^{198}Tl IT decay (1.87 h) 1960Ju01,1971Pa06

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=543.5 *4*; $J^{\pi}=7^+$; $T_{1/2}$=1.87 h *3*; %IT decay=44.1 *23*
^{198}Tl-%IT decay: From I(γ+ce)(259.6γ+282.8γ)=44.1% *23*.
Sources produced by ^{198}Hg(d,2n) (1971Pa06) and ^{197}Au(α,3n) (1954Mi16,1966Vi01,1970Du10,1971Be09,1977Kr04).
1960Ju01: measured Eγ, ce.
1971Pa06: measured Eγ, Iγ, and ce.
Others: 1953Be79, 1954Pa19, 1955Kn34, 1956Fi23, 1968Pe13, 1970Du10, 1971Be09.

^{198}Tl Levels

E(level)†	J^{π}‡	$T_{1/2}$#	Comments
0.0	2^-	5.3 h *5*	
259.66 *18*	$(2)^-$		
282.77 *17*	3^-		
543.7 *4*	7^+	1.87 h *3*	%IT=44.1 *23* $T_{1/2}$: From ce(t) decay curves (1960Ju01). Others: 1.8 h (1949Or01), 1.75 h (1954Mi16), 1.90 h (1956Fi23).

† From decay scheme and Eγ's by using least-squares fit to the Eγ values.
‡ From Adopted Levels.
# From Adopted Levels, except $T_{1/2}$(543.5 level) from ce(t) decay curves (1960Ju01).

γ(^{198}Tl)

E_γ†	I_γ†‡&	E_i(level)	J_i^π	E_f	J_f^π	Mult.	α#@	$I_{(\gamma+ce)}$&	Comments
23.1 *1*	0.069 *11*	282.77	3^-	259.66	$(2)^-$	M1	116.6 *23*	8.1 *13*	α(L)=89.3 *17*; α(M)=20.9 *4*; α(N+..)=6.3 *2* E_γ: From 1960Ju01. I_γ: From α and I(γ+ce). $I_{(\gamma+ce)}$: From intensity balance at 259.7 level. Mult.: From M1:M2:M3=6:≈1:weak.
259.6 *3*	5.1 *8*	259.66	$(2)^-$	0.0	2^-	M1	0.583 *8*		α(K)=0.478 *7*; α(L)=0.0808 *12*; α(M)=0.0189 *3*; α(N+..)=0.00578 *9* Mult.: From α(K)exp=0.43 *7*, α(L1)exp=0.08 *1* (^{198}Pb ε decay).
260.9 *3*	2.3 *4*	543.7	7^+	282.77	3^-	M4	34.0 *6*		α(K)=14.56 *22*; α(L)=14.12 *22*; α(M)=4.06 *7*; α(N+..)=1.252 *20* α(K)exp=12 *3*, α(L)exp=14 *3* (1960Ju01); α(exp)=40.1 *86* (1986Ve03). Mult.: From L1,2/L3=1.38 *7*, α(K)exp=12 *3*, α(L)exp=14 *3*.
282.8 *2*	50 *5*	282.77	3^-	0.0	2^-	M1	0.461		α(K)=0.378 *6*; α(L)=0.0638 *9*; α(M)=0.01489 *21*; α(N+..)=0.00456 *7* Mult.: From L1/L3>20, α(K)exp=0.34 *4*, α(L)exp=0.06 *1*.

† From 1971Pa06 (semi), except as noted.
‡ Relative intensities normalized to Iγ(587.2γ)=100 in ^{198}Tl ε decay (1.87 h). Values from 1971Pa06. Others: 1960Ju01,

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^{198}Tl IT decay (1.87 h) 1960Ju01,1971Pa06 (continued)

$\gamma(^{198}Tl)$ (continued)

1970Du10, 1971Be09.
ce data from 1960Ju01.
@ α(K)exp=ce(K)/Iγ normalized to α(K)(259.6γ)=0.478 (M1 theory).
& For absolute intensity per 100 decays, multiply by 0.544 *28*.

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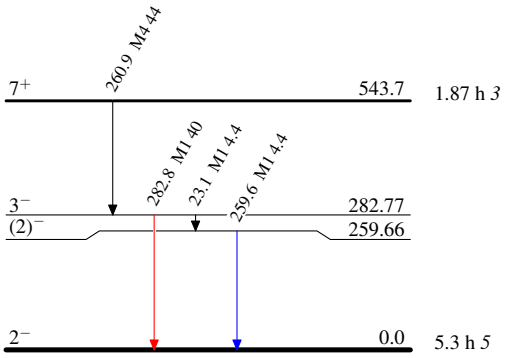
Decay Scheme

Intensities: $I_{(\gamma+ce)}$ per 100 parent decays
%IT=44.1 *23*

Legend
$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$



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