$^{36}_{17}$Cl (Continued)

7165 *7*, *[C]*
7512 *6*, (1,2)$^+$, *[C]*
7559.19 *8*, (0$^+$ to 4$^+$), *[A]* γ_{5329}***2229.94*** (†$_\gamma$100 *6*) γ_0***7558.33*** (†$_\gamma$37 *6*)
7564 *4*, (1,2)$^+$, *[CE]*, T=(2) γ_{2492}***5071*** (†$_\gamma$43 *10*) γ_{1959}***5604*** (†$_\gamma$95 *14*) γ_{1601}***5962*** (†$_\gamma$100 *14*)
7665 *6*, (1,2)$^+$, *[C]*
7755 *6*, *[C]*
7870 *6*, (1,2)$^+$, *[C]*
8184 *6*, *[C]*

$^{36}_{18}$Ar

%: 0.337 *3*
Δ: –30230.5 *3* **S$_n$:** 15253.6 *8* **S$_p$:** 8505.92 *25*
σ$_\gamma$: 5.2 *5* b , **σ$_\alpha$:** 0.0055 *1* b

Populating Reactions and Decay Modes

A ^{36}Cl β$^-$ decay (78En02)
B ^{36}K EC decay (86BrZQ)
C ^{35}Cl(p,γ)
D ^{33}S(α,nγ)
E ^{35}Cl(^{3}He,d)
F ^{32}S(α,γ)
G ^{35}Cl(p,x)
H ^{37}Ca ECp decay (74Se11)
I ^{40}Sc ECα decay (82HO09)
J ^{36}K ECp decay
K ^{36}K ECα decay

Levels and γ-ray branchings:

0, 0$^+$, stable, *[ABCDEHI]*
1970.39 *5*, 2$^+$, 320 *30* fs, *[BCE]*, Q=+0.11 *6* γ_0***1970.33*** (†$_\gamma$100) E2
4178.33 *11*, 3$^-$, 2.3 *3* ps, *[BCDE]* γ_{1970}***2207.87*** (†$_\gamma$100.0 *4*) E1+M2: δ=–0.05 *2* γ_0***4178.07*** (†$_\gamma$7.0 *4*) E3
4329.1 *10*, (0,1,2)$^+$, >490 fs, *[CE]* γ_{1970}***2358.6*** (†$_\gamma$100) γ_0***4328.8*** (†$_\gamma$<10)
4414.36 *17*, 4$^+$, 75 *11* fs, *[BCE]* γ_{1970}***2443.88*** (†$_\gamma$100) E2(+M3): δ=+0.05 *3* γ_0***4414.07*** (†$_\gamma$<2)
4440.5 *3*, 2$^+$, 75 *14* fs, *[BCDE]* γ_{1970}***2470.0*** (†$_\gamma$54 *5*) (M1+)E2: δ>1.5 γ_0***4440.2*** (†$_\gamma$100 *5*) E2
4951.2 *5*, 2$^+$, <35 fs, *[CE]* γ_{4414}***536.8*** (†$_\gamma$<8) γ_{4178}***772.9*** (†$_\gamma$<2.4) γ_{1970}***2980.7*** (†$_\gamma$18 *4*) γ_0***4950.8*** (†$_\gamma$100 *4*) E2
4974.05 *19*, 2$^-$, 10 *3* ps, *[CDE]* γ_{4441}***533.55*** (†$_\gamma$<0.4) γ_{4414}***559.69*** (†$_\gamma$<0.5) γ_{4178}***795.71*** (†$_\gamma$100 *3*) M1+E2: δ=–1.1 *7* γ_{1970}***3003.52*** (†$_\gamma$5.1 *11*) γ_0***4973.68*** (†$_\gamma$22 *3*) M2
5171.14 *16*, 5$^-$, 88 *3* ps, *[CDE]* γ_{4974}***197.09*** (†$_\gamma$<4.8) γ_{4441}***730.63*** (†$_\gamma$<0.36) γ_{4414}***756.77*** (†$_\gamma$14.3 *4*) E1(+M2): δ=+0.05 *2* γ_{4178}***992.80*** (†$_\gamma$100.0 *5*) E2(+M3): δ=–0.04 *2* γ_{1970}***3200.60*** (†$_\gamma$7.0 *5*) E3(+M4): δ≈0 γ_0***5170.74*** (†$_\gamma$<1.2)
5194.4 *8*, (0$^+$ to 3$^-$), 70 *20* fs, *[C]* γ_{4441}***753.9*** (†$_\gamma$<3) γ_{4414}***780.0*** (†$_\gamma$<3) γ_{1970}***3223.9*** (†$_\gamma$100) γ_0***5194.0*** (†$_\gamma$<10)
5836.0 *4*, 1$^-$, 6 *2* fs, *[CE]* γ_{5171}***664.9*** (†$_\gamma$<1) γ_{4974}***861.9*** (†$_\gamma$<1) γ_{4441}***1395.5*** (†$_\gamma$<1) γ_{4414}***1421.6*** (†$_\gamma$<1) γ_{4178}***1657.6*** (†$_\gamma$2.2 *9*) (E2) γ_{1970}***3865.4*** (†$_\gamma$7.7 *22*) (E1) γ_0***5835.5*** (†$_\gamma$100.0 *22*) E1
5856.6 *2*, 3$^-$, 310 *100* fs, *[CE]* γ_{5171}***685.5*** (†$_\gamma$<1.2) γ_{4974}***882.5*** (†$_\gamma$<2.4) γ_{4441}***1416.1*** (†$_\gamma$<3.6) γ_{4414}***1442.2*** (†$_\gamma$<3.6) γ_{4178}***1678.2*** (†$_\gamma$17 *3*) γ_{1970}***3886.0*** (†$_\gamma$100 *3*) E1(+M2): δ=+0.02 *2* γ_0***5856.1*** (†$_\gamma$3.6 *12*) E3
5895.9 *2*, 4$^-$, 350 *140* fs, *[C]* γ_{5171}***724.8*** (†$_\gamma$<1) γ_{4974}***921.8*** (†$_\gamma$<1) γ_{4441}***1455.4*** (†$_\gamma$<2) γ_{4414}***1481.5*** (†$_\gamma$<2) γ_{4178}***1717.5*** (†$_\gamma$100) M1+E2: δ=+0.16 *2* γ_{1970}***3925.3*** (†$_\gamma$<3) γ_0***5895.4*** (†$_\gamma$<3)
6136.5 *15*, (1$^-$,2$^+$,3$^-$,4$^+$), *[C]* γ_{1970}***4165.8*** (†$_\gamma$100)
6217.3 *3*, 5$^-$, 200 *35* fs, *[C]* γ_{5171}***1046.1*** (†$_\gamma$<2.2) γ_{4974}***1243.2*** (†$_\gamma$<1.2) γ_{4441}***1776.8*** (†$_\gamma$<1.2) γ_{4414}***1802.9*** (†$_\gamma$10.4 *14*) E1(+M2): δ=–0.03 *7* γ_{4178}***2038.9*** (†$_\gamma$100.0 *14*) E2(+M3): δ=+0.01 *2* γ_{1970}***4246.6*** (†$_\gamma$<2.2) γ_0***6216.7*** (†$_\gamma$<2.2)
6356.0 *6*, 4$^+$, 300 *100* fs, *[C]* γ_{4441}***1915.4*** (†$_\gamma$29 *6*) (E2) γ_{4414}***1941.6*** (†$_\gamma$76 *4*) γ_{1970}***4385.3*** (†$_\gamma$100 *4*) (E2) γ_0***6355.4*** (†$_\gamma$<14)
6611.2 *4*, 2$^+$, 15 *6* fs, *[BCE]*, T=1 γ_{4441}***2170.6*** (†$_\gamma$9.7 *15*) γ_{4414}***2196.8*** (†$_\gamma$<6) γ_{4178}***2432.8*** (†$_\gamma$100 *3*) (E1) γ_{1970}***4640.5*** (†$_\gamma$2.3 *4*) γ_0***6610.5*** (†$_\gamma$23 *3*) E2
6645.6 *15*, (2 to 4$^+$), *[C]* γ_{4441}***2205.0*** (†$_\gamma$100)
6730 *2*, 2$^+$, *[BCE]* γ_{4441}***2289*** (†$_\gamma$<3.6) γ_{1970}***4759*** (†$_\gamma$82 *18*) γ_0***6729*** (†$_\gamma$100 *18*) E2
6835.2 *2*, 4$^-$, 550 *180* fs, *[C]* γ_{5857}***978.6*** (†$_\gamma$11 *3*) γ_{5171}***1664.0*** (†$_\gamma$95 *5*) γ_{4974}***1861.1*** (†$_\gamma$100 *5*) (E2) γ_{4441}***2394.6*** (†$_\gamma$<5) γ_{4178}***2656.8*** (†$_\gamma$43 *5*) γ_{1970}***4864.5*** (†$_\gamma$<5) γ_0***6834.5*** (†$_\gamma$<2.6)
6836.5 *2*, 3$^-$, 170 *40* fs, *[CE]* γ_{5171}***1665.3*** (†$_\gamma$53 *9*) E2(+M3): δ=+0.07 *9* γ_{4974}***1862.4*** (†$_\gamma$16 *4*) γ_{4951}***1885.2*** (†$_\gamma$6.1 *9*) (E1) γ_{4441}***2395.9*** (†$_\gamma$<3.6) γ_{4414}***2422.1*** (†$_\gamma$<3.6) γ_{4178}***2658.1*** (†$_\gamma$100 *9*) M1+E2: δ=–1.9 *5* γ_{1970}***4865.8*** (†$_\gamma$<3.6) γ_0***6835.8*** (†$_\gamma$<1.8)
6866.9 *10*, (1,2)$^+$, *[BCE]* γ_{1970}***4896.1*** (†$_\gamma$100 *13*) γ_0***6866.2*** (†$_\gamma$41 *13*)
7136.5 *9*, (1$^-$,2$^+$), 9 *3* fs, *[CE]* γ_{4974}***2162.4*** (†$_\gamma$<2.6) γ_{4441}***2695.9*** (†$_\gamma$<3.8) γ_{4414}***2722.0*** (†$_\gamma$<2.6) γ_{4178}***2958.0*** (†$_\gamma$<5) γ_{1970}***5165.7*** (†$_\gamma$27 *3*) γ_0***7135.7*** (†$_\gamma$100 *3*)
7139.7 *3*, 3$^+$, 70 *35* fs, *[BCE]* γ_{5857}***1283.1*** (†$_\gamma$<4) γ_{4441}***2699.1*** (†$_\gamma$100 *7*) γ_{4178}***2961.2*** (†$_\gamma$<6) γ_{1970}***5168.9*** (†$_\gamma$85 *7*) γ_0***7138.9*** (†$_\gamma$<4)
7178.4 *5*, (1,2)$^+$, *[BCE]* γ_{1970}***5207.6*** (†$_\gamma$75 *11*) γ_0***7177.6*** (†$_\gamma$100 *11*)
7247.4 *6*, (1,2,3)$^-$, <20 fs, *[CE]* γ_{4178}***3068.9*** (†$_\gamma$<5) γ_{1970}***5276.6*** (†$_\gamma$100) (E1) γ_0***7246.6*** (†$_\gamma$<6)
7258.6 *8*, 3$^-$, <15 fs, *[C]* γ_{1970}***5287.8*** (†$_\gamma$100) E1(+M2): δ=–0.14 *14*
7337.1 *9*, 3$^+$, 11 *5* fs, *[BCE]*, T=1 γ_{4974}***2363.0*** (†$_\gamma$<6) γ_{4441}***2896.5*** (†$_\gamma$100 *4*) M1(+E2): δ=+0.02 *7* γ_{4414}***2922.6*** (†$_\gamma$21 *4*) γ_{4178}***3158.6*** (†$_\gamma$17 *4*) (E1) γ_{1970}***5366.3*** (†$_\gamma$54 *4*) γ_0***7336.3*** (†$_\gamma$<6)
7353.9 *3*, 6$^-$, 125 *30* fs, *[C]* γ_{5857}***1497.3*** (†$_\gamma$<6) γ_{5171}***2182.7*** (†$_\gamma$100) M1+E2: δ=–6.0 *9* γ_{4974}***2379.8*** (†$_\gamma$<4) γ_{4441}***2913.3*** (†$_\gamma$<3) γ_{4414}***2939.4*** (†$_\gamma$<4) γ_{4178}***3175.4*** (†$_\gamma$<7) γ_{1970}***5383.1*** (†$_\gamma$<5) γ_0***7353.1*** (†$_\gamma$<3)
7423.2 *7*, (1,2)$^+$, <70 fs, *[CE]* γ_{1970}***5452.4*** (†$_\gamma$56 *17*) γ_0***7422.4*** (†$_\gamma$100 *17*)
7573.1 *3*, 4$^-$, 160 *50* fs, *[CE]* γ_{5896}***1677.2*** (†$_\gamma$8.5 *22*) γ_{5171}***2401.9*** (†$_\gamma$100 *9*) γ_{4974}***2598.9*** (†$_\gamma$15.4 *15*) (E2) γ_{4441}***3132.5*** (†$_\gamma$<3.8) γ_{4414}***3158.6*** (†$_\gamma$15 *7*) γ_{4178}***3394.6*** (†$_\gamma$43 *9*) γ_{1970}***5602.2*** (†$_\gamma$3.7 *7*) γ_0***7572.2*** (†$_\gamma$<1.8)
7672.1 *6*, 3$^-$, *[CE]* γ_{4974}***2697.9*** (†$_\gamma$25 *9*) γ_{1970}***5701.2*** (†$_\gamma$100 *9*)
7709.5 *6*, 1$^+$, *[BCE]*, T=1 γ_{1970}***5738.6*** (†$_\gamma$100 *8*) γ_0***7708.6*** (†$_\gamma$56 *8*) M1
7749.7 *5*, (1,2,3)$^-$, *[CE]* γ_{1970}***5778.8*** (†$_\gamma$100)
7879 *2*, (1,2)$^-$, *[CE]* γ_{5836}***2043*** (†$_\gamma$100 *10*) γ_{4974}***2905*** (†$_\gamma$67 *10*)
7970.5 *7*, (1,2)$^+$, *[BE]* γ_0***7969.5*** (†$_\gamma$100)
8015.9 *10*, (3,4)$^-$, *[CE]* γ_{5857}***2159.2*** (†$_\gamma$51 *7*) γ_{5171}***2844.6*** (†$_\gamma$40 *4*) γ_{4974}***3041.7*** (†$_\gamma$100 *9*) γ_{4441}***3575.2*** (†$_\gamma$<4.4) γ_{4414}***3601.3*** (†$_\gamma$4.4 *13*) γ_{4178}***3837.3*** (†$_\gamma$27 *4*) γ_{1970}***6045.0*** (†$_\gamma$<6) γ_0***8014.9*** (†$_\gamma$<2.2)
8132.7 *9*, 1$^+$, *[BCE]*, T=1 γ_{1970}***6161.7*** (†$_\gamma$59 *8*) γ_0***8131.7*** (†$_\gamma$100 *8*) M1
8230 *10*, *[E]*
8302 *10*, (0 to 3)$^-$, *[E]*
8332.5 *15*, 3$^-$, *[CE]* γ_{4178}***4153.9*** (†$_\gamma$43 *7*)
8365 *10*, (0 to 3)$^-$, *[E]*
8400 *10*, *[E]*
8448 *10*, *[E]*, T=(1)
8472.0 *10*, (3$^-$ to 5$^-$), 31 *7* fs, *[C]* γ_{6217}***2254.6*** (†$_\gamma$13 *3*) γ_{5896}***2576.0*** (†$_\gamma$41 *6*) γ_{5857}***2615.3*** (†$_\gamma$66 *6*) γ_{5171}***3300.7*** (†$_\gamma$100 *6*) γ_{4974}***3497.8*** (†$_\gamma$<6) γ_{4441}***4031.3*** (†$_\gamma$<6) γ_{4414}***4057.4*** (†$_\gamma$88 *6*) γ_{4178}***4293.4*** (†$_\gamma$6.3 *19*)
8505 *10*, *[E]*
8555.5 *6*, 2$^+$, *[BE]*, T=1 γ_{1970}***6584.5*** (†$_\gamma$100)
8672 *10*, *[E]*
8909 *4*, 2$^+$, *[BFK]*, T=0
8938.5 *6*, (2$^+$ to 4$^-$), *[G]*, T=(1)
9014.5 *10*, (3$^-$ to 5$^-$), *[G]*, T=(1)
9024.9 *7*, 2, *[BGJ]*, T=(1)
9066.0 *7*, 3$^-$, *[G]*
9116 *5*, 1$^-$, *[F]*, T=0
9132.1 *7*, 3$^-$, *[BGK]*, T=0
9144.5 *7*, (2$^+$,3$^-$), *[G]*
9191.8 *11*, (3$^-$,4$^+$), *[G]*
9219.2 *8*, 1$^+$, *[BGJ]*, T=1
9240.2 *11*, (1$^-$ to 3$^-$), *[G]*
9248.1 *11*, (1$^-$ to 3$^-$), *[G]*
9258.0 *12*, 3$^-$, *[G]*
9300.2 *3*, 4$^-$, *[G]*, T=1
9342.7 *3*, 3$^-$, Γ=12 eV, *[G]*, T=1
9355.7 *8*, 2$^+$, *[FG]*, T=0
9365.6 *8*, 1$^-$, *[G]*, T=0
9373.7 *13*, (1$^-$,2$^+$,3$^-$), *[BGK]*, T=0
9379.6 *13*, (2$^+$,3), *[BGJ]*, T=(1)
9393.1 *10*, (2$^+$ to 4$^+$), *[G]*
9413 *3*, *[G]*
9438.9 *14*, (2$^+$ to 4$^+$), *[G]*
9447.7 *9*, (2$^+$,3$^-$), *[FG]*, T=0
9465.5 *6*, 2$^+$, *[FG]*, T=0
9473.7 *8*, (1,2), *[G]*
9494.0 *12*, *[G]*, T=0
9502.3 *5*, (2,3)$^+$, *[BGJ]*, T=0
9509.2 *7*, (2$^+$,3$^-$), *[BGK]*, T=0
9541.6 *11*, (1,2,3)$^-$, *[G]*, T=(1)
9550.0 *4*, (0$^+$ to 4$^+$), *[G]*
9574.0 *3*, 4$^-$, *[G]*, T=1
9595.1 *7*, 2$^+$, *[G]*, T=0
9606.4 *6*, (0,1,2)$^-$, *[G]*, T=(1)
9666.7 *10*, 3$^-$, *[G]*, T=0
9681.6 *6*, (2$^+$ to 6$^+$), *[G]*
9700 *30*, 0$^+$, T=1
9702.8 *14*, (1$^-$,2$^+$), *[BGK]*, T=0
9734.0 *6*, (1$^-$ to 4$^+$), *[G]*
9737.2 *8*, 3$^-$, Γ=400 eV, *[G]*, T=0 *+1*
9764.2 *6*, (3$^-$ to 5$^-$), *[G]*
9811.8 *6*, (1 to 3$^-$), *[G]*
9862.3 *6*, 3$^+$, *[G]*, T=0
9878.2 *6*, (2,3)$^+$, *[BGJ]*
9888.9 *6*, *[G]*
9901.7 *6*, 4$^+$, *[G]*, T=0
9927.0 *6*, (3$^-$ to 5$^-$), *[G]*
9942.2 *6*, (2,3$^-$), *[G]*
9956.5 *6*, (1,2$^+$), *[G]*
9982.2 *16*, (1,3)$^-$, *[G]*, T=0
9982.9 *6*, 1$^+$(2$^+$), *[G]*, T=1
9991.5 *16*, 2$^+$, *[G]*, T=0
9992.5 *9*, *[G]*
10002.0 *10*, (1$^-$ to 3), *[G]*
10044.0 *12*, 1$^-$, Γ=900 eV, *[G]*, T=0
10050.2 *15*, 3$^-$, Γ=400 eV, *[G]*, T=0
10076.4 *6*, (1$^-$ to 3), *[BGJ]*
10092 *3*, *[G]*
10094.6 *15*, 2$^+$, *[G]*, T=0
10099.0 *7*, 1$^-$, Γ=400 eV, *[G]*, T=0
10139.2 *9*, (2$^+$,3$^-$), *[G]*
10142.7 *7*, (1$^-$,2), *[G]*
10149.3 *6*, (3$^-$,4), *[G]*
10167.1 *6*, 3$^-$, *[G]*, T=0
10173.0 *6*, (1$^-$,2$^+$), *[BGK]*, T=0
10186 *5*, 1$^-$, *[F]*, T=0
10193.2 *10*, (3$^-$ to 6$^+$), *[G]*