

⁷⁰Ge(α ,np γ), ⁷²Ge(α ,3np γ) 1976Ma20

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	D. Abriola(a), A. A. Sonzogni		NDS 111,1 (2010)	1-May-2009

E=30-55 MeV, γ singles, yield functions, $\gamma(\theta)$, $\gamma\gamma$ coincidence and $\gamma(t)$ with respect to the beam burst, mainly ⁷⁰Ge(α ,np γ).

⁷²As Levels

E(level)	J $^{\pi}$	T _{1/2} [†]	E(level)	J $^{\pi}$	T _{1/2} [†]	E(level)	J $^{\pi}$
0	2 ⁻		362.77 21	5 ⁽⁻⁾	<3.7 ns	795.1? 3	
46.01 16	1 ⁺		414.09 18	(3) ⁺		828.1 3	(6 ⁺ ,7 ⁻)
213.82 13	3 ⁺		562.88 22	7 ⁽⁻⁾		981.0 3	8 ⁽⁺⁾
309.77 15	4 ⁻	17 ns 3	662.8?				
319.21 16	(4 ⁺)		783.1? 3				

[†] From delayed coincidences with beam burst.

$\gamma(^{72}\text{As})$

E $_{\gamma}$	I $_{\gamma}$ [†]	E $_i$ (level)	J $_i^{\pi}$	E $_f$	J $_f^{\pi}$	Mult. [‡]	Comments
46.0 2	100	46.01	1 ⁺	0	2 ⁻	D	
53.0 2	181	362.77	5 ⁽⁻⁾	309.77	4 ⁻	D	Mult.: from $\gamma(\theta)$ and RUL.
96.0 2	110	309.77	4 ⁻	213.82	3 ⁺	D	
105.2 2	4.5	319.21	(4 ⁺)	213.82	3 ⁺		
148.8 [#] 2	3.2	562.88	7 ⁽⁻⁾	414.09	(3) ⁺		E $_{\gamma}$: not observed in any other work, see 1994Do11.
167.8 2	56	213.82	3 ⁺	46.01	1 ⁺	Q	
200.1 2	75	562.88	7 ⁽⁻⁾	362.77	5 ⁽⁻⁾		
213.7 2	49	213.82	3 ⁺	0	2 ⁻	D	
300.0 [#] 2	18	662.8?		362.77	5 ⁽⁻⁾		E $_{\gamma}$: reported (1976Ma20) as in coincidence with 96 γ but not with 53 γ . Placement considered uncertain by the evaluators.
309.7 2	50	309.77	4 ⁻	0	2 ⁻	E2	Mult.: from $\gamma(\theta)$ and RUL.
319.4 2	4.1	319.21	(4 ⁺)	0	2 ⁻		
414.1 2	5.0	414.09	(3) ⁺	0	2 ⁻		
418.1 2	72	981.0	8 ⁽⁺⁾	562.88	7 ⁽⁻⁾	D	
420.3 [#] 2	22	783.1?		362.77	5 ⁽⁻⁾		E $_{\gamma}$: possibly misplaced as pointed out by 1994Do11.
432.3 [#] 2	19	795.1?		362.77	5 ⁽⁻⁾		E $_{\gamma}$: possibly misplaced as pointed out by 1994Do11.
465.3 2	16	828.1	(6 ⁺ ,7 ⁻)	362.77	5 ⁽⁻⁾		

[†] At E α =35 MeV; uncertainties not given by 1976Ma20.

[‡] From $\gamma(\theta)$, except as noted.

[#] Placement of transition in the level scheme is uncertain.

${}^{70}\text{Ge}(\alpha, n\gamma), {}^{72}\text{Ge}(\alpha, 3n\gamma)$ 1976Ma20

Level Scheme

Intensities: Relative I_γ

Legend

- $I_\gamma < 2\% \times I_\gamma^{\max}$
- $I_\gamma < 10\% \times I_\gamma^{\max}$
- $I_\gamma > 10\% \times I_\gamma^{\max}$
- - - - γ Decay (Uncertain)
- Coincidence

