

¹¹⁶Cd(α,γ) 1976Ma09

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	D. M. Symochko, E. Browne, J. K. Tuli		NDS 110,2945 (2009)	1-Dec-2008

E=15 MeV, enriched target (82-99%), self-support target (1-3 mg/cm²); measured semi γ , ce.

¹¹⁹Sn Levels

E(level) [†]	J π [‡]	T _{1/2}	Comments
0	1/2 ⁺		
24.0 6	3/2 ⁺		
89.6 12	11/2 ⁻	293.1 d 7	T _{1/2} : From Adopted Levels.
787.7 7	7/2 ⁺		
920.5 8	3/2 ⁺		
921.4 8	5/2 ⁺		
1062.4 16	7/2 ⁻		
1089.4 7	5/2 ⁺		
1187.5 7	3/2 ⁺ ,5/2 ⁺		
1303.6 16	\geq 7/2		

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

[‡] From Adopted Levels.

γ (¹¹⁹Sn)

α (K)exp are based on relative Ice(K) and I γ data, normalized to α (K)(1065 γ)=0.00118 (adopted mult=M1+E2 with δ =+0.26 3).

E γ [†]	I γ [‡]	E _i (level)	J π _i	E _f	J π _f	Mult. #	Comments
23.9		24.0	3/2 ⁺	0	1/2 ⁺		
65.6		89.6	11/2 ⁻	24.0	3/2 ⁺		
763.7 4	45 14	787.7	7/2 ⁺	24.0	3/2 ⁺	E2	α (K)exp=0.0014 6
^x 768.1 7	83 25					E2,M1	α (K)exp=0.0018 6
^x 838.0 8	13 4					M1,E2	α (K)exp=0.0019 6
896.6 @	\leq 3.5 &	920.5	3/2 ⁺	24.0	3/2 ⁺		
897.5 @	35 & 3	921.4	5/2 ⁺	24.0	3/2 ⁺	E2(+M1)	α (K)exp=0.0012 4 α (K)exp: originally value given by authors for a unresolved doublet of 896.6 γ +897.5 γ , but divided intensities indicate α (K)exp can be attributed entirely to the 897.5 γ .
920.5 @	\leq 7.6 &	920.5	3/2 ⁺	0	1/2 ⁺	E2+M1	Mult.: from adopted γ 's.
921.4 @	12 & 4	921.4	5/2 ⁺	0	1/2 ⁺	E2	α (K)exp=0.0010 3
972.8 10	29 3	1062.4	7/2 ⁻	89.6	11/2 ⁻	E2,M1	α (K)exp=0.00103 17
1065.4 7	10	1089.4	5/2 ⁺	24.0	3/2 ⁺	M1+E2	
1089.6		1089.4	5/2 ⁺	0	1/2 ⁺		
1163.5 5	7.9 12	1187.5	3/2 ⁺ ,5/2 ⁺	24.0	3/2 ⁺	M1	α (K)exp=0.00096 17
1187.4		1187.5	3/2 ⁺ ,5/2 ⁺	0	1/2 ⁺		
1214 1	16 5	1303.6	\geq 7/2	89.6	11/2 ⁻		
^x 1220.3	42 13						
^x 1289.4	32 10					E2	α (K)exp=0.00056 15
^x 1530.7	10 3						
^x 1651	9.1 14						

Continued on next page (footnotes at end of table)

$^{116}\text{Cd}(\alpha, n\gamma)$ [1976Ma09](#) (continued)

$\gamma(^{119}\text{Sn})$ (continued)

† From [1976Ma09](#). Authors have given one set of $E\gamma$ values for their $(\alpha, n\gamma)$ and $(d, p\gamma)$ studies.

‡ Relative photon intensity at $E(\alpha)=15$ MeV.

From $\alpha(K)\text{exp}$.

@ From Adopted Gammas.

& Divided intensity is given based on branching ratios in Coul. ex.

^x γ ray not placed in level scheme.

$^{116}\text{Cd}(\alpha, n\gamma)$ 1976Ma09

Level Scheme

Intensities: Relative I_γ

Legend

- $I_\gamma < 2\% \times I_\gamma^{\max}$
- $I_\gamma < 10\% \times I_\gamma^{\max}$
- $I_\gamma > 10\% \times I_\gamma^{\max}$

