^{166}Eu β^- decay (1.27 s) 2008Os02

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	M. Shamsuzzoha Basunia	NDS 213,1 (2026)	1-Jul-2026

Parent: ^{166}Eu: E=0; $T_{1/2}$=1.27 s *+9−14*; Q(β^-)=7620 *syst*; %β^- decay=100

^{166}Eu-$T_{1/2}$: from ^{166}Eu Adopted Levels. Other: 1.7 s *3* (2008Os02 − from decay curves of 69.7- and 160.8-keV γ rays assigned to 2^+ to 0^+ and 4^+ to 2^+ transitions in ^{166}Gd, respectively).

^{166}Eu-Q(β^-): from 2021Wa16. Other: Q(β^-)=7322 keV *300* (2014Ha38).

Edited/Adapted the ENSDF update by B. Singh (McMaster): dated January 25, 2015.

2008Os02: ^{166}Eu identified and produced in ^{238}U(p,F) reaction at E(p)=36 MeV. Target=600-800 mg/cm^2 natural UC_x containing 1 g/cm^2 $^{238}UC_x$. Experiments carried at JAEA on-line isotope separator (JAEA-ISOL) and ISOL-based Tokai radioactive ion accelerator complex (TRIAC) using newly developed forced electron beam induced arc discharge (FEBIAD-β_2) type ion source, and a surface ionization type ion source. Mass separation of the fission products was achieved by an integrated target-ion source system connected to the acceleration chamber of the mass separator. The activities were deposited on a tape transport system. Measured Eγ, $\beta\gamma$-coin, β(x ray)-coin, half-life.

The decay scheme is incomplete. Possibility of contribution from an unknown isomeric state as eluded in 2017Wu04 (see ^{166}Eu g.s. half-life comments in ^{166}Eu Adopted Levels.).

^{166}Gd Levels

E(level)	J$^\pi$[†]	$T_{1/2}$[†]
0	0^+	5.1 s *10*
69.7	(2^+)	
230.5	(4^+)	

[†] From Adopted Levels.

γ(^{166}Gd)

E$_\gamma$	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$
69.7	69.7	(2^+)	0	0^+
160.8	230.5	(4^+)	69.7	(2^+)

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Decay Scheme

