^{24}Mg(e,e′) 1978Za07,1974Jo10,1969Ti01

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	M. Shamsuzzoha Basunia, Anagha Chakraborty	NDS 186, 2 (2022)	31-Mar-2022

Others: 1990Ri08,1987Ho25,1984Ma08,1984Za03,1981It01,1978Gu13,1977Za02, 1972Cu02,1971Li26,1972Na06,1971Ho20,1970Fa04,1970Kh05,1970St10, 1968Fa05,1968Sa18,1956He83.

1978Za07: E=218.1 MeV; Measured σ(Ee′), level excitation energy, deduced E2,E4 Coulomb form factors. Comparison with theory suggests K-band structure.

1974Jo10: E=54 MeV; Target; 99.9% enriched ^{24}Mg. Measured σ(Ee′), level excitation energy, deduced Γ_0.

1969Ti01: E=64.94-115.67 MeV; Measured σ(Ee′), level excitation energy, deduced Γ_0.

^{24}Mg Levels

E(level)[†]	Jπ[&]	$T_{1/2}$[a]	Comments
0	0^+		$<r^2>^{1/2}$(^{24}Mg)=3.030 fm *30* (charge radius) (1971Li26), 3.04 fm *4* (1972Cu02).
1366 *10*	2^+	1.31 ps *3*	B(E2)↑=0.0420 *25* (1974Jo10). E(level): Others: 1358 *11* (1974Jo10). $T_{1/2}$: From τ=1.89 ps *5*: weighted average of 1.9 ps *2* (1956He83), 1.87 ps *5* (from B(E2)↑=0.0455 *12* − 1969Ti01), 1.9 ps *2* (from B(E2)↑=0.0446 *45* − 1972Na06), and 1.97 ps *11* (1974Jo10), 1.88 ps *15* (from B(E2)↑=0.0453 *35* − 1978Za07) and adopted γ properties.
4120	4^+		B(E4)↑=0.000020 *3* (1978Za07).
4228 *10*	2^+	62 fs *6*	B(E2)↑=0.0026 *4* (1974Jo10) and 0.00274 *30* (1978Za07). E(level): Also 4228 *12* (1974Jo10). $T_{1/2}$: Weighted average of 63 fs *10*, 60 fs *6* (from B(E2)↑=0.0026 *4* (1974Jo10) and 0.00274 *3* (1978Za07), respectively and adopted γ properties), and 69 fs *12* (from Γ_0=0.00526 eV *92* − 1969Ti01).
6003[‡] *17*	4^+[‡]		
6436 *15*	0^+,(2^+)		E(level): Other: 6420 *15* (1974Jo10).
7355 *20*	2^+	10 fs *2*	$T_{1/2}$: From Γ_0=0.0278 eV *58* (1969Ti01).
7600 *21*	3^-	912 fs *310*	E(level),Jπ: Other: 7586 *18* (1974Jo10). J^π from 1974Jo10. $T_{1/2}$: From Γ_0=0.000126 eV *43* (1969Ti01).
8366[‡] *19*	3^-	76 fs *13*	E(level): Others: 8375 *18* (1969Ti01). $T_{1/2}$: From Γ_0=0.000404 eV *67* (1969Ti01).
8995 *21*	2^+	8.4 fs *12*	$T_{1/2}$: From Γ_0=0.0339 eV *78* (1969Ti01).
9296[‡] *20*	(2^+,0^+)[‡]	3.3 fs *4*	E(level): Other: 9304 *19* (1969Ti01). $T_{1/2}$: From Γ_0=0.12 eV *2* (1974Jo10). 0.126 eV *23* (1969Ti01).
9846 *20*	1^+	0.30 fs *7*	$T_{1/2}$: From Γ_0=1.05 eV *26* (1969Ti01).
9968[‡] *22*	1^+	69 as *6*	E(level): Others: 9972 *17* (1969Ti01), 9940 *30* (1970Fa04). $T_{1/2}$: From Γ_0=4.8 eV *4*: weighted average of 7.6 eV *+16−14* (1970Fa04), 4.6 eV *4* (1974Jo10), and 4.50 eV *73* (1969Ti01). Other: 11.9 eV *27* (1968Fa05).
10363 *19*	2^+,(0^+)	1.3 fs *3*	E(level): Other: 10352 *24* (doublet − 1974Jo10). $T_{1/2}$: From Γ_0=0.146 eV *31* (1969Ti01).
10716 *18*	1^+	23 as *2*	E(level): Others: 10695 *26* (1974Jo10), 10700 *30* (1970Fa04). $T_{1/2}$: From Γ_0=14.5 eV *12*: weighted average of Γ_0=13.2 eV *12* (1974Jo10), 17.6 eV *+35−30* (1970Fa04), 15.9 eV *24* (1969Ti01), 18.9 eV *37* (1968Fa05).
10939 *20*	2^+	0.8 fs *1*	E(level): Other 11100 (triplet − 1974Jo10). $T_{1/2}$: From Γ=0.54 eV *2* based on Γ_0=0.184 eV *58* (1969Ti01) and adopted γ properties.
11382 *40*			E(level): From 1974Jo10.
11474 *30*	(2^+)		Γ_0=0.177 eV *44* (1969Ti01).
11855[‡@] *32*	(1^-,3^-)[‡]		
11990[‡@] *25*	3^-[‡]		
12388[‡@] *32*	3^-[‡]		
12522[‡] *30*	2^+[‡]		Jπ: 1^+ assignment with a comparable adopted level at 12527.6.

Continued on next page (footnotes at end of table)

^{24}Mg(e,e′) 1978Za07,1974Jo10,1969Ti01 (continued)

^{24}Mg Levels (continued)

E(level)[†]	J$^{\pi}$[&]	Comments
12706[‡] *29*	2$^-$[‡]	Γ_0=0.014 eV *5* (1974Jo10).
12910[#@] *60*		$T_{1/2}$: Γ_0=0.11 eV *+14−8* (1970Fa04).
12990[‡@] *29*	2$^+$[‡]	Γ_0=0.022 eV *4* (1974Jo10).
13371[‡@] *27*	2$^-$[‡]	E(level): Other: 13370 *50* (1970Fa04). Γ_0=0.13 eV *+18−8* (1970Fa04), Γ_0=0.040 eV *14* (1974Jo10).
15045 *35*	6$^-$	T=1 E(level),J$^{\pi}$: From 1977Za02. Spin parity assignment from form factor calculations.

[†] From 1969Ti01, except otherwise noted.
[‡] From 1974Jo10.
[#] From 1970Fa04.
[@] Overlaps three or more excited level energies in Adopted Levels − not adopted.
[&] From M1, E2 or E3 excitations (1969Ti01).
[a] From Γ_0 and adopted γ-ray branching, except otherwise noted.