(†33.0)
217.3 *5*	†1.9 *4*	^{183}Hg(9.4 s)	60.5(†100), 159.91(†21), 172.70(†17)
217.4 *2*	2.2 *6*	^{104}Sn(20.8 s)	132.7(56), 912.6(42), 401.2(16.2)
217.4 *10*		^{158}Ho(11.3 m)	218.21(†100.0), 98.91(†70), 945.7(†37)
217.422 *1*	0.021 *6*	^{168}Ho(2.99 m)	741.356(36.6), 821.164(34.5), 815.990(18.6)
217.43 *6*	†20.0 *15*	^{165}Lu(10.74 m)	132.49(†100), 120.60(†100), 174.25(†47.0)
217.48 *5*	0.041 *3*	^{127}Cs(6.25 h)	411.95(62.8), 124.70(11.37), 462.31(5.07)
217.5	0.13	^{185}Ir(14.4 h)	254.4(13.3), 1828.8(10), 60.0(5.7)
217.5 *1*	†8.8 *9*	^{225}Fr(4.0 m)	182.3(†100), 31.50(†91), 225.1(†55)
217.52 *7*	0.20 *4*	^{162}Yb(18.87 m)	163.35(40.0), 118.70(33.6), 576.10(3.24)
217.52 *10*	0.252 *17*	^{179}Re(19.5 m)	430.221(28), 289.968(26.9), 1680.244(13.0)
• 217.573 *23*	3.26 *21*	^{182}Re(64.0 h)	229.3220(26), 67.75001(22.2), 1121.3007(22.0)
217.6 *1*		^{132}Ce(3.51 h)	182.11(77), 155.37(10.5), 216.83(4.95)
217.60 *10*	>0.00012	^{161}Ho(2.48 h)	25.65150(27), 103.062(3.9), 77.414(1.91)
217.6 *3*	†0.63 *10*	^{201}Po(8.9 m)	967.4(†100.0), 964.3(†85), 411.9(†33.0)
217.6 *3*	†88	^{244}Bk(4.35 h)	891.5(†100), 921.5(†19), 490.5(†15.8)
217.647 *8*	3.66 *11*	^{159}Ho(33.05 m)	121.012(36.2), 131.973(23.6), 309.594(17.2)
217.7 *1*	0.097 *5*	^{143}Ba(14.33 s)	211.475(25), 798.79(15.6), 980.45(11.55)
217.7	†75 *15*	^{182}Hg(10.83 s)	129.3(†100), 413.5(†53), 542.9
217.7 *2*	0.38 *7*	^{225}Th(8.72 m)	321.4(23), 246.0(5.06), 359.0(4.1)
• 217.7	4.6×10^{-5}	^{233}U(1.592×10^{5} y)	42.44(0.0862), 97.134(0.020), 54.699(0.0182)
217.72 *2*	>0.20	^{145}Cs(0.594 s)	175.36(20), 198.93(10.9), 112.46(10.71)
217.73 *4*	0.33 *4*	^{81}Sr(22.3 m)	153.54(33.8), 147.76(30.1), 443.34(17.5)
217.80 *20*	0.141 *16*	^{91}Tc(3.14 m)	2450.90(13.5), 1639.90(9.2), 1605.20(7.77)
217.8 *2*	†15.2 *11*	^{103}Mo(67.5 s)	83.4(†100), 423.91(†69), 45.8(†57)
217.89 *2*	0.38 *4*	^{147}La(4.015 s)	117.718(12), 186.320(6.48), 438.30(5.04)
217.9 *1*	4.1 *4*	^{126}Ba(100 m)	233.6(19.6), 257.6(7.6), 241.0(6.0)
217.9 *6*	0.019 *13*	^{127}Cs(6.25 h)	411.95(62.8), 124.70(11.37), 462.31(5.07)
217.9 *2*	†2.4 *4*	^{181}Hg(3.6 s)	147.8(†100), 42.5(†25), 1986.7(†17)
217.90 *18*	†5.0 *5*	^{189}Hg(7.6 m)	320.99(†100), 78.21(†63), 565.42(†48)
217.92 *15*	3.7 *3*	^{102}Sr(69 ms)	243.80(53), 150.15(18.0), 93.89(13.4)
• 217.940 *18*	0.040 *3*	^{231}Th(25.52 h)	25.646(14.5), 84.216(6.6), 89.944(0.94)
• 217.940 *18*	0.8	^{231}U(4.2 d)	25.646(12), 84.216(7), 58.570(0.44)
218 *1*	0.024 *8*	^{100}Rh(20.8 h)	539.59(78.4), 2376.1(35.3), 1553.4(21)
218 *1*	3.8 *4*	^{105}Mo(35.6 s)	85.4(25.0), 76.50(19.3), 147.8(14.8)
218.0 *2*	0.30 *3*	^{146}Ba(2.22 s)	140.7(20.2), 251.2(19.6), 121.2(14.2)
218 *1*	0.09	^{175}Tm(15.2 m)	514.868(65), 941.23(15), 363.942(12.7)
218		^{217}At(32.3 ms)	258.5(0.056), 593.1(0.0120), 334
• 218.0 *5*	1.2×10^{-6} *10*	^{239}Pu(24110 y)	51.624(0.007100), 38.661(0.000500), 129.297(0.00631)
218.0 *3*	†14	^{238}Pa(2.3 m)	1015.3(†<100), 1014.6(†<100), 635.18(†88)
• 218.07 *6*	0.033 *17*	^{189}Re(24.3 h)	216.663(5.50), 219.395(4.54), 245.09(3.5)
218.07 *4*		^{193}Hg(3.80 h)	861.11(†100), 1118.84(†64), 789.21(†36)
218.07 *4*	5.3 *8*	^{193}Hg(11.8 h)	257.97(61), 407.63(25), 573.25(14.2)
218.1 *2*	6.00 *19*	^{73}Zn(23.5 s)	910.5(1.91), 495.6(1.48), 1612.9(0.92)
218.1 *8*	0.007	^{150}Pm(2.68 h)	333.971(68), 1324.51(17.5), 1165.739(15.8)
218.1 *3*	4.0×10^{-5} *3*	^{152}Eu(9.274 h)	841.586(14.6), 963.37(12.01), 121.7824(7.21)
218.10 *6*	1.05 *10*	^{161}Tm(33 m)	45.54(5.00), 1648.1(9.50), 84.40(9.4)
218.1 *2*	†29	^{256}Es(7.6 h)	861.8(†100), 231.1(†61), 172.6(†49)
• 218.11 *9*	0.0092 *13*	^{145}Eu(5.93 d)	893.73(66), 653.512(15.0), 1658.53(14.9)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
218.11 *8*	3.4 *5*	^{183}Au(42.0 s)	161.18(9.4), 214.13(5.9), 313.08(5.0)
• 218.154 *17*	0.185 *21*	^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
218.17 *21*	0.033 *11*	^{200}Pt(12.5 h)	76.21(13), 135.90(3.24), 243.71(2.49)
218.18 *3*	0.25 *6*	^{105}Tc(7.6 m)	143.26(16), 107.945(14.1), 321.50(11.1)
218.19 *5*	11.6 *4*	^{221}Fr(4.9 m)	410.7(0.14), 99.5(0.11), 150.0(0.07)
218.19 *10*	0.19	^{227}Ra(42.2 m)	27.36(16), 300.07(4.6), 302.65(4.3)
218.2		^{180}Os(21.5 m)	20.1(†100), 717.4, 667.0
218.2 *5*	†1.7	^{183}Hg(9.4 s)	60.5(†100), 159.91(†21), 172.70(†17)
• 218.21 *1*	0.933 *18*	^{158}Tb(180 y)	98.91(4.29)
218.21 *1*		^{158}Ho(21.3 m)	406.14(†100), 838.9(†84.3), 1484.1(†66.2)
218.21 *1*	†100.0 *4*	^{158}Ho(11.3 m)	98.91(†70), 945.7(†37), 948.8(†34.5)
218.23 *3*	20.8 *11*	^{146}Ce(13.52 m)	316.74(56), 264.56(9.0), 133.52(8.1)
218.30 *30*	3.6 *11*	^{103}Zr(1.3 s)	248(100), 164.05(94), 126.30(84)
218.3 *3*	0.110 *24*	^{140}Xe(13.60 s)	805.52(20), 1413.66(12.2), 1315.05(8.2)
218.30 *10*	0.35 *9*	^{148}Ba(0.607 s)	56.08(29.20), 133.53(3.88), 415.78(3.59)
• 218.3 *3*	0.0079 *14*	^{148}Eu(54.5 d)	550.284(98.5), 629.987(71.9), 611.293(20.5)
218.3 *3*	0.10	^{170}Hf(16.01 h)	164.78(33), 620.7(23), 120.17(19)
218.36 *5*	0.34 *3*	^{109}Ru(34.5 s)	206.29(22.0), 225.98(19.6), 1929.05(13.7)
218.4 *4*	0.038 *13*	^{158}Eu(45.9 m)	944.09(25), 977.131(13.6), 79.5104(11)
218.4 *1*	0.9	^{159}Er(36 m)	624.5(33), 649.1(23.4), 205.92(9.7)
218.5 *4*	†11	^{154}Nd(25.9 s)	151.703(†800), 799.55(†600), 180.693(†510)
218.5 *3*	†9 *3*	^{164}Tm(2.0 m)	91.40(†1500), 1154.66(†366), 768.91(†279)
• 218.508 *4*	0.008 *5*	^{155}Tb(5.32 d)	86.545(32.0), 105.305(25), 180.103(7.45)
218.566 *7*	0.14	^{182}Hf(61.5 m)	942.80(18.8), 799.64(9.4), 114.3152(6.2)
218.59 *3*	56	^{139}Xe(39.68 s)	296.53(21.7), 174.97(11.3), 289.78(9.2)
218.6 *1*	†5.5 *5*	^{148}Er(4.6 s)	1653.4(†100), 387.7(†88), 197.1(†71)
218.6 *2*	†17	^{179}Os(6.5 m)	65.39(†100), 32.3(†17), 593.8(†16)
218.6 *4*	†14 *4*	^{181}Ir(4.90 m)	107.64(†100), 1639.6(†52), 318.9(†46)
218.629 *8*	1.45 *7*	^{153}Dy(6.4 h)	80.723(11.10), 213.754(10.90), 99.659(10.51)
218.65 *13*	0.025 *3*	^{151}Tb(17.609 h)	287.357(28.3), 251.863(26.3), 108.088(24.3)
• 218.66 *8*	0.0430 *19*	^{95}Tc(61 d)	204.117(63.25), 582.082(29.96), 835.149(26.63)
218.69 *10*	1.14 *22*	^{170}Ho(2.76 m)	258.2(37.0), 931.3(36.1), 181.6(23.8)
218.7 *5*	†9.0 *18*	^{189}Au(28.7 m)	713.17(†100), 812.68(†63), 447.65(†55)
218.751 *10*	2.5	^{147}Ce(56.4 s)	268.80(7), 92.9(4.7), 374.23(3.5)
218.8 *4*	0.51 *7*	^{79}Rb(22.9 m)	688.1(23), 182.77(19.2), 143.41(13.9)
• 218.8 *2*	0.0087 *20*	^{193}Os(30.5 h)	139.03(4.27), 460.50(3.95), 73.039(3.2)
• 218.859 *6*	3.34 *18*	^{165}Tm(30.06 h)	242.917(35.5), 47.155(16.9), 297.369(12.71)
218.9 *2*	0.168 *19*	^{97}Zr(16.91 h)	743.36(93), 507.64(5.03), 1147.97(2.61)
218.9 *3*	0.05 *5*	^{127}In(1.09 s)	1597.7(49), 646.1(6.2), 805.1(5.6)
218.9 *1*	0.170 *19*	^{186}Hg(1.38 m)	112.1(63), 251.5(55), 191.6(3.7)
218.93 *2*	1.42 *8*	^{155}Ho(48 m)	240.19(12.5), 136.30(5.00), 45.38(5)
218.98 *8*	5.9 *8*	^{79}Sr(2.25 m)	39.41(28), 105.00(21.8), 413.8(7.6)
218.98 *13*	2.97 *5*	^{96}Nb(23.35 h)	778.224(96.45), 568.80(58.0), 459.88(26.62)
• 218.98 *13*	0.040 *10*	^{96}Tc(4.28 d)	778.224(100), 849.929(98), 812.581(82)
218.98 *13*	0.0006 *4*	^{96}Tc(51.5 m)	778.224(1.9), 1200.231(1.08), 480.705(0.311)
219.0 *6*	0.36 *18*	^{104}Tc(18.3 m)	358.0(89), 530.5(15.6), 535.1(14.7)
219.0 *10*	†5	^{135}Pm(49 s)	198.5(†100), 207.2(†70), 463.5(†62)
219 *1*	0.5 *3*	^{156}Sm(9.4 h)	87.4897(24), 203.818(20.6), 165.8452(12.7)
219.0 *8*	0.28	^{186}Pt(2.0 h)	276.7(0), 611.5(6.0), 635.6(>3.8)
219.0 *5*	0.99 *23*	^{194}Tl(32.8 m)	636.5(99), 428.0(99), 748.9(76)
219 *10*	0.1	^{221}Ra(28 s)	149.0(9.0), 93.1(2.1), 174.1(1.6)
• 219.0 *8*	0.014 *6*	^{223}Ra(11.435 d)	269.459(13.7), 154.21(5.62), 323.871(3.93)
219.00 *13*	0.0096 *6*	^{223}Fr(21.8 m)	50.13(36.0), 79.72(9.1), 234.81(3.0)
• 219.00 *13*	†6.8 *7*	^{227}Th(18.72 d)	235.971(†813), 50.13(†528), 256.25(†463)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
• 219.	>0.0048	^{232}Pa(1.31 d)	969.315(41.6), 894.351(19.8), 150.059(10.8)
219.05 *10*	18.1 *11*	^{74}Br(25.4 m)	634.78(64), 634.26(14.1), 2615.2(7.37)
219.05 *10*	5.02 *18*	^{74}Br(46 m)	634.78(91), 728.37(35.6), 634.26(16.4)
219.07 *5*	1.18 *11*	^{77}Zn(2.08 s)	189.49(28.1), 473.94(19.7), 1832.0(12.4)
219.08 *10*	2.15 *22*	^{130}In(0.32 s)	1905.17(74), 129.80(61), 1221.24(60)
219.08 *10*	0.33 *5*	^{130}In(0.55 s)	1221.24(89), 774.37(46), 89.23(20.2)
219.1 *3*	0.15 *15*	^{77}Ge(11.30 h)	264.44(54), 211.03(30.8), 215.50(28.6)
219.1 *2*	3.2 *9*	^{103}Zr(1.3 s)	248(100), 164.05(94), 126.30(84)
219.1 *6*		^{110}Te(18.6 s)	894.8, 605.9, 107.5
219.1 *3*	†5.4 *10*	^{142}Xe(1.22 s)	571.83(†100), 657.05(†79), 538.24(†77)
• 219.13 *5*	0.277 *20*	^{193}Os(30.5 h)	139.03(4.27), 460.50(3.95), 73.039(3.2)
219.16 *6*	2.75 *16*	^{93}Rb(5.84 s)	432.61(17.4), 986.05(6.8), 213.429(6.7)
219.16 *6*	†1.5×10^3	^{94}Rb(2.702 s)	432.61(†9000), 213.429(†6000), 986.05(†4100)
219.19 *10*	0.019 *5*	^{81}Rb(4.576 h)	190.38(64.0), 446.15(23.2), 510.31(5.3)
219.2 *3*	0.62 *7*	^{79}Rb(22.9 m)	688.1(23), 182.77(19.2), 143.41(13.9)
219.2 *3*	†1.5 *8*	^{155}Nd(8.9 s)	180.574(†100), 418.99(†75), 955.08(†50)
219.3 *1*	0.0236 *25*	^{121}I(2.12 h)	212.189(84), 532.08(6.07), 598.74(1.47)
219.3 *1*	5.8 *5*	^{129}Sn(6.9 m)	1161.31(56.0), 1128.44(50), 760.8(16.8)
219.3	>0.019	^{195}Tl(1.16 h)	563.52(10.5), 884.47(10.0), 1363.88(8.4)
219.33 *15*	0.82 *7*	^{136}I(83.4 s)	1313.02(67), 1321.08(24.8), 2289.6(10.4)
• 219.348 *8*	0.0658 *19*	^{110}Ag(249.79 d)	657.7622(94.0), 884.685(72.2), 937.493(34.13)
219.36 *12*	0.783 *21*	^{144}Ba(11.5 s)	103.855(23.30), 430.48(18.3), 172.828(15.4)
219.36 *4*	0.388 *19*	^{199}Pt(30.80 m)	542.993(15), 493.772(5.59), 317.056(4.95)
219.38 *6*	2.30 *16*	^{204}Bi(11.22 h)	899.15(98), 374.72(82), 984.02(59)
• 219.38 *5*	0.00014 *3*	^{233}U(1.592×10^5 y)	42.44(0.0862), 97.134(0.020), 54.699(0.0182)
• 219.395 *21*	4.54 *10*	^{189}Re(24.3 h)	216.663(5.50), 245.09(3.5), 185.85(1.89)
• 219.395 *21*	0.528 *24*	^{189}Ir(13.2 d)	245.09(6), 69.537(3.5), 59.053(1.20)
219.4	1.6 *6*	^{11}Li(8.5 ms)	3367.4(35), 2811(2.8), 5955.4(0.39)
219.4 *5*	0.10 *2*	^{107}Rh(21.7 m)	302.77(66), 392.47(8.8), 312.21(4.8)
• 219.4	0.0023 *5*	^{154}Eu(8.593 y)	123.071(40.79), 1274.436(35.19), 723.304(20.22)
219.4 *2*	0.076 *12*	^{161}Er(3.21 h)	826.6(3.0), 211.15(12.2), 592.6(3.7)
219.4 *3*	0.33 *4*	^{166}Lu(2.65 m)	228.12(77.3), 337.50(41), 367.95(31.4)
219.466 *52*	†67.4 *60*	^{94}Kr(0.20 s)	629.2(†100), 764.5(†71), 358.8(†39.4)
219.5 *10*	0.057 *25*	^{136}Nd(50.65 m)	108.90(32), 40.2(18.9), 574.8(10.4)
219.55 *23*	0.27 *7*	^{75}Kr(4.3 m)	132.43(67), 154.66(20.8), 153.15(8.0)
219.6 *3*	3.88 *23*	^{113}Rh(2.72 s)	189.7(17.0), 409.3(15.9), 116.8(3.66)
219.6		^{130}Ce(25 m)	1072.6(†100), 997.7(†100), 920.5(†100)
219.65 *9*	†1.01 *10*	^{184}Ir(3.09 h)	263.97(†100), 119.80(†45), 390.38(†38)
• 219.66 *3*	0.82 *4*	^{191}Pt(2.9 d)	538.90(13.7), 409.44(8.0), 359.90(6.0)
219.7 *2*	3.2 *3*	^{117}Ag(5.34 s)	135.4(48), 386.8(39.9), 298.1(21.1)
219.7	0.011 *5*	^{149}Tb(4.118 h)	352.24(29.43), 164.98(26.4), 388.57(18.37)
219.7 *2*	†0.8 *4*	^{158}Ho(11.3 m)	218.21(†100.0), 98.91(†70), 945.7(†37)
219.75 *5*		^{193}Hg(3.80 h)	861.11(†100), 1118.84(†64), 789.21(†36)
219.75 *5*	2.8 *5*	^{193}Hg(11.8 h)	257.97(61), 407.63(25), 573.25(14.2)
219.8 *3*		^{122}Ba(1.95 m)	550.7, 388.7, 231.0
219.8 *6*	0.19	^{228}Pa(22 h)	911.205(4.19), 463.005(1.250), 964.770(4.25)
• 219.8		^{237}Np(2.14×10^6 y)	29.374(15.0), 86.477(12.4), 94.66(0.6)
219.831 *10*	0.035 *17*	^{162}Ho(67.0 m)	185.005(28.6), 1220.0(22.5), 282.864(11.3)
219.9 *4*	4.09 *13*	^{99}Ag(124 s)	264.41(65), 832.29(13.5), 805.07(12.5)
219.9 *2*	0.19	^{227}Ra(42.2 m)	27.36(16), 300.07(4.6), 302.65(4.3)
219.96 *15*		^{186}Ir(16.64 h)	296.911(64.0), 137.155(42), 434.849(34.4)
219.98 *16*	†548 *55*	^{179}Ir(79 s)	97.5(†1849), 86.31(†1370), 45.20(†1329)
220.0 *8*	2.2 *9*	^{73}Kr(27.0 s)	177.8(65.8), 62.5(19.1), 454.8(15)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
220.0 *4*	0.06 *2*	^{140}Xe(13.60 s)	805.52(20), 1413.66(12.2), 1315.05(8.2)
220.0 *1*	0.044 *6*	^{186}Hg(1.38 m)	112.1(63), 251.5(55), 191.6(3.7)
220	†4.2	^{228}Pa(22 h)	95(†100), 310(†42), 240(†23)
220.00 *8*	0.144 *21*	^{234}Pa(6.70 h)	131.30(18), 946.00(13.4), 883.24(9.6)
• 220		^{243}Am(7370 y)	74.664(68), 43.533(5.93), 117.84(0.57)
220.05 *12*	0.32 *3*	^{194}Pb(12.0 m)	581.82(18.8), 1519.45(16.4), 203.82(16.2)
• 220.099 *1*	0.166 *5*	^{155}Tb(5.32 d)	86.545(32.0), 105.305(25), 180.103(7.45)
220.1 *6*	0.0021 *5*	^{155}Sm(22.3 m)	104.3346(74.6), 245.771(3.7), 141.4428(1.98)
220.10 *10*	0.30 *4*	^{161}Tm(33 m)	45.54(5.00), 1648.1(9.50), 84.40(9.4)
220.1 *2*	†5.6 *6*	^{171}Hf(12.1 h)	122.0(†100), 662.2(†83), 347.18(†47)
220.1 *5*	1.5 *5*	^{183}Lu(58 s)	1125.3(25.0), 1056.8(16.5), 168.1(7.5)
220.18 *5*	4.60 *23*	^{159}Tm(9.13 m)	38.35(5.8), 84.8(5.8), 271.30(5.1)
220.2 *5*	>0.35	^{137}Pm(2.4 m)	177.5(40.29), 108.6(35), 233.6(29.57)
220.2 *2*	0.066 *12*	^{142}Ba(10.6 m)	255.300(20.5), 1204.3(14.23), 895.2(13.9)
220.37	0.030	^{203}Bi(11.76 h)	820.3(30), 825.2(14.6), 896.9(13)
220.4 *4*	0.31 *4*	^{127}Sn(2.10 h)	1114.3(39), 1095.6(20), 823.1(10.9)
220.4 *2*	1.17 *12*	^{185}Ir(14.4 h)	254.4(13.3), 1828.8(10), 60.0(5.7)
220.4 *3*	0.16 *5*	^{242}U(16.8 m)	67.60(9.6), 55.58(3.90), 585.0(1.92)
220.44 *50*	0.083 *11*	^{174}Ta(1.05 h)	206.50(58), 91.00(16.0), 1205.92(4.9)
220.49 *5*	0.53 *5*	^{107}Ru(3.75 m)	194.05(9.9), 847.93(5.3), 462.61(3.66)
220.5 *3*	0.12 *6*	^{109}Sn(18.0 m)	1099.4(30), 649.90(28.0), 1321.3(11.9)
220.5 *3*	†0.26 *5*	^{111}Rh(11 s)	275.4(†100.0), 411.8(†9.42), 230.0(†8.9)
220.502 *15*	1.76 *3*	^{135}I(6.57 h)	1260.409(28.90), 1131.511(22.74), 1678.027(9.62)
• 220.56 *5*	†4.6×10^3 *6*	^{134}Ce(75.9 h)	162.306(†230000), 130.414(†209000), 39.08(†>150000)
220.6	0.38	^{83}Zr(44 s)	55.55(8), 104.97(5.70), 475.1(5.1)
220.6 *3*	0.59 *15*	^{109}Ru(34.5 s)	206.29(22.0), 225.98(19.6), 1929.05(13.7)
• 220.6 *3*	0.036 *6*	^{223}Ra(11.435 d)	269.459(13.7), 154.21(5.62), 323.871(3.93)
220.631	4.80 *6*	^{43}K(22.3 h)	372.760(87), 617.490(79.2), 396.861(11.85)
220.64 *5*	2.4 *3*	^{109}Ru(34.5 s)	206.29(22.0), 225.98(19.6), 1929.05(13.7)
220.65 *10*	3.6 *3*	^{100}Cd(49.1 s)	936.55(66), 139.71(6.7), 582.5(6.3)
220.67 *15*	†10.2 *15*	^{155}Nd(8.9 s)	180.574(†100), 418.99(†75), 955.08(†50)
220.7 *2*	0.8	^{140}Sm(14.82 m)	225.5(>10), 225.4(10), 140.0(5.0)
220.7 *2*	0.50	^{140}Sm(14.82 m)	225.5(>10), 225.4(10), 140.0(5.0)
220.7 *1*	0.227 *14*	^{146}Ba(2.22 s)	140.7(20.2), 251.2(19.6), 121.2(14.2)
220.7 *3*	0.45 *4*	^{152}Tb(4.2 m)	344.281(20.8), 411.115(18.8), 471.9(12.2)
220.7 *3*	0.11 *3*	^{188}Hg(3.25 m)	66.7(63), 190.1(4.40), 82.7(2.6)
• 220.778 *2*	0.508 *5*	^{155}Tb(5.32 d)	86.545(32.0), 105.305(25), 180.103(7.45)
220.78 *6*	0.40 *6*	^{149}Pr(2.26 m)	138.447(11.0), 165.087(9.9), 108.520(9.5)
220.79 *13*	†24 *5*	^{187}Hg(1.9 m)	233.38(†100), 376.34(†38), 240.26(†33)
220.8 *6*	†3	^{119}Xe(5.8 m)	231.8(†100), 98.5(†95), 461.5(†91)
220.8 *3*	0.00013 *13*	^{152}Eu(9.274 h)	841.586(14.6), 963.37(12.01), 121.7824(7.21)
220.80 *11*	0.9 *3*	^{182}Hf(61.5 m)	942.80(18.8), 799.64(9.4), 114.3152(6.2)
220.82 *14*	0.039 *19*	^{90}Kr(32.32 s)	1118.69(39.0), 121.82(35.5), 539.49(30.8)
220.83 *7*	8.54 *25*	^{129}Ba(2.23 h)	6.545(23.7), 214.30(13.4), 129.14(5.51)
220.83 *7*	†5.67 *14*	^{129}Ba(2.17 h)	182.30(†100), 1459.1(†50.0), 202.38(†33.7)
• 220.87 *11*	0.0034 *4*	^{238}Np(2.117 d)	984.45(27.8), 1028.54(20.3), 1025.87(9.6)
220.89 *10*	0.7 *3*	^{135}Nd(12.4 m)	204.02(52), 41.43(23), 441.2(14.9)
220.9 *3*	0.17 *7*	^{75}Kr(4.3 m)	132.43(67), 154.66(20.8), 153.15(8.0)
220.9	0.9	^{125}Cd(0.65 s)	436.29(37), 1099.48(22.3), 2147.19(19.1)
220.9 *3*	0.076 *19*	^{139}Nd(29.7 m)	405.12(7), 1074.2(2.5), 669.0(1.52)
• 220.90 *15*	0.0190 *7*	^{170}Lu(2.00 d)	84.2551(4.256), 1280.25(3.450), 2041.88(1.434)
220.92 *3*	1.17 *8*	^{117}Cd(2.49 h)	273.349(28), 1303.27(18.4), 344.459(17.9)
220.92 *3*	0.24 *16*	^{117}Cd(3.36 h)	1997.33(26), 1065.98(23.1), 564.397(14.7)
220.93 *10*	†18 *4*	^{163}Lu(238 s)	163.08(†100), 54.00(†88), 396.34(†63)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
220.94 *2*	0.0541 *6*	^{135}La(19.5 h)	480.51(1.5), 874.51(0.164), 587.83(0.1108)
220.948 *9*	20.1 *11*	^{89}Kr(3.15 m)	586.03(16.6), 904.27(7.2), 1472.76(6.9)
221.0 *4*	3.3 *19*	^{81}Y(72.4 s)	124.16(41.1), 79.23(24.67), 408.36(15.3)
221.0 *3*	1.62 *19*	^{113}Rh(2.72 s)	189.7(17.0), 409.3(15.9), 219.6(3.88)
221.0 *4*	0.06 *6*	^{117}Cd(2.49 h)	273.349(28), 1303.27(18.4), 344.459(17.9)
221.0 *4*	0.9	^{152}Ho(161.8 s)	613.8(73), 613.8(14), 1098.0(12)
221	†0.2	^{181}Os(2.7 m)	144.99(†100), 118.03(†28.3), 1118.8(†4.2)
221	1.8 *4*	^{211}Fr(3.10 m)	539.9(20), 918.3(11), 281(6.8)
221 *1*	0.0030 *10*	^{214}Bi(19.9 m)	609.312(44.8), 1764.494(15.36), 1120.287(14.80)
• 221.0 *5*	0.00005 *1*	^{230}U(20.8 d)	72.20(0.60), 154.23(0.125), 230.37(0.122)
• 221.01 *4*	0.0311 *19*	^{205}Bi(15.31 d)	1764.36(1.368), 703.44(31), 987.62(0.585)
• 221.079 *10*	0.0677 *9*	^{110}Ag(249.79 d)	657.7622(94.0), 884.685(72.2), 937.493(34.13)
221.1 *1*	0.24 *5*	^{133}Te(55.4 m)	912.671(55.28), 647.51(19.4), 863.955(15.6)
221.1 *2*	†21 *5*	^{155}Er(5.3 m)	110.12(†100), 241.5(†65), 234.0(†40.0)
221.13 *15*	1.12 *5*	^{172}Ta(36.8 m)	214.02(46), 95.23(17.5), 1109.27(12.4)
• 221.15 *5*		^{165}Tm(30.06 h)	242.917(35.5), 47.155(16.9), 297.369(12.71)
221.15 *10*	0.052 *21*	^{234}Pa(6.70 h)	131.30(18), 946.00(13.4), 883.24(9.6)
221.2 *1*	0.08	^{133}Ce(4.9 h)	477.22(39), 510.36(20.7), 58.39(19.2)
221.2 *5*	0.54 *18*	^{136}Sm(47 s)	114.4(36), 747.7(5.4), 485.3(5.0)
221.2 *2*	15.7 *5*	^{170}Ta(6.76 m)	100.8(21.0), 860.4(7.39), 987.0(5.88)
• 221.22 *5*	0.023 *6*	^{229}Th(7340 y)	193.509(4.4), 210.853(2.8), 86.40(2.57)
221.27 *2*	1.19 *7*	^{207}At(1.80 h)	814.41(44.5), 588.33(19.2), 300.654(12.8)
221.3 *1*	10.0 *8*	^{117}Xe(61 s)	28.5(7.0), 32.3(7.6), 519.1(6.2)
221.3 *4*	†29 *7*	^{172}W(6.6 m)	38.9(†100), 423.3(†44), 89.8(†33.0)
221.399 *1*	16.8 *16*	^{231}Ac(7.5 m)	282.471(39.0), 307.063(30.4), 185.712(16.4)
• 221.399 *1*	0.12 *1*	^{235}U(7.038×10^{8} y)	185.712(57.2), 143.764(10.96), 163.358(5.08)
221.40 *6*	0.078 *17*	^{193}Au(17.65 h)	186.17(10.1), 255.57(6.7), 268.22(3.9)
• 221.46 *3*	†4.24×10^{5} *5*	^{241}Am(432.2 y)	59.537(†60), 26.345(†1000×10^{9}), 33.195(†6000×10^{8})
• 221.480 *2*	2.26 *7*	^{82}Br(35.30 h)	776.517(83.5), 554.348(70.8), 619.106(43.4)
221.480 *2*	2.07 *4*	^{82}Rb(6.472 h)	776.517(84), 554.348(62.4), 619.106(37.976)
221.5 *3*	0.030 *4*	^{219}Rn(3.96 s)	271.23(10.8), 401.81(6.37), 130.59(0.119)
221.56 *12*	0.06	^{183}Au(42.0 s)	161.18(9.4), 214.13(5.9), 313.08(5.0)
221.57 *5*	0.033 *5*	^{131}Te(25.0 m)	149.716(69), 452.323(18.18), 1146.96(4.95)
• 221.59 *3*	6.4 *5*	^{182}Re(64.0 h)	229.3220(26), 67.75001(22.2), 1121.3007(22.0)
221.6 *10*	2.1 *3*	^{31}Na(17.0 ms)	2243.9(10.4), 171.1(4.8), 2022.2(3.8)
221.6 *10*	2.6 *8*	^{32}Na(13.2 ms)	171.1(5.4), 895.0(2.6)
221.6 *1*	4.8 *5*	^{117}Cs(8.4 s)	204.8(15.0), 29.7(9.9), 205.6(6.8)
221.6 *2*	0.50 *5*	^{120}Xe(40 m)	25.1(30), 72.6(9), 178.1(6.8)
221.6	0.8 *4*	^{147}Cs(0.225 s)	85.2(7.3), 245.8(4.5), 109.7(4.5)
221.62 *15*	†12 *3*	^{163}Lu(238 s)	163.08(†100), 54.00(†88), 396.34(†63)
221.7 *2*	0.3 *1*	^{104}Mo(60 s)	68.8(55), 69.7(17.8), 36.3(14)
221.7 *4*	†11.8 *12*	^{233}Pu(20.9 m)	235.4(†100), 534.8(†90.2), 500.3(†38.6)
221.701 *10*	6.4 *3*	^{106}Rh(131 m)	511.842(85), 1045.83(30.4), 717.24(28.9)
• 221.701 *10*	6.6 *3*	^{106}Ag(8.28 d)	511.842(88), 1045.83(29.6), 717.24(28.9)
221.74 *20*	0.094 *15*	^{163}Yb(11.05 m)	860.28(10.1), 63.62(6.5), 123.21(1.98)
• 221.74 *8*	0.116 *12*	^{191}Pt(2.9 d)	538.90(13.7), 409.44(8.0), 359.90(6.0)
221.76 *12*	0.033 *5*	^{105}Cd(55.5 m)	961.84(4.69), 346.870(4.20), 1302.459(3.98)
221.76 *20*	†20 *4*	^{161}Lu(77 s)	110.78(†100), 100.32(†95), 43.7(†70)
• 221.77 *11*	0.0023 *4*	^{151}Gd(124 d)	153.56(6.20), 243.28(5.60), 174.70(2.96)
• 221.775 *2*	0.0021 *10*	^{168}Tm(93.1 d)	198.241(52.39), 815.990(48.99), 447.515(23.05)
221.80 *23*	0.100 *11*	^{101}Mo(14.61 m)	191.92(19), 590.91(16.4), 1012.47(12.8)
• 221.80 *4*	0.0212 *7*	^{237}U(6.75 d)	59.537(34.5), 208.00(21.14), 26.345(2.43)
• 221.80 *4*		^{241}Am(432.2 y)	59.537(†60), 26.345(†1000×10^{9}), 33.195(†6000×10^{8})
221.83 *10*	0.072 *21*	^{234}Pa(6.70 h)	131.30(18), 946.00(13.4), 883.24(9.6)

• $t_{1/2}$>1 d

Energy-ordered Decay γ-ray Tables from the *Table of Isotopes*

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
221.87 *26*	0.136 *16*	^{136}Pr(13.1 m)	552.16(76), 539.75(52), 1092.3(18.5)
221.9 *1*	0.0026	^{161}Er(3.21 h)	826.6(3.0), 211.15(12.2), 592.6(3.7)
221.9 *5*	†0.04 *1*	^{188}Au(8.84 m)	265.63(†100), 340.04(†23.9), 605.5(†16.3)
221.9	†4	^{238}Pa(2.3 m)	1015.3(†<100), 1014.6(†<100), 635.18(†88)
221.926 *16*		^{179}Re(19.5 m)	430.221(28), 289.968(26.9), 1680.244(13.0)
221.93 *11*	†27 *3*	^{189}Au(28.7 m)	713.17(†100), 812.68(†63), 447.65(†55)
221.97 *9*	0.086 *16*	^{133}Ce(4.9 h)	477.22(39), 510.36(20.7), 58.39(19.2)
222.0 *2*	0.7	^{114}Pd(2.42 m)	232.0(4.90), 126.7(4.49), 358.5(1.63)
222.0 *10*	0.6	^{149}Er(8.9 s)	1171.0(9.4), 171.5(6.5), 343.9(6.3)
• 222.0 *7*		^{165}Tm(30.06 h)	242.917(35.5), 47.155(16.9), 297.369(12.71)
222 *8*	†3	^{189}W(11.5 m)	258(†100), 417(†96), 550(†28)
222.030 *7*	1.15 *5*	^{207}Po(5.80 h)	992.33(59.3), 742.64(28.2), 911.79(16.95)
222.06 *20*	1.2	^{113}Pd(93 s)	95.74(3.3), 643.7(3.0), 739.63(2.4)
• 222.06 *5*	0.0086 *10*	^{171}Lu(8.24 d)	739.78(47.8), 19.394(13.7), 667.404(11.04)
• 222.069 *9*	0.02 *1*	^{155}Tb(5.32 d)	86.545(32.0), 105.305(25), 180.103(7.45)
• 222.10956 *23*	3.49 *5*	^{182}Ta(114.43 d)	67.75001(41.2), 1121.3007(34.9), 1221.4066(26.98)
222.10956 *23*	3.69 *5*	^{182}Re(12.7 h)	67.75001(38.2), 1121.3007(32), 1221.4066(24.8)
• 222.10956 *23*	3.5 *8*	^{182}Re(64.0 h)	229.3220(26), 67.75001(22.2), 1121.3007(22.0)
222.13 *15*	2.0 *3*	^{184}Au(53.0 s)	162.97(50), 272.98(40), 362.47(17.5)
222.18 *6*	0.052 *15*	^{151}Nd(12.44 m)	116.80(43.4), 255.68(16.4), 1180.89(14.8)
222.2 *2*	0.06 *3*	^{109}Sn(18.0 m)	1099.4(30), 649.90(28.0), 1321.3(11.9)
222.3 *3*		^{122}Ba(1.95 m)	550.7, 388.7, 231.0
222.3 *2*	1.67 *17*	^{185}Ir(14.4 h)	254.4(13.3), 1828.8(10), 60.0(5.7)
• 222.3		^{188}Ir(41.5 h)	155.032(29.7), 2214.62(18.7), 632.99(18)
222.32 *5*	0.94 *10*	^{204}Bi(11.22 h)	899.15(98), 374.72(82), 984.02(59)
222.37 *20*	0.24 *4*	^{161}Yb(4.2 m)	78.20(34), 599.88(25.9), 631.45(13.9)
222.4 *5*	0.29 *7*	^{98}Sr(0.653 s)	119.353(73), 444.628(39), 428.4(31)
• 222.40 *15*	0.0403 *13*	^{170}Lu(2.00 d)	84.2551(4.256), 1280.25(3.450), 2041.88(1.434)
222.4 *1*	<0.21	^{236}Pa(9.1 m)	642.35(37.0), 687.59(9.9), 1762.7(6.0)
222.45 *9*		^{168}Lu(5.5 m)	1483.65(†100), 228.58(†97), 111.8(†68)
222.45 *9*	0.31	^{168}Lu(6.7 m)	198.82(28), 979.22(20), 896.12(15)
222.45 *5*	24.6 *18*	^{197}Pb(43 m)	385.85(74), 387.72(25.1), 774.26(14.1)
222.5 *2*	1.2 *3*	^{100}Ag(2.01 m)	665.54(99), 750.67(78), 773.20(24.2)
• 222.5 *5*		^{146}Eu(4.59 d)	747.2(98), 633.03(43), 634.07(37)
222.5 *1*	0.12 *4*	^{157}Tm(3.63 m)	455.00(9.3), 385.5(8.8), 348.40(8.4)
222.5 *5*	0.057 *17*	^{179}W(6.40 m)	238.61(0.218), 281.70(0.186), 213.9(0.057)
222.5 *3*	0.37 *5*	^{240}Np(61.9 m)	566.34(25.3), 973.9(23.8), 600.57(18.4)
222.54 *8*	0.181 *22*	^{205}Po(1.66 h)	872.39(37), 1001.21(28.8), 849.83(25.5)
• 222.6 *2*	0.0020 *10*	^{237}Np(2.14×10^6 y)	29.374(15.0), 86.477(12.4), 94.66(0.6)
222.63 *10*	†6.5 *6*	^{131}Pr(1.53 m)	266.13(†100), 72.82(†64), 387.56(†38)
222.690 *9*	0.30 *4*	^{207}Po(5.80 h)	992.33(59.3), 742.64(28.2), 911.79(16.95)
• 222.694 *6*	0.033 *16*	^{169}Lu(34.06 h)	960.622(23.4), 191.2137(20.6), 1449.74(9.92)
222.7 *6*	†1.8	^{177}Os(2.8 m)	84.7(†100), 125.4(†63), 195.8(†61)
222.7 *6*	0.36 *14*	^{179}Re(19.5 m)	430.221(28), 289.968(26.9), 1680.244(13.0)
• 222.71 *12*	0.0230 *22*	^{148}Eu(54.5 d)	550.284(98.5), 629.987(71.9), 611.293(20.5)
222.77 *4*	0.69 *10*	^{202}Bi(1.72 h)	960.67(99), 422.18(83.7), 657.49(60.6)
222.79 *6*	1.01 *11*	^{167}Lu(51.5 m)	29.66(14.4), 239.22(8.6), 213.19(3.6)
222.8 *1*	0.322 *10*	^{142}Ba(10.6 m)	255.300(20.5), 1204.3(14.23), 895.2(13.9)
222.8 *1*	1.61 *7*	^{142}Gd(70.2 s)	750.2(11.2), 178.90(11.20), 284.4(6.16)
222.8 *3*	0.065 *14*	^{150}Tb(3.48 h)	638.05(72), 496.3(14.8), 792.5(4.39)
222.80 *50*	0.019 *5*	^{174}Ta(1.05 h)	206.50(58), 91.00(16.0), 1205.92(4.9)
222.8 *4*	0.16 *9*	^{185}Au(4.25 m)	310.6(13), 243.1(6.6), 77.7(6)
222.8 *1*	†100.0 *6*	^{185}Hg(21.6 s)	258.7(†98), 212.5(†58), 190.1(†52)

• $t_{1/2}$>1 d

$E_\gamma(\Delta E)$	$I_\gamma(\Delta I)$	Decay Parent	Associated γ-rays: $E_\gamma(I_\gamma)$
222.8 *1*	†6.0 *6*	^{185}Hg(21.6 s)	222.8(†100.0), 258.7(†98), 212.5(†58)
222.83 *10*	0.07 *3*	^{199}Pb(90 m)	366.90(44.2), 353.39(9.5), 1135.04(7.8)
222.9 *10*	†15 *7*	^{196}Tl(1.41 h)	426.0(†540), 635.5(†304), 695.6(†243)
222.9 *1*	0.0045 *15*	^{223}Fr(21.8 m)	50.13(36.0), 79.72(9.1), 234.81(3.0)
222.98 *5*	0.75 *6*	^{157}Pm(10.56 s)	160.61(35), 188.052(13.5), 571.27(5.39)
222.993 *20*	1.79 *13*	^{250}Es(8.6 h)	828.82(72), 303.41(21.6), 349.4(19.8)
223.0 *3*	†6.0 *6*	^{111}Ru(2.12 s)	303.8(†100), 211.7(†77.7), 382.0(†41.3)
223.0 *1*		^{212}Bi(25.0 m)	276.5, 120.9, 405.2
223.09 *14*	0.26 *10*	^{181}Os(105 m)	238.75(44), 826.77(20), 118.03(12.9)
223.1 *2*	†4.7 *6*	^{101}Y(448 ms)	98.3(†100), 133.8(†18.8), 232.1(†11.9)
223.1 *1*	0.11 *4*	^{109}In(4.2 h)	203.5(74), 623.7(5.5), 1148.9(4.3)
223.1 *2*	†52 *8*	^{177}Pt(11 s)	148.0(†100), 85.4(†62), 157.2(†24)
223.1 *3*	0.077 *7*	^{187}Au(8.4 m)	1331.81(7.0), 1408.23(3.06), 914.73(3.02)
223.1 *3*	0.18 *4*	^{188}Hg(3.25 m)	66.7(63), 190.1(4.40), 82.7(2.6)
• 223.163 *20*	0.0127 *25*	^{173}Lu(1.37 y)	272.105(21.2), 78.63(11.87), 100.724(5.24)
• 223.163 *20*	0.140 *6*	^{173}Lu(1.37 y)	272.105(21.2), 78.63(11.87), 100.724(5.24)
223.173 *11*	†0.276 *22*	^{153}Pm(5.4 m)	35.842(†100), 127.298(†75), 28.309(†34.6)
223.2	0.7	^{133}Pr(6.5 m)	134.3(14), 74.0(10), 315.6(10)
223.2		^{168}Hf(25.95 m)	183.8(†100), 157.2(†68), 324.1
223.2 *2*	†10.7 *17*	^{181}Hg(3.6 s)	147.8(†100), 42.5(†25), 1986.7(†17)
223.2 *4*	0.44 *9*	^{185}Au(4.25 m)	310.6(13), 243.1(6.6), 77.7(6)
223.23 *3*	2.22 *10*	^{177}W(135 m)	115.65(50), 426.98(13.2), 1036.4(10.3)
• 223.234 *12*	0.00012 *2*	^{133}Xe(5.243 d)	80.997(38.0), 79.623(0.27), 160.613(0.066)
• 223.234 *12*	0.450 *4*	^{133}Ba(10.52 y)	356.017(62.05), 80.997(34.06), 302.853(18.33)
223.3 *3*		^{122}Ba(1.95 m)	550.7, 388.7, 231.0
223.3 *3*	†22.9 *24*	^{143}Tb(12 s)	45.1(†100), 686.1(†48), 462.8(†45)
223.3 *2*	†0.052 *12*	^{229}Ac(62.7 m)	164.522(†100), 569.1(†91), 261.92(†39)
• 223.3 *2*	3.0×10^{-5} *4*	^{233}U(1.592×10^{5} y)	42.44(0.0862), 97.134(0.020), 54.699(0.0182)
223.31 *10*	1.0 *1*	^{156}Pm(26.70 s)	173.75(52.0), 1147.84(20.5), 117.42(13.8)
223.33 *6*	0.124 *12*	^{158}Tm(3.98 m)	192.13(62), 335.10(16.8), 1149.83(7.6)
223.34 *3*	1.49 *10*	^{189}Pt(10.87 h)	721.41(9.3), 94.33(7.6), 568.84(7.1)
223.4 *3*	0.20 *3*	^{149}Dy(4.20 m)	100.8(15.2), 789.4(11.8), 1776.3(11.1)
• 223.40 *15*	0.0202 *7*	^{170}Lu(2.00 d)	84.2551(4.256), 1280.25(3.450), 2041.88(1.434)
223.40 *15*	0.08 *3*	^{183}Hf(1.067 h)	783.754(66), 73.174(38), 459.069(27)
223.41 *11*	0.64 *6*	^{70}Se(41.1 m)	49.51(35.8), 426.15(29), 376.65(9.43)
223.41 *7*	0.47	^{204}At(9.2 m)	684.341(95), 516.318(90), 426.253(67.5)
223.43 *9*	0.11	^{183}Au(42.0 s)	161.18(9.4), 214.13(5.9), 313.08(5.0)
223.5 *5*	0.12 *4*	^{123}In(5.98 s)	1130.5(63), 1019.7(32), 618.8(2.6)
223.5 *2*	6.9 *15*	^{139}Eu(17.9 s)	267.3(31), 155.3(31), 190.1(25)
• 223.5 *1*	0.112 *12*	^{191}Pt(2.9 d)	538.90(13.7), 409.44(8.0), 359.90(6.0)
223.54 *2*	0.221 *17*	^{191}Au(3.18 h)	586.45(17), 277.88(7.2), 674.19(6.8)
223.59 *19*	†50 *6*	^{168}Lu(5.5 m)	1483.65(†100), 228.58(†97), 111.8(†68)
223.6 *4*	2.24 *16*	^{232}Np(14.7 m)	327.3(52), 819.187(33.3), 866.760(24.4)
• 223.65 *15*	0.068 *12*	^{153}Tb(2.34 d)	212.038(31.0), 170.504(6.8), 109.758(6.4)
• 223.7 *5*		^{146}Eu(4.59 d)	747.2(98), 633.03(43), 634.07(37)
223.7 *3*	0.009	^{195}Ir(3.8 h)	98.85(10), 684.88(9.4), 432.86(9)
223.711 *10*	†1.4 *4*	^{131}Sn(56.0 s)	1226.03(†100), 450.03(†90), 798.50(†86)
• 223.75 *2*	23.5 *18*	^{246}Pu(10.84 d)	43.81(25.0), 179.94(9.7), 27.58(3.5)
223.8 *3*	†0.7 *2*	^{101}Nb(7.1 s)	276.10(†100), 157.466(†32), 13.5(†32)
• 223.8 *2*	1.39 *10*	^{126}Sb(12.46 d)	695.03(100), 666.331(100), 414.81(83.3)
223.8	0.021	^{135}Ce(17.7 h)	265.56(41.8), 300.07(23.5), 606.76(18.8)
223.8		^{157}Eu(15.18 h)	63.929(23.0), 410.723(17.5), 370.509(11.0)
223.8 *2*	2.10 *21*	^{185}Ir(14.4 h)	254.4(13.3), 1828.8(10), 60.0(5.7)

• $t_{1/2}$>1 d