^{114}Sb β^+ decay 1976Wi10,1975WiZX

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Jean Blachot	NDS 113, 515 (2012)	1-Jan-2012

Parent: ^{114}Sb: E=0.0; J$^\pi$=3$^+$; $T_{1/2}$=3.49 min *3*; Q(β^+)=6063 *22*; %β^+ decay=100.0

Activity: ^{114}Sn(p,n) E=13 MeV (1972Mi27), E=22 MeV (1972Si28); ^{114}Sn(p,n) E=14 MeV, natural-target isotope separation of enriched targets (1976Wi10).

Measured: β (1960Ma20,1972Mi27) scin; $\beta\gamma$ (scin-semi) (1972Mi27); γ (1972Mi27,1972Si28,1976Wi10); $\gamma\gamma$ (1972Mi27,1976Wi10); $\gamma\gamma$(t) (1976Wi10).

The level scheme is mainly as given by 1976Wi10.

^{114}Sn Levels

E(level)	J$^\pi$†	$T_{1/2}$	E(level)	J$^\pi$†	E(level)	J$^\pi$†
0	0$^+$	stable	2765.6 *1*	4$^+$	3357.7 *1*	4$^+$
1299.92 *7*	2$^+$		2815?‡		3397?‡	
1953.2 *3*	0$^+$		2859.9 *1*	4$^+$	3478.9 *7*	2$^+$
2187.5 *1*	4$^+$		2905.1 *4*	2$^+$,3$^+$,4$^+$	3525.1 *11*	3$^-$
2239.2 *7*	2$^+$		2915?‡		3781.9 *6*	2$^+$
2274.7 *2*	3$^-$		2943.5 *3*	2$^+$	3991.4 *5*	2$^+$,3$^+$,4$^+$
2454.3 *6*	2$^+$		3025?‡		4029.8 *5*	2$^+$,3$^+$,4$^+$
2514.7 *1*	3$^+$		3207.8 *5*	4$^+$		
2614.3 *1*	4$^+$		3225.9 *4*	3$^-$		

† From log *ft* values and Adopted Levels.
‡ Not proposed by authors. Suggested by evaluator from agreement of Eγ with placed transition in (α,2nγ) and/or (n,n′γ).

ε,β^+ radiations

E(decay)	E(level)	Iβ^+†	Iε†	Log *ft*	I($\varepsilon+\beta^+$)†	Comments
(2033 22)	4029.8	0.17 *3*	1.17 *18*	5.31 *7*	1.34 *20*	av Eβ=452.7 *97*; εK=0.753 *7*; εL=0.0981 *10*; εM+=0.02521 *25*
(2072 22)	3991.4	0.13 *2*	0.82 *13*	5.48 *7*	0.95 *15*	av Eβ=469.6 *97*; εK=0.741 *8*; εL=0.0964 *10*; εM+=0.0248 *3*
(2281 22)	3781.9	0.25 *7*	0.85 *23*	5.55 *12*	1.1 *3*	av Eβ=562.3 *98*; εK=0.664 *9*; εL=0.0863 *12*; εM+=0.0222 *3*
(2538 22)	3525.1	0.30 *5*	0.56 *10*	5.83 *8*	0.86 *15*	av Eβ=677.1 *99*; εK=0.559 *10*; εL=0.0725 *12*; εM+=0.0186 *3*
(2584 22)	3478.9	0.29 *6*	0.50 *9*	5.90 *9*	0.79 *15*	av Eβ=697.9 *99*; εK=0.540 *9*; εL=0.0700 *12*; εM+=0.0180 *3*
(2705 22)	3357.7	0.4	0.5	5.9	0.9	av Eβ=753 *10*; εK=0.491 *9*; εL=0.0635 *12*; εM+=0.0163 *3*
(2837 22)	3225.9	0.5 *10*	0.5 *10*	6.0 *9*	1.0 *20*	av Eβ=812 *10*; εK=0.440 *9*; εL=0.0569 *11*; εM+=0.0146 *3*
(2855 22)	3207.8	0.5 *10*	0.5 *10*	6.0 *9*	1.0 *20*	av Eβ=820 *10*; εK=0.433 *9*; εL=0.0560 *11*; εM+=0.0144 *3*
(3120 22)	2943.5	2	1	5.7	3	av Eβ=941 *10*; εK=0.344 *7*; εL=0.0444 *9*; εM+=0.01140 *23*
(3158 22)	2905.1	3.6 *2*	2.2 *1*	5.42 *3*	5.8 *3*	av Eβ=959 *10*; εK=0.333 *7*; εL=0.0429 *9*; εM+=0.01102 *22*
(3203 22)	2859.9	0.13 *3*	0.078 *19*	6.89 *11*	0.21 *5*	av Eβ=979 *10*; εK=0.319 *7*; εL=0.0412 *9*; εM+=0.01058 *21*
(3297 22)	2765.6	0.34 *7*	0.17 *3*	6.57 *9*	0.51 *10*	av Eβ=1023 *11*; εK=0.294 *6*; εL=0.0379 *8*; εM+=0.00973 *20*
(3449 22)	2614.3	0.18 *4*	0.075 *15*	6.97 *9*	0.25 *5*	av Eβ=1092 *11*; εK=0.257 *5*; εL=0.0331 *7*; εM+=0.00850 *17*
(3548 22)	2514.7	4.1 *4*	1.5 *1*	5.69 *5*	5.6 *5*	av Eβ=1138 *11*; εK=0.235 *5*; εL=0.0303 *6*; εM+=0.00778 *16*
(3609 22)	2454.3	1.1 *15*	0.4 *5*	6.3 *6*	1.5 *20*	av Eβ=1166 *11*; εK=0.223 *5*; εL=0.0288 *6*; εM+=0.00738 *15*
(3788 22)	2274.7	0.5 *2*	0.1 *1*	6.80 *22*	0.6 *3*	av Eβ=1250 *11*; εK=0.191 *4*; εL=0.0246 *5*; εM+=0.00632 *12*
(3824 22)	2239.2	1.24 *16*	0.34 *4*	6.40 *6*	1.58 *20*	av Eβ=1266 *11*; εK=0.186 *4*; εL=0.0239 *5*; εM+=0.00613 *12*

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^{114}Sb β^+ decay 1976Wi10,1975WiZX (continued)

ϵ,β^+ radiations (continued)

E(decay)	E(level)	Iβ^+ †	Iε †	Log *ft*	I($\varepsilon+\beta^+$) †	Comments
(3876 *22*)	2187.5	3.1 *8*	0.80 *21*	6.04 *12*	3.9 *10*	av Eβ=1290 *11*; εK=0.178 *4*; εL=0.0229 *5*; εM+=0.00587 *11*
(4110 *22*)	1953.2	0.03 *2*	0.007 *3*	8.17 *22*	0.04 *2*	av Eβ=1400 *11*; εK=0.146 *3*; εL=0.0188 *4*; εM+=0.00483 *9* log *ft*>12.0 expected for a 2U transition.
(4763 *22*)	1299.92	61.6 *7*	7.12 *15*	5.275 *13*	68.7 *8*	av Eβ=1707 *11*; εK=0.0892 *15*; εL=0.01146 *19*; εM+=0.00294 *5*

† Absolute intensity per 100 decays.

γ(^{114}Sn)

Iγ normalization: determined by the assumption of no β branch to g.s., and ΣI(-g+ce) to g.s.=100.

E$_\gamma$	I$_\gamma$ †#	E$_i$(level)	J$^\pi_i$	E$_f$	J$^\pi_f$
215.8 *6*	0.039 *10*	2454.3	2$^+$	2239.2	2$^+$
290.8 *4*	0.050 *6*	2905.1	2$^+$,3$^+$,4$^+$	2614.3	4$^+$
320.4 *2*	0.23 *2*	3225.9	3$^-$	2905.1	2$^+$,3$^+$,4$^+$
327.18 *5*	7.3 *5*	2514.7	3$^+$	2187.5	4$^+$
375.2 *4*	0.026 *6*	2614.3	4$^+$	2239.2	2$^+$
390.34 *7*	1.18 *8*	2905.1	2$^+$,3$^+$,4$^+$	2514.7	3$^+$
441.7 *6*	0.047 *7*	3207.8	4$^+$	2765.6	4$^+$
451.3 *8*	0.015 *6*	2905.1	2$^+$,3$^+$,4$^+$	2454.3	2$^+$
489.5 *9*	0.15 *6*	2943.5	2$^+$	2454.3	2$^+$
573.9 *5*	0.086 *10*	3478.9	2$^+$	2905.1	2$^+$,3$^+$,4$^+$
592.9 *7*	0.13 *2*	3207.8	4$^+$	2614.3	4$^+$
619.3 *3*	0.063 *6*	3478.9	2$^+$	2859.9	4$^+$
627.3 *2*	0.139 *10*	2815?		2187.5	4$^+$
634.0 *4*	0.025 *5*	3991.4	2$^+$,3$^+$,4$^+$	3357.7	4$^+$
653.3 *3*	0.16 *3*	1953.2	0$^+$	1299.92	2$^+$
668.37 *8*	1.28 *7*	2943.5	2$^+$	2274.7	3$^-$
704.2 *9*	0.05 *2*	2943.5	2$^+$	2239.2	2$^+$
717.32 *7*	4.7 *3*	2905.1	2$^+$,3$^+$,4$^+$	2187.5	4$^+$
771.8 *5*	0.043 *14*	3225.9	3$^-$	2454.3	2$^+$
^{x}787.1 *3*	0.047 *10*				
^{x}856.9 *3*	0.050 *7*				
887.57 *5*	17.9 *5*	2187.5	4$^+$	1299.92	2$^+$
921.9 *4*	0.12 *3*	3781.9	2$^+$	2859.9	4$^+$
932.5 *6*	0.24 *5*	3207.8	4$^+$	2274.7	3$^-$
939.0 *1*	1.04 *4*	2239.2	2$^+$	1299.92	2$^+$
963.4 *3*	0.130 *14*	3478.9	2$^+$	2514.7	3$^+$
974.82 *7*	2.9 *3*	2274.7	3$^-$	1299.92	2$^+$
990.5 *4*	0.07 *3*	2943.5	2$^+$	1953.2	0$^+$
1010.5 *7*	0.07 *2*	3525.1	3$^-$	2514.7	3$^+$
1019.9 *5*	0.49 *4*	3207.8	4$^+$	2187.5	4$^+$
1072.5 *3*	0.57 *3*	3525.1	3$^-$	2454.3	2$^+$
1121.9 *5*	0.069 *12*	3397?		2274.7	3$^-$
1131.7 *2*	0.32 *2*	3991.4	2$^+$,3$^+$,4$^+$	2859.9	4$^+$
^{x}1140.3 *3*	0.104 *12*				
1154.14 *8*	1.67 *6*	2454.3	2$^+$	1299.92	2$^+$
1169.7 *2*	0.28 *2*	4029.8	2$^+$,3$^+$,4$^+$	2859.9	4$^+$
1203.3 *7*	0.12 *4*	3478.9	2$^+$	2274.7	3$^-$

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^{114}Sb β^+ decay 1976Wi10,1975WiZX (continued)

γ(^{114}Sn) (continued)

E_γ	I_γ [†#]	E_i(level)	J_i^π	E_f	J_f^π
1239.9 *5*	0.14 *3*	3478.9	2^+	2239.2	2^+
1250.5 *5*	0.17 *3*	3525.1	3^-	2274.7	3^-
1264.7 *5*	0.16 *3*	4029.8	$2^+,3^+,4^+$	2765.6	4^+
1299.92 *7*	100	1299.92	2^+	0	0^+
1314.4 *2*	0.62 *7*	2614.3	4^+	1299.92	2^+
1327.6 *2*	0.073 *6*	3781.9	2^+	2454.3	2^+
1337.2 *2*	0.082 *4*	3525.1	3^-	2187.5	4^+
^{x}1364.5 *8*	0.027 *5*				
1377.0 *7*	0.178 *9*	3991.4	$2^+,3^+,4^+$	2614.3	4^+
^{x}1403.4 *3*	0.084 *4*				
1415.2 *4*	0.029 *3*	4029.8	$2^+,3^+,4^+$	2614.3	4^+
1465.7 *1*	0.74 *3*	2765.6	4^+	1299.92	2^+
1476.8 *3*	0.036 *4*	3991.4	$2^+,3^+,4^+$	2514.7	3^+
1507.1 *2*	0.21 *2*	3781.9	2^+	2274.7	3^-
1515.0 *2*	0.21 *2*	4029.8	$2^+,3^+,4^+$	2514.7	3^+
1526.1 *6*	0.019 *6*	3478.9	2^+	1953.2	0^+
^{x}1539.0 *6*	0.035 *7*				
1560.0 *2*	1.02 *4*	2859.9	4^+	1299.92	2^+
1576.1 *6*	0.029 *8*	4029.8	$2^+,3^+,4^+$	2454.3	2^+
1594.3 *1*	0.62 *3*	3781.9	2^+	2187.5	4^+
1605.5 *2*	0.157 *6*	2905.1	$2^+,3^+,4^+$	1299.92	2^+
1616.0 *3*	0.050 *5*	2915?		1299.92	2^+
^{x}1623.9 *3*	0.049 *5*				
1643.8 *1*	1.36 *5*	2943.5	2^+	1299.92	2^+
^{x}1677.7 *3*	0.026 *3*				
1715.9 *2*	0.110 *7*	3991.4	$2^+,3^+,4^+$	2274.7	3^-
1725.9 *2*	0.020 *1*	3025?		1299.92	2^+
^{x}1743.3 *3*	0.069 *5*				
1754.6 *2*	0.110 *7*	4029.8	$2^+,3^+,4^+$	2274.7	3^-
^{x}1778.6 *4*	0.051 *7*				
1804.4 *3*	0.28 *3*	3991.4	$2^+,3^+,4^+$	2187.5	4^+
^{x}1819.4 *5*	0.041 *6*				
1829.7 *5*	0.034 *6*	3781.9	2^+	1953.2	0^+
1842.5 *2*	0.37 *2*	4029.8	$2^+,3^+,4^+$	2187.5	4^+
^{x}1868.8 *3*	0.118 *7*				
^{x}1886.6 *3*	0.042 *5*				
1907.9 *1*	1.18 *6*	3207.8	4^+	1299.92	2^+
1926.2 *1*	1.72 *9*	3225.9	3^-	1299.92	2^+
^{x}1940.3 *7*	0.020 *5*				
^{x}1950.8 *3*	0.063 *6*				
^{x}1991.0 *6*	0.04 *2*				
^{x}2027.3 *3*	0.049 *5*				
^{x}2041.1 *3*	0.056 *7*				
2057.8 *2*	0.95 *7*	3357.7	4^+	1299.92	2^+
^{x}2095.7 *3*	0.021 *3*				
2179.2 *2*	0.21 *3*	3478.9	2^+	1299.92	2^+
^{x}2192.9 *3*	0.111 *10*				
2239.8 *2*	1.25 *10*	2239.2	2^+	0	0^+
^{x}2265.6 *10*	0.020 *8*				
^{x}2285.1 *5*	0.021 *6*				
^{x}2295.7 *2*	0.108 *8*				
^{x}2329.7 *5*	0.011 *3*				
^{x}2350.1 *3*	0.028 *3*				
^{x}2397.3 *2*	0.038 *3*				
^{x}2421.0 *5*	0.009 *3*				
2454.7 *2*	0.39 *3*	2454.3	2^+	0	0^+

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^{114}Sb β^+ decay 1976Wi10,1975WiZX (continued)

γ(^{114}Sn) (continued)

E_γ	I_γ †#	E_i(level)	J_i^π	E_f	J_f^π
2482.4 *2*	0.19 *2*	3781.9	2+	1299.92	2+
x2718.4 *3*	0.059 *5*				
2730.5 *3*	0.16 *2*	4029.8	2+,3+,4+	1299.92	2+
x2829.2 *6*	0.015 *2*				
2916.4 *3*	0.16 *2*	2915?		0	0+
2943.8 *4*	0.043 *4*	2943.5	2+	0	0+
x3059.9 *8*	0.013 *3*				
x3082.9 *8*	0.013 *3*				
x3107.4 *8*	0.007 *2*				
x3142.6 *9*	0.018 *3*				
x3153.5 *9*	0.021 *3*				
x3185.5 *4*	0.029 *3*				
x3212.8 *5*	0.012 *2*				
x3226.3 *6*	0.035 *3*				
x3439.0 *4*	0.016 *2*				
3477.7 *6*	0.020 *3*	3478.9	2+	0	0+
x3494.9 *5*	0.059 *5*				
x3562.5 *4*	0.109 *8*				
x3650.5 *4*	0.075 *6*				
3781.0‡	0.002‡	3781.9	2+	0	0+
x3795.2 *15*	0.005 *2*				
x3868.7 *7*	0.011 *2*				
x4141.3 *19*	0.020 *5*				
x4204.6 *15*	0.012 *3*				
x4305.0 *16*	0.006 *2*				
x4475 *2*	0.004 *2*				
x4547 *3*	0.003 *1*				
x4947 *5*	0.002 *1*				
x4987 *5*	0.003 *1*				

† From 1975WiZX.
‡ Given in authors′ decay scheme. Not shown in authors′ Table IV.3.
# For absolute intensity per 100 decays, multiply by 0.987 *10*.
x γ ray not placed in level scheme.

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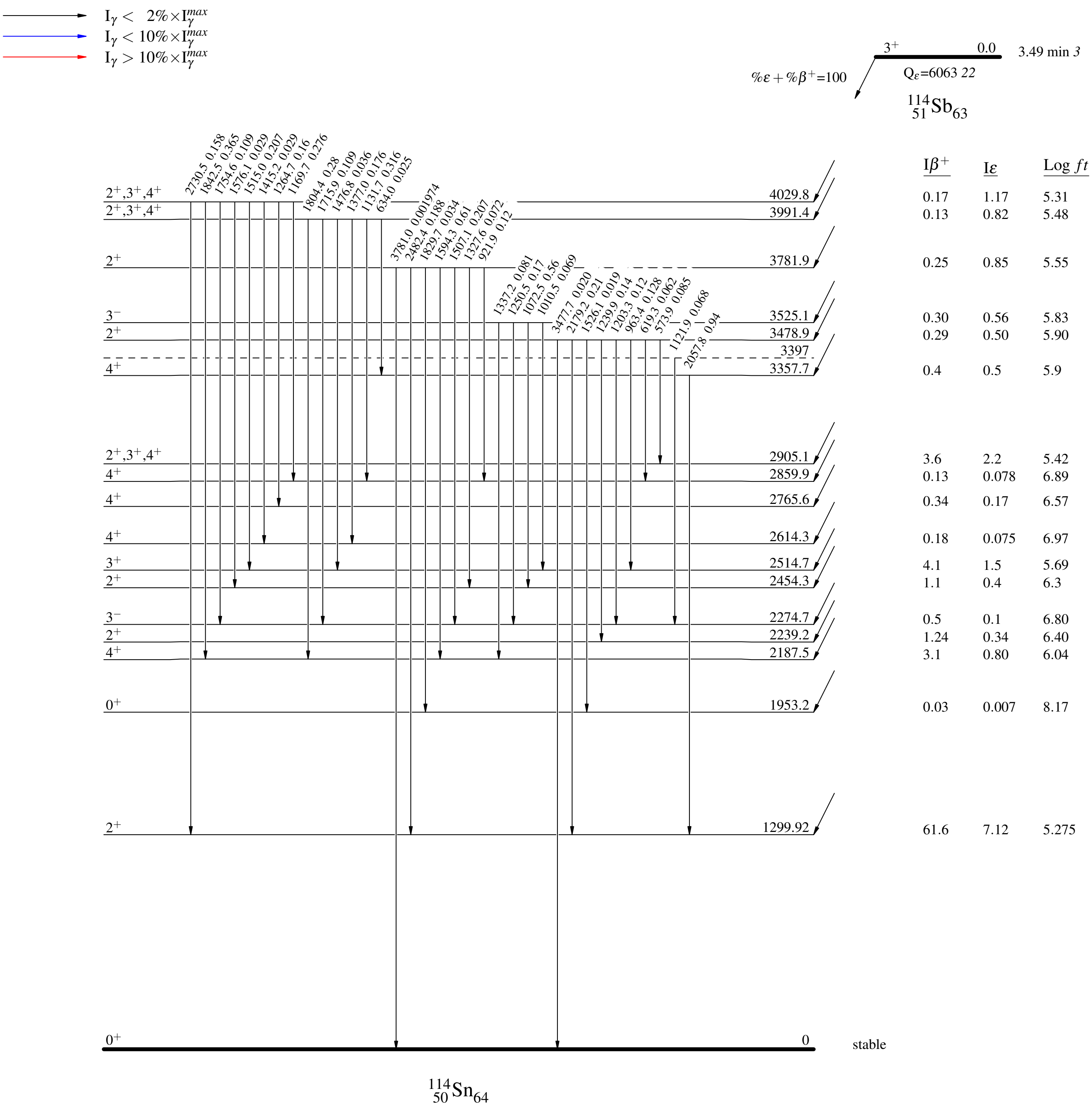
Decay Scheme

Intensities: I_γ per 100 parent decays



^{114}Sb β^+ decay 1976Wi10,1975WiZX

Decay Scheme (continued)

Intensities: I_γ per 100 parent decays