

Adopted Levels

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	C. Morse	NDS 182, 130 (2022).	14-Sep-2021

$Q(\beta^-) = -5133$  SY;  $S(n) = 6553$  SY;  $S(p) = 2736$  SY;  $Q(\alpha) = 10038$  I3 [2021Wa16](#)

$\Delta Q(\beta^-) = 512$ ,  $\Delta S(n) = 99$ ,  $\Delta S(p) = 189$  ([2021Wa16](#)).

$S(2n) = 14385$  syst 98,  $S(2p) = 4714$  syst 169,  $Q(\epsilon p) = 1751$  syst 263 ([2021Wa16](#)).

$^{267}\text{Hs}$  has been observed in the  $^{238}\text{U}(^{34}\text{S}, 5n)$  reaction at JINR ([1995La20](#)) and GSI ([2010Ni14](#)), and as the  $\alpha$ -decay daughter of  $^{271}\text{Ds}$  at GSI ([1998Ho13](#), [2011Ho10](#)), LBNL ([2003Gi05](#), [2004Fo08](#)), and RIKEN ([2004Mo40](#)). Events were identified based on the observation of chains of  $\alpha$ -decaying nuclei. The properties of these chains, when compared to the literature, allowed individual decays to be assigned to specific nuclei.

Identification of the  $\alpha$ -decay energies originating from  $^{271}\text{Ds}$  (which determine the level energies in  $^{267}\text{Hs}$ ) has been claimed in various works, but not uniformly. [1998Ho13](#) identifies  $E_\alpha = 10.738$  and  $E_\alpha = 10.681$ , but [2011Ho10](#) indicates that only 10.738 was observed. [2004Mo40](#) identifies  $E_\alpha = 10.73$  and  $E_\alpha = 10.45$ , but not 10.681. [2004Fo08](#) identifies  $E_\alpha = 10.738$ , as well as one event which could be assigned to  $E_\alpha = 10.681$  or 10.738, but none at  $E_\alpha = 10.45$ . The present evaluation represents the evaluator's attempt to reconcile the available data.

Half-lives, branching ratios, and  $\alpha$ -decay energies in this evaluation have been computed from the individual events listed in the references above. Half-life uncertainties have been computed according to the method of [1984Sc13](#). An additional 10 keV systematic uncertainty is assumed for the  $\alpha$ -decay energies, which is added in quadrature to the averaged statistical uncertainty.

 $^{267}\text{Hs}$  LevelsCross Reference (XREF) Flags

**A**  $^{271}\text{Ds}$   $\alpha$  decay (1.6 ms)

E(level)	$T_{1/2}$	XREF	Comments
0	43 ms +9-6	<b>A</b>	$\% \alpha = 100$ E(level): Assumed ground state. $T_{1/2}$ : From 37 events.
$8 \times 10^1$ 2		<b>A</b>	E(level): From $\Delta E_\alpha$ .
$3.2 \times 10^2$ 2		<b>A</b>	E(level): From $\Delta E_\alpha$ .
x	0.8 s +40-4		$T_{1/2}$ : From one event ( <a href="#">2004Mo40</a> ).