^{235}Pu α decay (25.3 min) 1952Or03,1957Th10

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh, Jagdish K. Tuli, and Edgardo Browne	NDS 185, 560 (2022)	31-Aug-2022

Parent: ^{235}Pu: E=0; $J^{\pi}=(5/2^{+})$; $T_{1/2}$=25.3 min *5*; Q(α)=5951 *20*; %α decay=0.0027 *5*

^{235}Pu-J^{π},$T_{1/2}$: From ^{235}Pu Adopted Levels in the ENSDF database (Feb 2014 update).

^{235}Pu-Q(α): From 2021Wa16.

^{235}Pu-%α decay: %α=0.0027 *5* for the decay of ^{235}Pu from I(α)/I(K x ray) in 1957Th10 and, ε(L+)/ε(K)(theory)=0.36. 1957Th10 gave partial half-life of 1.7 y *4*, and %α=0.0030 *6* using ε(L)/ε(K)=0.23. Note that %α=0.0028 *7* in ^{235}Pu Adopted Levels in the ENSDF database (Feb 2014 update).

1957Th10: ^{235}Pu activity produced in ^{233}U(α,2n) and ^{235}U(α,4n) at the Crocker Laboratory 60-inch cyclotron. Measured Eα, %α decay mode and half-life of ^{235}Pu decay. Except for the 5850 group, no other α group with I$\alpha\geq$5% found in Eα=5.5-6.5 MeV range.

Evaluators′ note about the decay scheme: except for the energy and approximate intensity of one α transition, no other spectral information is available in literature.

^{231}U Levels

E(level)	J^{π}	Comments
0	$(5/2^{-})$	
0+x	$(5/2^{+})$	E(level): x=40 *40* from energy systematics of neighboring nuclides.

α radiations

Eα	E(level)	Iα[†]	Comments
5850 *20*	0+x	≈100	Eα: from 1957Th10. Other: 5850 *30* (1952Or03). Iα: only one α branch has been measured. Other: ≈80 (1972El21, systematics of α decay).

[†] For absolute intensity per 100 decays, multiply by 0.000027 *5*.