

$^{23}\text{Na}(\alpha, n\gamma)$ 1972Du05, 1971Sh19, 1974Be08

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	M. S. Basunia and A. M. Hurst	NDS 134,1 (2016)	1-Feb-2016

Other: 1972Ma67, 1974Be43, 1974Pr08.

1971Sh19: E=7.8, 8.0 MeV; Ge(Li), NaI(Tl) detectors; Measured $\sigma(\theta(\gamma))$, Doppler-shift attenuation. ^{26}Al levels deduced J, mean lifetime.

1972Du05: $^{23}\text{Na}(\alpha, n\gamma)$, E=4.6-7.5 MeV; Ge(Li)-NaI(Tl) in anti-Compton and pair spectrometer mode; Measured E_γ , I_γ , deduced ^{26}Al levels, mean lifetime using Doppler Shift Attenuation Method.

1974Be08: $^{23}\text{Na}(\alpha, n\gamma)$, E=6.0-7.0 MeV. Target: NaCl (thickness 50 $\mu\text{g}/\text{cm}^2$) Ge Measured recoil distance, Doppler shift. Natural targets. Deduced mean lifetime of excited states.

 ^{26}Al Levels

E(level) [†]	J ^π	T _{1/2} [#]	Comments
0.0	5 ⁺		J ^π : From Adopted Levels.
228.305 13			
416.852 3			
1057.739 12		<24 fs	
1759.034 8		2.3 ps 6	T _{1/2} : From mean lifetimes 2.75 ps 20 and 3.9 ps 2 (1972Du05). Others: 4.44 ps 28 (1974Be08), 3.95 ps 76 (1972Ma67), 4.37 ps 35 (1974Be43).
1850.62 3			
2068.86 5		260 fs 42	T _{1/2} : Other: 0.69 ps 7 (1974Be08).
2069.47 3			
2071.64 4		319 fs 28	
2365.150 18		1.39 ps 14	
2545.367 17		0.87 ps 14	
2660.92 5			
2740.03 3			
2913.40 5		<28 fs	
3402.65 6	5 ⁺ [‡]	51 [@] fs 13	
3507.63 8	6 ⁺ [‡]	<21 [@] fs	
3921.96 24	7 ⁺ , (5 ⁺)		J ^π : From 1974Pr08, based on γ -ray angular distribution coefficients and polarization measurements.

[†] From Adopted Levels.

[‡] From 1971Sh19, based on γ -ray angular distribution and mean lifetime measurements.

[#] From mean lifetime in 1972Du05, except otherwise noted.

[@] From mean lifetime in 1971Sh19. Uncertainty: Statistical only.

 $\gamma(^{26}\text{Al})$

E _i (level)	J _i ^π	E _γ	I _γ	E _f	J _f ^π	Comments
3921.96	7 ⁺ , (5 ⁺)	3921.64	100	0.0	5 ⁺	A ₂ =0.41 2; A ₄ =-0.13 2 (1974Pr08) polarization 0.77 34 (1974Pr08).

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Level Scheme

Intensities: Relative photon branching from each level

