

^{111}Ag β^- decay (64.8 s) 1977Kr14

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Jean Blachot	NDS 110, 1239 (2009)	1-Feb-2008

Parent: ^{111}Ag : $E=59.85$; $J^\pi=7/2^+$; $T_{1/2}=64.8$ s 8; $Q(\beta^-)=1036.8$ 14; $\% \beta^-$ decay=0.7 2

Others: 1969Be11, 1969Sc12, 1972MeZD.

From a 23-min ^{111}Pd source. γ -rays from 64.8-s ^{111}Ag daughter are obscured by extensive ^{111}Ag γ -spectrum. Proposed partial decay scheme is based largely on other experiments.

 ^{111}Cd Levels

E(level)	J^π^\dagger	$T_{1/2}^\dagger$
0.0	$1/2^+$	stable
245.38 3	$5/2^+$	
342.131 20	$3/2^+$	
416.66 4	$7/2^+$	0.12 ns
620.14 16	$5/2^+$	
752.69 20	$5/2^+$	

† From Adopted Levels.

 β^- radiations

E(decay)	E(level)	$I\beta^-^\dagger$	Log ft	Comments
(344.0 14)	752.69	0.14 4	4.66 23	av $E\beta=100.6$ 5
(476.5 14)	620.14	0.16 6	4.89 21	av $E\beta=146.1$ 5
(680.0 14)	416.66	0.12 8	5.5 3	av $E\beta=221.3$ 6
(851.3 14)	245.38	0.29 13	5.51 23	av $E\beta=288.3$ 6

† Absolute intensity per 100 decays.

 $\gamma(^{111}\text{Cd})$

I_γ normalization: if no direct β^- feeding to ^{111}Cd g.s. from $I_\gamma(59.8\gamma, ^{111}\text{Ag})$ and $I_\gamma(^{111}\text{Cd})$ via 23.4-min ^{111}Pd source.

E_γ	$I_\gamma^{\ddagger\#}$	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult.	δ	$\alpha^@$	Comments
(96.75 † 2)	0.083 22	342.131	$3/2^+$	245.38	$5/2^+$	M1+E2	0.12 4	0.531 11	I_γ : from $I(\gamma+ce)$ balance at 342 level and adopted branching: $I_\gamma(96.7\gamma)/I_\gamma(342\gamma)=0.0173$ 9, and adopted α' 's.
171.28 3	14 7	416.66	$7/2^+$	245.38	$5/2^+$	M1+E2		0.1074	$\alpha(\text{K})=0.09319$ 8; $\alpha(\text{L})=0.01171$; $\alpha(\text{M})=0.00225$; $\alpha(\text{N+..})=0.00047$
(203.29 † 12)	0.094	620.14	$5/2^+$	416.66	$7/2^+$				E_γ : from 1975Sh29 (^{111}In decay). I_γ : from $I_\gamma(171\gamma)/I_\gamma(245\gamma)=0.24$ 12 (1977Kr14) $\gamma\gamma$ coin.
245.4 1	58 4	245.38	$5/2^+$	0.0	$1/2^+$				I_γ : from $I_\gamma/I_\gamma(620\gamma)=0.0067$ 12 in adopted γ' 's.
(278.3 † 4)	0.85 12	620.14	$5/2^+$	342.131	$3/2^+$				$\alpha(\text{K})=0.0535$; $\alpha(\text{L})=0.00835$; $\alpha(\text{M})=0.00161$; $\alpha(\text{N+..})=0.00032$
									I_γ : from $I_\gamma(278\gamma)/I_\gamma(620\gamma)=0.061$ 7 in adopted γ' 's.

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^{111}Ag β^- decay (64.8 s) **1977Kr14** (continued) $\gamma(^{111}\text{Cd})$ (continued)

E_γ	$I_\gamma^{\ddagger\#}$	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult.	δ	$\alpha^{\text{@}}$	Comments
(336.16 [†] 10)	1.6 5	752.69	5/2 ⁺	416.66	7/2 ⁺				
(342.13 [†] 2)	4.8 13	342.131	3/2 ⁺	0.0	1/2 ⁺	M1+E2	0.36 2	0.0186	I_γ : from I(γ +ce) balance at 342 level and adopted branching: $I_\gamma(96.7\gamma)/I_\gamma(342\gamma)=0.0173$ 9, and adopted α 's.
(374.75 [†] 5)	4.0 5	620.14	5/2 ⁺	245.38	5/2 ⁺				E_γ : from 1975PuZZ , ^{111}Ag g.s. decay. I_γ : from $I_\gamma(375\gamma)/I_\gamma(620\gamma)=0.286$ 32 in adopted γ 's.
(410.77 [†] 10)	4.2 14	752.69	5/2 ⁺	342.131	3/2 ⁺	M1+E2			I_γ : 11 3 expected from $I_\gamma/I_\gamma(752\gamma)=0.44$ 9 in adopted γ 's. $\alpha(\text{K})=0.00318$; $\alpha(\text{L})=0.00040$
506.9 10	5 3	752.69	5/2 ⁺	245.38	5/2 ⁺				
620.1 3	14 1	620.14	5/2 ⁺	0.0	1/2 ⁺	E2			E_γ : other: 620.0 4 (1969Sc12).
752.7 2	5.0 6	752.69	5/2 ⁺	0.0	1/2 ⁺	E2			$\alpha(\text{K})=0.00194$; $\alpha(\text{L})=0.00024$

[†] From adopted γ 's.

[‡] Relative to $I_\gamma(580\gamma, ^{111}\text{Ag})=100$ via 23-min ^{111}Pd β^- decay.

[#] For absolute intensity per 100 decays, multiply by 0.009 3.

[@] Total theoretical internal conversion coefficients, calculated using the BrIcc code (**2008Ki07**) with Frozen orbital approximation based on γ -ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.

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