^{85}Se β^- decay (32.9 s) 1975Hu02,1980Ze04,1977Pf01

Type	Author	History Citation	Literature Cutoff Date
Modified	Balraj Singh	ENSDF	08-May-2015

Parent: ^{85}Se: E=0; J$^{\pi}$=(5/2)$^+$; T$_{1/2}$=32.9 s *3*; Q(β^-)=6162 *4*; %β^- decay=100.0
^{85}Se-Q(β^-): From 2012Wa38.
^{85}Se-T$_{1/2}$: From ^{85}Se Adopted Levels.
1975Hu02: radiochemical separation from fission products, Ge(Li) detectors, measured γ rays.
1980Ze04 (also 1978Ze08): Ge(Li) detectors, measured Eγ, Iγ, $\gamma\gamma$. ^{85}Se half-life measured in 1978Ze08.
1977Pf01: fission product separation by LOHENGRIN, measured γ rays.
1973Ta19, 1977Ki14: reported γ spectra, but with large uncertainties.
1975Al11: measured total absorption γ spectra, deduced β strength functions.
1978Be51: measured $\beta\gamma$ coin.
1982Re10, 1982Re08, 1982Li09: production of ^{85}Se and measurement of γ rays from its decay.
Additional information 1.

^{85}Br Levels

E(level)†	J$^{\pi}$‡	T$_{1/2}$‡	E(level)†	J$^{\pi}$‡
0.0	3/2$^-$	2.90 min *6*	3539.6 *5*	(3/2,5/2,7/2$^-$)
345.19 *23*	5/2$^-$		3644.6 *5*	(3/2,5/2,7/2)
955.82 *23*	3/2$^-$		3680.4 *11*	(3/2,5/2,7/2)
1191.3 *4*	1/2$^-$		3741.7 *3*	(3/2)$^+$
1427.2 *3*	(7/2$^-$)		3824.6 *4*	(3/2,5/2$^-$)
1553.3 *3*	(1/2$^-$ to 7/2$^-$)		3970.4 *4*	(3/2,5/2,7/2)$^+$
1724.7 *4*	(3/2$^-$,5/2,7/2)		4000.4 *5*	(3/2,5/2,7/2)$^+$
1795.2 *5*	1/2$^-$		4028.8 *4*	(3/2)$^+$
1859.5 *5*	(9/2$^+$)		4119.0 *5*	(3/2,5/2,7/2)$^+$
1943.8 *4*			4172.4 *11*	(3/2,5/2,7/2)
2800.5 *4*	(5/2,7/2)		4299.4 *5*	(3/2,5/2,7/2)$^+$
3007.8 *5*	(3/2,5/2,7/2$^-$)		4510.9 *6*	(3/2,5/2,7/2$^-$)

† From least squares fit to Eγ data.
‡ From Adopted Levels.

β^- radiations

E(decay)	E(level)	Iβ^-†	Log *ft*	Comments
(1651 *4*)	4510.9	0.51 *7*	5.8 *1*	av Eβ=644.1 *21*
(1863 *4*)	4299.4	1.4 *3*	5.6 *1*	av Eβ=740.6 *21*
(1990 *4*)	4172.4	1.1 *3*	5.8 *1*	av Eβ=799.0 *21*
(2043 *4*)	4119.0	3.9 *8*	5.3 *1*	av Eβ=823.7 *21*
(2133 *4*)	4028.8	7.3 *12*	5.1 *1*	av Eβ=865.6 *21*
(2162 *4*)	4000.4	4.3 *9*	5.4 *1*	av Eβ=878.8 *21*
(2192 *4*)	3970.4	4.3 *7*	5.4 *1*	av Eβ=892.7 *21*
(2337 *4*)	3824.6	1.7 *4*	5.9 *1*	av Eβ=960.8 *21*
(2420 *4*)	3741.7	9.7 *17*	5.2 *1*	av Eβ=999.7 *21*
(2482 *4*)	3680.4	0.69 *13*	6.4 *1*	av Eβ=1028.5 *22*
(2517 *4*)	3644.6	2.8 *6*	5.9 *1*	av Eβ=1045.3 *21*
(2622 *4*)	3539.6	3.1 *6*	5.9 *1*	av Eβ=1094.8 *21*
(3154 *4*)	3007.8	3.0 *6*	6.3 *1*	av Eβ=1347.1 *22*
(3362 *4*)	2800.5	7.8 *13*	6.0 *1*	av Eβ=1446.1 *22*
(4218 *4*)	1943.8	1.7 *5*	7.0 *1*	av Eβ=1857.4 *22*
(4303‡ *4*)	1859.5	<0.4	>7.7	av Eβ=1898.0 *22*

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^{85}Se β^- decay (32.9 s) 1975Hu02,1980Ze04,1977Pf01 (continued)

β^- radiations (continued)

E(decay)	E(level)	Iβ^-[†]	Log *ft*	Comments
				Additional information 2.
(4367 *4*)	1795.2	1.6 *9*	8.8^{1u} *3*	av Eβ=1928.3 *22*
(4437 *4*)	1724.7	1.9 *5*	7.1 *1*	av Eβ=1963.0 *22*
(4609[‡] *4*)	1553.3	<1.7	>7.2	av Eβ=2045.7 *22* Additional information 3.
(4735 *4*)	1427.2	2.8 *13*	7.1 *2*	av Eβ=2106.5 *22*
(5817 *4*)	345.19	11 *3*	6.9 *1*	av Eβ=2629.7 *22* E(decay): measured Eβ=5850 *150*.
(6162 *4*)	0.0	31 *6*	6.5 *1*	av Eβ=2796.9 *22*

[†] Absolute intensity per 100 decays.

[‡] Existence of this branch is questionable.

γ(^{85}Br)

Iγ normalization: from the absolute intensity of the 925γ in ^{85}Kr from ^{85}Br β^- decay and comparison of the intensity of this line and the 345γ (1982Li09). The ground state branching is deduced to be 31 *6*.

E$_\gamma$[†]	I$_\gamma$[&c]	E$_i$(level)	J$^\pi_i$	E$_f$	J$^\pi_f$	Mult.	α[d]	Comments
345.2 *5*	100.0 *15*	345.19	5/2$^-$	0.0	3/2$^-$	(M1)	0.00464	α(K)=0.00412 *6*; α(L)=0.000441 *7*; α(M)=7.02×10^{-5} *10*; α(N)=6.56×10^{-6} *10*
432.5 *5*	5.1 *10*	1859.5	(9/2$^+$)	1427.2	(7/2$^-$)			
597.4[‡] *5*	2.9[a] *3*	1553.3	(1/2$^-$ to 7/2$^-$)	955.82	3/2$^-$			
609.8 *5*	6.1 *7*	955.82	3/2$^-$	345.19	5/2$^-$			
840.9[#] *21*	6.3 *14*	1795.2	1/2$^-$	955.82	3/2$^-$			
941.1 *4*	5.5 *8*	2800.5	(5/2,7/2)	1859.5	(9/2$^+$)			
956.2 *3*	9.2 *14*	955.82	3/2$^-$	0.0	3/2$^-$			
987.9[‡] *5*	3.8[a] *5*	1943.8		955.82	3/2$^-$			
1082.1[#] *7*	5.4 *8*	1427.2	(7/2$^-$)	345.19	5/2$^-$			
1191.2 *4*	1.9 *3*	1191.3	1/2$^-$	0.0	3/2$^-$			
1207.9 *4*	9.6 *14*	1553.3	(1/2$^-$ to 7/2$^-$)	345.19	5/2$^-$			
1246.9[‡] *5*	3.4[a] *10*	2800.5	(5/2,7/2)	1553.3	(1/2$^-$ to 7/2$^-$)			
1373.4 *4*	3.3 *5*	2800.5	(5/2,7/2)	1427.2	(7/2$^-$)			
1427.2 *4*	15.3 *23*	1427.2	(7/2$^-$)	0.0	3/2$^-$			
1450.1[#] *8*	3.9 *6*	1795.2	1/2$^-$	345.19	5/2$^-$			
1552.8[‡] *5*	1.8[a] *4*	1553.3	(1/2$^-$ to 7/2$^-$)	0.0	3/2$^-$			
1599.0[#] *10*	2.1 *3*	1943.8		345.19	5/2$^-$			
1701.0[#] *5*	4.6 *7*	3644.6	(3/2,5/2,7/2)	1943.8				
1724.5[#] *5*	5.9 *9*	1724.7	(3/2$^-$,5/2,7/2)	0.0	3/2$^-$			
1795.3[#] *8*	1.9 *3*	1795.2	1/2$^-$	0.0	3/2$^-$			
1944.0[#] *9*	2.4 *4*	1943.8		0.0	3/2$^-$			
2029.4[‡] *5*	2.2[a] *5*	3824.6	(3/2,5/2$^-$)	1795.2	1/2$^-$			
2091.2[‡] *5*	1.5[ab] *4*	3644.6	(3/2,5/2,7/2)	1553.3	(1/2$^-$ to 7/2$^-$)			
2234.4 *14*	6.4 *10*	4028.8	(3/2)$^+$	1795.2	1/2$^-$			

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^{85}Se β^- decay (32.9 s) 1975Hu02,1980Ze04,1977Pf01 (continued)

γ(^{85}Br) (continued)

E$_\gamma$[†]	I$_\gamma$[&c]	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$
2245.6[‡] *5*	≈0.6[ab]	3970.4	(3/2,5/2,7/2)$^+$	1724.7	(3/2$^-$,5/2,7/2)
2304.0[#] *6*	1.2 *3*	4028.8	(3/2)$^+$	1724.7	(3/2$^-$,5/2,7/2)
2417.3 *5*	4.8 *7*	3970.4	(3/2,5/2,7/2)$^+$	1553.3	(1/2$^-$ to 7/2$^-$)
2446.9[‡] *5*	1.0[ab] *7*	4000.4	(3/2,5/2,7/2)$^+$	1553.3	(1/2$^-$ to 7/2$^-$)
2455.1 *6*	4.8 *7*	2800.5	(5/2,7/2)	345.19	5/2$^-$
2542.9[‡] *5*	≈1.6[ab]	3970.4	(3/2,5/2,7/2)$^+$	1427.2	(7/2$^-$)
2550.2[#] *5*	3.5 *5*	3741.7	(3/2)$^+$	1191.3	1/2$^-$
2565.4[‡] *5*	2.1[a] *4*	4119.0	(3/2,5/2,7/2)$^+$	1553.3	(1/2$^-$ to 7/2$^-$)
2584.3[#] *8*	4.0 *6*	3539.6	(3/2,5/2,7/2$^-$)	955.82	3/2$^-$
2601.5[#] *4*	3.2 *5*	4028.8	(3/2)$^+$	1427.2	(7/2$^-$)
2724.5[#] *10*	1.5 *2*	3680.4	(3/2,5/2,7/2)	955.82	3/2$^-$
2871.9[‡] *5*	≈1.4[ab]	4299.4	(3/2,5/2,7/2)$^+$	1427.2	(7/2$^-$)
3007.7[#] *5*	6.6 *10*	3007.8	(3/2,5/2,7/2$^-$)	0.0	3/2$^-$
[x]3172.2[@] *8*	1.8 *3*				
3396.6 *4*	16.1 *24*	3741.7	(3/2)$^+$	345.19	5/2$^-$
3479.3[#] *4*	1.5 *3*	3824.6	(3/2,5/2$^-$)	345.19	5/2$^-$
3539.3[‡] *5*	2.8[a] *3*	3539.6	(3/2,5/2,7/2$^-$)	0.0	3/2$^-$
3555.0[‡] *5*	≈1.1[ab]	4510.9	(3/2,5/2,7/2$^-$)	955.82	3/2$^-$
3625.2 *9*	2.3 *4*	3970.4	(3/2,5/2,7/2)$^+$	345.19	5/2$^-$
3655.9 *9*	8.3 *13*	4000.4	(3/2,5/2,7/2)$^+$	345.19	5/2$^-$
3683.8[#] *9*	5.0 *8*	4028.8	(3/2)$^+$	345.19	5/2$^-$
3741.4[‡] *5*	1.5[a] *2*	3741.7	(3/2)$^+$	0.0	3/2$^-$
3774.5 *8*	6.4 *10*	4119.0	(3/2,5/2,7/2)$^+$	345.19	5/2$^-$
3827.1[#] *10*	2.4 *4*	4172.4	(3/2,5/2,7/2)	345.19	5/2$^-$
3954.8[@] *9*	1.7 *3*	4299.4	(3/2,5/2,7/2)$^+$	345.19	5/2$^-$

[†] Weighted average from 1975Hu02, 1980Ze04 and 1977Pf01, unless indicated otherwise.

[‡] γ from 1980Ze04 only.

[#] Weighted average from 1975Hu02 and 1980Ze04.

[@] γ from 1975Hu02 only.

[&] From 1975Hu02.

[a] From 1980Ze04, ΔIγ derived from measured counting and background rates.

[b] γ seen in $\gamma\gamma$ coin only.

[c] For absolute intensity per 100 decays, multiply by 0.46 *6*.

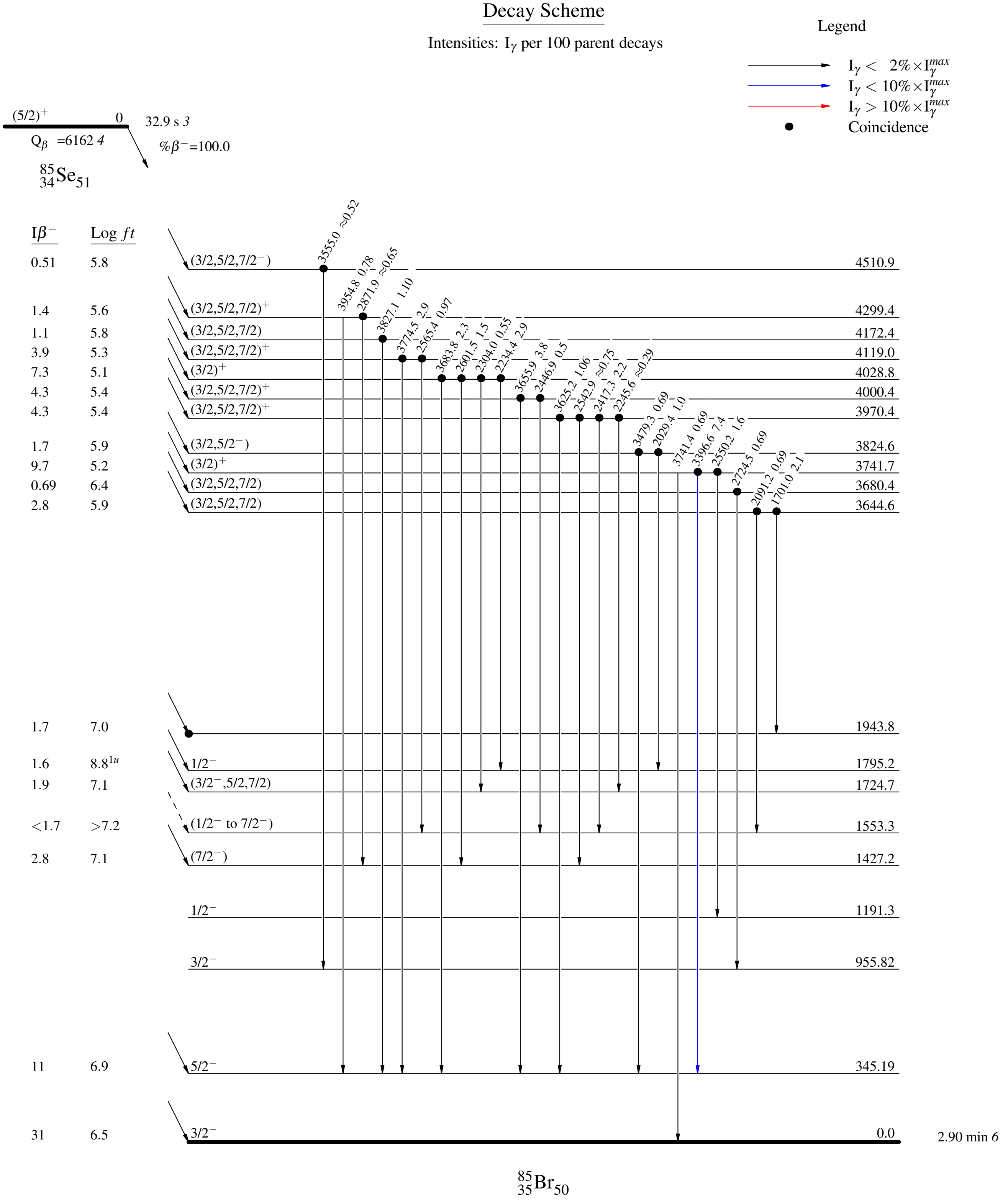
[d] Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ-ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.

[x] γ ray not placed in level scheme.

^{85}Se β^- decay (32.9 s) 1975Hu02,1980Ze04,1977Pf01

Decay Scheme

Intensities: I_γ per 100 parent decays



^{85}Se β^- decay (32.9 s) 1975Hu02,1980Ze04,1977Pf01

Decay Scheme (continued)

Intensities: I_γ per 100 parent decays