Adopted Levels

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh	NDS 156, 148 (2019)	31-Jan-2019

Q(β^-)=−6320 *SY*; S(n)=7890 *SY*; S(p)=3230 *SY*; Q(α)=9623 *16* 2017Wa10
Estimated uncertainties (2017Wa10): ΔQ(β^-)=370, ΔS(n)=300, ΔS(p)=390.
S(2n)=14450 *290*, S(2p)=5370 *380* (syst,2017Wa10).

2010Ni14: ^{238}U(^{34}S,4n), E(c.m.)=152.0 MeV ^{34}S beam produced by the linear accelerator UNILAC and the velocity filter SHIP at GSI in Darmstadt, beam intensity from 2.0 to 2.5 pμA. ^{238}U target prepared by sputtering of depleted ^{238}U metal on a 43 μg/cm^2 carbon backing. The α-decay events and fission fragments were detected by a position sensitive 16-strip Si PIPS detector (stop detector) with an active area of 80×35 mm. A clover Ge detector was used to measure γ rays or x rays in coincidence with α particles and/or SF events. Measured σ, Eα, $T_{1/2}$. FWHM for α particles=40 keV. One event was assigned by 2010Ni14 to the decay of ^{268}Hs nuclide.

2010Gr04: ^{238}U(^{36}S,6n),E=256.4 MeV from UNILAC at GSI. Measured reaction products using COMPACT system of efficient and rapid chemical-separation and online detection based on the cry-thermo- chromatography method. Based on expected production cross section for 6n-channel and Eα, assignment to ^{268}Hs in 2009Dv01 was excluded with certainty.

2009Dv01: ^{248}Cm(^{25}Mg,5n), E=140 MeV, provided by UNILAC at GSI. The α particles and fission fragments were detected using the Cryo Online Multidetector for Physics and Chemistry of Transactinides (COMPACT). Measured α and fission spectra. Deduced reaction cross sections. Transport time was ≈1 s. No decay chains were ascribed to the decay of ^{268}Hs. Upper limit of cross section of ^{268}Hs production was deduced from one event as σ<1.3 pb. Either ^{268}Hs does not decay by α mode or its half-life is <0.5 s.

For theoretical studies, consult Nuclear Science References (NSR) database at NNDC, BNL for 73 primary references dealing with the half-lives and other aspects of nuclear structure in this mass region.

^{268}Hs Levels

E(level)	J^π	$T_{1/2}$	Comments
0	0^+	0.4 s *+18−2*	%α≈100 Only the α decay mode has been observed. E(level): the reported activity is assumed to belong to the g.s. of ^{268}Hs. $T_{1/2}$: 0.38 s *+180−17* from one α-SF correlated decay chain in 2010Ni14. ^{268}Hs decays by Eα=9479 keV *16* followed by the SF decay of daughter nucleus ^{264}Sg. The SF events were in coincidence with 749γ. Production σ=0.54 pb *+130−45* (2010Ni14).