

^{167}Ta ε decay (80 s) [1982Li17,1987Es08](#)

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh and Jun Chen		NDS 191,1 (2023)	22-Aug-2023

Parent: ^{167}Ta : E=0.0; $J^\pi=(3/2^+)$; $T_{1/2}=80$ s 4; $Q(\varepsilon)=5120$ 40; $\% \varepsilon + \% \beta^+$ decay=100

^{167}Ta - $J^\pi, T_{1/2}$: From ^{167}Ta Adopted Levels.

^{167}Ta - $Q(\varepsilon)$: From [2021Wa16](#).

[1982Li17](#): ^{167}Ta from $\text{Lu}(^3\text{He}, \text{xn}), \text{E}(^3\text{He})=280$ MeV using Lu metal and Lutetium fluoride targets, followed by fluorination of products and mass separation. Measured E_γ, I_γ using Si(Li) and coaxial Ge(Li) detectors.

[1987Es08, 1989Br19](#): ^{167}Ta from $^{151}\text{Eu}(^{22}\text{Ne}, 6\text{n})$, followed by chemical separation and aerosol transport. Measured E_γ , half-life of ^{167}Ta and ^{167}Hf decays from decay curves for γ rays.

Others:

[1992HeZV](#): measured E_γ, I_γ , half-life.

[1969Ar22](#): ^{167}Ta produced in $\text{Re}, \text{Hg}(p, X)$ reaction, measured half-life of the decay of ^{167}Ta .

[Additional information 1](#).

The decay scheme is unknown, except for possible population of the first excited state at 92.3 keV.

 ^{167}Hf Levels

E(level)	J^π †	$T_{1/2}$ †
0.0	(5/2 ⁻)	2.05 min 5
92.3?	(7/2 ⁻)	

† From the Adopted Levels.

 $\gamma(^{167}\text{Hf})$

E_γ †	E_i (level)	J_i^π	E_f	J_f^π	Comments
^x 81.6					
92.3 [‡]	92.3?	(7/2 ⁻)	0.0	(5/2 ⁻)	E_γ : consistent with that for known transition deexciting first excited state of ^{167}Hf ; tentatively placed by evaluators.
^x 111.6					
^x 113.7					γ also reported in 1987Es08 .
^x 118.6					
^x 139.5 4					E_γ : from 1987Es08 . $E_\gamma=139.5$ in 1982Li17 .
^x 214.2					
^x 278.0					Other E_γ : 277.7 in 1987Es08 , 280.0 (1992HeZV).
^x 296.3					

† From [1982Li17](#), except as noted. No uncertainties are given by the authors.

‡ Placement of transition in the level scheme is uncertain.

^x γ ray not placed in level scheme.

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Legend

Decay Scheme-----> γ Decay (Uncertain)