

^{159}Hf α decay

<u>Type</u>	<u>Author</u>	<u>History Citation</u>	<u>Literature Cutoff Date</u>
Full Evaluation	N. Nica	NDS 160, 1 (2019)	21-Oct-2019

Parent: ^{159}Hf : $E=0.0$; $J^\pi=(7/2^-)$; $T_{1/2}=5.20$ s 10; $Q(\alpha)=5225.1$ 27; $\% \alpha$ decay=16 4

^{159}Hf - $T_{1/2}$: [Additional information 1](#).

^{159}Hf - $Q(\alpha)$: [Additional information 2](#).

^{159}Hf - $\% \alpha$ decay: From weighted average of the following $\% \alpha$ values: 16 5 ([1996Pa01](#)); 27 6 ([1978Ca11](#)); and 12 4 ([1979Ho10](#)).

[1979Ho10](#) quote an uncertainty of 1 for their value, but the evaluator has increased it so that it contributes no more than 50% to the total weight in the weighted average.

[Additional information 3](#).

Production: $^{107}\text{Ag}(^{58}\text{Ni}, 3p3n)$, $E=263$ MeV ([1979Ho10](#)). $^{144}\text{Sm}(^{20}\text{Ne}, 5n)$, $E=120$ MeV and 143 MeV ([1973To02](#)). ^{127}I ,

$E(^{127}\text{I})=711$ MeV, on Ca target. Decay product of ^{163}Ta production ([1992Ha10](#)). ^{58}Ni ($E(^{58}\text{Ni})=290$ MeV) bombardment of ^{102}Pd ([1996Pa01](#)).

The evaluator has assumed that the α transition connects the two ground states.

 ^{155}Yb Levels

<u>E(level)</u>	<u>J^π</u>	<u>$T_{1/2}$</u>
0.0	(7/2 ⁻)	1.739 s 19

 α radiations

<u>$E\alpha$</u>	<u>E(level)</u>	<u>Comments</u>
5094 5	0.0	$E\alpha$: weighted average of: 5095 5 (1979Ho10); 5088 6 (1992Ha10); and 5098 5 (1996Pa01). 1973To02 report $E\alpha(\text{MeV})=5.09$ 1; 1983Fa03 report $E\alpha(\text{MeV})=5.11$, with no uncertainty listed. HF: if $\%I\alpha=100$ then HF=0.71 18 (calculated for nuclear radius parameter $r_0(^{155}\text{Yb})=1.555$ 10 deduced from interpolation (or unweighted average) of radius parameters of the adjacent even-even nuclides).