

$^{25}\text{Mg}(\text{n},\text{n}'\gamma)$ 1960Le04,1962Do12,1979KaYR

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	M. Shamsuzzoha Basunia, Anagha Chakraborty		NDS 205,1 (2025)	31-May-2025

1960Le04: Neutrons were produced from $\text{D}(\text{d},\text{n})^3\text{He}$, $E_{\text{n}}=1\text{--}3$ MeV, or $^{14}\text{N}(\text{d},\text{n})^{15}\text{O}$, $E_{\text{n}}=4.3$ MeV (mean), reactions. NaI(Tl) crystal, a one-channel amplitude analyzer, resolving power of the spectrometer for gamma rays from ^{137}Cs was 10%. Measured E_{γ} .

1962Do12: Fast neutrons from a pool reactor, NaI(Tl) crystal, and the pulses from the photomultiplier were recorded in a 128-channel pulse height analyzer. Measured E_{γ} .

1979KaYR: Fast neutrons from reactor, enriched target; measured E_{γ} at 51° , 90° , and 145° . Deduced mean lifetime of excited levels by DSAM.

Other references: 1965EnZZ, 1976Be64 (also 1976BeXX), 1979KaYR.

 ^{25}Mg Levels

$E(\text{level})^{\dagger}$	$T_{1/2}$	Comments
0		
585.03 3		
974.53 11		
1611.27 6	16 fs 3	$T_{1/2}$: from 1976Be64, 1976BeXX. Other: 15.2 fs +35–55 (from $\tau=22$ fs +5–8 – 1979KaYR).
1964.24 9	0.56 ps +14–7	$T_{1/2}$: from $\tau=0.80$ ps +20–10 (1979KaYR).
2562.95 17	54 fs 16	$T_{1/2}$: from $\tau=78$ fs 23 (1979KaYR).
2737.72 19	0.27 ps 6	$T_{1/2}$: from $\tau=0.39$ ps 9 (1979KaYR).
3403.2 4	35 fs 21	$T_{1/2}$: from $\tau=50$ fs 30 (1979KaYR).

† From a least squares fit to E_{γ} .

 $\gamma(^{25}\text{Mg})$

$E_{\gamma}^{\dagger}$	$E_i(\text{level})$	E_f	Comments
585.028 30	585.03	0	E_{γ} : from Adopted Gammas. Other: 570 10 (1960Le04).
$^x630^{\ddagger}$ 10			
$^x740^{\ddagger}$ 10			
$^x890^{\ddagger}$ 10			
989.69 6	1964.24	974.53	
1379.17 8	1964.24	585.03	
1611.21 6	1611.27	0	E_{γ} : other: 1600 (1962Do12, 1965EnZZ).
$^x1680^{\ddagger}$ 20			
1763.13 15	2737.72	974.53	
$^x1850^{\ddagger}$ 20			
1977.84 16	2562.95	585.03	
3403.0 4	3403.2	0	

† From 1979KaYR, except otherwise where noted.

‡ From 1960Le04.

x γ ray not placed in level scheme.

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Level Scheme

