^{109}Cd IT decay (10.6 μs)

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	S. Kumar(a), J. Chen(b) and F. G. Kondev	NDS 137, 1 (2016)	31-May-2016

Parent: ^{109}Cd: E=462.7 *4*; $J^\pi=11/2^-$; $T_{1/2}$=10.6 μs *4*; %IT decay=100.0

1969Be37: (p,nγ) E=8.8 MeV. Measured Eγ, Iγ, I(ce), γ(t) with Ge(Li) and Si(Li) detectors. Deduced cc-ratio, $T_{1/2}$ using a microwave pulsing method.

1966Mc06: (p,nγ) E=17.5 MeV. Measured Eγ, Iγ, γ(t) with Li-Ge detectors. Deduced $T_{1/2}$.

1964Br27: (γ,nγ). Measured Eγ, Iγ, γ(t) with NaI(Tl) detectors. Deduced $T_{1/2}$.

1968Iv02: (p,nγ) E=9-11 MeV. Measured Eγ, γ(t). Deduced $T_{1/2}$.

^{109}Cd Levels

E(level)†	J^π‡	$T_{1/2}$	Comments
0.0	$5/2^+$	461.9 d *4*	$T_{1/2}$: from Adopted Levels.
203.20 *20*	$7/2^+$		
462.7 *4*	$11/2^-$	10.6 μs *4*	$T_{1/2}$: weighted average of 10.4 μs *6* (1964Br27), 10.4 μs *10* (1966Mc06), 10.8 μs *16* (1968Iv02), 10.8 μs *7* in 1975Me22.

† From a least-squares fit to γ-ray energies.
‡ From Adopted Levels.

γ(^{109}Cd)

E_γ‡	I_γ#&	E_i(level)	J_i^π	E_f	J_f^π	Mult.@	α†	Comments
203.2 *2*	93.81 *9*	203.20	$7/2^+$	0.0	$5/2^+$	M1	0.0660 *10*	α(K)=0.0573 *9*; α(L)=0.00706 *10*; α(M)=0.001356 *20* α(N)=0.000242 *4*; α(O)=1.394×10^{-5} *20*
259.5 *3*	85.61 *18*	462.7	$11/2^-$	203.20	$7/2^+$	M2	0.1681 *25*	α(K)=0.1429 *21*; α(L)=0.0204 *3*; α(M)=0.00398 *6* α(N)=0.000707 *11*; α(O)=3.85×10^{-5} *6*

† Additional information 1.
‡ From 1969Be37.
# From I(γ+ce)(203γ)=I(γ+ce)(259 γ)=100 and calculated conversion coefficients by the BrICC program based on adopted multipolarities. Uncertainties are from Δα(th) by BrICC.
@ From Adopted Gammas. Arguments from this data are: α(K)exp(259.5γ)/α(K)exp(203.2γ)=2.06 *23* (1969Be37), and Iγ(259.gγ)/Iγ(203.2γ)=0.9 (1966Mc06 and 1964Br27).
& Absolute intensity per 100 decays.

^{109}Cd IT decay (10.6 μs)

Decay Scheme

Intensities: $I_{(\gamma+ce)}$ per 100 decays through this branch

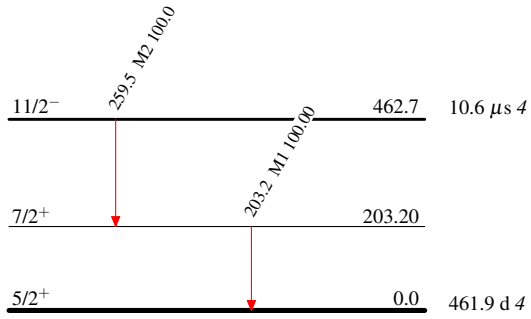
%IT=100.0

Legend

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

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

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



$^{109}_{48}Cd_{61}$