^{166}W α decay

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	N. Nica	NDS 195,1 (2024)	19-Sep-2023

Parent: ^{166}W: E=0.0; $J^{\pi}=0^+$; $T_{1/2}$=19.2 s *6*; Q(α)=4856 *4*; %α decay=0.035 *12*

^{166}W-$T_{1/2}$: Additional information 2.

^{166}W-Q(α): From 2021Wa16.

^{166}W-%α decay: Additional information 1.

Additional information 3.

The experimental methods were:

1975To05: ^{166}W produced by ^{156}Dy(^{16}O,6n) reaction on enriched (12.6%) target. α spectra measured with Si surface-barrier detectors. Excitation function used to identify mass.

1979Ho10: ^{166}W produced in ^{58}Ni bombardment of ^{108}Pd target. α spectra measured with Si detector following velocity selector. α-decay sequences used to determine mass.

1989Hi04: ^{166}W produced in the ^{136}Ba(^{36}Ar,6n) reaction at ^{36}Ar energies from 177 MeV to 214 MeV. Targets were $^{136}BaF_2$ (93% enrichment), 1.2 and 1.3 mg/cm^2 thick, and backed with C foils, 30 and 34 μg/cm^2 thick. Recoil nuclides were transported using a He-jet tape-transport system for analysis. α particles were counted using 450 mm^2 surface-barrier detector. Mass assignment was determined from excitation functions. $T_{1/2}$ was obtained from multiscaled spectra.

See also 1975IjZZ and 1981HoZM for other reports on same results.

^{162}Hf Levels

E(level)	J^{π}	$T_{1/2}$	Comments
0.0	0^+	39.4 s *9*	$T_{1/2}$: from ^{162}Hf Adopted Levels.

α radiations

Eα	E(level)	Iα[‡]	HF[†]	Comments
4739 *4*	0.0	100	1.000	Eα: value recommended by 1991Ry01. A weighted average of the measured values 4739 *5* (1975To05), 4733 *10* (1979Ho10), and 4741 *8* (1989Hi04) gives Eα=4738 *4*. From Q(α) one computes Eα=4739 *4*. Iα: only one α branch reported.

[†] The nuclear radius parameter $r_0(^{162}Hf)$=1.516 *19* is deduced by assuming HF=1.0 for the ground-state to ground-state alpha decay branch.

[‡] For absolute intensity per 100 decays, multiply by 0.00035 *12*.