

$^{198}\text{Hg}(^3\text{He},5n\gamma)$ 1973Dj01

Type	Author	History Citation	Literature Cutoff Date
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E=65 MeV. Measured $E\gamma$, $I\gamma$, $\gamma\gamma(t)$.

For $T_{1/2}$ measurements see (HI,xn γ) data set.

 ^{196}Pb Levels

E(level) [†]	J^π [‡]	$T_{1/2}$ [‡]
0	0 ⁺	37 min 3
1048.6 10	2 ⁺	
1737.5 15	4 ⁺	
1796.5 18	5 ⁻	
2168.7 20	7 ⁻	
2306.4 23	9 ⁻	
2644.6 25	10 ⁺	
2692.8 [#] 6	(12 ⁺)	

[†] From least-squares fit to $E\gamma$'s.

[‡] From Adopted Levels.

[#] From adopted value. The existence of this level in ($^3\text{He},5n\gamma$) is suggested by the $\gamma\gamma(t)$ observation that the 2644.6 level decay with $T_{1/2}=240$ ns ($T_{1/2}$ agrees well with the adopted value) and is fed from a higher energy level. Further, since the γ is not seen directly, it must be largely converted, suggesting low transition energy and non-E1 radiation.

 $\gamma(^{196}\text{Pb})$

E_γ [†]	I_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult. [#]	α ^{&}	Comments
47.7 [‡] 5		2692.8	(12 ⁺)	2644.6	10 ⁺	(E2)	202 11	$\alpha(\text{L})=151$ 9; $\alpha(\text{M})=39.6$ 22; $\alpha(\text{N}+..)=11.8$ 7
59	@	1796.5	5 ⁻	1737.5	4 ⁺	E1	0.379	$\alpha(\text{L})=0.290$ 4; $\alpha(\text{M})=0.0690$ 10; $\alpha(\text{N}+..)=0.0204$ 3
137.7	15	2306.4	9 ⁻	2168.7	7 ⁻	E2	1.704	$\alpha(\text{K})=0.370$ 6; $\alpha(\text{L})=0.994$ 14; $\alpha(\text{M})=0.262$ 4; $\alpha(\text{N}+..)=0.0784$ 11
338.2	42	2644.6	10 ⁺	2306.4	9 ⁻	E1	0.0224	$\alpha(\text{K})=0.0184$ 3; $\alpha(\text{L})=0.00307$ 5; $\alpha(\text{M})=0.000717$ 10; $\alpha(\text{N}+..)=0.000219$ 3
372.2	53	2168.7	7 ⁻	1796.5	5 ⁻	E2	0.0626	Mult.: tentative α supports E1 (1973WyZZ). $\alpha(\text{K})=0.0396$ 6; $\alpha(\text{L})=0.01724$ 25; $\alpha(\text{M})=0.00437$ 7; $\alpha(\text{N}+..)=0.001325$ 19
^x 466	@							
688.9	50	1737.5	4 ⁺	1048.6	2 ⁺	E2	0.01424	$\alpha(\text{K})=0.01082$ 16; $\alpha(\text{L})=0.00259$ 4; $\alpha(\text{M})=0.000630$ 9; $\alpha(\text{N}+..)=0.000193$ 3
^x 970	@							
1048.6	100	1048.6	2 ⁺	0	0 ⁺	E2	0.00608	$\alpha(\text{K})=0.00487$ 7; $\alpha(\text{L})=0.000929$ 13; $\alpha(\text{M})=0.000221$ 3; $\alpha(\text{N}+..)=6.79\times 10^{-5}$ 10

[†] γ energy uncertainties not given.

[‡] From adopted value.

[#] From adopted gammas.

@ Intensity is weak; seen only in delayed coincidence spectrum.

& 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.

^x γ ray not placed in level scheme.

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Level Scheme

Intensities: Relative I_γ

Legend

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

