^{247}Fm α decay (5.1 s) 2006He27

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	C. D. Nesaraja, E. A. Mccutchan	NDS 121, 695 (2014)	30-Sep-2013

Parent: ^{247}Fm: E=45 *7*; $J^{\pi}=(1/2^+)$; $T_{1/2}$=5.1 s *2*; Q(α)=8258 *10*; %α decay≤86.0

^{247}Fm-E: from 2006He27. 49 keV *7* is obtained from difference in Q values for the ground state to ground state and ground state to isomeric state transitions between ^{251}No and ^{247}Fm while 40 keV *9* is derived from difference in ^{247}Fm ground state Q value with Qα for the ^{247}Fm isomeric decay.

^{247}Fm-$T_{1/2}$: from recoil-α(t) in 2006He27. Others: 4.3 s *4* (2004He28, earlier result by same first author as 2006He27), 9.2 s *23* (1967Fl15).

^{247}Fm-%α decay: from %IT=12 *2* measured in 2006He27 based on number of correlations between $\alpha(^{251m}No)$-$\alpha(^{247m}Fm)$ and $\alpha(^{251m}No)$-$\alpha(^{247}Fm)$.

2006He27: ^{247}Fm activity from α decay chain of ^{255}Rf produced in ^{207}Pb(^{50}Ti,2n), E(^{50}Ti)=4.85 MeV/nucleon and α decay of ^{251}No produced in ^{206}Pb(^{48}Ca,3n), E(^{48}Ca)=4.8 MeV/nucleon. Isotopes separated with the velocity filter SHIP and implanted into a position-sensitive 16-strip PIPS detector. Measured Eα, Iα, recoil-α coincidences, recoil-α(t), conversion electrons with the PIPS detector and Eγ, Iγ, $\gamma\gamma$ and $\alpha\gamma\gamma$ coincidences using a HPGe Clover detector. Early results presented in 2005KuZZ, 2004He28.

Others: 1997He29, 1967Fl15.

^{243}Cf Levels

E(level)	J^{π}	Comments
0.0	$(1/2^+)$	J^{π}: unhindered α decay from proposed $1/2^+[631]$ isomeric state in ^{247}Fm.

α radiations

Eα	E(level)	Iα[‡]	HF[†]	Comments
8172 *16*	0.0	100	≥1.1	Eα: ΔE=16 keV from 5 keV statistical and 15 keV systematic uncertainties combined in quadrature. Others: 8170 keV *15* (2004He28), 8180 keV *30* (1967Fl15).

[†] $r_0(^{243}Cf)$=1.49 *2*, extrapolated from r_0 systematics given in 1998Ak04.

[‡] For absolute intensity per 100 decays, multiply by $\leq 8.6\times10^{-1}$.