^{148}Eu IT decay 1981Pi10

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	N. Nica	NDS 117, 1 (2014)	1-Oct-2013

Parent: ^{148}Eu: E=720.4 *3*; $J^\pi=9^+$; $T_{1/2}$=162 ns *8*; %IT decay=100.0
Production: Sm(p,xnγ) E=17-31 MeV.
Measured: Eγ, Iγ, $\gamma(\theta)$, $\gamma\gamma$ coin, γ excitation functions, Ice, γ(t).
Decay scheme is from 1981Pi10.

^{148}Eu Levels

E(level)†	J^π‡	$T_{1/2}$#	Comments
0.0	5^-		
232.80 *9*	6^-		
312.20 *9*	6^-		
518.49 *12*	7^-		
708.41 *10*	7^+		
720.4 *3*	9^+	162 ns *8*	g=+0.680 *5* (1980Ba67,1980RiZT). $T_{1/2}$: weighted average of 163 ns *10* (1981Pi10), 170 ns *20* (1980Ba67), and 152 ns *21* (1995Jo04). 1981Pi10 gives a $T_{1/2}$=235 ns *14* which is quoted by 1995Jo04 as the mean life and not the half-life. The evaluator has adopted this interpretation as it makes the 1981Pi10 data consistent with other two measurements.

† From a least-squares fit to the Eγ data.
‡ From Adopted Levels; supported by $\gamma(\theta)$, γ excitation functions, and Ice from this data set.
# $T_{1/2}$<1.5 ns for excited states other than the isomer.

$\gamma(^{148}Eu)$

I(γ+ce) normalization: Σ I(γ+ce) to g.s.=100.

Eγ	Iγ‡@	E$_i$(level)	J_i^π	E$_f$	J_f^π	Mult.†	α#	I$_{(\gamma+ce)}$@	Comments
(12.0)		720.4	9^+	708.41	7^+	[E2]	3.96×10^4	144 *3*	ce(L)/(γ+ce)=0.777 *8*; ce(M)/(γ+ce)=0.179 *4* ce(N)/(γ+ce)=0.0392 *8*; ce(O)/(γ+ce)=0.00515 *11*; ce(P)/(γ+ce)=2.95×10^{-6} *6* α(L)=3.08×10^4 *5*; α(M)=7.08×10^3 *10* α(N)=1554 *22*; α(O)=204 *3*; α(P)=0.1169 *17* I$_{(\gamma+ce)}$: from the balance of I(γ+ce) for the 708-keV level.
190.0 *3*	1.0 *3*	708.41	7^+	518.49	7^-				
201.9 *3*	1.0 *3*	720.4	9^+	518.49	7^-	M2	1.415		α(K)=1.133 *17*; α(L)=0.220 *4*; α(M)=0.0494 *8* α(N)=0.01133 *17*; α(O)=0.00177 *3*; α(P)=0.0001599 *24* Mult.: α(K)exp=1.3 *5* (normalized to α(K)exp(233γ)), compatible with α(K)exp; E4 was ruled out by $T_{1/2}$.
206.3 *2*	0.7 *3*	518.49	7^-	312.20	6^-	M1	0.242		α(K)=0.205 *3*; α(L)=0.0289 *5*; α(M)=0.00624 *9*

Continued on next page (footnotes at end of table)

^{148}Eu IT decay 1981Pi10 (continued)

$\gamma(^{148}Eu)$ (continued)

E_γ	I_γ[‡][@]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[†]	α[#]	Comments
								α(N)=0.001430 *21*; α(O)=0.000227 *4*; α(P)=2.25×10^{-5} *4* α(K)exp=0.19 *4*.
232.8 *1*	91 *5*	232.80	6$^-$	0.0	5$^-$	M1	0.1738	α(K)=0.1473 *21*; α(L)=0.0208 *3*; α(M)=0.00448 *7* α(N)=0.001026 *15*; α(O)=0.0001629 *23*; α(P)=1.620×10^{-5} *23* α(K)exp=0.14 *1*; K/L=6.9 *7*.
285.7 *1*	2.9 *6*	518.49	7$^-$	232.80	6$^-$	M1	0.1002	α(K)=0.0850 *12*; α(L)=0.01190 *17*; α(M)=0.00257 *4* α(N)=0.000588 *9*; α(O)=9.34×10^{-5} *14*; α(P)=9.32×10^{-6} *13* α(K)exp=0.088 *9*; K/L=6.7 *10*.
312.2 *1*	38 *3*	312.20	6$^-$	0.0	5$^-$	M1	0.0791	α(K)=0.0672 *10*; α(L)=0.00938 *14*; α(M)=0.00202 *3* α(N)=0.000463 *7*; α(O)=7.36×10^{-5} *11*; α(P)=7.36×10^{-6} *11* α(K)exp=0.063 *6*; K/L=6.9 *8*.
396.2 *1*	43 *3*	708.41	7$^+$	312.20	6$^-$	E1	0.00774	α(K)=0.00660 *10*; α(L)=0.000893 *13*; α(M)=0.000191 *3* α(N)=4.36×10^{-5} *7*; α(O)=6.82×10^{-6} *10*; α(P)=6.39×10^{-7} *9* α(K)exp=0.007 *2*; this value has been corrected for a 2% contribution of the 396 keV M2 transition in ^{147}Eu.
475.6 *1*	100	708.41	7$^+$	232.80	6$^-$	E1	0.00505	α(K)=0.00432 *6*; α(L)=0.000579 *9*; α(M)=0.0001240 *18* α(N)=2.83×10^{-5} *4*; α(O)=4.44×10^{-6} *7*; α(P)=4.22×10^{-7} *6* α(K)exp=0.005 *1*.

[†] From conversion electron data; α(K)exp were normalized to that of 347γ in ^{149}Eu assumed to be M2.
[‡] Relative intensity.
[#] Additional information 1.
[@] For absolute intensity per 100 decays, multiply by 0.68 *3*.

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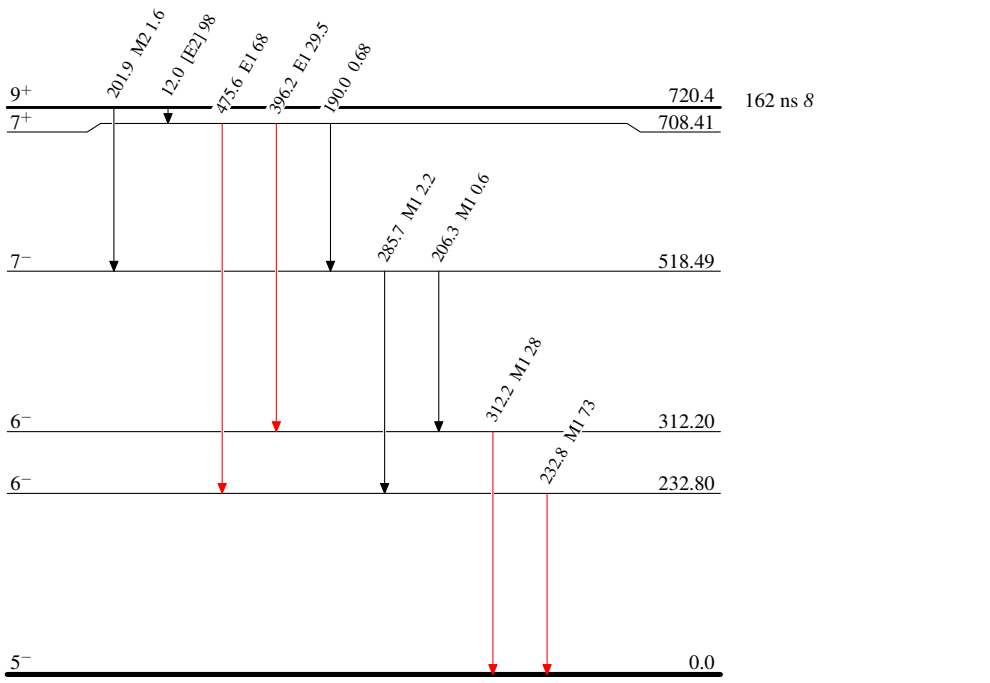
Decay Scheme

Intensities: $I_{(\gamma+ce)}$ per 100 parent decays
%IT=100.0



$^{148}_{63}Eu_{85}$