

$^{241}\text{Pu}(\text{n},\text{F}\gamma)$ 2007Si27

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	E. A. Mccutchan	NDS 152, 331 (2018)	1-Apr-2018

2007Si27: E(n)=thermal. Fission fragments separated with the Lohengrin mass spectrometer and identified by TOF and ΔE measurements. Measured $E\gamma$, $I\gamma$ with two HPGe Clover detectors and Ex-ray, Ix-ray, Ece, Ice using two liquid-nitrogen-cooled Si(Li) detectors.

 ^{136}Sb Levels

E(level) [†]	$J^{\pi\ddagger}$	$T_{1/2}$	Comments
0	(1 ⁻)		
53.4 3	(2 ⁻)		
226.4 4	(4 ⁻)		
277.8 7	(6 ⁻)	0.48 μs 10	$T_{1/2}$: from sum of implant- γ (t) using 173 γ and implant-x-ray(t) using $K\alpha$ x-rays (2007Si27).

[†] From $E\gamma$.

[‡] From the Adopted Levels.

 $\gamma(^{136}\text{Sb})$

E_{γ}	I_{γ}	$E_i(\text{level})$	J^{π}_i	E_f	J^{π}_f	Mult.	Comments
51.4 5		277.8	(6 ⁻)	226.4	(4 ⁻)	E2	Mult.: see comment on 53.4 γ .
53.4 3	9.5 21	53.4	(2 ⁻)	0	(1 ⁻)	M1	Mult.: $I(K\alpha \text{ x-ray})/I(\text{ce(L)}+\text{ce(M)})=1.7 \ 4$ for the 53.4 γ and 51.4 γ doublet is consistent only with the two transitions having different multipolarities; theoretical ratios are 1.4 1 for E2-E1 and 1.6 1 for E2-M1. The intensity ratio $I\gamma(173\gamma)/I\gamma(53.4\gamma)=10.5 \ 23$ is consistent with M1 multipolarity for the 53.4 γ ; theoretical ratios are 9.1 6 for M1 and 7.2 5 for E1, taking E2 multipolarity for the 173 γ . Having fixed M1 for the multipolarity of the 53.4 γ , the 51.4 γ is then E2.
173.0 3	100	226.4	(4 ⁻)	53.4	(2 ⁻)	E2	E_{γ} : ΔE estimated by evaluator from Fig. 1 of 2007Si27. $\alpha(K)_{\text{exp}}=0.17 \ 4$ (2007Si27). Mult.: From $\alpha(K)_{\text{exp}}$.

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Level Scheme

Intensities: Type not specified

Legend

- $I_\gamma < 2\% \times I_\gamma^{\text{max}}$
- $I_\gamma < 10\% \times I_\gamma^{\text{max}}$
- $I_\gamma > 10\% \times I_\gamma^{\text{max}}$

