^{169}Os α decay (3.4 s) 1995Hi02

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh and Jun Chen	NDS 194,460 (2024)	31-Oct-2022

Parent: ^{169}Os: E=0.0; J^π=(5/2$^-$); $T_{1/2}$=3.4 s *2*; Q(α)=5713 *3*; %α decay=13.7 *8*

^{169}Os-J^π: From ^{169}Os Adopted Levels in the ENSDF database (June 2008 update).

^{169}Os-$T_{1/2}$: Weighted average of 3.6 s *2* (1996Pa01), 3.2 s *3* and 3.4 s *8* (1995Hi02), 3.5 s *2* (1984Sc06), 3.4 s *2* (1982En03), 3.2 s *2* (1978Sc26), 3.0 s *5* (1972To19), 4.1 s 4 (2004GoZZ).

^{169}Os-$T_{1/2}$: Additional information 1.

^{169}Os-Q(α): From 2021Wa16.

^{169}Os-%α decay: %α=13.7 *8* from ^{169}Os Adopted Levels in the ENSDF database (June 2008 update).

1995Hi02: ^{169}Os ions were produced via ^{114}Cd(^{58}Ni,3n) with 267 MeV ^{58}Ni beam from the VICKSI accelerator of the Hahn-Meitner-Institut on a 3.44 mg/cm^2 ^{114}Cd target, and stopped in helium gas. γ rays were detected with two HPGe detectors and charged-particles were detected with a silicon surface-barrier detector. Measured Eα, Iα, Eγ, E(X ray), $\alpha\gamma$-coin, α(t). Deduced α-decay branchings, parent $T_{1/2}$.

Others: 2004GoZZ, 1996Pa01, 1984Sc06, 1982En03, 1982De11, 1978Sc26, 1978Ca11, 1972To19.

^{165}W Levels

E(level)	J^π[†]	$T_{1/2}$[†]
0	(5/2$^-$)	5.1 s *5*
43	(3/2$^-$)	
72	(7/2$^-$)	

[†] From the Adopted Levels.

α radiations

Eα	E(level)	Iα[‡#]	HF[†]	Comments
5508 *8*	72	12	7.4	Eα,Iα: from 1995Hi02. Other: 5510 (2004GoZZ).
5537 *5*	43	8	15	Eα: weighted average of 5536 *10* (1995Hi02) and 5537 *5* (2004GoZZ). Other: 5470-5540 (1984Sc06). A peak at 5521 *10* with $T_{1/2}$=2.7 s *3* was tentatively assigned to ^{169}Os by 1982En03. Iα: from 1995Hi02. Others: 20 (1984Sc06), 25 (1978Ca11).
5577 *4*	0	80	2.3	Eα: weighted average of 5576 *8* (1996Pa01), 5578 *8* (1995Hi02), 5581 *5* (2004GoZZ), 5564 *8* (1984Sc06), 5572 *10* (1982En03), 5582 *4* (1982De11), 5570 *10* (1978Sc26), 5560 *10* (1978Ca11), 5560 *20* (1972To19). Iα: From 1995Hi02. Others: 80 (1984Sc26), 75 (1978Ca11).

[†] The nuclear radius parameter r_0(^{165}W)=1.5627 *60* is deduced from interpolation of radius parameters of the adjacent even-even nuclides in 2020Si16.

[‡] Per 100 α decays.

[#] For absolute intensity per 100 decays, multiply by 0.137 *8*.

γ(^{165}W)

Eγ	E$_i$(level)	J_i^π	E$_f$	J_f^π	Mult.	Comments
28[†]	72	(7/2$^-$)	43	(3/2$^-$)		
43	43	(3/2$^-$)	0	(5/2$^-$)	(M1)	Mult.: From 1995Hi02, based on agreement of measured Iγ in $\alpha\gamma$ coin with α fine structure decay.
72	72	(7/2$^-$)	0	(5/2$^-$)	(M1)	Mult.: From 1995Hi02, based on K x-ray intensity and non-observation of 72γ. Note, however, that in table II (listing Eα, Iα, $\alpha\gamma$ coin information) of 1995Hi02, 72γ is shown to be in coin with 5508α group.

[†] Placement of transition in the level scheme is uncertain.

Legend

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Decay Scheme