9 Be(33 Cl, 32 Cl γ) 2004Ga15

		History		
Туре	Author	Citation	Literature Cutoff Date	
Full Evaluation	Jun Chen	NDS 201,1 (2025)	31-Oct-2024	

 $J^{\pi}(^{33}\text{Cl g.s.})=3/2^+$.

2004Ga15 (also 2005Ga54): E=65 MeV/nucleon ³³Cl beam was produced by fragmentation of 150 MeV/nucleon ³⁶Ar primary beam on a ⁹Be target and separated by A-1900 Fragment-Recoil Separator at NSCL facility. Recoils were detected and identified with the S800 magnetic spectrograph. γ rays were detected with the SeGA array of 32-fold segmented Ge detectors. Measured E γ , I γ , (³²Cl) γ -coin, parallel momentum distributions. Deduced levels, J, π , angular-momentum L-transfers. Comparisons with shell-model calculations.

³²Cl Levels

E(level) [†]	$J^{\pi \dagger}$	L‡	Comments
0	1+	0(+2)	L: either 75% L=0 + 25% L=2 or pure L=0.
90	(2 ⁺)	0+2	L: 57% L=0 + 43% L=2.
466?	(0+)		$\sigma \leq 4.8 \text{ mb}$ T_2 . $\sigma < 1.3 \text{ mb}$.

[†] From 2004Ga15.

[‡] Angular momentum of removed neutron, extracted from measured momentum distributions (2004Ga15).

$\gamma(^{32}\text{Cl})$

Eγ	E _i (level)	\mathbf{J}_i^{π}	E_f	\mathbf{J}_f^{π}	Comments
90	90	(2^{+})	0	1^{+}	
466†	466?	(0 ⁺)	0	1^{+}	Very weak γ .

 † Placement of transition in the level scheme is uncertain.



 $^{32}_{17}\text{Cl}_{15}$