^{141}Eu ε decay (2.7 s)   1977De25,1989Gi06

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	N. Nica	NDS 187,1 (2023)	12-Oct-2022

Parent: ^{141}Eu: E=96.45 7; J$^\pi$=11/2$^-$; T$_{1/2}$=2.7 s 3; Q(ε)=6008 14; %ε+%β^+ decay=13 3

^{141}Eu-Q(ε): From 2021Wa16.

^{141}Eu-%ε+%β^+ decay: 13% +4−2 (1989Gi06); branching=67% in 1977De25.

Measured: γ, K x ray (1977De25,1989Gi06).

Other: 1973VaYZ.

ε+β^+ feedings were determined from balance of Iγ for each level and absolute I(1595γ)=0.4% deduced from measurement of growth and decay of 196.6γ in daughter ^{141}Sm activity.

^{141}Sm Levels

E(level)	J$^{\pi\dagger}$	T$_{1/2}$†	E(level)	J$^{\pi\dagger}$	E(level)	J$^{\pi\dagger}$
0.0	1/2$^+$	10.2 min 2	545.2 11	(7/2$^-$)	1180.2? 12	(9/2,11/2$^-$)
1.6 3	3/2$^+$		829.5 3	(7/2)	1633.9? 5	(9/2,11/2)$^-$
175.8 11	11/2$^-$	22.6 min 2	1001.5 3		1771.0? 11	(9/2,11/2)$^-$
395.60 20	(5/2,3/2)$^+$		1063.5? 11	(9/2,11/2)$^-$		

† Adopted values.

ε,β^+ radiations

E(decay)	E(level)	I$\beta^{+\,\dagger}$	I$\varepsilon^\dagger$	Log ft	I(ε+β^+)†	Comments
(4334 14)	1771.0?	0.28 9	0.14 4	5.44 15	0.42 13	av Eβ=1502.9 66; εK=0.2747 24; εL=0.0394 4; εM+=0.01132 10
(4471 14)	1633.9?	0.31 8	0.13 4	5.49 13	0.44 12	av Eβ=1566.6 66; εK=0.2529 22; εL=0.0362 3; εM+=0.01041 9
(4924 14)	1180.2?	0.09 3	0.027 9	6.25 16	0.12 4	av Eβ=1778.3 66; εK=0.1934 16; εL=0.02766 23; εM+=0.00795 7
(5041 14)	1063.5?	0.6 2	0.1 1	5.54 20	0.7 3	av Eβ=1833.0 66; εK=0.1808 15; εL=0.02585 21; εM+=0.00743 6
(5103 14)	1001.5	0.11 6	0.029 14	6.26 23	0.14 7	av Eβ=1862.0 66; εK=0.1745 14; εL=0.02495 20; εM+=0.00717 6
(5929 14)	175.8	10 3	1.5 4	4.69 13	11 3	av Eβ=2251.5 67; εK=0.1116 8; εL=0.01592 12; εM+=0.00457 4

† Absolute intensity per 100 decays.

γ(^{141}Sm)

Iγ normalization: from I(1595γ)=0.4% deduced from measurement of growth and decay of 196.6γ in daughter ^{141}Sm activity.
I(395.6γ+394.0γ)=95 20; I(395.6γ)/I(394.0γ)=0.182 15 from ^{141}Eu g.s. ε decay.

E$_\gamma$	I$_\gamma^{\dagger\ddagger}$	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$	Comments
116.0 6	10 3	1180.2?	(9/2,11/2$^-$)	1063.5?	(9/2,11/2)$^-$	%Iγ=0.076 29
(174.2)		175.8	11/2$^-$	1.6	3/2$^+$	%Iγ=0.54 14
369.5 2	40 7	545.2	(7/2$^-$)	175.8	11/2$^-$	%Iγ=0.30 9
394.0 2	80 17	395.60	(5/2,3/2)$^+$	1.6	3/2$^+$	%Iγ=0.60 19
395.6 2	15 4	395.60	(5/2,3/2)$^+$	0.0	1/2$^+$	%Iγ=0.11 4
433.9 2	57 20	829.5	(7/2)	395.60	(5/2,3/2)$^+$	%Iγ=0.43 18

Continued on next page (footnotes at end of table)

^{141}Eu ε decay (2.7 s)   **1977De25,1989Gi06 (continued)**

$\gamma(^{141}$Sm$)$ (continued)

E_γ	I_γ[†‡]	E_i(level)	J_i^π	E_f	J_f^π	Comments
518.8 5	59 30	1063.5?	(9/2,11/2)$^-$	545.2	(7/2$^-$)	%Iγ=0.45 25
605.9 2	19 7	1001.5		395.60	(5/2,3/2)$^+$	%Iγ=0.14 6
635.6 5	6 2	1180.2?	(9/2,11/2$^-$)	545.2	(7/2$^-$)	%Iγ=0.045 18
804.4 3	58 8	1633.9?	(9/2,11/2)$^-$	829.5	(7/2)	%Iγ=0.44 12
^{x}882.9 2	72 9					%Iγ=0.54 14
887.3 3	38 8	1063.5?	(9/2,11/2)$^-$	175.8	11/2$^-$	%Iγ=0.29 9
1225.7 5	2 1	1771.0?	(9/2,11/2)$^-$	545.2	(7/2$^-$)	%Iγ=0.015 8
1595.3 3	53 10	1771.0?	(9/2,11/2)$^-$	175.8	11/2$^-$	%Iγ=0.40 12
						Iγ: Iγ=0.4% (1977De25).

† Relative to Iγ(96.4γ)=100 in IT decay.

‡ For absolute intensity per 100 decays, multiply by 0.0076 18.
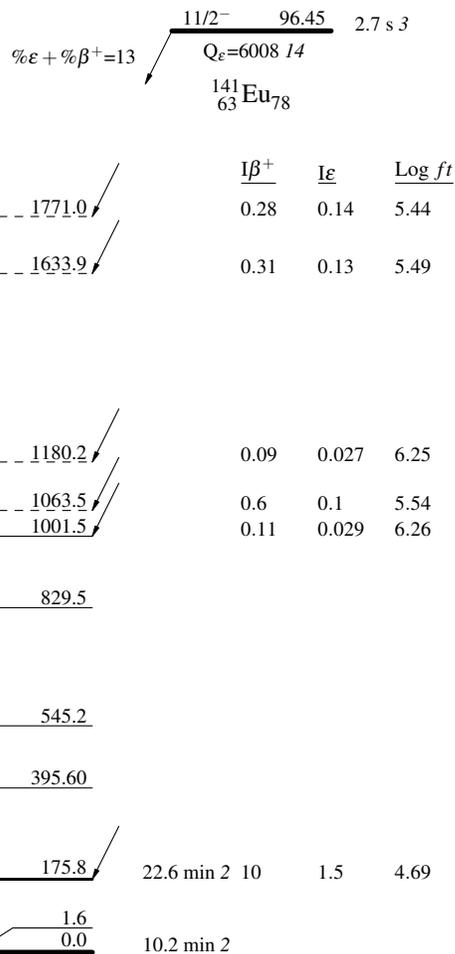
^{x} γ ray not placed in level scheme.

^{141}**Eu** ε **decay (2.7 s)**   **1977De25,1989Gi06**

Decay Scheme

Intensities: I_γ per 100 parent decays

Legend

→ $I_\gamma < 2\% \times I_\gamma^{max}$
→ $I_\gamma < 10\% \times I_\gamma^{max}$
→ $I_\gamma > 10\% \times I_\gamma^{max}$
--→ γ Decay (Uncertain)

$^{141}_{62}Sm_{79}$