

^{154}Eu ε decay **1968Me12,2004Te01**

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

Parent: ^{154}Eu : $E=0.0$; $J^\pi=3^-$; $T_{1/2}=8.592$ y 5; $Q(\varepsilon)=717.2$ 11; $\% \varepsilon$ decay=0.018 12

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

^{154}Eu - $\% \varepsilon$ decay: Assumes that the 81.99-keV γ represents 100% of the ε decays.

[Additional information 1](#).

 ^{154}Sm Levels

E(level)	J^π [†]	$T_{1/2}$ [†]
0	0 ⁺	stable
81.99 2	2 ⁺	3.02 ns 4
266.67 9	4 ⁺	172 ps 4

[†] From ^{154}Sm Adopted Levels.

 ε radiations

E(decay)	E(level)	I_ε [†]	Log ft	Comments
(450.5 15)	266.67	0.0051 13	12.83 11	$\varepsilon K=0.8202$; $\varepsilon L=0.13888$ 6; $\varepsilon M+=0.04091$ 2
(635.2 15)	81.99	0.012 12	12.8 5	$\varepsilon K=0.8286$; $\varepsilon L=0.13263$ 3; $\varepsilon M+=0.038761$ 9

[†] Absolute intensity per 100 decays.

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

I_γ normalization: Assumes that the 81.99-keV γ represents 100% of the ε decays.

E_γ	I_γ ^{†@}	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult. [‡]	$\alpha^\#$	Comments
81.99 2	0.003 2	81.99	2 ⁺	0	0 ⁺	E2	4.86 7	$\alpha(K)=1.989$ 28; $\alpha(L)=2.228$ 31; $\alpha(M)=0.518$ 7
								$\alpha(N)=0.1134$ 16; $\alpha(O)=0.01414$ 20; $\alpha(P)=8.30 \times 10^{-5}$ 12
184.68 8	0.004 1	266.67	4 ⁺	81.99 2 ⁺		E2	0.273 4	$\alpha(K)=0.1919$ 27; $\alpha(L)=0.0630$ 9; $\alpha(M)=0.01431$ 20
								$\alpha(N)=0.00316$ 4; $\alpha(O)=0.000417$ 6; $\alpha(P)=9.34 \times 10^{-6}$ 13

[†] Photons per 100 ^{154}Eu decays, measured together with the γ 's associated with the β^- decay of ^{154}Eu . Values are given by [2004Te01](#), but are those measured previously by participants in the international Decay Data Evaluation Project.

[‡] From ^{154}Sm adopted γ radiations.

[#] [Additional information 2](#).

[@] Absolute intensity per 100 decays.

¹⁵⁴Eu ε decay 1968Me12,2004Te01

