Adopted Levels, Gammas

History			
Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh	ENSDF	15-Dec-2021

Q(β^-)=−653×10[1] *10*; S(n)=7830 *40*; S(p)=2540 *SY*; Q(α)=10346 *16* 2021Wa16
Estimated uncertainty for S(p)=240 (2021Wa16).
S(2n)=14570 *40*, S(2p)=4220 *280* (syst), Q(εp)=1060 *140* (syst), Q(ε)=3040 *170* (syst) (2021Wa16).
2001Ho06 (also 2002Ho11, 2011Ac01, 2015Mu16 review): ^{266}Hs produced as α daughter of ^{270}Ds, which was formed in ^{207}Pb(^{64}Ni,n),E=317 MeV using UNILAC accelerator facility and SHIP separator at GSI. Experiments performed under an international collaboration between laboratories in Germany, Slovakia, Poland, and Russia. Of the eight correlated events detected, six events involved EVR-α1−α2-SF correlations, and two EVR-α2-SF. Two groups for the six α-decays assigned to ^{270}Ds as follows: events #1, #2, and #3 belonged to the g.s., and events #4, #5, and #6 to states originating from a K-isomer (as in the case of the longest half-life in event #6) or γ-decay. No fission event was observed which could have been assigned to ^{266}Hs. See details for ^{270}Ds Adopted Levels for history of eight decay chains assigned to ^{270}Ds → ^{266}Mt α-α sequence. 2001Ho06 considered the possibility of existence of an isomeric state, analogous to the one in ^{270}Ds.
2012Ac04: 25 additional decay chains were observed at GSI using the same reaction and SHIP separator as in 2001Ho06. These chains were of three different types of correlations: EVR-α-α-SF, EVR-α-SF, and EVR-α-α-α-SF. Complete analysis of these data are yet to be published as mentioned in author's review articles 2017Ac02 and 2015Ac04. Revised half-life of ^{270}Ds α decay was deduced in this work. These experiments are also briefly described by D. Ackermann et al., in GSI Annual Scientific reports (GSI-2010, p200 (published in 2011), and GSI-2011, p208 (published in 2012)). Isomeric state in ^{266}Hs is proposed in these studies.

For theoretical studies, consult Nuclear Science References (NSR) database at NNDC, BNL for 136 primary references dealing with the half-lives and other aspects of nuclear structure in this mass region.

^{266}Hs Levels

Cross Reference (XREF) Flags

A ^{270}Ds α decay (0.20 ms)
B ^{270}Ds α decay (3.9 ms)

E(level)	J^π	$T_{1/2}$	XREF	Comments
0	0^+	2.97 ms *+78−51*	A	%α=76 *9*; %SF=24 *9* (2012Ac04) SF branch from a larger number of decay chains observed in 2012Ac04, but complete analysis of these results is not available as yet. Other: fission branch estimated as within 1.4% in the absence of observed SF for this nucleus (2001Ho06). E(level): the observed α activity is assumed to correspond to the ground state of ^{266}Hs. $T_{1/2}$: from 2012Ac04, which probably includes data from 25 decay chains observed in this work, details of which have not been published as yet, and also the eight events from the previous GSI work (2001Ho06). Other: 2.3 ms *+13−4* (2001Ho06).
≈85			B	
≈712			B	
≈930			B	
≈1200		0.07 s *+36−3*	B	%α≈100 E(level): from 2017Ac02 and 2015Ac04 review articles. Others: 1100 keV *90* (2021Ko07, NUBASE-2020), 1404 keV *97* (2015Ko14, K-isomer evaluation). J^π: 9^- proposed from systematics (2021Ko07,2015Ko14) with possible configuration=ν7/2[613]⊗ν11/2[725] in 2015Ko14. $T_{1/2}$: 74 ms *+354−34* (2012Ac04). Note: units corrected from s in the 2019 ENSDF update (and 2019Si12) to ms in the present update.

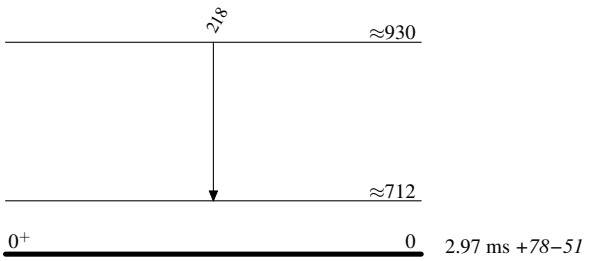
Adopted Levels, Gammas (continued)

$\gamma(^{266}Hs)$

E_i(level)	E_γ	E_f	Comments
≈930	218	≈712	2001Ho06 note that Eγ is close to the theoretical energy of 299 keV from the yrast 8^+ to 6^+ levels in ^{266}Hs.

Adopted Levels, Gammas

Level Scheme



$^{266}_{108}Hs_{158}$