Energy levels [04Fi10, 90En08, 98En04]. **$^{21}_{12}$Mg**

E^* [keV]	$2J^\pi$	L (^{3}He,^{6}He)	$I_{^6\mathrm{He}}$ arb.u	Γ_γ [meV]	ω_γ [eV]	$T_{1/2}$ or Γ_{cm}	Ref.
0.0	⟨3,5⟩$^+$	2	175			122(2) ms	92Ku02
200(4)	1^+	0	30				92Ku02
1070(13)	⟨1,3⟩$^-$	1	42				92Ku02
1649(9)	⟨1,3⟩$^-$	1	47				92Ku02
1998(15)	⟨1,3⟩$^-$	1	47				92Ku02
2048(15)	⟨1,3⟩$^-$	1					92Ku02
3086(15)	⟨3^+,5^+⟩	⟨2⟩	15	188			92Ku02
3244(15)	⟨3^+,5^+⟩	⟨2⟩	26	83.3	$1.82\cdot10^{-19}$		92Ku02
3347(15)	7^+	4	17	274	$9.84\cdot10^{-7}$		92Ku02
3643(15)	⟨7^+,9^+⟩	⟨4⟩		6.09	$1.54\cdot10^{-4}$		92Ku02
3752(15)	⟨1^-,3^-⟩	1	13		$4\cdot10^{-2}$		92Ku02
3901(15)		3,4	26		$7\cdot10^{-2}$		92Ku02
4010(15)	⟨1^+⟩	⟨0⟩		439	8,78E–2		92Ku02
4261(15)							
4987(15)							
5158(15)			11				92Ku02
5318(15)							
5421(15)							
5614(15)			17				92Ku02
5757(15)							
5862(15)							
6052(15)							
			92Ku02	92Ku02	92Ku02		Ref.

Yield $I_{^6\mathrm{He}}$ of ^6He (in counts per channel) was taken from momentun spectrum from the reaction $^{24}Mg(^3He,^6He)^{21}Mg$ measured at 10° and presented in [92Ku02]; in this work resonance parameters of the $^{20}Na(p,\gamma)^{21}Mg$ reaction Γ_γ and ω_γ important in astrophysics were derived.

Energy levels and branching ratios [90En08, 98En04]. **$^{22}_{12}$Mg**

E^* [keV]	J^π	T	$I_{^6\mathrm{He}}$ (^{3}He,^{6}He)	Γ_γ [meV]	Γ [meV]	ω_γ [meV]	L (τ,n)	ε (τ,n)	$T_{1/2}$ or Γ_{cm}	Ref.	Branching ratios in percentage E^*_{f}: 0.0 J^π_{f}: 0^+	1246 2^+	3308 ⟨4⟩$^+$	4401 ⟨2⟩$^+$
0.0	0^+		15				0	0.76	3.876(1) s	01Ch43				
1246.3(6)	2^+		24				⟨2⟩	0.80	2.1(8) ps	01Ch43	100			
3308.2(8)	⟨4⟩$^+$		14				⟨4⟩	0.41	201(45) fs	01Ch43		100		
4400.9(12)	⟨2⟩$^+$		7						<21 fs	01Ch43	8(4)	92(4)		
5006(2)*	0^+–4^+								<17 ns					⟨100⟩
5037.0(14)	2^+						2	0.57	<69 ps	86Al15	12(4)	88(4)		
5089.7(17)										01Ba17				
5295.7(16)	⟨2^+,3⟩								44(14) fs	01Ba17			60(10)	40(10)
5317(5)	⟨1–3⟩						⟨4⟩	0.94	<17 ns	86Al15	30(15)	70(15)		
5454.3(16)	⟨2–4⟩								<69 ps	01Ba17		70(10)	30(10)	

(continued) $^{22}_{12}$Mg

E^*	J^π	T	$I_{^6\mathrm{He}}$	Γ_γ	Γ	ω_γ	L	ε	$T_{1/2}$ or	Ref.	Branching ratios in percentage			
											E^*_f: 0.0	1246	3308	4401
[keV]			(^{3}He,^{6}He)	[meV]	[meV]	[meV]	(τ,n)	(τ,n)	Γ_cm		J^π_f: 0^+	2^+	$\langle 4\rangle^+$	$\langle 2\rangle^+$
5713.9(12)	2^+				16	≤0.8	3	0.48	28(10) fs	86Al15	13(3)	87(3)		
5837(5)	≤5								<17 ns			80(15)	20(15)	
5961.9(25)	0^+			2		0.2	0	4.5		01Ba17				
6045.8(30)				2		0.7				01Ba17				
6246.4(51)	4^+						4	1.7	<17 ns	02Ca36			⟨100⟩	
6322.6(60)									7(+4-2) keV	02Mi31				
6616(4)									14(5)	02Ru03				
6771(5)	3^-						3	0.43	8(5)	02Ru03				
6883(9)										01Ch43				
6980(80)	3^-						3	0.50		86Al15				
7206(6)	0^+						0			02Ca36				
7373(9)										02Ca36				
7402										01Ch43				
7606(11)										02Ca36				
7674										01Ch43				
7757(11)										02Ca36				
7840(90)														
7916(16)										02Ca36				
7986(16)										02Ca36				
8062										01Ch43				
8203										01Ch43				
8290(40)**														
8396(15)										01Ch43				
8487(36)										02Ca36				
8547(18)										01Ch43				
8613(20)										01Ch43				
8754(15)										01Ch43				
8925										01Ch43				
9066										01Ch43				
9172**										01Ch43				
9248**										01Ch43				
9329										01Ch43				
9452**										01Ch43				
9533										01Ch43				
9638										01Ch43				
9712										01Ch43				
9827										01Ch43				
9924										01Ch43				
10078(24)	2^+									02Gr27				
10190(29)										02Gr27				
10297(25)	2^+									02Gr27				
10429(26)	2^+									02Gr27				
10570(25)	2^+									02Gr27				
10660(28)	2^+									02Gr27				
10750(31)										02Gr27				

(continued) $^{22}_{12}$Mg

E^* [keV]	J^π	T	$I_{^6\mathrm{He}}$ (^{3}He,^{6}He)	Γ_γ [meV]	Γ [meV]	ω_γ [meV]	L (τ,n)	ε (τ,n)	$T_{1/2}$ or Γ_{cm}	Ref.	Branching ratios in percentage E^*_f: 0.0 J^π_f: 0^+	1246 2^+	3308 $\langle 4\rangle^+$	4401 $\langle 2\rangle^+$
10844(38)	0^+									02Gr27				
10910(50)	2^+									02Gr27				
10980(31)										02Gr27				
11050(50)	2^+									02Gr27				
11135(40)										02Gr27				
14044(15)	4^+	2												
			02Ca36	03Da36		03Da36		86Al15		Ref.				

Additional data on this isotope can be found in [03Da36, 02Ru03, 02Mi31, 02Gr27, 02Ca36, 01Gr14, 01Ch43, 01Ch35, 99Br18].
* disregarded in [01Ba17]
** uncertain [01Ch43]
Yield of ^6He in units counts per channel from reaction (^{3}He,^{6}He) at 7.5° [02Ca36].
Implication of data on ^{22}Mg states [01Ba17, 01Ch35, 02Ru03] for estimation of very important $^{21}Na(p,\gamma)^{22}Mg$ stellar reaction rate are discussed in [99Br18, 02Gr27, 01Gr14, 02Mi31].
Enhancement factor $\varepsilon=(d\sigma/d\Omega)_{exp}/213(d\sigma/d\Omega)_{DWBA}$) for the ($\tau$,n) reaction was measured and compared with that of ^{22}Ne in [86Al15].
Γ_γ, Γ and ω_γ from [03Da36] as well as uncertainties in E^* and $T_{1/2}$ are given in Supplement.

Energy levels and branching ratios [90En08, 98En04]. $^{23}_{12}$Mg

E^* [keV]	$2J^\pi$	$2T$	L	C^2S' (τ,d)	L	C^2S' (τ,d)	I_d (τ,d)	I_d (p,d)	σ (p,d) μb/sr	S_N (p,d)	C^2S (p,d)	σ (p,d) μb/sr	σ (p,t) μb/sr	L (p,t)	ω_γ [meV]	Ref.
0	3^+						x		1100	0.24	2.47	430	70	2		95Sc36
450.7(2)	5^+						x		6840	1.14		4100	235	0+2		95Sc36
2051(2)	7^+						x		82	0.03		30	50.9	2		95Sc36
2359(2)	1^+						x		118	0.03		260	3.4	2		95Sc36
2715(2)	9^+						x						34.2	4		95Sc36
2771(2)	1^-								>4760	2.42		2400	50.9	3		79Mi15
2908(3)	$\langle 3,5\rangle^+$								955	0.17		410	6.2	2		79Mi15
3800(4)	3^-								>1800	0.69		580	61	3		79Mi15
3864(4)	$\langle 3,5\rangle^+$						x						12.9	2		95Sc36
3974(4)	5^-								94	0.02			50.9	3		79Mi15
4354(4)	1^+						x		86	0.02		160	5.1	2		95Sc36
4685(4)	$\langle 1–9\rangle^+$								30	0.01		12	3.0	2		79Mi15
5287(4)	$\langle 3,5\rangle^+$								910	0.16		670	10.3	2+4		79Mi15
5456(6)	$\geq 3^+$								$\langle 4.0\rangle$	0.01			5.9	$\geq$4		79Mi15
5656(6)	5^+						x						55	0		95Sc36
5691(6)	$\langle 1–9\rangle^+$						x						5.0	2		95Sc36
5711(6)	$\langle 1–9\rangle^+$						x						4.9	2		95Sc36
5932(5)													6.1			81Na01
5984(5)	$\langle 1,3\rangle^-$								>1310	0.42		580	11.3			79Mi15

(continued) $^{23}_{12}$Mg

E^* [keV]	$2J^\pi$	$2T$	L	C^2S' (τ,d)	L	C^2S' (τ,d)	I_d (τ,d)	I_d (p,d)	σ (p,d) μb/sr	S_N (p,d)	C^2S (p,d)	σ (p,d) μb/sr	σ (p,t) μb/sr	L (p,t)	ω_γ [meV]	Ref.
6125(5)	⟨1–11⟩$^-$												22	3		81Na01
6191(5)	≥3$^+$												5.9	≥4		81Na01
6236(5)	⟨1–9⟩$^+$		0	0.08	2	0.47(10)							4.5	2		95Sc36
6375(6)	⟨3–13⟩$^+$		0	≤0.07	2	1.04(7)	x						2.4	4		95Sc36
6442(5)													6.3			81Na01
6507(5)	⟨1–9⟩$^+$		O	0.08(5)	2	0.24(6)						110	12	2		95Sc36
6538(5)	⟨1–9⟩$^+$		0	≤0.05	2	0.20(3)							2.0	2		95Sc36
6568(6)	5$^+$		0	1.58(18)	2	0.37(8)	x						5.6	0		95Sc36
6771(5)																
6799(6)													8.1			81Na01
6810(5)												180	4.4			81Na01
6899(4)	5$^+$		0	0.07	2	0.50(7)							11.2	0		95Sc36
6984(4)	5$^+$		0	0.30(7)	2	0.06(3)							39	0		95Sc36
7017(4)	⟨1–9⟩$^+$		0	0.02	2	0.14(3)							5.0	2		95Sc36
7111(6)	⟨3–13⟩$^+$		0	1.06(30)	2	0.37(9)							2.2	4		95Sc36
7146(5)	⟨5⟩$^+$												21.8	2		81Na01
7229(6)	⟨3–13⟩$^+$												1.5	4		81Na01
7258(6)	⟨3–11⟩$^+$		0	0.21	2	0.44(21)						65	2.2	≥4		95Sc36
	⟨1–13⟩$^-$		1	+0.12	3	0.80(53)										95Sc36
7381(8)																
7444(8)													3.8			81Na01
7493(8)	⟨1–9⟩$^+$		0	≤0.17	2	0.45(6)							4.4	2		95Sc36
7582(6)	5$^+$		0	≤0.07	2	≤0.03		36					4.2	0		94Ku06
7621(8)	7$^+$,9$^+$		0	0.12	2	1.12(12)	135	23					3.4	2		94Ku06
7641(8)	3$^+$,5$^+$		0	0.04	2	0.34(6)		26								94Ku06
7783(2)	1$^+$–13$^+$		0	0.36(34)	2	0.43(13)	123	129				150	7.4	4	1.8(7)	00Pe28
	⟨5–7⟩$^-$		1	+0.3(1)	3	0.50(16)										95Sc36
7801(2)	5$^+$	3	0	0.33	2	0.38(14)	60						140	0	2.2(11)	00Pe28
7855(2)	7$^+$,9$^+$		0	≤0.08	2	0.56(9)	74	26					3.2		16(3)	00Pe28
8016(6)	3$^+$		0	0.0	2	0.74(5)	74	40					4.7		68(20)	00Pe28
8058(7)	⟨5–7⟩$^+$		0	0.88(30)	2	0.91(7)	129	52							37(12)	00Pe28
	⟨3–9⟩$^-$		1	+1.0(2)	3	0.32(16)										95Sc36
8076(8)	⟨5–7⟩$^+$		0	1.41(34)	2	0.79(10)	166	20								94Ku06
	⟨3–9⟩$^-$		1	+0.6(2)	3	1.02(23)										95Sc36
8164(1)	5$^+$						240					90	46	0	235(33)	00Pe28
8193(8)							49									95Sc36
8288(3)	⟨5–13⟩$^+$						37								364(60)	00Pe28
8341(2)	⟨1–9⟩$^+$						117								95(30)	95Sc36
8393(6)																
8420(6)																
8455(4)	⟨3–13⟩$^+$												7.4	4		81Na01
8557(6)																
8617(6)													2.0	⟨≥4⟩		81Na01
8758(6)													2.8			81Na01
8793(8)																

(continued) $^{23}_{12}$Mg

E^* [keV]	$2J^\pi$	C^2S' (τ,d)	C^2S' (τ,d)	I_d (τ,d)	I_d (p,d)	σ (p,d) μb/sr	S_N (p,d)	C^2S (p,d)	σ (p,d) μb/sr	σ (p,t) μb/sr	L (p,t)	ω_γ [meV]	Ref.
8870(8)										2.1			81Na01
8916(6)	⟨3–13⟩$^+$						0.05		200	5.9	4		79Mi15
8941(7)													
8990(6)	⟨1–9⟩$^+$									18.1	2		81Na01
9018(6)	[3$^-$]						0.03			2.2			79Mi15
9060(8)													
9103(6)										6.3			81Na01
9138(6)	⟨3–13⟩$^+$									4.6	4		81Na01
9253(8)													
9328(8)										4.0			81Na01
9374(8)													
9403(8)													
9420(8)													
9465(6)	⟨1–9⟩$^+$									17	2		81Na01
9596(8)										3.8			81Na01
9642(8)										5.6			81Na01
9662(8)	[3$^-$]						0.14		340				79Mi15
9717(8)									340	4.8			81Na01
10570	[3$^-$]						0.09						79Mi15
		95Sc36	95Sc36		94Ku06	79Mi15	79Mi15			81Na01		00Pe28	Ref.
				95Sc36				80Ho18	75Ka10		81Na01		Ref.

Additional data on this isotope can be found in [04Je02, 02Fu17, 01Ba07, 00Pe28, 95Ti08].
Spectroscopic factor for proton transfer reaction (τ,d) as sum of components with L=0,2 is from [95Sc36] together with deuteron yield in units counts per channel.
For neutron pickup reaction (p,d) cross section σ (p,d) and C^2S are from [75Ka10] and [80Ho18]; the deuteron yield I_d in units counts per channel is from [94Ku06]; comparison of data from different works [79Mi15, 68Ko11, 75Ka10] can be found in [80Ho18, 79Mi15], see data in Supplement.

Energy levels and branching ratios [90En08, 98En04]. Part 2 $^{23}_{12}$Mg

E^* [keV]	$2J^\pi$	σ (p,d) μb/sr	S_N (p,d)	$T_{1/2}$ or Γ_cm	Ref.	Branching ratios in percentage		
						E_f^*:	0	451
						$2J_\mathrm{f}^\pi$:	3$^+$	5$^+$
0	3$^+$	520	0.72	11.32(1) s	95Sc36			
450.7(2)	5$^+$	4500	5.7	1.09(12) ps	95Sc36		100	
2051(2)	7$^+$			20(15) fs	95Sc36		16(3)	84(3)
2359(2)	1$^+$	310	0.20	575(120) fs	95Sc36		31(2)	69(2)
2715(2)	9$^+$			95(20) fs	95Sc36			68(2)
2771(2)	1$^-$	2650	3.4	110(20) fs	79Mi15		100	
2908(3)	⟨3,5⟩$^+$			<17 fs	79Mi15		66(2)	34(2)
3800(4)	3$^-$	1000	1.69	<14 ns	79Mi15		7.0(20)	87.0(20)
3864(4)	⟨3,5⟩$^+$				95Sc36			

(continued) $^{23}_{12}$Mg

E^* [keV]	$2J^\pi$	σ (p,d) μb/sr	S_N (p,d)	$T_{1/2}$ or Γ_{cm}	Ref.	Branching ratios in percentage E_f^*: 0, $2J_f^\pi$: 3^+	E_f^*: 451, $2J_f^\pi$: 5^+
3974(4)	5^-			<14 ns	79Mi15	40	
4354(4)	1^+	90	0.10	<14 ns	95Sc36	96(3)	
4685(4)	$\langle 1–9\rangle^+$				79Mi15		
5287(4)	$\langle 3,5\rangle^+$	310	0.54		79Mi15		
5456(6)	$\geq 3^+$				79Mi15		
5656(6)	5^+				95Sc36		
5691(6)	$\langle 1–9\rangle^+$				95Sc36		
5711(6)	$\langle 1–9\rangle^+$				95Sc36		
5932(5)					81Na01		
5984(5)	$\langle 1,3\rangle^-$	620	2.04		79Mi15		
6125(5)	$\langle 1–11\rangle^-$				81Na01		
6191(5)	$\geq 3^+$				81Na01		
6236(5)	$\langle 1–9\rangle^+$				95Sc36		
6375(6)	$\langle 3–13\rangle^+$				95Sc36		
6442(5)					81Na01		
6507(5)	$\langle 1–9\rangle^+$				95Sc36		
6538(5)	$\langle 1–9\rangle^+$				95Sc36		
6568(6)	5^+				95Sc36		
6771(5)							
6799(6)					81Na01		
6810(5)					81Na01		
6899(4)	5^+				95Sc36		
6984(4)	5^+				95Sc36		
7017(4)	$\langle 1–9\rangle^+$				95Sc36		
7111(6)	$\langle 3–13\rangle^+$				95Sc36		
7146(5)	$\langle 5\rangle^+$				81Na01		
7229(6)	$\langle 3–13\rangle^+$				81Na01		
7258(6)	$\langle 3–11\rangle^+$				95Sc36		
	$\langle 1–13\rangle^-$				95Sc36		
7381(8)							
7444(8)					81Na01		
7493(8)	$\langle 1–9\rangle^+$				95Sc36		
7582(6)	5^+				94Ku06		
7621(8)	$7^+,9^+$				94Ku06		
7641(8)	$3^+,5^+$				94Ku06		
7783(2)	$1^+–13^+$				00Pe28		
	$\langle 5–7\rangle^-$				95Sc36		
7801(2)	5^+				00Pe28		
7855(2)	$7^+,9^+$				00Pe28		
8016(6)	3^+				00Pe28		
8058(7)	$\langle 5–7\rangle^+$				00Pe28		
	$\langle 3–9\rangle^-$				95Sc36		
8076(8)	$\langle 5–7\rangle^+$				94Ku06		
	$\langle 3–9\rangle^-$				95Sc36		
8164(1)	5^+				00Pe28		

(continued) $^{23}_{12}$Mg

E^* [keV]	$2J^\pi$	σ (p,d) μb/sr	S_N (p,d)	$T_{1/2}$ or Γ_{cm}	Ref.	Branching ratios in percentage E^*_f: 0 $2J^\pi_f$: 3^+	451 5^+
8193(8)					95Sc36		
8288(3)	⟨5–13⟩$^+$				00Pe28		
8341(2)	⟨1–9⟩$^+$				95Sc36		
8393(6)							
8420(6)							
8455(4)	⟨3–13⟩$^+$				81Na01		
8557(6)							
8617(6)					81Na01		
8758(6)					81Na01		
8793(8)							
8870(8)					81Na01		
8916(6)	⟨3–13⟩$^+$				79Mi15		
8941(7)							
8990(6)	⟨1–9⟩$^+$				81Na01		
9018(6)	[3$^-$]				79Mi15		
9060(8)							
9103(6)					81Na01		
9138(6)	⟨3–13⟩$^+$				81Na01		
9253(8)							
9328(8)					81Na01		
9374(8)							
9403(8)							
9420(8)							
9465(6)	⟨1–9⟩$^+$				81Na01		
9596(8)					81Na01		
9642(8)					81Na01		
9662(8)	[3$^-$]	170	1.05		79Mi15		
9717(8)					81Na01		
10570	[3$^-$]				79Mi15		
		68Ko11	68Ko11		Ref.		
					Ref.		

Energy levels and branching ratios [90En08, 98En04]. Part 3 $^{23}_{12}$Mg

E^* [keV]	$2J^\pi$	Branching ratios in percentage E^*_f: $2J^\pi_f$:	2051 7^+	2359 1^+	2715 9^+,⟨5^+⟩	2771 1^-	2908 ⟨3,5⟩$^+$
2715(2)	9^+		32(2)				
3800(4)	3^-					6.0(20)	
3974(4)	5^-		50				10
4354(4)	1^+			4(3)			
5456(6)	≥3^+				100		

Energy levels and branching ratios [04Ha50, 90En08, 98En04]. $^{24}_{12}$Mg

E^* [keV]	J^π	T	ℓ_p	$S_p'^+$ eval	ℓ_n	$S_n'^-$ eval	$T_{1/2}$ or Γ_{cm}	Ref.	Branching ratios in percentage E_f^*: 0 J_f^π: 0^+	1369 2^+	4123 4^+	4238 2^+
0.0*	0^+		2	0.27	2	0.23*	Stable	90En08				
1368.67(1)*	2^+		0+2	0.2+6.5	⟨2⟩	0.48	1.35(3) ps	90En08	100			
4122.87(2)*	4^+		2	0.53	2	0.14	24(3) fs	90En08		100		
4238.4(1)*	2^+		0+2	0.7+1.4	0+2	0.01	49(3) fs	90En08	78(1)	21.8(10)		
5235.2(1)*	3^+		2	2.2	0+2	0.02	71(4) fs	90En08		97.3(3)	<1	2.7(3)
6010.3(1)*	4^+		2	<0.5	2	0.05	58(4) fs	90En08		89.3(4)	<1	9.4(4)
6432.5(2)*	0^+		⟨2⟩	≈0.01	⟨2⟩	<0.04	66(10) fs	90En08		82.6(7)		17(1)
7349.1(1)*	2^+		0+2	0.2+0.2	0+2	0.09	7(3) fs	90En08	62(2)	38(2)	<3	<2.0
7555.3(3)*	1^-		1	0.04	1+3	0.01	270(55) fs	90En08	47(3)	30(2)		23(2)
7616.5(1)*	3^-				1	0.23	0.94(17) ps	90En08	25(2)	61(2)	4.3(8)	4.9(8)
7747.7(2)*	1^+		0+2	0.6+1.2	2	0.02	14(3) fs	90En08	23(3)	68(3)		8.5(6)
7812.2(3)	4^-,5^+						17(3) fs				33(3)	
8113(2)	6^+						3.5(12) fs				100	
8358.1(3)*	3^-		1	0.17	3	0.01	59(7) fs	90En08	7(2)	60(4)		<10
8438.4(2)*	1^-						10(2) fs		82(5)	18(5)		
8439.3(1)*	4^+		2	0.81	2	0.40	5(2) fs	90En08		64(1)	24(1)	6.2(3)
8654.9(4)	2^+		0+2	0.8+1.7	2	0.01	10(3) fs	90En08	<3	82(2)		13(2)
8864.5(2)*	2^-		1	1.4	1	0.02	7(3) fs	90En08	0.9(2)	89.2(3)		7.9(3)
9003.5(2)	2^+		0+2	0.08	2	0.03	7.6(14) fs	90En08	62(8)	<11	22(6)	
9146.2(3)*	1^-		1+3	0.2+3.1	1	0.03		90En08	47(3)	28(2)		25(2)
9284.4(3)	2^+		2	1.2			10(3) fs	90En08		79(2)	21(2)	
9299.8(3)	3^-,4^-						175(35) fs				36(4)	
9300.9(2)	4^+						7(2) fs			54(2)	40(2)	1.5(3)
9305.4(3)	0^+–2								<3	100	<1	
9457.8(1)	2^+,3^+		2	1.0	2	0.06	4(2) fs	90En08	<1	66(1)	19(1)	3.7(4)
9516.2(1)	4^+	1	2	4.2	2	1.6	10(5) fs	90En08		0.08(4)	50(1)	<0.7
9528(2)	6^+						11(5) fs				22(5)	
9532.7(2)	⟨2,3⟩								<4	43(11)	<4	36(3)
9828.4(2)	1^+		2	1.1	2	0.01	285(60) as	90En08	76(2)	23(2)		
9967.8(3)	1^+		2	1.4	2	0.25	69(11) as	90En08	65(2)	35(2)		
10027.9(2)	5^-						62(17) fs			25(5)	41(4)	
10059.1(4)	1–,2^+		0+2	0.5+1.	2	0.65	<3 fs	90En08		86(3)		14(3)
10110.9(4)	0^+									100		
10161(3)	0^+,1^+											
10333.6(2)	3^-									62(7)		38(7)
10360.7(3)	2^+		2	2.2	2	0.07	1.5(3) fs	90En08	41(2)	57(2)	<1	
10576.0(1)	5^+						9(2) fs			<2.0	<4	<4.0
10581.3(1)	3,4^+				2	0.01	<2 fs	90En08		17.9(6)	15(1)	39(1)
10659.8(2)	1–3^-								70(8)	30(8)		
10660.2(2)	3^+,4^+						<2 fs			68(9)	24(9)	
10679.7(3)	0^+				2	0.02	2.3(8) eV	90En08		85(3)		12(1)
10712.2(2)	1^+		0	0.53	2	0.07	24(2) as	04Ha50	78(4)	22(4)		
10731.1(2)	2^+		0	0.84		incl	7(3) fs	04Ha50		73(3)		20(2)
10820.8(4)	3^+		2	0.057				04Ha50		100		
10917.2(3)	2^+		2	0.14	2	0.01	7.5(11) eV	04Ha50	34(2)	47(2)	16(1)	0.5(1)

(continued) **$^{24}_{12}$Mg**

E^* [keV]	J^π	T	ℓ_p	S'^{+}_{p} eval	ℓ_n	S'^{-}_{n} eval	$T_{1/2}$ or Γ_{cm}	Ref.	Branching ratios in percentage				
									E^*_f:	0	1369	4123	4238
									J^π_f:	0^+	2^+	4^+	2^+
11010(3)	5^+												
11016(2)	2^+				2	0.28	>1.4 eV	90En08		11(1)	81(2)	0.8(2)	1.9(3)
11128(3)							26(4) fs						
11162(2)	3^-						>0.6 eV			0.5(1)	72(2)	1.3(1)	
11181(3)	$\langle 2–4\rangle^-$												
11187.3(3)	$\langle 1–3\rangle$										100		
11208(2)	2^+				2	0.08	2.2(12) meV	90En08		<3	100		
11216.7(2)	4^+					incl	0.78(11) eV				86(2)	11(1)	
11293(3)	$2^+,3^-,4^+$				2	0.12	20(3) fs	90En08				32(5)	
11314(2)	$\langle 3,4\rangle^+$					incl					100		
11330(3)	$\langle 2^+–4^+\rangle$		2	0.48		incl		04Ha50			100		
11390(3)	1^-		1	⟨0.06⟩	1	0.18	≈0.5 keV	04Ha50		25(1)	70(2)		1.5(2)
11394(4)													
11453(1)	2^+		0	0.24			>1.0 eV	04Ha50		22(1)	44(1)	0.8(1)	21(1)
11457(2)	0^+		2	0.16			≈1 keV	04Ha50					
11519(2)	2^+		0	⟨0.10⟩			≈0.5 keV	04Ha50		63(2)	15(1)	4.4(2)	5.1(2)
11595(2)	3^-						15(4) fs					1.7(2)	
11618(3)													
11698.2(10)	4^+		2	0.11			1.6(6) eV	04Ha50			28(2)	6.9(4)	8.7(4)
11729.8(17)	0^+		2	≤0.00			10(2) keV	04Ha50			92(2)		3.3(2)
11830.7(15)								04Ha50					
			0	0.039									
			1	0.009									
			2	0.015									
			3	0.024									
11860(3)	$6^+,7^-,8^+$						62(24) fs	04Ha50					
11862.4(9)	1^-		1	0.026			7.0(3) keV	04Ha50		57(2)	37(2)		2.5(2)
11909.7(18)							6(2) keV	04Ha50					
11933.4(4)	$\langle 2–4\rangle$		[2]	0.25			<20 eV	04Ha50					
11966.9(5)	2^+		0	0.084			2.3(5) keV	04Ha50		16(1)	35(2)	1.2(1)	16(1)
11988.3(3)	2^+		0+2	0.4+0.			<20 eV	04Ha50					
12002.4(24)	6^+						<1 keV	04Ha50				63(2)	
12017.4(5)	3^-		1	0.13			0.7(2) keV	04Ha50					
12051.6(5)	4^+		2	0.13			<20 eV	04Ha50			1.0(2)	72(2)	
12117.1(12)	4^+						1.9(3) keV				5(1)	14(2)	34(2)
12128(3)	$\langle 3–5\rangle$												
12161(3)	4^+						0.9(3) keV				29(3)	51(3)	6(1)
12181.4(7)	$\langle 1,2^+\rangle$		2	0.13			<50 eV	04Ha50					
12257(1)	3^-		[3]	[0.28]			1.2(6) keV	04Ha50					
12258(1)	2^-		[1]	[0.35]			<60 eV	04Ha50					
12339.1(7)	3^+						<70 eV						
12344(3)							3.5(14) fs						
12383	0^-						7(2) keV						
12398.7(7)	3^+						<90 eV						
12403.3(7)	2^+						<100 eV						

(continued) $^{24}_{12}$Mg

E^* [keV]	J^π	T	ℓ_p	S'^{+}_{p} eval	ℓ_n	S'^{-}_{n} eval	$T_{1/2}$ or Γ_{cm}	Ref.	Branching ratios in percentage E^*_f: 0, J^π_f: 0^+	E^*_f: 1369, J^π_f: 2^+	E^*_f: 4123, J^π_f: 4^+	E^*_f: 4238, J^π_f: 2^+
12441(3)	7^-						11(3) fs					
12447(3)	1^-						5.7(4) keV					
12467(3)	2^+						3.8(3) keV					
12504(3)	4^+						2.3(3) keV	91Ab05		52(3)	13(2)	24(2)
12526.5(8)	1^+		0+2	0.6+0.			7.5(10) keV	04Ha50				
12577(3)	2^+						6.2(6) keV	91Ab05				
12636.8(6)	4^+						30(20) eV					
12657.2(6)							90(80) eV					
12658.9(7)	3^-						0.9(3) keV					
12669.9(2)	2^-						4.0(5) keV					
12731.4(8)							<0.6 keV					
12737.1(9)	2^+						8.1(7) keV	91Ab05				
12741	$\langle 4^+ \rangle$						2(2) keV	91Ab05				
12771	0^+						34(18) keV	91Ab05				
12776(1)	2^+						31(6) keV	91Ab05				
12805.9(8)	2^+						1.7(5) keV					
12815.9(6)	1^+						2.8(3) keV					
12845.0(8)	$2^+,3^-,4^+$						0.2(1) keV					
12850.3(8)	2^-						0.32(3) keV					
12852(1)	$\langle 0^- \rangle$						1.0(1) keV					
12861(3)	6^+						<1 keV				9(2)	
12893.2(8)	1^+						0.33(3) keV					
12919.7(7)	3^-		1+3	0.2+0.			6.7(5) keV	04Ha50				
12954.9(2)	1^+						2.5(2) keV					
12961.9(8)	2^-		1+3	0.3+0.			3.2(3) keV	04Ha50				
12966.0(8)							<1.5 keV	04Ma37				
12972(3)	4^+						3.3(3) keV	91Ab05				
12995.8(8)	$\langle 6^+ \rangle$						0.3(2) keV	91Ab05				
13027.9(6)	2^+		2	0.56			0.80(5) keV	04Ha50				
13041(3)	$0^+,\langle 2^+ \rangle$						2.8(6) keV	91Ab05				
13050.2(1)	4^+						0.09(3) keV				93(1)	
13055(3)	5^-						<1 keV				71(3)	
13086.8(7)	3^-		1+3	0.2+0.0			9(3) keV	04Ha50				
13130(3)							7(1) keV					
13137(3)	2^+						5.4(5) keV					
13144							3.2(5) keV					
13158.5(9)							1.7(7) keV					
13178(3)												
13182.6(10)							5.6(3) keV	91Ab05				
13198(3)	$0^+,4^+$						2.7(4) keV	91Ab05				
13213(3)							2.3(12) fs					
13253(5)	1^-						36(3) keV					
13266.8(9)	$\langle 1 \rangle^+$						6.0(6) keV	04Ma37				
13273.6(12)	1^-						≈2 keV					
13332(3)	1^-						31(3) keV					

(continued) $^{24}_{12}$Mg

E^* [keV]	J^π	T	ℓ_p	S'^{+}_{p} eval	ℓ_n	S'^{-}_{n} eval	$T_{1/2}$ or Γ_{cm}	Ref.	Branching ratios in percentage E^*_f: 0, J^π_f: 0^+	E^*_f: 1369, J^π_f: 2^+	E^*_f: 4123, J^π_f: 4^+	E^*_f: 4238, J^π_f: 2^+
13343.8(8)	3^+						1.2(2) keV	04Ma37				
13350												
13353.1(10)	2^-						9.0(9) keV					
13365.0(10)	⟨4^+–6⟩						1.6(7) keV					
13417.4(10)	2^+						4.5(5) keV	91Ab05				
13422.8(13)	3^-						4.5(5) keV	91Ab05				
13429(5)							15(3) keV					
13436(5)	6^+						<1 keV	91Ab05			100	
13444.9(10)	⟨2,3⟩$^-$						<0.4 keV					
13451.1(10)	2^+,⟨1^+⟩						2.1(2) keV					
13473.0(10)	⟨2^+–4⟩						<1 keV					
13481.0(10)							1.2(3) keV					
13540.4(10)	⟨1–3⟩$^+$						6.9(10) keV					
13581(5)	1^-						21(2) keV					
13585.3(12)	1^-						8.0(10) keV	91Ab05				
13630.7(13)	1^+						1.5(2) keV					
13675.5(11)	2^+						5.4(5) keV	91Ab05				
13682(3)	2^-						23(3) keV					
13720(5)	2^+						2.6(3) keV	91Ab05				
13770(3)	5^-						1.9(2) keV	91Ab05			42(6)	
13798(3)							4.4(4) keV					
13810(3)	1^-						24(4) keV					
13820(3)	2^-						30(5) keV					
13840(3)							2.5(5) keV					
13852(5)	6^+						<1 keV	91Ab05				
13879(3)	1^+						2.0(2) keV					
13884(3)	2^+						48(8) keV	91Ab05				
13891(3)							15(3) keV	91Ab05				
13933(3)	⟨1–3⟩$^+$						3.0(6) keV					
13946(3)	1^+						8.0(8) keV					
13982(3)	⟨1–3⟩$^+$						≈2 keV					
14017(3)	3^-						8.5(9) keV					
14024(3)	2^+						7.0(7) keV	91Ab05				
14072	2^+,4^+						24(5) keV	92Da10				
14078(3)	1^+						5.5(6) keV					
14082(5)	6^+,⟨4^+⟩						<1 keV	91Ab05			45(3)	
14099(5)	⟨2,4⟩$^+$						1.4(4) keV			9(3)		56(5)
14134	4^+						1.8(4) keV	92Da10			80(4)	
14150(5)							6.2(7) keV					
14152(3)	8^+						<4 fs					
14238	2^+,4^+						11.3(14) keV	92Da10				
14257	4^+						16(2) keV	91Ab05				
14327(5)	4^+						<1 keV				31(3)	
14348	⟨3^-⟩						112(29) keV	91Ab05				
14362	4^+						12(3) keV	92Da10				

(continued) $^{24}_{12}$Mg

E^* [keV]	J^π	T	ℓ_p	S'^{+}_{p} eval	ℓ_n	S'^{-}_{n} eval	$T_{1/2}$ or Γ_{cm}	Ref.	Branching ratios in percentage E^*_f: 0 J^π_f: 0^+	E^*_f: 1369 J^π_f: 2^+	E^*_f: 4123 J^π_f: 4^+	E^*_f: 4238 J^π_f: 2^+
14410(20)	$2^+,4^+$											
14424	2–$,4^+$						42 keV	92Da10				
14601	$\langle 3^-,5^- \rangle$						<13 keV	92Da10				
14661	$4^+,6^+$						11(9) keV	92Da10				
14705	$3^-,5^-$						9(1) keV	92Da10				
14738	4^+						13 keV	91Ab05				
14863	$\langle 2^+ \rangle$						≤13 keV	91Ab05				
14921	$\langle 0^+,1^- \rangle$						≈10 keV	91Ab05				
14970	$3^-,5^-$						≤13	92Da10				
15107	$\langle 3^-$–$6^+ \rangle$						≤13 keV	92Da10				
15115(40)	6^-											
15134	4^+						15 keV	91Ab05				
15150(20)	7^-											
15172	4^+						57(7) keV	91Ab05				
15209	$3^-,5^-$						33(3) keV	92Da10				
15226	4^+						27 keV	91Ab05				
15259	$\langle 1^-,3^- \rangle$						≈8 keV	91Ab05				
15354	$2^+,4^+$						21(4) keV	91Ab05				
15378	4^+						31(7) keV	91Ab05				
15436.4(6)	0^+						<0.5 keV	91Ab05		<3.0		
15477	$\langle 2^+ \rangle$						15 keV	91Ab05				
15510	$\langle 5^-$–$8^+ \rangle$						18(2) keV	92Da10				
15604	2^+						31(8) keV	91Ab05				
15684	$\langle 0^+ \rangle$						13 keV	92Da10				
15786	4^+						13 keV	91Ab05				
15821							21 keV	92Da10				
15846							<13 keV	91Ab05				
15879	4^+						42 keV	91Ab05				
15971							≤13 keV	92Da10				
15971								91Ab05				
16070(20)	6^+											
16129	$\langle 3^- \rangle$						29 keV	91Ab05				
16162							<8 keV	91Ab05				
16196	6^+						8 keV	91Ab05				
16271	4^+						30 keV	91Ab05				
16302(20)	8^+						10 keV	91Ab05				
16336	$\langle 4^+ \rangle$						13 keV	91Ab05				
16388	2^+						37(10) keV	91Ab05				
16433	7^-						10 keV	91Ab05				
16460	$\langle 4^+,6^+ \rangle$						8(2) keV	92Da10				
16518	$4^+,6^+$						33 keV	92Da10				
16560(20)	$8^+,9^-$											
16590(20)	$8^+,9^-$											
16557	$4^+,5^+$						33 keV	92Da10				
16604	$\langle 5^- \rangle$						≤8 keV	91Ab05				

(continued) $^{24}_{12}$Mg

E^*	J^π	T	ℓ_p	S'^+_p	ℓ_n	S'^-_n	$T_{1/2}$ or	Ref.	Branching ratios in percentage E^*_f: 0	1369	4123	4238
[keV]				eval		eval	Γ_{cm}		J^π_f: 0^+	2^+	4^+	2^+
16641							17 keV	92Da10				
16666							30 keV	91Ab05				
16775	$\langle 4^+,6^+\rangle$						30 keV	91Ab05				
16836	$\langle 3–6\rangle$						≤8 keV	92Da10				
16867	$\langle 5^-\rangle$						73(17) keV	91Ab05				
16904(3)	8^+						<7 fs					
16920	$\langle 4^+–7^-\rangle$						≤8 keV	92Da10				
17010	7^-						15(10) keV	91Ab05				
17080	6^+						44(6) keV	91Ab05				
17133	5^-						26(6) keV	91Ab05				
17219	4^+						17(3) keV	91Ab05				
17418	6^+						13 keV	92Da10				
17496	6^+						29 keV	92Da10				
17503							≈25 keV	91Ab05				
17615	5^-						23(8) keV	91Ab05				
17799	$4^+,6^+$						21 keV	92Da10				
17940	4^+						56(8) keV	91Ab05				
18030	5^-						50(8) keV	91Ab05				
18067							≤8	92Da10				
18082	$4^+,6^+$						33 keV	92Da10				
18145	5^-						33 keV	92Da10				
18161	7^-						<8 keV	91Ab05				
18195							≈25 keV	91Ab05				
18245							≈8 keV	91Ab05				
18266	7^-						25 keV	92Da10				
				90En0		90En08		Ref.				
				04Ha5				Ref.				

Additional data on this isotope can be found in [04Ma37, 03Me27, 01Wi18, 01Wi07, 01Tu06, 01Sh08, 01Fr03, 99Yo05, 98Mu16, 98Fr03, 91Co10, 90Ya07, 90En02, 76Co19, 67De06].
Abundance: 78.99(4) %.
* Parameters S'^+_p and S^-_n for these 16 states were evaluated in [77En02]; values $(2J+1)S^+_p$ and $(2J+1)S^-_n$ are from more recent evaluation [90En08] in which relative S-factors from [75El05] were normalized to that for the ground state from [69HaZD].
Levels at 11453-11457 keV and 12257-12258 keV are unresolved doublets.
Spectroscopic information for levels with $E^*\leq 10.68$ MeV are taken from [90En08] (Table 24.19) by a selection of data for the (d,n) reaction [68Fu10], (α,d) reaction [78Ga19] (parameter $(2J+1)S^+_p$) and (τ,α) reaction [69HaZD, 75El05] (parameter S^-_n) measured with the energy resolution better than 40 keV.
Comparison of proton widths, strengths of low-energy resonances and corrected (p,α) resonance strengths are given in [04Ha50] together with the discussion about the importance of these data for astrophysics.
Levels at 30.0 MeV (J=10) and 48.9 MeV (J=17±1) were observed in [01Fr19].
Data for this isotope are considered in vol. LB I/18A.

Energy levels and branching ratios [04Ha50, 90En08, 98En04]. Part 2 $^{24}_{12}\mathbf{Mg}$

E^* [keV]	J^π	Branching ratios in percentage								
	E_f^*:	5235	6010	6432	7349	7555	7616.47	7747.7	7812.2	8113
	J_f^π:	3^+	4^+	0^+	2^+	1^-	3^-	1^+	$\langle 4^-,5^+ \rangle$	6^+
6010.3(1)*	4^+	1.3(2)								
7349.1(1)*	2^+	<1.0	<1.0							
7616.5(1)*	3^-	4.1(7)	<3.0							
7747.7(2)*	1^+	<0.9								
7812.2(3)	$4^-,5^+$	60(3)	7(2)							
8358.1(3)*	3^-	20(2)	13(2)							
8439.3(1)*	4^+	4.8(2)	1.20(10)		0.22(2)		0.03(2)			
8654.9(4)	2^+			5.0(10)						
8864.5(2)*	2^-	1.9(1)			<0.30					
9003.5(2)	2^+			8(4)	8(2)					
9299.8(3)	$3^-,4^-$						64(4)			
9300.9(2)	4^+	<2.0	<2.0		4.1(4)					
9305.4(3)	0^+–2	<1			<1					
9457.8(1)	$2^+,3^+$	7.9(5)	1.4(2)		1.0(3)		<0.6	1.4(6)		
9516.2(1)	4^+	1.8(2)	5.3(3)		<0.07		2.3(2)		0.04(2)	
9528(2)	6^+		78(5)							
9532.7(2)	$\langle 2,3 \rangle$	17(3)			<4.2		3.2(3)			
9828.4(2)	1^+			1.6(4)						
10027.9(2)	5^-		9(1)				3.6(10)		3.0(5)	
10360.7(3)	2^+	1.7(4)	<0.8	0.7(2)	<0.7					
10576.0(1)	5^+	17(2)	<3.0		<2.0		<4.0			
10581.3(1)	$3,4^+$	21(1)	8.0(3)		<0.3		<0.5			
10660.2(2)	$3^+,4^+$	8(2)								
10679.7(3)	0^+				2.0(3)	0.5(3)				
10731.1(2)	2^+	7(2)								
10917.2(3)	2^+	1.3(1)	0.80(10)	0.40(10)						
11010(3)	5^+		32(7)							
11016(2)	2^+	1.2(2)	0.70(10)			0.30(10)		0.60(10)		
11128(3)							100			
11162(2)	3^-	8.1(2)	9.4(2)			4.5(2)				
11216.7(2)	4^+	0.8(1)			0.30(10)					
11293(3)	$2^+,3^-,4^+$						8(2)			
11390(3)	1^-			0.81(10)				1.01(10)		
11453(1)	2^+	1.8(2)			0.60(10)		0.40(10)	1.4(2)		
11519(2)	2^+			7.7(3)			0.90(10)	0.70(10)		
11595(2)	3^-						44(2)			
11698.2(10)	4^+	3.0(2)	2.2(2)		2.6(2)				0.6(2)	
11729.8(17)	0^+					1.50(10)				
11860(3)	$6^+,7^-,8^+$									100
11862.4(9)	1^-				1.00(10)	2.5(2)				
11966.9(5)	2^+	21(1)		3.3(2)						
12002.4(24)	6^+		19(2)							
12051.6(5)	4^+	22(1)	5.0(5)							
12117.1(12)	4^+		10(2)							
12128(3)	$\langle 3–5 \rangle$								100	

(continued) $^{24}_{12}$Mg

E^* [keV]	J^π	Branching ratios in percentage								
	E^*_f:	5235	6010	6432	7349	7555	7616.47	7747.7	7812.2	8113
	J^π_f:	3^+	4^+	0^+	2^+	1^-	3^-	1^+	$\langle 4^-,5^+\rangle$	6^+
12161(3)	4^+	4(1)								
12344(3)									100	
12504(3)	4^+	8(1)			3.0(5)					
12861(3)	6^+		47(2)							
13041(3)	$0^+,\langle 2^+\rangle$					x		x		
13050.2(1)	4^+	1.5(4)	2.5(6)							
13055(3)	5^-						10(2)			
13213(3)										100
14082(5)	$6^+,\langle 4^+\rangle$		36(3)							
14099(5)	$\langle 2,4\rangle^+$	35(5)								
14134	4^+		20(4)							
14327(5)	4^+	33(3)	36(3)							

Energy levels and branching ratios [04Ha50, 90En08, 98En04]. Part 3 $^{24}_{12}$Mg

E^* [keV]	J^π	Branching ratios in percentage								
	E^*_f:	8358.1	8439.30	8654.9	9003.5	9284.4	9299.8	9300.95	9457.80	9516.21
	J^π_f:	3^-	4^+	2^+	2^+	2^+	$\langle 3,4\rangle^-$	4^+	$\langle 2,3\rangle^+$	4^+
9516.2(1)	4^+		41.0(10)							
10027.9(2)	5^-	18.5(9)								
10576.0(1)	5^+		25(1)					15.8(9)		42(3)
11010(3)	5^+		68(7)							
11162(2)	3^-		4.5(2)							
11216.7(2)	4^+			0.70(10)						1.20(10)
11293(3)	$2^+,3^-,4^+$	37(3)				19(2)		4(1)		
11390(3)	1^-		0.71(10)							
11519(2)	2^+	0.20(10)								
11595(2)	3^-	3.6(3)				5.5(5)	33(2)	2.6(6)		9.6(6)
11698.2(10)	4^+		1.6(2)	1.1(2)		0.5(2)				44(2)
12002.4(24)	6^+		6.0(10)							
12117.1(12)	4^+									37(3)
12161(3)	4^+				2.0(5)					9.0(10)
12861(3)	6^+		19(2)					25(2)		
13041(3)	$0^+,\langle 2^+\rangle$		x							
13050.2(1)	4^+								3.2(6)	
13055(3)	5^-	9(2)								
13770(3)	5^-	58(6)								
14082(5)	$6^+,\langle 4^+\rangle$							1.0(4)		

Energy levels and branching ratios [04Ha50, 90En08, 98En04]. Part 4 **$^{24}_{12}$Mg**

E^*	J^π	Branching ratios in percentage									
	E^*_f:	9828.4	9967.8	10027.9	10059.1	10333.6	10712.2	10731.1	11010	11208	11860
[keV]	J^π_f:	1^+	1^+	5^-	$\langle 1,2\rangle^+$	3^-	1^+	2^+	5^+	2^+	
11016(2)	2^+		2.0(5)								
11390(3)	1^-		0.71(10)								
11453(1)	2^+		5.6(3)		0.50(10)		0.40(10)	1.5(2)			
11519(2)	2^+		0.70(10)		1.3(2)			1.00(10)			
11698.2(10)	4^+								0.80(10)		
11729.8(17)	0^+		3.20(20)								
11966.9(5)	2^+		1.7(2)		4.2(2)			1.3(2)		0.3(1)	
12002.4(24)	6^+								12(2)		
12441(3)	7^-			100							
13041(3)	$0^+,\langle 2^+\rangle$	100	x								
13055(3)	5^-					10(2)					
14082(5)	$6^+,\langle 4^+\rangle$								18(2)		
15436.4(6)	0^+		81(2)				19(2)				
16904(3)	8^+										100

Energy levels and branching ratios [90En08, 98En04]. **$^{25}_{12}$Mg**

E^* [keV]	$2J^\pi$	$2T$	L	S_N (d,p)	S_N (d,n)	S_N (τ,d)	$B(M1)$ [μ_N^2]	$B(M1)$ (e,e′)	L (d,p)	S^+_n eval	S^-_n eval	S^-_n (p,d)	C^2S (d,t)	$T_{1/2}$ or Γ_cm	Ref.
0	5^+		2	0.53	0.58	0.25				0.37(8)	1.8(2)		3.98	Stable	77En02
585.09(2)	1^+		0	0.49	0.85	0.37				0.51(7)	0.13(2)		0.20	3.38(5) ns	77En02
974.85(2)	3^+		2	0.37	0.45	0.32				0.35(7)	0.10(3)		0.11	11.3(3) ps	77En02
1611.77(1)	7^+						0.83(12)	1.2(3)						15(2) fs	04Fu02
1964.61(3)	5^+		2	0.10	0.20					0.11(2)	0.17(3)		0.23	0.70(6) ps	77En02
2563.44(4)	1^+		0	0.16		0.14				0.13(2)	0.05(2)		0.12	10(3) fs	77En02
2737.7(6)	7^+													275(30) fs	
2801.47(4)	3^+		2	0.31		0.34				0.36(7)	0.20(4)		0.35	28(7) fs	77En02
3405.2(2)	9^+													7.1(4) fs	67De10
3413.44(3)	3^-		1	0.30						0.26(5)	<0.1		0.07	5.8(3) fs	77En02
3907.7(8)	5^+		2	0.02								0.06		6.2(21) fs	88Pe19
3970.7(3)	7^-		3	0.43						0.51(9)	<0.4	0.02	0.18	22(4) fs	77En02
4059.4(4)	9^+													54(3) fs	
4276.49(4)	1^-		1	0.21						0.19(3)	0.3(1)			<3.5 fs	77En02
4359.4(2)	3^+		2	0.01									0.09	<7 fs	84Ki11
4711.4(4)	9^+													26(2) fs	
4722(1)	5^+												0.32	<7 fs	
5012.2(3)	7^+													<7 fs	
5116.6(1)	1^-			0.014									1.0	<7 fs	77Be48
5251.5(2)	11^+													15(2) fs	
5460.3(2)	13^+													1.44(8) ps	
5474.8(15)	1^+		0	0.17									0.08	<7 fs	75Me12

(continued)

$^{25}_{12}$Mg

E^*	$2J^\pi$	$2T$	L	S_N	S_N	S_N	$B(M1)$	$B(M1)$	L	R	S_n^-	C^2S	$T_{1/2}$ or	Ref.
[keV]				(d,p)	(d,n)	(τ,d)	[μ_N^2]	(e,e′)	(d,p)	(d,p)	(p,d)	(d,t)	Γ_cm	
5522.2(7)	5		⟨2⟩										46(6) fs	
5532(2)	11^+												6(2) fs	
5744(2)	⟨7,9^+⟩			<0.004										75Me12
5747.0(10)	⟨3,5^+⟩						0.11(5)	0.27(13)					0.6(2) fs	04Fu02
5793.1(3)	7^-										0.004		37(6) fs	88Pe19
5860(2)	5^+			<0.001							0.03	0.12	<7 fs	84Ki11
5971.6(13)	9^+												<7 fs	
5978.0(5)	7^+												<7 fs	
6041.2(5)	$⟨7,11⟩^+$												<6 fs	
6082(1)	5^+										0.11	≈0.6	<7 fs	84Ki11
6169(3)	3												<7 fs	
6362(2)	3												<7 fs	
6434(2)	9^+												<7 fs	
6468(2)	3^-											≈0.75	<7 fs	84Ki11
6570(1)	⟨1^+,3⟩												<7 fs	
6678(1)	5												<40 fs	
6777(3)	1^+											0.19	<7 fs	84Ki11
6832(2)	⟨3^-,5⟩												<30 fs	
6840(2)	5												<9 fs	
6883(2)	⟨7–11^+⟩												100(40) fs	
6913(2)	5^-										0.013		<7 fs	88Pe19
6958(2)	5^-										0.013		<7 fs	88Pe19
7038(2)	5							0.55(25)					<20 fs	04Fu02
7088(4)	$⟨3,5⟩^+$										0.009		<7 fs	88Pe19
7181(2)	⟨3,7⟩												<30 fs	
7185(2)													<14 fs	
7226(2)	$⟨3,5⟩^+$										0.006		<7 fs	88Pe19
7285(2)	7^-										0.032		<7 fs	88Pe19
7375.2(2)	3^+								>2	>1000			1.8(2) eV	76Bo18
7410.9(2)	3^-								1	8(4)			7.2(5) keV	76Bo18
7493(2)	$11^{⟨+⟩}$												21(8) fs	
7500.3(3)	5												<10 fs	
7525(2)	⟨5^+,7⟩												<10 fs	
7551(1)	$⟨9,13⟩^+$												<20 fs	
7577.5(4)	5^+													
7586.0(4)	1^-								1	5(1)			78(1) keV	76Bo18
7633(5)													<50 fs	
7653(2)	9												<20 fs	
7685(3)														
7743.9(4)	3^-								1	5.3(21)			31(1) keV	76Bo18
7786.9(5)	5^+	3									2.3	1.95	13(1) eV	88Pe19
7801(2)	9												<7 fs	
7808.8(5)	3^-												530(30) eV	
7838(2)	7												<30 fs	
7863.7(6)	3^+	3									3.50		13.0(5) eV	88Pe19

(continued) $^{25}_{12}$Mg

E^* [keV]	$2J^\pi$	$2T$	L	S_N (d,p)	S_N (d,n)	S_N (τ,d)	$B(M1)$ [μ_N^2]	$B(M1)$ (e,e′)	L (d,p)	R (d,p)	S_n^+ eval	S_n^- eval	C^2S (d,t)	$T_{1/2}$ or Γ_{cm}	Ref.
7866(2)	⟨7,11⟩$^+$													<12 fs	
7946.7(6)	1$^-$													900(200) eV	
7961(2)	7													<14 fs	
7963.7(7)	1$^+$								0	1.7(3)				10.0(15) keV	76Bo18
8011(2)	⟨9,13$^+$⟩													37(4) fs	
8075(2)														<14 fs	
8119(3)														<10 fs	
8140.8(8)	3$^+$								2	46(9)				13.0(5) keV	76Bo18
8244(1)															
8267(2)	⟨7,9$^+$⟩													<10 fs	
8311.3(10)	5$^+$													1.25(10) keV	
8316.5(10)															
8324.2(10)	1$^+$									15(3)				10.0(15) keV	76Bo18
8351.3(11)															
8362.6(11)	1$^+$									15(3)				20(2) keV	76Bo18
8400(10)															
8447(10)															
8532(2)	⟨7,11⟩													<10 fs	
8548(3)										9(5)				<17 fs	76Bo18
8551(1)	11													<5 fs	
8558.8(13)	5$^+$													1.8(1) keV	
8569.5(13)	3$^-$								1	11(4)				4.2(2) keV	76Bo18
8579.5(13)	3$^+$									12(4)				8.4(5) keV	76Bo18
8596.7(13)															
8656(2)	7													<10 fs	
8705(10)															
8811(2)														<8 fs	
8834.6(13)	1$^+$	3							0	3.0(6)			0.24	4.2(4) keV	84Ki11
8869.1(16)	3$^-$													15(1) keV	
8888(3)	⟨7–11⟩													<17 fs	
8894.1(16)	1$^-$								1	13(3)				35(3) keV	76Bo18
8896(1)														17(8) fs	
8970.8(17)	5$^+$								2	31(6)				9.6(5) keV	76Bo18
9013(2)	7$^+$–11													<5 fs	
9014.0(18)	⟨1,3⟩$^-$														
9071.8(7)										20(4)					76Bo18
9154										28(6)					76Bo18
9325.8(9)										27(6)					76Bo18
9410(3)														12(8) fs	
9502.1(15)															
9651(2)														<5 fs	
9685(2)														<5 fs	
9830(10)															
9947(2)															
10038.8(15)															

(continued) **$^{25}_{12}$Mg**

E^* [keV]	$2J^\pi$	$2T$	L	S_N (d,p)	S_N (d,n)	S_N (τ,d)	$B(M1)$ [μ_N^2]	$B(M1)$ (e,e′)	R (d,p)	S_n^+ eval	S_n^- eval	S_n^- (p,d)	C^2S (d,t)	Ref.
10137(4)														
10252.6(9)														
10618(8)	$\langle 3,5\rangle^+$	3										0.1*		70De40
10653(2)														
11003(3)														
11045.5(18)														
11087(7)														
11200(10)														
11361(3)														
11389.1(14)														
11410(3)														
11460(3)														
11486(6)														
11725(5)	$\langle 1,3\rangle^-$	3										0.27*	0.79	84Ki11
11747(10)														
11775(10)														70De40
11998.9(18)														
12898(10)	$\langle 1,3\rangle^-$	3										0.16*	0.45	84Ki11
13143(4)														
13332(10)														
				75Me12	75Me12				76Bo18			88Pe19		Ref.
				77Be48		75Me12	04Fu02	04Fu02		77En02	77En02		84Ki11	Ref.

Additional data on this isotope can be found in [92Wa06, 91Ho09, 91He05, 90Uc01, 73Sc05, 70Nu01, 69Bo18].

Abundance: 10.00(1) %.

* C^2S from the (τ,α) reaction [70De40]

Values S_n^- were normalized to facilitate the comparison [67De10].

Given at left $(2J{+}1)S$ values [75Me12, 77Be48] from the neutron transfer (d,p) reaction for ℓ_n=1 levels at 3413, 4276, 5116 keV were used in [92Wa06] for the calculation of direct-capture cross section for primary $E1$ transitions in the (n,γ) reaction.

Parameters from proton transfer reactions (d,n) and (τ,d) were also considered in [75Me12].

For unbound states the ratios between cross sections of the (d,p) reaction and the neutron scattering R=σ (d,p)/$\sigma_{n,tot}$ were studied in [76Bo18].

Values B(M1) from γ decay (given in Supplement) and B(M1) from the (e,e′) reaction (both in units $\mu^2{}_N$) were compared and discussed in [04Fu02].

Spectroscopic factors S_n^+ and S_n^- evaluated by P.Endt [77En02] are presented at right in two columns, data on S_n^- from the (p,d) reaction [88Pe19] and the (d,t) reaction [84Ki11] are given at right; data from the earlier work [67De10] on all three neutron pickups reaction (d,t), (τ,α) and (p,d) are given in Supplement; values S_n^- are normalized to facilitate the comparison [67De10].

Data for this isotope are considered in vol. LB I/18A.

Energy levels and branching ratios [90En08, 98En04]. Part 2 $^{25}_{12}$Mg

E^*	$2J^\pi$	S_n^-	S_n^-	S_n^-	Ref.		Branching ratios in percentage					
						E_f^*:	0	585.1	974.9	1612	1965	2563
[keV]		(d,t)	(τ,α)	(p,d)		$2J_f^\pi$:	5^+	1^+	3^+	7^+	5^+	1^+
0	5^+	2.5	2.5	2.5	77En02							
585.09(2)	1^+	0.18	0.17	0.17	77En02		100					
974.85(2)	3^+	0.12	0.11	0.11	77En02		51(1)	49(1)				
1611.77(1)	7^+	<0.2	0.15		04Fu02		100					
1964.61(3)	5^+	0.24	0.14	0.22	77En02		26(1)	47(1)	27(1)			
2563.44(4)	1^+	0.04		0.04	77En02		3(1)	80(1)	17(1)			
2737.7(6)	7^+						6(1)		87(1)		7.0(10)	
2801.47(4)	3^+	0.21	0.24	0.25	77En02		22(1)	39(2)			39(1)	
3405.2(2)	9^+	≤0.7	≤0.1		67De10		19(1)			81(1)		
3413.44(3)	3^-		≤0.1		77En02		10(1)	76(1)	14(1)			
3907.7(8)	5^+	0.28	0.19	0.22	88Pe19		12(1)		73(2)			
3970.7(3)	7^-	<0.4	<0.2		77En02		81(2)			2(1)	15.0(10)	
4059.4(4)	9^+						60(1)			39(1)		
4276.49(4)	1^-				77En02			5(1)	79(2)			12.0(10)
4359.4(2)	3^+				84Ki11			52(2)	47(2)			1.0(5)
4711.4(4)	9^+										94.0(10)	
4722(1)	5^+						1.0(5)		84(4)		15(4)	
5012.2(3)	7^+						38(4)			11(2)	40(4)	
5116.6(1)	1^-	0.16	0.32		77Be48			4(1)	78(3)			15(3)
5251.5(2)	11^+									35(3)		
5460.3(2)	13^+											
5474.8(15)	1^+				75Me12			64(3)	29(3)			3.0(10)
5522.2(7)	5						22(1)			30(2)	16(2)	
5532(2)	11^+									39(3)		
5744(2)	⟨7,9$^+$⟩				75Me12		85(4)					
5747.0(10)	⟨3,5$^+$⟩				04Fu02		45(7)	4(2)	30(5)		14(3)	
5793.1(3)	7^-				88Pe19							
5860(2)	5^+				84Ki11		65(6)		16(4)			
5971.6(13)	9^+						3(2)			58(4)		
5978.0(5)	7^+						8(3)				62(4)	
6041.2(5)	⟨7,11⟩$^+$									8(2)		
6082(1)	5^+				84Ki11		10(2)		4(1)	46(5)	25(4)	
6169(3)	3						8(2)	6(2)	40(5)		33(4)	
6362(2)	3						69(4)	10(2)	12(3)		7(2)	
6434(2)	9^+									27(6)		
6468(2)	3^-				84Ki11			17(4)	14(3)		28(5)	
6570(1)	⟨1$^+$,3⟩							33(4)	29(4)		17(3)	14(3)
6678(1)	5						13(3)				4.0(10)	
6777(3)	1^+				84Ki11		7(2)	40(7)	19(4)			9(2)
6832(2)	⟨3$^-$,5⟩											
6840(2)	5						16(4)		26(6)	17(4)		
6883(2)	⟨7–11$^+$⟩									84(4)		
6913(2)	5^-				88Pe19		48(5)		9(2)	6(2)	8(2)	
6958(2)	5^-				88Pe19		61(3)		14(2)			
7038(2)	5				04Fu02				16(3)	25(5)	40(6)	

(continued) $^{25}_{12}$Mg

E^*	$2J^\pi$	S_n^-	S_n^-	S_n^-	Ref.		Branching ratios in percentage					
						E_f^*:	0	585.1	974.9	1612	1965	2563
[keV]		(d,t)	(τ,α)	(p,d)		$2J_f^\pi$:	5^+	1^+	3^+	7^+	5^+	1^+
7088(4)	$\langle 3,5\rangle^+$				88Pe19		88(4)		12(4)			
7181(2)	$\langle 3,7\rangle$						20(4)				80(4)	
7185(2)										92(2)		
7226(2)	$\langle 3,5\rangle^+$				88Pe19		82(4)		18(4)			
7285(2)	7^-				88Pe19		55(5)			10(2)	35(4)	
7375.2(2)	3^+				76Bo18		100					
7410.9(2)	3^-				76Bo18							
7493(2)	$11^{\langle +\rangle}$									12(3)		
7500.3(3)	5						15(4)		36(6)			
7525(2)	$\langle 5^+,7\rangle$						34(5)		7(3)			
7551(1)	$\langle 9,13\rangle^+$											
7577.5(4)	5^+									100		
7586.0(4)	1^-				76Bo18							
7633(5)							38(8)			62(8)		
7653(2)	9									14(3)		
7685(3)												
7743.9(4)	3^-				76Bo18							
7786.9(5)	5^+		1.2	0.94	88Pe19		38(10)		19(6)	43(10)		
7801(2)	9									78(4)		
7808.8(5)	3^-											
7838(2)	7						67(5)					
7863.7(6)	3^+				88Pe19							
7866(2)	$\langle 7,11\rangle^+$											
7946.7(6)	1^-											
7961(2)	7						60(9)			17(4)	8(3)	
7963.7(7)	1^+				76Bo18							
8011(2)	$\langle 9,13^+\rangle$											
8075(2)										100		
8119(3)							87(5)					
8140.8(8)	3^+				76Bo18							
8244(1)												
8267(2)	$\langle 7,9^+\rangle$						24(8)			49(10)	10(4)	
8311.3(10)	5^+											
8316.5(10)												
8324.2(10)	1^+				76Bo18							
8351.3(11)												
8362.6(11)	1^+				76Bo18							
8400(10)												
8447(10)												
8532(2)	$\langle 7,11\rangle$											
8548(3)					76Bo18					80(10)		
8551(1)	11											
8558.8(13)	5^+											
8569.5(13)	3^-				76Bo18							
8579.5(13)	3^+				76Bo18							

(continued) $^{25}_{12}$Mg

E^*	$2J^\pi$	S_n^-	S_n^-	S_n^-	Ref.	Branching ratios in percentage						
						E_f^*:	0	585.1	974.9	1612	1965	2563
[keV]		(d,t)	(τ, α)	(p,d)		$2J_f^\pi$:	5^+	1^+	3^+	7^+	5^+	1^+
8596.7(13)												
8656(2)	7						24(6)			14(3)	12(3)	
8705(10)												
8811(2)												
8834.6(13)	1^+				84Ki11							
8869.1(16)	3^-											
8888(3)	⟨7–11⟩											
8894.1(16)	1^-				76Bo18							
8896(1)												
8970.8(17)	5^+				76Bo18							
9013(2)	7^+–11											
9014.0(18)	$\langle 1,3\rangle^-$											
9071.8(7)					76Bo18							
9154					76Bo18							
9325.8(9)					76Bo18							
9410(3)												
9502.1(15)												
9651(2)												
9685(2)												
9830(10)												
9947(2)												
10038.8(15)												
10137(4)												
10252.6(9)												
10618(8)	$\langle 3,5\rangle^+$				70De40							
10653(2)												
11003(3)												
11045.5(18)												
11087(7)												
11200(10)												
11361(3)												
11389.1(14)												
11410(3)												
11460(3)												
11486(6)												
11725(5)	$\langle 1,3\rangle^-$				84Ki11							
11747(10)												
11775(10)					70De40							
11998.9(18)												
12898(10)	$\langle 1,3\rangle^-$				84Ki11							
13143(4)												
13332(10)												
		67De10		67De10	Ref.							
			67De10		Ref.							

Energy levels and branching ratios [90En08, 98En04]. Part 3 $^{25}_{12}$Mg

E^*	$2J^\pi$		Branching ratios in percentage								
		E^*_f:	2738	2801	3405	3413	3908	3971	4059	4276	4359
[keV]		$2J^\pi_f$:	7^+	3^+	9^+	3^-	5^+	7^-	9^+	1^-	3^+
3907.7(8)	5^+		14.4(11)								
3970.7(3)	7^-		2.0(10)								
4059.4(4)	9^+				1.0(2)						
4276.49(4)	1^-					4.0(10)					
4711.4(4)	9^+		6.0(10)								
5012.2(3)	7^+			8(2)			2.0(10)	1.0(5)			
5116.6(1)	1^-					3(2)					
5251.5(2)	11^+		14(2)		28(2)				23(1)		
5460.3(2)	13^+				100						
5474.8(15)	1^+					4.0(10)					
5522.2(7)	5			12(2)		4(1)		16(1)			
5532(2)	11^+				61(3)						
5744(2)	$\langle 7,9^+\rangle$		7(3)		5(3)				3(3)		
5747.0(10)	$\langle 3,5^+\rangle$			5(2)			2.0(10)				
5793.1(3)	7^-				66.0(10)			34.0(10)			
5860(2)	5^+		19(4)								
5971.6(13)	9^+								39(4)		
5978.0(5)	7^+		30(3)								
6041.2(5)	$\langle 7,11\rangle^+$		12(3)		75(4)				5.0(10)		
6082(1)	5^+			3.0(10)		6.0(10)		4.0(10)			2.0(10)
6169(3)	3			8(2)		2.0(10)				3.0(10)	
6362(2)	3										2.0(10)
6434(2)	9^+		8(2)				15(3)		13(3)		
6468(2)	3^-					3(1)	17(4)			6(1)	
6570(1)	$\langle 1^+,3\rangle$						4(1)			3(1)	
6678(1)	5			75(4)			5.0(10)				
6777(3)	1^+			3(2)		21(4)				1.0(5)	
6832(2)	$\langle 3^-,5\rangle$			36(6)		22(6)		22(4)			20(4)
6840(2)	5		41(8)								
6883(2)	$\langle 7\text{–}11^+\rangle$				16(4)						
6913(2)	5^-		11(2)	15(3)			3.0(10)				
6958(2)	5^-		14(2)	8.0(10)		3.0(10)					
7038(2)	5		6(1)			9(2)		4(1)			
7185(2)			8.0(20)								
7493(2)	$11^{\langle +\rangle}$				10(3)				34(6)		
7500.3(3)	5		49(6)								
7525(2)	$\langle 5^+,7\rangle$		41(6)				18(3)				
7551(1)	$\langle 9,13\rangle^+$				30(10)						
7653(2)	9		46(5)						12(3)		
7685(3)									100		
7801(2)	9		12(3)								
7838(2)	7		7(2)		23(4)						
7866(2)	$\langle 7,11\rangle^+$		30(5)		22(4)				20(4)		
7961(2)	7				4(2)						
8119(3)							13(5)				

(continued) $^{25}_{12}$Mg

E^* [keV]	$2J^\pi$	E_f^*:	2738	2801	3405	3413	3908	3971	4059	4276	4359
		$2J_f^\pi$:	7^+	3^+	9^+	3^-	5^+	7^-	9^+	1^-	3^+
8267(2)	⟨7,9$^+$⟩				17(5)						
8532(2)	⟨7,11⟩				67(9)				12(5)		
8548(3)					20(10)						
8551(1)	11								47(6)		
8656(2)	7		26(6)		15(3)						
8888(3)	⟨7–11⟩								100		
8896(1)									4(3)		
9013(2)	7^+–11								35(7)		
9685(2)					63(7)						
9830(10)					100						

Branching ratios in percentage.

Energy levels and branching ratios [90En08, 98En04]. Part 4 $^{25}_{12}$Mg

E^* [keV]	$2J^\pi$	E_f^*:	4711	4722	5012	5117	5252	5460	5522	5532	5744	5793
		$2J_f^\pi$:	9^+	5^+,⟨3^+⟩	7^+	1^-	11^+	13^+	5	11^+	⟨7,9$^+$⟩	7^-
6434(2)	9^+		9(2)		18(4)		3(1)			7(2)		
6468(2)	3^-			4(1)		11(3)						
6678(1)	5				2.0(10)				1.0(5)			
7493(2)	$11^{⟨+⟩}$							18(4)		11(3)		
7551(1)	⟨9,13⟩$^+$						40(10)	10(5)		20(7)		
7653(2)	9				10(2)					3.0(10)	8.0(10)	
7801(2)	9						3.0(10)			2.0(10)		5(2)
7838(2)	7										3.0(10)	
7866(2)	⟨7,11⟩$^+$				10(3)		10(3)			8(3)		
7961(2)	7		7(3)	4(2)								
8011(2)	⟨9,13$^+$⟩		40(6)				34(6)					
8532(2)	⟨7,11⟩		21(8)									
8551(1)	11		14(3)				12(3)			14(3)		
8656(2)	7		9(2)									
8811(2)			31(7)							35(5)		
8896(1)												96(3)
9013(2)	7^+–11		40(8)				25(5)					
9410(3)							54(7)					20(5)
9651(2)								100				
9685(2)										37(7)		
9947(2)							10(5)	55(11)				
10137(4)										100		
10653(2)										94(3)		
11003(3)								100				
11200(10)								100				
11361(3)												100

Branching ratios in percentage.

(continued) $^{25}_{12}$Mg

E^* [keV]	$2J^\pi$		Branching ratios in percentage									
		E_f^*:	4711	4722	5012	5117	5252	5460	5522	5532	5744	5793
		$2J_f^\pi$:	9^+	5^+,⟨3^+⟩	7^+	1^-	11^+	13^+	5	11^+	⟨7,9^+⟩	7^-
11410(3)								91(3)				
11460(3)							<64	100				
11486(6)								<61				
13143(4)												100
13332(10)								100				

Energy levels and branching ratios [90En08, 98En04]. Part 5 $^{25}_{12}$Mg

E^* [keV]	$2J^\pi$		Branching ratios in percentage			
		E_f^*:	5972	6041	7551	8011
		$2J_f^\pi$:	9^+	$\langle 7,11\rangle^+$	$\langle 9,13\rangle^+$	⟨9,13^+⟩
7493(2)	$11^{\langle +\rangle}$		15(4)			
7653(2)	9		7(2)			
8011(2)	⟨9,13^+⟩			26(6)		
8551(1)	11			13(3)		
8811(2)				34(5)		
9410(3)				26(5)		
9947(2)					35(10)	
10653(2)					6(3)	
11410(3)					9(3)	
11486(6)						100

Energy levels and branching ratios [93Ve03, 90En08, 98En04]. $^{26}_{12}$Mg

E^* [keV]	J^π	C^2S ℓ=0	C^2S ℓ=2	ℓ_n	S_n^+ eval	σ (α,τ) μb	R (α,τ)	S_p^- eval	S' (d,p)	$E_\circ$ [keV]	Γ [keV]	ω_γ [meV]	$T_{1/2}$ or Γ_{cm}	Ref.
0.0	0^+		0.30	2	1.8(2)	700	0.70	0.44(5)	2.81(30)				Stable	93Ve03
1808.73(3)	2^+	0.006	1.00	0	0.03(2)	660	1.07	<0.02	0.16(5)				476(12) fs	93Ve03
				2	0.43(11)				3.51(35)					77En02
2938.34(4)	2^+	0.015	0.22	0	0.22(3)	180	1.0	0.03(3)	3.37(30)				141(8) fs	93Ve03
				2	0.34(8)			0.42(11)						77En02
3588.56(9)	0^+		0.006	2	small	50	1.2	<0.02	0.32(3)				6.44(14) ps	93Ve03
3941.55(4)*	3^+	0.005	0.020*	0	0.09(3)	470	1.16	<0.01	1.98(30)				0.85(12) ps	93Ve03
				2	0.42(11)			<0.05	1.1(5)					77En02
4318.88(6)	4^+	0.024	1.96			130	1.15						272(16) fs	93Ve03
4332.57(5)	2^+	incl	incl			incl	incl						20(3) fs	93Ve03
4350.08(5)*	3^+	0.060	0.12*			120	1.7						105(20) fs	93Ve03
4835.13(5)	2^+	0.091	0.08	0		80	2.0		0.30(5)				28(6) fs	93Ve03

(continued)

$^{26}_{12}$Mg

E^* [keV]	J^π	C^2S ℓ=0	C^2S ℓ=1	C^2S ℓ=2	ℓ_n	S_n^+ eval	σ (α,τ) μb	R (α,τ)	S_p^- eval	S' (d,p)	$E_\circ$ [keV]	Γ [keV]	ω_γ [meV]	$T_{1/2}$ or Γ_{cm}	Ref.
					2					1.05(35)					84Ar16
4901.30(9)	4^+			⟨0.02⟩	2		180	0.8		1.48(15)				29(6) fs	93Ve03
4972.3(1)	0^+			0.002			2	0.92	<0.02					440(60) fs	93Ve03
5291.74(5)	2^+	0.016		0.011			270	1.07		3.29(30)				<10 fs	93Ve03
5476.1(1)**	4^+			0.21			180	0.75		2.15(25)				21(6) fs	93Ve03
5691.1(2)	1^+			0.030			45	0.20						<8 fs	93Ve03
5715.6(1)*	4^+			0.070*			13	0.68		0.56(20)				70(35) fs	93Ve03
6125.48(4)*	3^+	0.026		0.07*	0		200	0.95		0.74(9)				14(6) fs	93Ve03
					2					4.2(10)					84Ar16
6256(1)	0^+						3	0.98						52(24) fs	90Ya07
6622(1)	4^+			0.029			50	5.5						19(5) fs	93Ve03
6634.3(2)	$\langle 0\text{–}4\rangle^+$			incl										<7 fs	93Ve03
6745.8(2)	2^+	0.001		0.013	0		50	1.8		0.04(2)				16(8) fs	93Ve03
					2					0.58(20)					84Ar16
6876.42(4)	3^-		0.0043		1					1.18				85(35) fs	93Ve03
					3					3.5(10)					84Ar16
6978(1)	5^+			0.038										14(5) fs	93Ve03
7061.9(1)	1^-													<7 fs	
7099.7(1)	2^+			0.059			7	0.16						<14 fs	93Ve03
7200(20)	$\langle 0,1\rangle^+$														
7242(1)	3^+	0.023		0.093										<7 fs	93Ve03
7261.39(4)	$\langle 2,3\rangle^-$				1					1.48(20)				<7 fs	84Ar16
					3					3.7(15)					84Ar16
7282.74(5)	4^-													24(8) fs	
7348.87(5)	3^-				1		48	1.0		1.14(15)					84Ar16
					3					2.4(8)					84Ar16
7371.2(2)	2^+			0.051											93Ve03
7395(1)	5^+			0.085										<14 fs	93Ve03
7428(3)	$\langle 0,1\rangle^+$														
7541.73(5)	2^-				1					0.36(6)				<7 fs	84Ar16
					3					1.1(4)					84Ar16
7677(1)	4^+			0.069			118	1,7						<10 fs	93Ve03
7697.3(6)	1^-		0.095				20	0.14							93Ve03
7725.7(2)	3^+			0.05	2					0.80(15)					93Ve03
7773(1)	4^+			⟨0.03⟩	2		77	3.9		0.72(7)				<7 fs	93Ve03
7816(2)	$\langle 2,3\rangle^+$			⟨0.07⟩	0					0.62(6)					93Ve03
					2					0.93(15)					84Ar16
7824(3)	3^-		0.78				50	0.35							93Ve03
7840(2)	2^+														
7851(3)															
7953(1)	5^-				3					7.8(8)				14(6) fs	84Ar16
8033(2)	2^+														
8052.9(6)	2^-		0.075												93Ve03
8185.0(1)	3^-						94	4.1							90Ya07
8201(1)	6^+													<14 fs	

(continued)

$^{26}_{12}$Mg

E^* [keV]	J^π	T	C^2S ℓ=0	C^2S ℓ=1	C^2S ℓ=2	ℓ_n	S_n^+ eval	σ (α,τ) μb	R (α,τ)	S_p^- eval	S' (d,p)	$E_\circ$ [keV]	Γ [keV]	ω_γ [meV]	$T_{1/2}$ or Γ_{cm}	Ref.
8227.6(2)	1^-														1.0(2) fs	
8250.7(1)	3^+							34	0.35							90Ya07
8399(3)																
8458.9(1)	3^+				0.029											93Ve03
8464(2)	$\langle 2^+–6^+\rangle$															
8472(1)	6^+														<14 fs	
8503.74(9)	1^-															
8532.27(9)	2^+															
8577(3)	1^+															
8625(1)**	5^-							36	0.64						29(6) fs	90Ya07
8670(1)	$\langle 3,5\rangle$														<7 fs	
8705.73(9)	4^+				0.12			56	3.4							93Ve03
8863.8(5)	2^+				$\langle 0.02\rangle$											93Ve03
8903.50(6)	3^-			0.032				38	2.2							93Ve03
8930(2)	4^+															
8959.4(5)	1^-															
9020(2)																
9044.7(3)	2^-			0.50				40	0.20							93Ve03
9064(1)	5^+				$\langle 0.05\rangle$										<7 fs	93Ve03
9111(1)	6^+														<10 fs	
9169(1)	6^-														26(8) fs	
9206(2)																
9238.7(5)	$\langle 1–4\rangle^-$			0.11				31	0.29						340(40) as	93Ve03
9261(2)	4^+															
9281(3)	$\langle 2^+,3^-\rangle$															
9291(2)																
9304(2)																
9317(2)																
9325.51(6)	$\langle 2^+–4^+\rangle$							31	2.3							90Ya07
9371(2)	4^+															
9383(1)	6^+														<7 fs	
9427.74(7)	3^+															
9471(2)	$\langle 0–5\rangle^+$				0.088											93Ve03
9541(1)	5^+														<14 fs	
9560(3)	1^+							70	0.57						630(110) as	90Ya07
9574.02(6)	$\langle 2^-–4\rangle$															
9579(3)	4^+															
9590(2)																
9617.0(9)	$\langle 1–3\rangle^-$			0.11												93Ve03
9681(2)	$\langle 0–5\rangle^+$				0.045											93Ve03
9714(3)	4^+							16	1.2							90Ya07
9771(2)																
9779(3)	1^+							13	0.10							90Ya07
9814(2)																
9829(1)	$\langle 5,7\rangle^+$														37(10) fs	

(continued) $^{26}_{12}$**Mg**

E^* [keV]	J^π	T	C^2S ℓ=0	C^2S ℓ=1	C^2S ℓ=2	ℓ_n	S_n^+ eval	σ (α,τ) μb	R (α,τ)	S_p^- eval	S' (d,p)	$E_\circ$ [keV]	Γ [keV]	ω_γ [meV]	$T_{1/2}$ or Γ_{cm}	Ref.
9856.52(6)	2^+															
9883(3)	$\langle 2^+,3^- \rangle$															
9902(2)	3^+															
9927(2)																
9939(2)																
9967(2)	2^+															
9982(2)																
9989(1)	6^+														<7 fs	
10040(2)	5^-															
10069(2)																
10102.41(15)	$\langle 1,2^+ \rangle$															
10126.70(10)	$\langle 0^+–4^+ \rangle$															
10136(3)																
10148(2)	1^+							24	0.26						110(15) as	90Ya07
10159(3)	0^+															
10184(2)																
10220.1(3)	3^+															
10234(2)																
10271(3)	2^+															
10319(2)	1^+							26	0.23						580(140) as	90Ya07
10328(3)	5^-															
10341(3)																
10350.37(12)	$\langle 0^+–4^+ \rangle$															
10362.42(7)	$\langle 2^+–4^+ \rangle$															
10377(2)																
10400(15)																
10414(3)	4^+															
10487(3)																
10493(3)																
10516(3)																
10529(2)																
10567(3)																
10576(2)																
10599.96(7)	$\langle 1^+–4^+ \rangle$															
10646(2)	1^+							56	0.57						75(20) as	90Ya07
10650(2)	$\langle 4^-–7^- \rangle$														21(6) fs	
10681.9(3)																
10693(3)								36	2.7							90Ya07
10707(3)																
10718.75(9)																
10726(3)																
10745.98(12)																
10767(2)																
10805.9(4)	$\langle 0^+–4^+ \rangle$															
10824(3)																

(continued) $^{26}_{12}$Mg

E^* [keV]	J^π	T	C^2S ℓ=0	C^2S ℓ=1	S_n^+ eval	σ (α,τ) μb	R (α,τ)	S_p^- eval	S' (d,p)	$E_\circ$ [keV]	Γ [keV]	ω_γ [meV]	$T_{1/2}$ or Γ_{cm}	Ref.
10881(3)														
10893(3)														
10915(3)														
10927(3)						34	2.1							90Ya07
10945(3)														
10978(3)														
10998(3)														
11012(3)														
11048(3)														
11084(3)														
11112.0(2)	2^+												1.80(18) keV	
11142(6)														
11153.2(2)										635(10)		$<6\cdot10^{-5}$	25(2) eV	01Ja15
11163.3(5)	$2^+,\langle 3^+\rangle$												7.6(11) keV	
11169.4(2)						53	0.43						1.91(14) keV	90Ya07
11171.1(7)													20(3) eV	
11183.0(2)														
11188.8(2)														
11191(2)														
11194.5(2)	2^+												10(2) keV	
11230**	$[6^+]$													
11243.3(2)														
11274.4(2)														
11279.5(2)														
11286.6(3)														
11289.2(3)														
11294.7(5)													2.6(2) keV	
11311.0(5)														
11319(2)										832(2)	0.25(17)	0.118(11)		01Ja15
11328.3(5)														
11329(2)														
11343.7(5)														
11362.0(6)														
11364.9(6)														
11372.5(6)														
11392.7(6)														
11425.4(7)														
11439.8(7)										976(2)	2.1(9)	0.034(4)		01Ja15
11457(2)														
11463.9(8)										1000(2)	9.3(25)	0.048(10)		01Ja15
11499.4(8)														
11508.1(9)										1053(2)	12.7(25)	0.35(6)		01Ja15
11526(2)										1077(2)	1.8(9)	0.83(7)		01Ja15
11540.8(9)														
11570(2)														

(continued) $^{26}_{12}$Mg

E^* [keV]	J^π	T	C^2S ℓ=0	S_n^+ eval	σ (α,τ) μb	R (α,τ)	S_p^- eval	S' (d,p)	$E_\circ$ [keV]	Γ [keV]	ω_γ [meV]	$T_{1/2}$ or Γ_{cm}	Ref.
11586(1)													
11612(5)													
11630(2)									1200(2)	13.5(17)	8.5(10)		01Ja15
11647(5)												<3 keV	
11749(10)									1340(10)	63.5(85)	60(9)		01Ja15
11787(4)									1285(4)	24.5(34)	50(7)	<3 keV	01Ja15
11828(3)	2^+								1434(2)	1.10(25)	1067(42)	<3 keV	01Ja15
11890(2)	1^-											<3 keV	
11910(2)	1^-											6(1) keV	
11945(10)	6^-												
11950(2)	3^-											3(1) keV	
12049(2)	3^-											6(2) keV	
12088(2)													
12110(2)	0^+											25(2) keV	
12142(2)	1^-											15(2) keV	
12196(2)													
12345(2)	0^+											40(5) keV	
12479(2)	6^-												
12865(10)	6^-												
12958(10)	$\langle 0\text{–}6\rangle^-$												
13958(10)	$\langle 0\text{–}6\rangle^-$												
14542(10)	6^-												
16580(10)	6^-												
18050(50)	6^-	2											
			93Ve03	77En02	90Ya07	90Ya07	77En02	84Ar16	01Ja15	01Ja15	01Ja15		Ref.

Additional data on this isotope can be found in [02Ta10, 01Ha31, 01Ge05, 00Ja08, 93Ve03, 93Gi04, 92Wa06].
Abundance: 11.01(3) %.
* Transfer of the proton with J^π=3/2$^+$; in all other cases $1d_{5/2}$ transfer is assumed in [93Ve03] for obtaining presented C^2S from the (d,τ) reaction.
** This state is clearly seen in the (α,^{2}He) reaction confirming its ($f_{7/2}$) character [78Ja10].
Values C^2S obtained from the analysis of angular distributions in (d,τ) reaction [93Ve03] are given at left.
Comparison of the previous spectroscopic information [90En08] can be found in vol. LB I/18A [01Sc0A].
The results of the performed in [77En02] evaluation of S_n^+ and S_p^- are given in separate columns.
(2J+1)S values in [84Ar16] from the (d,p) reaction for ℓ_n=1 levels at 6876, 7261, 7349, 7542 keV were used in [92Wa06] for the calculation of direct-capture cross section for primary $E1$ transitions in the (n,γ) reaction.
Integral cross section of neutron-transfer (α,τ) reaction and estimations of ratios R=$\sigma_{exp}/\sigma_{calc}$ close to specrtroscopic factor S_n^+ or spectroscopic strength $(2J+1)S_n^+$ are from [90Ya07].
Data for this isotope are considered in vol. LB I/18A.

Energy levels and branching ratios [93Ve03, 90En08, 98En04]. Part 2 $^{26}_{12}$Mg

E^* [keV]	J^π		Branching ratios in percentage								
		E_f^*:	0.0	1809	2938	3589	3941	4318.9	4332.6	4350.1	4835.13
		J_f^π:	0^+	2^+	2^+	0^+	3^+	4^+	2^+	3^+	2^+
1808.73(3)	2^+		100								
2938.34(4)	2^+		9.7(5)	90.3(5)							
3588.56(9)	0^+			100							
3941.55(4)*	3^+		<0.5	38(1)	62(1)						
4318.88(6)	4^+		<3	100							
4332.57(5)	2^+		6.0(6)	79(1)	15.2(8)						
4350.08(5)*	3^+		<1	52(2)	48(2)		0.18(4)				
4835.13(5)	2^+		11.1(10)	4.1(4)	85(1)						
4901.30(9)	4^+			94(1)	2(1)		4(1)				
4972.3(1)	0^+			7(4)	93(4)						
5291.74(5)	2^+		3.4(6)	5.8(8)	88(1)		3.0(6)				
5476.1(1)**	4^+			14(1)			29(2)	57(2)			
5691.1(2)	1^+		7(2)	61(3)	28(2)				4(1)		
5715.6(1)*	4^+				23(2)		40(2)			37(2)	
6125.48(4)*	3^+			3.4(4)	4.1(4)		9.7(5)		4.6(4)	70.9(10)	3.7(3)
6256(1)	0^+			93(4)							
6622(1)	4^+							11(2)	11(2)	21(3)	
6634.3(2)	$\langle 0–4\rangle^+$			6(1)	94(1)						
6745.8(2)	2^+			63(3)	37(3)						
6876.42(4)	3^-			69(1)	18.0(8)		2.9(6)	3.0(3)	4.2(6)		3.2(4)
6978(1)	5^+						14(2)	17(2)		4(1)	
7061.9(1)	1^-		36(5)	20(3)	10(2)	34(3)					
7099.7(1)	2^+		5(2)	16(2)	50(5)		9(2)				20(3)
7242(1)	3^+						24(4)	19(4)	25(4)	22(4)	10(2)
7261.39(4)	$\langle 2,3\rangle^-$			49(1)	7.4(4)		23.1(9)		4.6(3)	3.9(3)	12.2(4)
7282.74(5)	4^-						50(2)	31(2)		9.1(10)	
7348.87(5)	3^-			17(1)	53(2)			1.7(2)	6.3(6)		22(2)
7371.2(2)	2^+		26(7)	13(2)			48(7)			13(2)	
7395(1)	5^+						12(1)	7(2)		13(1)	
7541.73(5)	2^-			14(1)	31(1)		14(1)		37(1)	3.2(4)	
7677(1)	4^+							14(2)			
7697.3(6)	1^-		100								
7725.7(2)	3^+						16(3)	84(3)			
7773(1)	4^+				10(3)		50(7)	10(3)			15(4)
7816(2)	$\langle 2,3\rangle^+$								100		
7824(3)	3^-			20(4)	40(5)		40(5)				
7840(2)	2^+			10(3)	27(5)	43(5)		20(4)			
7953(1)	5^-							68(3)			
8033(2)	2^+				100						
8052.9(6)	2^-			100							
8185.0(1)	3^-			78(3)	22(3)						
8201(1)	6^+							45(4)			
8227.6(2)	1^-		54(3)	46(3)							
8250.7(1)	3^+				100						
8458.9(1)	3^+			100							

(continued) $^{26}_{12}\mathrm{Mg}$

E^*	J^π		Branching ratios in percentage								
		E_f^*:	0.0	1809	2938	3589	3941	4318.9	4332.6	4350.1	4835.13
[keV]		J_f^π:	0^+	2^+	2^+	0^+	3^+	4^+	2^+	3^+	2^+
8464(2)	$\langle 2^+–6^+ \rangle$							100			
8472(1)	6^+							13(2)			
8503.74(9)	1^-		72(4)	28(4)							
8532.27(9)	2^+			22(4)	47(6)					31(5)	
8625(1)**	5^-							15(3)			
8670(1)	$\langle 3,5 \rangle$							65(5)			
8705.73(9)	4^+				13(3)		29(4)	45(5)			
8863.8(5)	2^+			59(5)	41(5)						
8903.50(6)	3^-				10(1)		28(2)			29(2)	
8930(2)	4^+						19(4)				
9064(1)	5^+							66(5)			
9111(1)	6^+							18(3)			
9238.7(5)	$\langle 1–4 \rangle^-$		[100]								
9261(2)	4^+						100				
9325.51(6)	$\langle 2^+–4^+ \rangle$				40(3)		6(1)		19(2)	13(2)	11(2)
9371(2)	4^+						100				
9383(1)	6^+							11(2)			
9427.74(7)	3^+			21(3)	64(5)						
9541(1)	5^+							62(6)			
9560(3)	1^+		100								
9574.02(6)	$\langle 2^-–4 \rangle$						4.0(15)				
9856.52(6)	2^+		18(4)				13(4)		42(5)		26(4)
9967(2)	2^+				40(5)						
9989(1)	6^+							14(3)			
10040(2)	5^-							32(4)			
10102.41(15)	$\langle 1,2^+ \rangle$		74(6)		26(6)						
10126.70(10)	$\langle 0^+–4^+ \rangle$		66(6)		34(6)						
10148(2)	1^+		100								
10220.1(3)	3^+			100							
10319(2)	1^+		100								
10350.37(12)	$\langle 0^+–4^+ \rangle$			100							
10362.42(7)	$\langle 2^+–4^+ \rangle$			39(4)						19(3)	
10599.96(7)	$\langle 1^+–4^+ \rangle$				15(2)		34(7)		39(7)	12(3)	
10646(2)	1^+		100								
10805.9(4)	$\langle 0^+–4^+ \rangle$			100							

Energy levels and branching ratios [93Ve03, 90En08, 98En04]. Part 3 **$^{26}_{12}$Mg**

E^* [keV]	J^π	E^*_f: / J^π_f:	4901.30 4^+	5291.74 2^+	5476.11 4^+	5691.11 1^+	5715.60 4^+	6125.48 3^+	6622 4^+	6876.42 3^-	6978 5^+
		Branching ratios in percentage									
5715.6(1)*	4^+		<2								
6125.48(4)*	3^+		0.9(2)	2.4(3)			0.3(1)				
6256(1)	0^+					7(4)					
6622(1)	4^+		48(4)		9(1)						
6978(1)	5^+		11(2)		50(4)		4(1)				
7282.74(5)	4^-		5.1(5)				4.6(4)				
7348.87(5)	3^-				0.8(2)						
7395(1)	5^+		18(2)				50(3)				
7677(1)	4^+		21(3)				48(4)	17(2)			
7773(1)	4^+				15(4)						
7953(1)	5^-						32(3)				
8201(1)	6^+		35(3)								20(2)
8472(1)	6^+		63(4)								24(3)
8625(1)**	5^-								85(3)		
8670(1)	⟨3,5⟩				35(5)						
8705.73(9)	4^+				13(3)						
8903.50(6)	3^-		9(1)	9(1)							
8930(2)	4^+				27(5)		36(5)		18(4)		
9064(1)	5^+		17(3)								
9111(1)	6^+		16(3)		50(6)				8(2)		
9169(1)	6^-										12(2)
9325.51(6)	⟨2^+–4^+⟩		11(2)								
9383(1)	6^+						39(5)		15(2)		29(4)
9427.74(7)	3^+		15(4)								
9541(1)	5^+		21(4)				14(2)				
9574.02(6)	⟨2^-–4⟩			88(4)				0.4(21)		3.6(21)	
9967(2)	2^+		60(5)								
9989(1)	6^+										69(5)
10040(2)	5^-		23(4)				45(6)				
10362.42(7)	⟨2^+–4^+⟩				18(3)						

Energy levels and branching ratios [93Ve03, 90En08, 98En04]. Part 4 **$^{26}_{12}$Mg**

E^* [keV]	J^π	E^*_f: / J^π_f:	7099.66 2^+	7261.39 ⟨2,3⟩$^-$	7282.74 4^-	7348.87 3^-	7395 5^+	7953 5^-	8201 6^+	8472 6^+	9169 6^-	9829 ⟨5,7⟩$^+$
		Branching ratios in percentage										
8903.50(6)	3^-			6(1)	6(1)	2.3(4)						
9064(1)	5^+						17(3)					
9111(1)	6^+						8(2)					
9169(1)	6^-				13(2)		21(3)	54(4)				
9383(1)	6^+								6(1)			
9541(1)	5^+		3.3(10)									

(continued)

$^{26}_{12}$Mg

E^* [keV]	J^π	Branching ratios in percentage E^*_f: 7099.66 J^π_f: 2^+	7261.39 $\langle 2,3\rangle^-$	7282.74 4^-	7348.87 3^-	7395 5^+	7953 5^-	8201 6^+	8472 6^+	9169 6^-	9829 $\langle 5,7\rangle^+$
9574.02(6)	$\langle 2^- – 4\rangle$			3.5(21)							
9829(1)	$\langle 5,7\rangle^+$					5.0(10)		89.0(20)	6.0(10)		
9989(1)	6^+								17(3)		
10362.42(7)	$\langle 2^+ – 4^+\rangle$	24(2)									
10650(2)	$\langle 4^- – 7^-\rangle$					64(5)				36(5)	
12479(2)	6^-							39(6)			61(6)

Energy levels and branching ratios [90En08, 98En04].

$^{27}_{12}$Mg

E^* [keV]	$2J^\pi$	S_n^+ eval	ℓ_n (d,p)	S' (d,p)	S_N (t,d)	S_n^-	σ mb	$T_{1/2}$ or Γ_{cm}	Ref.	Branching ratios in percentage E^*_f: 0.0 $2J^\pi_f$: 1^+	985 3^+	1699 5^+	1940 5^+	3109 X^+
0.0	1^+	0.58(10)	0	1.5	0.28	1.1(3)	26(7)	9.46(1) m	77En02					
984.92(3)	3^+	0.60(15)	2	2.4	0.21	0.8(1)	12(2)	0.98(7) ps	77En02	100				
1698.63(5)	5^+	0.13(4)	2	0.76	0.04	1.9(2)	28(3)	0.98(8) ps	77En02	100	<1			
1940.35(8)	5^+	0.01(1)	2	0.06	0.005	1.1(1)	16(2)	0.8(1) ps	77En02	33(1)	66(3)	1.5(6)		
3109.4(2)	$\langle 3,7\rangle^+$					0.20(4)	2.8(6)	69(17) fs	04Te03	<3	7(2)	6(2)	87(4)	
3426.9(5)	$\langle 5,7\rangle^+$					0.22(7)	3.1(9)	69(35) fs	04Te03		58(3)	37(2)	3(1)	2(1)
3476.33(6)	1^+	0.29(8)	0	0.58				<7 fs	77En02	98(3)	2(1)	<1.00		
3491.5(1)	$\langle 3,5\rangle^+$		2	0.25				<10 fs	77En02	43(4)	44(4)	13(3)		
3561.56(3)	3^-	0.40(10)	1	1.6				<7 fs	77En02	93(1)	5.4(3)	2.1(2)		
3760.4(1)	7^-	0.56(14)	3	4.5		0.09(4)	1.3(6)	0.42(7) ps	77En02		<5	100	<5	<3
3787.38(6)	3^+		2	0.58				<17 fs	74Me28	50(3)	2(1)	32(3)	16(2)	
3884(2)	5^+,9^+							>0.5 ps				7(2)	81(3)	6(2)
4149.8(4)	$\langle 3,5\rangle^+$		2	0.23				<7 fs	74Me28		49(2)	37(1)	14(1)	
4398.2(5)	5^+							45(24) fs				41(3)		40(2)
4552.8(6)	$\langle 3,5\rangle^+$		2	0.04				<10 fs	74Me28	8(2)	25(5)	10(3)	52(5)	5(2)
4776.1(8)	$3–7^+$							<24 fs					44(4)	29(3)
4828.14(4)	$\langle 1,3\rangle^-$		1	0.64				<7 fs	74Me28	35(2)	51(2)			
4992.3(9)	5^+		$\langle 2\rangle$	0.01				<7 fs	74Me28		72(5)		6(4)	9(4)
5028.6(2)	1^+		0	0.048				<28 fs	74Me28		56(5)			
5172(1)	$\langle 3,5\rangle^+$		2	0.024				<10 fs	74Me28	23(2)	17(2)	45(3)		
5296(1)								<41 fs				27(7)		34(8)
5372(1)	$\langle 3^-,5\rangle$		$\langle 3\rangle$	0.05				<17 fs	74Me28		16(4)	45(5)		
5412(1)								<7 fs				46(5)	39(5)	7(2)
5422(1)	3^-		1	0.01				<7 fs	74Me28		[100]			
5627(1)	$\langle 3,5\rangle^+$		2	0.8,0.7				<7 fs	74Me28	42(2)	4(2)	18(3)	30(4)	
5749(1)								<17 fs				21(7)	29(9)	50(9)
5764(1)	$\langle 3,5\rangle^+$		2	0.04				<17 fs	74Me28			100		
5821(2)	$\langle 3,5\rangle^+$		2	0.06				<7 fs	74Me28		50(3)	4(2)		23(2)
5829(3)			$\langle 2\rangle$	0.025				<83 fs	74Me28					
5909(7)	$\langle 1,3\rangle^-$		1	0.046					74Me28					

(continued) $^{27}_{12}$Mg

E^* [keV]	$2J^\pi$	S_n^+ eval	ℓ_n (d,p)	S' (d,p)	S_N (t,d)	S_n^-	σ mb	$T_{1/2}$ or Γ_{cm}	Ref.	Branching ratios in percentage E_f^*: 0.0 $2J_f^\pi$: 1^+	985 3^+	1699 5^+	1940 5^+	3109 X^+
5925.93(18)								35(28) fs		53(5)	21(4)		26(4)	
6009(2)								<7 fs						
6084(2)														
6125(3)														
6161(2)														
6312(5)														
6336(3)														
6380(3)														
6443.40(4)	1^+									9.1(4)	2.6(2)			
6508(3)														
6651(3)														
6721(4)														
6811(3)														
6859(2)														
6921(3)														
6991(4)														
7013(5)														
7147(2)														
7278(3)														
7505(3)														
7530(3)														
7690(3)														
7700(3)														
7859(4)														
7927(5)														
7976(4)														
		77En02		74Me28	87Pe09	04Te03	04Te03		Ref.					

Additional data on this isotope can be found in [04Te03, 01Ge05, 92Wa06].
Presented spectroscopic factors S_n^+ were evaluated in [77En02].
Results for single-neutron removal from ^{28}Mg are represented by S_n^- and partial cross sections σ as parts of the inclusive cross section 90(5) mb [04Te03].
$(2J+1)S$ values in [75Me12] from the (d,p) reaction for ℓ_n=1 levels at 3562, 4828, 5909 keV were used in [92Wa06] for the calculation of direct-capture cross section for primary $E1$ transitions in the (n,γ) reaction.

Energy levels and branching ratios [90En08, 98En04]. Part 2 $^{27}_{12}$Mg

E^* [keV]	$2J^\pi$	Branching ratios in percentage E_f^*: 3426.9 $2J_f^\pi$: $\langle 5,7\rangle^+$	3476.3 1^+	3491.5 $\langle 3,5\rangle^+$	3561.56 3^-	3760.4 7^-	3787.38 3^+
3884(2)	5^+,9^+	6(2)					
4398.2(5)	5^+	13(2)					

(continued) $^{27}_{12}$Mg

E^* [keV]	$2J^\pi$	E^*_f: $2J^\pi_f$:	3426.9 ⟨5,7⟩$^+$	3476.3 1^+	3491.5 ⟨3,5⟩$^+$	3561.56 3^-	3760.4 7^-	3787.38 3^+
			Branching ratios in percentage					
4776.1(8)	3–7$^+$		6(3)					
4828.14(4)	⟨1,3⟩$^-$			5.3(5)	2.7(3)	5.7(5)		
4992.3(9)	5^+		6(4)				7(4)	
5028.6(2)	1^+			13(3)	8(2)	23(5)		
5172(1)	⟨3,5⟩$^+$							10(2)
5296(1)							9(4)	
5372(1)	⟨3^-,5⟩				8(2)	20(4)	11(3)	
5412(1)			3.0(10)					
5627(1)	⟨3,5⟩$^+$			5.0(10)				
5821(2)	⟨3,5⟩$^+$		9(3)		7(2)			
5829(3)							74(10)	
6443.40(4)	1^+			2.1(2)		64.8(10)		3.6(2)

Energy levels and branching ratios [90En08, 98En04]. Part 3 $^{27}_{12}$Mg

E^* [keV]	$2J^\pi$	E^*_f: $2J^\pi_f$:	3884 ⟨5,9⟩$^+$	4149.8 ⟨3,5⟩$^+$	4398.2 5^+	4828.14 ⟨1,3⟩$^-$	5028.56 1^+	5925.93
			Branching ratios in percentage					
4398.2(5)	5^+		6.0(10)					
4776.1(8)	3–7$^+$		21(4)					
5172(1)	⟨3,5⟩$^+$			5.0(10)				
5296(1)			30(6)					
5412(1)			5(2)					
5627(1)	⟨3,5⟩$^+$					1.1(3)		
5821(2)	⟨3,5⟩$^+$			7(2)				
5829(3)					26(10)			
6443.40(4)	1^+					16.7(8)	0.43(5)	0.61(8)

Energy levels and branching ratios [90En08, 98En04]. $^{28}_{12}$Mg

E^* [keV]	J^π	$T_{1/2}$ or Γ_{cm}	E^*_f: J^π_f:	0.0 0^+	1473 2^+	3863 0^+	4020 4^+	4557 2^+	4561 1^+	5272 1^+
				Branching ratios in percentage						
0.0	0^+	20.915(9) h								
1473.4(6)	2^+	1.2(1) ps		100						
3862.7(5)	0^+	550(70) fs		<1	100					
4020.2(6)	4^+	105(35) fs		<1	100					
4557.0(5)	2^+	<30 fs		<3	100	<2	<2			
4560.8(7)	1^+									

(continued) $^{28}_{12}\mathrm{Mg}$

E^*	J^π	$T_{1/2}$ or		Branching ratios in percentage						
			E_f^*:	0.0	1473	3863	4020	4557	4561	5272
[keV]		Γ_{cm}	J_f^π:	0^+	2^+	0^+	4^+	2^+	1^+	1^+
4878.6(8)	2^+	<80 fs		21(3)	79(3)	<2.0	<2.0	<2.0		
5171.8(4)	3^-	120(15) fs			71(2)		27(2)	2.1(4)		
5184.6(7)										
5192.7(7)	1	<20 fs		88(1)	10(1)	2.5(5)		<1.0		
5271.7(10)	1^+	<100 fs								
5469.1(8)	2			<2	100					
5672.8(8)	2^+			18(4)	68(4)	<4.0	<5.0	14(3)		
5702.3(7)	0^+	210(35) fs			20(1)				68(1)	12(1)
5917(15)										
6142(15)										
6423(15)										
6460*	$[5^-]$									
6523(15)										
6546(15)										
6606(15)										
6715(15)										
6766(15)										
8880*	$[6^+]$									
9780*	$[6^+]$									

Additional data on this isotope can be found in [01Ge05].
* This state is clearly seen in the (α,^{2}He) reaction confirming its ($f_{7/2}$) character [78Ja10].