^{137}Nd IT decay (1.60 s)   1971Va22

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	E. Browne, J. K. Tuli	NDS 108,2173 (2007)	1-Oct-2006

Parent: ^{137}Nd: E=519.43 17; J$^{\pi}$=11/2$^-$; T$_{1/2}$=1.60 s 15; %IT decay=100.0

Additional information 1.

Measured: γ rays, conversion electrons.

Other: 1970Dr04.

^{137}Nd Levels

E(level)	J$^{\pi\dagger}$	T$_{1/2}$	Comments
0.0	1/2$^+$		
108.4 5	3/2$^+$		
286.1 5	5/2$^+$		
519.8 5	11/2$^-$	1.60 s 15	T$_{1/2}$: from 1970Dr04. Other: 2.0 s 5 (1971Va22).

† From Adopted Levels.

γ(^{137}Nd)

Iγ normalization: from Iγ(1+α)=100 for 233.7γ.

E$_\gamma$	I$_\gamma^\dagger$	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$	Mult.	$\alpha^\ddagger$	Comments
108.4 5	54 6	108.4	3/2$^+$	0.0	1/2$^+$	M1+(E2)	1.4 3	α(K)=0.956 19; α(L)=0.33 20; α(M)=0.07 5; α(N+..)=0.018 12 α(N)=0.016 10; α(O)=0.0022 13; α(P)=5.2×10^{-5} 10 Mult.: α(K)exp+α(L+...)exp=1.4 2 (1971Va22), K/L+=2.8 (1970Dr04). α: 1.28 26 from I(γ+ce) and Iγ.
177.5 5	90 9	286.1	5/2$^+$	108.4	3/2$^+$	M1,(E2)	0.282 5	α(K)=0.240 4; α(L)=0.0331 6; α(M)=0.00702 12; α(N+..)=0.00183 3 α(N)=0.00157 3; α(O)=0.000239 4; α(P)=1.551×10^{-5} 25 Mult.: From α(K)exp+α(L+...)exp=0.29 1 (1971Va22). α=0.36 15 deduced by evaluators from transition intensity balance at 286-keV level.
233.7 5	100	519.8	11/2$^-$	286.1	5/2$^+$	E3	0.565 10	α(K)=0.316 5; α(L)=0.193 4; α(M)=0.0447 8; α(N+..)=0.01101 20 α(N)=0.00972 18; α(O)=0.001273 23; α(P)=1.69×10^{-5} 3 Mult.: From α(K)exp+α(L+...)exp=0.56 (1971Va22), K/L+=1.2 2 (1970Dr04).
286.1 5	32 4	286.1	5/2$^+$	0.0	1/2$^+$	E2	0.0608 10	α(K)=0.0478 8; α(L)=0.01017 16; α(M)=0.00223 4; α(N+..)=0.000562 9 α(N)=0.000490 8; α(O)=6.87×10^{-5} 11; α(P)=2.61×10^{-6} 4 Mult.: α(K)exp+α(L+...)exp=0.06 (1971Va22).

† For absolute intensity per 100 decays, multiply by 0.639 4.

‡ 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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Decay Scheme

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

Legend

$\longrightarrow$ $I_\gamma < \ 2\% \times I_\gamma^{max}$
$\longrightarrow$ $I_\gamma < 10\% \times I_\gamma^{max}$
$\longrightarrow$ $I_\gamma > 10\% \times I_\gamma^{max}$

233.7 E3 100.0

286.1 E2 22

177.5 M1,(E2) 74

108.4 M1+(E2) 83

11/2⁻   519.8   1.60 s *15*

5/2⁺   286.1

3/2⁺   108.4
1/2⁺   0.0

$^{137}_{60}$Nd$_{77}$