

$^{40}\text{Ca}(^7\text{Li},2n\gamma)$ 1980Gr04

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	T. W. Burrows	NDS 109, 171 (2008)	30-Oct-2007

E=14, 15, and 16 MeV. Measured γ 's and $\gamma\gamma(t)$ (Ge(Li), intrinsic Ge) and γ 's, n's, and $n\gamma(t)$ (stilbene).

^{45}V Levels

E(α),T_{1/2}(β) 56.4-57.2 doublet deduced on basis of two T_{1/2}'s associated with 56.4 γ and a detailed analysis of the $\gamma\gamma(t)$ spectra showing two gammas with E γ =329.7 and E γ =328.9, respectively.

E(level)	J $^{\pi}$ [†]	T _{1/2}
0.0	7/2 ⁻	
56.4	(5/2 ⁻)	≤4.2 ns
57.2	(3/2 ⁻)	0.43 μ s 8
386.1 [‡]	(3/2 ⁺)	
796.8 [‡]	(5/2 ⁺)	
1273 [‡]	(7/2 ⁺)	

[†] From similarity to ^{45}Ti (parentheses added by the evaluator). 1980Gr04 note that coincidence and half-life information determines the spin sequence of the first four states.

[‡] Band(A): quasi-rotational band. These states follow a behavior similar to bands in ^{43}Sc , ^{43}Ti and ^{45}Ti .

$\gamma(^{45}\text{V})$

E γ	I γ [†]	E _i (level)	J $^{\pi}$ _i	E _f	J $^{\pi}$ _f	Mult. [‡]	α [@]	I _($\gamma+ce$) [#]	Comments
(0.8 [#])		57.2	(3/2 ⁻)	56.4	(5/2 ⁻)	M1,E2		≈1.2	E γ : see footnote on 56.4-keV state.
56.3 [#] 8	>5	56.4	(5/2 ⁻)	0.0	7/2 ⁻	D	0.15 4		
57.1 [#] 8	≈1	57.2	(3/2 ⁻)	0.0	7/2 ⁻	D,E2		1.	
328.9		386.1	(3/2 ⁺)	57.2	(3/2 ⁻)				
329.7		386.1	(3/2 ⁺)	56.4	(5/2 ⁻)				
410.7		796.8	(5/2 ⁺)	386.1	(3/2 ⁺)				
476		1273	(7/2 ⁺)	796.8	(5/2 ⁺)				
740		796.8	(5/2 ⁺)	57.2	(3/2 ⁻)				
740		796.8	(5/2 ⁺)	56.4	(5/2 ⁻)				

[†] Approximate lower limit of I γ (56.7 γ)/I γ (57.1 γ) from decomposition of delayed spectrum.

[‡] From comparison to RUL.

[#] From decomposition of delayed spectrum. $\Delta E(\gamma)$ is from singles data. I($\gamma+ce$) is the ratio of the 0.8-keV transition to the 57.2-keV transition.

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

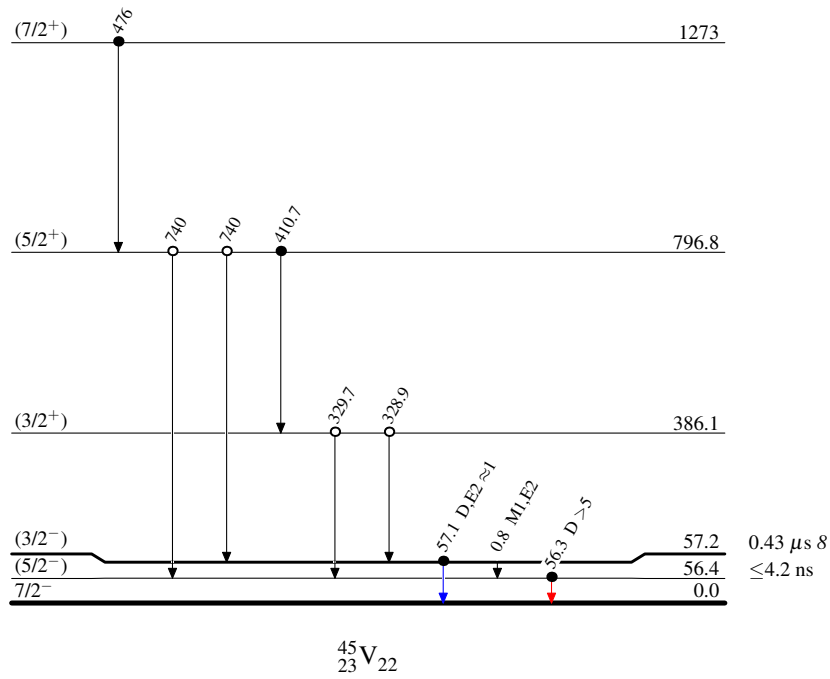
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Level Scheme

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
- Coincidence (Uncertain)



$^{40}\text{Ca}(^7\text{Li},2n\gamma)$ 1980Gr04Band(A): Quasi-rotational
band $(7/2^+)$ 1273

476

 $(5/2^+)$ 796.8

411

 $(3/2^+)$ 386.1 $^{45}_{23}\text{V}_{22}$