Adopted Levels, Gammas

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	E. Browne, J. K. Tuli	NDS 111,1093 (2010)	3-Mar-2009

Q(β^-)=9598 *14*; S(n)=5295 *15*; S(p)=12476 *16*; Q(α)=−1.035×10^4 *syst* 2012Wa38

Note: Current evaluation has used the following Q record 9.89E+3 255.0×10^3 *5* 1.25×10^4 *4* −1.05×10^{44} 2009AuZZ,2003Au03.

Q(β^-): =9.7×10^3 *5* from measured β^- end point energy of 7.0×10^3 *5* (1988Bo06); this value may be compared with 10.2×10^3 from model calculations (1981Mo24).

Additional information 1.

1994Cz02: ^{66}Co produced by fragmentation of a 500 MeV/u ^{86}Kr beam on a Be target and fragment separator. Measured $T_{1/2}$.

1994Se12: activity produced by fragmentation and fission reactions of 800-MeV proton beam incident on a natural Th target and time-of-flight isochronous (TOFI) spectrometer. Measured mass.

1988Bo06, 1985Bo49: activity produced by bombardment of natural W target with 11.4 MeV/u projectiles of ^{76}Ge and an on-line mass separator. Measured Eγ, Iγ, β-γ, $\gamma\gamma$ coincidences and $T_{1/2}$.

1998Gr14: activity produced by ^{86}Kr projectiles on a target of natural Ni, E=542 MeV. GANIL Laboratory. Measured γ rays, $\gamma\gamma$ coin, γ-particle coin. Detectors: Hyperpure Ge, Si planar detectors.

^{66}Co Levels

Cross Reference (XREF) Flags

A ^{86}Kr(Ni,Xγ)

E(level)	J$^\pi$	$T_{1/2}$	XREF	Comments
0.0	(3$^+$)	0.20 s *2*	A	%β^-=100 J$^\pi$: 3$^+$ or 1$^+$ from shell model; 3$^+$ seems to be likely since no β^- transition was observed to the ground state of ^{66}Ni (1988Bo06); however, J^π=1$^+$ is not ruled out. $T_{1/2}$: weighted average of 0.24 s 3 (1994Cz02), 0.23 s 2 (1985Bo49), 0.23 s 2 (1999So20), and 0.18 s 1 (2000Mu10).
175	(5$^+$)	1.21† μs *1*	A	J$^\pi$: 175γ E2 to (3$^+$).
390			A	
642	(8$^-$)	>100† μs	A	J$^\pi$: Expected πf7/2νg9/2 quasiparticle configuration (1998Gr14). $T_{1/2}$: From $\gamma\gamma$ coin, γ-particle coin (1998Gr14).

† From 1998Gr14.

$\gamma(^{66}Co)$

E$_i$(level)	J$_i^\pi$	E$_\gamma$	E$_f$	J$_f^\pi$	Mult.	Comments
175	(5$^+$)	175	0.0	(3$^+$)	E2	Mult.: From comparison of measured $T_{1/2}$=1.21 μs with Weisskopf estimate of ≈2 μs (1998Gr14).
390		214	175	(5$^+$)		
642	(8$^-$)	252	390			

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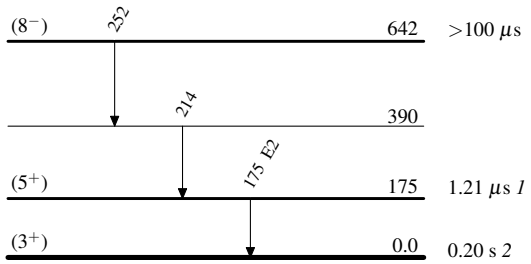
Level Scheme



$^{66}_{27}Co_{39}$