

Adopted Levels

Type	History		Literature Cutoff Date
	Author	Citation	
Full Evaluation	Balraj Singh	ENSDF	23-Dec-2014

$Q(\beta^-)=7600$ SY; $S(n)=4310$ SY; $S(p)=10410$ SY; $Q(\alpha)=-2980$ SY [2012Wa38](#)

Estimated uncertainties ([2012Wa38](#)): $\Delta(Q(\beta^-))=670$, $\Delta(S(n))=440$, $\Delta(S(p))=\Delta(Q(\alpha))=500$.

$S(2n)=9740$ 360, $Q(\beta^-n)=1490$ 420 (syst,[2012Wa38](#)). $S(2p)=22580$ (theory,[1997Mo25](#)).

[2008Os02](#): ^{166}Eu identified and produced in $^{238}\text{U}(p,F)$ reaction at $E(p)=36$ MeV. Target=600-800 mg/cm² natural UC_x containing 1 g/cm² $^{238}\text{UC}_x$. 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-B2) 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_γ , $\beta\gamma$ -coin, $\beta(x\text{ ray})$ -coin, half-life.

[Additional information 1](#).

 ^{166}Eu Levels

E(level)	$T_{1/2}$	Comments
0	1.7 s 3	$\% \beta^- = 100$; $\% \beta^- n = ?$ $T_{1/2}$: measured by 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. J^π : $5/2^+$ proton orbital and $5/2^-$ neutron orbital in theoretical calculations by 1997Mo25 . If 4^+ level in ^{166}Gd is directly populated by β feeding, $J^\pi = 3^-, 4^-, 5^-$ for ^{166}Eu g.s. Theoretical $\% \beta^- n = 0.58$ (1997Mo25).