

^{252}Cf SF decay **1997Hw03**

Type	Author	History	Citation	Literature Cutoff Date
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Parent: ^{252}Cf : $E=0.0$; $J^\pi=0^+$; $T_{1/2}=2.645$ y 8; %SF decay=3.086 8

1997Hw03: Source of $^{252}\text{Cf} \approx 25 \mu\text{Ci}$ was placed between two Ni foils and in the center of Gammasphere array (at LBNL), consisting of 72 Compton-suppressed Ge detectors. A total of 9.8×10^9 triple- γ or higher coincidence events were collected. Measured: E_γ , I_γ , $\gamma\gamma(\theta)$, $\gamma\gamma\gamma$. Others (from the same group): **1998Ha65**.

^{109}Mo Levels

E(level) [†]	J^π [‡]	$T_{1/2}$ [‡]	Comments
0.0	(5/2 ⁺)	0.61 s +3-4	
144.01 25	(7/2 ⁺)		E(level), J^π : Not observed in 1997Hw03 .
222.5 5	(7/2 ⁻)		
333.7 7	(9/2 ⁻)		J^π : (9/2 ⁺) in 1997Hw03 .
473.1 7	(11/2 ⁻)		
731.6 7	(13/2 ⁻)		J^π : (13/2 ⁺) in 1997Hw03 .
886.4 8	(15/2 ⁻)		
1443.8 9	(19/2 ⁻)		

[†] From a least-squares fit to γ -ray energies.

[‡] From Adopted Levels. Values from **1997Hw03** are given in the comments. Note, the different interpretation in the Adopted Levels, which contradicts the **1997Hw03** level scheme and interpretation.

$\gamma(^{109}\text{Mo})$

$E_i(\text{level})$	J_i^π	E_γ [†]	I_γ [†]	E_f	J_f^π	Mult. [†]	δ [†]	Comments
144.01	(7/2 ⁺)	144.0 3	100	0.0	(5/2 ⁺)			E_γ, I_γ : Not observed in 1997Hw03 .
222.5	(7/2 ⁻)	78.2 5	23 2	144.01	(7/2 ⁺)	E1		E_γ, I_γ : Not observed in 1997Hw03 .
		222.2 3	100 5	0.0	(5/2 ⁺)	E1		E_γ : 222.5 keV in 1997Hw03 .
333.7	(9/2 ⁻)	110.8 3	100 4	222.5	(7/2 ⁻)	M1+E2	0.55 20	E_γ : 111.3 keV in 1997Hw03 .
		189.0 3	34 3	144.01	(7/2 ⁺)			E_γ, I_γ : Not observed in 1997Hw03 .
473.1	(11/2 ⁻)	138.9 5	100 4	333.7	(9/2 ⁻)	M1(+E2)		E_γ : 139.3 keV in 1997Hw03 .
								I_γ : 74.7 in 1997Hw03 .
								Mult.: E1 from $\alpha=0.04$ 3 in 1997Hw03 , obtained by double gating on 111 γ and 222 γ . However, the uncertainty overlaps with M1 assignment within two standard deviations. The individual intensities were not given by the authors.
		250.5 5	28 3	222.5	(7/2 ⁻)			E_γ : $E_\gamma=326.4$ keV, listed in table II of 1997Hw03 , seems a misprint.
731.6	(13/2 ⁻)	258.3 5	100 9	473.1	(11/2 ⁻)			I_γ : 100 in 1997Hw03 .
								E_γ : 258.6 keV in 1997Hw03 .
		397.3 5	57 9	333.7	(9/2 ⁻)			I_γ : 430.7 in 1997Hw03 .
								E_γ : 397.9 keV in 1997Hw03 .
								I_γ : 100 in 1997Hw03 .
886.4	(15/2 ⁻)	155.4 5	29 4	731.6	(13/2 ⁻)			E_γ : 155.0 keV in 1997Hw03 .
								I_γ : 89.1 in 1997Hw03 .
		413.7 3	100	473.1	(11/2 ⁻)			E_γ : 413.2 keV in 1997Hw03 .
1443.8	(19/2 ⁻)	557.0 3	100	886.4	(15/2 ⁻)			E_γ : 557.4 keV in 1997Hw03 .

[†] From adopted gammas. Values from **1997Hw03** are given in the comments.

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Level Scheme

Intensities: Relative photon branching from each level

