^{163}Gd β^- decay (68 s) 1982Ge07

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	C. W. Reich, Balraj Singh	NDS 111, 1211 (2010)	12-Apr-2010

Parent: ^{163}Gd: E=0.0; J^π=(5/2$^-$,7/2$^+$); $T_{1/2}$=68 s *3*; Q(β^-)=3170 *70*; %β^- decay=100.0

^{163}Gd-J^π,$T_{1/2}$,Q(β^-): From the ^{163}Gd Adopted Levels.

Additional information 1.

1982Ge07: ^{163}Gd formed by ^{252}Cf SF decay and separated by chemistry. Measured Eγ, Iγ. Tentative decay scheme is proposed (evaluators) based on first few levels in (t,α).

^{163}Tb Levels

E(level)	J^π‡
0.0	3/2$^+$
54†	5/2$^+$
128† *5*	(7/2)$^+$
342 *2*	(7/2)$^-$
373.37 *15*	(5/2)$^+$

† From (t,α).
‡ From Adopted Levels.

γ(^{163}Tb)

Iγ normalization: from Iγ(287γ)= 25% *3* (1982Ge07). The value by 1982Ge07 is based on time dependence of Iγ(287γ)/Iγ(^{163}Tb 351γ) and Iγ(^{163}Tb 351γ)= 26% *3*.

E$_\gamma$	I$_\gamma$@	E$_i$(level)	J_i^π	E$_f$	J_f^π
214.0†& *2*	46 *3*	342	(7/2)$^-$	128	(7/2)$^+$
287.79†& *8*	100	342	(7/2)$^-$	54	5/2$^+$
373.37#& *15*	25 *2*	373.37	(5/2)$^+$	0.0	3/2$^+$
x396.4 *3*	12 *3*				
x575.1 *2*	11.3 *8*				
x632.9 *7*	18 *3*				
x1167.7 *3*	20 *2*				
x1234.4 *3*	10 *2*				
x1311.6 *3*	13 *3*				
x1562.1 *3*	36 *3*				
x1684.5‡ *3*	32‡ *3*				

† Tentative placement (evaluators) based on a level at 344 in (t,α).
‡ This γ ray may have a contribution from an impurity (evaluators) since decay time of 181 s *9* (1982Ge07) is larger by a factor of ≈3 from weighted average $T_{1/2}$=68 s *3* deduced from ten other γ rays.
# Tentative placement (1992Ga15) based on a level at 373 in (t,α).
@ For absolute intensity per 100 decays, multiply by 0.25 *3*.
& Placement of transition in the level scheme is uncertain.
x γ ray not placed in level scheme.

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Decay Scheme

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