^{118}In β^- decay (8.5 s) 1969Ha08

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	K. Kitao	NDS 75,99 (1995)	1-Feb-1993

Parent: ^{118}In: E=138.5+x; $J^\pi=8^-$; $T_{1/2}$=8.5 s *3*; Q(β^-)=4423 *8*; %β^- decay=1.4 *3*

^{118}In-%β^- decay: From Iγ(138.2)/Iγ(253.7)=100/6.3 *15* and assumption for these γ-transitions: mult(138.2γ)=E3 and mult(253.7γ)=E2.

Source: ^{118}Sn(n,p), 96.6% enriched target; γ, $\gamma\gamma$(t), $T_{1/2}$.

The level scheme is that proposed by 1969Ha08.

1969Ha08 determined that the 138.2γ to be a isomeric transition to the 4.4-min isomeric state and that the branching for β^- decay to be 1.5%.

Based on a ratio of the total intensity of 138.2γ to that of 253.7γ.

^{118}Sn Levels

E(level)[†]	J^π[‡]	$T_{1/2}$	Comments
0.0	0^+		
1229.65 *4*	2^+		
2280.34 *5*	4^+		
2321.16 *9*	5^-	22 ns *5*	$T_{1/2}$: from $\gamma\gamma$(t) (1969Ha08).
2574.84 *9*	7^-		

[†] Energy values are from ^{118}Sb ε decay (5.00 h).

[‡] From Adopted Levels.

β^- radiations

E(decay)	E(level)	Iβ^-[†]	Log *ft*	Comments
(1987 *8*)	2574.84	100 *4*	5.38 *6*	av Eβ=778 *4*

[†] For absolute intensity per 100 decays, multiply by 0.014 *3*.

$\gamma(^{118}Sn)$

E_γ[†]	I_γ[‡@]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[#]	α[&]	Comments
41.0 *5*	18 *2*	2321.16	5^-	2280.34	4^+	E1	2.18	α(K)=1.85; α(L)=0.263; α(M)=0.0507 Iγ: intensity balance requires Iγ=30 *2*.
253.678 *10*	93 *10*	2574.84	7^-	2321.16	5^-	E2	0.0620	α(K)=0.0516; α(L)=0.0084; α(M)=0.00166; α(N+..)=0.00036
1050.69 *3*	98 *10*	2280.34	4^+	1229.65	2^+	E2	0.00116	α=0.00116; α(K)=0.00100; α(L)=0.00012
1091.51 *8*	2.4 *4*	2321.16	5^-	1229.65	2^+			
1229.64 *4*	100	1229.65	2^+	0.0	0^+	E2	0.00083	α=0.00083; α(K)=0.00072 Mult.: from linear polarization (1961Ra01).

[†] From ^{118}Sb ε decay (5.00 h).

[‡] No intensities were given by author, values are those from ^{118}Sb ε decay (5.00 h).

[#] From ^{118}Sb ε decay (5.00 h).

[@] For absolute intensity per 100 decays, multiply by 0.014 *3*.

[&] 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.

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Decay Scheme

Intensities: $I_{(\gamma+ce)}$ per 100 parent decays