

$^{166}\text{Eu}$   $\beta^-$  decay (1.7 s) 2008Os02

Type	History		Literature Cutoff Date
	Author	Citation	
Full Evaluation	Balraj Singh	ENSDF	25-Jan-2015

Parent:  $^{166}\text{Eu}$ :  $E=0$ ;  $T_{1/2}=1.7$  s 3;  $Q(\beta^-)=7600$  SY;  $\% \beta^-$  decay=100.0

$^{166}\text{Eu}$ - $T_{1/2}$ : Measured by 2008Os02 from decay curves of 69.7- and 160.8-keV  $\gamma$  rays assigned to  $2^+$  to  $0^+$  and  $4^+$  to  $2^+$  transitions in  $^{166}\text{Gd}$ , respectively.

$^{166}\text{Eu}$ - $Q(\beta^-)$ : 7600 670 (syst,2012Wa38).

2008Os02:  $^{166}\text{Eu}$  identified and produced in  $^{238}\text{U}(p,F)$  reaction at  $E(p)=36$  MeV. Target=600-800 mg/cm<sup>2</sup> natural  $\text{UC}_x$  containing 1 g/cm<sup>2</sup>  $^{238}\text{UC}_x$ . 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- $\beta_2$ ) 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  $E_\gamma$ ,  $\beta\gamma$ -coin,  $\beta(x$  ray)-coin, half-life.

The decay scheme is incomplete.

 $^{166}\text{Gd}$  Levels

<u><math>E(\text{level})</math></u>	<u><math>J^\pi</math></u> †	<u><math>T_{1/2}</math></u> †
0	$0^+$	4.8 s 10
69.7	$(2^+)$	
230.5	$(4^+)$	

† From Adopted Levels.

 $\gamma(^{166}\text{Gd})$ 

<u><math>E_\gamma</math></u>	<u><math>E_i(\text{level})</math></u>	<u><math>J_i^\pi</math></u>	<u><math>E_f</math></u>	<u><math>J_f^\pi</math></u>
69.7	69.7	$(2^+)$	0	$0^+$
160.8	230.5	$(4^+)$	69.7	$(2^+)$

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