^{117}I β^+ decay 1985Le10

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Jean Blachot	ENSDF	1-Mar-2009

Parent: ^{117}I: E=0; J^π=(5/2)$^+$; $T_{1/2}$=2.22 min *4*; Q(β^+)=4.66×10^3 *3*; %β^+ decay=100.0
^{117}I produced from ^{16}O (86 MeV)+ ^{104}Pd, ms.
^{12}C (50-70MeV)+Ag (1985Le10).
Others: 1969Ha03, 1969Se05, 1974Ha10, 1969La33.
β-strength function: see 1975Ko01, 1975Ho03.

^{117}Te Levels

E(level)	J^π‡	$T_{1/2}$	Comments
0	1/2$^+$	62 min *2*	
274.4 *2*	5/2$^+$		
296.0 *5*	(3/2$^+$,5/2$^+$)		J^π: suggested by the 296 γ (1985Le10).
325.9 *3*	(3/2$^+$)		
577.8 *5*			
681.4?† *5*			
935.7 *5*			
958.4?† *5*			
964.4 *5*			
1244.4 *5*			
1299.3? *1*			
1577.3 *5*			

† Based on deexciting transition to 274 level. This transition could feed 296 level instead, in which case E(level) would be larger by 21.6 keV. In the case of the 681 level, the level at this energy is established by data in other data sets.
‡ From 1985Le10, but not adopted.

ε,β^+ radiations

E(decay)	E(level)	Iβ^+†	Iε†	Log *ft*	I($\varepsilon+\beta^+$)†	Comments
(3.08×10^3 *3*)	1577.3	0.11 *4*	0.10 *3*	6.64 *15*	0.21 *7*	av Eβ=925 *14*; εK=0.393 *10*; εL=0.0517 *13*; εM+=0.0136 *4*
(3.70×10^3 *3*)	964.4	0.46 *11*	0.18 *4*	6.54 *11*	0.64 *15*	av Eβ=1207 *14*; εK=0.237 *6*; εL=0.0310 *8*; εM+=0.00817 *21*
(3.70×10^3 *3*)	958.4?	0.39 *13*	0.15 *5*	6.61 *15*	0.54 *18*	av Eβ=1210 *14*; εK=0.236 *6*; εL=0.0308 *8*; εM+=0.00813 *21*
(3.72×10^3 *3*)	935.7	1.2 *3*	0.43 *11*	6.15 *11*	1.6 *4*	av Eβ=1220 *14*; εK=0.231 *6*; εL=0.0303 *8*; εM+=0.00798 *20*
(4.33×10^3 *3*)	325.9	70 *5*	14 *1*	4.78 *4*	84 *6*	av Eβ=1505 *14*; εK=0.143 *4*; εL=0.0187 *5*; εM+=0.00493 *12*
(4.36×10^3 *3*)	296.0	<8	<1	>5.8	<9	av Eβ=1519 *14*; εK=0.140 *4*; εL=0.0183 *5*; εM+=0.00482 *11*
(4.39×10^3 *3*)	274.4	<3	<0.6	>6.1	<4	av Eβ=1529 *14*; εK=0.138 *4*; εL=0.0180 *4*; εM+=0.00474 *11*

† Absolute intensity per 100 decays.

$\gamma(^{117}Te)$

Iγ normalization: from assumption of Σ Ti(g.s.)=100.

E_γ	I_γ[‡]	E_i(level)	J_i^π	E_f	J_f^π	Mult.	α[@]	$I_{(\gamma+ce)}$[#]	Comments
21.6 *5*		296.0	(3/2$^+$,5/2$^+$)	274.4	5/2$^+$	(M1,E2)	4.×10^2 *4*	7 *5*	ce(L)/(γ+ce)=0.8 *5*; ce(M)/(γ+ce)=0.17 *22*; ce(N)/(γ+ce)=0.03 *5*; ce(O)/(γ+ce)=0.002 *4*; Particle normalization/$T_{1/2}$=0.03 *5* Mult.: from level scheme. $I_{(\gamma+ce)}$: based on the intensity balance.
30.1 *5*	0.1 *1*	325.9	(3/2$^+$)	296.0	(3/2$^+$,5/2$^+$)	(M1,E2)	7.×10^1 *7*		α(L)=6.E1 6; α(M)=12 *12*; α(N)=2.3 *22*; α(O)=0.18 *17*; α(N+..)=2.5 *24* Mult.: from level scheme. $I_{(\gamma+ce)}$: based on the intensity balance.
[x]45.6 *5*	0.3 *1*								
52.2 *5*		325.9	(3/2$^+$)	274.4	5/2$^+$	[M1]	4.43 *14*	7 *5*	ce(K)/(γ+ce)=0.702 *12*; ce(L)/(γ+ce)=0.092 *4*; ce(M)/(γ+ce)=0.0184 *8*; ce(N)/(γ+ce)=0.00363 *15*; ce(O)/(γ+ce)=0.000392 *16* Particle normalization/$T_{1/2}$=0.00402 *17*
[x]112.3 *6*	0.5 *2*								
[x]122.2 *5*	0.3 *1*								
274.4 *2*	27.2 *14*	274.4	5/2$^+$	0	1/2$^+$	E2	0.0516		α(K)=0.0427 *6*; α(L)=0.00715 *11*; α(M)=0.001453 *21*; α(N)=0.000280 *4*; α(O)=2.74×10^{-5} *4* α(N+..)=0.000308 *5*
296.0 *5*	0.5[†] *5*	296.0	(3/2$^+$,5/2$^+$)	0	1/2$^+$				
303.4 *5*	1.5 *1*	577.8		274.4	5/2$^+$				
325.8 *2*	100	325.9	(3/2$^+$)	0	1/2$^+$	(M1,E2)	0.0286 *11*		α(K)exp=0.025 *3*; α(L)exp=0.004 *1* (1986Ma41) α(K)=0.0243 *6*; α(L)=0.0034 *5*; α(M)=0.00069 *10*; α(N)=0.000136 *18*; α(O)=1.41×10^{-5} *12* α(N+..)=0.000150 *19*
340.9 *5*	0.6 *1*	1299.3?		958.4?					
[x]353.0 *5*	0.6 *1*								
407.0 *5*	1.1 *1*	681.4?		274.4	5/2$^+$				
[x]475.9 *5*	0.6 *1*								
[x]583.3 *5*	0.7 *1*								
609.8 *5*	0.6 *3*	935.7		325.9	(3/2$^+$)				
638.9 *5*	3.3 *2*	964.4		325.9	(3/2$^+$)				
[x]655.4 *5*	0.5 *1*								
661.5 *5*	6.8 *20*	935.7		274.4	5/2$^+$				
684.0 *5*	4.3 *3*	958.4?		274.4	5/2$^+$				
689.7 *5*	0.8 *1*	964.4		274.4	5/2$^+$				
[x]695.8 *5*	1.7 *1*								
[x]858.8 *5*	1.3 *1*								
935.5 *5*	0.6 *1*	935.7		0	1/2$^+$				

From ENSDF

$^{117}_{52}Te_{65}$-2

^{117}I β^+ decay 1985Le10 (continued)

$\gamma(^{117}Te)$ (continued)

E_γ	I_γ‡	E_i(level)	J_i^π	E_f	J_f^π	E_γ	I_γ‡	E_i(level)	E_f	J_f^π
948.6 *5*	0.4 *1*	1244.4		296.0	$(3/2^+,5/2^+)$	x1084.5 *5*	0.8 *1*			
964.4 *5*	0.9 *1*	964.4		0	$1/2^+$	x1232.4 *5*	0.4 *1*			
969.9 *5*	0.7 *1*	1244.4		274.4	$5/2^+$	1302.9 *5*	1.7 *1*	1577.3	274.4	$5/2^+$
x989.7 *5*	0.6 *1*									

† From coin data (1985Le10).
‡ For absolute intensity per 100 decays, multiply by 0.75 *1*.
# Absolute intensity per 100 decays.
@ 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.
x γ ray not placed in level scheme.

From ENSDF

$^{117}_{52}Te_{65}$-3

^{117}I β^+ decay 1985Le10

Decay Scheme

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