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

$^{25}_{13}$Al

E^* [keV]	$2J^\pi$	C^2S (τ,d)	C^2S (τ,d)	C^2S (τ,d)	$B(GT)$	$T_{1/2}$ or Γ_{cm}	Ref.	Branching ratios in percentage				
								E_f^*:	0	451	945	1612	1790
								$2J_f^\pi$:	5^+	1^+	3^+		5^+
0	5^+	0.33	0.24	0.37(8)	0.408(2)	7.18(1) s	94Ve04						
451.5(4)	1^+	0.69	0.41	0.51(7)		2.29(3) ns	81En04		100				
944.8(4)	3^+	0.32	0.19	0.35(7)		4.3(11) ps	94Ve04		44(3)	56(3)			
1612.5(4)	7^+				0.165(7)	10(2) fs	04Fu02		100				
1789.6(4)	5^+					388(40) fs			24(2)	38(3)	38(3)		
2485.3(8)	1^+					<32 eV			3(2)	78(3)	19(3)		
2673.5(6)	3^+					5.5(14) fs			26(3)	43(15)	1.0(10)		30(15)
2720.4(8)	7^+					215(30) fs			8(2)	<1.0	78(3)	<5.0	15(2)
3061.7(6)	3^-					1.3(4) keV			13(2)	77(3)	10(2)		
3424.3(5)	9^+,$\langle 5^+ \rangle$					9.2(14) fs			16(4)			84(4)	
3695.7(5)	7^-					0.3 keV			30(3)				67(3)
3823.0(16)	1^-					36(7) keV				31(5)	61(5)		
3858.8(8)	5^+					0.1 keV			10.7(6)	1.0(3)	62.5(10)	2.2(2)	5.7(3)
4026(2)	$\langle 5,9 \rangle^+$					22(4) fs			60(10)			40(10)	<1.0
4196(3)	3^+					0.15 keV			<3	50	50		
4514(5)	$\langle 5,7,9 \rangle$					>6.5 eV							
4583(4)	5^+					0.3 keV			<1		100		
4906(4)	≥ 5					<10 keV							
5068(5)						>1.5 keV							
5101(10)						<4 keV							
5117(7)						47(5) keV							
5232(4)													
5285	1^+					185 keV							
5527(7)						≈18 keV							
5597(5)	$\langle 3,5,7 \rangle$					55(20) keV							
5686(7)													
5785(7)	1^+					≈20 keV							
5808(6)	5^+												
6063(7)	$\langle 3,5,7 \rangle$												
6122(3)	3^+				0.217(18)	51(2) keV	04Fu02						
6327(2)	7					>0.4 keV							
6385(3)	3^-					<15 keV							
6517(7)	3^+					64(16) keV							
6645(7)	5^+				0.083(12)	58(9) keV	04Fu02						
6734(22)	7^-					195(40) keV							
6740(5)	1^+					152(11) keV							
6881(7)	$\langle 3–7 \rangle^+$												
6895(3)	7^-					53(4) keV							
6907(9)	3^+												
6944(10)	1^+					104(10) keV							
6982(15)	$\langle 3–7 \rangle^+$					145(45) keV							
7055(9)	3^-					615(20) keV							
7121(6)	3^+				0.136(12)	117(4) keV	04Fu02						
7150(7)	5^-					20(6) keV							
7240(7)	5^+				0.056(5)	19(4) keV	04Fu02						

(continued) **$^{25}_{13}$Al**

E^* [keV]	$2J^\pi$	$2T$	C^2S (τ,d)	C^2S (τ,d)	C^2S (τ,d)	$B(GT)$	$T_{1/2}$ or Γ_{cm}	Ref.	Branching ratios in percentage E_f^*: 0 451 945 1612 1790 $2J_f^\pi$: 5^+ 1^+ 3^+ 5^+
7297(3)	3^-						66(6) keV		
7409(3)	5^-						<12 keV		
7422	$\langle 3–7\rangle^+$					0.006(3)		04Fu02	
7637(6)	$\langle 3–7\rangle^+$						50(15) keV		
7684(3)	7^-						21(3) keV		
7717(10)	3^+						230(20) keV		
7820(20)	$\langle 3–7\rangle^+$						280(70) keV		
7848(20)							20(8) keV		
7892(8)	5^-						94(15) keV		
7902(2)	5^+	3					105(18) eV		50(3) <3 13(2) 37(3)
7943(20)	$\langle 3–7\rangle^+$						35(10) keV		
7972(2)	3^+	3					1.30(14) keV		100 <5 <5 <5
8026							20(10) keV		
8077	$\langle 7,9\rangle^+$								
8089(3)	5^-						40(9) keV		
8186(3)	$\langle 3–7\rangle^+$						40(10) keV		
8853(5)	1^+	3					<4 keV		
9065(10)	$\langle 3–7\rangle^+$								
9275(25)	$\langle 3–7\rangle^+$								
9415(30)	$\langle 3–7\rangle^+$								
				81En04				Ref.	
			94Ve04		77En02	04Fu02		Ref.	

Additional data on this isotope can be found in [93Ro06, 91Pr06, 91Ho09, 75Pe05, 66Bu07].

Values C^2S are from [94Ve04], [81En04] and [77En02], respectively, as they are given in [94Ve04].

For 5 levels with $E^*\leq$7422 keV parameters $B(GT)$ from the (τ,t) reaction were obtained in [04Fu02] due to the approximate proportionality between the 0° cross sections and the GT transition strengths $B(GT)$.

Uncertainties in E^*, $T_{1/2}$, C^2S, $B(GT)$ and branching ratios are given in Supplement.

Energy levels and branching ratios [90En08, 98En04]. Part 2 **$^{25}_{13}$Al**

E^* [keV]	$2J^\pi$	Branching ratios in percentage E_f^*: 2485.3 2673.5 2720.4 3061.7 $2J_f^\pi$: 1^+ 3^+ 7^+ 3^-
3695.7(5)	7^-	3.0(10)
3823.0(16)	1^-	8(5)
3858.8(8)	5^+	<0.3 8.5(5) 9.1(5) 0.25(8)
4026(2)	$\langle 5,9\rangle^+$	<1.0

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

$^{26}_{13}$Al

E^*	J^π	T	σ (α,d)	σ	ℓ	S'^{+}_{p}	C^2S	C^2S	S'^{+}_{p}	S^{-}_{n}	S^{-}_{n}	S^{-}_{n}	C^2S	C^2S	Ref.
[keV]			μb/sr	(τ,p)		(τ,d)	(τ,d)	(τ,d)	eval	eval	(p,d)	(τ,α)	(τ,α)	(p,d)	
0.0	5^+	0	880	150	2	11	0.40	0.52	0.68(12)	1.1(3)	1.00	1.30	1.00	1.00	94Ve04
228.31(1)	0^+	1		100	2	3.1	1.22	1.56			0.42	0.53	0.14	0.14	94Ve04
416.852(3)	3^+	0	1060	600	0	7.1			0.40(9)	0.15(6)	0.15	0.16	0.12	0.15	77En02
					+2				0.17(17)	0.10(3)	0.05	0.40		0.05	77En02
1057.74(1)	1^+	0		90	2	5.6	0.71	0.94	1.1(2)	0.30(7)	0.31	0.40	0.31	0.31	94Ve04
1759.03(1)	2^+	0			0	2.0			0.18(5)	0.02(1)	0.02	0.01	0.01	0.02	77En02
					+2	3.7			0.41(13)	0.06(4)	0.02	0.02	0.02	0.02	77En02
1850.62(3)	1^+	0	240	400	2	1.0			0.24(5)	0.04(3)	0.02	0.02	0.02	0.02	77En02
2068.86(5)	4^+	0		110	0	0.42							0.50	0.52	76Sh17
					+2	2.1					0.52	0.65	incl	incl	76Sh17
2069.47(3)	2^+	1		incl		incl					incl	incl	incl	incl	76Sh17
2071.64(4)	1^+	0		incl		incl					incl	incl		<0.02	76Sh17
2365.15(2)	3^+	0		180	0	0.30			0.02(1)		0.02			0.02	77En02
					2	2.6			0.20(6)	0.36(6)	0.23	0.34	0.26	0.23	77En02
2545.37(2)	3^+	0			0	0.48			0.03(1)				0.30	0.30	77En02
					2	2.0			0.24(4)	0.36(5)	0.30	0.39			77En02
2660.92(5)	2^+	0			0	0.04									90Ya07
					2	0.18									
2740.03(3)	1^+	0													90Ya07
2913.40(5)	2^+	0			0	0.60					0.00			0.001	76Sh17
					2	0.90					0.03			0.025	76Sh17
3073.63(4)	3^+	0	360	160	0	0.06									90Ya07
					2	0.36									
3159.89(1)	2^+	1		290	0	3.5					0.01			0.003	76Sh17
					2						0.30	0.41	0.10	0.10	76Sh17
3402.65(6)	5^+	0							small	0.19(8)	0.09	0.11	0.08	0.09	77En02
3507.63(8)	6^+	0												⟨0.04⟩	76Sh17
3596.34(4)	3^+	0			0	0.30					0.00	0.01	0.004	0.003	76Sh17
					2	0.90					0.01	0.01	0.006	0.013	76Sh17
3674.92(5)	4^+	0			0								0.14	0.16	
3680.68(6)	3^+	0			0	0.60					0.01	0.02	0.01	0.01	76Sh17
					2	3.3					0.16	0.18			76Sh17
3723.81(4)	1^+	0			2						0.02			0.016	76Sh17
3750.90(4)	2^+	0		370	0	1.6					0.02	0.03	0.02	0.02	76Sh17
					2	2.2					0.03	0.02	0.016	0.028	76Sh17
3753.63(13)	0^+	1		incl									incl	incl	
3921.96(24)	7^+	0												⟨0.04⟩	90Ya07
3962.83(5)	3^+	0			0						0.05	0.04	0.03	0.05	76Sh17
					2	0.54					0.08	0.11	0.08	0.08	76Sh17
3977.91(9)	0^-	0												weak	76Sh17
4191.92(6)	3^+	1			0	2.5					0.01	0.00	0.002	0.004	76Sh17
					2	4.4					0.03	0.04	0.03	0.009	76Sh17
4205.86(5)	4^+	0			2	incl					0.02	incl		0.016	76Sh17
4349.34(7)	3^+	0			2						0.03	0.03	0.02	0.03	76Sh17
4430.72(6)	2^-	0			1						0.02	0.03	0.02	0.02	76Sh17

(continued) **$^{26}_{13}$Al**

E^* [keV]	J^π	T	σ (α,d) μb/sr	σ (τ,p)	ℓ	S'^{+}_{p} (τ,d)	C^2S (τ,d)	C^2S (τ,d)	S'^{+}_{p} eval	S^{-}_{n} eval	S^{-}_{n} (p,d)	S^{-}_{n} (τ,α)	C^2S (τ,α)	C^2S (p,d)	Ref.
					3						0.05			0.05	76Sh17
4480.48(9)	0^-	0													90Ya07
4547.92(6)	2^+	1			0						0.06	0.08	0.02	0.02	76Sh17
					2						0.15	0.23	0.06	0.05	76Sh17
4599.17(5)	3^+	1			0	1.4					0.09	0.08	0.02	0.03	76Sh17
					+2	0.78					0.06	0.09	0.02	0.02	76Sh17
4622.38(5)	2^-	0													
4705.37(4)	4^+	1			2	1.2					2.1	3.30	0.86	0.71	76Sh17
4773.35(6)	4^+	0			2	1.7					0.02			0.015	76Sh17
4939.64(9)	1^-	0			1						0.02			0.02	76Sh17
					3						0.02			0.02	76Sh17
4940.79(5)	5^+	0													
4952.30(4)	3^+	0			2						0.03	0.08	0.06	0.03	76Sh17
5006.66(16)	2^-	0												0.02	76Sh17
5010.24(7)	1^+	0			2						0.02				76Sh17
5131.93(5)	4^+	1													89Ya03
5141.68(6)	2^+	1			0	0.60					0.09	0.23	0.06	0.03	76Sh17
					+2	0.15									
5195.11(12)	0^+	1													
5245.28(4)	4^+	0				2.7								0.006	76Sh17
5395.53(7)	4^-	0			1	0.72									89Ya03
					+3	1.4									
5431.23(10)	1^-	0													
5456.71(5)	3^-	0			1	0.42									
5461.87(13)	0^+	0				incl									
5487.93(6)	5^+	0			0	0.06					0.01	0.01	0.01	0.014	76Sh17
					+2	0.06					0.01	0.04	0.03	0.007	76Sh17
5494.51(5)	2^+	0				incl					incl		incl	incl	76Sh17
5513.48(4)	4^+	0			2	4.3								0.003	76Sh17
5544.56(7)	2^+	1			0						0.02			0.007	89Ya03
					+2	2.6					0.03			0.01	76Sh17
5569.16(19)	4,5	0												0.004	76Sh17
5584.99(6)	1	0													
5598.30(6)	2^-,3^-	0			1						0.12	0.20	0.17	0.12	76Sh17
					+3						0.02			0.02	76Sh17
5671.04(7)	1^+	0			0	1.3									
					+2	2.2									
5676.07(5)	4^-	0													89Ya03
5692.15(5)	3^-	0			1										89Ya03
					+3	1.0									
5726.38(5)	4^+	1			2						0.36	0.70	0.18	0.12	76Sh17
5849.21(8)	2^+	0		1170											90Ya07
5882.65(9)	3^+	0		incl											
5916.10(6)	2^-	0			1	0.78									89Ya03
					+3	1.2									

(continued) **$^{26}_{13}$Al**

E^* [keV]	J^π	T	σ (α,d) μb/sr	σ (τ,p)	ℓ	S'^{+}_{p} (τ,d)	C^2S (τ,d)	C^2S (τ,d)	S'^{+}_{p} eval	S^{-}_{n} eval	S^{-}_{n} (p,d)	S^{-}_{n} (τ,α)	C^2S (τ,α)	C^2S (p,d)	Ref.
5924.19(7)	4^+	1				incl									
5949.93(8)	1^-	0													
6028.02(4)	1^+	1													
6084.07(5)	5^-	0			2	3.4									89Ya03
6086.47(11)	1^-,2^+														
6120.01(7)	4^+–6	0													
6197.56(19)	1,2^+	0													
6238.4(3)	1	0													
6254.06(20)	3^-	0													
6270.19(11)	1^+	0		620	0	0.30									
					2	0.36									
6280.33(9)	3^+	0		incl											
6343.46(8)	4	0			1	0.01	<0.09	0.006						0.03	85Wi03
					+3									0.08	85Wi03
6363.99(8)	3^+	1			0	0.2	1.0	0.20				0.10		0.04	89Ya03
					+2	0.1	1.7	0.11				0.30		0.16	85Wi03
6398.64(21)	2^-	0			1	0.02	0.07	0.016						0.02	85Wi03
					+3									0.02	85Wi03
6414.46(10)	0^+	1		780	2	0.01	<0.02	0.013						0.05	85Wi03
6436.44(11)	4^-	0			1		<0.003	<0.001						0.01	85Wi03
					+3									0.03	85Wi03
6495.94(7)	5^+	0			2	0.01	small	0.011						0.06	85Wi03
6550.68(7)	4^+	0			2	0.03	0.52	0.027							89Ya03
					4		0.90								89Ch44
6598.32(16)	5^+	0		900											
6610.40(6)	3^-	0						0.088							90Ro03
6680.45(7)	2^+	0			0			0.038							90Ro03
					+2			0.010							90Ro03
6695(1)	7														
6724.25(7)	4^-	0		1200											89Ya03
6783.79(5)	2^-	0													
6789.30(4)	3^-	0										0.14			73Be27
6801.12(4)	3^+	0													
6801.60(16)	1^+	1													
6815.74(10)	6^+	0													
6817.86(9)	4^+	1													
6851.50(11)	2^+	1		1000											
6874.29(8)	1^+	0		incl											
6875.73(6)	2^+	1		incl											
6891.70(4)	6^-	0	1700		3	2.2						0.004			89Ya03
6936.20(8)	1^+	0													
6964.48(9)	3^-	1			3										89Ya03
7000.91(9)	2^+	0													
7015.01(11)	5^+	0													
7051.22(7)	3^+	0													

(continued) **$^{26}_{13}$Al**

E^* [keV]	J^π	T	σ (α,d) μb/sr	σ (τ,p)	ℓ	S'^{+}_{p} (τ,d)	C^2S (τ,d)	C^2S (τ,d)	S'^{+}_{p} eval	S^{-}_{n} eval	S^{-}_{n} (p,d)	S^{-}_{n} (τ,α)	C^2S (τ,α)	C^2S (p,d)	Ref.
7085.97(16)	1^-	1													
7092.78(9)	2^+	0													
7108.71(8)	4^-	0			3	0.27									89Ya03
7141.80(5)	2^-	0													
7152.84(6)	3^+	0													
7160.97(9)	3^-	0													
7167.65(6)	4^-	0			3	0.36									89Ya03
7198.44(12)	1^+	0													
7222.42(9)	5^+	1													
7237.68(5)	3^-	0													
7253.6(2)	2^-	1													
7285.62(11)	0^-	0													
7291.33(9)	4^+	0													89Ya03
7308.22(5)	2^+	1													
7347.89(10)	4^-	1			3	1.4									89Ya03
7366.25(11)	5^+	0		1400											
7396.92(5)	2^+	0		incl											
7398.70(10)	3^-	1													
7409.62(8)	4^-	1			3	1.1									89Ya03
7425.07(7)	4^+	0													
7439.50(14)	0	1													
7444.16(16)	1^-	0													
7455.34(19)	1^+	0													
7464.44(11)	3^+	0+1													
7495.38(4)	3^+	0+1													
7497(2)	2^-	0													
7529.26(5)	6^-	1			3	1.2						0.006			89Ya03
7539.52(11)	2^-	0													89Ya03
7548.20(9)	5^-	0			3	0.33						0.031			89Ya03
7557.56(25)	2^+	1													
7561.2(2)	2^+	0													
7591.55(10)	4^+	0													
7596.06(12)	5^+	0													
7604.80(10)	2^-	0													
7622.68(10)	1^+	0													
7627.52(12)	5^+	1													
7647.8(4)	1^+	0													
7761.84(10)	3^-	0													
7772.25(6)	3^+	0													
7773(2)	1	0													89Ya03
7813.63(18)	1^+	0													
7824.66(15)	4^-	0													
7831.61(7)	4^+	0													
7865.0(3)	2^+	0													
7874.29(15)	3^+	0													

(continued) **$^{26}_{13}$Al**

E^* [keV]	J^π	T	σ (α,d) μb/sr	σ (τ,p)	ℓ	S'^{+}_{p} (τ,d)	C^2S (τ,d)	C^2S (τ,d)	S'^{+}_{p} eval	S^{-}_{n} eval	S^{-}_{n} (p,d)	S^{-}_{n} (τ,α)	C^2S (τ,α)	C^2S (p,d)	Ref.
7879.6(3)	1^+	0+1													
7891.17(9)	4^+	1													89Ya03
7921.27(14)	5^+,6^+	0													
7938.79(8)	3^+	1													
7953.35(6)	4^+	1													
7982(2)	2^+	1													
8000.63(7)	1^-	1													
8008.08(9)	2^+	0													
8011.2(1)	5^-	1			3	1.6						0.044			89Ya03
8035.7(3)	1^-	0													90En08
8046.6(1)	3^-	9													90En08
8064(2)	2^+	1													90En08
8066(2)															90En08
8067.4(1)	5^-	1			3	2.2						0.051			89Ya03
8116(2)	3^+														90En08
8130(2)	1^-														90En08
8131(2)	3^-														90En08
8140	[7^+]														89Ya13
8154(2)	1^-														90En08
8174(2)	3^+														90En08
8186(2)	4^+														90En08
8227(2)	4^+														90En08
8249(2)	2^-														90En08
8256(2)	4^-														90En08
8261(2)	3^-														90En08
8272(2)	2^-														90En08
8294(2)	3^+														90En08
8310(2)	2^-														90En08
8347(2)	3^+														90En08
8531(1)	4	1													98En04
8602(1)	5,6^+														98En04
8747(1)	6^+	1													98En04
8924(1)	4	1													98En04
9060(1)	4	1													98En04
9271(1)	6^-	1			3	2.9						0.033			89Ya03
9271(1)	4														98En04
9286(1)	5	1													98En04
9311(1)	3^+,4	1													98En04
9720(1)	7^+														98En04
9720(1)	$\langle$3,4$\rangle$														98En04
9960(10)	5^-	0													98En04
9986(1)	7^+	1													89Ya13
10610	[7^+]														89Ya13
10660(10)	6^-	0													93Ya14
11810	[7^+]														89Ya13

(continued) **$^{26}_{13}$Al**

E^*	J^π	T	σ (α,d)	σ	ℓ	$S_p'^+$	C^2S	C^2S	$S_p'^+$	S_n^-	S_n^-	C^2S	C^2S	Ref.
[keV]			μb/sr	(τ,p)		(τ,d)	(τ,d)	(τ,d)	eval	(p,d)	(τ,α)	(τ,α)	(p,d)	
11966(15)	$\langle 6^-\rangle$	$\langle 1\rangle$												88Pe14
12000	$[7^+]$													89Ya13
12450(15)	$\langle 6^-\rangle$	$\langle 1\rangle$												88Pe14
12554(15)	$\langle 6^-\rangle$	$\langle 1\rangle$												88Pe14
13250(20)	$\langle 6^-\rangle$	$\langle 1\rangle$												88Pe14
13910(20)	6^-	0												88Pe14
14050(20)	$\langle 6^-\rangle$	$\langle 1\rangle$												88Pe14
14744(20)	$\langle 6^-\rangle$	$\langle 1\rangle$												88Pe14
15371(20)	$\langle 6^-\rangle$	$\langle 1\rangle$												88Pe14
16550(20)	$\langle 6^-\rangle$	$\langle 1\rangle$												88Pe14
							90En08	90Ro03						Ref.
			76De24				94Ve04	94Ve04		76Sh17		73Be27	76Sh17	Ref.
				76De24		78Be28	89Ch44		77En02		73Be27		85Wi03	Ref.

Additional data on this isotope can be found in [03Fu07, 96Il01, 96Br06, 90Ya07, 90Ro03, 89Ch44, 89Ya13, 88Pe14, 85Wi03, 78Be28, 76Sh17].

Cross sections of two-nucleon transfer σ (α,d) (in μb/sr) and σ of the (τ,p) reaction (in arbitrary units) from [76De24] are given at left.

Next four columns contain parameters of one-proton transfer:

1) S_p^+ derived in [90En08] from data in [78Be28] for (τ,d) reaction (factor C^2S is equal to 1/2);

2) C^2S for three low-energy states are from [94Ve04]; for the energies higher than E^*=6343 keV values $(2J+1)S_p^+$ from [89Ch44, 90En08] are presented;

3) C^2S from [78Be28] as given in [94Ve04]; for energies higher than E^*=6343 keV values $S_p'^+$ from [90Ro03] are presented; spectroscopic factors for proton unbound levels were used in [90Ro03] for estimation of stellar reaction rates.

4) Values $S_p'^+$ (eval) for the states below 3.5 MeV are results of evaluation by P.Endt [77En02]. Comparison of absolute spectroscipic factors from (d,n) and (τ,d) reaction can be found in [68Fu03].

Neutron pickup reactions were evaluated as S_n^- (eval) by P.Endt [77En02]; two other pairs of columns at right contain values S_n^- derived in [90En08] from (p,d) [76Sh17] and (τ,α) [73Be27] reactions, respectively, as well as their values in the original works; for the energies higher than E^*=6343 keV the ratios $S_n^-=\sigma_{exp}/\sigma_{theor}$ [85Wi03] for the (τ,α) reaction are given.

Cross sections and parameters from other transfer reaction [88Pe19, 88Pe14, 89Ya03, 89Ya13, 90Ya07, 93Ya14] used for obtaining spin and parity of many highly excited states, for example, J^π=5$^-$, 6$^-$, 7$^+$7 are given in Supplement.

Energy levels and branching ratios [90En08, 98En04]. Part 2 **$^{26}_{13}$Al**

E^*	J^π	S_N	σ (α,t)	σ (α,d)	ε	$T_{1/2}$ or	Ref.	Branching ratios in percentage			
								E_f^*: 0.0	228.31	416.85	1057.7
[keV]		(α,t)	μb		(α,d)	Γ_{cm}		J_f^π: 5$^+$	0$^+$	3$^+$	1$^+$
0.0	5$^+$		1869			717(24)·10^3 yr	94Ve04				
228.31(1)	0$^+$		276			6.345(2) s	94Ve04				
416.852(3)	3$^+$		109			1.25(3) ns	77En02	100			

(continued) **$^{26}_{13}$Al**

E^* [keV]	J^π	S_N (α,t)	σ (α,t) μb	σ (α,d)	ε (α,d)	$T_{1/2}$ or Γ_{cm}	Ref.	Branching ratios in percentage E^*_f: 0.0 J^π_f: 5^+	228.31 0^+	416.85 3^+	1057.7 1^+
							77En02				
1057.74(1)	1^+		481			25(5) fs	94Ve04		100		
1759.03(1)	2^+		216			4.2(3) ps	77En02			98.00(10)	2.00(10)
							77En02				
1850.62(3)	1^+		64			32(3) fs	77En02		99.30(10)	0.70(10)	
2068.86(5)	4^+					310(50) fs	76Sh17	31.0(10)		69.0(10)	
							76Sh17				
2069.47(3)	2^+		280			14(2) fs	76Sh17		3.0(4)	21.4(8)	75.4(9)
2071.64(4)	1^+					370(70) fs	76Sh17		89(1)	10.6(9)	
2365.15(2)	3^+		220			1.0(2) ps	77En02	0.89(4)		33.0(10)	13.7(4)
							77En02				
2545.37(2)	3^+		146			0.7(2) ps	77En02	0.21(6)		26.0(10)	2.5(2)
							77En02				
2660.92(5)	2^+		14			2.1(3) ps	90Ya07			61(2)	9.0(3)
2740.03(3)	1^+		10			30(3) fs	90Ya07		99.20(20)	0.80(20)	
2913.40(5)	2^+		49			68(4) fs	76Sh17			29.6(9)	0.79(4)
							76Sh17				
3073.63(4)	3^+		27			190(30) fs	90Ya07	0.79(9)		0.50(20)	12.3(4)
3159.89(1)	2^+		53			4.2(14) fs	76Sh17		0.44(5)	63.7(7)	16.4(5)
							76Sh17				
3402.65(6)	5^+		25			67(12) fs	77En02	37.1(10)		57.1(10)	
3507.63(8)	6^+		105			17(3) fs	76Sh17	99.7(1)			
3596.34(4)	3^+		63			17(3) fs	76Sh17	3.70(20)		0.18(4)	3.20(10)
							76Sh17				
3674.92(5)	4^+					155(20) fs		4.4(2)		57.1(9)	
3680.68(6)	3^+		203			8.3(14) fs	76Sh17	0.72(7)		1.65(7)	2.60(20)
							76Sh17				
3723.81(4)	1^+					4.2(14) fs	76Sh17		99.2(1)		0.44(9)
3750.90(4)	2^+		84			22(6) fs	76Sh17			6.1(8)	9.4(3)
							76Sh17				
3753.63(13)	0^+					5(2) fs					86.1(4)
3921.96(24)	7^+		74			19(4) fs	90Ya07	100			
3962.83(5)	3^+		31			37(5) fs	76Sh17	5.5(3)		3.9(3)	11.2(4)
							76Sh17				
3977.91(9)	0^-					>1.0 ps	76Sh17				37.0(10)
4191.92(6)	3^+		177			5(2) fs	76Sh17	0.24(6)		58.8(9)	
							76Sh17				
4205.86(5)	4^+					62(10) fs	76Sh17	2.9(2)		66.1(10)	
4349.34(7)	3^+		38			9(3) fs	76Sh17	0.60(10)		2.6(6)	1.8(2)
4430.72(6)	2^-		18			59(13) fs	76Sh17			29(3)	0.7(2)
							76Sh17				
4480.48(9)	0^-		5			62(12) fs	90Ya07				5.2(5)
4547.92(6)	2^+		25			<10 fs	76Sh17		0.57(5)	33.0(10)	47.9(10)

(continued) **$^{26}_{13}$Al**

E^*	J^π	S_N	σ (α,t)	σ (α,d)	ε	$T_{1/2}$ or	Ref.	Branching ratios in percentage			
								E_f^*: 0.0	228.31	416.85	1057.7
[keV]		(α,t)	μb		(α,d)	Γ_{cm}		J_f^π: 5^+	0^+	3^+	1^+
							76Sh17				
4599.17(5)	3^+					5(2) fs	76Sh17			25.3(8)	
							76Sh17				
4622.38(5)	2^-					53(18) fs				11.4(8)	1.5(3)
4705.37(4)	4^+		48			<3 fs	76Sh17	56.8(10)		0.30(10)	
4773.35(6)	4^+		44			82(12) fs	76Sh17	12.1(5)		30(1)	
4939.64(9)	1^-					69(14) fs	76Sh17		80.3(10)		1.2(4)
							76Sh17				
4940.79(5)	5^+					24(6) fs		1.1(2)		53.9(10)	
4952.30(4)	3^+		48			10(3) fs	76Sh17			9.4(3)	1.9(2)
5006.66(16)	2^-					120(30) fs	76Sh17				18.9(10)
5010.24(7)	1^+	0.14	20			<6 fs	76Sh17		97.7(8)		
5131.93(5)	4^+		65			<3 fs	89Ya03	0.42(3)		0.6(1)	
5141.68(6)	2^+					<4 fs	76Sh17			80.9(20)	2.9(4)
5195.11(12)	0^+					<24 fs					34(3)
5245.28(4)	4^+	0.19	60			12(3) fs	76Sh17	3.6(2)		3.9(2)	
5395.53(7)	4^-	0.20	100			65(50) fs	89Ya03	33.1(10)		46.2(10)	
5431.23(10)	1^-					12(6) fs			14.7(5)		22(2)
5456.71(5)	3^-					17(4) fs				38(3)	
5461.87(13)	0^+					<20 fs					18(3)
5487.93(6)	5^+					17(6) fs	76Sh17	10(2)			
							76Sh17				
5494.51(5)	2^+					<5 fs	76Sh17				
5513.48(4)	4^+					35(4) fs	76Sh17	11.2(4)		9.5(4)	
5544.56(7)	2^+	0.46	80			15(13) fs	89Ya03		1.6(4)	28(2)	2.8(5)
							76Sh17				
5569.16(19)	4,5						76Sh17	62(8)			
5584.99(6)	1					<6 fs			86.4(7)		
5598.30(6)	2^-,3^-					19(7) fs	76Sh17			29(3)	
							76Sh17				
5671.04(7)	1^+					<30 fs			11(2)	5.8(9)	7.8(12)
5676.07(5)	4^-	0.26	210			22(10) fs	89Ya03	40.1(10)		45.1(10)	
5692.15(5)	3^-	0.12	80			2.8(11) fs	89Ya03			44.1(10)	
5726.38(5)	4^+	0.17	50			<5 fs	76Sh17	37(1)		33(1)	
5849.21(8)	2^+		18			10(6) fs	90Ya07			8(2)	
5882.65(9)	3^+					<12 fs				14.0(10)	
5916.10(6)	2^-	0.10	50			<2 fs	89Ya03			44(2)	6(2)
5924.19(7)	4^+					<12 fs		18(2)			
5949.93(8)	1^-					<30 fs			14(3)		
6028.02(4)	1^+					<4 fs					44(2)

(continued) **$^{26}_{13}$Al**

E^* [keV]	J^π	S_N (α,t)	σ (α,t) μb	σ (α,d)	ε (α,d)	$T_{1/2}$ or Γ_{cm}	Ref.	Branching ratios in percentage E_f^*: 0.0 J_f^π: 5^+	228.31 0^+	416.85 3^+	1057.7 1^+
6084.07(5)	5^-	0.38	330	60	<0.01	90(20) fs	89Ya03	15.1(5)			
6086.47(11)	1^-,2^+					14(11) fs			38(8)		
6120.01(7)	4^+–6					10(3) fs					
6197.56(19)	$1,2^+$								100		
6238.4(3)	1					<7 fs			15(1)		14(1)
6254.06(20)	3^-										
6270.19(11)	1^+					<9 fs			76(4)		
6280.33(9)	3^+					<14 fs					
6343.46(8)	4					<6 fs	85Wi03				
							85Wi03				
6363.99(8)	3^+	0.3	60			22(11) fs	89Ya03			12(2)	
							85Wi03				
6398.64(21)	2^-						85Wi03				
							85Wi03				
6414.46(10)	0^+						85Wi03				40(10)
6436.44(11)	4^-					<17 fs	85Wi03			19(3)	
							85Wi03				
6495.94(7)	5^+					<8 fs	85Wi03				
6550.68(7)	4^+	0.3	70				89Ya03				
							89Ch44				
6598.32(16)	5^+										
6610.40(6)	3^-						90Ro03				
6680.45(7)	2^+					1.2(3) eV	90Ro03				
							90Ro03				
6695(1)	7										
6724.25(7)	4^-	0.02	10				89Ya03				
6783.79(5)	2^-										
6789.30(4)	3^-						73Be27				
6801.12(4)	3^+					0.41(20) eV					
6801.60(16)	1^+					0.34(6) eV					
6815.74(10)	6^+					<15 fs					
6817.86(9)	4^+					0.7(3) eV					
6851.50(11)	2^+										
6874.29(8)	1^+					0.43(23) eV					
6875.73(6)	2^+										
6891.70(4)	6^-	0.17	160		0.33		89Ya03				
6936.20(8)	1^+										
6964.48(9)	3^-	0.18	80				89Ya03				
7000.91(9)	2^+										
7015.01(11)	5^+					0.18(5) eV					
7051.22(7)	3^+					0.95(11) eV					
7085.97(16)	1^-										
7092.78(9)	2^+					0.68(12) eV					
7108.71(8)	4^-	0.03	20			75(20) eV	89Ya03				

(continued) **$^{26}_{13}$Al**

E^* [keV]	J^π	S_N (α,t)	σ (α,t) μb	σ (α,d)	ε (α,d)	$T_{1/2}$ or Γ_{cm}	Ref.	Branching ratios in percentage E_f^*: 0.0 228.31 416.85 1057.7 J_f^π: 5^+ 0^+ 3^+ 1^+
7141.80(5)	2^-					200(50) eV		
7152.84(6)	3^+					90(25) eV		
7160.97(9)	3^-					90(25) eV		
7167.65(6)	4^-	0.04	30			80(20) eV	89Ya03	
7198.44(12)	1^+							
7222.42(9)	5^+							
7237.68(5)	3^-					100(25) eV		
7253.6(2)	2^-					3.4(5) keV		
7285.62(11)	0^-							
7291.33(9)	4^+	0.27	40			55(15) eV	89Ya03	
7308.22(5)	2^+							
7347.89(10)	4^-	0.16	90			1.3(2) keV	89Ya03	
7366.25(11)	5^+							
7396.92(5)	2^+					45(11) eV		
7398.70(10)	3^-					1.9(3) keV		
7409.62(8)	4^-	0.12	70			230(60) eV	89Ya03	
7425.07(7)	4^+					65(15) eV		
7439.50(14)	0							
7444.16(16)	1^-					45(10) eV		
7455.34(19)	1^+							
7464.44(11)	3^+							
7495.38(4)	3^+					80(20) eV		
7497(2)	2^-					750(200) eV		
7529.26(5)	6^-	0.09	60	210	0.04		89Ya03	
7539.52(11)	2^-		20			2.1(3) keV	89Ya03	
7548.20(9)	5^-	0.03	20	200	0.01		89Ya03	
7557.56(25)	2^+					170(40) eV		
7561.2(2)	2^+					3.1(5) keV		
7591.55(10)	4^+					17(4) eV		
7596.06(12)	5^+							
7604.80(10)	2^-					500(80) eV		
7622.68(10)	1^+							
7627.52(12)	5^+					10(3) eV		
7647.8(4)	1^+					23(14) eV		
7761.84(10)	3^-							
7772.25(6)	3^+							
7773(2)	1	0.24	40			5.3(8) keV	89Ya03	
7813.63(18)	1^+					2.7(3) keV		
7824.66(15)	4^-					930(140) eV		
7831.61(7)	4^+					110(30) eV		
7865.0(3)	2^+					6.6(10) keV		
7874.29(15)	3^+					1.2(2) keV		
7879.6(3)	1^+					3.7(4) keV		
7891.17(9)	4^+		40	310	0.05	900(140) eV	89Ya03	
7921.27(14)	5^+,6^+							

(continued) **$^{26}_{13}$Al**

E^* [keV]	J^π	S_N (α,t)	σ (α,t) μb	σ (α,d)	ε (α,d)	$T_{1/2}$ or Γ_{cm}	Ref.	Branching ratios in percentage E_f^*: 0.0 228.31 416.85 1057.7 J_f^π: 5^+ 0^+ 3^+ 1^+
7938.79(8)	3^+					1.7(3) keV		
7953.35(6)	4^+					320(50) eV		
7982(2)	2^+					12(2) keV		
8000.63(7)	1^-					850(130) eV		
8008.08(9)	2^+					850(130) eV		
8011.2(1)	5^-	0.15	80	80	0.02	140(40) eV	89Ya03	
8035.7(3)	1^-						90En08	
8046.6(1)	3^-					1.9(3) keV	90En08	
8064(2)	2^+					7.3(11) keV	90En08	
8066(2)							90En08	
8067.4(1)	5^-	0.20	100			200(50) eV	89Ya03	
8116(2)	3^+					1.0(2) keV	90En08	
8130(2)	1^-					1.2(2) keV	90En08	
8131(2)	3^-					2.7(4) keV	90En08	
8140	$[7^+]$			1100	0.17		89Ya13	
8154(2)	1^-					10.5(16) keV	90En08	
8174(2)	3^+					23(3) keV	90En08	
8186(2)	4^+					260(70) eV	90En08	
8227(2)	4^+					610(90) eV	90En08	
8249(2)	2^-					11(2) keV	90En08	
8256(2)	4^-					250(60) eV	90En08	
8261(2)	3^-					9.6(14) keV	90En08	
8272(2)	2^-					8.2(12) keV	90En08	
8294(2)	3^+					25(4) keV	90En08	
8310(2)	2^-					1.5(2) keV	90En08	
8347(2)	3^+					40(6) keV	90En08	
8531(1)	4						98En04	
8602(1)	$5,6^+$						98En04	
8747(1)	6^+						98En04	
8924(1)	4						98En04	
9060(1)	4						98En04	
9271(1)	6^-	0.22	100	80	0.015		89Ya03	
9271(1)	4						98En04	
9286(1)	5						98En04	
9311(1)	$3^+,4$						98En04	
9720(1)	7^+						98En04	
9720(1)	$\langle 3,4 \rangle$						98En04	
9960(10)	5^-			110	0.45		98En04	
9986(1)	7^+			120	0.02		89Ya13	
10610	$[7^+]$			90	0.01		89Ya13	
10660(10)	6^-			350			93Ya14	
11810	$[7^+]$			700	0.11		89Ya13	
11966(15)	$\langle 6^- \rangle$	0.05					88Pe14	
12000	$[7^+]$			110	0.03		89Ya13	
12450(15)	$\langle 6^- \rangle$	0.03		120	0.014		88Pe14	

(continued) **$^{26}_{13}$Al**

E^* [keV]	J^π	S_N (α,t)	σ (α,t) μb	σ (α,d)	ε (α,d)	$T_{1/2}$ or Γ_{cm}	Ref.	Branching ratios in percentage E_f^*: 0.0 228.31 416.85 1057.7 J_f^π: 5^+ 0^+ 3^+ 1^+
12554(15)	$\langle 6^- \rangle$	0.02		120	0.030		88Pe14	
13250(20)	$\langle 6^- \rangle$	0.02		120	0.031		88Pe14	
13910(20)	6^-			150	0.03		88Pe14	
14050(20)	$\langle 6^- \rangle$	0.01		50	0.008		88Pe14	
14744(20)	$\langle 6^- \rangle$	0.02					88Pe14	
15371(20)	$\langle 6^- \rangle$	0.01					88Pe14	
16550(20)	$\langle 6^- \rangle$	0.01					88Pe14	
							Ref.	
		88Pe14		93Ya14			Ref.	
			89Ya03		93Ya14		Ref.	

Energy levels and branching ratios [90En08, 98En04]. Part 3 **$^{26}_{13}$Al**

E^* [keV]	J^π	Branching ratios in percentage E_f^*: 1759.0 1850.6 2068.9 2069.5 2071.6 2365.2 2545.4 2660.9 2740.03 J_f^π: 2^+ 1^+ 4^+ 2^+ 1^+ 3^+ 3^+ 2^+ 1^+
2069.47(3)	2^+	0.17(2) 0.04(1)
2071.64(4)	1^+	0.04(1)
2365.15(2)	3^+	1.48(5) 51(1)
2545.37(2)	3^+	3.3(2) 68.0(10)
2660.92(5)	2^+	0.62(5) 1.5(2) 24.9(10) 3.4(8)
2913.40(5)	2^+	0.79(4) 1.05(4) 67.8(9)
3073.63(4)	3^+	0.37(4) 2.69(8) 83.4(5)
3159.89(1)	2^+	14.7(4) 0.35(3) 2.71(8) 0.22(5) 1.43(5)
3402.65(6)	5^+	5.3(2) 0.48(6)
3507.63(8)	6^+	0.32(7)
3596.34(4)	3^+	0.98(6) 91.94(20)
3674.92(5)	4^+	27.4(8) 1.00(10) 8.1(4) 2.0(2)
3680.68(6)	3^+	1.15(6) 0.18(4) 93.32(20)
3723.81(4)	1^+	0.35(9)
3750.90(4)	2^+	0.19(6) 0.26(7) 68(2) 0.13(7)
3753.63(13)	0^+	2.6(3) 9.5(3) 1.9(3)
3962.83(5)	3^+	2.2(3) 1.6(2) 70.2(10) 3.4(3) 1.5(7) 0.5(2)
3977.91(9)	0^-	62.0(10) 0.9(2)
4191.92(6)	3^+	3.9(2) 23.9(7) 9.3(5) 2.10(10) 0.5(2)
4205.86(5)	4^+	1.10(7) 10.6(7) 6.8(5) 3.2(2) 8.1(5)
4349.34(7)	3^+	0.80(9) 94.2(6)
4430.72(6)	2^-	2.9(6) 0.6(3) 61(3) 1.8(6) 1.0(3)
4480.48(9)	0^-	34(1) 44.2(10) 16.4(6)
4547.92(6)	2^+	7.0(2) 0.08(3) 1.30(6) 3.29(10) 5.3(2) 0.20(5) 0.71(5)
4599.17(5)	3^+	47.8(9) 2.60(10) 2.60(10) 5.0(2) 6.6(3)
4622.38(5)	2^-	9.0(7) 18.2(8) 1.2(3) 2.1(6) 19.1(5) 32(1)

(continued) **$^{26}_{13}$Al**

E^*	J^π	Branching ratios in percentage								
	E^*_f:	1759.0	1850.6	2068.9	2069.5	2071.6	2365.2	2545.4	2660.9	2740.03
[keV]	J^π_f:	2^+	1^+	4^+	2^+	1^+	3^+	3^+	2^+	1^+
4705.37(4)	4^+			0.60(10)			25.4(8)	15.8(5)		
4773.35(6)	4^+	0.4(1)		3			8	5.4(2)	26(1)	
4939.64(9)	1^-	0.51(20)	0.8(3)		4.9(12)	5.7(12)			0.8(2)	0.5(3)
4940.79(5)	5^+			0.7(2)			20.5(6)	21.4(8)		
4952.30(4)	3^+		2.6(2)		25.1(8)			0.6(2)		1.00(10)
5006.66(16)	2^-	7.0(10)	1.9(8)		65(2)				2.3(6)	2.3(5)
5131.93(5)	4^+	0.05(1)		16.1(10)	5.1(10)		45(1)	0.97(7)		
5141.68(6)	2^+	12.0(10)				0.8(3)	0.70(10)			
5195.11(12)	0^+		9.0(10)			42(3)				
5245.28(4)	4^+	7.4(3)			3.8(2)		9.1(3)	2.5(2)	2.9(1)	
5395.53(7)	4^-			2.11(10)			3.62(10)	1.31(10)		
5431.23(10)	1^-	0.6(1)	5.0(2)		26(4)	10(4)			0.4(1)	
5456.71(5)	3^-	7.0(3)			10.6(4)		2.3(2)	1.3(2)	20.5(10)	
5461.87(13)	0^+	23(3)	8(3)						8(2)	17(3)
5487.93(6)	5^+			14(2)			9(2)			
5494.51(5)	2^+				90.7(10)					
5513.48(4)	4^+	26.6(8)		4.3(2)			6.1(2)	0.73(9)	0.73(8)	
5544.56(7)	2^+	11.4(7)	0.9(3)			2.4(4)	14(1)	2.4(5)	2.2(4)	
5569.16(19)	4,5			24(7)						
5584.99(6)	1	1.4(4)								
5598.30(6)	2^-,3^-				31(3)					
5676.07(5)	4^-			0.38(7)			0.79(8)	3.51(10)		
5692.15(5)	3^-	16.5(5)			0.31(8)				0.31(9)	
5726.38(5)	4^+			6.0(3)			5.0(2)			
5849.21(8)	2^+	7(2)			48(3)					3.2(9)
5882.65(9)	3^+	3(1)	4.1(6)		11.6(7)					
5916.10(6)	2^-	6.6(5)	4.7(11)		21.5(7)		1.6(4)			
5924.19(7)	4^+				11(2)			48(3)		
5949.93(8)	1^-				22(4)					
6028.02(4)	1^+	1.2(5)				2.9(6)				3.5(7)
6084.07(5)	5^-				56(2)					
6086.47(11)	1^-,2^+	13(4)	24(8)		25(8)					
6120.01(7)	4^+–6				67.9(10)					
6238.4(3)	1	2.3(6)	1.8(6)		28(1)					4(2)
6280.33(9)	3^+				9(4)					
6343.46(8)	4				8.6(5)		3.8(5)	12.9(10)		
6363.99(8)	3^+	27(3)			8(2)		8(2)	5(2)		
6414.46(10)	0^+		60(10)							
6436.44(11)	4^-				7(2)					

Energy levels and branching ratios [90En08, 98En04]. Part 4

$^{26}_{13}$Al

E^*	J^π	Branching ratios in percentage								
	E_f^*:	2913.40	3073.63	3159.89	3402.65	3507.63	3596.34	3674.92	3680.68	3723.81
[keV]	J_f^π:	2^+	3^+	2^+	5^+	6^+	3^+	4^+	3^+	1^+
3680.68(6)	3^+	0.12(5)		0.26(4)						
3750.90(4)	2^+	0.39(7)		15.7(9)						
4191.92(6)	3^+	0.39(4)					0.88(7)			
4205.86(5)	4^+	0.63(5)	0.52(3)					0.040(10)		
4430.72(6)	2^-			3.5(3)						
4547.92(6)	2^+	0.48(4)							0.23(3)	
4599.17(5)	3^+	3.4(2)	1.00(10)					3.1(2)	0.79(5)	
4622.38(5)	2^-		4.5(4)	1.1(2)						
4705.37(4)	4^+		0.6(2)						0.5(2)	
4773.35(6)	4^+	5.8(2)	3.5(2)		0.6(2)		0.26(4)	0.1	0.38(3)	
4939.64(9)	1^-			1.0(3)						
4940.79(5)	5^+		0.25(8)			1.79(10)		0.30(10)		
4952.30(4)	3^+	0.90(10)		57.1(10)						
5006.66(16)	2^-	2.7(5)								
5131.93(5)	4^+		19.1(6)	0.27(3)	5.0(2)		4.1(1)	0.12(2)	0.45(7)	
5141.68(6)	2^+						1.4(3)			
5195.11(12)	0^+									15.0(10)
5245.28(4)	4^+	5.6(2)	5.2(2)		1.5(5)	0.25(4)	2.1(5)	0.19(5)	0.43(4)	
5395.53(7)	4^-		1.91(10)		0.11(5)		3.01(10)	0.15(4)		
5456.71(5)	3^-		6.0(3)	5.5(3)			0.4(1)	0.5(2)	0.5(2)	
5461.87(13)	0^+	20(4)		6(2)						
5487.93(6)	5^+		64(3)		3.4(12)					
5494.51(5)	2^+			4.3(5)			2.8(9)			
5513.48(4)	4^+	1.07(8)					0.4(1)			
5544.56(7)	2^+	5(1)	2.0(4)				5(1)			1.2(4)
5584.99(6)	1	2.6(3)		1.0(3)						
5598.30(6)	2^-,3^-			40(3)						
5671.04(7)	1^+			23.1(10)					3.2(8)	
5676.07(5)	4^-							0.22(8)	1.36(8)	
5692.15(5)	3^-		0.69(9)	16.5(5)			0.29(6)		1.8(1)	
5726.38(5)	4^+				8(1)		2.4(2)	0.7(1)		
5849.21(8)	2^+	7(3)								
5882.65(9)	3^+		1.0(4)	9.3(7)						
5916.10(6)	2^-	1.9(4)		3.3(4)						
5924.19(7)	4^+				3.5(6)				19(3)	
5949.93(8)	1^-			44(4)						
6028.02(4)	1^+	15.4(5)								22.1(7)
6084.07(5)	5^-					7.8(3)		10.9(10)		
6120.01(7)	4^+–6				26.0(10)			6.1(8)		
6238.4(3)	1	1.2(4)		1.3(5)						0.5(3)
6270.19(11)	1^+			17(2)						
6280.33(9)	3^+			35(8)						
6343.46(8)	4		5.0(11)							
6363.99(8)	3^+							12(4)	13(1)	
6695(1)	7					x				

Energy levels and branching ratios [90En08, 98En04]. Part 5 **$^{26}_{13}$Al**

E^*	J^π	Branching ratios in percentage							
	E_f^*:	3750.90	3753.63	3962.83	3977.91	4191.92	4205.86	4349.34	4430.72
[keV]	J_f^π:	2^+	0^+	3^+	0^-	3^+	4^+	3^+	2^-
4599.17(5)	3^+	1.8(2)							
4773.35(6)	4^+					4.1(3)			
4939.64(9)	1^-		4.22(20)						
4952.30(4)	3^+					1.3(2)			
5010.24(7)	1^+		2.3(8)						
5131.93(5)	4^+			2.0(6)		0.09(1)	0.52(2)	0.32(3)	
5141.68(6)	2^+			1.3(2)					
5245.28(4)	4^+	0.08(3)		1.80(10)		46.1(10)	0.43(5)	0.32(4)	
5395.53(7)	4^-					6.1(2)			
5431.23(10)	1^-		21(2)						
5456.71(5)	3^-	0.5(2)							
5513.48(4)	4^+	0.29(7)				37(1)		1.15(7)	
5544.56(7)	2^+	20(1)		1.8(3)					
5584.99(6)	1		2.4(3)						
5671.04(7)	1^+		49(2)						
5676.07(5)	4^-					7.0(2)			
5692.15(5)	3^-					18.4(6)	0.42(8)		
5726.38(5)	4^+			6.2(3)				0.8(1)	
5849.21(8)	2^+					15(2)			
5882.65(9)	3^+					1.7(7)			
5916.10(6)	2^-	2(1)				6.4(4)			
5949.93(8)	1^-		21(3)						
6028.02(4)	1^+	3.5(9)			0.9(3)				
6238.4(3)	1		5.1(7)		7(2)				1.3(4)
6280.33(9)	3^+					23(4)			
6343.46(8)	4					13.8(10)			
6363.99(8)	3^+	6(1)				2(1)	7(2)		

Energy levels and branching ratios [90En08, 98En04]. Part 6 **$^{26}_{13}$Al**

E^*	J^π	Branching ratios in percentage						
	E_f^*:	4480.48	4547.92	4599.17	4622.38	4705.37	4773.35	4939.64
[keV]	J_f^π:	0^-	2^+	3^+	2^-	4^+	4^+	1^-
5245.28(4)	4^+					2.7(2)		
5395.53(7)	4^-			1.91(10)	0.39(5)			
5431.23(10)	1^-	0.22(6)	0.62(6)					
5456.71(5)	3^-		5.9(3)			0.4(1)		
5494.51(5)	2^+		2.20(20)					
5513.48(4)	4^+					0.60(6)		
5569.16(19)	4,5					14(4)		
5584.99(6)	1		6.2(3)					
5676.07(5)	4^-			1.60(8)				

(continued) **$^{26}_{13}$Al**

E^*	J^π	Branching ratios in percentage						
	E_f^*:	4480.48	4547.92	4599.17	4622.38	4705.37	4773.35	4939.64
[keV]	J_f^π:	0^-	2^+	3^+	2^-	4^+	4^+	1^-
5692.15(5)	3^-		0.21(9)	0.24(8)				
5849.21(8)	2^+		8.4(9)					
5882.65(9)	3^+		43(2)	2.3(5)	3.1(7)	2.3(8)		
6028.02(4)	1^+							5.4(6)
6084.07(5)	5^-					8.9(4)	0.74(9)	
6238.4(3)	1		10.2(7)					
6280.33(9)	3^+			10(4)				
6343.46(8)	4			45(2)		3.8(10)		
6436.44(11)	4^-					35(3)		

Energy levels and branching ratios [90En08, 98En04]. Part 7 **$^{26}_{13}$Al**

E^*	J^π	Branching ratios in percentage					
	E_f^*:	5006.66	5131.93	5141.68	5195.11	5395.53
[keV]	J_f^π:	2^-	4^+	2^+	0^+	4^-
5513.48(4)	4^+		0.26(5)			
5692.15(5)	3^-			0.23(7)		
5849.21(8)	2^+			3.1(6)		
5882.65(9)	3^+		2.2(10)	2.3(10)		
5916.10(6)	2^-			1.2(2)		
6028.02(4)	1^+	1.1(2)				
6084.07(5)	5^-					0.72(7)
6238.4(3)	1			7.9(7)		
6270.19(11)	1^+				7(2)	
6280.33(9)	3^+		10(5)	13(6)		
6343.46(8)	4		6.6(7)			
6436.44(11)	4^-		39(4)			

Energy levels and branching ratios [90En08, 98En04]. **$^{27}_{13}$Al**

E^*	$2J^\pi$	$2T$	C^2S	$S_p'^+$	S_p^-	C^2S	ℓ_p	S_N	g$\Gamma_\circ$	$B(M1)$	C^2S'	$G_{\ell j}$	$T_{1/2}$ or	Ref.
[keV]				eval	eval	(d,τ)	(d,τ)	(t,α)	[meV]	[μ_N^2]	(τ,d)	(τ,d)	Γ_{cm}	
0.0	5^+		0.22	0.44(5)	6.4(6)	3.39	2	5.52			1.5	1.70	Stable	94Ve04
843.76(3)	1^+		0.43	0.67(10)	1.4(2)	0.79	0	0.68			1.0	0.88	35(1) ps	94Ve04
1014.45(3)	3^+			0.10(2)	1.3(2)	0.48	2	0.78		0.015(1)	0.27	0.27	1.49(7) ps	77En02
2212.0(1)	7^+					<0.3	$\langle 4 \rangle$	0.47		0.150(4)		<0.3	26.4(7) fs	74Ma34
2734.9(7)	5^+			0.03(1)	1.2(2)	0.41	2	0.44		0.046(7)	0.13	0.11	8.9(13) fs	77En02
2982.00(5)	3^+		0.45	0.77(11)	0.7(3)	0.53	2		95(26)	0.245(13)	2.5	1.79	3.9(2) fs	94Ve04

(continued) **$^{27}_{13}$Al**

E^* [keV]	$2J^\pi$	$2T$	C^2S	$S_p'^+$ eval	S_p^- eval	C^2S (d,τ)	ℓ_p (d,τ)	S_N (t,α)	g$\Gamma_\circ$ [meV]	$B(M1)$ [μ_N^2]	C^2S' (τ,d)	$G_{\ell j}$ (τ,d)	$T_{1/2}$ or Γ_{cm}	Ref.
3004.2(8)	9^+					<0.06	⟨4⟩						59(3) fs	74Ma34
3680.4(9)	1^+			0.06(2)	0.06(6)	0.06	0				0.08	0.07	5.8(12) fs	77En02
3956.8(4)	3^+								106(12)	0.145(12)	0.30	0.19	2.7(3) fs	99Fu01
4054.6(5)	1^-					1.51	1						7.3(12) fs	74Ma34
4410.2(4)	5^+					0.29	2		230(31)	0.226(28)	0.29	0.21	1.2(1) fs	74Ma34
4510.3(5)	11^+												220(20) fs	
4580.0(8)	7^+								85(9)	0.077(8)			5.3(5) fs	99Fu01
4811.6(5)	5^+								94(13)	0.059(10)			1.5(2) fs	99Fu01
5155.6(8)	3^-					1.22	1				0.03		2.4(2) fs	74Ma34
5248.0(6)	5^+										0.07		<4 fs	70Lu07
5419.9(9)	9^+												<14 fs	
5432.8(10)	7								63(42)	0.034(23)			7(2) fs	99Fu01
5438.4(8)	5^-												6(4) fs	
5499.8(8)	11^+					0.17							<7 fs	74Ma34
5550.9(5)	5								130(25)	0.066(12)			2.6(4) fs	99Fu01
5667.3(12)	9^+												11(3) fs	
5751.6(10)	1^+												<10 fs	
5827.0(8)	3^-												<21 fs	
5960.3(7)	7								114(82)	0.028(20)			1.7(12) fs	99Fu01
6080.8(9)	3								64(13)	0.025(6)			3.3(7) fs	99Fu01
6115.8(6)	5													
6158.4(7)	3^-										0.14	0.29	<14 fs	70Lu07
6284.7(15)	7^+								85(36)	0.026(11)			4.9(20) fs	99Fu01
6462.8(13)	5								490(55)	0.158(19)			0.78(8) fs	99Fu01
6477.3(9)	7^-										2.7		1.8(3) fs	70Lu07
6512.2(11)	9												9.7(21) fs	
6533(1)	7^+								222(163)				2.0(14) fs	99Fu01
6605.1(9)	3^-												<10 fs	
6651.3(7)	5^-										0.30		0.55(3) fs	70Lu07
6713(1)	9^+												<7 fs	
6765(1)	5												<14 fs	
6776.3(11)	3												<14 fs	
6813.8(7)	1^+	3									0.98		<10 fs	70Lu07
6820.7(13)	$\langle 3,7\rangle^+$								530(40)	0.144(11)				99Fu01
6947.9(19)	11^+												<14 fs	
6992.9(9)	5^-													
6996(2)	$\langle 1,3\rangle^-$													
7071.3(14)	1^+													
7173.6(13)	9^+												<7 fs	
7227.2(8)	9^-												<14 fs	
7280.0(16)	$\langle 1^+–5^+\rangle$													
7289(2)	$\langle 9–13\rangle^+$												<14 fs	
7400(1)	11^+												24(10) fs	
7413(1)	7^+								906(135)	0.195(18)			0.43(4) fs	99Fu01
7443.0(13)	$9,13^+$												<7 fs	

(continued) **$^{27}_{13}$Al**

E^* [keV]	$2J^\pi$	$2T$	C^2S	S'^+_p eval	S^-_p eval	C^2S (d,τ)	ℓ_p (d,τ)	S_N (t,α)	g$\Gamma_\circ$ [meV]	$B(M1)$ [μ_N^2]	C^2S' (τ,d)	$G_{\ell j}$ (τ,d)	$T_{1/2}$ or Γ_{cm}	Ref.
7477.1(9)	7^-												0.68(10) fs	
7550(2)	3													
7578(2)	5^+								587(118)	0.117(26)			0.35(6) fs	99Fu01
7660(2)	7^+–11^+												13(4) fs	
7676.5(15)	$\langle 3,5\rangle^+$								996(274)	0.250(80)				99Fu01
7679(1)	$\langle 7,9^+\rangle$													
7721(1)	5										0.18			70Lu07
7798(2)	$\langle 3$–$7\rangle$													
7806(2)	9^+												18(4) fs	
7858(2)	3^+													
7900(1)	$\langle 5,7\rangle^-$													
7935(3)	9^-,11^-													
7948(2)	9^+,11^+													
7997(1)	9													
8037(1)	7								1126(112)	0.189(19)			0.43(4) fs	99Fu01
8043(2)	5^+–9^+													
8065(2)	$\langle 3,5\rangle^+$								280(86)	0.046(14)			20(6) as	99Fu01
8097(1)	5													91Ho09
8130(3)	1^+													91Ho09
8136(1)	5													91Ho09
8182.1(13)	3^-													91Ho09
8287(1)	9^-													
8324(1)	5^+													91Ho09
8361(3)														91Ho09
8376(1)	$\langle 3,5\rangle^+$													91Ho09
8396(1)	11													
8408(3)														
8420.7(10)	$\langle 3,5\rangle^+$													91Ho09
8442(1)	7								1208(244)	0.093(24)			0.50(10) fs	91Ho09
8490.3(12)	5^+													91Ho09
8521(2)	1–5,7^+													
8537(1)	5													
8553.0(3)	3													
8586(1)	7													
8597.6(3)	3^-												0.56(4) eV	91Ho09
8675(1)	$\langle 7,9^+\rangle$								3207(866)	0.423(114)				99Fu01
8693(2)	$\langle 9$–$13\rangle$													
8708.7(3)	1^+												7.6(6) eV	91Ho09
8716.6(6)														
8732.2(5)	7^-												0.19(3) eV	91Ho09
8753.6(6)	5								680(80)	0.087(10)			1.05(13) eV	99Fu01
8774.2(6)	5^+								510(120)	0.065(15)			3.7(3) eV	99Fu01
8804(1)														
8825(3)														
8861(3)														

(continued) **$^{27}_{13}$Al**

E^* [keV]	$2J^\pi$	$2T$	C^2S	S'^+_p eval	S^-_p eval	C^2S (d,τ)	ℓ_p (d,τ)	S_N (t,α)	g$\Gamma_\circ$ [meV]	$B(M1)$ [μ_N^2]	C^2S' (τ,d)	$G_{\ell j}$ (τ,d)	$T_{1/2}$ or Γ_{cm}	Ref.
8897.2(5)	5^+								340(80)	0.042(10)			0.86(17) eV	99Fu01
8905.0(8)														
8909.2(5)	$\langle 1,3\rangle^-$													
8952(1)	$\langle 5,9^+\rangle$													
8963.4(3)	3^-													
9001(3)														
9050.9(3)	7^-													
9051.6(3)	5^+								340(100)	0.039(12)				99Fu01
9058(1)														
9080.4(3)	1^+												240(25) eV	
9190.2(3)	3													
9216.3(3)	3^-													
9236.0(8)	1^+												13(11) eV	
9239.5(8)	5													
9271.6(8)	$\langle 1^+,3\rangle$													
9274.3(8)	$\langle 5^-,7\rangle$													
9276.9(8)	3^-												100(30) eV	
9299(3)														
9308.2(9)	5^+													
9322(3)														
9359.3(10)														
9371(3)														
9390.0(9)	3^+													
9400.8(9)	1^+												110(50) eV	
9427(3)														
9474.4(8)	7													
9488(3)														
9501.7(10)									430(110)	0.043(11)				99Fu01
9511.5(9)	5													
9530(3)														
9552(3)														
9600.7(9)	3												12(2) eV	
9619(3)														
9628.5(9)	1^-												2.76(14) keV	
9634.5(9)	5^+												18(5) eV	
9658(2)									160(40)	0.015(4)				99Fu01
9664.7(8)	5^+												24(8) eV	
9664.8(20)	1^-												5.82(10) keV	
9692(3)														
9715.9(8)	3^+													
9742(3)														
9762.8(8)	5^+												18 eV	
9796.3(9)	7^+								790(430)	0.072(39)			4(3) eV	99Fu01
9821.6(9)	3^+								120(70)	0.011(6)			18 eV	99Fu01
9834.4(10)	1^-												3.0 keV	

(continued) **$^{27}_{13}$Al**

E^* [keV]	$2J^\pi$	$2T$	C^2S	S'^+_p eval	S^-_p eval	C^2S (d,τ)	ℓ_p (d,τ)	S_N (t,α)	g$\Gamma_\circ$ [meV]	$B(M1)$ [μ_N^2]	C^2S' (τ,d)	$G_{\ell j}$ (τ,d)	$T_{1/2}$ or Γ_{cm}	Ref.
9839.7(10)	5								710(160)	0.064(14)			1.0(2) eV	99Fu01
9846.6(10)	1^+												210 eV	
9867(3)														
9883(3)														
9893(2)									110(60)	0.010(5)				99Fu01
9921.9(9)	3^-												1.8 keV	
9930.4(9)	1^-												1.35 keV	
9941.3(9)	7													
9953.0(16)														
9955.5(10)	3													
9960.3(9)	5^-												8 eV	
9962.8(9)	5^+												12 eV	
9976.8(9)	$\langle 5,7\rangle^+$								1300(300)	0.113(26)				99Fu01
9990.8(9)	7^-												10 eV	
9999.9(10)	5													
10008(3)														
10024.3(9)	5^+												35 eV	
10075(3)														
10089.6(9)	3^-												2.7 keV	
10092.9(9)	$\langle 3,5\rangle^+$												0.47 keV	
10112.0(9)	$\langle 5,7\rangle^-$												15 eV	
10112.5(9)	1^-												40 eV	
10121.2(10)	7^+													
10135.1(11)	$\langle 3^-,5\rangle$													
10148(3)														
10164.8(9)	5^+												14 eV	
10209(3)														
10218(3)	3^-	3											40.9 keV	
10243.9(9)	3^+												0.13 keV	
10244(3)	1^+	3											70.4 keV	
10244.8(9)	7^-												75 eV	
10258.5(10)	5													
10281(3)														
10287(2)	3													
10307(2)	7													
10318(2)	1^+													
10333(2)	3^+												1.1 keV	
10334(2)	1^-												5.6 keV	
10338(2)	1^+												1.3 keV	
10340(2)														
10348(2)	3													
10360(3)														
10365(2)	9^+													
10370(2)	5^+												45 eV	
10372(2)	3^+												450 eV	

(continued) **$^{27}_{13}$Al**

E^* [keV]	$2J^\pi$	$2T$	C^2S	$S_p'^+$ eval	S_p^- eval	C^2S (d,τ)	ℓ_p (d,τ)	S_N (t,α)	g$\Gamma_\circ$ [meV]	$B(M1)$ [μ_N^2]	C^2S' (τ,d)	$G_{\ell j}$ (τ,d)	$T_{1/2}$ or Γ_{cm}	Ref.
10409(2)	5^+												37 eV	
10422(2)														
10448(3)														
10459(2)	1^-												70 eV	
10478(3)														
10480(3)	7^-	1+3											0.65 keV	
10509(2)	7^-	1+3											0.12 keV	
10519(2)														
10528(2)	3^-												0.3 keV	
10555(2)	5													
10558(2)	1^-												30 keV	
10566(2)	3^+	1+3											0.14 keV	
10588(2)	3^+	1+3											1.4 keV	
10593(2)	$\langle 5,7\rangle^-$												10 eV	
10599(3)	3^+	1+3											0.49 keV	
10612(3)	1^-												10.2 keV	
10626(2)	7^-												65 eV	
10630(3)														
10634(3)	1^+												0.90 keV	
10648(2)	3^+												135 eV	
10675(2)	5^+												0.11 keV	
10676(2)														
10692(2)	$\langle 5,7\rangle^-$												10 eV	
10716(2)	3^+												0.18 keV	
10723(2)													70 eV	
10737(2)	3^-												2.1 keV	
10751(2)	9													
10769(3)														
10778(3)														
10781(3)														
10782(3)														
10791(3)														
10804(2)	1^+												0.8 keV	
10833(2)	$\langle 3,5\rangle^+$												0.34 keV	
10835(3)	$\langle 3,5\rangle^+$												0.8 keV	
10837(3)	$\langle 5,7\rangle^-$												0.6 keV	
10839(3)	3^-												8.0 keV	
10865(2)	$\langle 5,7\rangle^-$												40 eV	
10872(3)														
10901(3)														
10911(3)	1^-												2.9 keV	
10922(3)	$\langle 3,5\rangle^+$												16 eV	
10922(3)													2.8(10) keV	
10931(3)	5^+												1.2(8) keV	
10939(3)														

(continued) **$^{27}_{13}$Al**

E^* [keV]	$2J^\pi$	$2T$	C^2S	S'^+_p eval	S^-_p eval	C^2S (d,τ)	ℓ_p (d,τ)	S_N (t,α)	g$\Gamma_\circ$ [meV]	$B(M1)$ [μ_N^2]	C^2S' (τ,d)	$G_{\ell j}$ (τ,d)	$T_{1/2}$ or Γ_{cm}	Ref.
10971(3)														
10973(2)	5^+												0.33 keV	
10995(3)														
11003(2)	$\langle 5,7\rangle^-$												8 eV	
11012(3)													35 eV	
11073(3)	$\langle 3,5\rangle^+$												0.26 keV	
11075(3)														
11077(3)														
11095(3)	5^-												1.4 keV	
11101(4)	3^-												5.5 keV	
11128(3)	$\langle 3,5\rangle^+$												15 eV	
11188														
11702														
				77En02										Ref.
			94Ve04		77En02	74Ma34		87Pe09	99Fu01	99Fu01	70Lu07	69Bo18		Ref.

Additional data on this isotope can be found in [97DeZW, 95Pi02, 91Ho09, 76Mo09, 76Sh17, 69Bo18].

Abundance: 100 %.

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

Energy levels and branching ratios [90En08, 98En04]. Part 2 **$^{27}_{13}$Al**

E^* [keV]	$2J^\pi$	σ (τ,d) μb/sr	σ (α,t) μb/sr	Ref.	E^*_f: $2J^\pi_f$:	0.0 5^+	Branching ratios in percentage 844 1^+	1014 3^+	2212 7^+	2735 5^+	2982.0 3^+
0.0	5^+			94Ve04							
843.76(3)	1^+			94Ve04		100					
1014.45(3)	3^+			77En02		97(3)	3(1)				
2212.0(1)	7^+			74Ma34		100	<0.2	<0.1			
2734.9(7)	5^+			77En02		22(1)	1.8(1)	76(2)	0.4(1)		
2982.00(5)	3^+			94Ve04		97(3)	1.0(3)	1.6(5)	<0.2		
3004.2(8)	9^+			74Ma34		89(3)	<0.8	<0.5	11(1)	<0.4	
3680.4(9)	1^+			77En02		1.6(3)	61(2)	38(1)	<0.1	<0.1	<0.50
3956.8(4)	3^+			99Fu01		85(2)	5(1)	4(1)	<0.5	5.8(4)	<0.7
4054.6(5)	1^-			74Ma34		<1.0	86(1)	14(1)	<0.3	<0.3	<0.7
4410.2(4)	5^+			74Ma34		58(2)	<1.0	35(2)	4.8(8)	2.5(4)	<0.3
4510.3(5)	11^+					<0.8	<4.0	<4.0	77(2)	<6.0	<4.0
4580.0(8)	7^+			99Fu01		70(4)	<1.0	4.5(15)	17(2)	8.4(9)	<2.0
4811.6(5)	5^+			99Fu01		32(2)	<2.0	45(2)	17(2)	<1.0	6(2)
5155.6(8)	3^-			74Ma34		80(3)	<5.0	20(3)	<5.0	<2.0	<3.0
5248.0(6)	5^+			70Lu07		2.0(10)	<2.0	72(4)	16(2)	4.0(10)	2.1(4)
5419.9(9)	9^+					5.9(20)			86.1(20)	7.9(10)	<3.0

(continued) **$^{27}_{13}$Al**

E^*	$2J^\pi$	σ (τ,d)	σ (α,t)	Ref.	Branching ratios in percentage					
				E_f^*:	0.0	844	1014	2212	2735	2982.0
[keV]		μb/sr	μb/sr	$2J_f^\pi$:	5^+	1^+	3^+	7^+	5^+	3^+
5432.8(10)	7			99Fu01	44(5)			17(3)	<6.0	
5438.4(8)	5^-				83.0(20)	<3.0	<1.0	<2.0	13.0(20)	4.0(10)
5499.8(8)	11^+			74Ma34	<2.0	<3.0	<2.0	20(2)	<5.0	<2.0
5550.9(5)	5			99Fu01	75.1(15)	<3	9.9(5)	6.1(5)	3.4(5)	5.5(5)
5667.3(12)	9^+				34(7)					
5751.6(10)	1^+				<5.0	35(2)	17(2)	<1.0	<1.0	29(2)
5827.0(8)	3^-				15(2)	<3	75(2)	<2.0	<0.7	<1.0
5960.3(7)	7			99Fu01	19(3)			39(4)	31(3)	5(2)
6080.8(9)	3			99Fu01	70(3)	<4.0	24(2)			<4.0
6115.8(6)	5					<2.0	61(10)	22(9)	<4.0	11(6)
6158.4(7)	3^-			70Lu07	7.1(11)	75(2)	11(2)	<4.1	5.1(11)	1.5(5)
6284.7(15)	7^+			99Fu01	60(5)			25(4)		
6462.8(13)	5			99Fu01	84(4)		10(3)			6.0(20)
6477.3(9)	7^-			70Lu07	65(2)			12.0(10)	20.0(10)	
6512.2(11)	9							22(4)		
6533(1)	7^+			99Fu01	18(4)			35(6)	15(3)	
6605.1(9)	3^-				17(8)	50(10)			<3.4	<3.4
6651.3(7)	5^-			70Lu07	86.7(20)	<2.0	9.9(16)	<2.0	<2.0	3.5(16)
6713(1)	9^+							14.0(10)	5.0(10)	
6765(1)	5				8(2)	<3.0	18(1)		21(2)	35(3)
6776.3(11)	3				17(3)	49(7)				10(5)
6813.8(7)	1^+			70Lu07		22(2)	71(2)	<2.0	<1.0	<2.0
6820.7(13)	$\langle 3,7\rangle^+$			99Fu01	100					
6947.9(19)	11^+				<2			21(2)		
6992.9(9)	5^-				41(14)			59(14)		
6996(2)	$\langle 1,3\rangle^-$					77(8)				
7071.3(14)	1^+					20(10)	80(10)			
7173.6(13)	9^+							9(3)		
7227.2(8)	9^-				<3.0			73(4)		
7280.0(16)	$\langle 1^+–5^+\rangle$				100					
7289(2)	$\langle 9–13\rangle^+$									
7400(1)	11^+									
7413(1)	7^+			99Fu01	76(3)			24(3)		
7443.0(13)	$9,13^+$				<2			<2		<5.0
7477.1(9)	7^-				50(7)			41(7)		
7550(2)	3				100					
7578(2)	5^+			99Fu01	46(6)		23(4)			20(4)
7660(2)	$7^+–11^+$							29(5)		
7676.5(15)	$\langle 3,5\rangle^+$			99Fu01	83(12)		17(7)			
7679(1)	$\langle 7,9^+\rangle$				44(7)			20(5)	21(4)	
7721(1)	5			70Lu07				11.0(11)		89.0(11)
7798(2)	$\langle 3–7\rangle$				22(5)					
7806(2)	9^+							60(6)		
7858(2)	3^+				22(4)	16(4)	<9.0	<5.0	19(5)	<7.0
7900(1)	$\langle 5,7\rangle^-$				34(11)				66(11)	

(continued) **$^{27}_{13}$Al**

E^*	$2J^\pi$	σ (τ,d)	σ (α,t)	Ref.	Branching ratios in percentage					
				E_f^*:	0.0	844	1014	2212	2735	2982.0
[keV]		μb/sr	μb/sr	$2J_f^\pi$:	5^+	1^+	3^+	7^+	5^+	3^+
7935(3)	9^-,11^-									
7948(2)	9^+,11^+									
7997(1)	9							63(5)		
8037(1)	7			99Fu01	81(6)			12(4)		
8043(2)	5^+–9^+				39(8)					
8065(2)	$\langle 3,5\rangle^+$			99Fu01	100					
8097(1)	5	14	4.2	91Ho09			24(8)			56(15)
8130(3)	1^+	2000	9.4	91Ho09	57(16)		43(16)			
8136(1)	5	incl	incl	91Ho09						
8182.1(13)	3^-	14	>170	91Ho09	40(11)	60(11)				
8287(1)	9^-							24(3)		
8324(1)	5^+	18	78	91Ho09			100			
8361(3)		<2.7	>48	91Ho09						
8376(1)	$\langle 3,5\rangle^+$	9.0	25	91Ho09						
8396(1)	11									
8408(3)										
8420.7(10)	$\langle 3,5\rangle^+$	35	19	91Ho09						
8442(1)	7	5.0	4.0	91Ho09	53(9)					
8490.3(12)	5^+	16	200	91Ho09						
8521(2)	1–5,7^+						100			
8537(1)	5								100	
8553.0(3)	3									
8586(1)	7				18(7)			82(7)		
8597.6(3)	3^-	30	610	91Ho09						
8675(1)	$\langle 7,9^+\rangle$			99Fu01	18(4)			61(7)		
8693(2)	$\langle 9$–$13\rangle$									
8708.7(3)	1^+	5.5	560	91Ho09						
8716.6(6)										
8732.2(5)	7^-	18	67	91Ho09						
8753.6(6)	5			99Fu01						
8774.2(6)	5^+			99Fu01						
8804(1)										
8825(3)										
8861(3)										
8897.2(5)	5^+			99Fu01						
8905.0(8)										
8909.2(5)	$\langle 1,3\rangle^-$									
8952(1)	$\langle 5,9^+\rangle$				100					
8963.4(3)	3^-									
9001(3)										
9050.9(3)	7^-									
9051.6(3)	5^+			99Fu01						
9058(1)										
9080.4(3)	1^+									
9190.2(3)	3									

(continued) **$^{27}_{13}$Al**

E^*	$2J^\pi$	σ (τ,d)	σ (α,t)	Ref.	Branching ratios in percentage					
				E_f^*:	0.0	844	1014	2212	2735	2982.0
[keV]		μb/sr	μb/sr	$2J_f^\pi$:	5^+	1^+	3^+	7^+	5^+	3^+
9216.3(3)	3^-									
9236.0(8)	1^+									
9239.5(8)	5									
9271.6(8)	$\langle 1^+,3\rangle$									
9274.3(8)	$\langle 5^-,7\rangle$									
9276.9(8)	3^-									
9299(3)										
9308.2(9)	5^+									
9322(3)										
9359.3(10)										
9371(3)										
9390.0(9)	3^+									
9400.8(9)	1^+									
9427(3)										
9474.4(8)	7									
9488(3)										
9501.7(10)				99Fu01						
9511.5(9)	5									
9530(3)										
9552(3)										
9600.7(9)	3									
9619(3)										
9628.5(9)	1^-									
9634.5(9)	5^+									
9658(2)				99Fu01						
9664.7(8)	5^+									
9664.8(20)	1^-									
9692(3)										
9715.9(8)	3^+									
9742(3)										
9762.8(8)	5^+									
9796.3(9)	7^+			99Fu01						
9821.6(9)	3^+			99Fu01						
9834.4(10)	1^-									
9839.7(10)	5			99Fu01						
9846.6(10)	1^+									
9867(3)										
9883(3)										
9893(2)				99Fu01						
9921.9(9)	3^-									
9930.4(9)	1^-									
9941.3(9)	7									
9953.0(16)										
9955.5(10)	3									
9960.3(9)	5^-									

(continued) **$^{27}_{13}$Al**

E^*	$2J^\pi$	σ (τ,d)	σ (α,t)	Ref.	Branching ratios in percentage					
				E_f^*:	0.0	844	1014	2212	2735	2982.0
[keV]		μb/sr	μb/sr	$2J_f^\pi$:	5^+	1^+	3^+	7^+	5^+	3^+
9962.8(9)	5^+									
9976.8(9)	$\langle 5,7\rangle^+$			99Fu01						
9990.8(9)	7^-									
9999.9(10)	5									
10008(3)										
10024.3(9)	5^+									
10075(3)										
10089.6(9)	3^-									
10092.9(9)	$\langle 3,5\rangle^+$									
10112.0(9)	$\langle 5,7\rangle^-$									
10112.5(9)	1^-									
10121.2(10)	7^+									
10135.1(11)	$\langle 3^-,5\rangle$									
10148(3)										
10164.8(9)	5^+									
10209(3)										
10218(3)	3^-									
10243.9(9)	3^+									
10244(3)	1^+									
10244.8(9)	7^-									
10258.5(10)	5									
10281(3)										
10287(2)	3									
10307(2)	7									
10318(2)	1^+									
10333(2)	3^+									
10334(2)	1^-									
10338(2)	1^+									
10340(2)										
10348(2)	3									
10360(3)										
10365(2)	9^+									
10370(2)	5^+									
10372(2)	3^+									
10409(2)	5^+									
10422(2)										
10448(3)										
10459(2)	1^-									
10478(3)										
10480(3)	7^-									
10509(2)	7^-									
10519(2)										
10528(2)	3^-									
10555(2)	5									
10558(2)	1^-									

(continued) **$^{27}_{13}$Al**

E^*	$2J^\pi$	σ (τ,d)	σ (α,t)Ref.	Branching ratios in percentage						
				E_f^*:	0.0	844	1014	2212	2735	2982.0
[keV]		μb/sr	μb/sr	$2J_f^\pi$:	5^+	1^+	3^+	7^+	5^+	3^+
10566(2)	3^+									
10588(2)	3^+									
10593(2)	$\langle 5,7\rangle^-$									
10599(3)	3^+									
10612(3)	1^-									
10626(2)	7^-									
10630(3)										
10634(3)	1^+									
10648(2)	3^+									
10675(2)	5^+									
10676(2)										
10692(2)	$\langle 5,7\rangle^-$									
10716(2)	3^+									
10723(2)										
10737(2)	3^-									
10751(2)	9									
10769(3)										
10778(3)										
10781(3)										
10782(3)										
10791(3)										
10804(2)	1^+									
10833(2)	$\langle 3,5\rangle^+$									
10835(3)	$\langle 3,5\rangle^+$									
10837(3)	$\langle 5,7\rangle^-$									
10839(3)	3^-									
10865(2)	$\langle 5,7\rangle^-$									
10872(3)										
10901(3)										
10911(3)	1^-									
10922(3)	$\langle 3,5\rangle^+$									
10922(3)										
10931(3)	5^+									
10939(3)										
10971(3)										
10973(2)	5^+									
10995(3)										
11003(2)	$\langle 5,7\rangle^-$									
11012(3)										
11073(3)	$\langle 3,5\rangle^+$									
11075(3)										
11077(3)										
11095(3)	5^-									
11101(4)	3^-									
11128(3)	$\langle 3,5\rangle^+$									

(continued) **$^{27}_{13}$Al**

E^*	$2J^\pi$	σ (τ,d)	σ (α,t)	Ref.	Branching ratios in percentage						
					E_f^*:	0.0	844	1014	2212	2735	2982.0
[keV]		μb/sr	μb/sr		$2J_f^\pi$:	5^+	1^+	3^+	7^+	5^+	3^+
11188											
11702											
		91Ho09	91Ho09	Ref.							
				Ref.							

Energy levels and branching ratios [90En08, 98En04]. Part 3 **$^{27}_{13}$Al**

E^*	$2J^\pi$					Branching ratios in percentage						
		E_f^*:	3004.2	3680.4	3956.8	4410.2	4510.3	4580.0	4811.6	5155.6	5419.9	5432.8
[keV]		$2J_f^\pi$:	9^+	1^+	3^+	5^+	11^+	7^+	5^+	3^-	9^+	7
3680.4(9)	1^+		<0.10									
3956.8(4)	3^+		<0.6	<2.0								
4054.6(5)	1^-		<0.3	<0.5								
4410.2(4)	5^+		<0.4	<0.9	<1.0							
4510.3(5)	11^+		23(2)	<6.0	<3.9							
4580.0(8)	7^+		<2.0	<1	<4.0							
4811.6(5)	5^+		<2.0	<0.5	<0.5							
5155.6(8)	3^-		<2.0	<2.0	<1.0							
5248.0(6)	5^+		<0.9	<2.0	4.0(10)							
5419.9(9)	9^+		<4.0	<2.0								
5432.8(10)	7		39(5)									
5438.4(8)	5^-		<1.0									
5499.8(8)	11^+		76(2)	<2.0	<2.0		4.0(11)					
5550.9(5)	5		<7.0	<3.5	<3							
5667.3(12)	9^+		55(7)				11(4)					
5751.6(10)	1^+		<4.0	13(2)	6(2)							
5827.0(8)	3^-		<2.0	8(2)	2.0(6)							
5960.3(7)	7					2(1)			3(1)			
6080.8(9)	3		<4.0	<5.0	6(2)							
6115.8(6)	5		<3.0		<4.0					6(3)		
6158.4(7)	3^-		<1	<0.5								
6284.7(15)	7^+		8(5)			4(2)					2.0(10)	
6477.3(9)	7^-					3.0(10)						
6512.2(11)	9		31(4)				47(4)					
6533(1)	7^+		15(4)					14(3)				3(1)
6605.1(9)	3^-			33(7)								
6651.3(7)	5^-		<2.9	<2.0								
6713(1)	9^+		71(4)					10.0(10)				
6765(1)	5		<3.0		9(1)			9(1)				
6776.3(11)	3			14(3)		10(5)						
6813.8(7)	1^+			7.0(11)								
6947.9(19)	11^+		66(2)								2.0(11)	

(continued) **$^{27}_{13}$Al**

E^*	$2J^\pi$		Branching ratios in percentage									
		E^*_f:	3004.2	3680.4	3956.8	4410.2	4510.3	4580.0	4811.6	5155.6	5419.9	5432.8
[keV]		$2J^\pi_f$:	9^+	1^+	3^+	5^+	11^+	7^+	5^+	3^-	9^+	7
6996(2)	$\langle 1,3\rangle^-$				12(7)					7(5)		
7173.6(13)	9^+		28(15)				16(8)	31(13)				17(8)
7227.2(8)	9^-		20(2)					5.0(10)			2.0(10)	
7289(2)	$\langle 9–13\rangle^+$						100					
7400(1)	11^+		36(4)				11(2)	35(4)				
7443.0(13)	$9,13^+$		66(4)				8(2)					
7477.1(9)	7^-		9(5)									
7578(2)	5^+					4(2)						
7660(2)	7^+–11^+		28(5)				23(5)	15(4)				
7679(1)	$\langle 7,9^+\rangle$		15(3)									
7806(2)	9^+						15(4)	25(5)				
7858(2)	3^+		<7.0	11(3)					15(5)			
7935(3)	$9^-,11^-$		50(15)				50(15)					
7948(2)	$9^+,11^+$		44(4)				45(4)				8(2)	
7997(1)	9		37(5)									
8037(1)	7							7(3)				
8043(2)	5^+–9^+		37(8)									24(7)
8097(1)	5							13(5)				
8287(1)	9^-		34(4)								20(3)	
8396(1)	11		22(4)				56(6)					
8442(1)	7		47(9)									
8675(1)	$\langle 7,9^+\rangle$							21(5)				
8693(2)	$\langle 9–13\rangle$						84(5)					

Energy levels and branching ratios [90En08, 98En04]. Part 4 **$^{27}_{13}$Al**

E^*	$2J^\pi$		Branching ratios in percentage									
		E^*_f:	5438.4	5499.8	5667.3	5751.6	5827.0	6512.2	6605.1	6713	6947.9	6996
[keV]		$2J^\pi_f$:	5^-	11^+	9^+	1^+	3^-	9	3^-	9^+	11^+	$\langle 1,3\rangle^-$
6947.9(19)	11^+			11(2)								
6996(2)	$\langle 1,3\rangle^-$								4(2)			
7400(1)	11^+			13(2)						5(1)		
7443.0(13)	$9,13^+$			26(3)								
7578(2)	5^+						7(3)					
7660(2)	7^+–11^+			5(3)								
7798(2)	$\langle 3–7\rangle$		78(5)									
7858(2)	3^+					11(3)						6(2)
7948(2)	$9^+,11^+$			3.0(10)								
8097(1)	5					7(2)						
8287(1)	9^-		16(2)		6(2)							
8396(1)	11			14(3)				8(3)				
8693(2)	$\langle 9–13\rangle$										16(5)	

Energy levels and branching ratios [90En08, 98En04, 94Ve02]. **$^{28}_{13}$Al**

E^* [keV]	J^π	$2T$	L (α,d)	σ (α,d) μb/sr	L (d,τ)	C^2S (d,τ)	C^2S (d,τ)	$n\ell j$ (d,τ)	ℓ_n	S_n^+ eval	ℓ	S_p^- eval	$T_{1/2}$ or Γ_{cm}	Ref.
0	3^+		2	150	2	2.39			0	0.50(6)			2.241(1) m	94Ve02
									2	0.24(9)				
30.638(1)	2^+				2	1.26	3.58	1d5/2	0	0.37(7)			2.07(5) ns	94Ve02
									2	0.17(6)				
972.38(4)	0^+				0	0.13*	0.04	2s1/2	2	0.25(5)	0	0.06(2)	33(2) ps	94Ve02
1013.63(2)	3^+		2	110	2	0.10	0.20	1d5/2	0	0.05(2)			104(14) fs	94Ve02
									2	0.89(22)	2	0.30(8)		
1372.95(3)	1^+		0+2	100	0	0.39	0.47	2s1/2	2	0.27(5)	0	0.7(2)	220(35) fs	94Ve02
1620.32(5)	1^+				2	0.15							85(40) fs	94Ve02
1622.92(3)	2^+					incl	0.25	1d5/2					59(14) fs	94Ve02
2138.92(3)	2^+				2	0.42							8(1) fs	94Ve02
2201.46(5)	1^+		0+2	130	2	0.11	0.60	1d5/2					41(4) fs	94Ve02
2271.77(3)	4^+												22(3) fs	
2486.18(3)	2^+				2	0.26	0.27	1d5/2					66(7) fs	94Ve02
2582.0(3)	5^+		4	100									370(40) fs	76De24
2656.09(5)	4^+						<0.1	1d5/2					22(3) fs	74Ma34
2987.5(1)	$\langle 1,3\rangle^+$				2	0.13							62(55) fs	94Ve02
3011(3)	0^+				0	0.004	0.36	1d5/3						94Ve02
3030(1)**														03Ho37
3105(1)	$\langle 1,3\rangle^+$				2	0.03							15(4) fs	94Ve02
3240.0(5)**														
3296.39(5)	3^+				2	0.06							8(4) fs	94Ve02
3300.7(6)**														
3347.19(4)	2^+				2	0.23	0.19	1d5/2					6(2) fs	94Ve02
3443.6(3)**														
3465.29(4)	4^-												44(2) fs	
3474.2(4)**														
3541.9(4)	1^+				0	0.02	0.09	2s1/2						94Ve02
					+2	+0.01								
3591.45(4)	3^-												29(4) fs	
3601(5)														
3670.77(5)	3^+				2	<0.05							130(40) fs	94Ve02
3709.21(5)	$\langle 2,3\rangle^+$				2	0.073							185(20) fs	94Ve02
3760(3)	0^+				0	0.031								94Ve02
3875.78(4)	2^-												19(2) fs	
3900.99(5)	$\langle 1–5\rangle^+$												185(30) fs	
3935.58(5)	2^+												21(10) fs	
4033(2)	5^-												105(35) fs	
4115(4)	1^+				0	0.01								94Ve02
					+2	+0.03								
4244.4(1)	2^+				2	0.072							40(20) fs	94Ve02
4313(3)	$\langle 1–5\rangle^+$													
4385(4)														
4423.4(6)**														
4461.92(9)	$\langle 2,4\rangle^+$													

(continued) **$^{28}_{13}$Al**

E^* [keV]	J^π	$2T$	L (α,d)	σ (α,d) μb/sr	L (d,τ)	C^2S (d,τ)	C^2S (d,τ)	$n\ell j$ (d,τ)	ℓ_n	S_n^+ eval	ℓ	S_p^- eval	$T_{1/2}$ or Γ_{cm}	Ref.
4516.73(9)	3^+													
4578.6(2)**														
4596.51(6)	3^+				2	0.044							160(85) fs	94Ve02
4614.2(8)**														
4649.8(3)**														
4691.10(5)	3^-												4.9(6) fs	
4721.8(6)**														
4739(2)	$\langle 0–5\rangle^+$													
4764.91(5)	2^-												3.5(14) fs	
4770.3(3)**														
4848.7(1)	1^+				0 +2	0.01 +0.07								94Ve02
4903.58(5)	2^-						1.10	1p1/2					5.7(8) fs	74Ma34
4928(3)														
4996.9(1)	2^-				1	0.77								94Ve02
4999(8)	2^+													
5015.42(7)	3^+													
5134.84(6)	3^-						incl	incl					5.6(7) fs	74Ma34
5146.8(3)**														
5165(2)	6^-		$\langle 5\rangle$	400									<50 fs	76De24
5176.97(7)	1^+,3^+												7(3) fs	
5190.4(1)	0^+–3^+													
5207.0(5)**														
5274.4(6)**														
5281.9(4)**														
5299.1(4)**														
5302.4(3)**														
5305.3(7)**														
5328(8)														
5344.73(8)	1^+–5^+													
5377.81(7)	1^+–4^+												4(2) fs	
5405(4)	$\langle 0–2\rangle^-$				1	0.32								94Ve02
5415.3(4)**														
5442.28(6)	2^-												3.3(10) fs	
5453.4(2)**														
5503.2(5)**														
5522(8)														
5553.2(3)**														
5585.0(4)**														
5588.1(3)**														
5615.4(1)**														
5643.7(7)**														
5688.8(5)**														
5714.1(5)**														
5741.12(6)	$\langle 1–4^+\rangle$												4(2) fs	

(continued) **$^{28}_{13}$Al**

E^* [keV]	J^π	$2T$	L (α,d)	σ (α,d) μb/sr	L (d,τ)	C^2S (d,τ)	C^2S (d,τ)	$n\ell j$ (d,τ)	ℓ_n	S_n^+ eval	ℓ	S_p^- eval	$T_{1/2}$ or Γ_{cm}	Ref.
5761.34(17)	1^+–4^+													
5786.8(6)**														
5790.1(6)**														
5797.55(6)	2^-												<4 fs	
5809.0(6)														
5860.78(7)	$\langle 2,3^+\rangle$												<7 fs	
5904.3(6)	$\langle 1$–$3\rangle^+$													
5925.1(18)														
5944.8(2)**														
5956.8(4)														
5981.2(6)														
5992.4(4)	0^+	2											<35 ns	
6004.8(4)														
6019.61(7)	2^-				1	0.20								94Ve02
6053.3(2)**														
6063.8(5)														
6070.9(5)	$\langle 0,1\rangle^+$													
6101.7(5)**														
6135.6(3)**														
6160.3(6)														
6198.88(7)	$\langle 2^+$–$4^+\rangle$												<4 fs	
6238.2(7)	$\langle 0$–$2\rangle^-$													
6250.2(2)**														
6295.2(5)**														
6316.80(7)	2^+												<4 fs	
6320.0(10)**														
6329.1(4)														
6361.4(2)**														
6381.9(1)**														
6419.84(14)	$\langle 1,2\rangle^+$													
6441.45(7)	$\langle 3^+,4\rangle$													
6453.6(5)														
6462.2(8)														
6480.5(5)														
6493.3(8)														
6512.5(5)														
6532.6(1)**														
6550.7(1)**														
6564.1(5)														
6568.6(4)														
6571.6(6)														
6588.1(3)**														
6595.3(6)**														
6600.2(1)**														
6604.5(2)**														

(continued) **$^{28}_{13}$Al**

E^* [keV]	J^π	$2T$	L (α,d)	σ (α,d) μb/sr	L (d,τ)	C^2S (d,τ)	C^2S (d,τ)	$n\ell j$ (d,τ)	ℓ_n	S_n^+ eval	ℓ	S_p^- eval	$T_{1/2}$ or Γ_{cm}	Ref.
6623.08(9)	$\langle 1^+–4^+\rangle$													
6651.17(8)	$\langle 1,2\rangle^-$				1	0.20								94Ve02
6660.6(2)**														
6671.1(9)														
6701.0(5)**														
6720.3(5)														
6742.0(4)**														
6756.67(10)	$\langle 2^+,3\rangle$													
6772.8(9)														
6783.6(3)**														
6787.6(6)														
6809.2(9)														
6814.3(4)**														
6826.0(5)														
6832(10)														
6846.3(7)**														
6893.70(8)	$\langle 2^+,3\rangle$													
6909.9(4)**														
6938.0(3)**														
6967(10)														
7022(10)														
7087(10)														
7118(10)	$\langle 1–3\rangle^+$													
7136.9(1)**														
7176.49(9)	$\langle 1^+–3^+\rangle$													
7243(10)														
7269.48(11)	$\langle 2^+–4^+\rangle$													
7303(8)														
7344.2(1)**														
7408.79(14)	$\langle 1^+–4^+\rangle$													
7409.5(2)**														
7444(10)														
7457(10)														
7502(10)														
7592(10)														
7654(10)														
7669(10)														
7700(10)														
				76De24		94Ve02	74Ma34	74Ma34						Ref.

Additional data on this isotope can be found in [03Ho37, 94Ve02, 82Sc0A, 82Su0A].

* ℓ_p=1 for this level; for others – ℓ_p=2, values in the first column are from (d,τ) reaction [94Ve02]; spectroscopic factors S_n^+ and S_p^- are from the evaluation by P.Endt [77En02].

** tentative level introduced in [03Ho37] from the study of two-step cascades following thermal neutron capture

Energy levels and branching ratios [90En08, 98En04, 94Ve02]. Part 2

$^{28}_{13}$Al

E^*	J^π		Branching ratios in percentage									
		E_f^*:	0	30.6	972	1014	1373	1620.3	1622.9	2138.9	2201.5	2271.8
[keV]		J_f^π:	3^+	2^+	0^+	3^+	1^+	1^+	2^+	2^+	1^+	4^+
30.638(1)	2^+		100									
972.38(4)	0^+		<0.5	100								
1013.63(2)	3^+		38(1)	62(1)	<0.7							
1372.95(3)	1^+		4.7(3)	55(1)	40(1)	<0.3						
1620.32(5)	1^+		6	92	2	<1.9	<1.9					
1622.92(3)	2^+		93(1)	7.2(5)	<2.0	<2.0	<3.0					
2138.92(3)	2^+		41(2)	52(2)	<3.0	7(2)	<3.0	<2.0	<2.0			
2201.46(5)	1^+		<6.0	79(3)	16(2)	<5.0	<3.0	<3.0	5(3)	<4.0		
2271.77(3)	4^+		100	<3	<3	<4	<3	<3	<5	<5		
2486.18(3)	2^+		22(4)	<6.0	6(2)	<2.0	<2.0	61(4)	11(3)	<1.0		<1.0
2582.0(3)	5^+		95(2)	<4.0	<4.0	<5.0	<4.0	<4.0	<5.0	<0.9		5.0(20)
2656.09(5)	4^+		25(5)	<4.0	<3	75(5)	<3	<3	<3	<1.0		<1.0
2987.5(1)	$\langle 1,3\rangle^+$		50(10)						50(10)			
3105(1)	$\langle 1,3\rangle^+$			75(3)							25(3)	
3296.39(5)	3^+			65(3)					35(3)			
3347.19(4)	2^+		95.1(7)	4.9(7)								
3465.29(4)	4^-		88(2)			4.9(4)						7.0(15)
3591.45(4)	3^-		59(2)	11.8(6)		28(1)			1.2(1)			
3670.77(5)	3^+			50(5)					50(5)			
3709.21(5)	$\langle 2,3\rangle^+$		37(5)	25(5)						16(5)		22(5)
3875.78(4)	2^-		79(1)			1.1(2)	4.6(3)	15(1)				
3900.99(5)	$\langle 1–5\rangle^+$		50(2)			50(2)						
3935.58(5)	2^+		40(2)	25(2)		35(2)						
4033(2)	5^-											49(3)
4244.4(1)	2^+			67(3)		33(3)						
4461.92(9)	$\langle 2,4\rangle^+$		57(4)			43(4)						
4516.73(9)	3^+								100			
4596.51(6)	3^+		13(2)	16(1)					71(2)			
4691.10(5)	3^-		61(2)	34(2)					1.1(1)	1.30(10)		1.80(10)
4764.91(5)	2^-		10.3(6)	62(1)			6.5(3)			15.4(8)	1.1(2)	
4903.58(5)	2^-		93.1(6)			6.9(6)						
4996.9(1)	2^-		6(1)	40(5)			54(5)					
5015.42(7)	3^+			39(2)		46(2)						15(2)
5134.84(6)	3^-		88.4(7)	11.6(7)								
5176.97(7)	1^+,3^+		64(4)				10(3)					
5190.4(1)	0^+–3^+							100				
5344.73(8)	1^+–5^+					100						
5377.81(7)	1^+–4^+		64(3)						36(3)			
5442.28(6)	2^-		0.45(6)	60(2)			4.7(2)	1.0(2)		34(2)		
5741.12(6)	$\langle 1–4^+\rangle$			96.3(6)								
5761.34(17)	1^+–4^+		74(3)	26(3)								
5797.55(6)	2^-		14.1(8)	44(1)		1.3(3)	41(1)					
5860.78(7)	$\langle 2,3^+\rangle$		59(2)	4.8(4)						11.7(12)	25(2)	
5992.4(4)	0^+						14(3)		34(4)		43(4)	
6019.61(7)	2^-		59(1)	7(4)		15(1)			18(1)			

(continued) **$^{28}_{13}$Al**

E^*	J^π	Branching ratios in percentage									
	E_f^*:	0	30.6	972	1014	1373	1620.3	1622.9	2138.9	2201.5	2271.8
[keV]	J_f^π:	3^+	2^+	0^+	3^+	1^+	1^+	2^+	2^+	1^+	4^+
6198.88(7)	$\langle 2^+–4^+\rangle$	64(2)	3(3)					29(2)	3(3)		2(3)
6316.80(7)	2^+	77(1)		0.65(5)	18(1)						0.86(9)
6419.84(14)	$\langle 1,2\rangle^+$	3.0(5)		19.3(12)					78(2)		
6441.45(7)	$\langle 3^+,4\rangle$	75(1)			8.5(6)						12.2(7)
6623.08(9)	$\langle 1^+–4^+\rangle$	53(3)	47(3)								
6651.17(8)	$\langle 1,2\rangle^-$		70(2)			6.1(4)			24(2)		
6756.67(10)	$\langle 2^+,3\rangle$		29(2)								24(2)
6893.70(8)	$\langle 2^+,3\rangle$		14(1)		2.1(2)				31(2)		16(1)
7176.49(9)	$\langle 1^+–3^+\rangle$	73.6(17)			6.9(13)	19.5(13)					
7269.48(11)	$\langle 2^+–4^+\rangle$	12.0(7)	28(2)		4.3(4)				34(2)		
7408.79(14)	$\langle 1^+–4^+\rangle$	76(2)	24(2)								

Energy levels and branching ratios [90En08, 98En04, 94Ve02]. Part 3 **$^{28}_{13}$Al**

E^*	J^π	Branching ratios in percentage								
	E_f^*:	2486.2	2582.0	2656.1	2987.5	3296.4	3347.2	3465.3	3591.4
[keV]	J_f^π:	2^+	5^+	4^+	$\langle 1,3\rangle^+$	3^+	2^+	4^-	3^-
4033(2)	5^-							51(3)	
4764.91(5)	2^-								4.4(9)
5176.97(7)	$1^+,3^+$	26(4)							
5741.12(6)	$\langle 1–4^+\rangle$	3.7(6)							
5992.4(4)	0^+								9(2)
6316.80(7)	2^+					2.8(8)			0.8(2)
6441.45(7)	$\langle 3^+,4\rangle$		4.6(7)						
6756.67(10)	$\langle 2^+,3\rangle$	19(3)		6(2)	4(1)		8(1)		
7269.48(11)	$\langle 2^+–4^+\rangle$			5.1(7)					

Energy levels and branching ratios [90En08, 98En04, 94Ve02]. Part 4 **$^{28}_{13}$Al**

E^*	J^π	Branching ratios in percentage				
	E_f^*:	3670.8	3875.8	4033	4244.4	4764.9
[keV]	J_f^π:	3^+	2^-	5^-	2^+	2^-
5165(2)	6^-			100		
6756.67(10)	$\langle 2^+,3\rangle$		10(2)			
6893.70(8)	$\langle 2^+,3\rangle$	4.0(3)	5(2)			28(2)
7269.48(11)	$\langle 2^+–4^+\rangle$				16.9(6)	

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

$^{29}_{13}$Al

E^*	$2J^\pi$	S_p^-	S_N	S_N	ℓ_p	S_N	$T_{1/2}$ or	Ref.	Branching ratios in percentage				
									E_f^*:	0	1398	1754	2224	2866
[keV]		eval	(t,α)	(d,τ)		(t,α)	Γ_{cm}		$2J_f^\pi$:	5^+	1^+	7^+	3^+	3^+
0	5^+	5.4(12)	3.26	3.96	2	2.39	6.56(6) m	77En02						
1398.0(2)	1^+	0.95(14)	0.31	0.68	0	0.22	4.5(3) ps	77En02		100				
1754.2(2)	7^+	0.35(9)	0.27*	0.26	2	0.15	28(11) fs	86Ha24		100	<1			
2224.0(2)	3^+	small		0.30	$\langle 4 \rangle$	0.11	75(20) fs	77En02		100	<1	<1		
2865.6(2)	3^+	0.87(22)		0.65	2	0.28	75(20) fs	77En02		56(1)	44(1)	<2.0	<2.0	
3061.7(2)	5^+	1.4(4)	1.32	1.07	2	0.59	55(20) fs	77En02		33(3)	<4	67(3)	<3.0	
3184.4(3)	5^+	small	0.15				125(20) fs	77En02		7(1)	14(1)	24(2)	55(2)	<2.0
3432.9(6)	1^+	0.17(5)	0.11	0.13	0	0.05	<7 ns	77En02		<8.0	83(3)	<7.0	17(3)	<4.0
3577.6(5)	9^+						25(7) fs			9(1)	<1	91(1)	<1.9	<1
3641.5(7)	5^+		0.17	0.25	2		<70 fs	74Ma34		91(2)	<4.0	9(2)	<3.0	<3.0
3671.7(8)	$\langle 3,5 \rangle^+$		0.10	incl	2		<70 fs	69Jo13		100	<12	<4	<15	<5
3935.2(7)	$\langle 3,7 \rangle^+$						90(20) fs			86(3)	<9.1	<9.1	14(3)	<6
3986.2(12)			0.08				<30 fs	69Jo13		100	<10	<9	<8	<6
4057.0(7)	$\langle 1,3 \rangle^+$						85(50) fs			<4	50(3)	<5	50(3)	<4
4219.6(6)	5^+		0.16				40(15) fs	69Jo13		<3	<2	100	<5	<4
4403.1(7)	$\langle 7,9 \rangle^+$						40(20) fs			45(6)	<6	55(6)	<6	<5
4656(10)	5^+													
4715.6(9)										100	<11	<7	<10	<7
4827.9(10)	$\langle 1–9 \rangle^+$						40(20) fs			75(11)				
4940.8(10)	$\langle 1^+–9^+ \rangle$						29(9) fs			100	<10	<7	<6	<4
5023(3)	$\langle 3–7 \rangle^-$						<85 fs			100				
5145(8)	$\langle 3–7 \rangle^-$													
5181.6(14)	$\langle 3–9 \rangle^+$									100				
5248.3(17)	$\langle 1,3 \rangle^-$			1.54	1		<90 fs	74Ma34			100			
5263.7(11)	$\langle 3^+–11^+ \rangle$						75(50) fs					100		
5392(3)	$\langle 1^+–9^+ \rangle$									100				
5433(4)	$\langle 1^+–9^+ \rangle$									100				
5549(7)														
5580(8)														
5660(9)														
5733(4)	$\langle 3^+–11^+ \rangle$											100		
5855.2(8)	11^+						29(13) fs			<2	<3.0	35(2)	<4.0	<3.0
5922(10)														
5994(1)	$\langle 7^+ \rangle$						<65 fs							
6068(9)														
6154(10)														
6359(11)														
6410(12)														
6450(9)														
6472(10)														
6516(11)														
6582(11)														
6670(12)														
6689(11)														
6762(13)														

(continued) **$^{29}_{13}$Al**

E^*	$2J^\pi$	S_p^-	S_N	S_N	ℓ_p	S_N	$T_{1/2}$ or	Ref.	Branching ratios in percentage					
									E_f^*:	0	1398	1754	2224	2866
[keV]		eval	(t,α)	(d,τ)		(t,α)	Γ_{cm}		$2J_f^\pi$:	5^+	1^+	7^+	3^+	3^+
6840(12)														
6984(14)														
7065(15)														
7093(12)														
7179(15)														
		77En02	69Jo13	74Ma34		87Pe09		Ref.						

Additional data on this isotope can be found in [69Jo22].

* S_N from [86Ha24]; S_N for the (d,τ) and (t,α) reactions are from [74Ma34] where in data from [69Jo13, 71Jo03] the summed spectroscopic strenght was normalized to the shell model limit 6.

The more recent data in the last column are from [87Pe09], see there a comparison of results.

Energy levels and branching ratios [90En08, 98En04]. Part 2 **$^{29}_{13}$Al**

E^*	$2J^\pi$			Branching ratios in percentage			
		E_f^*:	3062	3184	3578	3641	4220
[keV]		$2J_f^\pi$:	5^+	5^+	9^+,$\langle 5^+ \rangle$	5^+	5^+
3432.9(6)	1^+		<4.0				
3577.6(5)	9^+		<1	<1			
3641.5(7)	5^+		<3.0	<3.0			
3671.7(8)	$\langle 3,5 \rangle^+$		<4	<8			
3935.2(7)	$\langle 3,7 \rangle^+$		<4.1	<5.0			
3986.2(12)			<4	<4			
4057.0(7)	$\langle 1,3 \rangle^+$		<3	<3			
4219.6(6)	5^+		<3	<2			
4403.1(7)	$\langle 7,9 \rangle^+$		<5	<4.0			
4715.6(9)			<8	<8			
4827.9(10)	$\langle 1–9 \rangle^+$			25(11)			
4940.8(10)	$\langle 1^+–9^+ \rangle$		<4				
5855.2(8)	11^+		<3.0	<3.0	65(2)		
5994(1)	$\langle 7^+ \rangle$				34(5)	14(3)	52(5)