

Adopted Levels, Gammas

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

$Q(\beta^-)=251.8$ 16; $S(n)=8952.4$ 15; $S(p)=14110$ 3; $Q(\alpha)=-9553$ 4 [2012Wa38](#)
 Note: Current evaluation has used the following Q record 251.9 16 8951.9 1514125 13-9531 15 [2009AuZZ,2003Au03](#).

 ^{66}Ni Levels

Configuration: Listed configurations are those expected in this region, and were used in DWBA analysis of (α , ^2He) data.

Cross Reference (XREF) Flags

A	^{66}Co β^- decay	D	$^{64}\text{Ni}(\alpha,^2\text{He})$
B	$^{64}\text{Ni}(t,p)$	E	(HI,xn γ)
C	$^{68}\text{Zn}(^{14}\text{C},^{16}\text{O})$		

E(level) [†]	J ^π @	T _{1/2}	XREF	Comments
0	0 ⁺	54.6 h 3	ABCDE	$\% \beta^- = 100$ Configuration=(ν f _{5/2} 0 ⁺) T _{1/2} : from ^{66}Ni β^- decay, weighted average of 55.1 h 10 (1956Jo20), 54.8 h 3 (1956Kj07), and 53.5 h 7 (1956Ru45).
1424.8 [‡] 10	2 ⁺	0.8 ps 2	ABC E	T _{1/2} : Deduced by evaluators from B(E2) \uparrow =600 200 (2002So03).
2445 [‡] 1	0 ⁺		AB	
2664 10	(0 ⁺)		B	
2670.8 [‡] 13	(3 ⁺)		A E	J ^π : from log ft=4.2 for β^- decay from (3 ⁺).
2916 [‡] 1	2 ⁺		AB	
2965 10	0 ⁺		B	
3185.44 [#] 15	(4 ⁺)		B E	
3230.6 3	2 ⁺		AB	XREF: B(3219). J ^π : From log ft=4.9 for β^- decay from (3 ⁺).
3370.9 [#] 4	3 ⁻		B E	
3390 50	(5 ⁻)		D	Configuration=((ν p _{1/2})(ν g _{9/2}))5 ⁻ J ^π : L(α , ^2He)=(5).
3541.34 [#] 18			B E	J ^π : (4 ⁺) from L(t,p)=(4) disagrees with (5 ⁻) yrast state in (HI,xn γ) suggested from analogy with ^{64}Ni .
3599.3 [#] 6	(6 ⁻)&	4.3 ns 4	B E	T _{1/2} : from (HI,xn γ) (1994Pa20).
3646 10			B	
3678 10	3 ⁻		B	
3725.2 [#] 6			B E	
3746 10	2 ⁺		B	
3782 10			B	
4028 10			B d	
4070.4 [#] 7			B dE	
4089.4 [#] 6	7 ⁻		B dE	Configuration=((ν f _{5/2})(ν g _{9/2}))7 ⁻ J ^π : L(α , ^2He)=7 for a level at 4050 50.
4125 10	(4 ⁺)		B	
4407 10			B	
4500 10			B	
4655 10			B	
4696 10			B	
4738 10			B d	

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued) ^{66}Ni Levels (continued)

E(level) [†]	J ^π @	XREF	Comments
4760 50	(5 ⁻)	d	Configuration=((ν f _{5/2})(ν d _{5/2}))5 ⁻ J ^π : L(α , ² He)=(5). At the largest angle measured, this level could not be separated clearly from the 5170 level with a dominant configuration=(ν g _{9/2}) ₈₊ ⁺² .
4796 10		B d	
4919 10		B	
4967 10		B	
5109 10		B	
5157 10		B d	
5174.9 [#] 7	(8 ⁺)	dE	Configuration=((ν G _{9/2}) ₈₊ ⁺² +(ν G _{9/2})(ν d _{5/2})6 ⁺) J ^π : L(α , ² He)=8+6 for an unresolved doublet at 5170 50; (8 ⁺) in (HI,xn γ).
5192 10		B d	
5237 10		B	
5260 10		B	
5327 10		B	
5368 10		B	
5503 10		B	
5584 10		B	
5612 10		B	
5660 10		B	
5745 10		B	
5787 10		B	
5836 10		B	
5885 10		B	
6004 10		B	
6027 10		B	
6074 10		B	
6122 10		B	
6166 10		B	
6217 10		B	
6267 10		B	
6304 10		B	
6339 10		B	
6384 10		B	
6457 10		B	
6525 10		B	
6556 10		B	
6579.8 [#] 9	(10 ⁺)&	E	
6600 10		B	
6665 10		B	
6730 10		B	

[†] From $^{64}\text{Ni}(\text{t,p})$, except as stated.[‡] From ^{66}Co β^- decay.[#] From (HI,xn γ).[@] From deduced L values in $^{64}\text{Ni}(\text{t,p})$ with the assumption that the spins of the transferred neutrons couple to S=0, except as stated otherwise.& From (HI,xn γ) based on level systematics and shell model calculations.

Adopted Levels, Gammas (continued)

$\gamma(^{66}\text{Ni})$											
$E_i(\text{level})$	J_i^π	E_γ^\dagger	I_γ^\ddagger	E_f	J_f^π	$E_i(\text{level})$	J_i^π	E_γ^\dagger	I_γ^\ddagger	E_f	J_f^π
1424.8	2 ⁺	1424.8 10	100	0	0 ⁺	3599.3	(6 ⁻)	58.0 5	100	3541.34	
2445	0 ⁺	1020 [#] 1	100	1424.8	2 ⁺	3725.2		354.3 5	100	3370.9	3 ⁻
2670.8	(3 ⁺)	1246.0 9	100	1424.8	2 ⁺	4070.4		471.1 4	100	3599.3	(6 ⁻)
2916	2 ⁺	471.3 6	100	2445	0 ⁺	4089.4	7 ⁻	490.1 2	100	3599.3	(6 ⁻)
3185.44	(4 ⁺)	1760.3 1	100	1424.8	2 ⁺	5174.9	(8) ⁺	1085.5 3	100	4089.4	7 ⁻
3370.9	3 ⁻	1945.8 3	100	1424.8	2 ⁺	6579.8	(10 ⁺)	1404.8 6	100	5174.9	(8) ⁺
3541.34		355.9 1	100	3185.44	(4 ⁺)						

[†] From ^{66}Co β^- decay and (HI,xn γ).

[‡] Relative photon branching from each level.

[#] Placement of transition in the level scheme is uncertain.

Adopted Levels, Gammas

Legend

Level Scheme

Intensities: Relative photon branching from each level

-----► γ Decay (Uncertain)