^{156}Tb IT decay (5.3 h) 1970To11,1957Mi01,1955Ha52

History			
Type	Author	Citation	Literature Cutoff Date
Full Evaluation	C. W. Reich	NDS 113, 2537 (2012)	1-Mar-2012

Parent: ^{156}Tb: E=88.4; $J^\pi=(0^+)$; $T_{1/2}$=5.3 h *2*; %IT decay=100.0

^{156}Tb-%IT decay: value unknown, but 1950Wi13 and 1970Ag02 report β^+ decay.

Additional information 1.

Data are from 1957Mi01, 1957Mi67, and 1970To11 for the γ ray and 1950Wi13, 1955Ha52, and 1970To11 for the half-life.
Others: 1970Ag02; 1975ViZP.

Experimental methods:

1950Wi13: from ^{153}Eu(α,n), E(α)=19-38 MeV and Gd(p,xn), E(p)=10 MeV. β^+ observed in spectrograph.

1955Ha52: from (p,xn) on enriched Gd targets with chemical separation. Half-life measured.

1957Mi01: From (p,xn) with chemical separation. ce measured using magnetic spectrometer. Report 88-keV G.

1957Mi67: From (p,xn) with chemical separation. ce measured using magnetic spectrograph. Report 88-keV G.

1970To11: From ^{157}Gd(p,2n) on enriched (93.7%) and natural (15.6%) targets with chemical separation. ce measured using magnetic spectrometer. Report half-life and multipolarity of 88-keV G.

^{156}Tb Levels

E(level)	J^π[†]	$T_{1/2}$	Comments
0.0[‡]	3^-	5.35 d *10*	$T_{1/2}$: From Adopted Levels.
88.4[#]	(0^+)	5.3 h *2*	%IT<100; $\%\varepsilon+\%\beta^+>0$ $T_{1/2}$: From Adopted Levels and based on data of 1950Wi13, 1955Ha52, and 1970To11. %IT: Value unknown, but it is <100, since β^+ decay has been reported (1950Wi13,1970Ag02). 1950Wi13 report Eβ+≈1400 which agrees with Q value of 2544 *4*, but their limit of Iβ^+<25% is not useful since Iε/Iβ^+>7 already requires Iβ^+<13%. 1970Ag02 report Eβ+=2640.0 *5*, which is much too high, so their value of Iβ^+=0.024% *8* may also be in error.

† From ^{156}Tb Adopted Levels.
‡ Band(A): $K^\pi=3^-$ Bandhead, conf=π3/2[411]+ν3/2[521].
# Band(B): $K^\pi=0^+$ Bandhead, conf=π3/2[411]-ν3/2[402].

$\gamma(^{156}Tb)$

Iγ normalization, I(γ+ce) normalization: evaluator assumes that 100% of the IT decays are through the 88-keV γ transition. Thus, this value represents an upper limit.

E_γ	I_γ[‡]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[†]	α[#]	Comments
88.4	100	88.4	(0^+)	0.0	3^-	E3	86.2	α(K)=5.21 *8*; α(L)=61.6 *9*; α(M)=15.53 *22*; α(N+..)=3.94 *6* α(N)=3.50 *5*; α(O)=0.440 *7*; α(P)=0.000474 *7*

† From ^{156}Tb Adopted γ radiations.
‡ For absolute intensity per 100 decays, multiply by <0.0115.
# 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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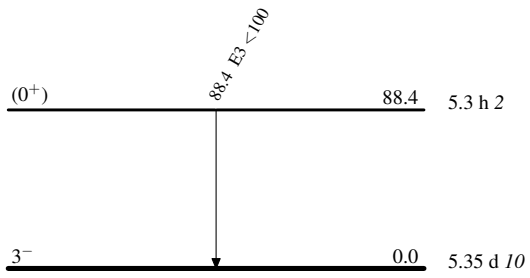
Decay Scheme

Intensities: $I_{(\gamma+ce)}$ per 100 decays through this branch

%IT=100.0



$^{156}_{65}Tb_{91}$

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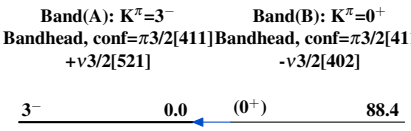

$^{156}_{65}Tb_{91}$