

$^{125}\text{In}$  IT decay:5.0 ms 2004Sc42,1998FoZY

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	J. Katakura	NDS 112, 495 (2011)	1-Jan-2010

Parent:  $^{125}\text{In}$ : E=2161.2 18;  $J^\pi=(23/2^-)$ ;  $T_{1/2}=5.0$  ms 15; %IT decay=100.0

2004Sc42,2005ScZQ: Thermal-neutron fission of  $^{239}\text{Pu}$  and  $^{241}\text{Pu}$ . The LOHENGRIN mass spectrometer; Measured  $E_\gamma$ ,  $I_\gamma$ ,  $\gamma\gamma$ ,  $\gamma(t)$ .

1998FoZY: Thermal-neutron fission of  $^{233}\text{U}$ ,  $^{235}\text{U}$  and  $^{238}\text{U}$ ; measured  $E_\gamma$ ,  $I_\gamma(t)$ , E(ce), I(ce).

XUNDL data set compiled by J. Roediger and B. Singh (McMaster), December 29, 2004, is consulted.

 $^{125}\text{In}$  Levels

E(level)	$J^\pi$ ‡	$T_{1/2}$ †	Comments
0.0	$9/2^+$		
1027.3 4	$(11/2^+)$		
1173.0 4	$(13/2^+)$		
1909.7 7	$(13/2^+)$		
1953.1 9	$(15/2^+)$		
2009.4 10	$(19/2^+)$	9.4 $\mu\text{s}$ 6	
2161.2 11	$(23/2^-)$	5.0 ms 15	Configuration= $(\pi g_{9/2}$ hole $\otimes 7^-$ Sn Core).

† From 1998FoZY.

‡ From 1998FoZY and systematics. Based on the non-observation of crossover transitions between the 1953 and 1173 levels, and between the 1909 and 1027 levels, 2004Sc42 propose  $J^\pi=25/2^+$  for the 5.0 ms isomer and  $19/2^-$ ,  $17/2^-$ , and  $15/2^-$  for the 2009, 1953, and 1909 levels, respectively. The evaluator notes that  $J^\pi(1909 \text{ level})=15/2^-$  is probably inconsistent with the observed, although weak,  $\gamma$  branch to the  $9/2^+$  gs. Also  $15/2^-$  is not consistent with  $\log ft=5.29$  from  $(11/2^-)$ .

 $\gamma(^{125}\text{In})$ 

$E_\gamma$ †	$E_i$ (level)	$J_i^\pi$	$E_f$	$J_f^\pi$	Mult.‡	$\alpha^\#$	Comments
43.4	1953.1	$(15/2^+)$	1909.7	$(13/2^+)$	M1	5.67	$\alpha(K)=4.90$ 7; $\alpha(L)=0.628$ 9; $\alpha(M)=0.1220$ 17; $\alpha(N+..)=0.0239$ 4 $\alpha(N)=0.0223$ 4; $\alpha(O)=0.001636$ 23
56.3	2009.4	$(19/2^+)$	1953.1	$(15/2^+)$	E2	11.99	$\alpha(K)=6.67$ 10; $\alpha(L)=4.30$ 6; $\alpha(M)=0.876$ 13; $\alpha(N+..)=0.1511$ 22 $\alpha(N)=0.1474$ 21; $\alpha(O)=0.00366$ 6
145.8	1173.0	$(13/2^+)$	1027.3	$(11/2^+)$			
151.8	2161.2	$(23/2^-)$	2009.4	$(19/2^+)$	M2	1.152	$\alpha(K)=0.959$ 14; $\alpha(L)=0.1560$ 22; $\alpha(M)=0.0311$ 5; $\alpha(N+..)=0.00606$ 9 $\alpha(N)=0.00567$ 8; $\alpha(O)=0.000388$ 6
736.7	1909.7	$(13/2^+)$	1173.0	$(13/2^+)$			
1027.3	1027.3	$(11/2^+)$	0.0	$9/2^+$			
1173.0	1173.0	$(13/2^+)$	0.0	$9/2^+$			

† From 1998FoZY.  $\Delta E_\gamma=0.5$  keV assumed.

‡ From 1998FoZY.

# Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on  $\gamma$ -ray energies, assigned multiplicities, and mixing ratios, unless otherwise specified.

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Decay Scheme

%IT=100.0

