Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	M. J. Martin	NDS 114, 1497 (2013)	31-Aug-2013

Q(β^-)=3.51×10^3 *3*; S(n)=5.94×10^3 *3*; S(p)=7.60×10^3 *3*; Q(α)=−1.14×10^3 *3* 2017Wa10
S(2n)=1.380×10^4 *3*; S(2p)=1.753×10^4 *3* 2017Wa10
Additional information 1.
All data are from ^{152}Nd β^- decay.

^{152}Pm Levels

The level scheme is that derived from ^{152}Nd β^- decay (1993Sh23).

Cross Reference (XREF) Flags

A ^{152}Nd β^- decay

E(level)†	J$^\pi$	T$_{1/2}$	XREF	Comments
0.0	1$^+$	4.12 min *8*	A	%β^-=100 configuration: (π,5/2[532])⊗(ν,3/2[532]) suggested by 1993Sh23. The 295 level contains the main component of this configuration. J$^\pi$: log *ft*=6.4 to 0$^+$ and 6.8 to 2$^+$. M1 γ from 1$^+$. T$_{1/2}$: weighted average of 4.3 min *4* (1977Ya07), 4.2 min *2* (1975Wi08), 4.1 min *1* (1971Da19), 4.1 min *2* (1969Wa25).
16.03 *4*	0$^-$,1$^-$,2$^-$	2.1 ns *10*	A	J$^\pi$: E1 γ to 1$^+$. T$_{1/2}$: from ^{152}Nd β^- decay.
25.02 *7*	(0$^+$,1$^+$,2$^+$)		A	J$^\pi$: (M1) γ to 1$^+$.
44.45 *4*	0$^-$,1$^-$,2$^-$	≤1.0 ns	A	J$^\pi$: E1 γ from 1$^+$. T$_{1/2}$: from ^{152}Nd β^- decay.
1.5×10^2 *9*	4$^-$	7.52 min *8*	A	%β^-=100 E(level): from Eβ^-=1850 *80* for β^- decay from ^{152}Pm (7.52 min) to the 1804 level in ^{152}Sm and Q(β^-)(^{152}Pm)=3508 *26*. the value given is rounded off from 146 *84*. T$_{1/2}$: from 1977Ya07. Others: 7.5 min *2* (1975Wi08), 7.6 min *7* (1972Wa04), 7.5 min *10* (1971Da19). J$^\pi$: log *ft*=5.6 to 5$^-$; log *ft*=7.4 to 3$^-$.
200.48 *10*			A	
220.96 *18*			A	
294.55 *4*	1$^+$		A	J$^\pi$: log *ft*=4.49 for β^- decay from 0$^+$ ^{152}Nd. configuration: (π,5/2(532))⊗(ν,3/2(532)) suggested by 1993Sh23.
319.17 *14*			A	
330.47 *14*			A	
450.80 *25*	0,1		A	J$^\pi$: log *ft*=6.80 for β^- decay from 0$^+$.
570.78 *10*	1$^+$		A	J$^\pi$: log *ft*=5.38 for β^- decay from 0$^+$.
592.40 *10*	1$^+$		A	J$^\pi$: log *ft*=5.26 for β^- decay from 0$^+$.
659.90 *12*	1$^+$		A	J$^\pi$: log *ft*=5.61 for β^- decay from 0$^+$.
150+x	(8)	13.8 min *2*	A	%β^-≤100; %IT≥0 E(level),%IT: probably feeds 7.52-min level and, therefore, may be higher than level with T$_{1/2}$=7.52 min (1971Da19). See comment in 13.8-min β^- decay. J$^\pi$: probably feeds K^π=7$^-$ ^{152}Sm levels, Nilsson model. T$_{1/2}$: from 1985YaZV. Others: 15.0 min *10* (1975Wi08), 18 min *3* (1971Da19,1977Ya07).

† From a least-squares fit to the Eγ data, except for the 150 level, as noted.

Adopted Levels, Gammas (continued)

$\gamma(^{152}Pm)$

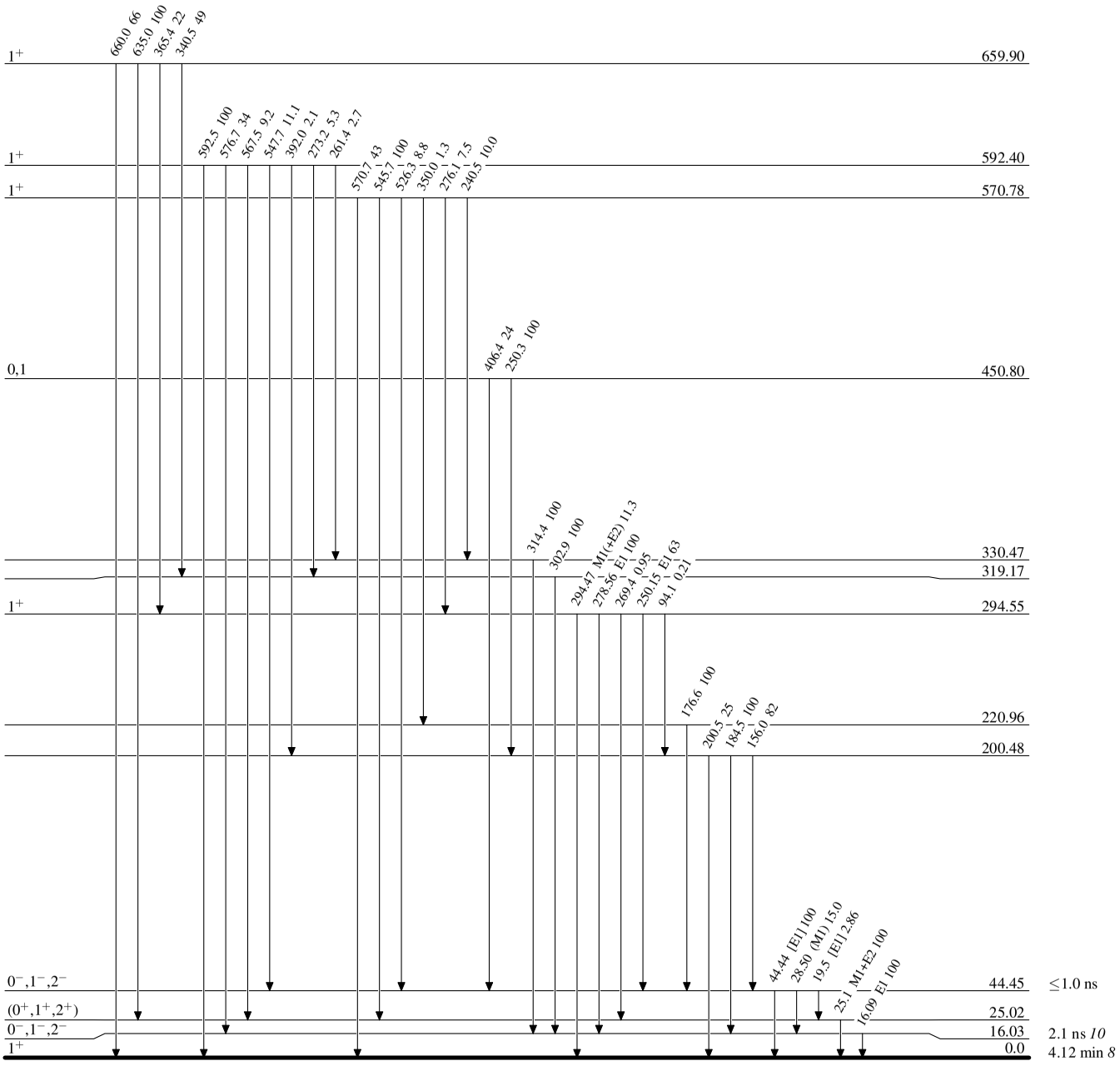
E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.	δ	α[†]	Comments
16.03	$0^-,1^-,2^-$	16.09 *5*	100	0.0	1^+	E1		7.05 *12*	B(E1)(W.u.)=0.0033 *16*
25.02	$(0^+,1^+,2^+)$	25.1 *1*	100	0.0	1^+	M1+E2			δ: 0.1<δ<1.1.
44.45	$0^-,1^-,2^-$	19.5 *1*	2.86 *23*	25.02	$(0^+,1^+,2^+)$	[E1]		4.14 *9*	B(E1)(W.u.)>0.00028
		28.50 *10*	15.0 *14*	16.03	$0^-,1^-,2^-$	(M1)		11 *2*	B(M1)(W.u.)>0.044 δ: δ<0.09.
		44.44 *4*	100 *11*	0.0	1^+	[E1]		0.411	B(E1)(W.u.)>0.00085
200.48		156.0 *2*	82 *6*	44.45	$0^-,1^-,2^-$				
		184.5 *2*	100 *10*	16.03	$0^-,1^-,2^-$				
		200.5 *2*	25 *4*	0.0	1^+				
220.96		176.6 *2*	100	44.45	$0^-,1^-,2^-$				
294.55	1^+	94.1 *2*	0.21 *3*	200.48					
		250.15 *5*	63 *3*	44.45	$0^-,1^-,2^-$	E1		0.0226	
		269.4 *2*	0.95 *12*	25.02	$(0^+,1^+,2^+)$				
		278.56 *5*	100 *6*	16.03	$0^-,1^-,2^-$	E1		0.0171	
		294.47 *5*	11.3 *6*	0.0	1^+	M1(+E2)	<1.5	0.071 *7*	
319.17		302.9 *2*	100	16.03	$0^-,1^-,2^-$				
330.47		314.4 *2*	100	16.03	$0^-,1^-,2^-$				
450.80	0,1	250.3 *3*	100 *15*	200.48					
		406.4 *4*	24 *9*	44.45	$0^-,1^-,2^-$				
570.78	1^+	240.5 *2*	10.0 *13*	330.47					
		276.1 *2*	7.5 *16*	294.55	1^+				
		350.0 *3*	1.3 *7*	220.96					
		526.3 *3*	8.8 *16*	44.45	$0^-,1^-,2^-$				
		545.7 *2*	100 *9*	25.02	$(0^+,1^+,2^+)$				
		570.7 *2*	43 *5*	0.0	1^+				
592.40	1^+	261.4 *3*	2.7 *6*	330.47					
		273.2 *3*	5.3 *19*	319.17					
		392.0 *3*	2.1 *5*	200.48					
		547.7 *2*	11.1 *8*	44.45	$0^-,1^-,2^-$				
		567.5 *3*	9.2 *16*	25.02	$(0^+,1^+,2^+)$				
		576.7 *2*	34 *4*	16.03	$0^-,1^-,2^-$				
		592.5 *2*	100 *8*	0.0	1^+				
659.90	1^+	340.5 *2*	49 *11*	319.17					
		365.4 *2*	22 *4*	294.55	1^+				
		635.0 *2*	100 *12*	25.02	$(0^+,1^+,2^+)$				
		660.0 *3*	66 *8*	0.0	1^+				

[†] 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.

Adopted Levels, Gammas

Level Scheme

Intensities: Relative photon branching from each level



$^{152}_{61}Pm_{91}$