

^{160}Hf ε decay [1995Hi12](#)

<u>Type</u>	<u>Author</u>	<u>History Citation</u>	<u>Literature Cutoff Date</u>
Full Evaluation	N. Nica	NDS 176, 1 (2021)	1-May-2021

Parent: ^{160}Hf : $E=0.0$; $J^\pi=0^+$; $T_{1/2}=13.6$ s 2; $Q(\varepsilon)=4330$ 60; $\% \varepsilon + \% \beta^+$ decay=99.3 2

^{160}Hf - $Q(\varepsilon)$: From [2021Wa16](#).

[Additional information 1.](#)

Production: Hf isotopes were produced in fusion evaporation reactions on enriched (92.7% ^{135}Ba) BaF_2 targets. The reactions were induced by ^{32}S ions at five different energies ranging from 214 MeV down to 172 MeV, the energies being reduced from the initial beam energy (240 MeV) by use of Ta beam degrader foils. The reaction products were thermalized, swept out with a He jet flow and sprayed onto a tape, which periodically moved them into a detection system. Excitation functions were used to provide mass-number assignments. Element assignment was done by measurement of coincident x-rays from internally converted transitions and/or emitted after electron capture.

The radiations were studied using two high-resolution Ge detectors in a close 180° geometry with a 4.50 cm^2 Si surface-barrier α detector placed between them. Two previously unknown γ rays were assigned to the ε decay of ^{160}Hf . They are not in coincidence with each other and their placement in the ^{160}Lu level scheme is not established at present (although they may both be g.s. transitions). Their reported properties are as follows:

$\gamma(^{160}\text{Lu})$

<u>E_γ</u>	<u>I_γ</u>
^x 185.2 4	15 2
^x 193.6 3	100

^x γ ray not placed in level scheme.