^{124}Cd β^- decay 1974Fo23

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	J. Katakura, Z. D. Wu	NDS 109, 1655 (2008)	1-Apr-2008

Parent: ^{124}Cd: E=0.0; $J^\pi=0^+$; $T_{1/2}$=1.25 s *2*; Q(β^-)=4170 *40*; %β^- decay=100.0

The decay scheme is that proposed by 1974Fo23 on the basis of Eγ sums and $\gamma\gamma$ coin.

1974Fo23: U(n,F), on-line ms, chem sep; semi γ, ce, $\gamma\gamma$ coin, $\beta\gamma$ delayed coin.

^{124}In Levels

E(level)[†]	J^π[‡]	$T_{1/2}$	Comments
0.0	$(1)^+$	3.12 s *9*	
36.53 *4*	$(1,2)^+$		
179.88 *4*	$(2)^-$		
242.68 *1*	$(1)^+$	50 ns *6*	$T_{1/2}$: from $\beta\gamma$(t) (1974Fo23).

[†] From a least-squares fit to Eγ's.

[‡] From Adopted Levels.

$\gamma(^{124}In)$

Iγ normalization: From I(180γ)=70% *8* (1986Go10); other: I(180γ)=50% *5* (1974Fo23).

I(Kα x ray)=32 *5*, I(Kβ x ray)=5.8 *8* (1974Fo23).

α(K)exp: from Ice(K)/Iγ, unless otherwise noted.

E_γ[†]	I_γ[†‡@]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[#]	α[&]	Comments
36.50 *5*	4.6 *6*	36.53	$(1,2)^+$	0.0	$(1)^+$	(M1)	9.42	α(K)=8.13 *12*; α(L)=1.046 *16*; α(M)=0.203 *3*; α(N+..)=0.0399 *6* α(N)=0.0371 *6*; α(O)=0.00272 *4* α(K)exp=5.9 *25*. α(K)exp from K x-ray intensity.
62.80 *10*	23 *3*	242.68	$(1)^+$	179.88	$(2)^-$	E1	0.646	α(K)=0.557 *9*; α(L)=0.0727 *11*; α(M)=0.01400 *21*; α(N+..)=0.00264 *4* α(N)=0.00249 *4*; α(O)=0.0001498 *22* α(K)exp=0.7 *2*.
143.33 *5*	12.9 *16*	179.88	$(2)^-$	36.53	$(1,2)^+$	E1	0.0626	α(K)=0.0544 *8*; α(L)=0.00668 *10*; α(M)=0.001288 *18*; α(N+..)=0.000248 *4* α(N)=0.000233 *4*; α(O)=1.561×10^{-5} *22* α(K)exp<0.05.
179.91 *5*	50 *5*	179.88	$(2)^-$	0.0	$(1)^+$	E1	0.0330	α(K)=0.0287 *4*; α(L)=0.00349 *5*; α(M)=0.000674 *10*; α(N+..)=0.0001303 *19* α(N)=0.0001220 *18*; α(O)=8.36×10^{-6} *12* α(K)exp=0.028 *10*.

[†] From 1974Fo23.

[‡] Relative to I(180γ)=50.

[#] From α(K)exp in 1974Fo23.

[@] For absolute intensity per 100 decays, multiply by 1.40 *16*.

[&] 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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Decay Scheme

Intensities: $I_{(\gamma+ce)}$ per 100 parent decays