

^{248}Cm SF decay **1999Da13**

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	E. Browne, J. K. Tuli	NDS	108,2173 (2007)	1-Oct-2006

Parent: ^{248}Cm : $E=0.0$; $J^\pi=0^+$; $T_{1/2}=3.48\times 10^5$ y 6; %SF decay=?

Includes ^{252}Cf SF decay ([1974CIZX](#),[1970Jo20](#)).

1999Da13: Measured γ , $\gamma\gamma$, $\gamma\gamma(\theta)$, lin pol using Eurogam-2 array with 52 Compton-suppressed Ge detectors and four LEPS detectors.

2005Fo17,**2005Hw06**,**2004Hw01**: ^{252}Cf SF decay, $\gamma\gamma(t)$.

1974CIZX,**1970Jo20**: Measured: ^{252}Cf SF decay, γ , $\gamma(t)$, $\gamma\gamma$, K x ray A and Z identification from multiparameter coincidences.

 ^{137}Xe Levels

E(level)	$J^\pi^\dagger$	$T_{1/2}$	Comments
0	$7/2^-$		
1220.0 3	$11/2^-$		
1620.2 5	$15/2^-$		
1934.2 6	$19/2^-$	10.1 ns 9	$T_{1/2}$: From 2005Hw06 , 2004Hw02 ; others: 8.1 ns 4 and 7.8 ns 15 (1974CIZX), 7.8 ns 8 (2005Fo17), 9 ns (1970Jo20). 7.8 ns 15 for 400.1 γ (1974CIZX), 9 ns (1970Jo20).
1978.4 9			
2103.2 8			
2204.0 6	$(19/2^-)$		
2980.0 6	$(23/2^-)$		
3062.1 8	$(23/2^-)$		
3111.9 10			
3251.8 11			
3291.6 7	$(27/2^-)$		
3347.4 10			
4382.8 10	$(29/2^+)$		
4687.6 11	$(33/2^+)$		

† From mult and lin pol adopted values.

 $\gamma(^{137}\text{Xe})$

ΔI_γ : < 20%.

ΔE : 0.3 keV for $I_\gamma \geq 10$ and 1 keV for $I_\gamma < 10$, based on a statement by [1999Da13](#).

E_γ	I_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult.	Comments
101.1 10	<1	2204.0	$(19/2^-)$	2103.2			
124.9 10	≈ 1	2103.2		1978.4			
139.5 10	≈ 1	3251.8		3111.9			
190.2 10	≈ 1	3251.8		3062.1	$(23/2^-)$		
229.4 10	≈ 1	3291.6	$(27/2^-)$	3062.1	$(23/2^-)$		
269.7 3	19	2204.0	$(19/2^-)$	1934.2	$19/2^-$	D [#]	Mult.: $\Delta J=0$ transition.
304.8 10	3	4687.6	$(33/2^+)$	4382.8	$(29/2^+)$		
311.6 3	12	3291.6	$(27/2^-)$	2980.0	$(23/2^-)$	E2 [#]	
314.0 3	63	1934.2	$19/2^-$	1620.2	$15/2^-$	E2 [#]	
358.2 10	8	1978.4		1620.2	$15/2^-$		
367.7 10	3	3347.4		2980.0	$(23/2^-)$	D [#]	Mult.: $\Delta J=1$ transition.
400.2 3	87	1620.2	$15/2^-$	1220.0	$11/2^-$	E2 [#]	Observed $T_{1/2}=7.8$ ns 15 (1974CIZX) perhaps belongs to level 1935.

Continued on next page (footnotes at end of table)

^{248}Cm SF decay [1999Da13](#) (continued) $\gamma(^{137}\text{Xe})$ (continued)

E_γ	I_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult.	Comments
483.3 10	6	2103.2		1620.2	15/2 ⁻		
857.9 10	5	3062.1	(23/2 ⁻)	2204.0	(19/2 ⁻)		
907.4 10	2	3111.9		2204.0	(19/2 ⁻)		
1035.6 10	1	4382.8	(29/2 ⁺)	3347.4			
1045.8 3	21	2980.0	(23/2 ⁻)	1934.2	19/2 ⁻	(E2) [#]	
1090.8 10	3	4382.8	(29/2 ⁺)	3291.6	(27/2 ⁻)	D [#]	Mult.: $\Delta J=1$ transition.
1128.3 10	2	3062.1	(23/2 ⁻)	1934.2	19/2 ⁻	Q [#]	Mult.: $\Delta J=2$ transition.
1220.0 3	100	1220.0	11/2 ⁻	0	7/2 ⁻	E2	Observed $T_{1/2}=5.1$ ns <i>11</i> (1974CIZX) disagrees with $T_{1/2}<0.4$ ns measured by 1980Fo09 . $T_{1/2}<0.25$ ns may belong to precursor higher levels.
1396.0 10	1	4687.6	(33/2 ⁺)	3291.6	(27/2 ⁻)	Q [#]	Mult.: $\Delta J=2$ transition. Not consistent with J^π assignment.

[†] < 20%.[‡] 0.3 keV for $I_\gamma \geq 10$ and 1 keV for $I_\gamma < 10$, based on a statement by [1999Da13](#).[#] From $\gamma\gamma(\theta)$ at 0°, 30°, 60° and 90° by gating on 1220 γ ($\Delta J=2$, E2) and linear polarization measurements.

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Level Scheme

Intensities: Relative I_γ

Legend

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

