^{252}Cf SF decay 2009Hw03

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	C. W. Reich	NDS 113, 2537 (2012)	1-Mar-2012

Parent: ^{252}Cf: E=0; $J^\pi=0^+$; $T_{1/2}$=2.645 y *8*; %SF decay=3.092 *8*

Additional information 1.

Unless noted otherwise, all the data listed here are from 2009Hw03.

Excited states populated in deexcitation of highly excited fragments from the spontaneous fission of a 62−μCi source of ^{252}Cf.

Radiation studied using the Gammasphere array at ANL with 101 Compton-suppressed HPGe detectors. Data obtained as a part of a study of excited states in ^{91,92,93}Rb. Measured Eγ, $\gamma\gamma\gamma$, (Pm x-ray)$\gamma\gamma$ coin, cross coincidences between Rb and Pm. Report 5 excited states with connecting γ's in ^{156}Pm but no Iγ values, owing to experimental difficulties.

The evaluator has assumed that the band structure is based on the ^{156}Pm g.s., for which $J^\pi=4^{(+)}$.

Properties of this band have been discussed by 2011So14.

^{156}Pm Levels

E(level)[†]	J^π[‡]
0[#]	$4^{(+)}$
85.6[#]	(5^+)
189.2[#]	(6^+)
313.9[#]	(7^+)
453.3[#]	(8^+)
618.7[#]	(9^+)

[†] From a least-squares fit by the evaluator to the listed Eγ values.

[‡] Values assigned by the evaluator assuming that the levels form a rotational-band sequence based on the ^{156}Pm g.s.

[#] Band(A): Assumed K=4 (g.s.) band. α=8.51 keV; β=+3.2 eV.

$\gamma(^{156}$Pm)

Eγ	Iγ	E$_i$(level)	J_i^π	E$_f$	J_f^π
85.6	100	85.6	(5^+)	0	$4^{(+)}$
103.6	100	189.2	(6^+)	85.6	(5^+)
124.7	100	313.9	(7^+)	189.2	(6^+)
139.4		453.3	(8^+)	313.9	(7^+)
165.3		618.7	(9^+)	453.3	(8^+)
264.1		453.3	(8^+)	189.2	(6^+)
304.8		618.7	(9^+)	313.9	(7^+)

^{252}Cf SF decay 2009Hw03

Level Scheme

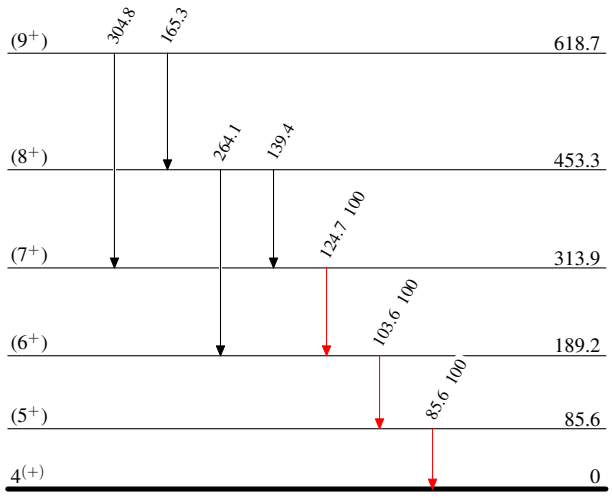
Intensities: Relative I_γ

Legend

$I_\gamma < 2\% \times I_\gamma^{max}$

$I_\gamma < 10\% \times I_\gamma^{max}$

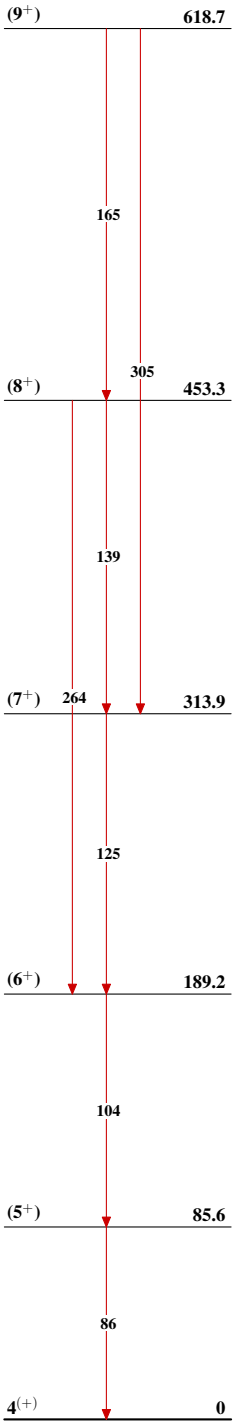
$I_\gamma > 10\% \times I_\gamma^{max}$



$^{156}_{61}Pm_{95}$

^{252}Cf SF decay 2009Hw03

Band(A): Assumed K=4 (g.s.) band



$^{156}_{61}Pm_{95}$