

$^{24}\text{Mg}(^3\text{He},\alpha)$ 1967Ha17,1981En04,1969Jo15

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	M. S. Basunia [#] , A. Chakraborty ^{##}		NDS 171, 1 (2021)	1-Jun-2020

Other references: 1984ScZM,1981Gi04,1970Mc18,1969Ka28,1969Jo15, 1967Du04.

1967Ha17: $^{24}\text{Mg}(^3\text{He},\alpha)$, E=8, 10 MeV. $\sigma(E\alpha)$, deduced excited level energies, 99.9% enriched target.

1981En04: $^{24}\text{Mg}(\text{pol } ^3\text{He},\alpha)$, E=33.3 MeV, 99.9% enriched target, measured $\sigma(\theta)$, $A_y(\theta)$, deduced contribution of two-step processes, DWBA, coupled-channels analysis.

1969Jo15: $^{24}\text{Mg}(^3\text{He},\alpha)$, E=15 MeV. Measured $\sigma(E\alpha,\theta)$. Deduced levels, L, S.

1984ScZM: $^{24}\text{Mg}(^3\text{He},\alpha)$, E=12, 15, 18 MeV. Measured $\sigma(\theta,E)$ using broad range magnetic spectrograph, position sensitive proportional counter, and photographic plates. Deduced levels, spin, parity, L-transfer. The reported results were preliminary, noted by authors.

 ^{23}Mg Levels

E(level) [†]	J ^π	L ^{&}	Comments
0.0 [‡]	3/2 ⁺ @	2 [‡]	S: 0.84 (1981En04), 1.6 (1969Jo15), 0.9 (1970Mc18).
450 [‡]	5/2 ⁺ @	2 [‡]	S: 4.74 (1981En04), 7.8 (1969Jo15), 4.4 (1970Mc18).
2050 [‡]	7/2 ⁺ @	4	
2356	1/2 ⁺	0	E(level): From 1969Jo15. L: From 1969Jo15, 1967Du04. S: 0.57 (1969Jo15).
2710			E(level): From 1969Jo15. L: 3 in 1967Du04 (fewer data points) and (2) in 1969Jo15 (poor fit). S: (4.4) (1969Jo15).
2768 ^a	1/2 ⁻ , 3/2 ⁻	1 ^a	
2904 ^a	3/2 ⁺ , 5/2 ⁺	2 ^a	
3800 5	1/2 ⁻ , 3/2 ⁻	1 ^a	
3865 5			
3976 5			
4360 6	1/2 ⁺	0 ^a	
4682 6			
5284 6	3/2 ⁺ , 5/2 ⁺	2 ^a	
5450 6			
5651 7			
5686 8			
5706 8			
5931 7			
5984 7	1/2 ⁻ , 3/2 ⁻	1 ^a	
6128 7			
6194 7			
6238 7			
6379 8			
6444 8			
6508 8			
6540 8			
6571 9			
6771 8			
6811 8			
6900 8			
6988 8			
7016 9			
7110 9			
7141 9			
7224 10			
7255 10			

Continued on next page (footnotes at end of table)

$^{24}\text{Mg}(^3\text{He},\alpha)$ [1967Ha17](#),[1981En04](#),[1969Jo15](#) (continued) ^{23}Mg Levels (continued)

<u>E(level)[†]</u>	<u>J^π</u>	<u>L&</u>	<u>Comments</u>
7587 [#]	3/2 ⁺ , 5/2 ⁺	2 [#]	
7635 [#]	5/2 ⁻ , 7/2 ⁻	3 [#]	
7777 [#]	5/2 ⁻ , 7/2 ⁻	3 [#]	
7793 [#]	3/2 ⁺ , 5/2 ⁺	2 [#]	
7852 [#]	7/2 ⁺ , 9/2 ⁺	4 [#]	
8016 [#]			
8054 [#]			
8076 [#]			
8164 [#]	J ^π : 5/2 ⁺ in 1984ScZM – no argument was available.		

[†] From [1967Ha17](#), except where otherwise noted.

[‡] From [1981En04](#).

[#] From [1984ScZM](#) (Preliminary).

@ From vector analyzing power in [1981En04](#).

& From [1969Ka28](#), except otherwise noted.

^a From [1967Du04](#).