

¹⁴⁴Sm(α ,p2n γ) **1979Ha48**

Type	Author	History	Literature Cutoff Date
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E=50 MeV.

Measured: γ , $\gamma\gamma$, $\gamma(\theta)$, $\gamma(t)$, $\gamma(E(\alpha))$ (**1979Ha48**), γ , $\gamma(\theta)$, $\gamma(E(\alpha))$ (**1984RuZW**).

¹⁴⁵Eu Levels

E(level)	J π^\dagger	T _{1/2}	E(level)	J π^\dagger	T _{1/2}	E(level)	J π^\dagger
0.0	5/2 ⁺		2283.5 5	15/2 ⁻		3183.9 5	23/2 ⁻
329.6 2	7/2 ⁺		2574.0 5	15/2 ⁻		3977.7 9	25/2 ⁺
716.3 3	11/2 ⁻	490 ns	2813.6 5	17/2 ⁻		4124 1	27/2 ⁺
1601.8 5	11/2 ⁻		2836.2 5	19/2 ⁻	5.5 ns 5	5154 2	29/2
1845.1 5	13/2 ⁻		2861.8 7	19/2 ⁻			
2244.9 5	15/2 ⁺		2912.1? 6	21/2 ⁻			

[†] Adopted values.

$\gamma(^{145}\text{Eu})$

E γ	I γ	E _i (level)	J π_i^\dagger	E _f	J π_f^\dagger	Mult.	α^\dagger	I _(γ+ce)	Comments
22.5 2	≈ 25	2836.2	19/2 ⁻	2813.6	17/2 ⁻	M1	22.7 7	≈ 608	ce(L)/(γ +ce)=0.752 15; ce(M)/(γ +ce)=0.163 7; ce(N+)/(γ +ce)=0.0436 18 ce(N)/(γ +ce)=0.0372 16; ce(O)/(γ +ce)=0.00588 25; ce(P)/(γ +ce)=0.000575 25 Mult.: α from balance of I(γ +ce) for 2813.6 level (if no side feeding). $\alpha(K)=3.45$ 6; $\alpha(L)=0.496$ 8; $\alpha(M)=0.1072$ 18; $\alpha(N+..)=0.0288$ 5 $\alpha(N)=0.0245$ 4; $\alpha(O)=0.00389$ 7; $\alpha(P)=0.000383$ 7 Mult.: A ₂ =-0.23 3 (1984RuZW), balance of I(γ +ce) for 2912 level. I γ : from 1984RuZW (renormalized to I(386 γ)=650 (1979Ha48)). Mult.: A ₂ =-0.53 10, A ₄ =-0.03 10. I γ : from 1979Ha48 . Other: 98 7 (1984RuZW). Mult.: A ₂ =-0.37 10, A ₄ =-0.02 10 (1979Ha48). Others: A ₂ =-0.30 8, A ₄ =+0.03 10 (1984RuZW). Mult.: A ₂ =-0.28 4, A ₄ =-0.01 6. Mult.: A ₂ =+0.42 6, A ₄ =-0.10 10. Mult.: A ₂ =-0.76 6, A ₄ =-0.01 6 (1979Ha48). Others: A ₂ =-0.50 4, A ₄ =+0.09 6 (1984RuZW). Mult.: A ₂ =+0.00 4, A ₄ =-0.04 6. Mult.: A ₂ =+0.00, A ₄ =+0.05 6. Mult.: A ₂ =-0.33 6, A ₄ =-0.07 8. Mult.: A ₂ =-0.70 8, A ₄ =+0.14 8. Mult.: A ₂ =+0.22 6, A ₄ =-0.14 8. Mult.: A ₂ =-0.29 6, A ₄ =-0.01 8.
75.9 2	78 7	2912.1?	21/2 ⁻	2836.2	19/2 ⁻	M1	4.08 7		
^x 143.0 2	12 3					D			
146.5 2	125 10	4124	27/2 ⁺	3977.7	25/2 ⁺	D+Q			
239.6 2	110 10	2813.6	17/2 ⁻	2574.0	15/2 ⁻	D			
262.1 2	23 5	2836.2	19/2 ⁻	2574.0	15/2 ⁻	Q			
271.8 2	385 10	3183.9	23/2 ⁻	2912.1?	21/2 ⁻	D+Q			
329.6 2	955 20	329.6	7/2 ⁺	0.0	5/2 ⁺				
386.7 2	650	716.3	11/2 ⁻	329.6	7/2 ⁺				
399.8 2	90 10	2244.9	15/2 ⁺	1845.1	13/2 ⁻	D			
530.0 3	60 10	2813.6	17/2 ⁻	2283.5	15/2 ⁻	D			
553.0 3	70 10	2836.2	19/2 ⁻	2283.5	15/2 ⁻	Q			
568.7 3	50 15	2813.6	17/2 ⁻	2244.9	15/2 ⁺	D			

Continued on next page (footnotes at end of table)

$^{144}\text{Sm}(\alpha, p2n\gamma)$ **1979Ha48** (continued) $\gamma(^{145}\text{Eu})$ (continued)

E_γ	I_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult.	Comments
578.3 3	50 15	2861.8	19/2 ⁻	2283.5	15/2 ⁻		Mult.: $A_2=-0.01$ 10, $A_4=+0.08$ 10.
716.4 2	240 50	716.3	11/2 ⁻	0.0	5/2 ⁺		Mult.: $A_2=+0.00$ 6, $A_4=+0.03$ 8.
793.8 5	420 80	3977.7	25/2 ⁺	3183.9	23/2 ⁻	D	Mult.: $A_2=-0.37$ 6, $A_4=+0.01$ 6 (1979Ha48). Others: $A_2=-0.42$ 5, $A_4=+0.03$ 7 (1984RuZW).
							I_γ : not very reliable because of admixture of ^{145}Gd γ -lines.
885.5 2	125 10	1601.8	11/2 ⁻	716.3	11/2 ⁻	D+Q	Mult.: $A_2=-0.20$ 6, $A_4=-0.10$ 6.
968.6 3	185 20	2813.6	17/2 ⁻	1845.1	13/2 ⁻	Q	Mult.: $A_2=+0.26$ 6, $A_4=-0.02$.
972.1 3	115 15	2574.0	15/2 ⁻	1601.8	11/2 ⁻	Q	Mult.: $A_2=+0.30$ 6, $A_4=-0.16$ 10.
1029.4 3	50 5	5154	29/2	4124	27/2 ⁺	D	Mult.: $A_2=-1.14$ 20, $A_4=+0.35$ 20.
^x 1046 5	75 25					D	Mult.: $A_2=-0.27$ 20, $A_4=+0.21$ 20.
1128.8 22	95 15	1845.1	13/2 ⁻	716.3	11/2 ⁻	Q+D	Mult.: $A_2=+0.51$ 6, $A_4=+0.15$ 8.
^x 1472.0 1	≤10						
1567.2 2	110 30	2283.5	15/2 ⁻	716.3	11/2 ⁻	Q	Mult.: $A_2=+0.25$ 6, $A_4=-0.05$ 8.
1857.7 3	115 10	2574.0	15/2 ⁻	716.3	11/2 ⁻	Q	Mult.: $A_2=+0.31$ 8, $A_4=+0.02$ 10.

† Additional information 1.

^x γ ray not placed in level scheme.

$^{144}\text{Sm}(\alpha, p2n\gamma)$ 1979Ha48

Level Scheme

Intensities: Relative I_γ

Legend

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

