

^{193}Tl IT decay (2.11 min) [1963Di10,1976Ha25](#)

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	M. Shamsuzzoha Basunia		NDS 143, 1 (2017)	31-Mar-2017

Parent: ^{193}Tl : $E=365.0+x$; $J^\pi=(9/2^-)$; $T_{1/2}=2.11$ min *I5*; %IT decay ≤ 75.0

[1963Di10](#): sources from $^{185}\text{Re}(^{12}\text{C},4n)$, $E(^{12}\text{C})=59, 67$ MeV; $^{181}\text{Ta}(^{16}\text{O},4n)$, $E(^{16}\text{O})=74, 79, 94$ MeV. Natural targets. Measured $E(\text{ce})$, Ice (mag spect).

[1976Ha25](#): from ^{193}Pb (5.8 min) ε decay (^{193}Pb produced by bombardment of natural tungsten by ^{16}O , mass separation); measured E_γ , I_γ (Ge(Li)).

Other: [1976GoZP](#).

 ^{193}Tl Levels

E(level)	J^π [†]	$T_{1/2}$	Comments
0.0	$1/2^{(+)}$	21.6 min 8	
365.0	$3/2^{(+)}$		
365.0+x	$(9/2^-)$	2.11 min <i>I5</i>	%IT ≤ 75 (1976GoZP) $T_{1/2}$: from 1963Di10 .

[†] From Adopted Levels.

 $\gamma(^{193}\text{Tl})$

E_γ	I_γ [#]	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult.	δ	α [‡]	$I_{(\gamma+ce)}$ ^{†#}	Comments
(<13)		365.0+x	$(9/2^-)$	365.0	$3/2^{(+)}$	[E3]			100	E_γ : limit suggested by negligible L X ray intensity (conversion of isomeric transition only in M-shell or higher) (1976Ha25); $E < 25$ (1963Di10) L3(binding energy, Tl)=12.657. For the assumed multipolarity the theoretical conversion coefficient is $\alpha \geq 1.0 \times 10^7$.
365.0	90.2 <i>I6</i>	365.0	$3/2^{(+)}$	0.0	$1/2^{(+)}$	M1+E2	1.7 +5-4	0.106 20	100	$ce(K)/(\gamma+ce)=0.071$ <i>I5</i> ; $ce(L)/(\gamma+ce)=0.0189$ <i>I6</i> ; $ce(M)/(\gamma+ce)=0.0046$ <i>4</i> $ce(N)/(\gamma+ce)=0.00116$ <i>9</i> ; $ce(O)/(\gamma+ce)=0.000216$ <i>I8</i> ; $ce(P)/(\gamma+ce)=1.56 \times 10^{-5}$ <i>25</i> $\alpha(K)=0.079$ <i>I7</i> ; $\alpha(L)=0.0209$ <i>I7</i> ; $\alpha(M)=0.0051$ <i>4</i> $\alpha(N)=0.00129$ <i>I0</i> ; $\alpha(O)=0.000239$ <i>20</i> ; $\alpha(P)=1.7 \times 10^{-5}$ <i>3</i> E_γ : from 1976Ha25 . I_γ : deduced from $I(\gamma+ce)$ and α . Mult., δ : from $K/L=3.8$ <i>4</i>

Continued on next page (footnotes at end of table)

¹⁹³Tl IT decay (2.11 min) **1963Di10,1976Ha25** (continued)

γ(¹⁹³Tl) (continued)

<u>E_γ</u>	<u>E_i(level)</u>	<u>Comments</u>
		(1963Di10); other: L/M=2.7 (1963Di10); theory: K/L=3.8 9, L/M=4.1 5.

† From intensity balance in the level scheme.
‡ **Additional information 1.**
For absolute intensity per 100 decays, multiply by ≤0.75.

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