

$^{24}\text{Mg}(p, ^3\text{He})$ 2010Ch46

Type	Author	History	Citation	Literature Cutoff Date
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$J^\pi(^{24}\text{Mg})=0^+$.

Enriched (99.9%) ^{24}Mg target, thickness $500 \mu\text{g}/\text{cm}^2$, proton beam, $E=41$ - and 51.5 -MeV. Recoiling ^3He detected in a large area annular silicon detector array (SIDAR), each detector segmented into 16 radial strips and configured with a 100 - μm detector backed by a 1000 - μm detector. Measured $\sigma(E_p, \theta)$. Deduced levels, J , π , L for 10 levels from DWBA analysis.

 ^{22}Na Levels

E(level)	J^π [†]	L [‡]	Comments
1936 [†]	1^+	0	Relative $d\sigma/d\Omega=0.440$ 6 at 28° .
2572 [†]	$2^-, 3^-, 4^-$	3	Relative $d\sigma/d\Omega=0.064$ 3 at 27° .
2969 [†]	$1^+, 2^+, 3^+$	2	Relative $d\sigma/d\Omega=0.125$ 4 at 18° .
3944 [†]	1^+	0	Relative $d\sigma/d\Omega=0.077$ 1 at 28° .
5061 3	$1^+, 2^+, 3^+$	0+2	E(level): unresolved level.
5914 4	$(2^-, 3^-, 4^-)$	(3)	Relative $d\sigma/d\Omega=0.010$ 1 at 28° .
6329 7	$1^+, 2^+, 3^+$	2	Relative $d\sigma/d\Omega=0.039$ 2 at 18° .
6996 11	$1^+, 2^+, 3^+$	2	Relative $d\sigma/d\Omega=0.007$ 2 at 18° .
7215 10	$0^-, 1^-, 2^-$	1	Relative $d\sigma/d\Omega=0.024$ 3 at 15° .
9715 13	$(1^+, 2^+, 3^+)$	(2)	Relative $d\sigma/d\Omega=0.011$ 1 at 50° .

[†] Used for ^3He spectrum calibration.

[‡] From comparison of experimental differential cross section with DWBA predictions.