

**<sup>155</sup>Gd IT decay (31.97 ms) 1970Bo02**

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	N. Nica	NDS 160, 1 (2019)	21-Oct-2019

Parent: <sup>155</sup>Gd: E=121.05 19; J<sup>π</sup>=11/2<sup>-</sup>; T<sub>1/2</sub>=31.97 ms 27; %IT decay=100.0

1970Bo02: source produced in the <sup>152</sup>Sm(α,n) reaction, using a pulsed beam with E(α)=18 MeV. Measured conversion-electron spectra and electron-γ coincidences using a six-gap β spectrometer and a Ge(Li) detector. Also measured γ spectra, γ(t), T<sub>1/2</sub>.

Others: 1978K111, 1977Go15, 1972Br53, 1971KiZC, 1969Li21, 1968EtZZ, 1967Bo05.

The decay scheme is that proposed by 1970Bo02.

<sup>155</sup>Gd Levels

E(level) <sup>†</sup>	J <sup>π</sup> <sup>†</sup>	T <sub>1/2</sub>	Comments
0.0	3/2 <sup>-</sup>		
86.5460 6	5/2 <sup>+</sup>		
107.5803 11	9/2 <sup>+</sup>		
121.05 19	11/2 <sup>-</sup>	31.97 ms 27	%IT=100 T <sub>1/2</sub> : from 1972Br53, γ(t). Other: 31 ms 1 (1970Bo02).

<sup>†</sup> From adopted values.

γ(<sup>155</sup>Gd)

E <sub>γ</sub>	I <sub>γ</sub> <sup>‡@</sup>	E <sub>i</sub> (level)	J <sub>i</sub> <sup>π</sup>	E <sub>f</sub>	J <sub>f</sub> <sup>π</sup>	Mult.	α <sup>#</sup>	Comments
13.47 19	7.35 32	121.05	11/2 <sup>-</sup>	107.5803	9/2 <sup>+</sup>	E1	12.6 6	α(L)=9.9 5; α(M)=2.23 10 α(N)=0.475 20; α(O)=0.0551 22; α(P)=0.00139 5 E <sub>γ</sub> : computed from level-energy difference. Mult.: from the measured I <sub>γ</sub> values for the 14 and 86 γ's and from theoretical conversion coefficients, 1970Bo02 conclude that mult=E1 for the 14γ, since any other choice of mult would lead to a I(γ+ce)(14γ) value at least five times as large as that of I(γ+ce)(86γ).
21.036 <sup>†</sup> 4	0.03845 59	107.5803	9/2 <sup>+</sup>	86.5460	5/2 <sup>+</sup>	E2	2.60×10 <sup>3</sup> 40	α: listed uncertainty takes into account only the uncertainty in the E <sub>γ</sub> value. α(L)=2.01×10 <sup>3</sup> 3; α(M)=471 7 α(N)=104.1 15; α(O)=13.24 19; α(P)=0.00391 6
86.545 <sup>†</sup> 3	69.88 29	86.5460	5/2 <sup>+</sup>	0.0	3/2 <sup>-</sup>	E1	0.431 6	α(K)=0.360 5; α(L)=0.0555 8; α(M)=0.01203 17 α(N)=0.00271 4; α(O)=0.000394 6; α(P)=1.97×10 <sup>-5</sup> 3 Mult.: from I(K x ray)/Iγ(86γ), α(K)exp=0.3 2 (1970Bo02), so mult=E1.

<sup>†</sup> From adopted values.

<sup>‡</sup> Deduced by evaluator, by requiring that I(γ+ce)(13.4γ)=I(γ+ce)(21.0γ)=I(γ+ce)(86.5γ)=100%.

<sup>#</sup> Additional information 1.

<sup>@</sup> Absolute intensity per 100 decays.

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## Decay Scheme

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

## Legend

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

