

¹⁴⁴Sm($\alpha,4n\gamma$) 1978Ma43

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	A. A. Sonzogni	NDS 93, 599 (2001)	1-Dec-2000

E=60-110 MeV, measured: γ , $\gamma(\theta)$, $\gamma\gamma$, $\gamma(t)$, excitation functions, conversion coefficients.
See ¹⁴⁴Sm(³He,3n γ),($\alpha,4n\gamma$) dataset for additional ($\alpha,4n\gamma$) studies.

¹⁴⁴Gd Levels

E(level) [‡]	J π	E(level) [‡]	J π	T _{1/2} [†]	E(level) [‡]	J π	T _{1/2} [†]
0.0	0 ⁺	2302.5	5 ⁻		3345.5	9 ⁻	
743.0	2 ⁺	2471.4	7 ⁻	13 ns 2	3432.9	10 ⁺	145 ns 30
1702.3	3 ⁻	2786.4	7 ⁻		4144.2	11 ⁺	
1744.5	4 ⁺	3017.8	8 ⁻		4450.7	12 ⁺	

[†] From beam- $\gamma(t)$ in 1978Ma43.

[‡] As given by authors.

$\gamma(^{144}\text{Gd})$

E γ [†]	I γ	E _i (level)	J π_i	E _f	J π_f	Mult.	α^{\ddagger}	Comments
87.4	37	3432.9	10 ⁺	3345.5	9 ⁻	E1	0.424	$\alpha(K)= 0.355$; $\alpha(L)= 0.0545$; $\alpha(M)=0.01172$; $\alpha(N+..)=0.00330$
^x 101.6	4							
^x 129.0	5							
^x 132.4	3							
^x 141.3	7							
168.9	61	2471.4	7 ⁻	2302.5	5 ⁻	E2	0.395	$\alpha(K)= 0.259$; $\alpha(L)= 0.1052$; $\alpha(M)=0.02423$; $\alpha(N+..)=0.00675$
^x 208.4	12							
^x 226.8	7							
231.3	26	3017.8	8 ⁻	2786.4	7 ⁻	M1	0.1958	$\alpha(K)= 0.1657$; $\alpha(L)=0.02352$; $\alpha(M)=0.00508$; $\alpha(N+..)=0.00146$
^x 235.8	8							
315.0	37	2786.4	7 ⁻	2471.4	7 ⁻	M1	0.0855	$\alpha(K)= 0.0725$; $\alpha(L)=0.01022$; $\alpha(M)=0.00220$; $\alpha(N+..)=0.00062$
327.7	53	3345.5	9 ⁻	3017.8	8 ⁻	M1	0.0770	$\alpha(K)= 0.0652$; $\alpha(L)=0.00919$; $\alpha(M)=0.00198$; $\alpha(N+..)=0.00056$
^x 352.6	7							
415.2	7	3432.9	10 ⁺	3017.8	8 ⁻	M2	0.1448	$\alpha(K)= 0.1194$; $\alpha(L)=0.01986$; $\alpha(M)=0.00438$; $\alpha(N+..)=0.00124$
546.4	39	3017.8	8 ⁻	2471.4	7 ⁻	M1+E2		
558.0	57	2302.5	5 ⁻	1744.5	4 ⁺	E1	0.00372	$\alpha(K)=0.00316$; $\alpha(L)=0.00042$
600.3	34	2302.5	5 ⁻	1702.3	3 ⁻			
711.3	20	4144.2	11 ⁺	3432.9	10 ⁺			
743.0	100	743.0	2 ⁺	0.0	0 ⁺	E2	0.00531	$\alpha(K)=0.00440$; $\alpha(L)=0.00068$
959.3	36	1702.3	3 ⁻	743.0	2 ⁺			
1001.4	61	1744.5	4 ⁺	743.0	2 ⁺			
1017.8	25	4450.7	12 ⁺	3432.9	10 ⁺			

[†] Uncertainty=0.2 keV.

[‡] Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ -ray energies, assigned multiplicities, and mixing ratios, unless otherwise specified.




^x γ ray not placed in level scheme.

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Level Scheme

Intensities: Type not specified

Legend

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

