

$^{70}\text{Ge}(\alpha,2n\gamma), ^{72}\text{Ge}(\alpha,4n\gamma)$ 1970Li11,1973Wy01,1974Dr02

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

$(\alpha,2n\gamma)$: E=25-35 MeV; $(\alpha,4n\gamma)$: E=60-70 MeV, Ge(Li) detector, $E\gamma$, $I\gamma$, excit function, $\gamma(\theta)$, $\gamma(t)$, delayed coincidence of γ with the beam burst (1970Li11).

$(\alpha,2n)$: E=27.5 MeV, Si(Li) detector, in-beam ce measurements (1970Wy01,1974Dr02).

 ^{72}Se Levels

Placement of levels is based on the assumption that the observed γ 's are from a cascade in a probable quasirotational band (1970Li11).

E(level)	J^π [†]	$T_{1/2}$ [‡]	Comments
0	0 ⁺		
862.0 10	2 ⁺	<0.83 ns	
936.0 5	0 ⁺	19.3 ns 4	$T_{1/2}$: by delayed coincidence of conversion electrons with the beam burst (1974Dr02).
1637.0 15	4 ⁺	<0.83 ns	
2467.0 18	6 ⁺	<0.83 ns	

[†] Four-point $\gamma(\theta)$'s consistent with stretched E2 transitions between the states. $T_{1/2}$ consistent with enhanced E2 rates (1970Li11).

Parities are from $\alpha(K)\text{exp}$ values, and spins are consistent with $\alpha(K)\text{exp}$ values (1973Wy01).

[‡] From prompt coincidence with beam burst (1970Li11), except where noted.

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

E_γ [†]	I_γ [†]	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult. [‡]	Comments
775 1	65 10	1637.0	4 ⁺	862.0	2 ⁺	(E2)	$\alpha(K)\text{exp}=79\times 10^{-5}$ 17
830 1	42 10	2467.0	6 ⁺	1637.0	4 ⁺	(E2)	$\alpha(K)\text{exp}=56\times 10^{-5}$ 17
862 1	100 10	862.0	2 ⁺	0	0 ⁺	(E2)	$\alpha(K)\text{exp}=54\times 10^{-5}$ 10 $\alpha(K)\text{exp}$: value for assumed E2 used for normalization of other $\alpha(K)\text{exp}$ measurements.
936.0 5	<2	936.0	0 ⁺	0	0 ⁺	E0	K/L=8.1 3; $\alpha(K)\text{exp}\geq 1.4$ (1974Dr02) Mult.: from $T_{1/2}$ and lower limit of $\alpha(K)\text{exp}$ (1974Dr02).

[†] From $(\alpha,2n\gamma)$ at E=29.5 MeV (1970Li11).

[‡] Four-point $\gamma(\theta)$ measurements are consistent with stretched E2 transitions. $\alpha(K)\text{exp}$ measurements (1973Wy01) indicate E2, M1.

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