

¹²⁷Te β⁻ decay (106.1 d) 1970Ap02

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	A. Hashizume	NDS 112, 1647 (2011)	1-Oct-2009

Parent: ¹²⁷Te: E=88.26 8; J^π=11/2⁻; T_{1/2}=106.1 d 7; Q(β⁻)=702 3; %β⁻ decay=2.4 2

1970Ap02: source ¹²⁶Te(n,γ), semi γ, proportional counter β.

Others: 1956Kn20, 1965Au01, 1966Ne02, 1971Bu27.

See also ¹²⁷Te IT decay (106.1 d).

¹²⁷I Levels

E(level) [†]	J ^π [‡]	T _{1/2} [‡]
0.0	5/2 ⁺	stable
57.64 8	7/2 ⁺	1.95 ns 1
628.6 3	7/2 ⁺	
650.95 11	9/2 ⁽⁺⁾	
716.54 13	(11/2 ⁺)	

[†] From a least-squares fit to E(γ's).

[‡] From Adopted Levels.

β⁻ radiations

E(decay)	E(level)	Iβ ⁻ [†]	Log ft	Comments
(74 3)	716.54	0.52 7	8.68 8	av Eβ=19.07 81
(139 3)	650.95	0.109 14	10.21 7	av Eβ=37.19 86
(162 3)	628.6	0.0036 9	11.33 ^{1u} 12	av Eβ=53.0 11
(733 3)	57.64	100 14	9.94 ^{1u} 7	av Eβ=255.9 12

[†] For absolute intensity per 100 decays, multiply by 0.024 2.

γ(¹²⁷I)

I_γ normalization: Based on I(418γ)/I(total β)=0.0097 1 and I(58γ from ¹²⁷Te(106.1 d + 9.35 h))/I(58γ from ¹²⁷Te(9.35 h))=18.8, which yields Iβ=2.4 √ 2, IT=97.6% for 106.1 d parent (1970Ap02).

E _γ [†]	I _γ ^{†@}	E _i (level)	J _i ^π	E _f	J _f ^π	Mult.#	δ [#]	α [‡]	Comments
57.63 8	53 5	57.64	7/2 ⁺	0.0	5/2 ⁺	M1+E2	-0.083 5	3.72	α(K)=3.16 5; α(L)=0.449 8; α(M)=0.0909 17; α(N+..)=0.0204 4 α(N)=0.0183 4; α(O)=0.00209 4 %I _γ =0.51 5, using the calculated normalization.
593.3 1	0.24 2	650.95	9/2 ⁽⁺⁾	57.64	7/2 ⁺	M1+E2	-0.23 3	0.00668 10	α=0.00668 10; α(K)=0.00578 9; α(L)=0.000722 11; α(M)=0.0001448 21; α(N+..)=3.28×10 ⁻⁵ 5 α(N)=2.93×10 ⁻⁵ 5; α(O)=3.46×10 ⁻⁶ 5 %I _γ =8.6×10 ⁻⁵ 23, using the calculated normalization.
628.6 3	0.009 2	628.6	7/2 ⁺	0.0	5/2 ⁺				

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^{127}Te β^- decay (106.1 d) 1970Ap02 (continued) $\gamma(^{127}\text{I})$ (continued)

E_γ †	I_γ †@	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Comments
651.0 2	0.03 1	650.95	9/2 ⁽⁺⁾	0.0	5/2 ⁺	%I γ =0.00029 11, using the calculated normalization.
658.9 1	1.30 10	716.54	(11/2 ⁺)	57.64	7/2 ⁺	

† From 1970Ap02.

‡ Theoretical conversion coefficients are calculated using BrIcc code for the multipolarity and mixing ratio indicated.

From Adopted Levels, gammas.

@ For absolute intensity per 100 decays, multiply by 0.0096 13.

^{127}Te β^- decay (106.1 d) 1970Ap02

Decay Scheme

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

Legend

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

