^{120}Ag β^- decay (1.23 s) 1971Fo22,1982Al29

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	K. Kitao, Y. Tendow and A. Hashizume	NDS 96, 241 (2002)	1-Dec-2001

Parent: ^{120}Ag: E=0.0; $J^\pi=3^{(+)}$; $T_{1/2}$=1.23 s *4*; Q(β^-)=8325 *71*; %β^- decay=100.0

1971Fo22: ^{235}U(n,F) E=th, on-line mass separation; semi γ, ce, β, $\gamma\gamma$.

1973Fr19: ^{238}U(α,F) E=43 MeV, on-line mass separation; semi G.

1982Al29: fission products, on-line mass separation; $\beta\gamma$.

1989Ma33: ^{235}U(n,F), on-line mass separation; $\beta\gamma\gamma$(t).

See also ^{120}Ag β^- decay (0.32 s).

^{120}Cd Levels

Levels below 1323 keV are from 1971Fo22, levels at 1388 and 1744 keV are from 1989Ma33, and levels above 1899 keV are from 1982Al29.

E(level)‡	J^π†	$T_{1/2}$	Comments
0.0	0^+	50.80 s *21*	
505.94 *17*	2^+	18.0 ps *21*	$T_{1/2}$: from $\beta\gamma\gamma$(t) (1989Ma33).
1203.7@ *3*	(4^+)	3.5 ps *28*	$T_{1/2}$: from $\beta\gamma\gamma$(t) (1989Ma33).
1323.07@ *17*	(2^+)		
1388.9#@ *11*	(0^+)	<13 ps	$T_{1/2}$: from $\beta\gamma\gamma$(t) (1989Ma33).
1744.9# *11*	(0^+)	<13 ps	$T_{1/2}$: from $\beta\gamma\gamma$(t) (1989Ma33).
1899.9 *19*	(3^-)		
2093.9 *13*			
2449.8 *11*			
3329.0 *11*			
3423.9 *16*			
3500.9 *8*			
3536.0 *8*			
3549.9 *8*			
3559.0 *11*			
3880.1 *10*			

† From Adopted Levels.

‡ From a least-squares fit to E(γ's) by the evaluators.

From 1989Ma33.

@ Member of two phonon triplet.

β^- radiations

E(decay)†	E(level)	Comments
(4.44×10^3 *7*)	3880.1	E(decay): 4620 *530* from (3880γ)β coin.
(4.77×10^3 *7*)	3559.0	E(decay): 4490 *570* from (3053γ)β coin.
(4.78×10^3 *7*)	3549.9	E(decay): 4640 *190* from weighted av of 4610 *200* from (2346γ)β coin and 4880 *580* from (3044γ)β coin.
(4.79×10^3 *7*)	3536.0	E(decay): 4670 *400* from weighted av of 4780 *610* from (3030γ)β coin and 4590 *540* from (3536γ)β coin.
(4.82×10^3 *7*)	3500.9	E(decay): 4740 *210* from weighted av of 4920 *320* from (1407γ)β coin, 5000 *680* from (2297γ)β coin, and 4510 *310* from (2995γ)β coin.
(4.90×10^3 *7*)	3423.9	E(decay): 4770 *210* from weighted av of 4750 *240* from (1330γ)β coin and 4860 *480* from (1524γ)β

Continued on next page (footnotes at end of table)

^{120}Ag β^- decay (1.23 s) 1971Fo22,1982Al29 (continued)

β^- radiations (continued)

E(decay)†	E(level)	Iβ⁻‡#	Log *ft*	Comments
				coin.
(5.00×10³ *7*)	3329.0			E(decay): 4850 *450* from (2823γ)β coin.
(5.88×10³ *7*)	2449.8			E(decay): 5560 *610* from (1246γ)β coin.
(7.00×10³ *7*)	1323.07	≈20	≈5.7	av Eβ=3148 *34*
(7.12×10³ *7*)	1203.7	≈30	≈5.6	av Eβ=3205 *34*
(7.82×10³ *7*)	505.94	≈30	≈5.8	av Eβ=3536 *34*

† From 1982Al29.
‡ From 1971Fo22, based on γ-intensity imbalance for each level. The authors give no Iγ data.
# Absolute intensity per 100 decays.

γ(^{120}Cd)

1971Fo22 reported that the number of detected γ′s was of the order of 100 in the decay of ^{120}Ag.

E_γ†	I_γ&*a*	E_i(level)	J_i^π	E_f	J_f^π	E_γ†	E_i(level)	J_i^π	E_f	J_f^π
505.9 *2*	≈71	505.94	2^+	0.0	0^+	1524.0‡	3423.9		1899.9	(3^-)
697.8 *2*	≈30	1203.7	(4^+)	505.94	2^+	2297.0‡	3500.9		1203.7	(4^+)
817.1 *2*	≈11	1323.07	(2^+)	505.94	2^+	2346.0‡	3549.9		1203.7	(4^+)
883.0@		1388.9	(0^+)	505.94	2^+	2823.0‡	3329.0		505.94	2^+
1239.0@		1744.9	(0^+)	505.94	2^+	2995.0‡	3500.9		505.94	2^+
1246.0‡		2449.8		1203.7	(4^+)	3030.0‡	3536.0		505.94	2^+
1323.1 *2*	≈9	1323.07	(2^+)	0.0	0^+	3044.0‡	3549.9		505.94	2^+
x1330.0#						3053.0‡	3559.0		505.94	2^+
1330.0‡		3423.9		2093.9		3536.0‡	3536.0		0.0	0^+
1407.0‡		3500.9		2093.9		3880.0‡	3880.1		0.0	0^+

† From 1971Fo22, unless otherwise noted.
‡ From 1982Al29.
# Assigned only by 1973Fr19.
@ From decay scheme in 1989Ma33.
& Tentatively deduced by the evaluators from Iβ of 1971Fo22.
a Absolute intensity per 100 decays.
x γ ray not placed in level scheme.

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Decay Scheme

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