$^{142}_{62}$Sm

Δ: –78997 *11* **S_n:** 11122 *16* **S_p:** 5810 *30*
Q_{EC}: 2090 *40* **Q_α:** (620)

Nuclear Bands

A SD-1 band (95Ha29,93Ha03)
B SD-2 band (95Ha29)

Levels and γ-ray branchings:

0, 0^+, 72.49 *5* m, %EC+%β^+=100
768.0 *2*, 2^+ γ_0***768.0*** *2* (†$_\gamma$100) E2
1450.2 *8*, (0^+) γ_{768}***682.2*** *7* (†$_\gamma$100)
1572 *6*
1657.7 *3*, $(2)^+$ γ_{768}***889.6*** *3* (†$_\gamma$100 *9*)
γ_0***1658.1*** *5* (†$_\gamma$98 *23*)
1784.1 *3*, 3^- γ_{768}***1016.1*** *2* (†$_\gamma$100) (E1)
1791.2 *3*, 4^+ γ_{768}***1023.3*** *2* (†$_\gamma$100) E2
2055.4 *4*, 2^+ γ_{768}***1287.4*** *3* (†$_\gamma$100 *9*)
γ_0***2055.5*** *10* (†$_\gamma$37 *5*)
2173.2 *5*, 0^+ γ_{768}***1405.2*** *4* (†$_\gamma$100)
2280 *3*, 0^+
2347.7 *3*, 5^- γ_{1791}***556.6*** *2* (†$_\gamma$100 *3*) E1
γ_{1784}***563.7*** *2* (†$_\gamma$9.6 *5*) E2,(M1)
2371.8 *4*, 7^-, 170 *2* ns, μ=+0.06, Q=+1.12 *27* γ_{2348}***24.1*** *3* (†$_{\gamma+e}$95.0) E2
γ_{1791}***580.7*** *4* (?) (†$_{\gamma+e}$≈0.5)
2415.9 *1*, (4) γ_{1784}***631.8***
2420.0 *3*, 6^+, <2 ns γ_{1791}***628.7*** *2* (†$_\gamma$100)
2497 *2*
2582 *2*, 4^+
2656 *2*
2747 *6*, (2^+)
2867 *1*, 4^+
2911.8 *4*, 7^- γ_{2420}***491.8*** γ_{2372}***540.0*** *2* (†$_\gamma$100) M1
2955 *2*, 4^+
3002.9 *1*, (6^+) γ_{1791}***1211.7*** (†$_\gamma$100)
3007 *5*
3052 *3*
3112.9 *4*, 8^- γ_{2912}***200.9*** *5* (†$_\gamma$65 *12*) E2,M1 γ_{2372}***741.2*** *2* (†$_\gamma$100 *12*)
3118 *4*
3182 *1*
3219.8 *5* (?) γ_{2372}***848.0*** *3* (†$_\gamma$100)
3245 *4*
3326.1 *4*, 8^+ γ_{2420}***906.4*** *3* (†$_\gamma$86 *21*) γ_{2372}***954.3*** *2* (†$_\gamma$100 *14*)
3386.6 *5*, 9^- γ_{3113}***273.8*** *5* (†$_\gamma$100 *17*) E2,M1 γ_{2912}***474.4*** *5* (†$_\gamma$63 *8*)
3570.8 *4* γ_{2420}***1151.0*** *3* (†$_\gamma$90 *18*) γ_{2372}***1198.8*** *3* (†$_\gamma$100 *26*)
3639.7 *1*, 11^- γ_{3387}***253.1*** (†$_\gamma$100)
3661.9 *7*, 10^+, 480 *60* ns γ_{3387}***275.1*** γ_{3326}***336.0*** γ_{2372}***1290.3***
3713.7 *4* γ_{2372}***1341.9*** *2* (†$_\gamma$100)
3798.6 *4* γ_{2912}***886.7*** *2* (†$_\gamma$88 *9*) γ_{2372}***1426.8*** *3* (†$_\gamma$100 *19*)
3825.7 *8*, 10^+ γ_{3662}***163.9*** γ_{3387}***438.9*** (†$_\gamma$100)
3974.4 *8*, 10^- γ_{3387}***587.7*** γ_{3113}***861.6***
4072.1 *4*, (7^-) γ_{2420}***1652.1*** *3* (†$_\gamma$35 *7*) γ_{2372}***1700.1*** *3* (†$_\gamma$100 *8*) γ_{2348}***1724.5*** *4* (†$_\gamma$14 *5*)
4210.4 *5* γ_{2372}***1838.6*** *3* (†$_\gamma$100 *11*)
4293.8 *9*, 11^- γ_{3974}***319.4*** γ_{3387}***907.2***
4309.1 *4*, (7^-) γ_{3326}***982.0*** *5* (†$_\gamma$47 *10*) γ_{2420}***1889.0*** *4* (†$_\gamma$29 *6*) γ_{2372}***1937.6*** *3* (†$_\gamma$100 *12*)
4371.6 *1*, 11^- γ_{3974}***397.1*** γ_{3387}***985***
4541.3 *1*, 11^+ γ_{3826}***715.6***
4546.7 *1*, 13^-, 2.6 *6* ns γ_{4372}***175.1*** γ_{4294}***252.9***
4630.3 *4* γ_{2372}***2258.4*** *2* (†$_\gamma$100 *9*)
4745.7 *1*, 12^+ γ_{3826}***920.0*** (†$_\gamma$100)
4970.1, (11^+) γ_{3662}***1308.4***
5048.1, 12 γ_{4970}***78.1*** γ_{4746}***302.5*** γ_{4541}***506.7***
5133.5, 13 γ_{5048}***85.5*** γ_{4746}***387.7***
5223.9, 14 γ_{5134}***90.5*** γ_{4547}***677.1***
5417.7, 15 γ_{5224}***193.8*** (†$_\gamma$100)
5763.6, 16 γ_{5418}***345.7*** (†$_\gamma$100)
5802.9, 16 γ_{5418}***385.2***
6089.8 γ_{5803}***286.9***

A **x**, J≈(25)
A **677.6+x**, J+2 γ_x***677.6*** *6* (?) (†$_\gamma$0.30 *17*)
$I^{(2)}$=*64.8*, ħω=*0.354*
A **1416.9+x**, J+4 γ_{678+x}***739.3*** *1* (†$_\gamma$0.84 *19*)
$I^{(2)}$=*67.2*, ħω=*0.385*
A **2215.7+x**, J+6 γ_{1417+x}***798.8*** *1* (†$_\gamma$0.85 *5*)
$I^{(2)}$=*66.1*, ħω=*0.415*
A **3075.0+x**, J+8 γ_{2216+x}***859.3*** *1* (†$_\gamma$1.09 *6*)
$I^{(2)}$=*66.6*, ħω=*0.445*
A **3994.4+x**, J+10 γ_{3075+x}***919.4*** *1* (†$_\gamma$1.02 *9*) $I^{(2)}$=*65.9*, ħω=*0.475*
A **4974.5+x**, J+12 γ_{3994+x}***980.1*** *1* (†$_\gamma$0.95 *5*) $I^{(2)}$=*66.2*, ħω=*0.505*
A **6015.0+x**, J+14 γ_{4975+x}***1040.5*** *1* (†$_\gamma$1.11 *6*) $I^{(2)}$=*65.9*, ħω=*0.535*
A **7116.2+x**, J+16 γ_{6015+x}***1101.2*** *1* (†$_\gamma$0.93 *5*) $I^{(2)}$=*65.4*, ħω=*0.566*
A **8278.6+x**, J+18 γ_{7116+x}***1162.4*** *1* (†$_\gamma$0.94 *5*) $I^{(2)}$=*65.1*, ħω=*0.597*
A **9502.4+x**, J+20 γ_{8279+x}***1223.8*** *1* (†$_\gamma$1.06 *6*) $I^{(2)}$=*64.8*, ħω=*0.627*
A **10787.9+x**, J+22 γ_{9502+x}***1285.5*** *1* (†$_\gamma$0.82 *5*) $I^{(2)}$=*63.8*, ħω=*0.658*
A **12136.1+x**, J+24 $\gamma_{10788+x}$***1348.2*** *1* (†$_\gamma$0.66 *4*) $I^{(2)}$=*64.1*, ħω=*0.690*

A **13546.7+x**, J+26 $\gamma_{12136+x}$***1410.6*** *2*
($\dagger_\gamma$0.58 *4*) $I^{(2)}$*=63.0, ħω=0.721*

A **15020.8+x**, J+28 $\gamma_{13547+x}$***1474.1*** *2*
($\dagger_\gamma$0.52 *4*) $I^{(2)}$*=62.4, ħω=0.753*

A **16559.0+x**, J+30 $\gamma_{15021+x}$***1538.2*** *2*
($\dagger_\gamma$0.31 *3*) $I^{(2)}$*=62.2, ħω=0.785*

A **18161.5+x**, J+32 $\gamma_{16559+x}$***1602.5*** *3*
($\dagger_\gamma$0.21 *3*) $I^{(2)}$*=60.2, ħω=0.818*

A **19830.4+x**, J+34 $\gamma_{18162+x}$***1668.9*** *5*
($\dagger_\gamma$0.12 *2*) $I^{(2)}$*=63.4, ħω=0.850*

A **21562.4+x**, J+36 $\gamma_{19830+x}$***1732.0*** *9* (?)
($\dagger_\gamma$0.06 *2*) $I^{(2)}$*=78.6, ħω=0.879*

A **23345.3+x**, J+38 $\gamma_{21562+x}$***1782.9*** *14* (?)
($\dagger_\gamma$0.04 *2*)

B **y**, J

B **725.5+y**, J+2 γ_y***725.5*** *6* (?) ($\dagger_\gamma$0.08 *3*)
$I^{(2)}$*=66.2, ħω=0.378*

B **1511.4+y**, J+4 γ_{726+y}***785.9*** *5* ($\dagger_\gamma$0.18 *3*)
$I^{(2)}$*=69.7, ħω=0.407*

B **2354.7+y**, J+6 γ_{1511+y}***843.3*** *5* ($\dagger_\gamma$0.19 *3*)
$I^{(2)}$*=69.9, ħω=0.436*

B **3255.2+y**, J+8 γ_{2355+y}***900.5*** *4* ($\dagger_\gamma$0.16 *3*)
$I^{(2)}$*=69.0, ħω=0.465*

B **4213.7+y**, J+10 γ_{3255+y}***958.5*** *5*
($\dagger_\gamma$0.17 *3*) $I^{(2)}$*=76.9, ħω=0.492*

B **5224.2+y**, J+12 γ_{4214+y}***1010.5*** *6*
($\dagger_\gamma$0.16 *3*) $I^{(2)}$*=64.1, ħω=0.521*

B **6297.1+y**, J+14 γ_{5224+y}***1072.9*** *5*
($\dagger_\gamma$0.18 *3*) $I^{(2)}$*=71.0, ħω=0.551*

B **7426.3+y**, J+16 γ_{6297+y}***1129.2*** *4*
($\dagger_\gamma$0.25 *6*) $I^{(2)}$*=69.8, ħω=0.579*

B **8612.8+y**, J+18 γ_{7426+y}***1186.5*** *9*
($\dagger_\gamma$0.16 *3*) $I^{(2)}$*=69.8, ħω=0.608*

B **9856.6+y**, J+20 γ_{8613+y}***1243.8*** *7*
($\dagger_\gamma$0.13 *3*) $I^{(2)}$*=69.2, ħω=0.636*

B **11158.2+y**, J+22 γ_{9857+y}***1301.6*** *7*
($\dagger_\gamma$0.12 *3*) $I^{(2)}$*=69.3, ħω=0.665*

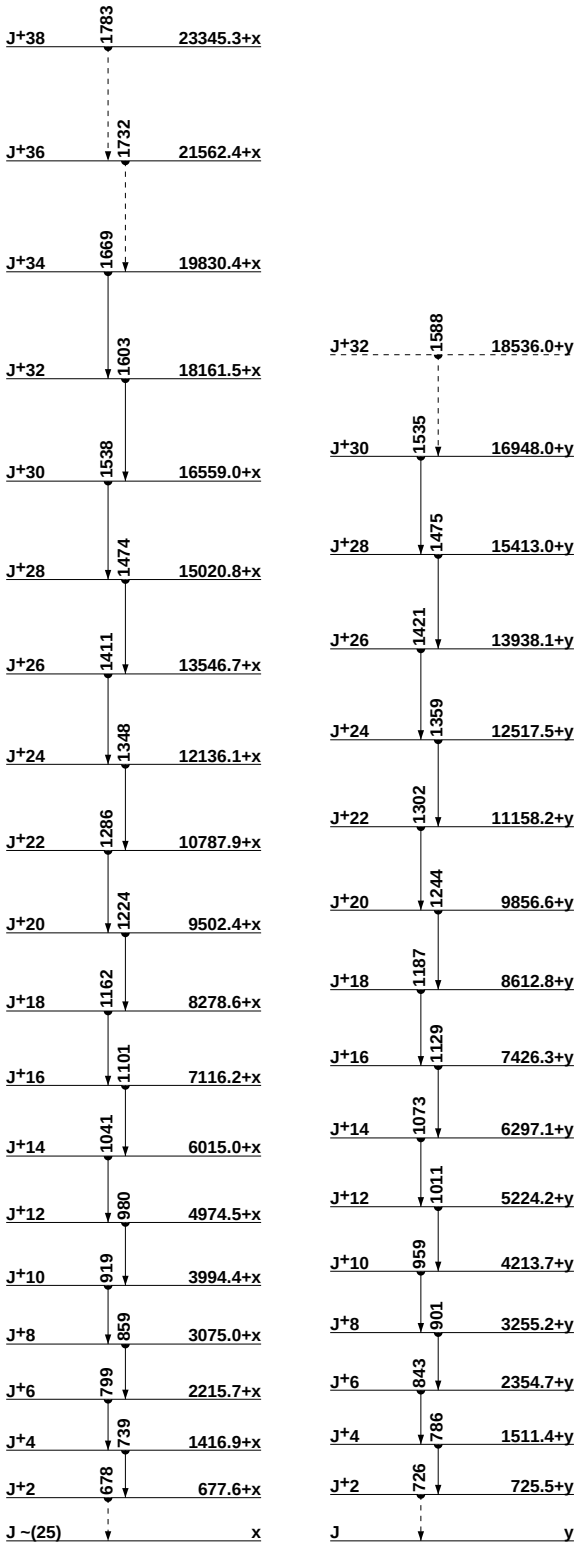
B **12517.5+y**, J+24 $\gamma_{11158+y}$***1359.3*** *8*
($\dagger_\gamma$0.08 *3*) $I^{(2)}$*=65.3, ħω=0.695*

B **13938.1+y**, J+26 $\gamma_{12518+y}$***1420.6*** *18*
($\dagger_\gamma$0.07 *5*) $I^{(2)}$*=73.7, ħω=0.724*

B **15413.0+y**, J+28 $\gamma_{13938+y}$***1474.9*** *7*
($\dagger_\gamma$0.08 *2*) $I^{(2)}$*=66.6, ħω=0.752*

B **16948.0+y**, J+30 $\gamma_{15413+y}$***1535.0*** *11*
($\dagger_\gamma$0.06 *2*) $I^{(2)}$*=75.5, ħω=0.781*

B **18536.0+y** (?), J+32
$\gamma_{16948+y}$***1588.0*** *15* (?) ($\dagger_\gamma$0.04 *2*)



SD-1 band
(95Ha29,93Ha03)

SD-2 band
(95Ha29)

$^{142}_{62}$Sm