

^{131}Te IT decay (33.25 h) 1975Ja03,2002Re30

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	Yu. Khazov, I. Mitropolsky, A. Rodionov		NDS 107, 2715 (2006)	17-Jul-2006

Parent: ^{131}Te : E=182.258 18; $J^\pi=11/2^-$; $T_{1/2}=33.25$ h 25; %IT decay=25.9 5

2002Re30: $^{131\text{m}}\text{Te}(\text{IT})$, $^{131\text{g}}\text{Te}(\beta^-)$ E=th; measured E_γ , $I_\gamma(t)$, $^{131\text{m,g}}\text{Te}$ deduced $T_{1/2}$, IT branching ratio, $\sigma(m)/(\sigma(m)+\sigma(g))$.

HPGe detectors.

1975Ja03: $^{131\text{m}}\text{Te}(\text{IT})$ [from $\text{Te}(n,\gamma)$ E=reactor]; measured γ , $\gamma\gamma$ coin. Ge(Li). 25-min ^{131}Te in transient equilibrium with 30-h ^{131}Te . Others: 1965De22 and 1974Fu13.

1961Be20: $^{131\text{m}}\text{Te}(\text{IT})$, measured γ , ce, β , $\gamma\gamma$, $\beta\gamma$; $^{131}\text{Te}(\text{IT})$ deduced branching. Magnetic lens spectrometer, NaI(Tl),

Pb-radiator.

1957A135: $^{131\text{m}}\text{Te}(\text{IT})$, measured ce; magnetic spectrograph.

1955He88: $^{131}\text{Te} \beta^-$ [from $^{130}\text{Te}(d,p)$ E=11.5 MeV, $^{130}\text{Te}(n,\gamma)$ E=th]; measured ce, E_β , I_β ; $^{131}\text{Te}(\text{IT})$ deduced E(IT), K/L+M, branching. Magnetic lens spectrometer, Pb-, U-radiators, NaI(Tl), anthracene.

 ^{131}Te Levels

E(level)	$J^\pi^\dagger$	$T_{1/2}^\dagger$	Comments
0.0	$3/2^+$	25.0 min 1	
182.250 20	$11/2^-$	33.25 h 25	%IT=25.9 5 $T_{1/2}$: from 2002Re30. Other: 1.2 d 2 (1940Se01). %IT from 2002Re30. Others: of 22.2 % 16 (1975Ja03), 18.3 % 12 (1961Be20), 21 % (1955He88). Configuration= $\nu h_{11/2}^{-1}$.

† From the Adopted Levels.

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

$E_\gamma^\dagger$	$I_\gamma^{\ddagger\#}$	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult.	$\alpha^@$	$I_{(\gamma+ce)}^\#$	Comments
182.25 2	3.83 CA	182.250	$11/2^-$	0.0	$3/2^+$	(M4)	25.1	100.0	ce(K)/($\gamma+ce$)=0.649; ce(L)/($\gamma+ce$)=0.245; ce(M)/($\gamma+ce$)=0.0539; ce(N+)/($\gamma+ce$)=0.0137 Mult.: E3,M4 from K/L=2.3 4 (1957A135). $\Delta J=4$, $\Delta\pi=\text{yes}$ from Adopted Levels. Additional information 1.

† From 1975Ja03. Others: 181.7 2 from ce(K) and 182.1 2 from ce(L) (1957A135).

‡ From $I(\gamma+ce)$ and α .

$^\#$ For absolute intensity per 100 decays, multiply by 0.259 5.

$^@$ 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=25.9 5

