^{234}Cm α decay 2002CaZU,2016Ka13

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	C. Morse	NDS 197,259 (2024).	26-Sep-2023

Parent: ^{234}Cm: E=0.0; $T_{1/2}$=49 s *+15−9*; Q(α)=7365 *9*; %α decay≈40

^{234}Cm-$T_{1/2}$: From 2016Ka13. Other: 51 s *12* (2002CaZU).

^{234}Cm-Q(α): From 2021Wa16.

^{234}Cm-%α decay: From 2002CaZU.

^{234}Cm-%α decay: 2002CaZU gives the measured ratio for α/spontaneous-fission decay of ^{234}Cm as 94 *9*/6 *2*, but also assumes a 50% electron-capture branch. The evaluator has chosen to approximate the α-branching as ≈40%.

2002CaZU: First observation of ^{234}Cm using ^{198}Pt(^{40}Ar,4n) reaction at GSI for several bombarding energies. Determined decay properties by analysis of correlated α-decay chains. Measured E_α, α(t), $\alpha\alpha$.

2016Ka13: ^{230}Pu produced through various decay paths originating with ^{234}Bk produced at RIKEN through the ^{197}Au(^{40}Ar,3n) reaction. Reaction products were attached to KCl aerosols and flowed through a gas-handling system, then deposited on a rotating detector apparatus to measure decay products. Measured E_α, $\alpha\alpha$ and α-SF coincidence, time distribution between decay generations.

^{230}Pu Levels

E(level)	J^π[†]	Comments
0.0	0^+	%α≈100; %ε<27 %ε: Estimated from balance of α decays populating and depopulating ^{230}Pu in 2002CaZU.
99 *22*	(2^+)	E(level): From ΔE_α.

[†] From Adopted Levels.

α radiations

Eα	E(level)	Iα[‡]	HF[†]	Comments
7140 *20*	99	15	2.3	Eα,Iα: From 2016Ka13.
7239 *9*	0.0	85	1	Eα: Weighted average of 7239 keV *10* (2002CaZU) and 7240 keV *20* (2016Ka13). Iα: From 2016Ka13.

[†] The nuclear radius parameter $r_0(^{230}Pu)$=1.381 *11* is deduced by assuming HF=1.0 for the ground-state to ground-state alpha decay branch.

[‡] For absolute intensity per 100 decays, multiply by ≈0.40.