

^{154}Tm $\varepsilon+\beta^+$ decay (3.30 s) [1997To12](#),[1973BoVZ](#),[1984ToZT](#)

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	N. Nica	NDS 200,2 (2025)	22-Aug-2022

Parent: ^{154}Tm : $E=0+x$; $J^\pi=9^+$; $T_{1/2}=3.30$ s 7; $Q(\varepsilon)=8178$ 15; $\% \varepsilon+\% \beta^+$ decay=42 5

^{154}Tm -E: [2003Au02](#) list $E=70$ 50. See the comment on this level energy in the ^{154}Tm Adopted Levels data set.

^{154}Tm - $Q(\varepsilon+\beta^+)$: From [2021Wa16](#).

^{154}Tm - $\% \varepsilon+\% \beta^+$ decay: From [1997To12](#).

[Additional information 2](#).

[1984ToZT](#): Produced by (^{16}O ,xn) or (^{16}O ,pxn) on ^{144}Sm followed by isotope separation. Measured $T_{1/2}$.

[1997To12](#): Produced by (^{64}Zn ,3pxn) on ^{92}Mo and ^{94}Mo followed by isotope separation. Coincidences among α , β^+ , and γ with Si, Ge, and plastic scintillation detectors.

Other: [1973BoVZ](#). Abstract only.

Level scheme is incomplete.

 ^{154}Er Levels

E(level)	J^π [†]	$T_{1/2}$
0	0^+	3.73 min 9
560.8 1	2^+	
1162.2 1	4^+	
1787.6 2	6^+	
2329.5 2	8^+	
2583.6 3	8^+	

[†] From Adopted Levels.

 ε, β^+ radiations

Values in comments assume that 560γ represents 100% of the ground-state feeding. However due to the incompleteness of the level scheme the actual value may be smaller than 100% and the values of $\log ft$ and $I(\varepsilon+\beta^+)$ are most likely are limits.

E(decay)	E(level)	Comments
(5594 15)	2583.6	$\log ft \geq 5.0$, $I(\varepsilon+\beta^+) \leq 8$.
(5849 15)	2329.5	$\log ft \geq 4.6$, $I(\varepsilon+\beta^+) \leq 24$.

 $\gamma(^{154}\text{Er})$

I_γ normalization: [Additional information 4](#).

E_γ [†]	I_γ [†]	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult. [‡]	$\alpha^\#$	Comments
$^{x}460.5$ 2	8 3							
541.9 1	57 8	2329.5	8^+	1787.6	6^+	E2	0.01341 19	$\alpha(\text{K})=0.01077$ 15; $\alpha(\text{L})=0.002052$ 29; $\alpha(\text{M})=0.000467$ 7 $\alpha(\text{N})=0.0001077$ 15; $\alpha(\text{O})=1.468 \times 10^{-5}$ 21; $\alpha(\text{P})=6.00 \times 10^{-7}$ 8
560.8 1	100	560.8	2^+	0	0^+	E2	0.01231 17	$\alpha(\text{K})=0.00992$ 14; $\alpha(\text{L})=0.001859$ 26; $\alpha(\text{M})=0.000422$ 6 $\alpha(\text{N})=9.75 \times 10^{-5}$ 14; $\alpha(\text{O})=1.332 \times 10^{-5}$ 19; $\alpha(\text{P})=5.54 \times 10^{-7}$ 8
601.4 1	95 5	1162.2	4^+	560.8	2^+	E2	0.01038 15	$\alpha(\text{K})=0.00842$ 12; $\alpha(\text{L})=0.001528$ 21;

Continued on next page (footnotes at end of table)

^{154}Tm $\varepsilon+\beta^+$ decay (3.30 s) [1997To12](#),[1973BoVZ](#),[1984ToZT](#) (continued) $\gamma(^{154}\text{Er})$ (continued)

E_γ [†]	I_γ [†]	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult. [‡]	α [#]	Comments
								$\alpha(\text{M})=0.000346$ 5 $\alpha(\text{N})=7.99\times 10^{-5}$ 11; $\alpha(\text{O})=1.098\times 10^{-5}$ 15; $\alpha(\text{P})=4.72\times 10^{-7}$ 7
625.4 1	88 5	1787.6	6 ⁺	1162.2	4 ⁺	E2	0.00946 13	$\alpha(\text{K})=0.00769$ 11; $\alpha(\text{L})=0.001372$ 19; $\alpha(\text{M})=0.000310$ 4 $\alpha(\text{N})=7.17\times 10^{-5}$ 10; $\alpha(\text{O})=9.88\times 10^{-6}$ 14; $\alpha(\text{P})=4.32\times 10^{-7}$ 6
796.0 2	20 4	2583.6	8 ⁺	1787.6	6 ⁺	E2	0.00545 8	$\alpha(\text{K})=0.00451$ 6; $\alpha(\text{L})=0.000735$ 10; $\alpha(\text{M})=0.0001647$ 23 $\alpha(\text{N})=3.82\times 10^{-5}$ 5; $\alpha(\text{O})=5.35\times 10^{-6}$ 7; $\alpha(\text{P})=2.56\times 10^{-7}$ 4

[†] From [1997To12](#); other E_γ : from [1973BoVZ](#).[‡] From ^{154}Er Adopted γ radiations.[#] [Additional information 3](#).^x γ ray not placed in level scheme.

^{154}Tm $\varepsilon + \beta^+$ decay (3.30 s) 1997To12,1973BoVZ,1984ToZT

Decay Scheme

