

$^{203}\text{Tl}(\text{p},4\text{n}\gamma)$ 1972Is01

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	F. G. Kondev	NDS 192,1 (2023)	1-Aug-2023

Beam: E(p)=28.5 to 54 MeV; Target: $^{203}\text{Tl}_2\text{O}_3$ isotopically enriched in ^{203}Tl ; Detectors: two Ge(Li), electron spectrometer;
 Measured: γ , $\gamma(\text{t})$, ce, $\text{I}\gamma$, $\text{E}\gamma$, Deduced: level scheme, J^π , $\text{T}_{1/2}$.

 ^{200}Pb Levels

E(level) [†]	J^π [‡]	$\text{T}_{1/2}$	Comments
0	0 ⁺		
1027.0 10	2 ⁺		
1489.0 15	4 ⁺		
1909.0 18	(5) ⁻		
2154.0 20	(7) ⁻	50 ns 10	$\text{T}_{1/2}$: From 245 $\gamma(\text{t})$ in 1972Is01.
2183.5 23	(9) ⁻	540 ns 30	$\text{T}_{1/2}$: From 1027 $\gamma(\text{t})$, 462 $\gamma(\text{t})$, 420 $\gamma(\text{t})$ and 245 $\gamma(\text{t})$ in 1972Is01.

[†] From $\text{E}\gamma$.

[‡] From Adopted Levels.

 $\gamma(^{200}\text{Pb})$

E_γ [†]	I_γ [†]	$\text{E}_i(\text{level})$	J^π_i	E_f	J^π_f	Mult. [‡]	α [#]	Comments
(29.5 10)		2183.5	(9) ⁻	2154.0	(7) ⁻			E_γ : From adopted gammas.
245	52.0 5	2154.0	(7) ⁻	1909.0	(5) ⁻	(E2)	0.2166 30	$\alpha(\text{K})=0.1047$ 15; $\alpha(\text{L})=0.0837$ 12; $\alpha(\text{M})=0.02170$ 30 $\alpha(\text{N})=0.00548$ 8; $\alpha(\text{O})=0.000999$ 14; $\alpha(\text{P})=5.52\times 10^{-5}$ 8 Mult.: $\alpha(\text{K})_{\text{exp}}=0.04$ 9.
420	81.0 15	1909.0	(5) ⁻	1489.0	4 ⁺			
462	88.0 15	1489.0	4 ⁺	1027.0	2 ⁺	E2	0.0356 5	$\alpha(\text{K})=0.02458$ 34; $\alpha(\text{L})=0.00833$ 12; $\alpha(\text{M})=0.002081$ 29 $\alpha(\text{N})=0.000527$ 7; $\alpha(\text{O})=9.91\times 10^{-5}$ 14; $\alpha(\text{P})=7.48\times 10^{-6}$ 10 Mult.: $\alpha(\text{K})_{\text{exp}}=0.0247$ 25, $\alpha(\text{L})_{\text{exp}}=0.0093$ 14.
^x 777								E_γ : $\gamma(\text{t})$ data in 1972Is01 indicate this transition has delayed component with $\text{T}_{1/2}=0.26\ \mu\text{s}$ 6.
1027	100 3	1027.0	2 ⁺	0	0 ⁺	E2	0.00632 9	$\alpha(\text{K})=0.00505$ 7; $\alpha(\text{L})=0.000972$ 14; $\alpha(\text{M})=0.0002310$ 32 $\alpha(\text{N})=5.85\times 10^{-5}$ 8; $\alpha(\text{O})=1.145\times 10^{-5}$ 16; $\alpha(\text{P})=1.110\times 10^{-6}$ 16 Mult.: $\alpha(\text{K})_{\text{exp}}=0.0057$ 10.

[†] From 1972Is01.

[‡] From $\alpha(\text{K})_{\text{exp}}$ and $\alpha(\text{L})_{\text{exp}}$ data in 1972Is01.

[#] Additional information 1.

^x γ ray not placed in level scheme.

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Level Scheme
Intensities: Relative I_γ

- Legend
- $\longrightarrow$ $I_\gamma < 2\% \times I_\gamma^{max}$
 - $\longrightarrow$ $I_\gamma < 10\% \times I_\gamma^{max}$
 - $\longrightarrow$ $I_\gamma > 10\% \times I_\gamma^{max}$
 - $-----\longrightarrow$ γ Decay (Uncertain)

