

¹⁴²Nd($\alpha,3n\gamma$) **1974Ko29**

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	E. Browne, J. K. Tuli		NDS 113, 715 (2012)	31-May-2011

E=43-52 MeV.

Measured: γ rays, $\gamma\gamma$ coincidence, $\gamma(t)$, $\gamma(\theta)$, yield.

¹⁴³Sm Levels

E(level)	J π [†]	T _{1/2} [†]	E(level)	J π [†]	E(level)	J π [†]
0.0	3/2 ⁺	66 s 2	2586.7	17/2 ⁽⁺⁾	3890.4	27/2
754.8	11/2 ⁻		2794.7	23/2 ⁽⁻⁾	4196.4	29/2
2328.2	13/2 ⁽⁻⁾		3600.3	27/2 ⁽⁻⁾	4368.7	
2460.3	13/2 ⁽⁺⁾		3721.3			
2510.2	15/2 ⁽⁺⁾		3723.3	25/2		

[†] From Adopted Levels.

$\gamma(^{143}\text{Sm})$

E γ	I γ [†]	E _i (level)	J π _i	E _f	J π _f	Mult. [†]	α^{\ddagger}	Comments
76.5	11 3	2586.7	17/2 ⁽⁺⁾	2510.2	15/2 ⁽⁺⁾	M1	3.72	$\alpha(K)=3.15$ 10; $\alpha(L)=0.448$ 14; $\alpha(M)=0.095$ 3; $\alpha(N+..)=0.0272$ 9 Mult.: A ₂ =-0.02 7; at E(α)=52 MeV A ₂ =-0.05 6.
121.0	6.3 10	3721.3		3600.3	27/2 ⁽⁻⁾	D		Mult.: A ₂ =-0.21 10.
167.1	11.4 5	3890.4	27/2	3723.3	25/2	D		Mult.: A ₂ =-0.23 5, A ₄ =-0.02 7.
172.3	4.1 5	4368.7		4196.4	29/2	D		Mult.: A ₂ =-0.16 9.
182.0	40.6 10	2510.2	15/2 ⁽⁺⁾	2328.2	13/2 ⁽⁻⁾	D		Mult.: A ₂ =-0.06 5.
208.0	51 1	2794.7	23/2 ⁽⁻⁾	2586.7	17/2 ⁽⁺⁾			Mult.: A ₂ =-0.06 4, A ₄ =+0.02 3.
306.0	6.6 10	4196.4	29/2	3890.4	27/2	D		Mult.: A ₂ =-0.30 12, A ₄ =+0.06 10.
^x 368.0	0.6 1							
645.0	2.3 5	4368.7		3723.3	25/2			
754.8	112 6	754.8	11/2 ⁻	0.0	3/2 ⁺			Mult.: A ₂ =-0.02 3.
805.6	11.2 8	3600.3	27/2 ⁽⁻⁾	2794.7	23/2 ⁽⁻⁾	Q		Mult.: A ₂ =+0.58 14, A ₄ =+0.05 21; at E(α)=52 MeV A ₂ =+0.35 12.
928.6	26.3 16	3723.3	25/2	2794.7	23/2 ⁽⁻⁾	D		Mult.: A ₂ =-0.33 20, A ₄ =-0.13 20.
1573.4	64 7	2328.2	13/2 ⁽⁻⁾	754.8	11/2 ⁻	D		Mult.: A ₂ =-0.21 4, A ₄ =+0.08 5.
1705.5	19 3	2460.3	13/2 ⁽⁺⁾	754.8	11/2 ⁻	D		Mult.: A ₂ =-0.05 7, A ₄ =-0.04 9.
^x 1720.5								I γ : I γ =1.7 5 at E(α)=45 MeV.
1755.0	≈2.7	2510.2	15/2 ⁽⁺⁾	754.8	11/2 ⁻			
1831.7	8.1 15	2586.7	17/2 ⁽⁺⁾	754.8	11/2 ⁻			

[†] At E(α)=43 MeV. See 1974Ko29 for I γ at 45 MeV and delayed spectra at 52 MeV.

[‡] 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.

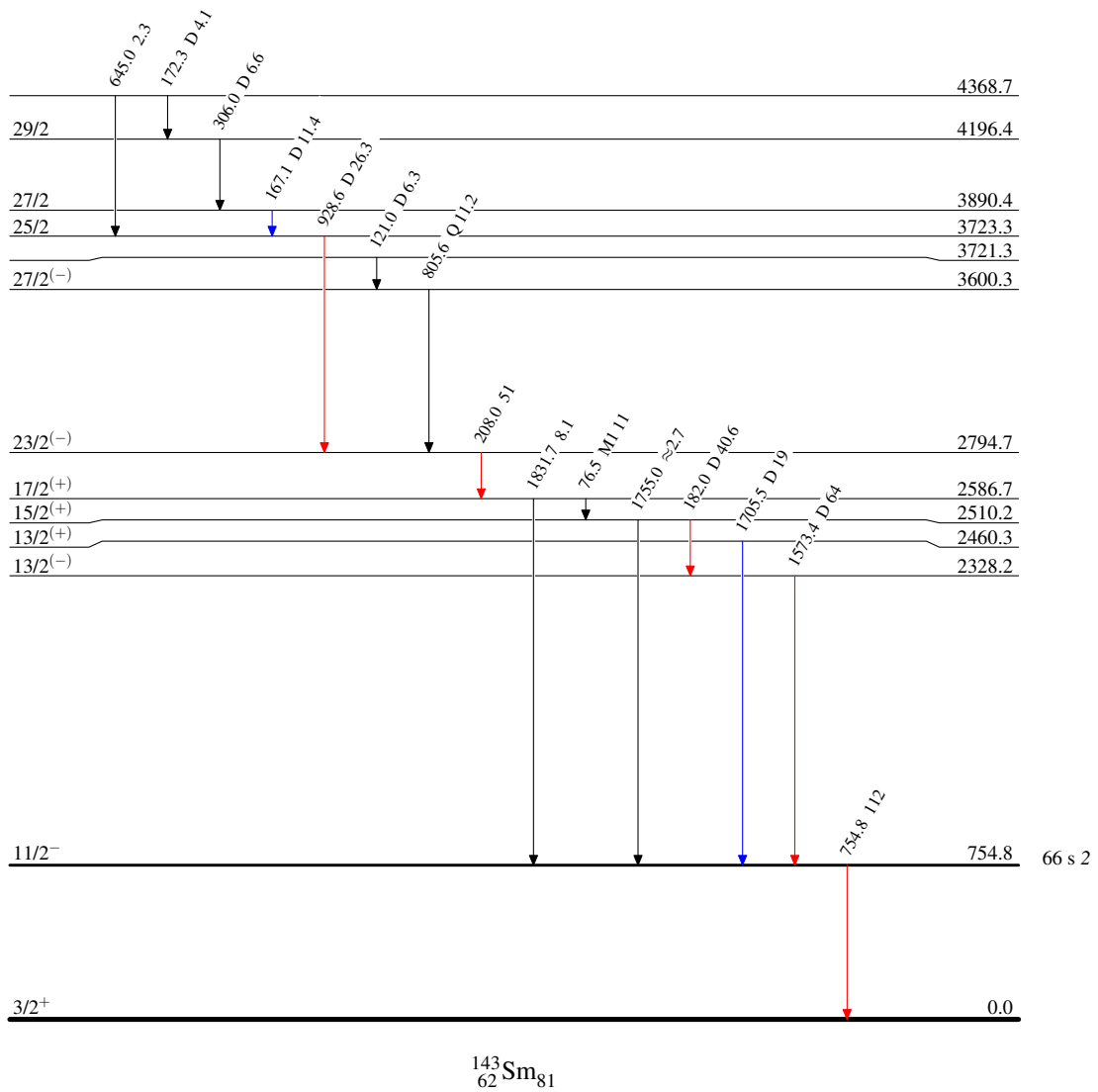
$^{142}\text{Nd}(\alpha,3n\gamma)$ 1974Ko29

Legend

Level Scheme

Intensities: Relative I_γ

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

 $^{143}_{62}\text{Sm}_{81}$