^{143}Gd ε decay (39 s) 1978Fi02

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	E. Browne, J. K. Tuli	NDS 113, 715 (2012)	31-May-2011

Parent: ^{143}Gd: E=0.0; $J^\pi=(1/2)^+$; $T_{1/2}$=39 s *2*; Q(ε)=6.01×10^3 *20*; %ε+%$β^+$ decay=100.0

Measured: γ, γγ.

Decay scheme is from 1978Fi02, level feedings were deduced by evaluators assuming no ε to g.s. ($1/2^+$ to $5/2^+$). Since Q(ε) is large compared with level energies, the decay scheme may not be complete.

^{143}Eu Levels

E(level)	J^π†
0.0	$5/2^+$
258.82 *3*	$(3/2)^+$
463.61 *5*	$(1/2)^+$
812.9 *1*	$(1/2,3/2)^+$
1543.0? *4*	$(1/2,3/2)^+$
1723.6? *4*	$(1/2,3/2)^+$

† From Adopted Levels.

ε,$β^+$ radiations

E(decay)	E(level)	Iβ+ †	Iε†	Log *ft*	I(ε+β+)†	Comments
(4.29×10^3 *20*)	1723.6?	0.6 *2*	0.3 *1*	6.26 *18*	0.9 *3*	av Eβ=1481 *93*; εK=0.30 *4*; εL=0.043 *6*; εM+=0.0125 *16*
(4.47×10^3 *20*)	1543.0?	0.7 *3*	0.32 *13*	6.30 *20*	1.0 *4*	av Eβ=1565 *93*; εK=0.27 *4*; εL=0.039 *5*; εM+=0.0112 *14*
(5.20×10^3 *20*)	812.9	4.8 *6*	1.3 *2*	5.83 *10*	6.1 *7*	av Eβ=1905 *94*; εK=0.177 *21*; εL=0.025 *3*; εM+=0.0074 *9*
(5.55×10^3 *20*)	463.61	27.8 *18*	5.8 *8*	5.22 *9*	33.6 *20*	av Eβ=2070 *95*; εK=0.146 *17*; εL=0.0211 *24*; εM+=0.0061 *7*
(5.75×10^3 *20*)	258.82	49.2 *20*	9.1 *11*	5.06 *9*	58.3 *20*	av Eβ=2166 *95*; εK=0.131 *15*; εL=0.0189 *21*; εM+=0.0055 *6*

† Absolute intensity per 100 decays.

γ(^{143}Eu)

Iγ normalization: ΣI(γ+ce)(g.s.)=100.

Additional information 1.

E_γ	I_γ‡	E_i(level)	J_i^π	E_f	J_f^π	Mult.	α†	Comments
204.77 *5*	25.9 *19*	463.61	$(1/2)^+$	258.82	$(3/2)^+$	M1,E2	0.223 *24*	α(K)=0.18 *4*; α(L)=0.037 *8*; α(M)=0.0083 *19*; α(N+..)=0.0022 *5* α(N)=0.0019 *4*; α(O)=0.00028 *5*; α(P)=1.8×10^{-5} *6*
258.81 *3*	100	258.82	$(3/2)^+$	0.0	$5/2^+$	(M1)	0.1305	α(K)=0.1107 *16*; α(L)=0.01555 *22*; α(M)=0.00336 *5*; α(N+..)=0.000903 *13* α(N)=0.000768 *11*; α(O)=0.0001221 *17*; α(P)=1.216×10^{-5} *17* Mult.: α(K)exp=0.22 *10* (1976Wi09).
463.7 *1*	13.2 *10*	463.61	$(1/2)^+$	0.0	$5/2^+$			

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^{143}Gd ε decay (39 s) 1978Fi02 (continued)

γ(^{143}Eu) (continued)

E_γ	I_γ[‡]	E_i(level)	J_i^π	E_f	J_f^π
554.1 *3*	1.0 *5*	812.9	$(1/2,3/2)^+$	258.82	$(3/2)^+$
812.9 *1*	7.2 *7*	812.9	$(1/2,3/2)^+$	0.0	$5/2^+$
1284.2 *4*	1.4 *5*	1543.0?	$(1/2,3/2)^+$	258.82	$(3/2)^+$
1464.8 *4*	1.2 *4*	1723.6?	$(1/2,3/2)^+$	258.82	$(3/2)^+$

† Additional information 2.
‡ For absolute intensity per 100 decays, multiply by 0.749 *7*.

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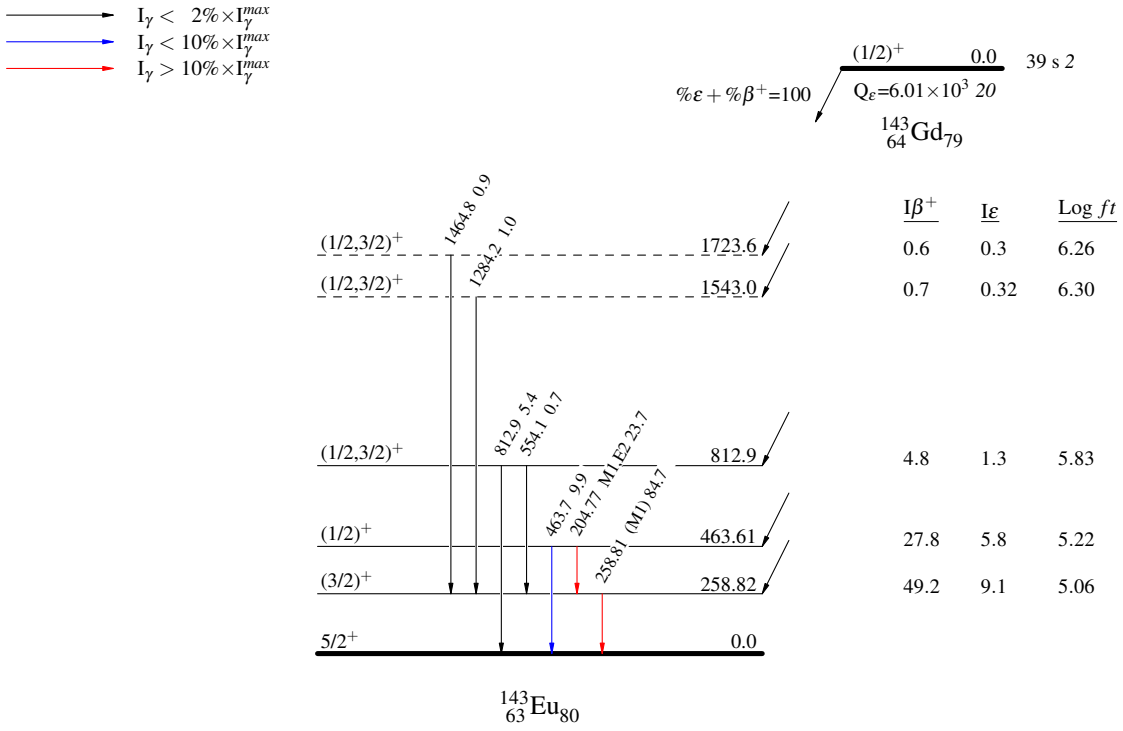
Decay Scheme

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



	Iβ+	Iε	Log *ft*
1723.6	0.6	0.3	6.26
1543.0	0.7	0.32	6.30
812.9	4.8	1.3	5.83
463.61	27.8	5.8	5.22
258.82	49.2	9.1	5.06