

Energy levels and branching ratios [99Zh11].

¹⁹⁵Tl
81

E^*	$2J^\pi$	$T_{1/2}$ or
[keV]		Γ_{cm}
0.0	1^+	1.16(5) h
0+X	$2J \approx \langle 11^+ \rangle$	
67.8+X	$2J+2$	
146.2+X	$2J+4$	
383.66(12)	3^+	
235.3+X	$2J+6$	
482.63(17)	9^-	3.6(4) s
334.4+X	$2J+8$	
443.6+X	$2J+10$	
777.55(17)	$\langle 5^+ \rangle$	
563.2+X	$2J+12$	
811.1(6)		
876.69(19)	11^-	
692.6+X	$2J+14$	
832.9+X	$2J+16$	
1079.7(8)		
1173.79(20)	$9^-, 11^-$	
1190.12(19)	13^-	
982.0+X	$2J+18$	
1267.0(3)	$\langle 1^+, 3^+, 5^+ \rangle$	
1285.3(4)		
1360.95(22)	11^-	
1143.4+X	$2J+20$	
1378		
1410.68(20)	$11^-, 13^-$	
1434.7(7)		
1484.04(21)	13^-	
1311.7+X	$2J+22$	
1612.7(9)	$\langle 3^+, 5^+, 7^+ \rangle$	
1616.42(21)	$9^-, 11^-, 13^-$	
1618.74(20)	15^-	
1648.6(5)		
1687.9(7)		
1492.9+X	$2J+24$	
1725.26(23)	$\langle 13 \rangle^+$	
1843.7(10)		
1844.8(4)		
1680.8+X	$2J+26$	
1924.46(22)	17^-	
1944.61(21)	13^-	
1991.47(22)	$11^-, 13^-$	
2011.5(3)	17^-	
2023.5(3)	$11^- - 15^-$	
2033.7(5)		
2037.1(3)	15^+	

(continued)

¹⁹⁵Tl
81

E^*	$2J^\pi$	$T_{1/2}$ or
[keV]		Γ_{cm}
1882.7+X	$2J+28$	
2115.1(5)		
2145.1(3)	$\langle 11-15 \rangle^+$	
2212.9(4)	17^+	
2088.3+X	$2J+30$	
2361.9(4)	$\langle 11,13,15 \rangle$	
2367.9(5)		
2470.1(3)	19^-	
2529.6(4)	19^+	
2311.6+X	$2J+32$	
2581.5(5)		
2587.4(3)	21^-	
2534.0+X	$2J+34$	
2840.7(5)	21^+	
2861.1(4)	23^-	
2778.8+X	$2J+36$	
3059.8(4)	25^-	
3157.1(5)	$27^{\langle - \rangle}$	
3201.9(5)	23^+	
3016.5+X	$2J+38$	
3283.3+X	$2J+40$	
3513.9(5)	25^+	
3729.6(5)	27^+	
3535.5+X	$2J+42$	
3885.3(6)	$29^{\langle + \rangle}$	
4002.8(8)	$31^{\langle + \rangle}$	
3824.1+X	$2J+44$	
4174.8(9)	$33^{\langle + \rangle}$	
4089.3+X	$2J+46$	
4393.3(9)	$35^{\langle + \rangle}$	
4400.6+X	$2J+48$	
4677.1+X	$2J+50$	
5012.6+X	$2J+52$	
5298.1+X	$2J+54$	
5658.4+X	$2J+56$	
5951.1+X	$2J+58$	
6337.8+X	$2J+60$	
6635.3+X	$2J+62$	
7050.6+X	$2J+64$	
7350.8+X	$2J+66$	
7796.4+X	$2J+68$	
8096.8+X	$2J+70$	

(continued)

			¹⁹⁵ Tl 81
<i>E</i> [*]	<i>2J</i> ^π		<i>T</i> _{1/2} or
[keV]			<i>Γ</i> _{cm}
8573.6+X	<i>2J</i> +72		
8874.3+X	<i>2J</i> +74		

Additional data on this isotope can be found in [95Az01].
Comparison of *h*_{9/2} bands in ^{195,197}Tl with ground state bands in ^{194,196}Hg see in [78Li10].
Data for this isotope are considered in vol. LB I/18C.

Energy levels and branching ratios [99Zh11]. Part 2

										¹⁹⁵ Tl 81
<i>E</i> [*]	<i>2J</i> ^π	Branching ratios in percentage								
		<i>E</i> _f [*] :	0.0	0+X	67.8+X	146.2+X	383.66	235.3+X	482.63	
[keV]		<i>2J</i> _f ^π :	1 ⁺		<i>2J</i> +2	<i>2J</i> +4	3 ⁺	<i>2J</i> +6	9 ⁻	
146.2+X	<i>2J</i> +4			x						
383.66(12)	3 ⁺		100							
235.3+X	<i>2J</i> +6				x					
482.63(17)	9 ⁻						100			
334.4+X	<i>2J</i> +8					x		x		
443.6+X	<i>2J</i> +10							x		
777.55(17)	⟨5 ⁺ ⟩		41.6(52)				58.4(52)			
811.1(6)							100			
876.69(19)	11 ⁻								100	
1079.7(8)							100			
1173.79(20)	9 ⁻ ,11 ⁻								100	
1190.12(19)	13 ⁻								67(4)	
1267.0(3)	⟨1 ⁺ ,3 ⁺ ,5 ⁺ ⟩						100			
1360.95(22)	11 ⁻								100	
1378							100			
1410.68(20)	11 ⁻ ,13 ⁻								68(10)	
1434.7(7)							100			
1484.04(21)	13 ⁻								9.1(8)	
1616.42(21)	9 ⁻ ,11 ⁻ ,13 ⁻								40.2(4)	
1687.9(7)							78(12)			
1725.26(23)	⟨13 ⁺ ⟩								10.2(22)	
1843.7(10)							100			

Energy levels and branching ratios [99Zh11]. Part 3

¹⁹⁵Tl
81

E^* [keV]	$2J^\pi$	Branching ratios in percentage									
		E_f^* : $2J_f^\pi$:	334.4+X 2J+8	443.6+X 2J+10	777.55 $\langle 5^+ \rangle$	563.2+X 2J+12	876.69 11 ⁻	692.6+X 2J+14	832.9+X 2J+16	1173.79 9 ⁻ , 11 ⁻	1190.12 13 ⁻
443.6+X	2J+10		x								
563.2+X	2J+12		x	x							
692.6+X	2J+14			x		x					
832.9+X	2J+16					x		x			
1190.12(19)	13 ⁻						33(2)				
982.0+X	2J+18							x	x		
1285.3(4)					100						
1143.4+X	2J+20								x		
1410.68(20)	11 ⁻ , 13 ⁻						≈30.7			0.77(8)	
1484.04(21)	13 ⁻						55(6)				36(26)
1612.7(9)	$\langle 3^+, 5^+, 7^+ \rangle$				85(13)						
1616.42(21)	9 ⁻ , 11 ⁻ , 13 ⁻						19(3)			41(4)	
1618.74(20)	15 ⁻						48(3)				52(3)
1648.6(5)					100						
1725.26(23)	$\langle 13 \rangle^+$						90(22)				
1844.8(4)					48(9)						
1924.46(22)	17 ⁻										63(16)
1944.61(21)	13 ⁻						76(5)				10(2)
1991.47(22)	11 ⁻ , 13 ⁻										38(4)
2011.5(3)	17 ⁻										45(26)
2033.7(5)											100
2037.1(3)	15 ⁺						x				69(24)
2581.5(5)											76(24)

Energy levels and branching ratios [99Zh11]. Part 4

¹⁹⁵Tl
81

E^* [keV]	$2J^\pi$	Branching ratios in percentage									
		E_f^* : $2J_f^\pi$:	982.0+X 2J+18	1267.0	1360.95 11 ⁻	1143+X 2J+20	1410.68 11 ⁻ , 13 ⁻	1434.7	1484.04 13 ⁻	1312+X 2J+22	1618.74 15 ⁻
1143.4+X	2J+20		x								
1311.7+X	2J+22		x			x					
1612.7(9)	$\langle 3^+, 5^+, 7^+ \rangle$			15(10)							
1687.9(7)								22(9)			
1492.9+X	2J+24					x				x	
1844.8(4)				17(9)							
1680.8+X	2J+26									x	
1924.46(22)	17 ⁻										37(4)
1944.61(21)	13 ⁻						≈6				8.0(10)
1991.47(22)	11 ⁻ , 13 ⁻				62(5)						
2011.5(3)	17 ⁻										55(26)
2023.5(3)	11 ⁻ –15 ⁻								100		
2037.1(3)	15 ⁺								17(3)		14(2)

(continued)

¹⁹⁵Tl
81

E^* [keV]	$2J^\pi$	Branching ratios in percentage									
		E_f^* : $2J_f^\pi$:	982.0+X $2J+18$	1267.0	1360.95 11^-	1143+X $2J+20$	1410.68 $11^-, 13^-$	1434.7	1484.04 13^-	1312+X $2J+22$	1618.74 15^-
2115.1(5)									100		
2361.9(4)	$\langle 11, 13, 15 \rangle$								100		
2367.9(5)											100
2470.1(3)	19^-										12(6)

Energy levels and branching ratios [99Zh11]. Part 5

¹⁹⁵Tl
81

E^* [keV]	$2J^\pi$	Branching ratios in percentage									
		E_f^* : $2J_f^\pi$:	1648.6	1493+X $2J+24$	1725.26 $\langle 13 \rangle^+$	1681+X $2J+26$	1924.46 17^-	2011.5 17^-	2037.1 15^+	1883+X $2J+28$	2115.1
1844.8(4)			35(7)								
1882.7+X	$2J+28$			x							
2145.1(3)	$\langle 11-15 \rangle^+$				100						
2212.9(4)	17^+								100		
2088.3+X	$2J+30$					x					
2470.1(3)	19^-						15(4)	72(9)			
2529.6(4)	19^+								14(4)		
2311.6+X	$2J+32$									x	
2581.5(5)											24(11)
2587.4(3)	21^-						60(7)	25(4)			

Energy levels and branching ratios [99Zh11]. Part 6

¹⁹⁵Tl
81

E^* [keV]	$2J^\pi$	Branching ratios in percentage									
		E_f^* : $2J_f^\pi$:	2212.9 17^+	2088+X $2J+30$	2470.1 19^-	2529.6 19^+	2312+X $2J+32$	2587.4 21^-	2534+X $2J+34$	2840.7 21^+	2861.1 23^-
2529.6(4)	19^+		86(10)								
2587.4(3)	21^-				15(5)						
2534.0+X	$2J+34$			x							
2840.7(5)	21^+		33(5)			67(21)					
2861.1(4)	23^-							100			
2778.8+X	$2J+36$						x				
3059.8(4)	25^-							39(13)			61(15)
3201.9(5)	23^+									[100]	
3016.5+X	$2J+38$								x		

Energy levels and branching ratios [99Zh11]. Part 7

¹⁹⁵Tl
81

E^* [keV]	$2J^\pi$	Branching ratios in percentage									
		E_f^* : $2J_f^\pi$:	2779+X $2J+36$	3059.8 25^-	3201.9 23^+	3017+X $2J+38$	3283+X $2J+40$	3513.9 25^+	3729.6 27^+	3536+X $2J+42$	3885.3 $29^{(+)}$
3157.1(5)	$27^{(-)}$			100							
3283.3+X	$2J+40$		x								
3513.9(5)	25^+				[100]						
3729.6(5)	27^+				38(8)			62(6)			
3535.5+X	$2J+42$					x					
3885.3(6)	$29^{(+)}$								100		
4002.8(8)	$31^{(+)}$										100
3824.1+X	$2J+44$						x				
4089.3+X	$2J+46$									x	

Energy levels and branching ratios [99Zh11]. Part 8

¹⁹⁵Tl
81

E^* [keV]	$2J^\pi$	Branching ratios in percentage									
		E_f^* : $2J_f^\pi$:	4002.8 $31^{(+)}$	3824+X $2J+44$	4174.8 $33^{(+)}$	4089+X $2J+46$	4401+X $2J+48$	4677+X $2J+50$	5013+X $2J+52$	5298+X $2J+54$	5658+X $2J+56$
4174.8(9)	$33^{(+)}$		100								
4393.3(9)	$35^{(+)}$				100						
4400.6+X	$2J+48$			x							
4677.1+X	$2J+50$					x					
5012.6+X	$2J+52$						x				
5298.1+X	$2J+54$							x			
5658.4+X	$2J+56$								x		
5951.1+X	$2J+58$									x	
6337.8+X	$2J+60$										x

Energy levels and branching ratios [99Zh11]. Part 9

¹⁹⁵Tl
81

E^*	$2J^\pi$	Branching ratios in percentage							
[keV]	$E_f^*:$ $2J_f^\pi:$	5951+X $2J+58$	6338+X $2J+60$	6635+X $2J+62$	7051+X $2J+64$	7351+X $2J+66$	7796+X $2J+68$	8097+X $2J+70$	
6635.3+X	$2J+62$	x							
7050.6+X	$2J+64$		x						
7350.8+X	$2J+66$			x					
7796.4+X	$2J+68$				x				
8096.8+X	$2J+70$					x			
8573.6+X	$2J+72$						x		
8874.3+X	$2J+74$							x	

Energy levels and branching ratios [98Zh05].

¹⁹⁶Tl
81

E^*	J^π	$T_{1/2}$ or
[keV]		Γ_{cm}
0.0	2^-	1.84(3) h
191.7(4)	0^-	
240.2(4)	1^-	
253.2(4)	1^-	
274.1(4)	$\langle 3^- \rangle$	
366.5(5)	1^-	
394.2(5)	$\langle 7^+ \rangle$	1.41(2) h
493.9(4)	1^-	
638.1(6)		2.5 ns
738.1(6)	$\langle 8^- \rangle$	21.3(5) ns
738.1+X	$\langle 9^- \rangle$	
755.3(4)	$\langle 1^- \rangle$	
799.5(7)		
799.6+X	$\langle 10^- \rangle$	
908.4+X	$\langle 11^- \rangle$	
954.2(5)	$\langle 1^- \rangle$	
1179.7+X	$\langle 12^- \rangle$	
1274.8(7)		
1416.1+X	$\langle 13^- \rangle$	
1544.6(7)		
1812.9+X	$\langle 14^- \rangle$	
1995.8(7)		
2079.6+X	$\langle 15^- \rangle$	
2171.2+X		
2222.8(7)		
2335.1+X		
2527.3+X		
2527.4+X	$\langle 16^- \rangle$	
2760.3+X	$\langle 17^- \rangle$	
2846.8+X		
3045.6+X	$\langle 18^- \rangle$	
3163.5+X		
3334.6+X	$\langle 19^- \rangle$	
3500.1+X		
3523.4+X	$\langle 20^- \rangle$	
3629.8+X	$\langle 21^- \rangle$	

Energy levels and branching ratios [98Zh05]. Part 2

¹⁹⁶Tl
81

<i>E</i> [*] [keV]	<i>J</i> ^π	Branching ratios in percentage										
		<i>E</i> _f [*] : <i>J</i> _f ^π :	0.0 2 [−]	191.7 0 [−]	240.2 1 [−]	253.2 1 [−]	274.1 ⟨3 [−] ⟩	366.5 1 [−]	394.2 ⟨7 ⁺ ⟩	638.1	738.1 ⟨8 [−] ⟩	738.1+X ⟨9 [−] ⟩
191.7(4)	0 [−]		100									
240.2(4)	1 [−]		100									
253.2(4)	1 [−]		100									
274.1(4)	⟨3 [−] ⟩		x		x							
366.5(5)	1 [−]		90(13)	6(3)	1.8(6)	2.2(9)						
394.2(5)	⟨7 ⁺ ⟩						100					
493.9(4)	1 [−]		53(10)	36(10)		9(3)		2.3(10)				
638.1(6)									100			
738.1(6)	⟨8 [−] ⟩								100			
738.1+X	⟨9 [−] ⟩										x	
755.3(4)	⟨1 [−] ⟩		6(3)		4.5(22)	89(7)						
799.5(7)										100		
799.6+X	⟨10 [−] ⟩											100
954.2(5)	⟨1 [−] ⟩		60(15)		12(6)	28(12)						

Energy levels and branching ratios [98Zh05]. Part 3

¹⁹⁶Tl
81

<i>E</i> [*] [keV]	<i>J</i> ^π	Branching ratios in percentage										
		<i>E</i> _f [*] : <i>J</i> _f ^π :	799.5	799.6+X ⟨10 [−] ⟩	908.4+X ⟨11 [−] ⟩	1180+X ⟨12 [−] ⟩	1274.8	1416+X ⟨13 [−] ⟩	1544.6	1813+X ⟨14 [−] ⟩	1995.8	2080+X ⟨15 [−] ⟩
908.4+X	⟨11 [−] ⟩			100								
1179.7+X	⟨12 [−] ⟩			6.5	93							
1274.8(7)		100										
1416.1+X	⟨13 [−] ⟩				37	63						
1544.6(7)		100					x					
1812.9+X	⟨14 [−] ⟩					29		71				
1995.8(7)							50		50			
2079.6+X	⟨15 [−] ⟩							70		30		
2171.2+X						100						
2222.8(7)									65		35	
2527.4+X	⟨16 [−] ⟩									48		52
2760.3+X	⟨17 [−] ⟩											69

Energy levels and branching ratios [98Zh05]. Part 4

¹⁹⁶Tl
81

E^*	J^π	Branching ratios in percentage									
[keV]		E_f^* : J_f^π :	2171+X	2335+X	2527+X	2760+X $\langle 17^- \rangle$	2847+X	3046+X $\langle 18^- \rangle$	3164+X	3335+X $\langle 19^- \rangle$	3523+X $\langle 20^- \rangle$
<hr/>											
2335.1+X			100								
2527.3+X		x		100							
2760.3+X	$\langle 17^- \rangle$				31						
2846.8+X					100						
3045.6+X	$\langle 18^- \rangle$					100					
3163.5+X							100				
3334.6+X	$\langle 19^- \rangle$							100			
3500.1+X									100		
3523.4+X	$\langle 20^- \rangle$									100	
3629.8+X	$\langle 21^- \rangle$										100
<hr/>											

Energy levels and branching ratios [95Zh27, 05Hu03].

¹⁹⁷Tl
81

E^* [keV]	$2J^\pi$	$T_{1/2}$ or Γ_{cm}	Ref.
0.0	1^+	2.84(4) h	
385.77(6)	3^+		
608.22(8) ^a	9^-	0.54(1) s	05Hu03
761.17(5)	5^+		
995.85(9) ^a	11^-		05Hu03
1155.96(8)	3^+		
1257.38(12)	$1^-, 5^-$		
1281.81(7)	$3^+, 5^+$		
1303.86(9) ^a	13^-		05Hu03
1382.53(10)	11^-		
1501.66(10)	$9^-, 11^-$		
1553.40(12)	13^-		
1605.18(10)	$\langle 1^+ - 5^+ \rangle$		
1647.01(8)	$3^+, 5^+$		
1662.93(10)	$3^+, 5^+$		
1674.63(8)	$3^+, 5^+$		
1719.90(10) ^a	15^-		05Hu03
1803.06(13)	$\langle 11^-, 13^- \rangle$		
1849.33(12)	$\langle 1^+ - 5^+ \rangle$		
1854.02(8)	$\langle 1^+ - 5^+ \rangle$		
1953.64(10)	11^-		
1970.16(12)	$\langle 3^+, 5^+ \rangle$		
1994.51(12)	13^-		
1999.06(13)	$11^-, 13^-$		
2010.66(11)	13^-		
2018.91(13) ^a	17^-		05Hu03

(continued)

¹⁹⁷Tl
81

E^*	$2J^\pi$	$T_{1/2}$ or	Ref.
[keV]		Γ_{cm}	
2033.42(11)	$11^-, 13^-$		
2041.06(12)	17^-		
2072.66(22)			
2113.53(10)	13^-		
2114.38(17) ^b	15^+		05Hu03
2175.03(14)			
2218.29(14)	11^--15^-		
2266.6(3) ^b	$\langle 17 \rangle^+$		05Hu03
2302.78(14)	$\langle 11, 13 \rangle^-$		
2327.55(15)	$\langle 11, 13 \rangle^-$		
2345.57(7)	$\langle 3^+, 5^+ \rangle$		
2367.57(11)	$\langle 11^-, 13^- \rangle$		
2411.99(17)	$\langle 11^-, 13^- \rangle$		
2426.49(15) ^a	19^-		05Hu03
2429.39(9)	$1, 3, 5^{(+)}$		
2456.88(13)	$11^-, 13^-$		
2462.5(4) ^b	19^+		05Hu03
2498.85(12)	$11^-, 13^-$		
2529.7(4)		18(4) ns	
2569.66(15)	15^-		
2597.49(18) ^a	21^-		05Hu03
2783.32(11)	$11^-, 13^-$		
2801.6(4) ^b	$\langle 21 \rangle^+$		05Hu03
2820.27(11)			
2861.2(3) ^a	$\langle 23 \rangle^-$		05Hu03
3067.7(4) ^a	$\langle 25 \rangle^-$		05Hu03
3147.5(4) ^b	$\langle 23 \rangle^+$		05Hu03
3170.3(4) ^a	$\langle 27^- \rangle$		05Hu03
3277.5(5) ^a	$\langle 29^- \rangle$		05Hu03
3568.6(4) ^b	$\langle 25 \rangle^+$		05Hu03
3690.0(5)			
3761.1(5) ^b	$\langle 27^+ \rangle$		05Hu03
3965.7(5) ^b	$\langle 29^+ \rangle$		05Hu03

Additional data on this isotope can be found in [05Hu03, 78Li10].

Two bands (A,B marked here as a,b) are assigned to excited states of this nucleus in [05Hu03].

Uncertainties in E^* and $T_{1/2}$ are given in Supplement.

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

Energy levels and branching ratios [95Zh27, 05Hu03]. Part 2

¹⁹⁷Tl
81

E^*	$2J^\pi$	Branching ratios in percentage										
[keV]		E_f^* : $2J_f^\pi$:	0.0 1 ⁺	385.77 3 ⁺	608.22 9 ⁻	761.17 5 ⁺	995.85 11 ⁻	1257.38	1281.81 3 ⁺ ,5 ⁺	1303.86 13 ⁻	1382.53 11 ⁻	1501.66 9 ⁻ ,11 ⁻
385.77(6)	3 ⁺		100									
608.22(8) ^a	9 ⁻			100								
761.17(5)	5 ⁺		51(4)	49(4)								
995.85(9) ^a	11 ⁻				100							
1155.96(8)	3 ⁺		45(3)	30(5)		25(5)						
1257.38(12)	1 ⁻ -5 ⁻			100								
1281.81(7)	3 ⁺ ,5 ⁺		5.8(17)	74(18)		21(2)						
1303.86(9) ^a	13 ⁻				76(6)		24(3)					
1382.53(10)	11 ⁻				100							
1501.66(10)	9 ⁻ ,11 ⁻				67(8)		33(3)					
1553.40(12)	13 ⁻						100					
1605.18(10)	⟨1 ⁺ -5 ⁺ ⟩			39(4)		61(7)						
1647.01(8)	3 ⁺ ,5 ⁺		20(1)	72(6)		8(1)						
1662.93(10)	3 ⁺ ,5 ⁺		11(2)	28(4)		60(7)						
1674.63(8)	3 ⁺ ,5 ⁺		30(3)	49(4)		21(3)						
1719.90(10) ^a	15 ⁻						62(4)			38(3)		
1803.06(13)	⟨11 ⁻ ,13 ⁻ ⟩				30(4)							70(10)
1849.33(12)	⟨1 ⁺ -5 ⁺ ⟩					100						
1854.02(8)	⟨1 ⁺ -5 ⁺ ⟩		65(5)			35(3)						
1953.64(10)	11 ⁻				12(2)		77(6)			9(1)		
1970.16(12)	⟨3 ⁺ ,5 ⁺ ⟩					100						
1994.51(12)	13 ⁻						68(5)					22(2)
1999.06(13)	11 ⁻ ,13 ⁻										100	
2010.66(11)	13 ⁻						1.9(6)			44(6)	9(1)	
2018.91(13) ^a	17 ⁻									80(7)		
2033.42(11)	11 ⁻ ,13 ⁻				21(2)		23(3)				56(6)	
2041.06(12)	17 ⁻									79(6)		
2072.66(22)								100				
2113.53(10)	13 ⁻				2.3(6)		61(5)			10(1)		16(2)
2114.38(17) ^b	15 ⁺									16(3)		
2175.03(14)											100	
2218.29(14)	11 ⁻ -15 ⁻										100	
2302.78(14)	⟨11,13⟩ ⁻										100	
2327.55(15)	⟨11,13⟩ ⁻										100	
2345.57(7)	⟨3 ⁺ ,5 ⁺ ⟩		64(5)			27(3)			9(5)			
2367.57(11)	⟨11 ⁻ ,13 ⁻ ⟩				9(2)		16(2)			38(23)	22(2)	
2411.99(17)	⟨11 ⁻ ,13 ⁻ ⟩										100	
2429.39(9)	1,3,5 ⁽⁺⁾		16(2)	59(5)					25(4)			
2456.88(13)	11 ⁻ ,13 ⁻										57(6)	
2783.32(11)	11 ⁻ ,13 ⁻				15(2)		15(2)			53(4)		
2820.27(11)					22(3)		51(5)			27(3)		

Energy levels and branching ratios [95Zh27, 05Hu03]. Part 3

¹⁹⁷Tl
81

E^*	$2J^\pi$	Branching ratios in percentage										
[keV]		E_f^* :	1553.40	1719.90	1953.64	1994.51	1999.06	2010.66	2018.91	2041.06	2114.38	2266.6
		$2J_f^\pi$:	13 ⁻	15 ⁻	11 ⁻	13 ⁻	11 ⁻ ,13 ⁻	13 ⁻	17 ⁻	17 ⁻	15 ⁺	$\langle 17 \rangle^+$
1953.64(10)	11 ⁻		2.5(3)									
1994.51(12)	13 ⁻			10(1)								
2010.66(11)	13 ⁻		<41	44(4)								
2018.91(13) ^a	17 ⁻			20(4)								
2041.06(12)	17 ⁻			21(2)								
2113.53(10)	13 ⁻			11(2)								
2114.38(17) ^b	15 ⁺		84(8)									
2266.6(3) ^b	$\langle 17 \rangle^+$										100	
2367.57(11)	$\langle 11^-, 13^- \rangle$				15(5)							
2426.49(15) ^a	19 ⁻			58(8)					24(3)	18(7)		
2456.88(13)	11 ⁻ , 13 ⁻					x		43(5)				
2462.5(4) ^b	19 ⁺										11(3)	89(15)
2498.85(12)	11 ⁻ , 13 ⁻				10(3)		20(4)	70(6)				
2529.7(4)												100
2569.66(15)	15 ⁻					27(5)			28(4)	45(5)		
2597.49(18) ^a	21 ⁻								32(9)	18(10)		
2783.32(11)	11 ⁻ , 13 ⁻				16(4)							
2801.6(4) ^b	$\langle 21 \rangle^+$											22(9)

Energy levels and branching ratios [95Zh27, 05Hu03]. Part 4

¹⁹⁷Tl
81

E^*	$2J^\pi$	Branching ratios in percentage											
[keV]	E_f^* : $2J_f^\pi$:	2426.49 19 ⁻	2462.5 19 ⁺	2597.49 21 ⁻	2801.6 $\langle 21 \rangle^+$	2861.2 $\langle 23 \rangle^-$	3067.7 $\langle 25 \rangle^-$	3147.5 $\langle 23 \rangle^+$	3170.3 $\langle 27^- \rangle$	3277.5 $\langle 29^- \rangle$	3568.6 $\langle 25 \rangle^+$	3761.1 $\langle 27^+ \rangle$	
2597.49(18) ^a	21 ⁻	50(5)											
2801.6(4) ^b	$\langle 21 \rangle^+$		78(12)										
2861.2(3) ^a	$\langle 23 \rangle^-$			100									
3067.7(4) ^a	$\langle 25 \rangle^-$			19(8)		81(12)							
3147.5(4) ^b	$\langle 23 \rangle^+$		33(15)		67(14)								
3170.3(4) ^a	$\langle 27^- \rangle$						100						
3277.5(5) ^a	$\langle 29^- \rangle$									100			
3568.6(4) ^b	$\langle 25 \rangle^+$				62(12)			38(15)					
3690.0(5)										100			
3761.1(5) ^b	$\langle 27^+ \rangle$							33(19)			67(14)		
3965.7(5) ^b	$\langle 29^+ \rangle$											100	

Energy levels and branching ratios [02Zh04].

¹⁹⁸Tl
81

E^*	J^π	$T_{1/2}$ or Γ_{cm}
[keV]		
0.0	2^-	5.3(5) h
173.41(8)	$0^-, 1^-$	4.5(10) ns
259.51(7)	$\langle 2 \rangle^-$	
282.65(11)	3^-	
290.31(6)	1^-	
382.11(7)	1^-	
397.67(9)	$1^-, 3^-$	
543.5(4)	7^+	1.87(3) h
648.92(8)	1^-	
655.71(12)	$0^-, 1^-$	
674.1(4)	$\langle 6 \rangle^+$	
687.2(5)	$\langle 5^+ \rangle$	150(40) ns
742.3(4)	$\langle 10^- \rangle$	32.1(10) m
865.33(8)	1^-	
934.1(4)	$\langle 8 \rangle^-$	12.3(3) n
966.2(4)	$\langle 6 \rangle^+$	
977.7(4)	$\langle 4 \rangle^+$	
1000.3(4)	$\langle 6^+ \rangle$	
1056.3(4)	$\langle 9 \rangle^-$	
1140.7(3)	$0^-, 2^-$	
1188.9(4)	$\langle 7^+ \rangle$	
1230.3		
1290.2(4)	$\langle 5 \rangle^+$	
1315.3(4)	$\langle 10 \rangle^-$	
1561.5(5)	$\langle 11 \rangle^-$	
1617.0(4)	$\langle 6^+ \rangle$	
1778.4(4)	$\langle 7 \rangle$	
1892.7(5)	$\langle 7^+ \rangle$	
1963.0(5)	$\langle 12 \rangle^-$	
2089.1(5)	$\langle 8^+ \rangle$	
2259.7(5)	$\langle 13 \rangle^-$	
2747.7(5)	$\langle 14^- \rangle$	

Energy levels and branching ratios [02Zh04]. Part 2

¹⁹⁸Tl
81

E^*	J^π	Branching ratios in percentage							
		E_f^* :	0.0	173.4	259.5	282.6	290.3	382.1	397.7
[keV]		J_f^π :	2^-	$0^-, 1^-$	$\langle 2 \rangle^-$	3^-	1^-	1^-	
173.41(8)	$0^-, 1^-$		100						
259.51(7)	$\langle 2 \rangle^-$		100						
282.65(11)	3^-		100		0.132(26)				
290.31(6)	1^-		97(15)	3.1(5)	0.20(5)				

(continued)

¹⁹⁸Tl
81

E^*	J^π	Branching ratios in percentage							
[keV]		E_f^* : J_f^π :	0.0 2 ⁻	173.4 0 ⁻ ,1 ⁻	259.5 (2) ⁻	282.6 3 ⁻	290.3 1 ⁻	382.1 1 ⁻	397.7
382.11(7)	1 ⁻		98(13)		2.0(3)				
397.67(9)	1 ⁻ –3 ⁻		95(18)		4.8		0.24		
543.5(4)	7 ⁺					100			
648.92(8)	1 ⁻		56(6)		17(6)			27	
655.71(12)	0 ⁻ ,1 ⁻				1.1(2)		99(16)		
865.33(8)	1 ⁻		58(5)		5(3)		30(3)		7(2)
1140.7(3)	0 ⁻ –2 ⁻								84(16)

Energy levels and branching ratios [02Zh04]. Part 3

¹⁹⁸Tl
81

E^*	J^π	Branching ratios in percentage									
[keV]		E_f^* : J_f^π :	543.5 7 ⁺	648.9 1 [−]	674.1 ⟨6⟩ ⁺	687.2 ⟨5 ⁺ ⟩	865.3 1 [−]	934.1 ⟨8⟩ [−]	966.2 ⟨6⟩ ⁺	977.7 ⟨4⟩ ⁺	1000.3 ⟨6 ⁺ ⟩
674.1(4)	⟨6⟩ ⁺		100								
687.2(5)	⟨5 ⁺ ⟩				100						
742.3(4)	⟨10 [−] ⟩		100								
865.33(8)	1 [−]			0.40							
934.1(4)	⟨8⟩ [−]		100								
966.2(4)	⟨6⟩ ⁺				32.2(15)	68(3)					
977.7(4)	⟨4⟩ ⁺				10(4)	90(5)					
1000.3(4)	⟨6 ⁺ ⟩		56(3)		44(4)						
1056.3(4)	⟨9⟩ [−]							100			
1140.7(3)	0 [−] –2 [−]						16(3)				
1188.9(4)	⟨7 ⁺ ⟩										100
1290.2(4)	⟨5⟩ ⁺					41(4)			35(2)	24(1)	
1315.3(4)	⟨10⟩ [−]							7.9(13)			
1617.0(4)	⟨6 ⁺ ⟩								22.2(13)	25.7(13)	
1778.4(4)	⟨7⟩										100

Energy levels and branching ratios [02Zh04]. Part 4

¹⁹⁸Tl
81

E^*	J^π	Branching ratios in percentage								
[keV]		E_f^* : J_f^π :	1056.3 $\langle 9 \rangle^-$	1290.2 $\langle 5 \rangle^+$	1315.3 $\langle 10 \rangle^-$	1561.5 $\langle 11 \rangle^-$	1617.0 $\langle 6^+ \rangle$	1892.7 $\langle 7^+ \rangle$	1963.0 $\langle 12 \rangle^-$	2259.7 $\langle 13 \rangle^-$
1315.3(4)	$\langle 10 \rangle^-$		92(5)							
1561.5(5)	$\langle 11 \rangle^-$		20.8(11)		79(4)					
1617.0(4)	$\langle 6^+ \rangle$			52(5)						
1892.7(5)	$\langle 7^+ \rangle$			28(4)			72(4)			
1963.0(5)	$\langle 12 \rangle^-$				25(3)	75(4)				

(continued)

¹⁹⁸Tl
81

E^*	J^π	Branching ratios in percentage								
		E_f^* :	1056.3	1290.2	1315.3	1561.5	1617.0	1892.7	1963.0	2259.7
[keV]		J_f^π :	$\langle 9 \rangle^-$	$\langle 5 \rangle^+$	$\langle 10 \rangle^-$	$\langle 11 \rangle^-$	$\langle 6^+ \rangle$	$\langle 7^+ \rangle$	$\langle 12 \rangle^-$	$\langle 13 \rangle^-$
2089.1(5)	$\langle 8^+ \rangle$						27.8(14)	72(5)		
2259.7(5)	$\langle 13 \rangle^-$					39(4)			61(4)	
2747.7(5)	$\langle 14^- \rangle$								38(7)	62(6)

Energy levels and branching ratios [94Ar13].

¹⁹⁹Tl
81

E^* [keV]	$2J^\pi$	$T_{1/2}$ or Γ_{cm}
0.0	1 ⁺	7.42(8) h
366.91(4)	3 ⁺	<1.5 ns
720.37(4)	$\langle 5 \rangle^+$	
749.7(3)	9 ⁻	28.4(2) ms
1119.1(9)	11 ⁻	
1120.94(5)	1,3,5	
1205.2	$\langle 7^+ \rangle$	
1241.64(6)		
1451.3	13 ⁻	
1482.41(7)	1,3,5	
1501.94(5)	1 ^{$\langle + \rangle$} –5 ^{$\langle + \rangle$}	
1554.13(8)	1,3,5	
1632.12(12)	1,3,5	
1658.37(6)	1,3,5 ⁺	
1695.25(9)		
1717.8	$\langle 13^- \rangle$	
1725.50(9)	1,3,5	
1749.66(6)	1,3,5	
1768.61(7)	1,3,5	
1867.9	$\langle 15^- \rangle$	
1891.07(8)	1,3,5	
1898.15(9)	1,3,5	
1930.12(10)	1,3,5	
1944.6	$\langle 9^- - 13^- \rangle$	
1959.47(8)	1,3,5	
1977.50(8)	1,3,5	
1986.1	$\langle 17^- \rangle$	
2031.60(10)	1,3,5	
2062.5(2)	1,3,5	
2080.9	$\langle 15^+ \rangle$	
2159.3(7)	1,3,5	
2237.40(8)	1,3,5 ⁺	
2367.48(15)	1,3,5	

(continued)

¹⁹⁹Tl
81

E^*	$2J^\pi$	$T_{1/2}$ or
[keV]		Γ_{cm}
2433.64(17)	1,3,5 ⁺	
2472.6	$\langle 19^- \rangle$	

Uncertainties in E^* and $T_{1/2}$ are given in Supplement.
Data for this isotope are considered in vol. LB I/18C.

Energy levels and branching ratios [94Ar13]. Part 2

¹⁹⁹Tl
81

E^*	$2J^\pi$	Branching ratios in percentage							
		E_f^* :	0.0	366.91	720.37	749.7	1119.1	1120.94	1241.64
[keV]		$2J_f^\pi$:	1 ⁺	3 ⁺	$\langle 5 \rangle^+$	9 ⁻	11 ⁻	1,3,5	
366.91(4)	3 ⁺		100						
720.37(4)	$\langle 5 \rangle^+$		41(2)	59(3)					
749.7(3)	9 ⁻			100	x				
1119.1(9)	11 ⁻					100			
1120.94(5)	1,3,5		34(2)	36(2)	29(3)				
1205.2	$\langle 7^+ \rangle$			100					
1241.64(6)				77(4)	20(4)			2.6(8)	
1451.3	13 ⁻					49	51		
1482.41(7)	1,3,5			21(2)	74(4)				5.2(4)
1501.94(5)	1 ⁽⁺⁾ ₅ ⁽⁺⁾		18.1(7)	66(3)	15.7(9)				
1554.13(8)	1,3,5		9(2)	52(5)	21(3)			19(5)	
1632.12(12)	1,3,5		11(2)	22(2)	46(7)				21(4)
1658.37(6)	1,3,5 ⁺		70	3.8(3)	26.3(14)				
1695.25(9)			65(5)	35(5)					
1717.8	$\langle 13^- \rangle$						100		
1725.50(9)	1,3,5		3.8(13)	20(2)	76(4)				
1749.66(6)	1,3,5		32(2)	40(2)	23(1)				
1768.61(7)	1,3,5		15(4)	66(4)	19(3)				
1867.9	$\langle 15^- \rangle$						50		
1891.07(8)	1,3,5		46(3)	19(5)	35(3)				
1898.15(9)	1,3,5		9(3)	57(4)				34(3)	
1930.12(10)	1,3,5		30(8)		70(5)				
1944.6	$\langle 9^- - 13^- \rangle$						100		
1959.47(8)	1,3,5		1.9(3)	7.5(8)	60(2)			25(5)	
1977.50(8)	1,3,5		7(1)	56(4)					
2031.60(10)	1,3,5		32(6)		53(7)				
2062.5(2)	1,3,5		23(2)	77(6)					
2159.3(7)	1,3,5		10(3)	51(9)					
2237.40(8)	1,3,5 ⁺		47(3)		35(2)				9(2)
2367.48(15)	1,3,5		19(4)	42(4)					
2433.64(17)	1,3,5 ⁺		69(5)	31(3)					

Energy levels and branching ratios [94Ar13]. Part 3

¹⁹⁹Tl
81

E^*	$2J^\pi$	Branching ratios in percentage										
[keV]		E_f^* :	1451.3	1482.41	1501.94	1554.13	1632.12	1717.8	1725.50	1768.61	1867.9	1986.1
		$2J_f^\pi$:	13^-	1,3,5		1,3,5	1,3,5	$\langle 13^- \rangle$	1,3,5	1,3,5	$\langle 15^- \rangle$	$\langle 17^- \rangle$
1749.66(6)	1,3,5			6(3)								
1867.9	$\langle 15^- \rangle$		50									
1959.47(8)	1,3,5			5(1)								
1977.50(8)	1,3,5			37(6)								
1986.1	$\langle 17^- \rangle$		81								19	
2031.60(10)	1,3,5				14(5)							
2080.9	$\langle 15^+ \rangle$		80				20					
2159.3(7)	1,3,5									38(7)		
2237.40(8)	$1,3,5^+$				8(2)		<3					
2367.48(15)	1,3,5					26(5)			14(3)			
2472.6	$\langle 19^- \rangle$										x	x

Energy levels and branching ratios [95Sc23].

²⁰⁰Tl
81

E^* [keV]	J^π	$T_{1/2}$ or Γ_{cm}
0	2 ⁻	26.1(1) h
147.63(2)	⟨0⟩ ⁻	7.10(15) ns
257.17(2)	1 ⁻	
289.16(5)	1 ⁻ , 2 ⁻	
289.92(3)	1 ⁻	
323.70(17)	⟨2 ⁻ , 3 ⁻ ⟩	
450.52(3)	1 ⁻	
525.55(3)	⟨1⟩ ⁻	
540.90(17)	4 ⁻	
605.40(5)	1 ⁻	
753.6(2)	7 ⁺	34.3(10) ms
762.0(2)	5 ⁺	0.33(5) μ s
886.1(3)	6 ⁺	
1023.6(3)	6 ⁺	
1173.8(3)	⟨6,8⟩ ⁺	
1244.0(3)	7 ⁻	4.8(2) ns
1349.4(4)		

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

Energy levels and branching ratios [95Sc23]. Part 2

²⁰⁰Tl₈₁

E^*	J^π	E_f^* :	0	147.63	257.17	289.16	289.92	323.70	540.90
[keV]		J_f^π :	2 ⁻	$\langle 0 \rangle^-$	1 ⁻	1 ⁻ , 2 ⁻	1 ⁻	$\langle 2^-, 3^- \rangle$	4 ⁻
147.63(2)	$\langle 0 \rangle^-$		100						
257.17(2)	1 ⁻		90(3)	9.7(14)					
289.16(5)	1 ⁻ , 2 ⁻		100						
289.92(3)	1 ⁻		35(7)	64(3)	0.5(1)				
323.70(17)	$\langle 2^-, 3^- \rangle$		100						
450.52(3)	1 ⁻		87	4.3(9)	0.9(3)	7.9(9)			
525.55(3)	$\langle 1 \rangle^-$		4.8(3)	0.3(1)	45(2)		49(1)		
540.90(17)	4 ⁻		98					1.7(2)	
605.40(5)	1 ⁻		53(4)	11(2)	15(3)		21(3)		
753.6(2)	7 ⁺								100
762.0(2)	5 ⁺								100

Energy levels and branching ratios [95Sc23]. Part 3

²⁰⁰Tl₈₁

E^*	J^π	E_f^* :	753.6	762.0	886.1	1023.6	1173.8
[keV]		J_f^π :	7 ⁺	5 ⁺	6 ⁺	6 ⁺	$\langle 6, 8 \rangle^+$
886.1(3)	6 ⁺		100				
1023.6(3)	6 ⁺			100			
1173.8(3)	$\langle 6, 8 \rangle^+$		70(7)		30(3)		
1244.0(3)	7 ⁻		68(7)		29(3)	3(1)	
1349.4(4)							100

Energy levels and branching ratios [94Ra12].

²⁰¹Tl₈₁

E^*	$2J^\pi$	L	σ (p,t)	$T_{1/2}$ or	Ref.
[keV]			$\mu\text{b/sr}$	Γ_{cm}	
0	1 ⁺	0	2705	72.912(17) h	77Se15
331.193(23)	3 ⁺	2	93.2	70(20) ps	77Se15
692.50(3)	5 ⁺	2	471.8		77Se15
919.50(9)	$\langle 9^- \rangle$			2.035(7) ms	
1098.53(4)	3 ⁺ , 5 ⁺	2	163.2		77Se15
1134.83(5)	7 ⁺				
1157.47(5)	$\langle 3^+, 5^+ \rangle$		26.4		77Se15
1238.48(13)	$\langle 11^- \rangle$				
1238.79(5)	$\langle 3 \rangle^+$	$\langle 2 \rangle$	20.9		77Se15
1277.09(4)	3 ⁺ , 5 ⁺				
1290.10(6)	9 ⁺	4	118.4		77Se15

(continued)

201Tl
81

E^*	$2J^\pi$	L	σ (p,t)	$T_{1/2}$ or	Ref.
[keV]			$\mu\text{b/sr}$	Γ_{cm}	
1330.44(5)	5^+	2	73.3		77Se15
1401.23(5)	$\langle 5^+, 3^+ \rangle$				
1413.40(10)	$\langle 11 \rangle$				
1420.01(6)	7^+	4	115.2		77Se15
1434(15)	$\langle 11^- \rangle$				
1445.86(6)	$\langle 5^+, 3^+ \rangle$	2	27.7		77Se15
1479.87(4)	5^+				
1550.59(15)					
1571.79(16)	$\langle 13^- \rangle$				
1575.1		4	82.4		77Se15
1594(15)	$\langle 9 \rangle$				
1617.47(12)	$\langle 3, 5^+ \rangle$				
1639.53(6)	$\langle 3^+, 5^+ \rangle$				
1671.96(5)	$\langle 5^+ \rangle$				
1712.45(22)					
1740(15)	$\langle 7^+ - 11^- \rangle$				
1755.34(7)	$\langle 3, 5^+ \rangle$				
1778(15)	$\langle 7, 9 \rangle$				
1849(15)	$\langle 5 \rangle$	2	54.2		77Se15
1923(15)	$\langle 26, 30^- \rangle$				
1955(15)	$\langle 7, 9 \rangle$				
1962.31(16)	$\langle 15^- \rangle$				
1987.8(4)					
2014.99(19)	$\langle 13^-, 15^- \rangle$			2.9(+19-5) ns	
2060(20)	$\langle 11^-, 13 \rangle$				
2118(20)	$\langle 9 \rangle$				
2160(20)	$\langle 9 \rangle$				
2211(20)	$\langle 15^+ \rangle$				
2269(20)	$\langle 15^- \rangle$				
2394(20)	$\langle 15^+ \rangle$				
2464(20)					
2549(20)	$\langle 9 \rangle$				
2637(20)	$\langle 15^+ \rangle$				
2684(20)	$\langle 5 \rangle$				
2729(20)					
2777(20)	$\langle 7, 9 \rangle$				
2868(20)	$\langle 11^- \rangle$				
2914(20)	$\langle 15^+ \rangle$				
2991(20)	$\langle 15^+ \rangle$				
3045(20)	$\langle 15^+, 17^+ \rangle$				
3098(20)	$\langle 9, 11 \rangle$				
3148(20)					
3216(20)					
3318(20)	$\langle 9, 11 \rangle$				
3377(20)	$\langle 15^+ \rangle$				

(continued)

²⁰¹Tl
81

E^*	$2J^\pi$	L	σ (p,t)	$T_{1/2}$ or	Ref.
[keV]			$\mu\text{b/sr}$	Γ_{cm}	
3416(20)	$\langle 17^+ \rangle$				
3456(20)	$\langle 9 \rangle$				
3514(20)	$\langle 15 \rangle$				
3567(20)	$\langle 15 \rangle$				
3630(20)	$\langle 17^-, 19^- \rangle$				
3663(20)	$\langle 15^+ \rangle$				
3689(20)	$\langle 17, 19^- \rangle$				
3742(20)					
			77Se15		Ref.

Additional data on this isotope can be found in [85Fi05].

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

Energy levels and branching ratios [94Ra12]. Part 2

²⁰¹Tl
81

E^*	$2J^\pi$	Branching ratios in percentage									
[keV]		E_f^* : $2J_f^\pi$:	0 1 ⁺	331 3 ⁺	692 5 ⁺	919 $\langle 9^- \rangle$	1098 3 ⁺ , 5 ⁺	1134.83 7 ⁺	1157.47 $\langle 3^+, 5^+ \rangle$	1238.48 $\langle 11^- \rangle$	1238.79 $\langle 3 \rangle^+$
331.193(23)	3 ⁺		100								
692.50(3)	5 ⁺		30.2(11)	70(3)							
919.50(9)	$\langle 9^- \rangle$			100	≤ 5						
1098.53(4)	3 ⁺ , 5 ⁺		26(2)	45(2)	29(2)						
1134.83(5)	7 ⁺			100	< 1						
1157.47(5)	$\langle 3^+, 5^+ \rangle$		4.7(6)	83(4)	12(5)		≤ 2				
1238.48(13)	$\langle 11^- \rangle$					100					
1238.79(5)	$\langle 3 \rangle^+$		16.5(10)	80(5)	3.7(2)						
1277.09(4)	3 ⁺ , 5 ⁺		13.0(9)	59(5)	28.3(13)				0.16(5)		
1290.10(6)	9 ⁺				69(5)			31(5)			
1330.44(5)	5 ⁺		2.0(13)	54(3)	36(4)		8.4(12)				
1401.23(5)	$\langle 5^+, 3^+ \rangle$		6.3(3)	55(5)	37(2)		0.5(2)				
1413.40(10)	$\langle 11 \rangle$					83(11)					
1420.01(6)	7 ⁺			72(5)	11.9(13)			≈ 6.6			
1445.86(6)	$\langle 5^+, 3^+ \rangle$		10.3(7)	47(5)	43(4)						
1479.87(4)	5 ⁺		7.0(4)	32(2)	25(3)		9.8(5)	12.1(10)	3.3(5)		7(1)
1550.59(15)			16(3)	84(8)							
1571.79(16)	$\langle 13^- \rangle$					22.5(25)					77(8)
1617.47(12)	$\langle 3, 5^+ \rangle$		27.4(27)	73(4)							
1639.53(6)	$\langle 3^+, 5^+ \rangle$		0.25(5)	39(2)	34(17)		18.7(11)		4.8(8)		
1671.96(5)	$\langle 5^+ \rangle$		2.8(3)	46(3)	3(2)				18(3)		
1712.45(22)				44(9)	56(16)						
1755.34(7)	$\langle 3, 5^+ \rangle$		6.5(6)	53(3)	40(5)						
1962.31(16)	$\langle 15^- \rangle$									28(5)	
1987.8(4)										100	

Energy levels and branching ratios [94Ra12]. Part 3

201Tl
81

E^*	$2J^\pi$	E_f^* :	1277.09	1290.10	Branching ratios in percentage					
[keV]		$2J_f^\pi$:	$3^+, 5^+$	9^+	1330.44	1571.79	1594	1955	1987.8	2014.99
					5^+	$\langle 13^- \rangle$	$\langle 9 \rangle$	$\langle 7, 9 \rangle$		
1401.23(5)	$\langle 5^+, 3^+ \rangle$		2.1(4)							
1413.40(10)	$\langle 11 \rangle$			17(2)						
1420.01(6)	7^+			9.2(13)						
1479.87(4)	5^+		3.0(4)							
1639.53(6)	$\langle 3^+, 5^+ \rangle$				2.9(4)					
1671.96(5)	$\langle 5^+ \rangle$		18(1)		11.2(15)					
1962.31(16)	$\langle 15^- \rangle$					72(7)				
2014.99(19)	$\langle 13^-, 15^- \rangle$					100				
2060(20)	$\langle 11^-, 13 \rangle$						100			
2160(20)	$\langle 9 \rangle$								100	
2464(20)										100
2729(20)								100		

Energy levels and branching ratios [97Sc07].

202Tl
81

E^*	J^π	L	L	$T_{1/2}$ or	Ref.
[keV]		(p,d)	(d, α)	Γ_{cm}	
0	2^-	$\langle 1, 3 \rangle$	1	12.23(2) d	70ClZU
188(20)	$\langle 0^-, 1^- \rangle$	1			70ClZU
315(20)		$\langle 1 \rangle$			70ClZU
351(20)		$\langle 3 \rangle$			70ClZU
490.5(1)	4^-	$\langle 1 \rangle$	5		70ClZU
627(20)					
720(20)					
810(20)					
950.2(1)	7^+	6	6	572(7) μs	70ClZU
1099.0(1)	$\langle 6 \rangle^+$	$\langle 6 \rangle$			70ClZU
1340.1(1)	8^+				
1552.1(1)	$8^+, 9^+$		8		77Fr11
1620(20)	$\langle 2^-, 4^- \rangle$	3			70ClZU
1675.7(2)	$8^+, 9^+$				
≈ 2150	$\langle 12^- \rangle$		11		77Fr11
≈ 2340	$\langle 9^+ \rangle$		8		77Fr11
		70ClZU	77Fr11		Ref.

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

Energy levels and branching ratios [97Sc07]. Part 2

202Tl
81

E^* [keV]	J^π	Branching ratios in percentage					
		$E_f^*:$ $J_f^\pi:$	0 2 ⁻	490 4 ⁻	950 7 ⁺	1099 $\langle 6 \rangle^+$	1340 8 ⁺
490.5(1)	4 ⁻		100				
950.2(1)	7 ⁺			100			
1099.0(1)	$\langle 6 \rangle^+$				100		
1340.1(1)	8 ⁺				88(7)	12.0(21)	
1552.1(1)	8 ⁺ ,9 ⁺				44(4)		56(11)
1675.7(2)	8 ⁺ ,9 ⁺						100

Energy levels and branching ratios [93Ra11, 05Ko0A].

203Tl
81

E^*	$2J^\pi$	L	σ (p,t)	ε	L	S_N	S_N	σ (t, α)	σ (d,d')	$B(E2)$	$T_{1/2}$ or	Ref.
[keV]		(p,t)	$\mu\text{b/sr}$	(p,t)	(d, τ)		(t, α)	$\mu\text{b/sr}$	$\mu\text{b/sr}$	$10^{-3}ef$	Γ_{cm}	
0	1 ⁺	0	1992	5.88	0	1.4	1.80	272			Stable	77Se15
279.196(1)	3 ⁺	2	115.3	0.46	2	1.84	2.46	338	85	1.106	278(2) ps	77Se15
680.516(3)	5 ⁺	2	669	3.20	2	0.55	0.42	89	175	2.112	0.88(10) ps	77Se15
1044.13(7)	3 ⁺	2	234	0.83			0.05	9	8			77Se15
1065.42(5)	$\langle 5 \rangle^+$			0.47								81We03
1072.37(9)	3 ⁺						0.11	16	11			77Fl04
1073.95(5)	$\langle 7^+ \rangle$											
1113.8(1)*	1 ⁺ ,3 ⁺											
1184.28(6)	$\langle 7^+ \rangle$	4		1.24					4			81We03
1215.59(6)	$\langle 1^+ \rangle$								23			71Un01
1217.64(7)	9 ⁺											
1227(5)	$\langle 7,9 \rangle^+$				2	0.70			23			70Ro24
1232.36(11)	3 ⁺	4	287	9.6**			0.90	128	incl			77Se15
1273(5)	$\langle 7,9 \rangle^+$	$\langle 0+4 \rangle$	125	4.66					9			77Se15
1293.9(5)			incl									77Se15
1305.78(18)	$\langle 3.5^+ \rangle$											
1320.14(11)	3 ⁺	2		0.2**			0.21	25				81We03
1334.9(3)	1 ⁺ -7 ⁺											
1386(5)		4		3.37					4			81We03
1407.2(4)	$\langle 1^+ \rangle$		76.4				0.20	47				77Se15
1448.0(1)	$\langle 3^+,5^+ \rangle$	2	90.9	0.62					16			77Se15
1449.63(9)	11 ⁻				5	8.2	5.92	454				70Ro24
1488.3(1)	$\langle 7,9 \rangle^+$	4	87.8	4.00					20			77Se15
1568.9(1)	5 ⁺	2	29.9	0.16			0.30	57				77Se15
1611.0(1)	$\langle 3^+-7^+ \rangle$											
1618(5)	$\langle 3^+ \rangle$						0.11	16				77Fl04
1638.9(5)	$\langle 3^+,5^+ \rangle$		71.1									77Se15
1657(5)	$\langle 5^+ \rangle$						0.13	27				77Fl04
1669.2(2)	$\langle 1,3 \rangle$											
1683.7(1)	3 ⁺ ,5 ⁺											

(continued)

²⁰³Tl
81

E^*	$2J^\pi$	L	σ (p,t)	ε	L	S_N	S_N	σ (t, α)	σ (d,d')	$B(E2)$	$T_{1/2}$ or	Ref.
[keV]		(p,t)	$\mu\text{b/sr}$	(p,t)	(d, τ)		(t, α)	$\mu\text{b/sr}$	$\mu\text{b/sr}$	$10^{-3}ef$	Γ_{cm}	
1698(5)	$\langle 7^+, 9^+ \rangle$	2	33.8	1.63	2	1.61	0.67	128				77Se15
1715.8(2)	$\langle 1^+, 5^+ \rangle$											
1743(3)	$\langle 5, 7^+ \rangle$											
1752.9(10)	$\langle 3^+, 5^+ \rangle$	2	44.2	0.34								77Se15
1760(5)	$\langle 11^- \rangle$						0.52					77Fl04
1818(3)	5^+	2	48.7	0.34								77Se15
1836.5(2)	$[5^+]$						0.13	23				77Fl04
1839.8(2)												05Ko0A
1856(5)	$\langle 3^+, 5^+ \rangle$	2		0.18					10			81We03
1887.8(4)	$\langle 1-5 \rangle$											05Ko0A
1901.1(6)	$\langle 1-5 \rangle$											05Ko0A
1920(10)	1^+						0.07	17				77Fl04
1935.2(5)	$\langle 1-5 \rangle$											05Ko0A
1964(5)	$\langle 7^+, 9^+ \rangle$	4		0.78								81We03
1988.9(2)	$\langle 1-5 \rangle$											
1992.0(5)	$\langle 7^+ \rangle$											05Ko0A
2010(10)	$\langle 3^+ \rangle$						0.05	9				77Fl04
2037.9(2)	$\langle 13 \rangle$											
2076.1(1)	$\langle 5^+ \rangle$											
2100(10)	$\langle 3^+ \rangle$						0.21	29				77Fl04
2140(10)	$\langle 5^+ \rangle$						0.17	30				77Fl04
2170(10)	$\langle 11^- \rangle$						0.43	28				77Fl04
2178(8)	$3^+, 5^+$	2	55.6									77Se15
2232.2(4)	$\langle 3, 5 \rangle^+$	2		0.20								81We03
2284(5)	$\langle 9^-, 11^- \rangle$	$\langle 5 \rangle$		0.72				37				81We03
2310.2(2)	$3^+, 5^+$				2	1.5	0.93	92				70Ro24
2314(5)	$13, 15^-$	$\langle 0+4 \rangle$										05Ko0A
2330(10)												77Fl04
2342.2(3)	$\langle 1, 3 \rangle$							49				
2349(5)	$\langle 7 \rangle^+$	$\langle 4 \rangle$		1.45								81We03
2370(10)	$\langle 11^- \rangle$	$\langle 5 \rangle$		0.35			0.75	50				81We03
2406(10)	$\langle 9^-, 11^- \rangle$											05Ko0A
2427.5(11)	$\langle 1-5^- \rangle$								4			71Un01
2430(10)	$\langle 11^- \rangle$						1.40	83	incl			77Fl04
2445(2)	$\langle 7^+ \rangle$											05Ko0A
2460.6(11)	$\langle 5^- \rangle$	$\langle 4 \rangle$		2.26				77				81We03
2489.1(11)	$\langle 5^- \rangle$	$\langle 3 \rangle$		0.22				incl	39			81We03
2507.3(10)	$\langle 5 \rangle$											05Ko0A
2541(10)	$\langle 5^-, 7^- \rangle$	$\langle 3 \rangle$		0.41					62			81We03
2571.3(2)	$\langle 15 \rangle$											05Ko0A
2597(5)	$\langle 11^+ \rangle$	$\langle 6 \rangle$		1.35								81We03
2635(5)	$1^+, 3^+$											05Ko0A
2662.1(11)												05Ko0A
2686(5)									16			71Un01
2742.5(11)												05Ko0A

(continued)

²⁰³Tl
81

E^*	$2J^\pi$	L	σ (p,t)	ε	L	S_N	S_N	σ (t, α)	σ (d,d')	$B(E2)$	$T_{1/2}$ or	Ref.
[keV]		(p,t)	$\mu\text{b/sr}$	(p,t)	(d, τ)		(t, α)	$\mu\text{b/sr}$	$\mu\text{b/sr}$	$10^{-3}ef$	Γ_{cm}	
2760(5)												05Ko0A
2810(5)									17			71Un01
2840(5)	$\langle 11^+ \rangle$											05Ko0A
2893												05Ko0A
2899.4(2)	$\langle 17 \rangle$											05Ko0A
2910(5)	$\langle 5, 7^+ \rangle$								37			71Un01
2955.5(11)									19			71Un01
2966.1(10)												05Ko0A
2987.5(11)												05Ko0A
2995(5)	$11^- - 15^-$											05Ko0A
3012.6(11)	$3^+, 5^+$				2	0.6						70Ro24
3049(5)	$\langle 9^+ \rangle$											05Ko0A
≈ 3081									23			71Un01
3104(8)												05Ko0A
≈ 3110									10			71Un01
3203(8)	$\langle 5 \rangle$											05Ko0A
3249.6(4)	$\langle 17^-, 19^- \rangle$											05Ko0A
3284(8)	$\langle 9 \rangle$											05Ko0A
3320.8(11)												05Ko0A
3397(8)												05Ko0A
3454(8)												05Ko0A
3514.7												05Ko0A
3514.6+x	$\langle 25^+ \rangle$											05Ko0A
3596(8)												05Ko0A
3643(8)												05Ko0A
3722(8)												05Ko0A
3859(8)												05Ko0A
3948(8)												05Ko0A
6418.79(15)	$\langle 1^- \rangle$										0.32 eV	05Ko0A
			81We03	81We03		70Ro24	77Fl04	77Fl04	71Un01	05Ko0A		Ref.

Additional data on this isotope can be found in [85Fi05, 72Wo21].

Abundance: 29.524(14) %.

* Doublet from angular distribution [81We03].

** Possibly the sum of two neighbour states [85Sc23].

 σ (t, α) and σ (d,d') were measured at 45° [77Fl04] and 150° [71Un01], respectively.

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

Energy levels and branching ratios [93Ra11, 05Ko0A]. Part 2

²⁰³Tl
81

E^*	$2J^\pi$	Branching ratios in percentage										
[keV]		E_f^* : $2J_f^\pi$:	0 1 ⁺	279 3 ⁺	680 5 ⁺	1044 3 ⁺	1065 ⟨5⟩ ⁺	1072 3 ⁺	1074 ⟨7 ⁺ ⟩	1114 ⟨1 ⁺ ,3 ⁺ ⟩	1184.36 ⟨7⟩ ⁺	1217.73 9 ⁺
279.196(1)	3 ⁺		100									
680.516(3)	5 ⁺		18(2)	82(2)								
1044.13(7)	3 ⁺		24(3)	46(4)	30(3)							
1065.42(5)	⟨5⟩ ⁺			90(3)	10(3)							
1072.37(9)	3 ⁺			100								
1073.95(5)	⟨7 ⁺ ⟩			100								
1113.8(1)*	1 ⁺ ,3 ⁺		32(4)	68(4)								
1184.28(6)	⟨7⟩ ⁺			88(2)	12(2)							
1215.59(6)	⟨1 ⁺ ⟩		9(2)	62(4)	29(3)			x				
1217.64(7)	9 ⁺				44(4)				53(2)		3.0(4)	
1232.36(11)	3 ⁺		9(4)	71(5)	20(3)							
1293.9(5)			100									
1305.78(18)	⟨3.5 ⁺ ⟩		≈69	≈31					x			
1320.14(11)	3 ⁺		2(1)	41(5)	23(3)	34(4)						
1334.9(3)	1 ⁺ –7 ⁺			32(13)	68(13)							
1407.2(4)	⟨1 ⁺ ⟩		93(9)	≈7								
1448.0(1)	⟨3 ⁺ ,5 ⁺ ⟩		12(4)	70(5)		18(4)						
1449.63(9)	11 [−]											100
1488.3(1)	⟨7,9⟩ ⁺										100	
1568.9(1)	5 ⁺			14(9)	41(8)		10(2)					
1611.0(1)	⟨3 ⁺ –7 ⁺ ⟩				17(7)				x	83(7)		
1638.9(5)	⟨3 ⁺ ,5 ⁺ ⟩		16(7)						84(7)			
1669.2(2)	⟨1,3⟩		58(9)	42(9)								
1683.7(1)	3 ⁺ ,5 ⁺			100								
1715.8(2)	⟨1 ⁺ –5 ⁺ ⟩		57(8)		43(8)							
1836.5(2)	[5 ⁺]				11(5)							
1839.8(2)			100									
1887.8(4)	⟨1–5⟩			100								
1901.1(6)	⟨1–5⟩		100	x								
1988.9(2)	⟨1–5⟩		47(6)				18(6)					
2076.1(1)	⟨5 ⁺ ⟩		12(3)			13(4)			20(4)			18(8)
2232.2(4)	⟨3,5⟩ ⁺		29(12)	71(12)								
2310.2(2)	3 ⁺ ,5 ⁺		7(3)				5(3)					
2342.2(3)	⟨1,3⟩		37(14)	63(14)								
6418.79(15)	⟨1 [−] ⟩		28	12(1)		0.3		0.4		17(2)		

Energy levels and branching ratios [93Ra11, 05Ko0A]. Part 3

²⁰³Tl₈₁

E^*	$2J^\pi$	Branching ratios in percentage										
[keV]	E_f^* : $2J_f^\pi$:	1232.36 3 ⁺	1320.14 3 ⁺	1334.9 ⟨1,3⟩	1407.2 1 ⁺	1448.05 3 ⁺	1449.73 11 [−]	1488.33 ⟨7,9⟩ ⁺	1611.04	1638.9 ⟨1 ⁺ ,3 ⁺ ⟩	1669.24 ⟨1,3⟩	
1568.9(1)	5 ⁺	35(7)										
1836.5(2)	[5 ⁺]						89(5)					
1988.9(2)	⟨1−5⟩								35(6)			
2076.1(1)	⟨5 ⁺ ⟩							10(3)				
2310.2(2)	3 ⁺ ,5 ⁺					15(6)						
6418.79(15)	⟨1 [−] ⟩	2.9(3)	0.2	0.1	14(1)	7(1)				2.0(5)	0.6(1)	

Energy levels and branching ratios [93Ra11, 05Ko0A]. Part 4

²⁰³Tl₈₁

E^*	$2J^\pi$	Branching ratios in percentage										
[keV]		E_f^* : $2J_f^\pi$:	1683.74 $\langle 3,5 \rangle^+$	1715.83 $\langle 1,3 \rangle$	1752.9 $\langle 3 \rangle^+$	1836.60	1839.97 $\langle 1,3 \rangle$	1887.8 $\langle 1,3 \rangle$	1901.1 $\langle 1,3 \rangle$	1935.2 $\langle 1,3 \rangle$	1991.9	2232.2 $\langle 3 \rangle^+$
2076.1(1)	$\langle 5^+ \rangle$	27(5)										
2310.2(2)	$3^+, 5^+$					28(5)	45(5)					
6418.79(15)	$\langle 1^- \rangle$	0.4		0.5	2		2(1)	0.8(2)	1.9(2)	0.7(2)	0.5	

Energy levels and branching ratios [93Ra11, 05Ko0A]. Part 5

²⁰³Tl₈₁

E^*	$2J^\pi$	Branching ratios in percentage									
[keV]	$E_f^*:$ $2J_f^\pi:$	2342.2 (1,3)	2427.5	2460.6	2489.1	2507.3	2662.1	2742.5	2955.5	2966.1	2987.5
6418.79(15)	$\langle 1^- \rangle$	1.4(4)	1.0	0.6	0.3	0.4	≈ 0.3	≈ 0.4	≈ 0.2	0.3	0.3

Energy levels and branching ratios [93Ra11, 05Ko0A]. Part 6

²⁰³Tl₈₁

E^* [keV]	$2J^\pi$	Branching ratios in percentage									
		E_f^* : $2J_f^\pi$:									
6418.79(15)	⟨1 ⁻ ⟩								3012.6		3320.8
										≈0.4	0.6

Energy levels and branching ratios [94Sc24].

²⁰⁴Tl
81

E^*	J^π	L	C^2S	$d\sigma/d\Omega$	L	I_p	L	I_t	$T_{1/2}$ or	Ref.
[keV]		(p,d)	(p,d)	$\mu\text{b/sr}$	(d,p)	rel.	(d,t)	rel.	Γ_{cm}	
0	2^-	1+3	0.5+1.5	1720	3	5	3	13	3.78(2) yr	80Sm02
139.97(20)	$\langle 1 \rangle^-$	1	0.36	720		7	3	4		64Mu07
146.03(20)	$\langle 0 \rangle^-$		incl						18.7(14) ns	80Sm02
300.2(3)	$\langle 1,2 \rangle^-$	1	0.81	1580		22				64Mu07
319.03(21)	$\langle 2,1 \rangle^-$	1	1.39	2740		incl	1	21		64Mu07
347.9(4)	$\langle 3 \rangle^-$	3	3.09	1560						80Sm02
414.06(14)	$\langle 4 \rangle^-$								<6 n	
425.06(17)	$\langle 2^-, 1^- \rangle$	3	0.17	180						80Sm02
432.5(4)	$\langle 1,2 \rangle^-$	1	0.058	incl						80Sm02
471.93(17)	$\langle 1 \rangle^-$	1	0.85	1240		14	1	12		64Mu07
488.29(19)	$0^- - 2^-$	1	0.32	620		incl				80Sm02
535.9(3)	$\langle 1,2 \rangle^-$	1	0.038	70						80Sm02
626.7(4)	$\langle 1^-, 2^- \rangle$	1	0.65	1280		4		4		80Sm02
629.5(4)	$\langle 1,2 \rangle^-$	1	incl	incl		incl				80Sm02
678.6(6)	$\langle 2,3 \rangle^-$	3	0.10	50			1	4		80Sm02
737.4(4)	$\langle 1,2 \rangle^-$	1	0.13	240		3	1	3		80Sm02
764.5(4)	$\langle 1,2 \rangle^-$	1	0.15	670		incl				80Sm02
800							1	2		
859(3)	$\langle 2^- \rangle$	$\langle 1+3 \rangle$	0.01+0.03	35						80Sm02
873.4(6)	$\langle 3 \rangle^-$	3	0.18	75						80Sm02
906.6(6)	2^-	1+3	0.08+0.2	200			1	2		80Sm02
966(3)	$\langle 3,4 \rangle^-$	3	0.23	110						80Sm02
1012.7(3)	$\langle 0-2 \rangle^-$	1	0.017	35						80Sm02
1046(3)	$\langle 2-4 \rangle^-$	3	0.32	140						80Sm02
1051.2(4)	$\langle 2 \rangle^-$		incl							80Sm02
1104.0(4)	$\langle 7 \rangle^+$	6	4.6*	260					63(2) u	80Sm02
1121.4(5)	$\langle 0-2 \rangle^-$	1	0.15	280			1	3		80Sm02
1135.0(20)	$0^- - 2^-$	1	0.096	180						80Sm02
1176(4)	$\langle 3,4 \rangle^-$	3	0.037	15						80Sm02
1201.4(3)	$0^- - 2^-$	1	0.11	190						80Sm02
1250.2(4)	$0^- - 2^-$	1	0.12	215						80Sm02
1289(6)	$\langle 6 \rangle^+$	6	4.4*	220			6	2		80Sm02
1375.0(11)	$\langle 0-2 \rangle^-$	[1]	0.08							80Sm02
1393.4(4)	$\langle 2 \rangle^-$	[3]	0.31	25						80Sm02
1405(6)	$0^- - 2^-$	1	0.015	25						80Sm02
1415.3(8)										
1424(8)	$\langle 2^- \rangle$	1+3	0.004+0.02	<10						80Sm02
1463(8)										
1474.0(11)				<10						80Sm02
1483.3(8)	$\langle 2 \rangle^-$									
1489(8)		$\langle 3 \rangle$	0.037	15						80Sm02
1516(8)		1	0.008	15						80Sm02
1545(8)		1	0.022	40						80Sm02
1584(5)		5	1.03	40						80Sm02
1652(5)		1	0.024	24						80Sm02

(continued)

²⁰⁴Tl
81

E^*	J^π	L	C^2S	$d\sigma/d\Omega$	L	I_p	L	I_t	$T_{1/2}$ or	Ref.
[keV]		(p,d)	(p,d)	$\mu\text{b/sr}$	(d,p)	<i>rel.</i>	(d,t)	<i>rel.</i>	Γ_{cm}	
1683(5)		1	0.036	55						80Sm02
1709(5)		5	1.54	70						80Sm02
1753(10)				<10						80Sm02
1810(10)		3		15						80Sm02
1834(5)		3	1.32	500			3			80Sm02
1908(5)		$\langle 1+3 \rangle$	0.06+0.2	140						80Sm02
1933(5)		3	0.35	135						80Sm02
1951(5)		3	0.29	80						80Sm02
1969(5)		1+3	<0.02+0.07	50						80Sm02
1997(5)				35			3			80Sm02
2049(5)		3	0.62	205			3			80Sm02
2084(10)				<10						80Sm02
2116(5)		3	0.15	60						80Sm02
2146(5)		$\langle 1+3 \rangle$	0.02+0.06	45						80Sm02
2166(5)		1	<0.02	25						80Sm02
2191(5)				20						80Sm02
2228(5)		3	0.76	250			3			80Sm02
2243(8)		$\langle 3 \rangle$	$\langle 0.3 \rangle$	90						80Sm02
2271(9)		3	0.18	55						80Sm02
2320(9)		$\langle 3 \rangle$	$\langle 0.03 \rangle$	<10						80Sm02
2374(6)		3	0.31	95						80Sm02
2397(6)		3	0.15	80						80Sm02
2420(9)		3	0.097	30						80Sm02
2475(9)		3	0.20	60						80Sm02
2492(8)		3	0.11	30						80Sm02
2570(6)		3	0.19	60						80Sm02
2642(8)		3	0.076	20						80Sm02
2673(6)		3	0.14	40						80Sm02
2705(8)		3	0.11	30						80Sm02
2728(8)		3	0.54	15						80Sm02
2796(10)		3	<0.04	<15						80Sm02
2807(10)		3 $\langle +1 \rangle$	<0.07	20						80Sm02
2831(10)		$\langle 1 \rangle$	$\langle 0.02 \rangle$	15						80Sm02
2934(10)				15						80Sm02
2968(10)				<10						80Sm02
2986(15)				<10						80Sm02
3002(15)				<10						80Sm02
3045(10)		$\langle 3 \rangle$	$\langle 0.05 \rangle$	15						80Sm02
3067(10)				25						80Sm02
3093(10)				10						80Sm02
3117(15)				<10						80Sm02

(continued)

²⁰⁴Tl
81

E^*	J^π	L	C^2S	$d\sigma/d\Omega$	L	I_p	L	I_t	$T_{1/2}$ or	Ref.
[keV]		(p,d)	(p,d)	$\mu\text{b/sr}$	(d,p)	rel.	(d,t)	rel.	Γ_{cm}	
3142(20)			80Sm02	<10 80Sm02		64Mu07		64Mu07		80Sm02 Ref.

Additional data on this isotope can be found in [64Mu07].

* Orbitals are assumed to be $3p_{1/2}$, $2f_{5/2}$, $1h_{9/2}$ and $1i_{13/2}$ for $L=1, L=3, L=5$ and $L=6$, respectively [80Sm02].Data for high spin states in ²⁰⁴Tl observed in the (d, α) reaction can be found in [77Fr11].

Energy levels and branching ratios [94Sc24]. Part 2

²⁰⁴Tl
81

E^*	J^π	Branching ratios in percentage									
		E_f^* : 0	139.97	146.03	300.2	319.03	347.9	414.06	425.06	432.5	471.93
[keV]		J_f^π : 2^-	$\langle 1 \rangle^-$	$\langle 0^- \rangle$	$\langle 1,2 \rangle^-$	$\langle 2,1 \rangle^-$	$\langle 3 \rangle^-$	$\langle 4^- \rangle$	$\langle 2^-, 1^- \rangle$	$\langle 1,2 \rangle^-$	$\langle 1 \rangle^-$
139.97(20)	$\langle 1 \rangle^-$	100									
146.03(20)	$\langle 0^- \rangle$	97	≈ 3								
300.2(3)	$\langle 1,2 \rangle^-$	x		x							
319.03(21)	$\langle 2,1 \rangle^-$	100	x								
347.9(4)	$\langle 3 \rangle^-$	100									
414.06(14)	$\langle 4^- \rangle$	100									
425.06(17)	$\langle 2^-, 1^- \rangle$	100	x	x			x				
432.5(4)	$\langle 1,2 \rangle^-$		100	x	x						
471.93(17)	$\langle 1 \rangle^-$	100	x	x	x	x					
488.29(19)	$0^- - 2^-$				x	x					
535.9(3)	$\langle 1,2 \rangle^-$		100	x	x	x			x		
626.7(4)	$\langle 1^-, 2^- \rangle$				x		x			x	x
629.5(4)	$\langle 1,2 \rangle^-$			x		x				x	x
678.6(6)	$\langle 2,3 \rangle^-$	100					x		x		
737.4(4)	$\langle 1,2 \rangle^-$	100		x	x	≤ 11					
764.5(4)	$\langle 1,2 \rangle^-$	100	x				≤ 27				x
873.4(6)	$\langle 3 \rangle^-$	x	x			x					
906.6(6)	2^-				x	x					
1012.7(3)	$\langle 0-2 \rangle^-$		69(10)								31(5)
1104.0(4)	$\langle 7 \rangle^+$							100			
1121.4(5)	$\langle 0-2 \rangle^-$	47(11)									
1135.0(20)	$0^- - 2^-$	100									
1375.0(11)	$\langle 0-2 \rangle^-$		100								
1474.0(11)		57(14)				43(14)					

Energy levels and branching ratios [94Sc24]. Part 3

²⁰⁴Tl₈₁

E^* [keV]	J^π	$E_f^*:$ $J_f^\pi:$	488.29	Branching ratios in percentage			
				535.9 $\langle 1,2 \rangle^-$	626.7 $\langle 1^-, 2^- \rangle$	629.5 $\langle 1,2 \rangle^-$	737.4 $\langle 1,2 \rangle^-$
535.9(3)	$\langle 1,2 \rangle^-$		x				
737.4(4)	$\langle 1,2 \rangle^-$		x		x	x	
764.5(4)	$\langle 1,2 \rangle^-$		x	x			
873.4(6)	$\langle 3 \rangle^-$			x			
906.6(6)	2^-			x			x
1051.2(4)	$\langle 2 \rangle^-$		100				
1121.4(5)	$\langle 0-2 \rangle^-$						53(21)
1201.4(3)	$0^- - 2^-$		100				

Energy levels and branching ratios [04Ko28, 93Ra10].

²⁰⁵Tl₈₁

E^* [keV]	$2J^\pi$	L	C^2S (d, τ)	C^2S (d, τ)	S_N (t, α)	S_N (p, α)	L	σ (d,d') $\mu\text{b/sr}$	$B(E2)$ $10^{-3}ef$	$T_{1/2}$ or Γ_{cm}	Ref.
0.0	1^+	0	1.27	1.09	1.4	0.54				Stable	94Gr07
203.75(1)	3^+	2	1.96	1.61	1.6	1.00		63	1.060	1.46(8) ns	94Gr07
619.44(2)	5^+	2	0.44	0.38	0.3	1.45		116	1.284	1.0(2) ps	94Gr07
923.78(3)	7^+	2	0.08			1.50		19			94Gr07
1140.8(1)	3^+	2	0.83	0.74	0.8	0.03		8			94Gr07
1174								2			71Un01
1180.0(1)	$\langle 3^+, 5^+ \rangle$										
1219.0(1)	1^+	0	0.20	0.18	0.3	0.07					94Gr07
1340.3(1)	3^+	2	0.43	0.37	0.4	0.09		6			94Gr07
1429.6(1)	9^+	4				1.40		31			91Ga11
1433.8(1)	1^+	0	0.08	0.06	0.3						94Gr07
1438.4(1)	$\langle 1-5^+ \rangle$										
1484.0(1)	11^-	5	7.35	6.31	5.3	0.54		5		4.5(5) ns	91Ga11
1553(3)	$\langle 7^+, 9^- \rangle$					0.12					91Ga11
1554.6(1)	$\langle 3^+ \rangle$										
1574.0(1)	5^+	$\langle 2 \rangle$	0.11	0.10		0.09		1			91Ga11
1637		$\langle 2 \rangle$	0.02					2			94Gr07
1668								1			71Un01
1694(3)	3^+					0.04					91Ga11
1711.1(1)											
1768		$\langle 2 \rangle$	0.05					2			94Gr07
1829(3)	1^+					0.09					91Ga11
1865.9(5)	5^+	2	0.59	0.54	$\langle 0.5 \rangle$	0.17		5			91Ga11
1916(3)	11^+					1.00					91Ga11
1946(3)	5^+	2	0.83	0.74	$\langle 0.6 \rangle$	0.25					91Ga11
1966.4(1)	$\langle 1^+, 3^+ \rangle$										
2002.5(1)	$\langle 3^+, 5^+ \rangle$										
2036(3)	5^+	2	0.97	0.85	$\langle 2.4 \rangle$						94Gr07

(continued)

²⁰⁵Tl
81

E^*	$2J^\pi$	L	C^2S	C^2S	S_N	S_N	L	σ (d,d')	$B(E2)$	$T_{1/2}$ or	Ref.
[keV]			(d, τ)	(d, τ)	(t, α)	(p, α)		$\mu\text{b/sr}$	$10^{-3}ef$	Γ_{cm}	
2054.5(1)	15^-	6,7				≈ 1.3					91Ga11
2089.0(1)	$\langle 1^+, 3^+ \rangle$										
2098.2(1)	5^+	2	0.26	0.28	$\langle 1.0 \rangle$						94Gr07
2124.6(1)	7^-	3				0.25					91Ga11
2163.3(1)	$\langle 1^+, 3^+ \rangle$										
2185(3)	$11^+, 13^-$	6,7				≈ 0.3					91Ga11
2220.6(4)	$\langle 3^+ \rangle$	2				0.04					91Ga11
2286(5)	$\langle 11^- \rangle$	5									91Ga11
2304.0(2)	$\langle 7^+, 9^- \rangle$	[2]	0.03			≈ 0.2	$\langle 4, 5 \rangle$				91Ga11
2316.3(1)	$\langle 1^+, 3^+ \rangle$				$\langle 0.1 \rangle$						
2339(3)	$\langle 7^+ \rangle$	4				0.10					91Ga11
2394.1(1)	17^-	9				0.75					91Ga11
2434(15)	5^+	2	0.10	0.06							94Gr07
2445(3)	$11^+, 13^+$					≈ 0.1	$\langle 6, 7 \rangle$				91Ga11
2486(3)	9^+	4				0.09		35 incl			91Ga11
2488.5(1)	$\langle 5^- \rangle$										
2498(15)	11^-	5	1.22	0.94							94Gr07
2537(5)											
2551.5(1)	19^-										
2554.2(2)	$\langle 1^+, 3^+ \rangle$										
2560.2(4)	$\langle 1^+, 3^+ \rangle$										
2584(3)	11^-	5	1.70	1.37	$\langle 0.4 \rangle$	0.17					91Ga11
2623.1(1)	$\langle 5^- \rangle$							85			71Un01
2630(3)	$\langle 9^+ \rangle$					0.30	$\langle 4, 3 \rangle$				91Ga11
2716(10)	$\langle 7^- \rangle$					≈ 0.2	$\langle 3, 4 \rangle$	107			91Ga11
2721.0(4)	$\langle 1^+, 3^+ \rangle$										
2750.5(5)	3^+	2				0.10					91Ga11
2756(15)	5^+	2	0.11	0.09							94Gr07
2838(3)	$\langle 5^+ \rangle$	2				0.20					91Ga11
2845(3)											
2885(3)	$\langle 5^+, 7^+ \rangle$	$\langle 2 \rangle$	0.07				$\langle 2, 4 \rangle$				94Gr07
2893.5(3)	$\langle 1^+, 3^+ \rangle$										
2923(3)	13^+	6				1.80					91Ga11
2942(5)*	$\langle 5^+ \rangle$	$\langle 2 \rangle$	0.08								94Gr07
2970(10)	$\langle 5, 7 \rangle^-$										
2996(5)		$\langle 2 \rangle$	0.06								94Gr07
3017.7(7)	$\langle 1^+, 3^+ \rangle$										
3072(8)											
3111(8)		$\langle 2 \rangle$	0.17								94Gr07
3133(8)	$\langle 7, 9 \rangle$										
3159(8)											
3177.1(9)	$\langle 1^+, 3^+ \rangle$							8			71Un01
3182(8)	$\langle 5^-, 7^- \rangle$										
3213(10)	$\langle 5, 7 \rangle^-$							12			71Un01
3258(10)	$\langle 5, 7 \rangle^-$							29			71Un01

(continued)

²⁰⁵Tl
81

E^*	$2J^\pi$	L	C^2S	C^2S	S_N	S_N	L	σ (d,d')	$B(E2)$	$T_{1/2}$ or	Ref.
[keV]			(d, τ)	(d, τ)	(t, α)	(p, α)		$\mu\text{b/sr}$	$10^{-3}ef$	Γ_{cm}	
3273(8)		$\langle 2 \rangle$	0.05								94Gr07
3287.5(7)	$\langle 1^+, 3^+ \rangle$										
3290.6(2)	25^+									$2.6(2) \mu\text{s}$	
3363(8)	$\langle 7, 9 \rangle$	$\langle 2 \rangle$	0.05								94Gr07
3427(8)	$\langle 7, 9 \rangle$							9			71Un01
3473(10)								4			71Un01
3511(8)		$\langle 2 \rangle$	0.03					4			94Gr07
3531(8)	$\langle 15^+, 17^+ \rangle$										
3540(10)	$\langle 9, 11 \rangle^-$							14			71Un01
3636(8)	9^+										
3692(8)	$\langle 15^+, 17^+ \rangle$										
3813(8)	$\langle 19^+, 21^+ \rangle$										
3960(8)											
3990(8)											
7251.5(7)	3^+									45(12) meV	
7646.2(2)	1^-									0.98(12) eV	04Ko28
			94Gr07		77Fl04			71Un01	05Ko0A		Ref.
				88Ra01							Ref.

Additional data on this isotope can be found in [04Wr01, 78Sm06, 72Wo21, 70Gl01].

Abundance: 70.476(14) %.

* Absent in [04Ko28].

Cross section of inelastic scattering (d,d') was measured at 150°, see data for the angles 120° and 125° in [71Un01].

Comparison of data on the (d, τ) reaction with theories can be found in [88Ra01].

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

Energy levels and branching ratios [04Ko28, 93Ra10]. Part 2

²⁰⁵Tl
81

E^*	$2J^\pi$	Branching ratios in percentage										
		E_f^* :	0.0	204	619	924	1141	1180	1219	1340	1429.58	1433.81
[keV]		$2J_f^\pi$:	1^+	3^+	5^+	7^+	3^+	$\langle 3^+, 5^+ \rangle$	1^+	3^+	9^+	1^+
203.75(1)	3^+		100									
619.44(2)	5^+		7.2	92.8								
923.78(3)	7^+			100								
1140.8(1)	3^+		20	59	21							
1180.0(1)	$\langle 3^+, 5^+ \rangle$		1.7	50	32	16						
1219.0(1)	1^+		80	20								
1340.3(1)	3^+		7	75	18							
1429.6(1)	9^+				17	83						
1433.8(1)	1^+		65	35								
1438.4(1)	$\langle 1-5^+ \rangle$		7	93								
1484.0(1)	11^-										100	

(continued)

²⁰⁵Tl
81

E^* [keV]	$2J^\pi$	Branching ratios in percentage										
		$E_f^*:$ $2J_f^\pi:$	0.0 1 ⁺	204 3 ⁺	619 5 ⁺	924 7 ⁺	1141 3 ⁺	1180 ⟨3 ⁺ ,5 ⁺ ⟩	1219 1 ⁺	1340 3 ⁺	1429.58 9 ⁺	1433.81 1 ⁺
1554.6(1)	⟨3 ⁺ ⟩		≈5	32		45		17(3)				
1574.0(1)	5 ⁺		100									
1711.1(1)							33		67(3)			
1865.9(5)	5 ⁺				≈20				80			
1966.4(1)	⟨1 ⁺ ,3 ⁺ ⟩		62	15					23(4)			
2002.5(1)	⟨3 ⁺ ,5 ⁺ ⟩				90	10						
2089.0(1)	⟨1 ⁺ ,3 ⁺ ⟩		30	33	37							
2098.2(1)	5 ⁺		76		24							
2124.6(1)	7 ⁻				100							
2163.3(1)	⟨1 ⁺ ,3 ⁺ ⟩		21	48	31							
2220.6(4)	⟨3 ⁺ ⟩		≈38						≈62			
2304.0(2)	⟨7 ⁺ ,9 ⁻ ⟩						100					
2316.3(1)	⟨1 ⁺ ,3 ⁺ ⟩			21	79							
2488.5(1)	⟨5 ⁻ ⟩			40	30	30						
2554.2(2)	⟨1 ⁺ ,3 ⁺ ⟩		≈57	≈43								
2560.2(4)	⟨1 ⁺ ,3 ⁺ ⟩		≈65		≈19		≈16					
2623.1(1)	⟨5 ⁻ ⟩				28	22				50(5)		
2721.0(4)	⟨1 ⁺ ,3 ⁺ ⟩		≈22	≈34	≈25							
2750.5(5)	3 ⁺		≈50		≈50							
2893.5(3)	⟨1 ⁺ ,3 ⁺ ⟩			≈24	≈14			≈33				
3017.7(7)	⟨1 ⁺ ,3 ⁺ ⟩						≈62					
3177.1(9)	⟨1 ⁺ ,3 ⁺ ⟩		≈45									
3287.5(7)	⟨1 ⁺ ,3 ⁺ ⟩		100									
7251.5(7)	3 ⁺		x	x								
7646.2(2)	1 ⁻		58	0.7			3.6			0.8		1.2

Energy levels and branching ratios [04Ko28, 93Ra10]. Part 3

²⁰⁵Tl
81

E^* [keV]	$2J^\pi$	Branching ratios in percentage										
		$E_f^*:$ $2J_f^\pi:$	1483.96 11 ⁻	1553 ⟨7 ⁺ ,9 ⁻ ⟩	1554.64 ⟨3 ⁺ ⟩	1574.03 5 ⁺	1865.9 5 ⁺	1966.38 ⟨1 ⁺ ,3 ⁺ ⟩	2002.47 ⟨3 ⁺ ,5 ⁺ ⟩	2054.51 15 ⁻	2089.04 ⟨1 ⁺ ,3 ⁺ ⟩	2098.22 5 ⁺
2054.5(1)	15 ⁻		100									
2394.1(1)	17 ⁻									100		
2551.5(1)	19 ⁻									35		
2721.0(4)	⟨1 ⁺ ,3 ⁺ ⟩						≈19					
2893.5(3)	⟨1 ⁺ ,3 ⁺ ⟩								≈29			
3177.1(9)	⟨1 ⁺ ,3 ⁺ ⟩			≈55								
7646.2(2)	1 ⁻				0.8	1.4		6.6	3.1		3.1	2.6

Energy levels and branching ratios [04Ko28, 93Ra10]. Part 4

²⁰⁵Tl
81

E^*	$2J^\pi$	Branching ratios in percentage									
		E_f^* :	2163.27	2220.6	2304.00	2316.28	2394.11	2551.47	2554.20	2560.2	2721.0
[keV]		$2J_f^\pi$:	$\langle 1^+, 3^+ \rangle$	$\langle 3^+ \rangle$	$\langle 7^+, 9^- \rangle$	$\langle 1^+, 3^+ \rangle$	17^-	19^-	$\langle 1^+, 3^+ \rangle$	$\langle 1^+, 3^+ \rangle$	$\langle 1^+, 3^+ \rangle$
2551.5(1)	19^-						65				
3017.7(7)	$\langle 1^+, 3^+ \rangle$				≈ 38						
3290.6(2)	25^+							100			
7646.2(2)	1^-		0.5	2.3	0.8	0.9			2.3	2.9	2.9

Energy levels and branching ratios [04Ko28, 93Ra10]. Part 5

²⁰⁵Tl
81

E^* [keV]	$2J^\pi$	Branching ratios in percentage					
		E_f^* : $2J_f^\pi$:	2750.5 3^+	2893.5 $\langle 1^+, 3^+ \rangle$	3017.7 $\langle 1^+, 3^+ \rangle$	3177.1 $\langle 1^+, 3^+ \rangle$	3287.5 $\langle 1^+, 3^+ \rangle$
7646.2(2)	1^-		1.6	2.1	0.8	0.6	0.7

Energy levels and branching ratios [99Br39].

²⁰⁶Tl
81

E^* [keV]	J^π	L (d,p)	σ (d,p) $\mu\text{b/sr}$	L (t, α)	σ (t, α) $\mu\text{b/sr}$	L (d, α)	σ (d, α) $\mu\text{b/sr}$	$T_{1/2}$ or Γ_{cm}	Ref.	Branching ratios in percentage				
										E_f^* : J_f^π :	0.0 0 ⁻	266 2 ⁻	305 1 ⁻	635 649 2 ⁻ 1 ⁻
0.0	0^-	1	420	0	160	1	17	4.200(17) m	70Le09					
265.83(1)	2^-	3	110	2	300	3	58	2.3(2) ns	70Le09	100				
304.90(1)	1^-	1	1300	0	600	1	19	4.2(14) ps	70Le09	100				
635.02(5)	2^-	$\langle 1 \rangle$	560			1+3	40	4.0(9) ps	70Le09	0.9	38(8)		62(14)	
649.42(5)	1^-	$\langle 3 \rangle$	240	2	520	$\langle 1 \rangle$	$\langle 10 \rangle$		70Le09	82	0.11		18	
801.36(4)	$\langle 3 \rangle^-$		180	2	35	3	23	2.4(7) ps	70Le09	100				
939.9														100
952.17(6)	4^-					5	21	42(10) ps	70Le09	100				
998.17(7)	2^-		130	2	240	1+3	23		70Le09	100				
1079.6(7)	$\langle 1^-, 2 \rangle$													
1118.0(6)	$1^-, 2^-$		130	2	100		<0.5		70Le09	x	100			
1206(4)														
1257(10)				$\langle 0, 5 \rangle$	24				70Ba07					
1334(4)	$1^-, 2^-$		60	2	60	1	13		70Le09					
1360.3(2)	$\langle 0^- \rangle$					1	7		70Le09				61(18)	39(24)
1400(3)	$0, 1, 2$													
1405.5(1)	$\langle 5 \rangle^+$			5	350	$\langle 4 \rangle$	50	78(1) ns	70Le09		6.0(17)			
1453(4)						$\langle 3, 4 \rangle$	25		70Le09					
1473(4)														
1483(4)							$\langle 10 \rangle$		70Le09					
1489.8(4)	$0, 1, 2$			2	40				70Ba07					100
1621.7(1)	$\langle 6, 7 \rangle^+$					$\langle 6 \rangle$	$\langle 27 \rangle$	10.1(6) ns	70Le09					

(continued)

²⁰⁶Tl
81

E^*	J^π	L	σ (d,p)	L	σ (t, α)	L	σ (d, α)	$T_{1/2}$ or	Ref.	Branching ratios in percentage					
[keV]		(d,p)	$\mu\text{b/sr}$	(t, α)	$\mu\text{b/sr}$	(d, α)	$\mu\text{b/sr}$	Γ_{cm}		E_{f}^* :	0.0	266	305	635	649
										J_{f}^π :	0 ⁻	2 ⁻	1 ⁻	2 ⁻	1 ⁻
1631(4)	2 ⁻					$\langle 3 \rangle$	$\langle 18 \rangle$		70Le09						
1650(4)	$\langle 1,2 \rangle^-$			2	134	$\langle 1 \rangle$	$\langle 10 \rangle$		70Le09						
1710.5(2)	$\langle 5,6 \rangle^+$			5	530	6	14		70Le09						
1800(5)	$\langle 3^+ \rangle$					4+2	15		70Le09						
1844(4)	1 ⁻ , 2 ⁻			2	260	1	9		70Le09						
1983(5)	$\langle 5^+ \rangle$			5	30	4	5		70Le09						
1988(6)	0, 1, 2														
2059(6)	2 ⁻ , 3 ⁻			2	660	$\langle 3 \rangle$	10		70Le09						
2078.9(2)	$\langle 8^+ \rangle$					$\langle 8 \rangle$	6		70Le09						
2126(6)	$\langle 5^+, 6^+ \rangle$			5	180	$\langle 6 \rangle$	$\langle 5 \rangle$		70Le09						
2170(7)						$\langle 4, 3 \rangle$	$\langle 5 \rangle$		70Le09						
2217(7)	2 ⁻ -4 ⁻					3	65		70Le09						
2243(7)						$\langle 6 \rangle$	6		70Le09						
2264(10)	5 ⁺ , 6 ⁺			5	40		$\langle 2 \rangle$		70Le09						
2326.2(2)	$\langle 8^+ \rangle$						$\langle 2 \rangle$		70Le09						
2347(7)							$\langle 2 \rangle$		70Le09						
2411(7)						$\langle 6 \rangle$	13		70Le09						
2442(7)							$\langle 2 \rangle$		70Le09						
2463(7)	2 ⁻ , 3 ⁻			2	50		$\langle 5 \rangle$		70Le09						
2499(6)	1 ⁻ , 2 ⁻			2	115	1	3		70Le09						
2530(8)						$\langle 3, 4 \rangle$	4		70Le09						
2581(7)	$\langle 4^+, 5^+ \rangle$		1100						65Er02						
2594(7)	$\langle 4^+, 5^+ \rangle$		1000						65Er02						
2617(8)						$\langle 4 \rangle$	8		70Le09						
2643.1(2)	$\langle 12^- \rangle$					$\langle 4 \rangle$	19	3.74(3) m	70Le09						
2646(8)															
2708(8)				2	14		$\langle 3 \rangle$		70Le09						
2728(8)							17		70Le09						
2807(8)				2	30	$\langle 1 \rangle$	5		70Le09						
2828(7)			430						65Er02						
2870(6)			300			4	$\langle 19 \rangle$		70Le09						
2894(6)			180				$\langle 2 \rangle$		70Le09						
2936(9)						$\langle 6 \rangle$	4		70Le09						
2977(9)							$\langle 2 \rangle$		70Le09						
3012(6)			380				$\langle 2 \rangle$		70Le09						
3023(9)						$\langle 4, 3 \rangle$	7		70Le09						
3046(9)	$\langle 0^- - 2^- \rangle$					1	3		70Le09						
3106(9)							$\langle 2 \rangle$		70Le09						
3123(9)							$\langle 2 \rangle$		70Le09						
3181(10)							$\langle 5 \rangle$		70Le09						
3225(10)							$\langle 7 \rangle$		70Le09						
3278(10)							$\langle 5 \rangle$		70Le09						
3330(10)						$\langle 4 \rangle$	20		70Le09						
3363(7)			480						65Er02						
3424(7)			240						65Er02						

(continued)

²⁰⁶Tl
81

E^*	J^π	L	σ (d,p)	L	σ (t, α)	L	σ (d, α)	$T_{1/2}$ or	Ref.	Branching ratios in percentage					
[keV]		(d,p)	$\mu\text{b/sr}$	(t, α)	$\mu\text{b/sr}$	(d, α)	$\mu\text{b/sr}$	Γ_{cm}		E_f^* :	0.0	266	305	635	649
										J_f^π :	0 ⁻	2 ⁻	1 ⁻	2 ⁻	1 ⁻
3452(7)			620						65Er02						
3538(7)			240						65Er02						
3564(7)			180						65Er02						
3638(7)			920						65Er02						
3717(7)			110						65Er02						
3784(7)			510						65Er02						
3871(6)	$\langle 3^- - 5^- \rangle$		450						65Er02						
3900(7)			210						65Er02						
3938(7)			190						65Er02						
3976(7)			350						65Er02						
4126(7)			810						65Er02						
4200(7)			2100						65Er02						
4238(7)	$\langle 3^+ \rangle$		4000						65Er02						
4273(7)	$\langle 2^+ \rangle$		4400						65Er02						
4426(7)	$\langle 1^+ \rangle$		7000						65Er02						
4491(7)	$\langle 0^+ \rangle$		3500						65Er02						
4555(7)			940						65Er02						
4622(7)			2000						65Er02						
4680(7)			1200						65Er02						
4739(7)			1200						65Er02						
4775(7)			1100						65Er02						
4879(7)			770						65Er02						
4904(7)			890						65Er02						
4941(7)			3000						65Er02						
5015(7)			2200						65Er02						
5055(7)			2900						65Er02						
5091(7)			2400						65Er02						
5140(7)			1300						65Er02						
			65Er02		70Ba07		70Le09		Ref.						

Additional data on this isotope can be found in [04Br19, 00Re12, 77Fr11, 65Mu04].

The mechanism of $^{208}\text{Pb}(d, \alpha)^{206}\text{Tl}$ reaction was studied in [87Ha25].

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

Energy levels and branching ratios [99Br39]. Part 2

²⁰⁶Tl
81

E^*	J^π	Branching ratios in percentage							
[keV]		E_f^* :	801.36	952.17	1405.47	1621.72	1710.54	2078.92	2326.17
		J_f^π :	$\langle 3 \rangle^-$	4 ⁻	$\langle 5 \rangle^+$	$\langle 6, 7 \rangle^+$	$\langle 5, 6 \rangle^+$	$\langle 8^+ \rangle$	$\langle 8^+ \rangle$
952.17(6)	4 ⁻		x						
1079.6(7)	$\langle 1^-, 2 \rangle$		100						
1405.5(1)	$\langle 5 \rangle^+$		1.0(7)	93(6)					
1621.7(1)	$\langle 6, 7 \rangle^+$				100				

(continued)

²⁰⁶Tl
81

E^* [keV]	J^π	Branching ratios in percentage							
		$E_f^*:$ $J_f^\pi:$	801.36 $\langle 3 \rangle^-$	952.17 4^-	1405.47 $\langle 5 \rangle^+$	1621.72 $\langle 6, 7 \rangle^+$	1710.54 $\langle 5, 6 \rangle^+$	2078.92 $\langle 8^+ \rangle$	2326.17 $\langle 8^+ \rangle$
1710.5(2)	$\langle 5, 6 \rangle^+$				x	x			
2078.9(2)	$\langle 8^+ \rangle$					95(11)	5(3)		
2326.2(2)	$\langle 8^+ \rangle$					14(9)	4	82(16)	
2643.1(2)	$\langle 12^- \rangle$					92(8)		6.9(11)	0.9(4)

Energy levels and branching ratios [93Ma73].

²⁰⁷Tl
81

E^* [keV]	$2J^\pi$	L (d, τ)	C^2S (d, τ)	$n\ell j$	C^2S (d, τ)	C^2S (t, α)	C^2S (t, α)	L (t,p)	σ (t,p) <i>rel.</i>	$T_{1/2}$ or Γ_{cm}	Ref.
0	1^+	0	1.70	3s1/2	$\langle 1.8 \rangle$	1.26	1.9	0	100	4.77(2) m	92Gr19
351.059(20)	3^+	2	3.58	2d3/2	3.8	4.35	4.6		14	30(7) ps	92Gr19
1348.1(3)	11^-	5	10.55	1h11/2	7.7	7.28	10.7			1.33(11) s	92Gr19
1682.7(3)	5^+	2	3.75	2d5/2	3.5	3.13	3.7		6		84La26
2675.2(3)		$\langle 2 \rangle$	0.03	2d5/2					15		92Gr19
2709.1(3)	$\langle 5^- \rangle$								9		69Ha11
2911.9(3)	$\langle 7^-, 9^- \rangle$								7		69Ha11
2985.3(3)	$\langle 7^-, 9^- \rangle$								6		69Ha11
3104.4(3)	$\langle 7 \rangle$										
3143.0(3)	$\langle 7^-, 11^- \rangle$								10		69Ha11
3210(5)	$X^{(-)}$								3		69Ha11
3272.7(3)	$\langle 7 \rangle$										
3295.6(3)	$\langle 9^-, 11^- \rangle$								16		69Ha11
3335.6(3)	$\langle 9^-, 11^- \rangle$								incl		69Ha11
3358.2(3)	$7^- - 11^-$								14		69Ha11
3445(10)	$X^{(-)}$								≈ 3		
3474(6)	7^+	4	2.17	1g7/2	3.5	6.43	3.2				92Gr19
3558(6)	$X^{(-)}$										
3592(1)									11		69Ha11
3791(6)											
3856(6)											
3904(6)											
3958(6)											
3991(5)	$7^+, 9^+$	4	0.69	1g7/2							92Gr19
4078(6)											
4113(10)											
4292(4)	$3^+, 5^+$		<0.1	2d5/2							92Gr19
4337(10)	1^+		<0.1	3s1/2				0	51		92Gr19
4432(6)		$\langle 4, 5 \rangle$	0.4*	1g7/2							92Gr19
4503(6)											
4521(10)	1^+		<0.1	3s1/2				0	17		92Gr19
4589(6)	$3^+, 5^+$		<0.2	2d5/2					24		92Gr19

(continued)

²⁰⁷Tl
81

E^*	$2J^\pi$	L	C^2S	$n\ell j$	C^2S	C^2S	C^2S	L	σ (t,p)	$T_{1/2}$ or	Ref.
[keV]		(d, τ)	(d, τ)		(d, τ)	(t, α)	(t, α)	(t,p)	rel.	Γ_{cm}	
4696(6)	5 ⁺	2	0.16	2d5/2							92Gr19
4737(6)											
4888(6)		4	1.26	1g7/2							92Gr19
4920(6)											
4982(6)		⟨4⟩	0.87	1g7/2							92Gr19
5037(6)			0.08	2d5/2							92Gr19
5800											
6200											
7400											
7750											
8050											
						77Fl04			69Ha11		Ref.
					84La26		70Ba07				Ref.

Additional data on this isotope can be found in [04Br19, 00Re12, 70Ba07, 70Ro24].

* Expected configuration 1g7/2,1h11/2 [92Gr19]

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

Energy levels and branching ratios [93Ma73]. Part 2

²⁰⁷Tl
81

E^*	$2J^\pi$	Branching ratios in percentage										
[keV]		E_{f}^* :	0	351	1348	1683	2675	2709.1	2911.9	2985.3	3104.4	3143.0
		$2J_{\text{f}}^\pi$:	1^+	3^+	11^-	5^+		$\langle 5^- \rangle$	$\langle 7^-, 9^- \rangle$	$\langle 7^-, 9^- \rangle$	$\langle 7 \rangle$	
351.059(20)	3^+		100									
1348.1(3)	11^-		3.8(10)	96								
1682.7(3)	5^+		14	86								
2675.2(3)			17			83						
2709.1(3)	$\langle 5^- \rangle$			100								
2911.9(3)	$\langle 7^-, 9^- \rangle$			5.0	95							
2985.3(3)	$\langle 7^-, 9^- \rangle$			11	89							
3104.4(3)	$\langle 7 \rangle$			4.2	96					x		
3143.0(3)	$\langle 7^- - 11^- \rangle$				x			x		x		
3272.7(3)	$\langle 7 \rangle$					61	12	27				
3295.6(3)	$\langle 9^-, 11^- \rangle$				76					24	x	x
3335.6(3)	$\langle 9^-, 11^- \rangle$			0.8	99						x	x
3358.2(3)	$7^- - 11$				58				32		10	
3592(1)						100						

Energy levels and branching ratios [86Ma17].

²⁰⁸Tl₈₁

E^*	J^π	$T_{1/2}$ or	Ref.
[keV]		Γ_{cm}	
0.0	5^+	3.053(4) m	
39.858(4)	4^+	6.5(8) ps	03Zh19
327.94(6)	5^+	>0.1 ps	03Zh19
473.57(18)	$\langle 3^+-5^+ \rangle$		
492.69(10)	$\langle 3^+, 5^+ \rangle$		
620.4(3)	$\langle 6^+ \rangle$		
760			03Zh19
803			03Zh19
1362			03Zh19
1652			03Zh19
1728			03Zh19

Additional data on this isotope can be found in [03Zh19, 03Zh06, 95Lh02].

Energy levels and branching ratios [86Ma17]. Part 2

²⁰⁸Tl₈₁

E^*	J^π	$E_f^*:$ $J_f^\pi:$	Branching ratios in percentage	
[keV]			0.0 $5^{(+)}$	39.858 $4^{(+)}$
39.858(4)	4^+		100	
327.94(6)	5^+		29(1)	71(3)
473.57(18)	$\langle 3^+-5^+ \rangle$		78(5)	22(5)
492.69(10)	$\langle 3^+, 5^+ \rangle$		1.7	98(3)
620.4(3)	$\langle 6^+ \rangle$		82	18(8)

Energy levels and branching ratios [91Ma16].

²⁰⁹Tl₈₁

E^*	$2J^\pi$	I_α	$T_{1/2}$ or	Ref.
[keV]		arb.u	Γ_{cm}	
0.0	$\langle 1^+ \rangle$	95	2.161(7) m	76El07
323.81(5)	$\langle 3^+ \rangle$	95		76El07
739(10)		10		76El07
868.3(2)				
947(10)		13		76El07
1230(10)		10		76El07

(continued)

²⁰⁹Tl
81

E^*	$2J^\pi$	I_α	$T_{1/2}$ or	Ref.
[keV]		arb.u	Γ_{cm}	
1369(10)	$\langle 11^- \rangle$	25		76El07
1748(10)	$\langle 5^+ \rangle$	50		76El07

Additional data on this isotope can be found in [94Ar23, 93El08].

I_α – yield of α -particles from the (t, α) reaction at 42° in number of tracks per 200 μm [76El07].

$T_{1/2}$ and uncertainties in E^* are given in Supplement.

Energy levels and branching ratios [91Ma16]. Part 2

²⁰⁹Tl
81

E^*	$2J^\pi$		Branching ratios in percentage	
[keV]		$E_{\text{f}}^*:$ $2J_{\text{f}}^\pi:$	0.0 $\langle 1^+ \rangle$	324 $\langle 3^+ \rangle$
323.81(5)	$\langle 3^+ \rangle$		100	
868.3(2)			43(5)	57(6)