

¹⁶⁸Tb β⁻ decay 1999As03

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Coral M. Baglin	NDS 111, 1807 (2010)	15-Jun-2010

Parent: ¹⁶⁸Tb: E=0.0; J^π=(4⁻); T_{1/2}=8.2 s 13; Q(β⁻)=6070 SY; %β⁻ decay=100.0

Source from on-line isotope separation of products from 20-MeV proton-induced fission of ²³⁸U; measured E_γ, I_γ, I(K x ray), x-γ coin, βγ coin, γγ coin, Kα x ray(t), γ(t).

The decay scheme is from 1999As03. Feeding of J=3 and 5 members of the octupole band would also be expected. The decay scheme is presumably so incomplete that normalization would not be meaningful.

¹⁶⁸Dy Levels

E(level) [†]	J ^π [‡]
0.0 [#]	0 ⁺
0.0+x	(3 ⁺)
74.96 [#] 6	(2 ⁺)
227.03+x 16	(4 ⁻)
248.33 [#] 10	(4 ⁺)

[†] From E_γ.

[‡] From Adopted Levels.

[#] Band(A): g.s. band (1999As03).

β⁻ radiations

E(decay)	E(level)
(2921 ^{†‡} SY)	227.03+x

[†] Existence of this branch is questionable.

[‡] Estimated for a range of levels.

γ(¹⁶⁸Dy)

E _γ [†]	I _γ [†]	E _i (level)	J _i ^π	E _f	J _f ^π	Mult.	α [‡]	Comments
74.96 6	50 10	74.96	(2 ⁺)	0.0	0 ⁺	[E2]	8.18	α(K)=2.08 3; α(L)=4.69 7; α(M)=1.126 17; α(N+...)=0.282 4
173.37 8	100 19	248.33	(4 ⁺)	74.96	(2 ⁺)	[E2]	0.383	α(N)=0.252 4; α(O)=0.0299 5; α(P)=8.99×10 ⁻⁵ 13 α(K)=0.242 4; α(L)=0.1083 16; α(M)=0.0255 4; α(N+...)=0.00648 10
227.03 16	56 15	227.03+x	(4 ⁻)	0.0+x	(3 ⁺)	[E1]	0.0349	α(N)=0.00575 9; α(O)=0.000718 11; α(P)=1.117×10 ⁻⁵ 16 α(K)=0.0295 5; α(L)=0.00424 6; α(M)=0.000927 13; α(N+...)=0.000244 4 α(N)=0.000212 3; α(O)=3.00×10 ⁻⁵ 5; α(P)=1.515×10 ⁻⁶ 22

[†] From 1999As03. On this intensity scale, I(Kα x ray, Dy)=184 28, somewhat higher than expected from the decay scheme; however, the level scheme is almost certainly incomplete. All three γ's observed are coincident with each other and with K x ray(Dy).

Continued on next page (footnotes at end of table)

^{168}Tb β^- decay [1999As03](#) (continued)

$\gamma(^{168}\text{Dy})$ (continued)

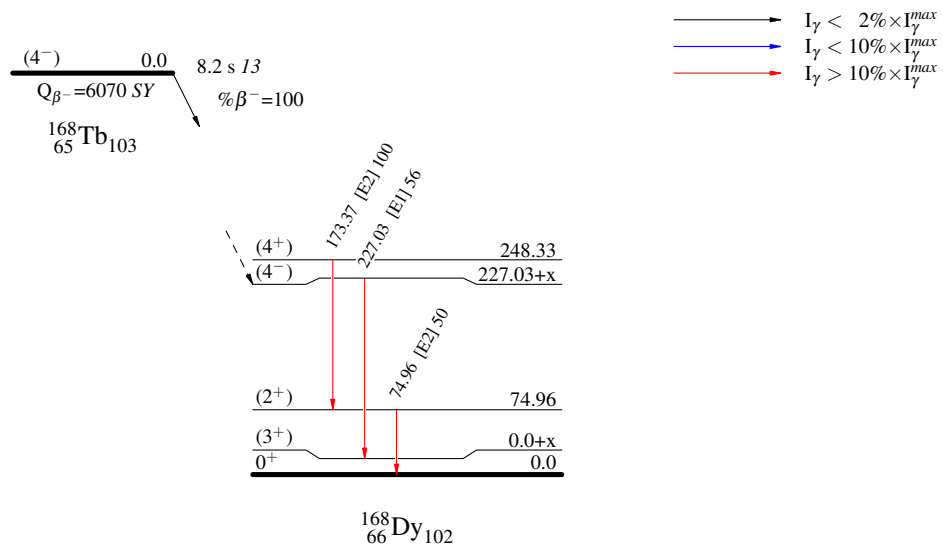
‡ Total theoretical internal conversion coefficients, calculated using the BrIcc code ([2008Ki07](#)) with Frozen orbital approximation based on γ -ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.

^{168}Tb β^- decay 1999As03

Decay Scheme

Intensities: Relative I_γ

Legend



$^{168}\text{Tb} \beta^- \text{ decay } 1999\text{As03}$

Band(A): g.s. band
(1999As03)

(4⁺) 248.33

173

(2⁺) 74.96

75

0⁺ 0.0

$^{168}_{66}\text{Dy}_{102}$