

^{162}Ta $\varepsilon+\beta^+$ decay [1992Ha10,1986Ru05,1985Li14](#)

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	N. Nica	NDS 195,1 (2024)	19-Sep-2023

Parent: ^{162}Ta : $E=0.0$; $T_{1/2}=3.57$ s 12; $Q(\varepsilon)=9390$ 60; $\% \varepsilon + \% \beta^+$ decay=99.926 10

^{162}Ta - $T_{1/2}$: [Additional information 1](#).

^{162}Ta - $Q(\varepsilon)$: From [2021Wa16](#).

[Additional information 2](#).

[1985Li14](#): sample produced in the $^{175}\text{Lu}(^3\text{He},16n)$ reaction with $E(^3\text{He})=280$ MeV on a 15-g LuF_3 powder target. Isotope separation was used, with the activities collected on a moving tape-transport system. γ 's measured using Ge and Si detectors. Reported $T_{1/2}$, $E\gamma$, $I\gamma$.

[1986Ru05](#): sample produced in the $^{133}\text{Cs}(^{36}\text{Ar},7n)$ reaction at $E(^{36}\text{Ar})=255, 234$ and 218 MeV on a 3 mg/cm²-thick CsCl target. The reaction products were transported using a He-jet tape-transport system. A Si surface-barrier detector and three Ge detectors were used to study α , x-ray and γ -ray spectra. Reported $\% \alpha$ (and, hence, $\% \varepsilon + \% \beta^+$).

[1992Ha10](#): samples produced by bombarding a 1.1 mg/cm²-thick target of natural Ca, evaporated onto a 2.7 mg/cm²-thick Mo foil, with a 711-MeV ^{127}I beam. Mo foils were used to degrade the accelerated ions before striking the target. A He-jet tape-transport system was used to carry the reaction products to the detectors. A 300 mm², 100 μm -thick, surface-barrier detector and a Ge(Li) detector were used to study the α particles and γ rays. Reported $T_{1/2}$, $E\alpha$, $E\gamma$, $I\gamma$ and $\% \alpha$ (and, hence, $\% \varepsilon + \% \beta^+$) values.

Preliminary data from these authors are given by [1987HaZO](#).

 ^{162}Hf Levels

E(level) [†]	J^π [‡]	$T_{1/2}$	Comments
0 [#]	0 ⁺	39.4 s 9	$T_{1/2}$: from adopted values.
284.4 [#] 2	2 ⁺		
728.4 [#] 3	4 ⁺		

[†] Computed from the listed $E\gamma$ values.

[‡] From adopted values.

[#] Band(A): $K^\pi=0^+$ ground-state band.

 $\gamma(^{162}\text{Hf})$

$I\gamma$ normalization: There are insufficient data to deduce a normalization factor.

E_γ [†]	I_γ [†]	$E_i(\text{level})$	J^π_i	E_f	J^π_f	Mult.	α [‡]	Comments
284.5 2	100	284.4	2 ⁺	0	0 ⁺	[E2]	0.0930	I_γ : other: ≈ 40 (1985Li14).
443.8 2	40 3	728.4	4 ⁺	284.4	2 ⁺	[E2]	0.0263	

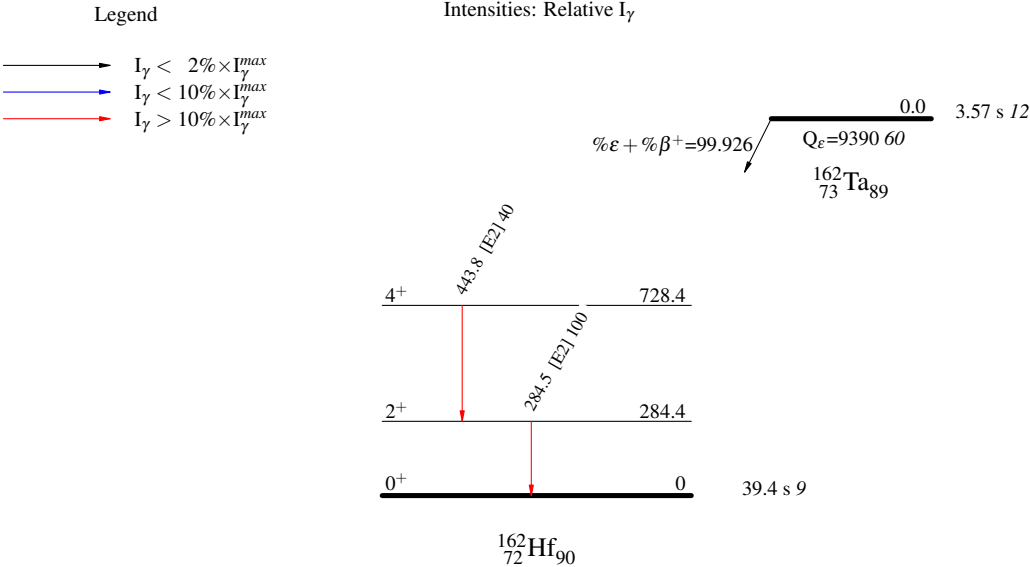
[†] From [1992Ha10](#).

[‡] 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.

¹⁶²Ta ε decay **1992Ha10,1986Ru05,1985Li14**

Decay Scheme

Intensities: Relative I_γ



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