^{127}Cd β^- decay 2009Ar04,1986Ho24

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	A. Hashizume	NDS 112, 1647 (2011)	1-Oct-2009

Parent: ^{127}Cd: E=0.0; J^π=(3/2$^+$); $T_{1/2}$=0.37 s *7*; Q(β^-)=8.47×10^3 *6*; %β^- decay=100.0

2009Ar04: Source from RILIS(ISOLDE Resonance Ionization Laser Ion Source), γ, $\gamma\gamma$ coin.

1986Ho24: Source from ^{235}U(n,F), on-line mass separation; γ, $\gamma\gamma$ coin.

Decay scheme is that proposed by 1986Ho24, two levels are added by 2009Ar04.

^{127}In Levels

E(level)[†]	J^π[#]	Comments
0.0[‡]	(9/2$^+$)	
408.9[‡] *3*	(1/2$^-$)	E(level): other: 420 *65* from the end point energy of β, the value is obtained by using $\beta\gamma$ coincidence (2004Ga24).
932.5[‡] *3*	(3/2$^-$)	
1066.26 *13*	(5/2$^+$,7/2)	
1202.30 *10*	(5/2$^+$,7/2)	
1235.16 *10*	(5/2$^+$,7/2)	
1300.7 *5*		
1589.2 *6*		
1611.44 *14*		
2677.27[‡] *25*		
2688.0[‡] *5*		
2756.7 *6*		
2825.1 *4*		
2852.0 *6*		
2893.95 *25*		
3589.5 *9*		

[†] From least-squares fit to E(γ's) (by evaluator); same as Adopted Levels.

[‡] Levels reported both by 2009Ar04 and 1996Ho25.

[#] From Adopted Levels.

$\gamma(^{127}In)$

Iγ normalization: From the branching of 376γ: 7.5% *30* by the absolute measurements of β-ray and γ-ray intensities (1986Go10). However, the known maximum level energy is 3590 keV compared to Q value of 8470. So, the the decay scheme is incomplete, and log ft values are tentative (evaluator).

E$_\gamma$[†]	I$_\gamma$[&]	E$_i$(level)	J_i^π	E$_f$	J_f^π
[x]122.13 *15*	3.6 *5*				
168.98 *10*	15.0 *10*	1235.16	(5/2$^+$,7/2)	1066.26	(5/2$^+$,7/2)
[x]204.3 *2*	8.3 *8*				
270.2[‡] *4*		1202.30	(5/2$^+$,7/2)	932.5	(3/2$^-$)
[x]339.0 *5*	6.3 *10*				
368.2 *4*	8.7 *20*	1300.7		932.5	(3/2$^-$)
376.28 *10*	90 *5*	1611.44		1235.16	(5/2$^+$,7/2)
[x]388.8 *3*	8.3 *20*				
523.60 *10*	62 *3*	932.5	(3/2$^-$)	408.9	(1/2$^-$)
656.7 *5*	5.4 *15*	1589.2		932.5	(3/2$^-$)

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^{127}Cd β^- decay 2009Ar04,1986Ho24 (continued)

$\gamma(^{127}In)$ (continued)

E_γ [†]	I_γ [&]	E_i(level)	J_i^π	E_f	J_f^π
[x]688.0 *3*	13 *2*				
[x]863.0 *3*	6.5 *10*				
1067.0 *3*	61 *8*	1066.26	(5/2$^+$,7/2)	0.0	(9/2$^+$)
1145.3 *5*	8.5 *20*	2756.7		1611.44	
[x]1160.2 *4*	9.7 *20*				
1202.27 *10*	54 *3*	1202.30	(5/2$^+$,7/2)	0.0	(9/2$^+$)
1235.07 *10*	100 *5*	1235.16	(5/2$^+$,7/2)	0.0	(9/2$^+$)
1240.6 *5*	27 *5*	2852.0		1611.44	
1282.5 *2*	31 *4*	2893.95		1611.44	
[x]1372.5 *4*	8.0 *20*				
1622.8 *3*	17 *3*	2825.1		1202.30	(5/2$^+$,7/2)
[x]1662.8 *5*	3.3 *10*				
[x]1686.0 *5*	11 *3*				
1744.7 *2*	6.0 *10*	2677.27		932.5	(3/2$^-$)
1755.4 *4*	6.0 *10*	2688.0		932.5	(3/2$^-$)
[x]1784.6[#] *6*	10.0 *20*				
[x]1856.0 *2*	14.5 *20*				
[x]1868.1 *5*	4.9 *10*				
[x]1907.6 *8*	4.6 *15*				
1978.0 *8*	10 *3*	3589.5		1611.44	
[x]2062.4 *5*	5.5 *15*				
[x]2193.6[#] *4*	5.1 *15*				
[x]2250.0 *6*	3.3 *15*				
[x]2266.0 *6*	3.0 *10*				
[x]2339.1 *2*	39 *3*				
[x]2443.0 *6*	3.1 *10*				
[x]2482.3 *5*	4.8 *15*				
[x]2535.0 *6*	3.7 *15*				
[x]2637.9 *8*	2.7 *10*				
2677.4[@] *3*	12.0 *20*	2677.27		0.0	(9/2$^+$)
2688.6[@] *10*	2.4 *10*	2688.0		0.0	(9/2$^+$)
[x]2941.3 *3*	17.5 *20*				
[x]3108.9 *4*	8.9 *15*				
[x]3521.1 *10*	4.0 *15*				

[†] From 1986Ho24, unless otherwise noted.
[‡] From 2009Ar04.
[#] Questionable line (1986Ma42). Assignment to ^{127}In is uncertain.
[@] Assigned by 2009Ar04.
[&] For absolute intensity per 100 decays, multiply by 0.083 *33*.
[x] γ ray not placed in level scheme.

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Decay Scheme

Intensities: I_γ per 100 parent decays