$^{145}_{62}$Sm

Δ: −80662 *3* **S_n:** 6757.1 *3* **S_p:** 6525.3 *25*
Q_{EC}: 616.4 *24* **Q_α:** 1116 *4*
σ_γ: ≈220 b

Nuclear Bands

A SD-1 band (97HaAA)
B SD-2 band (97HaAA)

Levels and γ-ray branchings:

0, 7/2⁻, 340 *3* d, %EC=100, μ=−1.11 *6*, Q=−0.59 *17*

893.792 *18*, 3/2⁻, 36 *12* ps γ_0***893.73*** *3* ($\dagger_\gamma$100) E2

1105.02 *18*, 13/2⁺, 15 *2* ns γ_0***1105.0*** *2* ($\dagger_\gamma$100) E3

1423.23 *3*, 9/2⁻ γ_0***1423.19*** *5* ($\dagger_\gamma$100) M1(+E2): δ=+0.48 $^{+6}_{-3}$

1436.372 *25*, 1/2⁺ γ_{894}***542.57*** *3* ($\dagger_\gamma$100) E1

1538.04 *16*, 11/2⁻ γ_{1105}***433.0*** *3* ($\dagger_\gamma$22 *9*) γ_0***1538.0*** *2* ($\dagger_\gamma$100 *13*) Q

1547.310 *23*, 3/2⁺ γ_{1436}***110.943*** *24* ($\dagger_\gamma$12.8 *7*) M1+E2: δ=−1.98 *6* γ_{894}***653.512*** *25* ($\dagger_\gamma$100 *5*) E1 γ_0***1547.30*** *8* ($\dagger_\gamma$0.36 *3*) M2+E3: δ=+0.62 $^{+12}_{-10}$

1607.28 *3*, 1/2⁻ γ_{894}***713.48*** *5* ($\dagger_\gamma$100) M1

1627.75 *4*, 3/2⁺ γ_{1547}***80.46*** *10* ($\dagger_\gamma$2.4 *2*) γ_{1436}***191.38*** *3* ($\dagger_\gamma$100 *5*) M1+E2: δ=+0.084 *16*

1658.568 *21*, 5/2⁻ γ_{894}***764.74*** *4* ($\dagger_\gamma$11.3 *6*) M1+E2: δ=+0.16 *7* γ_0***1658.53*** *5* ($\dagger_\gamma$100 *5*) M1+E2: δ=−2.07 *6*

1706.13 *19*, 9/2⁻ γ_{1538}***168.0*** *3* ($\dagger_\gamma$54 *12*) M1+E2 γ_{1423}***283.1*** *3* ($\dagger_\gamma$27 *4*) γ_0***1706.0*** *3* ($\dagger_\gamma$100 *23*) M1+E2

1729.2 *10*, 1/2⁺ γ_{894}***835.4*** ($\dagger_\gamma$100)

1774.0 *4*, (15/2⁺) γ_{1105}***669.0*** *3* ($\dagger_\gamma$100) D+Q

1774.1 *3*, (9/2)⁻ γ_0***1774.0*** *3* ($\dagger_\gamma$100)

1780.32 *9*, 9/2⁻ γ_0***1780.27*** *10* ($\dagger_\gamma$100)

1804.25 *4*, 5/2⁺ γ_{1628}***176.62*** *9* ($\dagger_\gamma$0.74 *6*) γ_{1547}***256.89*** *7* ($\dagger_\gamma$2.03 *19*) M1 γ_{894}***910.47*** *11* ($\dagger_\gamma$6.4 *4*) E1 γ_0***1804.26*** *5* ($\dagger_\gamma$100 *5*) E1

1848.1 *3*, 9/2⁺ γ_0***1848.1*** *3* ($\dagger_\gamma$100)

1857.66 *4*, 7/2⁺ γ_{1659}***199.14*** *3* ($\dagger_\gamma$7.6 *8*) γ_{1423}***434.43*** *4* ($\dagger_\gamma$43.4 *24*) E1 γ_0***1857.66*** *5* ($\dagger_\gamma$100 *5*) E1

1876.64 *4*, 7/2⁻ γ_{1659}***218.11*** *9* ($\dagger_\gamma$0.69 *10*) γ_{1423}***453.42*** *6* ($\dagger_\gamma$2.66 *20*) M1(+E2): δ=+0.03 *12* γ_{894}***982.62*** *16* ($\dagger_\gamma$0.15 *5*) γ_0***1876.67*** *6* ($\dagger_\gamma$100 *5*) M1+E2: δ=−1.29 $^{+6}_{-7}$

1972.725 *21*, 3/2⁻ γ_{1659}***314.13*** *3* ($\dagger_\gamma$10.4 *6*) M1(+E2): δ=+0.04 $^{+27}_{-29}$ γ_{1628}***344.92*** *10* ($\dagger_\gamma$2.1 *3*) γ_{1607}***365.51*** *5* ($\dagger_\gamma$11.5 *8*) M1+E2: δ=−2.2 $^{+7}_{-13}$ γ_{1547}***425.48*** *7* ($\dagger_\gamma$4.2 *3*) E1 γ_{1436}***536.15*** *10* ($\dagger_\gamma$6.0 *14*) γ_{894}***1078.91*** *3* ($\dagger_\gamma$100 *5*) M1+E2: δ=+0.04 *1* γ_0***1972.77*** *4* ($\dagger_\gamma$22.2 *14*) E2

1996.96 *3*, 5/2⁻ γ_{1877}***120.44*** *8* ($\dagger_\gamma$0.24 *9*) γ_{1659}***338.37*** *3* ($\dagger_\gamma$0.75 *5*) M1+E2: δ=+1.9 $^{+14}_{-8}$ γ_{1423}***573.55*** *12* ($\dagger_\gamma$0.09 *2*) γ_{894}***1103.12*** *25* ($\dagger_\gamma$0.08 *1*) γ_0***1997.00*** *4* ($\dagger_\gamma$100 *6*) M1+E2: δ=+0.241 *11*

2049.96 *25*, 15/2⁻, ≈ 3 ns γ_{1105}***944.9*** *2* ($\dagger_\gamma$100) E1

2110.60 *5*, 5/2⁻,7/2⁻,9/2⁻ γ_0***2110.58*** *5* ($\dagger_\gamma$100) M1

2113.1 *8*, 11/2(⁺) γ_{1538}***575*** γ_{1423}***690***

2133.43 *3*, 3/2⁻ γ_{1973}***160.70*** *6* ($\dagger_\gamma$7.2 *6*) γ_{1659}***474.89*** *10* ($\dagger_\gamma$11.3 *15*) γ_{1607}***526.10*** *4* ($\dagger_\gamma$43.9 *27*) M1+E2: δ=+0.31 $^{+10}_{-9}$ γ_{1547}***586.06*** *9* ($\dagger_\gamma$9.3 *15*) γ_{894}***1239.60*** *6* ($\dagger_\gamma$54.9 *30*) M1+E2: δ=−0.61 $^{+7}_{-9}$ γ_0***2133.42*** *5* ($\dagger_\gamma$100 *12*) E2

2155.50 *5*, (5/2⁻,7/2⁻) γ_{1659}***497.3*** *4* ($\dagger_\gamma$3.3 *6*) γ_{894}***1261.9*** *2* ($\dagger_\gamma$3.3 *6*) γ_0***2155.46*** *5* ($\dagger_\gamma$100 *5*) M1

2160.3 *5*, 1/2⁻

2192.98 *5*, 5/2⁻,7/2⁻,9/2⁻ γ_0***2192.96*** *5* ($\dagger_\gamma$100) M1

2230.0 *3*, 17/2⁻ γ_{2050}***180.0*** *2* ($\dagger_\gamma$100) M1

2276.55 *4*, 5/2⁺ γ_{1547}***729.09*** *14* ($\dagger_\gamma$26 *3*) γ_0***2276.54*** *4* ($\dagger_\gamma$100 *6*) E1(+M2): δ=+0.067 *30*

2292.82 *13*, 9/2⁺ γ_0***2292.80*** *13* ($\dagger_\gamma$100)

2329.30 *9*, 5/2⁻,7/2⁻,3/2⁻ γ_0***2329.28*** *9* ($\dagger_\gamma$100) E2,(M1)

2340.63 *8* γ_{2111}***230.01*** *20* ($\dagger_\gamma$16 *3*) γ_{1780}***560.24*** *13* ($\dagger_\gamma$19 *3*) γ_0***2340.64*** *9* ($\dagger_\gamma$100 *9*)

2346.39 *4*, 5/2⁻ γ_{2133}***212.94*** *6* ($\dagger_\gamma$10.7 *7*) E2 γ_{1997}***349.43*** *5* ($\dagger_\gamma$14.1 *10*) M1 γ_{1973}***373.68*** *4* ($\dagger_\gamma$31.8 *17*) M1(+E2): δ=−0.19 $^{+21}_{-41}$ γ_{1877}***469.66*** *10* ($\dagger_\gamma$13 *5*) M1,(E2) γ_{1659}***687.83*** *6* ($\dagger_\gamma$15.1 *13*) γ_{1423}***923.15*** *19* ($\dagger_\gamma$3.0 *7*) γ_{894}***1452.60*** *5* ($\dagger_\gamma$35.8 *23*) (M1) γ_0***2346.42*** *10* ($\dagger_\gamma$100 *5*) M1(+E2): δ=+0.81 $^{+18}_{-10}$

2385.90 *4*, 3/2⁺ γ_{1804}***581.60*** *12*

($\dagger_{\gamma}$18.5 *19*) γ_{1659}***727.34*** *10* ($\dagger_{\gamma}$46 *10*) γ_{1628}***758.13*** *6* ($\dagger_{\gamma}$44 *4*) E2,M1 γ_{1607}***778.60*** *7* ($\dagger_{\gamma}$34 *3*) γ_{1547}***838.61*** *4* ($\dagger_{\gamma}$100 *6*) M1 γ_{1436}***949.53*** *5* ($\dagger_{\gamma}$72 *4*) M1

2387.61 *7* γ_{1423}***965.1*** *3* ($\dagger_{\gamma}$14.6 *24*) γ_{0}***2387.55*** *7* ($\dagger_{\gamma}$100 *7*) (M1)

2425.96 *3*, 5/2$^-$ γ_{2156}***270.48*** *30* ($\dagger_{\gamma}$0.8 *2*) (E2) γ_{2133}***292.47*** *4* ($\dagger_{\gamma}$7.3 *6*) (M1) γ_{1997}***429.25*** *15* ($\dagger_{\gamma}$1.9 *4*) γ_{1877}***549.34*** *12* ($\dagger_{\gamma}$4.8 *10*) γ_{1804}***621.79*** *8* ($\dagger_{\gamma}$1.5 *2*) γ_{1423}***1002.77*** *10* ($\dagger_{\gamma}$3.1 *6*) γ_{894}***1532.14*** *7* ($\dagger_{\gamma}$100 *5*) M1 γ_{0}***2425.96*** *6* ($\dagger_{\gamma}$39.6 *21*) M1

2438.0 *3*, 17/2$^+$ γ_{1105}***1333.0*** *2* ($\dagger_{\gamma}$100) E2

2482.15 *6* γ_{1423}***1058.75*** *12* ($\dagger_{\gamma}$33 *4*) γ_{894}***1588.42*** *20* ($\dagger_{\gamma}$31 *6*) γ_{0}***2482.17*** *6* ($\dagger_{\gamma}$100 *5*)

2508.31 *7*, 5/2$^-$,7/2$^-$ γ_{894}***1614.67*** *15* ($\dagger_{\gamma}$30 *9*) (D,E2) γ_{0}***2508.24*** *8* ($\dagger_{\gamma}$100 *7*) M1+E2

2512.97 *9*, $^-$ γ_{0}***2512.95*** *9* ($\dagger_{\gamma}$100) E2,M1

2559.4 *4* γ_{0}***2559.4*** *4* ($\dagger_{\gamma}$100)

2629 *15*

2670.0 *11*, 11/2$^+$,13/2$^+$ γ_{1105}***1565*** ($\dagger_{\gamma}$100)

2678.3 *5*, 1/2$^-$,3/2$^-$

2710.4 *3*, 19/2$^-$ γ_{2230}***480.4*** *2* ($\dagger_{\gamma}$100) M1

2724 *16*

2750 *18* γ_{2386}***346.9*** *3* (?) ($\dagger_{\gamma}$10 *4*) γ_{2193}***555.0*** *3* (?) ($\dagger_{\gamma}$10 *4*)

2797 *12*

2824 *14*

2842 *19*

2926 *13*

2931.2 *3*, 21/2$^+$ γ_{2710}***221.0*** *2* ($\dagger_{\gamma}$20 *2*) E1 γ_{2438}***493.6*** *2* ($\dagger_{\gamma}$100 *7*) E2

2960 *16*

2964.3 *5*, 19/2($^+$) γ_{2230}***734.3*** *4* ($\dagger_{\gamma}$100) D

2978.7 *3*, 21/2$^+$ γ_{2710}***268.0*** *2* ($\dagger_{\gamma}$100 *8*) E1 γ_{2438}***540.0*** *3* ($\dagger_{\gamma}$7 *3*)

3018 *13*

3096 *10*

3119.6 *4*, 23/2$^+$ γ_{2979}***140.2*** *2* ($\dagger_{\gamma}$75 *6*) D γ_{2931}***189.0*** *2* ($\dagger_{\gamma}$100 *8*) M1

3140.1 *5*, 3/2$^-$

3183 *15*

3246 *20*

3275 *20*

3302 *13*

3323.2 *5*, (23/2) γ_{2931}***392.0*** *4* ($\dagger_{\gamma}$100) (D)

3335 *17*

3366 *14*

3369.3 *4*, 25/2$^+$ γ_{2931}***438.1*** *2* ($\dagger_{\gamma}$100) E2

3397 *14*

3433 *17*

3446 *20*

3480 *20*

3483.8 *4*, 25/2$^+$ γ_{3120}***364.2*** *2* ($\dagger_{\gamma}$100) M1

3506 *20*

3534 *20*

3558 *14*

3596 *14*

3633 *21*

3655 *21*

3679 *14*

3726 *14*

3783 *15*

3833 *15*

3856 *21*

3882 *15*

3916 *20*

4010 *20*

4027 *15*

A **x**, J

A **1011.3+x** *4*, J+2 γ_{x}***1011.3*** *4* *$I^{(2)}$=146.5, $\hbar\omega$=0.512*

A **2049.9+x** *6*, J+4 γ_{1011+x}***1038.6*** *4* *$I^{(2)}$=84.7, $\hbar\omega$=0.531*

A **3135.7+x** *8*, J+6 γ_{2050+x}***1085.8*** *5* *$I^{(2)}$=78.1, $\hbar\omega$=0.556*

A **4272.7+x** *10*, J+8 γ_{3136+x}***1137.0*** *6* *$I^{(2)}$=78.7, $\hbar\omega$=0.581*

A **5460.5+x** *14*, J+10 γ_{4273+x}***1187.8*** *10* *$I^{(2)}$=76.9, $\hbar\omega$=0.607*

A **6700.3+x** *15*, J+12 γ_{5461+x}***1239.8*** *4* *$I^{(2)}$=74.8, $\hbar\omega$=0.633*

A **7993.6+x** *16*, J+14 γ_{6700+x}***1293.3*** *5* *$I^{(2)}$=72.2, $\hbar\omega$=0.661*

A **9342.3+x** *16*, J+16 γ_{7994+x}***1348.7*** *5* *$I^{(2)}$=76.2, $\hbar\omega$=0.687*

A **10743.5+x** *18*, J+18 γ_{9342+x}***1401.2*** *6* *$I^{(2)}$=72.7, $\hbar\omega$=0.714*

A **12199.8+x** *19*, J+20 $\gamma_{10744+x}$***1456.2*** *7* *$I^{(2)}$=66.7, $\hbar\omega$=0.743*

A **13716+x** *3*, J+22 $\gamma_{12200+x}$***1516.2*** *19* *$I^{(2)}$=78.7, $\hbar\omega$=0.771*

A **15283+x** *3*, J+24 $\gamma_{13716+x}$***1567.0*** *10*

B **y**, J

B **945.1+y** *8*, J+2 γ_{y}***945.1*** *8* *$I^{(2)}$=82.0, $\hbar\omega$=0.485*

B **1939.0+y** *20*, J+4 γ_{945+y}***993.9*** *18* *$I^{(2)}$=78.6, $\hbar\omega$=0.510*

B **2983.8+y** *22*, J+6 γ_{1939+y}***1044.8*** *8* *$I^{(2)}$=72.3, $\hbar\omega$=0.536*

B **4083.9+y** *23*, J+8 γ_{2984+y}***1100.1*** *9* *$I^{(2)}$=81.3, $\hbar\omega$=0.562*

B **5233+y** *3*, J+10 γ_{4084+y}***1149.3*** *18*

$I^{(2)}$=*70.7, ħω=0.589*

B **6439+y** *3*, J+12 γ_{5233+y} ***1205.9*** *8*

$I^{(2)}$=*73.7, ħω=0.617*

B **7699+y** *4*, J+14 γ_{6439+y} ***1260.2*** *10*

$I^{(2)}$=*69.6, ħω=0.644*

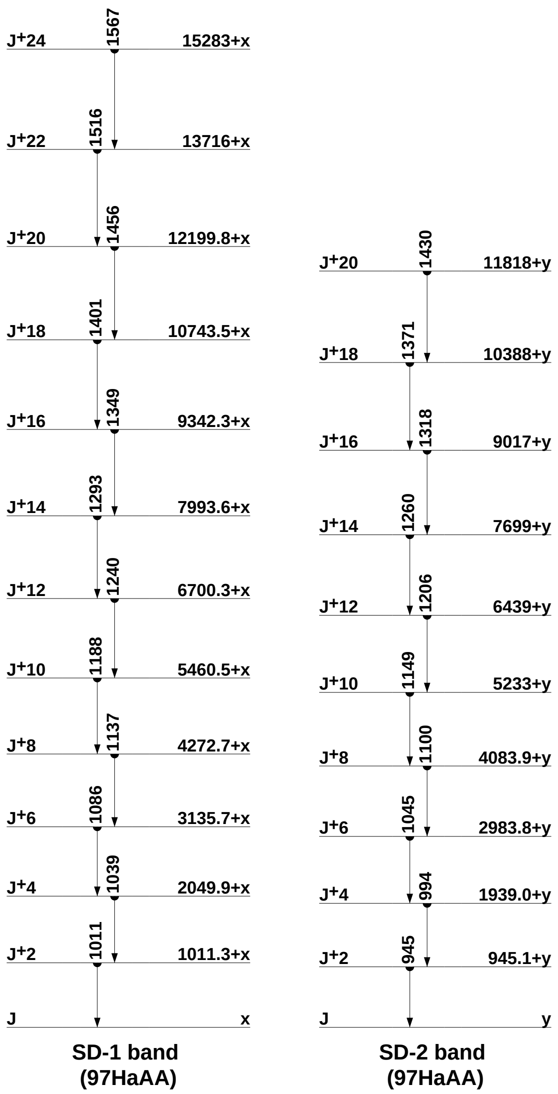
B **9017+y** *4*, J+16 γ_{7699+y} ***1317.7*** *10*

$I^{(2)}$=*74.6, ħω=0.672*

B **10388+y** *4*, J+18 γ_{9017+y} ***1371.3*** *17*

$I^{(2)}$=*68.0, ħω=0.700*

B **11818+y** *5*, J+20 $\gamma_{10388+y}$ ***1430.1*** *22*



J+24 1567 15283+x
J+22 1516 13716+x
J+20 1456 12199.8+x
J+18 1401 10743.5+x
J+16 1349 9342.3+x
J+14 1293 7993.6+x
J+12 1240 6700.3+x
J+10 1188 5460.5+x
J+8 1137 4272.7+x
J+6 1086 3135.7+x
J+4 1039 2049.9+x
J+2 1011 1011.3+x
J x
SD-1 band
(97HaAA)
J+20 1430 11818+y
J+18 1371 10388+y
J+16 1318 9017+y
J+14 1260 7699+y
J+12 1206 6439+y
J+10 1149 5233+y
J+8 1100 4083.9+y
J+6 1045 2983.8+y
J+4 994 1939.0+y
J+2 945 945.1+y
J y
SD-2 band
(97HaAA)

$^{145}_{62}$Sm