^{121}Te ε decay (164.2 d) 1975Me23

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	S. Ohya	NDS 111, 1619 (2010)	20-Jan-2009

Parent: ^{121}Te: E=293.991 *22*; J$^\pi$=11/2$^-$; $T_{1/2}$=164.2 d *8*; Q(ε)=1054 *26*; %ε+%β^+ decay=11.4 *11*

^{121}Te-%ε+%β^+ decay: from I(γ+ce 212γ)/ΣI(γ+ce to g.s.). Note that in an equilibrium 19-d, 154-d ^{121}Te source, 11% of the intensity of the 37γ is due to the ^{121}Te ε decay (19.17 d).

1975Me23: Compton suppression spectrometer semi γ.

Others: scin γ, $\gamma\gamma$, magnetic spectrograph ce (1964Ch08); semi γ (1971Au03).

See also ^{121}Te IT decay (164.2 d).

^{121}Sb Levels

E(level)†	J$^\pi$‡	$T_{1/2}$	Comments
0.0	5/2$^+$	stable	
37.138 *10*	7/2$^+$	3.46 ns *3*	$T_{1/2}$: from Adopted Levels.
946.991 *14*	9/2$^+$		
1024.0 *3*	7/2$^+$		
1035.433 *15*	9/2$^+$		
1139.292 *20*	9/2$^+$,11/2$^+$		
1144.66 *4*	9/2$^+$		

† E(levels) are based on a least-squares fit to Eγ′s from 1975Me23.

‡ From Adopted Levels.

ε,β^+ radiations

E(decay)	E(level)	Iβ^+ †	Iε†	Log *ft*	Comments
(2.0×10^2 *3*)	1144.66		0.00148 *22*	10.97 *16*	εK=0.823 *7*; εL=0.139 *6*; εM+=0.0375 *17*
(2.1×10^2 *3*)	1139.292		2.54 *3*	7.76 *15*	εK=0.824 *7*; εL=0.138 *5*; εM+=0.0372 *16*
(3.1×10^2 *3*)	1035.433		0.078 *8*	9.66 *11*	εK=0.8382 *24*; εL=0.1279 *19*; εM+=0.0340 *6*
(3.2×10^2 *3*)	1024.0		0.00008 *4*	12.2^{1u} *3*	εK=0.791 *10*; εL=0.164 *8*; εM+=0.0453 *24*
(4.0×10^2 *3*)	946.991		0.079 *8*	9.89 *9*	εK=0.8437 *14*; εL=0.1236 *11*; εM+=0.0327 *4*
(1.31×10^3 *3*)	37.138	0.0011 *6*	8.7 *10*	9.72^{1u} *8*	av Eβ=150 *13*; εK=0.8497 *3*; εL=0.11892 *21*; εM+=0.03125 *7* Iβ^+: deduced from intensity of $\gamma^\pm$=0.052 *21* relative to I(537γ)=1000 and theoretical I(β^+)/I(ε) (1975Me23).

† Absolute intensity per 100 decays.

γ(^{121}Sb)

Iγ normalization: from ΣI(γ+ce to g.s.)=11.4 *11*.

E$_\gamma$†	I$_\gamma$‡#	E$_i$(level)	J$^\pi_i$	E$_f$	J$^\pi_f$	Mult.	α@	Comments
37.138 *10*	11.8 *12*	37.138	7/2$^+$	0.0	5/2$^+$	M1	10.87	α(K)=9.35 *14*; α(L)=1.226 *18*; α(M)=0.243 *4*; α(N+..)=0.0514 *8* α(N)=0.0468 *7*; α(O)=0.00459 *7* Mult.: from α(K)exp=9.32 *37* (1968Sn01).
103.85 *8*	0.011 *4*	1139.292	9/2$^+$,11/2$^+$	1035.433	9/2$^+$	[M1,E2]	1.0 *5*	α(K)=0.8 *3*; α(L)=0.19 *14*; α(M)=0.04

Continued on next page (footnotes at end of table)

^{121}Te ε decay (164.2 d) 1975Me23 (continued)

γ(^{121}Sb) (continued)

E_γ †	I_γ ‡#	E_i(level)	J_i^π	E_f	J_f^π	Comments
						3; α(N+..)=0.008 *6* α(N)=0.007 *5*; α(O)=0.0006 *4* α: for δ=1.0; uncertainty chosen to overlap M1,E2 theory values.
909.847 *18*	0.881 *19*	946.991	9/2$^+$	37.138	7/2$^+$	
946.989 *18*	0.103 *3*	946.991	9/2$^+$	0.0	5/2$^+$	
998.291 *11*	0.997 *22*	1035.433	9/2$^+$	37.138	7/2$^+$	
1024.00 *25*	0.0010 *5*	1024.0	7/2$^+$	0.0	5/2$^+$	
1035.40 *10*	0.007 *3*	1035.433	9/2$^+$	0.0	5/2$^+$	
1102.149 *18*	31.8 *7*	1139.292	9/2$^+$,11/2$^+$	37.138	7/2$^+$	
1107.60 *18*	0.005 *2*	1144.66	9/2$^+$	37.138	7/2$^+$	
1144.65 *4*	0.0135 *6*	1144.66	9/2$^+$	0.0	5/2$^+$	

† From 1975Me23. The evaluators have added 10 eV in quadrature to the quoted uncertainties to allow for uncertainties in calibration.

‡ From 1975Me23. The evaluators have added 2% in quadrature to the quoted uncertainties to allow for uncertainties in efficiency calibration.

For absolute intensity per 100 decays, multiply by 0.080 *8*.

@ 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.

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