^{198}Tl IT decay (32.1 ms) 1975Se12

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Huang Xiaolong and Kang Mengxiao	NDS 133, 221 (2016)	1-Dec-2015

Parent: ^{198}Tl: E=742.3 *4*; J^π=(10$^-$); $T_{1/2}$=32.1 ms *10*; %IT decay=100.0

Sources produced by ^{197}Au(α,3n) (1956Fi23,1954Mi16) and ^{198}Hg(d,2n) (1971Pa06).

^{197}Au(α,3nγ); Eα=32-42 MeV (pulsed beam); measured Eγ, γ(t), excitation functions of 198.8γ and 282.8γ.

^{198}Tl Levels

E(level)‡	J^π†	$T_{1/2}$	Comments
0	2$^-$	5.3† h *5*	
259.53 *10*	(2)$^-$		
282.67 *12*	3$^-$		
543.6 *4*	7$^+$	1.87† h *3*	
742.4 *4*	(10$^-$)	32.1 ms *10*	%IT=100 $T_{1/2}$: From γ(t) measurements (1975Se12).

† From Adopted Levels.

‡ A least-squares fit to Eγ.

γ(^{198}Tl)

Iγ normalization: From I(γ+ce) (to 543.5 level)=100%.

E$_\gamma$‡	I$_\gamma$†@	E$_i$(level)	J_i^π	E$_f$	J_f^π	Mult.‡	α&	I$_{(\gamma+ce)}$#@	Comments
(23.1 *1*)	0.081 *16*	282.67	3$^-$	259.53	(2)$^-$	M1	116.6 *23*	10 *2*	α(L)=89.3 *17*; α(M)=20.9 *4*; α(N+..)=5.3 *1*
198.8 *2*	20.6 *6*	742.4	(10$^-$)	543.6	7$^+$	(E3)	3.85	100	α(K)=0.452 *6*; α(L)=2.51 *4*; α(M)=0.685 *10*; α(N+..)=0.224 *20*
(259.5 *1*)	6.2 *13*	259.53	(2)$^-$	0	2$^-$	M1	0.584	10 *2*	α(K)=0.478 *7*; α(L)=0.081 *1*; α(M)=0.0189 *3*; α(N+..)=0.00048 *7*
(260.9 *3*)	2.76 *9*	543.6	7$^+$	282.67	3$^-$	M4	34.0 *6*	100	α(K)=14.56 *21*; α(L)=14.1 *2*; α(M)=4.06 *6*; α(N+..)=1.05 *2*
(282.8 *2*)	61 *6*	282.67	3$^-$	0	2$^-$	M1	0.461	90 *9*	α(K)=0.378 *5*; α(L)=0.0638 *9*; α(M)=0.0149 *2*; α(N+..)=0.00376 *5*

† Deduced from I(γ+ce) and α.

‡ From Adopted Gamma radiations.

From decay scheme. Branching of 23.1γ and 282.8γ is taken from adopted γ's.

@ Absolute intensity per 100 decays.

& 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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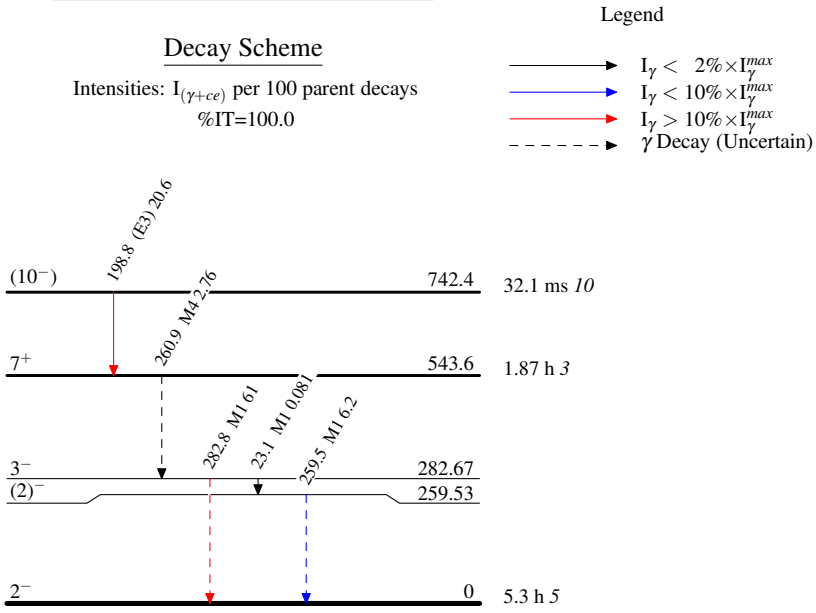
Decay Scheme

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

%IT=100.0



$^{198}_{81}Tl_{117}$