

^{145}Dy ε decay (6 s) [1993To04](#)

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	E. Browne, J. K. Tuli	NDS 110, 507 (2009)		1-Oct-2008

Parent: ^{145}Dy : $E=0.0$; $J^\pi=(1/2^+)$; $T_{1/2}=6$ s 2; $Q(\varepsilon)=7590$ 70; $\% \varepsilon + \% \beta^+$ decay=?

^{145}Dy - $Q(\varepsilon)$: From [2003Au03](#). Adjusted value based on $Q(\varepsilon)=7300$ 200 ([1993Al03](#)) total γ -ray absorption.

^{145}Dy produced in $^{58}\text{Ni} + ^{92}\text{Mo}$ irradiation. Measured P, γ , P(t), Pb+(t), p γ (t), HPGe, scin.

 ^{145}Tb Levels

E(level)	J^π
x	(3/2 ⁺)
x+108	(1/2 ⁺)
253+x	(5/2 ⁺)
438+x	(7/2 ⁺)

 $\gamma(^{145}\text{Tb})$

E_γ	I_γ	$E_i(\text{level})$	J^π_i	E_f	J^π_f	Mult.	$\alpha^\ddagger$	Comments
108.1 1	100	x+108	(1/2 ⁺)	x	(3/2 ⁺)	(M1)	1.76	$\alpha(\text{K})=1.482$ 22; $\alpha(\text{L})=0.216$ 3; $\alpha(\text{M})=0.0471$ 7; $\alpha(\text{N}+..)=0.01269$ 18 $\alpha(\text{N})=0.01090$ 16; $\alpha(\text{O})=0.001678$ 24; $\alpha(\text{P})=0.0001104$ 16
145.1 1	77 [†] 5	253+x	(5/2 ⁺)	x+108	(1/2 ⁺)	(E2)	0.686	$\alpha(\text{K})=0.407$ 6; $\alpha(\text{L})=0.215$ 3; $\alpha(\text{M})=0.0506$ 8; $\alpha(\text{N}+..)=0.01291$ 19 $\alpha(\text{N})=0.01139$ 17; $\alpha(\text{O})=0.001505$ 22; $\alpha(\text{P})=2.16 \times 10^{-5}$ 3
184.5 1	45 [†] 9	438+x	(7/2 ⁺)	253+x	(5/2 ⁺)	(E2)	0.300	$\alpha(\text{K})=0.200$ 3; $\alpha(\text{L})=0.0779$ 11; $\alpha(\text{M})=0.0182$ 3; $\alpha(\text{N}+..)=0.00466$ 7 $\alpha(\text{N})=0.00410$ 6; $\alpha(\text{O})=0.000551$ 8; $\alpha(\text{P})=1.120 \times 10^{-5}$ 16
253.1 1	48 [†] 9	253+x	(5/2 ⁺)	x	(3/2 ⁺)	(M1)	0.1640	$\alpha(\text{K})=0.1387$ 20; $\alpha(\text{L})=0.0199$ 3; $\alpha(\text{M})=0.00433$ 6; $\alpha(\text{N}+..)=0.001167$ 17 $\alpha(\text{N})=0.001002$ 14; $\alpha(\text{O})=0.0001546$ 22; $\alpha(\text{P})=1.025 \times 10^{-5}$ 15
437.7 2	109 [†] 15	438+x	(7/2 ⁺)	x	(3/2 ⁺)	(E2)	0.0208	$\alpha(\text{K})=0.01659$ 24; $\alpha(\text{L})=0.00326$ 5; $\alpha(\text{M})=0.000732$ 11; $\alpha(\text{N}+..)=0.000193$ 3 $\alpha(\text{N})=0.0001672$ 24; $\alpha(\text{O})=2.42 \times 10^{-5}$ 4; $\alpha(\text{P})=1.095 \times 10^{-6}$ 16

[†] Admixture from ^{145}Dy (14.1 s) decay.

[‡] 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.

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Decay Scheme

 Intensities: Relative I_γ

Legend

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

