

$^{241}\text{Am}(\text{}^{209}\text{Bi}, \text{}^{208}\text{Pb}\gamma)$  2004Ab16,2002AbZV

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	M. J. Martin, C. D. Nesaraja		NDS 186, 261 (2022)	31-Dec-2021

The evaluators have made use of the XUNDL dataset compiled by J. Roediger and B. Singh (McMaster), September 23, 2004. One proton transfer channel.

E=1450 MeV; about 10-15% above the Coulomb barrier for the projectile- target combination. Measured  $E_\gamma$ ,  $I_\gamma$ ,  $\gamma\gamma$  with the Gammasphere array of 101 Compton-suppressed Ge spectrometers. In addition to the Ge information, the total multiplicity and sum energy measured by Gammasphere (measured in both the BGO suppressor shields and in the Ge detectors) was also written to tape event by event as the collimators, placed in front of the BGO shields for most applications, were not present for those measurements.

$^{242}\text{Cm}$  Levels

E(level) <sup>†</sup>	$J^\pi$	Comments
0.0 <sup>‡</sup>	0 <sup>+</sup>	
42.13 <sup>‡</sup> 5	2 <sup>+</sup>	
138.1 <sup>‡</sup> 10	4 <sup>+</sup>	
288.3 <sup>‡</sup> 12	6 <sup>+</sup>	
489.1 <sup>‡</sup> 13	8 <sup>+</sup>	
735.9 <sup>‡</sup> 14	10 <sup>+</sup>	
1026.2 <sup>‡</sup> 15	12 <sup>+</sup>	
1355.2 <sup>‡</sup> 15	14 <sup>+</sup>	
1720.8 <sup>‡</sup> 16	16 <sup>+</sup>	
2119.5 <sup>‡</sup> 17	18 <sup>+</sup>	
2549.3 <sup>‡</sup> 18	20 <sup>+</sup>	
3008.8 <sup>‡</sup> 18	22 <sup>+</sup>	
3497.4 <sup>‡</sup> 19	(24 <sup>+</sup> )	
4015.7? <sup>‡</sup> 20	(26 <sup>+</sup> )	E(level): from 2002AbZV only; not given in 2004Ab16.

<sup>†</sup> From  $E_\gamma$ 's.

<sup>‡</sup> Band(A): g.s. Band. The sequence is in  $\gamma\gamma$  coin with 2614 $\gamma$  and 583 $\gamma$  in  $^{208}\text{Pb}$ .

$\gamma(^{242}\text{Cm})$

$E_\gamma$ <sup>†</sup>	$E_i(\text{level})$	$J_i^\pi$	$E_f$	$J_f^\pi$	Comments
42.13 1	42.13	2 <sup>+</sup>	0.0	0 <sup>+</sup>	$E_\gamma$ : From the adopted gammas, rounded to the nearest hundred keV.
96 3	138.1	4 <sup>+</sup>	42.13	2 <sup>+</sup>	$E_\gamma$ : From the adopted gammas.
150.2 5	288.3	6 <sup>+</sup>	138.1	4 <sup>+</sup>	
200.8 5	489.1	8 <sup>+</sup>	288.3	6 <sup>+</sup>	
246.8 5	735.9	10 <sup>+</sup>	489.1	8 <sup>+</sup>	
290.3 5	1026.2	12 <sup>+</sup>	735.9	10 <sup>+</sup>	
329.0 5	1355.2	14 <sup>+</sup>	1026.2	12 <sup>+</sup>	
365.6 5	1720.8	16 <sup>+</sup>	1355.2	14 <sup>+</sup>	
398.7 5	2119.5	18 <sup>+</sup>	1720.8	16 <sup>+</sup>	
429.8 5	2549.3	20 <sup>+</sup>	2119.5	18 <sup>+</sup>	
459.5 5	3008.8	22 <sup>+</sup>	2549.3	20 <sup>+</sup>	
488.6 <sup>‡</sup> 5	3497.4	(24 <sup>+</sup> )	3008.8	22 <sup>+</sup>	
518.3 <sup>‡</sup> 5	4015.7?	(26 <sup>+</sup> )	3497.4	(24 <sup>+</sup> )	$E_\gamma$ : from 2002AbZV only; not given in 2004Ab16.

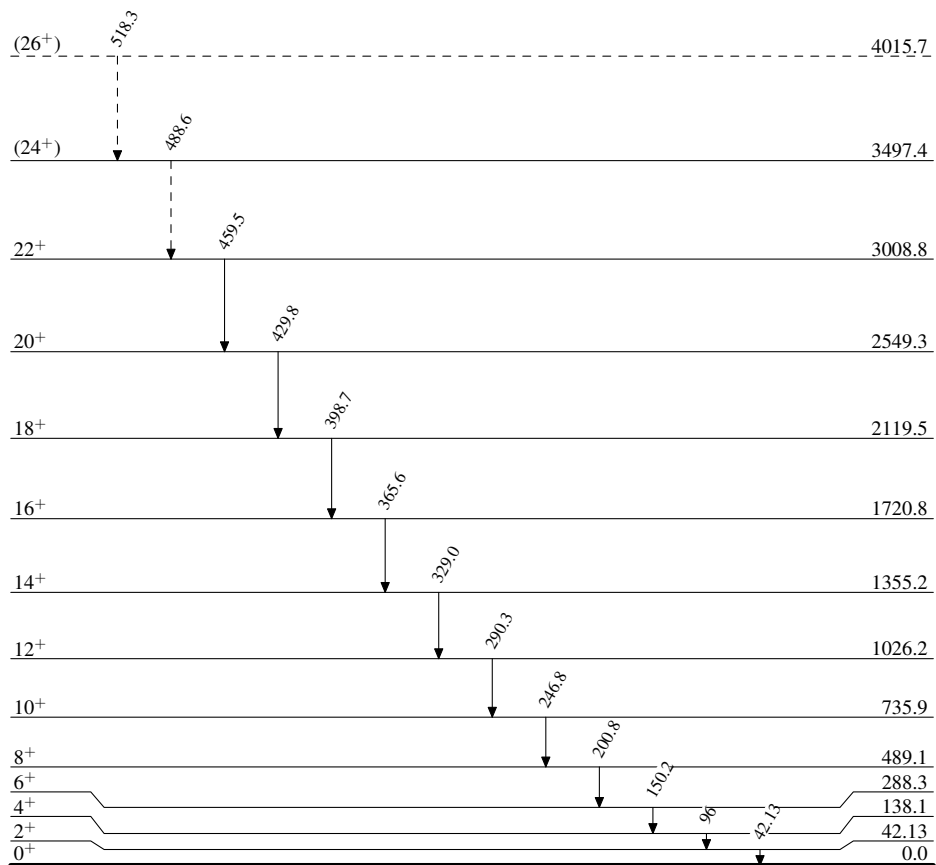
Continued on next page (footnotes at end of table)

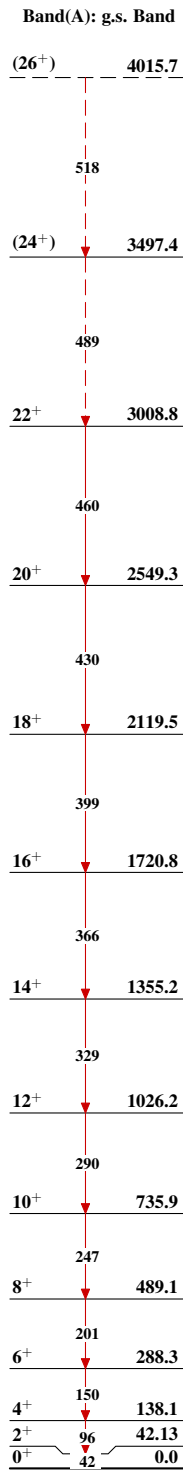
${}^{241}\text{Am}({}^{209}\text{Bi}, {}^{208}\text{Pb}\gamma)$  2004Ab16,2002AbZV (continued) $\gamma({}^{242}\text{Cm})$  (continued)† 0.5 keV uncertainty assigned on the basis of a general comment by 2004Ab16 for  $\gamma$  rays in  ${}^{237}\text{Np}$  and  ${}^{241}\text{Am}$ .

‡ Placement of transition in the level scheme is uncertain.

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Legend

Level Scheme-----►  $\gamma$  Decay (Uncertain) ${}^{242}_{96}\text{Cm}_{146}$

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