^{201}Tl IT decay 1975Uy01

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	F. G. Kondev	NDS 187,355 (2023)	20-Sep-2022

Parent: ^{201}Tl: E=919.47 *11*; J^{π}=(9/2$^-$); $T_{1/2}$=2.11 ms *11*; %IT decay=100

1975Uy01: Populated following (γ,2n) reaction using a pulsed bremsstrahlung beam with E(γ)=25-32 MeV; Target: natural thallium; Detectors: Ge(Li); Measured: Eγ, γ(t).

Others: 1962Mo19, 1963De38, 1964Br27, 1965Gr04, 1967Co20, 1977KoZH, 1977Sl01.

^{201}Tl Levels

E(level)[†]	J^{π}[‡]	$T_{1/2}$[‡]	Comments
0.0	1/2$^+$	3.0420 d *16*	
331.10 *20*	3/2$^+$	70 ps *20*	
919.40 *23*	(9/2$^-$)	2.11 ms *11*	$T_{1/2}$: Unweighted average of 1.8 ms *1* (1962Mo19), 2.3 ms *2* (1963De38), 2.1 ms *2* (1964Br27), 1.8 ms *1* (1965Gr04), 2.65 ms *20* (1967Co20), 2.1 ms *1* (1975Uy01) and 2.035 ms *7* (1977KoZH). Others: >60 ns 1977Sl01. configuration: π 9/2[505] ($h_{9/2}$) orbital at oblate deformation.

[†] From a least-squares fit to Eγ.
[‡] From Adopted Levels, unless otherwise stated.

$\gamma(^{201}Tl)$

Note that 1965Gr04 (scin detector system) reported 225 keV *10* transition depopulating the isomer to the 5/2$^+$ level at 692.5 keV. Since, no 361.3γ was reported by 1965Gr04 (this Eγ should follow 225γ in the cascade), coupled with the fact that subsequent measurements high-resolution Ge(Li) detectors (1975Uy01 and 1977Sl01) have not confirmed the 1965Gr04 observation, the level scheme proposed in 1965Gr04 was rejected by the evaluator.

E$_\gamma$[†]	I$_\gamma$[#&]	E$_i$(level)	J_i^{π}	E$_f$	J_f^{π}	Mult.[‡]	δ[‡]	α[@]	Comments
331.1 *2*	86.1 *4*	331.10	3/2$^+$	0.0	1/2$^+$	M1+E2	+1.33 *6*	0.161 *5*	α(K)=0.121 *5*; α(L)=0.0305 *6*; α(M)=0.00744 *13* α(N)=0.001871 *33*; α(O)=0.000348 *6*; α(P)=2.59×10^{-5} *7*
588.3 *1*	94.63 *7*	919.40	(9/2$^-$)	331.10	3/2$^+$	[E3]		0.0567 *8*	α(K)=0.0345 *5*; α(L)=0.01666 *23*; α(M)=0.00426 *6* α(N)=0.001074 *15*; α(O)=0.0001953 *27*; α(P)=1.250×10^{-5} *18* E$_\gamma$: From adopted gammas; Other: 588.0 *2* (975Uy01). Eγ=582.3 keV *3* was reported in 1967Co20, but it was not confirmed by others.

[†] From 1975Uy01, unless otherwise stated.
[‡] From Adopted Levels.
[#] From I(γ+ce)=100 and α.
[@] Additional information 1.
[&] Absolute intensity per 100 decays.

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Decay Scheme

Intensities: I_γ per 100 parent decays

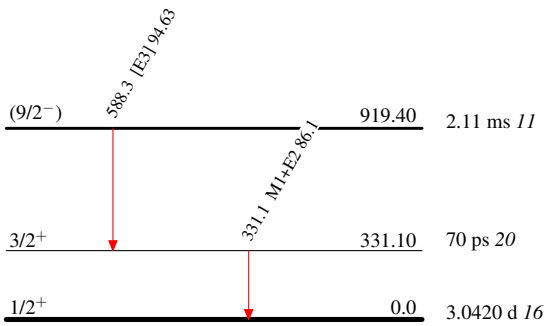
%IT=100

Legend

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

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

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



$^{201}_{81}Tl_{120}$