

^{131}Pr IT decay (5.73 s) 1996Ge12

Type	Author	History	Citation	Literature Cutoff Date
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Parent: ^{131}Pr : $E=152.4$; $J^\pi=(11/2^-)$; $T_{1/2}=5.73$ s 20; %IT decay=96.4 12

1996Ge12: $^{96}\text{Mo}(^{40}\text{Ca},X)$, $E=255$ MeV; $\gamma(t)$, $ce(t)$, $\gamma\gamma$, $ce\gamma$ coincidences, He-jet technique, electron selector. $^{nat}\text{In}(^{20}\text{Ne},X)$, $E=95$ MeV; measured $\gamma\gamma$. Beam chopper.

Others: 1983GaZT, 1992GeZZ, 1993GeZZ.

Level scheme from 1996Ge12.

 ^{131}Pr Levels

E(level) [†]	J^π	$T_{1/2}$	Comments
0.0	(3/2 ⁺)	1.51 min 2	$T_{1/2}$: from Adopted Levels.
87.60 20	(5/2 ⁺)		
152.4 4	(11/2 ⁻)	5.73 s 20	% ϵ +% β^+ =3.6 12; %IT=96.4 12(1996Ge12) E(level): from 1996Ge12. %IT: from in-beam experiment and using the ^{131}Ce level scheme. Other: % ϵ +% β^+ =5; %IT=95 (1993GeZZ). $T_{1/2}$: from Adopted Levels.

[†] From least-squares fit to E_γ 's.

 $\gamma(^{131}\text{Pr})$

E_γ	I_γ ^{†#}	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult. [‡]	α [@]	$I_{(\gamma+ce)}$ [#]	Comments
64.8 3	0.33 CA	152.4	(11/2 ⁻)	87.60	(5/2 ⁺)	E3	302	100	B(E3)(W.u.)=0.138 7 ce(K)/($\gamma+ce$)=0.0469 14; ce(L)/($\gamma+ce$)=0.728 22; ce(M)/($\gamma+ce$)=0.174 6; ce(N)/($\gamma+ce$)=0.0472 15 Additional information 1.
87.6 2	34.1 CA	87.60	(5/2 ⁺)	0.0	(3/2 ⁺)	M1	1.93	100	E_γ : ΔE assumed by evaluator on the basis of 1996Ge12 data. ce(K)/($\gamma+ce$)=0.560 17; ce(L)/($\gamma+ce$)=0.0772 24; ce(M)/($\gamma+ce$)=0.0162 5; ce(N)/($\gamma+ce$)=0.00444 14

[†] From $I(\gamma+ce)$ and α .

[‡] From $\alpha(\text{exp})$.

[#] For absolute intensity per 100 decays, multiply by 0.964 12.

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

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Decay Scheme

Intensities: $I_{(\gamma+ce)}$ per 100 parent decays
%IT=96.4 12

Legend

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

