^{251}Fm α decay 1973Ah02

History			
Type	Author	Citation	Literature Cutoff Date
Full Evaluation	C. D. Nesaraja	NDS 125, 395 (2015)	31-Mar-2014

Parent: ^{251}Fm: E=0.0; J^π=(9/2$^-$); $T_{1/2}$=5.30 h *8*; Q(α)=7425.1 *20*; %α decay=1.80 *13*

^{251}Fm-J^π,$T_{1/2}$: From Adopted Levels in ^{251}Fm (2013Br09).

^{251}Fm-Q(α): From 2012Wa38.

1973Ah02: ^{251}Fm was produced by bombarding 32-MeV α on ^{249}Cf The α-particle decay was measured with the Argonne magnetic alpha spectrometer (FWHM=5 keV) and 14 position-sensitive Au-Si surface barrier detectors. γ-rays associated with the α decay was identified by α-γ coincidence measurements for which the γ′s were detected with a Ge(Li)diode.

^{247}Cf Levels

E(level)	J^π	$T_{1/2}$	Comments
0.0†	(7/2$^+$)	3.11 h *3*	$T_{1/2}$: From α decay measurement of ^{247}Cf (1984Ah02).
55.00† *11*	(9/2$^+$)		
122.09† *11*	(11/2$^+$)		
201.0† *4*	(13/2$^+$)		
383.2‡ *3*	(5/2$^+$)		
427.2‡ *4*	(7/2$^+$)		
480.40# *9*	(9/2$^-$)		
531.99# *21*	(11/2$^-$)		
551.0‡ *10*	(11/2$^+$)		
595# *4*	(13/2$^-$)		
634‡ *5*	(13/2$^+$)		
678.0@ *6*	(7/2$^-$)		
738.0@ *8*	(9/2$^-$)		

† Band(A): 7/2[624] band member.
‡ Band(B): 5/2[622] band member.
# Band(C): 9/2[734] band member.
@ Band(D): 7/2[743] band member.

α radiations

α branching was deduced by 1978Ah02 as 1.80% *13* from measured Einsteinium K x-ray/α ratio of 40 *2* and estimated Einsteinium K x-ray intensity of 0.733 *39* per ε decay.

Eα†	E(level)	Iα‡@	HF#	Eα†	E(level)	Iα‡@	HF#
6580 *3*	738.0	0.26 *4*	39 *7*	6886 *2*	427.2	1.7 *1*	141 *14*
6639 *3*	678.0	0.56 *6*	34 *5*	6929 *2*	383.2	1.8 *1*	204 *20*
6682 *4*	634	0.07 *3*	4.3×10^2 *19*	7107 *5*	201.0	≈0.05	≈41638
6721 *3*	595	0.44 *4*	102 *13*	7185 *3*	122.09	0.29 *3*	1.49×10^4 *20*
6763 *3*	551.0	0.38 *6*	184 *33*	7252 *3*	55.00	0.93 *8*	8.5×10^3 *10*
6783 *2*	531.99	4.8 *2*	17.6 *16*	7306 *3*	0.0	1.5 *1*	8.69×10^3 *88*
6834 *2*	480.40	87.0 *9*	1.63 *13*				

† From 1973Ah02. The original energies have been increased by 1 keV, as recommended by 1991Ry01, due to change in

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^{251}Fm α decay 1973Ah02 (continued)

α radiations (continued)

calibration energy.

‡ Intensity per 100 α decays measured by 1973Ah02.

$r_0(^{247}Cf)$=1.4725 *55*, unweighted average of $r_0(^{248}Cf)$=1.4670 *8* and $r_0(^{246}Cf)$=1.478 *14* (1998Ak04), is used in the calculations of HF.

@ For absolute intensity per 100 decays, multiply by 0.0180 *13*.