

Energy levels and branching ratios [85Sz01, 94Si18, 04Si16].

¹⁴⁹Tb
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E^*	$2J^\pi$	L	$d\sigma/d\Omega$	S'	$S_{j\ell}$	σ (τ ,d)	$S_{\ell j}$	$T_{1/2}$ or	Ref.	Branching ratios in percentage					
[keV]		(τ ,d)	$\mu\text{b/sr}$	(τ ,d)	(τ ,d)	$\mu\text{b/sr}$	(τ ,d)	Γ_{cm}		E_{f}^* : $2J_{\text{f}}^\pi$:	0.0 1 ⁺	35.8 11 ⁻	101 $\langle 3 \rangle^+$	207 $\langle 5 \rangle^+$	460 $\langle 7^+ \rangle$
0.0	1 ⁺	0	145(4)	3.1(5)	1.5	534	1.6	4.118(25) h	84DeZV						
35.8(1)	11 ⁻	5	88(3)	22(3)	10.7	177	10.2	4.16(4) m	90Ma68						
100.8(1)	$\langle 3 \rangle^+$	2	132(3)	6.1(9)	3.0	459	3.3	0.45(5) ns	90Ma68	100					
207.0(1)	$\langle 5 \rangle^+$	2	89(3)	3.6(5)	1.8	275	1.6	≤ 0.2 ns	90Ma68				100		
460.4(1)	$\langle 7^+ \rangle$	4	11(2)	1.9(6)	1.0	≈ 19	≈ 1.3		90Ma68				5(1)	95(4)	
689.4(1)	$\langle 7^- \rangle$		6(1)						90Ma68			100			
741.7(1)	$\langle 5^+ \rangle$		10(1)						90Ma68	59(2)			16(3)	25(2)	
754.9(2)	3 ⁺ , 5 ⁺									41(6)			59(9)		
822.3(2)	15 ⁻											100			
825.2(1)	$\langle 9^- \rangle$											99(6)			
837.2(1)	$\langle 5^+ \rangle$									11(2)			89(5)		
840.6(2)	$\langle 13^- \rangle$											100			
844.3(2)	$\langle 7^+ \rangle$													100	
869.8(2)	$\langle 5^+ \rangle$		13(1)						90Ma68				57(9)	43(5)	
872.6(2)	$\langle 11^- \rangle$											100			
952.9(2)	$\langle 3^- \rangle$		19(2)						90Ma68	100					
0+X	2J														
970.4(1)	$\langle 7^+ \rangle$												74(7)	10(2)	16(2)
982.2(1)	$\langle 9^+ \rangle$													94(6)	4.1(7)
1048(4)			3(1)						90Ma68						
1088.5(3)	$\langle 5^- \rangle$												100		
1120.1(2)	$\langle 7^+ \rangle$													100	
1129.0(2)	15 ⁺														
1184.0(2)	$\langle 9^- \rangle$														
1189.0(3)	$\langle 7^- \rangle$											54(8)			46(7)
1205.42(17)	$\langle 9^+ \rangle$											55(9)			25(4)
1206.0(2)	$\langle 9^- \rangle$											70(11)			
1250.65(18)	$\langle 5^- \rangle$													41(7)	
1272.8(2)	$\langle 9^+ \rangle$											55(13)			45(7)
0+U	2J														
1381.94(16)	$\langle 7^- \rangle$													49(5)	
1382.1(2)	$\langle 19 \rangle^-$														
1420.6(2)	$\langle 9^- \rangle$											26(6)			11(4)
1426.0(3)	$\langle 9^- \rangle$											81(6)			
0+Y	2J														
0+V	2J														
1454.5(3)	$\langle 17^- \rangle$														
1461.4(3)	5 ⁻ , 7 ⁻													100	
1473.8(3)	$\langle 11^- \rangle$											100			
1508.5(2)	$\langle 7^- \rangle$													100	
0+Z	2J														
1568.8(3)	$\langle 15^- \rangle$														
1591.0(3)	$\langle 17^+ \rangle$														
1672.7(2)	$\langle 23 \rangle^-$														
1697.6(2)	$\langle 9^- \rangle$											58(5)			

(continued)

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E^*	$2J^\pi$	L	$d\sigma/d\Omega$	S'	$S_{j\ell}$	σ (τ, d)	$S_{\ell j}$	$T_{1/2}$ or	Ref.	Branching ratios in percentage					
[keV]		(τ, d)	$\mu b/sr$	(τ, d)	(τ, d)	$\mu b/sr$	(τ, d)	Γ_{cm}		E_f^* : $2J_f^\pi$:	0.0 1 ⁺	35.8 11 ⁻	101 $\langle 3 \rangle^+$	207 $\langle 5 \rangle^+$	460 $\langle 7^+ \rangle$
740.10+X	$2J+4$														
1728.31(13)	$\langle 5^- \rangle$												27(2)	46(4)	
1734.8(2)	$\langle 7^- \rangle$														100
1776.7(2)	$\langle 7^- \rangle$													22(4)	47(8)
1813.3(2)	$\langle 21 \rangle^-$														
1841.73(13)	$\langle 9^- \rangle$											53(4)			
1867.8(2)	$\langle 19 \rangle^+$														
1876.96(12)	$\langle 5^- \rangle$												63(3)	3.5(4)	1.5(3)
1879.0(4)	$\langle 17^+ \rangle$														
1883.09(16)	$\langle 9^- \rangle$														26(2)
1953.1(2)	$\langle 9^- \rangle$											50(3)			
2015.1(4)															
2065.43(13)	$\langle 7^- \rangle$											27(2)		9(1)	
2074.2(2)	$\langle 7^- \rangle$											18(3)		42(6)	
646.2+Y	$2J+4$														
2161.2(3)	$\langle 9^- \rangle$														
824.0+U	$2J+4$														
803.6+V	$2J+4$														
2302.9(3)	$\langle 27 \rangle^-$														
786.0+Z	$2J+4$														
2350.0(2)	$\langle 23 \rangle^+$														
2368.7(4)	$\langle 21^+ \rangle$														
2492.2(3)	$\langle 21^+ \rangle$														
1534.8+X	$2J+8$														
2518.4(2)	$\langle 27 \rangle^+$							2.4(2)	ns						
2664.3(3)	$\langle 25 \rangle^-$														
2666.9(3)	$\langle 25^+ \rangle$														
2762.7(3)	$\langle 25^- \rangle$														
1343.6+Y	$2J+8$														
2812.5(2)	$\langle 29 \rangle^+$														
1701.4+U	$2J+8$														
1657.0+V	$2J+8$														
3141.6(3)	$\langle 31 \rangle^+$														
1623.3+Z	$2J+8$														
2381.9+X	$2J+12$														
3526.8(3)	$\langle 33 \rangle^+$														
2091.7+Y	$2J+12$														
3603.3(3)	$\langle 31^- \rangle$														
2633.3+U	$2J+12$														
3990.5(4)															
2564.8+V	$2J+12$														
2513.9+Z	$2J+12$														
4061.2(4)	$\langle 31^+ \rangle$														
4106.9(5)	$\langle 31^+ \rangle$														
4208.1(3)	$\langle 33 \rangle^+$														

(continued)

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E^*	$2J^\pi$	L	$d\sigma/d\Omega$	S'	$S_{j\ell}$	σ (τ, d)	$S_{\ell j}$	$T_{1/2}$ or Ref.	Branching ratios in percentage					
[keV]		(τ, d)	$\mu\text{b/sr}$	(τ, d)	(τ, d)	$\mu\text{b/sr}$	(τ, d)	Γ_{cm}	E_f^* :	0.0	35.8	101	207	460
									$2J_f^\pi$:	1 ⁺	11 ⁻	$\langle 3 \rangle^+$	$\langle 5 \rangle^+$	$\langle 7^+ \rangle$
3281.3+X	2J+16													
2890.7+Y	2J+16													
4463.0(3)	$\langle 35 \rangle^+$													
4673.5(3)	$\langle 37 \rangle^+$													
4923.0(3)	$\langle 39 \rangle^+$													
3523.1+V	2J+16													
3619.0+U	2J+16													
3454.9+Z	2J+16													
5147.9(3)	$\langle 41 \rangle^+$													
3741.2+Y	2J+20													
4234.8+X	2J+20													
5257.5(3)	$\langle 39^- \rangle$													
5618.5(4)	$\langle 41^- \rangle$													
5712.0(3)	$\langle 43^- \rangle$													
5734.8(3)	$\langle 45 \rangle^+$													
5965.9(4)	$\langle 43^+ \rangle$													
4532.8+V	2J+20													
4447.5+Z	2J+20													
4656.6+U	2J+20													
6025.1(4)	$\langle 43^- \rangle$													
4643.2+Y	2J+24													
6111.9(3)	$\langle 45^- \rangle$													
5242.0+X	2J+24													
6220.6(4)	$\langle 45^- \rangle$													
6400.3(4)	$\langle 47^- \rangle$													
6788.2(3)	$\langle 47 \rangle^+$													
6873.9(4)	$\langle 47 \rangle^+$													
5491.4+Z	2J+24													
5597.3+Y	2J+28													
5593.5+V	2J+24													
5744.9+U	2J+24													
7112.4(4)	$\langle 49 \rangle^+$													
7193.8(4)	$\langle 49 \rangle$													
6302.7+X	2J+28													
7740.5(5)	$\langle 51 \rangle$													
7976.2(4)	$\langle 51^+ \rangle$													
6603.6+Y	2J+32													
8048.1(8)	$\langle 51 \rangle^+$													
6587.2+Z	2J+28													
6706.2+V	2J+28													
6884.9+U	2J+28													
8246.9(4)	$\langle 53 \rangle^+$													
8280.6(5)	$\langle 53 \rangle$													
7416.9+X	2J+32													
8733.4(4)	$\langle 55^+ \rangle$													

(continued)

 $^{149}_{65}\text{Tb}$

E^* [keV]	$2J^\pi$	L (τ, d)	$d\sigma/d\Omega$ $\mu\text{b/sr}$	S' (τ, d)	$S_{j\ell}$ (τ, d)	σ (τ, d) $\mu\text{b/sr}$	$S_{\ell j}$ (τ, d)	$T_{1/2}$ or Γ_{cm}	Ref.	Branching ratios in percentage					
										E^*_f :	0.0	35.8	101	207	460
										$2J^\pi_f$:	1^+	11^-	$\langle 3 \rangle^+$	$\langle 5 \rangle^+$	$\langle 7^+ \rangle$
8921.8(4)	$\langle 53 \rangle^+$														
7662.4+Y	$2J+36$														
9196.9(5)	$\langle 59^+ \rangle$														
9227.2(6)															
7735.6+Z	$2J+32$														
7873.0+V	$2J+32$														
8077.9+U	$2J+32$														
9482.2(5)															
8586.1+X	$2J+36$														
9771.2(4)	$\langle 57 \rangle^+$														
9955.3(4)	$\langle 61 \rangle^+$							4.0(2) ns							
10184(1)															
8774.1+Y	$2J+40$														
8935.6+Z	$2J+36$														
9092.7+V	$2J+36$														
9322.9+U	$2J+36$														
9810.7+X	$2J+40$														
11000.2(4)	$\langle 65 \rangle^+$														
11176.9(15)															
11204.2(4)	$\langle 67 \rangle^-$														
9938.6+Y	$2J+44$														
10187.6+Z	$2J+40$														
10364.5+V	$2J+40$														
10622.9+U	$2J+40$														
11089.5+X	$2J+44$														
12151.9(5)	$\langle 71^- \rangle$														
11156.5+Y	$2J+48$														
11491+Z	$2J+44$														
13118(1)	$\langle 75^- \rangle$														
11692+U	$2J+44$														
11977+U	$2J+44$														
12424+X	$2J+48$														
12428+Y	$2J+52$														
12847+Z	$2J+48$														
13075+U	$2J+48$														
13382+U	$2J+48$														
13815+X	$2J+52$														
13753+Y	$2J+56$														
14833+U	$2J+52$														
15259+X	$2J+56$														
15132+Y	$2J+60$														
16565+Y	$2J+64$														

(continued)

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E^*	$2J^\pi$	L	$d\sigma/d\Omega$	S'	$S_{j\ell}$	σ (τ, d)	$S_{\ell j}$	$T_{1/2}$ or Ref.	Branching ratios in percentage					
[keV]		(τ, d)	$\mu b/sr$	(τ, d)	(τ, d)	$\mu b/sr$	(τ, d)	Γ_{cm}	E_f^* :	0.0	35.8	101	207	460
									$2J_f^\pi$:	1^+	11^-	$\langle 3 \rangle^+$	$\langle 5 \rangle^+$	$\langle 7^+ \rangle$
18053+Y	2J+68													
19595+Y	2J+72													

Additional data on this isotope can be found in [90Sa32].

Cross section of (τ, d) reaction measured at 55° was used in [90Ma68] for obtaining of spectroscopic factor $(2J+1)S$ given in the first column ($N=4.42$ for DWBA normalization factor).The values in the second column are additionally normalized to sum $\Sigma S_{j\ell}=18$ and correspond to numbers of protons vacancies in the level, or $(2j+1)U^2$ [90Ma68].The last two columns contain results from [84DeZV] on cross section σ (τ, d) and $S_{\ell j}$ – normalized to $\Sigma S_{lj}=18$ number of vacant protons in each orbital ($s_{1/2}$, $h_{11/2}$, $d_{3/2}$, $d_{5/2}$, $g_{7/2}$).

Energy levels and branching ratios [85Sz01, 94Si18, 04Si16]. Part 2

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E^*	$2J^\pi$	Branching ratios in percentage									
[keV]		E_f^* :	689.4	741.7	754.9	822.3	825.2	837.2	840.6	844.3	869.8
		$2J_f^\pi$:	$\langle 7^- \rangle$	$\langle 5^+ \rangle$	$\langle 3^+, 5^+ \rangle$	15^-	$\langle 9^- \rangle$	$\langle 5^+ \rangle$	$\langle 13^- \rangle$	$\langle 7^+ \rangle$	$\langle 5^+ \rangle$
825.2(1)	$\langle 9^- \rangle$		1.3(3)								
982.2(1)	$\langle 9^+ \rangle$									2.2(6)	
1129.0(2)	15^+					89(3)			11(1)		
1184.0(2)	$\langle 9^- \rangle$		81(5)				19(5)				
1206.0(2)	$\langle 9^- \rangle$						30(5)				
1250.65(18)	$\langle 5^- \rangle$		34(6)								
1381.94(16)	$\langle 7^- \rangle$		35(7)				16(2)				
1382.1(2)	$\langle 19^- \rangle$					100					
1420.6(2)	$\langle 9^- \rangle$									20(3)	
1426.0(3)	$\langle 9^- \rangle$		19(2)								
1454.5(3)	$\langle 17^- \rangle$								57(29)		
1568.8(3)	$\langle 15^- \rangle$					78(16)			16(6)		
1591.0(3)	$\langle 17^+ \rangle$					34(9)					
1697.6(2)	$\langle 9^- \rangle$		16(2)				26(4)				
1728.31(13)	$\langle 5^- \rangle$		11(2)	8(1)	4.8(7)						
1776.7(2)	$\langle 7^- \rangle$		31(4)								
1841.73(13)	$\langle 9^- \rangle$		2.6(4)							7(1)	
1876.96(12)	$\langle 5^- \rangle$		2.1(4)	9(1)	4.6(6)			9(1)			
1883.09(16)	$\langle 9^- \rangle$		3.0(5)				24(1)				
1953.1(2)	$\langle 9^- \rangle$		21(4)								
2015.1(4)							58(24)			9(6)	
2065.43(13)	$\langle 7^- \rangle$		7(1)	12(1)				5(1)		6(1)	7(1)
2074.2(2)	$\langle 7^- \rangle$		24(6)					16(3)			
2161.2(3)	$\langle 9^- \rangle$		61(9)								

Energy levels and branching ratios [85Sz01, 94Si18, 04Si16]. Part 3

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E^* [keV]	$2J^\pi$	Branching ratios in percentage									
		E_f^* : $2J_f^\pi$:	872.6 $\langle 11^- \rangle$	952.9 $\langle 3^- \rangle$	0+X $2J$	970.4 $\langle 7^+ \rangle$	982.2 $\langle 9^+ \rangle$	1088.5 $\langle 5^- \rangle$	1120.1 $\langle 7^+ \rangle$	1129.0 15^+	1184.0 $\langle 9^- \rangle$
1205.42(17)	$\langle 9^+ \rangle$						19(3)				
1250.65(18)	$\langle 5^- \rangle$			26(4)							
1420.6(2)	$\langle 9^- \rangle$		44(6)								
1454.5(3)	$\langle 17^- \rangle$									43(29)	
1568.8(3)	$\langle 15^- \rangle$									6(6)	
1591.0(3)	$\langle 17^+ \rangle$									66(7)	
740.10+X	$2J+4$				100						
1841.73(13)	$\langle 9^- \rangle$					15(1)	7.2(5)	2.1(4)	1.9(3)		
1867.8(2)	$\langle 19 \rangle^+$									88(4)	
1876.96(12)	$\langle 5^- \rangle$			2.3(3)		1.9(7)					
1879.0(4)	$\langle 17^+ \rangle$									100	
1883.09(16)	$\langle 9^- \rangle$		31(2)			12(2)	4(1)				
1953.1(2)	$\langle 9^- \rangle$		29(2)								
2015.1(4)			34(11)								
2065.43(13)	$\langle 7^- \rangle$					3(1)	7(1)		2.3(3)		4(1)

Energy levels and branching ratios [85Sz01, 94Si18, 04Si16]. Part 4

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E^* [keV]	$2J^\pi$	Branching ratios in percentage									
		E_f^* : $2J_f^\pi$:	1189.0 $\langle 7^- \rangle$	1205.42 $\langle 9^+ \rangle$	1206.0 $\langle 9^- \rangle$	1250.65 $\langle 5^- \rangle$	1272.8 $\langle 9^+ \rangle$	0+U $2J$	1381.94 $\langle 7^- \rangle$	1382.1 $\langle 19 \rangle^-$	0+Y $2J$
1672.7(2)	$\langle 23 \rangle^-$									100	
1728.31(13)	$\langle 5^- \rangle$					2.9(5)					
1813.3(2)	$\langle 21 \rangle^-$									67(4)	
1841.73(13)	$\langle 9^- \rangle$			2.2(4)	2.6(4)		2.0(4)				
1867.8(2)	$\langle 19 \rangle^+$									9(3)	
2065.43(13)	$\langle 7^- \rangle$			8(1)							
646.2+Y	$2J+4$										100
2161.2(3)	$\langle 9^- \rangle$		39(7)								
824.0+U	$2J+4$							100			
2368.7(4)	$\langle 21^+ \rangle$								82(27)		
2492.2(3)	$\langle 21^+ \rangle$								50(18)		

Energy levels and branching ratios [85Sz01, 94Si18, 04Si16]. Part 5

¹⁴⁹Tb
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E^* [keV]	$2J^\pi$	Branching ratios in percentage									
		E_f^* : $2J_f^\pi$:	0+V $2J$	1461.4 $\langle 5^-, 7^- \rangle$	1473.8 $\langle 11^- \rangle$	0+Z $2J$	1591.0 $\langle 17^+ \rangle$	1672.7 $\langle 23^- \rangle$	740.1+X $2J+4$	1728.31 $\langle 5^- \rangle$	1813.3 $\langle 21^- \rangle$
1813.3(2)	$\langle 21^- \rangle$							33(4)			
1841.73(13)	$\langle 9^- \rangle$				4.5(7)						
1867.8(2)	$\langle 19^+ \rangle$						4(2)				
1876.96(12)	$\langle 5^- \rangle$			2.0(3)						0.9(3)	
803.6+V	$2J+4$		x								
2302.9(3)	$\langle 27^- \rangle$							100			
786.0+Z	$2J+4$					100					
2350.0(2)	$\langle 23^+ \rangle$							9(3)			18(2)
1534.8+X	$2J+8$								100		
2518.4(2)	$\langle 27^+ \rangle$							4.9(9)			
2666.9(3)	$\langle 25^+ \rangle$							65(11)			
2762.7(3)	$\langle 25^- \rangle$							50(16)			

Energy levels and branching ratios [85Sz01, 94Si18, 04Si16]. Part 6

¹⁴⁹Tb
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E^* [keV]	$2J^\pi$	Branching ratios in percentage									
		E_f^* : $2J_f^\pi$:	1841.73 $\langle 9^- \rangle$	1867.8 $\langle 19^+ \rangle$	1876.96 $\langle 5^- \rangle$	646.2+Y $2J+4$	824.0+U $2J+4$	803.6+V $2J+4$	2302.9 $\langle 27^- \rangle$	786.0+Z $2J+4$	2350.0 $\langle 23^+ \rangle$
2065.43(13)	$\langle 7^- \rangle$		2.1(3)		1.6(4)						
2350.0(2)	$\langle 23^+ \rangle$			74(4)							
2368.7(4)	$\langle 21^+ \rangle$			18(9)							
2492.2(3)	$\langle 21^+ \rangle$			50(18)							
2518.4(2)	$\langle 27^+ \rangle$								75(1)		20(4)
2664.3(3)	$\langle 25^- \rangle$								100		
2666.9(3)	$\langle 25^+ \rangle$										14(8)
2762.7(3)	$\langle 25^- \rangle$								34(11)		16(11)
1343.6+Y	$2J+8$					100					
2812.5(2)	$\langle 29^+ \rangle$								30(5)		
1701.4+U	$2J+8$						100				
1657.0+V	$2J+8$							x			
1623.3+Z	$2J+8$									100	
3603.3(3)	$\langle 31^- \rangle$								85(9)		

Energy levels and branching ratios [85Sz01, 94Si18, 04Si16]. Part 7

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E^* [keV]	$2J^\pi$	Branching ratios in percentage									
		E_f^* : $2J_f^\pi$:	1535+X $2J+8$	2518.4 $\langle 27 \rangle^+$	1344+Y $2J+8$	2812.5 $\langle 29 \rangle^+$	1701+U $2J+8$	1657+V $2J+8$	3141.6 $\langle 31 \rangle^+$	1623+Z $2J+8$	2382+X $2J+12$
2666.9(3)	$\langle 25^+ \rangle$			21(8)							
2812.5(2)	$\langle 29 \rangle^+$			70(3)							
3141.6(3)	$\langle 31 \rangle^+$			7(2)		93(2)					
2381.9+X	$2J+12$		100								
3526.8(3)	$\langle 33 \rangle^+$					8(2)			92(4)		
2091.7+Y	$2J+12$				100						
3603.3(3)	$\langle 31^- \rangle$								15(6)		
2633.3+U	$2J+12$						100				
2564.8+V	$2J+12$							x			
2513.9+Z	$2J+12$									100	
4106.9(5)	$\langle 31^+ \rangle$								x		
4208.1(3)	$\langle 33 \rangle^+$					69(4)			14(3)		
3281.3+X	$2J+16$										100
4463.0(3)	$\langle 35 \rangle^+$								43(3)		

Energy levels and branching ratios [85Sz01, 94Si18, 04Si16]. Part 8

 $^{149}_{65}\text{Tb}$

E^* [keV]	$2J^\pi$	Branching ratios in percentage									
		E_f^* : $2J_f^\pi$:	3526.8 $\langle 33 \rangle^+$	2092+Y $2J+12$	3603.3 $\langle 31^- \rangle$	2633+U $2J+12$	2565+V $2J+12$	2514+Z $2J+12$	4061.2 $\langle 31^+ \rangle$	4106.9 $\langle 31^+ \rangle$	4208.1 $\langle 33 \rangle^+$
3990.5(4)					100						
4061.2(4)	$\langle 31^+ \rangle$		100								
4208.1(3)	$\langle 33 \rangle^+$		17(4)								
2890.7+Y	$2J+16$			100							
4463.0(3)	$\langle 35 \rangle^+$									10(2)	47(3)
4673.5(3)	$\langle 37 \rangle^+$		55(2)								12(2)
3523.1+V	$2J+16$						x				
3619.0+U	$2J+16$					100					
3454.9+Z	$2J+16$							100			
5257.5(3)	$\langle 39^- \rangle$								40(10)		

Energy levels and branching ratios [85Sz01, 94Si18, 04Si16]. Part 9

 $^{149}_{65}\text{Tb}$

E^* [keV]	$2J^\pi$	Branching ratios in percentage									
		E_f^* : $2J_f^\pi$:	3281+X $2J+16$	2891+Y $2J+16$	4463.0 $\langle 35 \rangle^+$	4673.5 $\langle 37 \rangle^+$	4923.0 $\langle 39 \rangle^+$	3523+V $2J+16$	3619+U $2J+16$	3455+Z $2J+16$	5147.9 $\langle 41 \rangle^+$
4673.5(3)	$\langle 37 \rangle^+$				33(2)						
4923.0(3)	$\langle 39 \rangle^+$				21(2)	79(3)					
5147.9(3)	$\langle 41 \rangle^+$					25(2)	75(4)				

(continued)

 $^{149}_{65}\text{Tb}$

E^* [keV]	$2J^\pi$	Branching ratios in percentage									
		E^*_f : $2J^\pi_f$:	3281+X $2J+16$	2891+Y $2J+16$	4463.0 $\langle 35 \rangle^+$	4673.5 $\langle 37 \rangle^+$	4923.0 $\langle 39 \rangle^+$	3523+V $2J+16$	3619+U $2J+16$	3455+Z $2J+16$	5147.9 $\langle 41 \rangle^+$
3741.2+Y	$2J+20$			100							
4234.8+X	$2J+20$		100								
5257.5(3)	$\langle 39^- \rangle$					60(10)					
5618.5(4)	$\langle 41^- \rangle$						100				
5712.0(3)	$\langle 43^- \rangle$										68(6)
5734.8(3)	$\langle 45^+ \rangle$										100
5965.9(4)	$\langle 43^+ \rangle$										26(7)
4532.8+V	$2J+20$							x			
4447.5+Z	$2J+20$									100	
4656.6+U	$2J+20$								100		
6025.1(4)	$\langle 43^- \rangle$										100

Energy levels and branching ratios [85Sz01, 94Si18, 04Si16]. Part 10

 $^{149}_{65}\text{Tb}$

E^* [keV]	$2J^\pi$	Branching ratios in percentage									
		E^*_f : $2J^\pi_f$:	3741+Y $2J+20$	4235+X $2J+20$	5257.5 $\langle 39^- \rangle$	5618.5 $\langle 41^- \rangle$	5712.0 $\langle 43^- \rangle$	5734.8 $\langle 45^+ \rangle$	5965.9 $\langle 43^+ \rangle$	4533+V $2J+20$	4448+Z $2J+20$
5712.0(3)	$\langle 43^- \rangle$				26(3)	6(1)					
5965.9(4)	$\langle 43^+ \rangle$						74(10)				
4643.2+Y	$2J+24$		100								
6111.9(3)	$\langle 45^- \rangle$						53(3)	40(7)	7(2)		
5242.0+X	$2J+24$			100							
6220.6(4)	$\langle 45^- \rangle$						79(6)				
5491.4+Z	$2J+24$										100
5593.5+V	$2J+24$								x		

Energy levels and branching ratios [85Sz01, 94Si18, 04Si16]. Part 11

 $^{149}_{65}\text{Tb}$

E^* [keV]	$2J^\pi$	Branching ratios in percentage									
		E^*_f : $2J^\pi_f$:	4657+U $2J+20$	6025.1 $\langle 43^- \rangle$	4643+Y $2J+24$	6111.9 $\langle 45^- \rangle$	5242+X $2J+24$	6220.6 $\langle 45^- \rangle$	6400.3 $\langle 47^- \rangle$	6788.2 $\langle 47^+ \rangle$	6873.9 $\langle 47^+ \rangle$
6220.6(4)	$\langle 45^- \rangle$			21(3)							
6400.3(4)	$\langle 47^- \rangle$					62(9)		38(9)			
6788.2(3)	$\langle 47^+ \rangle$					69(3)		31(3)			
6873.9(4)	$\langle 47^+ \rangle$					100					
5597.3+Y	$2J+28$				100						
5744.9+U	$2J+24$		100								
7112.4(4)	$\langle 49^+ \rangle$								23(3)	62(4)	15(3)
7193.8(4)	$\langle 49 \rangle$								100		

(continued)

¹⁴⁹Tb
65

E^* [keV]	$2J^\pi$	Branching ratios in percentage									
		E_f^* : $2J_f^\pi$:	4657+U $2J+20$	6025.1 $\langle 43 \rangle^-$	4643+Y $2J+24$	6111.9 $\langle 45 \rangle^-$	5242+X $2J+24$	6220.6 $\langle 45 \rangle^-$	6400.3 $\langle 47 \rangle^-$	6788.2 $\langle 47 \rangle^+$	6873.9 $\langle 47 \rangle^+$
6302.7+X 7976.2(4)	$2J+28$ $\langle 51^+ \rangle$						100			100	

Energy levels and branching ratios [85Sz01, 94Si18, 04Si16]. Part 12

¹⁴⁹Tb
65

E^* [keV]	$2J^\pi$	Branching ratios in percentage									
		E_f^* : $2J_f^\pi$:	5491+Z $2J+24$	5597+Y $2J+28$	5594+V $2J+24$	5745+U $2J+24$	7112.4 $\langle 49 \rangle^+$	7193.8 $\langle 49 \rangle$	6303+X $2J+28$	7740.5 $\langle 51 \rangle$	7976.2 $\langle 51^+ \rangle$
7740.5(5)	$\langle 51 \rangle$							100			
6603.6+Y	$2J+32$			100							
8048.1(8)	$\langle 51 \rangle^+$						100				
6587.2+Z	$2J+28$	100									
6706.2+V	$2J+28$				x						
6884.9+U	$2J+28$					100					
8246.9(4)	$\langle 53 \rangle^+$						100				
8280.6(5)	$\langle 53 \rangle$									100	
7416.9+X	$2J+32$								100		
8733.4(4)	$\langle 55^+ \rangle$										100
8921.8(4)	$\langle 53 \rangle^+$										52(7)

Energy levels and branching ratios [85Sz01, 94Si18, 04Si16]. Part 13

¹⁴⁹Tb
65

E^* [keV]	$2J^\pi$	Branching ratios in percentage									
		E_f^* : $2J_f^\pi$:	6604+Y $2J+32$	8048.1 $\langle 51 \rangle^+$	6587+Z $2J+28$	6706+V $2J+28$	6885+U $2J+28$	8246.9 $\langle 53 \rangle^+$	8280.6 $\langle 53 \rangle$	7417+X $2J+32$	8733.4 $\langle 55^+ \rangle$
8921.8(4)	$\langle 53 \rangle^+$			48(7)							
7662.4+Y	$2J+36$	100									
9196.9(5)	$\langle 59^+ \rangle$										100
9227.2(6)									100		
7735.6+Z	$2J+32$				100						
7873.0+V	$2J+32$					x					
8077.9+U	$2J+32$						100				
8586.1+X	$2J+36$									100	
9771.2(4)	$\langle 57 \rangle^+$							43(3)			

Energy levels and branching ratios [85Sz01, 94Si18, 04Si16]. Part 14

 $^{149}_{65}\text{Tb}$

E^* [keV]	$2J^\pi$	Branching ratios in percentage								
		E_f^* : $2J_f^\pi$:	8921.8 $\langle 53 \rangle^+$	7662+Y $2J+36$	9196.9 $\langle 59^+ \rangle$	9227.2 $2J+32$	7736+Z $2J+32$	7873+V $2J+32$	8078+U $2J+32$	9482.2 $2J+36$
9482.2(5)					100					
9771.2(4)	$\langle 57 \rangle^+$		52(3)							5(2)
10184(1)					x					
8774.1+Y	$2J+40$			100						
8935.6+Z	$2J+36$					100				
9092.7+V	$2J+36$						x			
9322.9+U	$2J+36$								100	
9810.7+X	$2J+40$									100

Energy levels and branching ratios [85Sz01, 94Si18, 04Si16]. Part 15

 $^{149}_{65}\text{Tb}$

E^* [keV]	$2J^\pi$	Branching ratios in percentage								
		E_f^* : $2J_f^\pi$:	9771.2 $\langle 57 \rangle^+$	9955.3 $\langle 61 \rangle^+$	10183.9	8774+Y $2J+40$	8936+Z $2J+36$	9093+V $2J+36$	9323+U $2J+36$	9811+X $2J+40$
9955.3(4)	$\langle 61 \rangle^+$		100							
11000.2(4)	$\langle 65 \rangle^+$			100						
11176.9(15)					x					
11204.2(4)	$\langle 67 \rangle^-$					100				100
9938.6+Y	$2J+44$									
10187.6+Z	$2J+40$						100			
10364.5+V	$2J+40$							x		
10622.9+U	$2J+40$								100	
11089.5+X	$2J+44$									100

Energy levels and branching ratios [85Sz01, 94Si18, 04Si16]. Part 16

 $^{149}_{65}\text{Tb}$

E^* [keV]	$2J^\pi$	Branching ratios in percentage								
		E_f^* : $2J_f^\pi$:	11204.2 $\langle 67 \rangle^-$	9939+Y $2J+44$	10188+Z $2J+40$	10365+V $2J+40$	10623+U $2J+40$	11090+X $2J+44$	12151.9 $\langle 71^- \rangle$	11157+Y $2J+48$
12151.9(5)	$\langle 71^- \rangle$		100							
11156.5+Y	$2J+48$			100						
11491+Z	$2J+44$				100					
13118(1)	$\langle 75^- \rangle$								100	
11692+U	$2J+44$					x				
11977+U	$2J+44$						100			
12424+X	$2J+48$							100		
12428+Y	$2J+52$									100

Energy levels and branching ratios [85Sz01, 94Si18, 04Si16]. Part 17

¹⁴⁹Tb
65

E^*	$2J^\pi$	Branching ratios in percentage								
[keV]	$E_f^*:$ $2J_f^\pi:$	11491+Z $2J+44$	11692+V $2J+44$	11977+U $2J+44$	12424+X $2J+48$	12428+Y $2J+52$	13382+U $2J+48$	13815+X $2J+52$	13753+Y $2J+56$	
12847+Z	$2J+48$	100								
13075+U	$2J+48$		x							
13382+U	$2J+48$			100						
13815+X	$2J+52$				100					
13753+Y	$2J+56$					100				
14833+U	$2J+52$						100			
15259+X	$2J+56$							100		
15132+Y	$2J+60$								100	

Energy levels and branching ratios [85Sz01, 94Si18, 04Si16]. Part 18

¹⁴⁹Tb
65

E^*	$2J^\pi$	Branching ratios in percentage			
[keV]		E_f^* : $2J_f^\pi$:	15132+Y $2J+60$	16565+Y $2J+64$	18053+Y $2J+68$
16565+Y	$2J+64$		100		
18053+Y	$2J+68$			100	
19595+Y	$2J+72$				100

Energy levels and branching ratios [95De28, 04He05].

¹⁵⁰Tb
65

E^* [keV]	J^π	$T_{1/2}$ or Γ_{cm}
0	$\langle 2^- \rangle$	3.48(16) h
397.2(3)	$\langle 1^+ \rangle$	
474(51)	9^+	5.8(2) m
0+X	$J \approx \langle 24 \rangle$	
1067.95(25)	10^+	
1232.79(24)	11^+	
1306.55(25)	10^-	
1348.40(24)	11^-	0.39(6) ns
596.8+X	$J+2$	
0+Z	J	
1586.5(4)	12^-	
0+Y	J	
1910.4(4)	13^+	
1244.2+X	$J+4$	
2114.0(4)	13^-	
662.5+Y	$J+2$	

(continued)

 $^{150}_{65}\text{Tb}$

E^*	J^π	$T_{1/2}$ or Γ_{cm}
[keV]		
877.0+Z	$J+2$	
2404.9(4)	14^-	
2413.0(4)	14^+	
2641.7(4)	16^+	
1941.9+X	$J+6$	
2741.4(4)	15^-	
2757.6(4)	$\langle 15^+ \rangle$	
1378.6+Y	$J+4$	
3017.9(4)	16^-	
1765.3+Z	$J+4$	
3373.6(5)	18^-	
2690.1+X	$J+8$	
3684.5(5)	19^-	
2148.3+Y	$J+6$	
3898.2(5)	20^-	
3933.2(5)	19^+	
2694.7+Z	$J+6$	
3489.3+X	$J+10$	
4324.0(5)	20^+	
2971.8+Y	$J+8$	
4818.2(5)	21^+	
4894.6(6)	22^+	
4972.7(5)	21^-	
4339.8+X	$J+12$	
3671.7+Z	$J+8$	
5238.9(5)	22^-	
3849.1+Y	$J+10$	
5448.8(6)	22^+	
5667.5(6)	$\langle 22^- \rangle$	
5725.8(6)	23^+	
5842.5(6)	23^-	
5975.7(6)	$\langle 24^+ \rangle$	
6010.9(6)	24^+	
5241.9+X	$J+14$	
6044.1(6)	25^+	
4698.4+Z	$J+10$	
4779.6+Y	$J+12$	
6382.5(7)	26^+	
6509.0(7)	$\langle 27^+ \rangle$	
6571.4(7)	27^+	
6196.0+X	$J+16$	
7067.9(7)	28^-	
5775.4+Z	$J+12$	
5763.3+Y	$J+14$	
7202.9+X	$J+18$	

(continued)

¹⁵⁰Tb
65

E^*	J^π	$T_{1/2}$ or Γ_{cm}
[keV]		
8168.2(8)	30^-	
8266.1(8)	$\langle 29^+ \rangle$	
8335.0(8)	$\langle 29^- \rangle$	
6901.6+Z	$J+14$	
6801.2+Y	$J+16$	
8496.9(8)	$\langle 30 \rangle$	
8514.9(8)	$\langle 30^- \rangle$	
8519.9(13)		
8540.5(8)		
8808.2(8)	31^-	
8901.2(13)	32	
8957.6(8)	32^-	
9013.4(8)	$\langle 31 \rangle$	
8262.5+X	$J+20$	
9188.2(13)		
9327.2(13)	$\langle 33 \rangle$	
9403.5(8)		
7892.0+Y	$J+18$	
8079.5+Z	$J+16$	
9556.6(8)	$\langle 32^- \rangle$	
9914.3(8)	$\langle 33^- \rangle$	
9921.4(8)	$\langle 33^+ \rangle$	
10006.9(13)		
10046.6(8)	$\langle 33 \rangle$	
9374.9+X	$J+22$	
10170.2(17)		
10321.6(13)		
9035.1+Y	$J+20$	
9309.2+Z	$J+18$	
10906.2(9)	$\langle 35^- \rangle$	
11072.4(13)		
11160.0(8)	$\langle 34^- \rangle$	
10540.4+X	$J+24$	
11567.7(9)	$\langle 36^- \rangle$	
10231.2+Y	$J+22$	
10591.6+Z	$J+20$	
11759.2+X	$J+26$	
12596.5(9)	$\langle 38^- \rangle$	
11478.8+Y	$J+24$	
11924.9+Z	$J+22$	
13378.5(14)	$\langle 39^+ \rangle$	
13031.5+X	$J+28$	
12778.5+Y	$J+26$	
13312+Z	$J+24$	
14358+X	$J+30$	

(continued)

 $^{150}_{65}\text{Tb}$

E^*	J^π	$T_{1/2}$ or
[keV]		Γ_{cm}
14130+Y	$J+28$	
14752+Z	$J+26$	
15738+X	$J+32$	
15533+Y	$J+30$	
16246+X	$J+28$	
17173+X	$J+34$	
16986+Y	$J+32$	
18662+X	$J+36$	
20207+X	$J+38$	
21806+X	$J+40$	

Additional data on this isotope can be found in [96Vi03, 95Fa09].

Energy levels and branching ratios [95De28, 04He05]. Part 2

 $^{150}_{65}\text{Tb}$

E^*	J^π	Branching ratios in percentage							
[keV]		E^*_f : J^π_f :	0 $\langle 2^- \rangle$	474 9^+	0+X $J \approx \langle 24 \rangle$	1067.9 10^+	1232.8 11^+	1306.5 10^-	1348.4 11^-
397.2(3)	$\langle 1^+ \rangle$		100						
1067.95(25)	10^+			100					
1232.79(24)	11^+			100					
1306.55(25)	10^-			100					
1348.40(24)	11^-					78(8)	22(2)	0.0	
596.8+X	$J+2$				100				
1586.5(4)	12^-								100
1910.4(4)	13^+						100		
2114.0(4)	13^-								100

Energy levels and branching ratios [95De28, 04He05]. Part 3

 $^{150}_{65}\text{Tb}$

E^*	J^π	Branching ratios in percentage										
[keV]		E^*_f : J^π_f :	596.8+X $J+2$	0+Z J	1586 12^-	0+Y J	1910.4 13^+	1244+X $J+4$	2114.0 13^-	662.5+Y $J+2$	877.0+Z $J+2$	2404.9 14^-
1244.2+X	$J+4$	100										
662.5+Y	$J+2$					100						
877.0+Z	$J+2$			100								
2404.9(4)	14^-				64(8)				36(4)			
2413.0(4)	14^+					100						
1941.9+X	$J+6$							100				
2741.4(4)	15^-								100			

(continued)

¹⁵⁰Tb
65

E^*	J^π	Branching ratios in percentage										
[keV]		E_f^* :	596.8+X	0+Z	1586	0+Y	1910.4	1244+X	2114.0	662.5+Y	877.0+Z	2404.9
		J_f^π :	$J+2$	J	12^-	J	13^+	$J+4$	13^-	$J+2$	$J+2$	14^-
2757.6(4)	$\langle 15^+ \rangle$					100						
1378.6+Y	$J+4$									100		
3017.9(4)	16^-											26(4)
1765.3+Z	$J+4$										100	

Energy levels and branching ratios [95De28, 04He05]. Part 4

¹⁵⁰Tb
65

E^* [keV]	J^π	Branching ratios in percentage										
		E_f^* : J_f^π :	2413.0 14 ⁺	2641.7 16 ⁺	1942+X $J+6$	2741.4 15 ⁻	2757.6 $\langle 15^+ \rangle$	1379+Y $J+4$	3017.9 16 ⁻	1765+Z $J+4$	3373.6 18 ⁻	2690+X $J+8$
2641.7(4)	16 ⁺		100									
3017.9(4)	16 ⁻			2.4(5)		70(7)	1.5(5)					
3373.6(5)	18 ⁻			1.4(6)					99(10)			
2690.1+X	$J+8$				100							
3684.5(5)	19 ⁻										100	
2148.3+Y	$J+6$							100				
3898.2(5)	20 ⁻										51(5)	
3933.2(5)	19 ⁺										100	
2694.7+Z	$J+6$									100		
3489.3+X	$J+10$											100

Energy levels and branching ratios [95De28, 04He05]. Part 5

¹⁵⁰Tb
65

E^* [keV]	J^π	Branching ratios in percentage										
		E_f^* : J_f^π :	3684.5 19 ⁻	2148+Y $J+6$	3898.2 20 ⁻	3933.2 19 ⁺	2695+Z $J+6$	3489+X $J+10$	4324.0 20 ⁺	2972+Y $J+8$	4818.2 21 ⁺	4894.6 22 ⁺
3898.2(5)	20 ⁻		49(5)									
4324.0(5)	20 ⁺		38(5)			62(7)						
2971.8+Y	$J+8$			100								
4818.2(5)	21 ⁺				46(4)				54(5)			
4894.6(6)	22 ⁺										0.0	
4972.7(5)	21 ⁻		77(8)		23(8)							
4339.8+X	$J+12$							100				
3671.7+Z	$J+8$						100					
5238.9(5)	22 ⁻				50(10)							
3849.1+Y	$J+10$								100			
5448.8(6)	22 ⁺										53(5)	47(5)
5667.5(6)	$\langle 22^- \rangle$										100	
5725.8(6)	23 ⁺										28(2)	26(6)

(continued)

 $^{150}_{65}\text{Tb}$

E^* [keV]	J^π	Branching ratios in percentage										
		E^*_f : J^π_f :	3684.5 19 ⁻	2148+Y $J+6$	3898.2 20 ⁻	3933.2 19 ⁺	2695+Z $J+6$	3489+X $J+10$	4324.0 20 ⁺	2972+Y $J+8$	4818.2 21 ⁺	4894.6 22 ⁺
5842.5(6)	23 ⁻											76(8)
5975.7(6)	$\langle 24^+ \rangle$											100
6010.9(6)	24 ⁺											27(2)

Energy levels and branching ratios [95De28, 04He05]. Part 6

 $^{150}_{65}\text{Tb}$

E^* [keV]	J^π	Branching ratios in percentage										
		E^*_f : J^π_f :	4972.7 21 ⁻	4340+X $J+12$	3672+Z $J+8$	5238.9 22 ⁻	3849+Y $J+10$	5448.8 22 ⁺	5667.5 $\langle 22^- \rangle$	5725.8 23 ⁺	5842.5 23 ⁻	5975.7 $\langle 24^+ \rangle$
5238.9(5)	22 ⁻		50(5)									
5725.8(6)	23 ⁺					24(2)		22(4)	0.0			
5842.5(6)	23 ⁻									24(6)		
6010.9(6)	24 ⁺									62(7)	10.6(12)	
5241.9+X	$J+14$			100								
6044.1(6)	25 ⁺									100		
4698.4+Z	$J+10$				100							
4779.6+Y	$J+12$						100					

Energy levels and branching ratios [95De28, 04He05]. Part 7

 $^{150}_{65}\text{Tb}$

E^* [keV]	J^π	Branching ratios in percentage										
		E^*_f : J^π_f :	6010.9 24 ⁺	5242+X $J+14$	6044.1 25 ⁺	4698+Z $J+10$	4780+Y $J+12$	6382.5 26 ⁺	6509.0 $\langle 27^+ \rangle$	6571.4 27 ⁺	6196+X $J+16$	7067.9 28 ⁻
6382.5(7)	26 ⁺				100							
6509.0(7)	$\langle 27^+ \rangle$				100							
6571.4(7)	27 ⁺				36(4)			64(6)				
6196.0+X	$J+16$			100								
7067.9(7)	28 ⁻									100		
5775.4+Z	$J+12$					100						
5763.3+Y	$J+14$						100					
7202.9+X	$J+18$										100	
8168.2(8)	30 ⁻											100
8266.1(8)	$\langle 29^+ \rangle$											100
8335.0(8)	$\langle 29^- \rangle$											100
8519.9(13)												100
8540.5(8)												100

Energy levels and branching ratios [95De28, 04He05]. Part 8

 $^{150}_{65}\text{Tb}$

E^* [keV]	J^π	Branching ratios in percentage									
		E_f^* : J_f^π :	5775+Z $J+12$	5763+Y $J+14$	7203+X $J+18$	8168.2 30^-	8266.1 $\langle 29^+ \rangle$	8335.0 $\langle 29^- \rangle$	6902+Z $J+14$	6801+Y $J+16$	8496.9 $\langle 30 \rangle$
6901.6+Z	$J+14$		100								
6801.2+Y	$J+16$			100							
8496.9(8)	$\langle 30 \rangle$						100				
8514.9(8)	$\langle 30^- \rangle$							100			
8808.2(8)	31^-					100					<33
8901.2(13)	32					100					
8957.6(8)	32^-					87(10)					
9013.4(8)	$\langle 31 \rangle$					50(25)		50(25)			
8262.5+X	$J+20$				100						
9188.2(13)						100					
7892.0+Y	$J+18$									100	
8079.5+Z	$J+16$								100		

Energy levels and branching ratios [95De28, 04He05]. Part 9

 $^{150}_{65}\text{Tb}$

E^* [keV]	J^π	Branching ratios in percentage									
		E_f^* : J_f^π :	8514.9 $\langle 30^- \rangle$	8808.2 31^-	8901.2 32	8957.6 32^-	9013.4 $\langle 31 \rangle$	8263+X $J+20$	9327.2 $\langle 33 \rangle$	7892+Y $J+18$	8080+Z $J+16$
8957.6(8)	32^-			13(3)							
9327.2(13)	$\langle 33 \rangle$				100						
9556.6(8)	$\langle 32^- \rangle$		100								
9914.3(8)	$\langle 33^- \rangle$					100					
9921.4(8)	$\langle 33^+ \rangle$					100					
10046.6(8)	$\langle 33 \rangle$						100				
9374.9+X	$J+22$							100			
10170.2(17)									100		
9035.1+Y	$J+20$									100	
9309.2+Z	$J+18$										100

Energy levels and branching ratios [95De28, 04He05]. Part 10

 $^{150}_{65}\text{Tb}$

E^* [keV]	J^π	Branching ratios in percentage									
		E_f^* : J_f^π :	9556.6 $\langle 32^- \rangle$	9914.3 $\langle 33^- \rangle$	9921.4 $\langle 33^+ \rangle$	10046.6 $\langle 33 \rangle$	9375+X $J+22$	9035+Y $J+20$	9309+Z $J+18$	11160.0 $\langle 34^- \rangle$	10540+X $J+24$
10906.2(9)	$\langle 35^- \rangle$			100							
11160.0(8)	$\langle 34^- \rangle$		31(9)	<34	<17	69(34)					
10540.4+X	$J+24$						100				
11567.7(9)	$\langle 36^- \rangle$									100	
10231.2+Y	$J+22$							100			

(continued)

**¹⁵⁰Tb
65**

E^*	J^π	Branching ratios in percentage									
		E_f^* :	9556.6	9914.3	9921.4	10046.6	9375+X	9035+Y	9309+Z	11160.0	10540+X
[keV]		J_f^π :	$\langle 32^- \rangle$	$\langle 33^- \rangle$	$\langle 33^+ \rangle$	$\langle 33 \rangle$	$J+22$	$J+20$	$J+18$	$\langle 34^- \rangle$	$J+24$
10591.6+Z	$J+20$								100		
11759.2+X	$J+26$										100

Energy levels and branching ratios [95De28, 04He05]. Part 11

**¹⁵⁰Tb
65**

E^*	J^π	Branching ratios in percentage									
[keV]		E^*_f : J^π_f :	11567.7 $\langle 36^- \rangle$	10231+Y $J+22$	10592+Z $J+20$	11759+X $J+26$	12596.5 $\langle 38^- \rangle$	11479+Y $J+24$	11925+Z $J+22$	13032+X $J+28$	12779+Y $J+26$
12596.5(9)	$\langle 38^- \rangle$	100									
11478.8+Y	$J+24$			100							
11924.9+Z	$J+22$				100						
13378.5(14)	$\langle 39^+ \rangle$						100				
13031.5+X	$J+28$					100					
12778.5+Y	$J+26$							100			
13312+Z	$J+24$								100		
14358+X	$J+30$									100	
14130+Y	$J+28$										100

Energy levels and branching ratios [95De28, 04He05]. Part 12

**¹⁵⁰Tb
65**

E^*	J^π	Branching ratios in percentage								
[keV]	E^*_f : J^π_f :	13312+Z $J+24$	14358+X $J+30$	14130+Y $J+28$	14753+Z $J+26$	15738+X $J+32$	15533+Y $J+30$	17173+X $J+34$	18663+X $J+36$	20207+X $J+38$
14752+Z	$J+26$	100								
15738+X	$J+32$		100							
15533+Y	$J+30$			100						
16246+X	$J+28$				100					
17173+X	$J+34$					100				
16986+Y	$J+32$						100			
18662+X	$J+36$							100		
20207+X	$J+38$								100	
21806+X	$J+40$									100

Energy levels and branching ratios [97Si03].

¹⁵¹Tb
65

E^*	$2J^\pi$	$T_{1/2}$ or Γ_{cm}
[keV]		
0.0	$1^{\langle+}\rangle$	17.609(1) h
22.922(20)	$3^{\langle+}\rangle$	4.05(7) ns
72.39(3)	$\langle 5^+ \rangle$	0.92(3) ns
99.54(6)	$\langle 11^- \rangle$	25(3) s
248.79(3)	$\langle 5^+, 7^+ \rangle$	<0.26 ns
276.42(4)		
485.64(5)	$\langle 7^- \rangle$	
548.85(5)	$\langle 3^+, 7^+ \rangle$	
583.98(6)	$\langle 5^+ \rangle$	
646.02(5)	$\langle 9^- \rangle$	
686.70(7)	$\langle 5, 7^+ \rangle$	
703.8(1)	$\langle 15^- \rangle$	
711.93(5)	$\langle 5^+ \rangle$	
841.11(9)	$\langle 5, 7^+ \rangle$	
856.81(7)	$\langle 5, 7^+ \rangle$	
886.43(7)	$\langle 5-, 9^+ \rangle$	
887.5(2)	$\langle 13^- \rangle$	
917.78(7)	$\langle 5^-, 7^- \rangle$	
0+X	$2J \approx \langle 57 \rangle$	
949.07(6)	$\langle 5^-, 7^+ \rangle$	
1082.61(6)	$\langle 7^- \rangle$	
1096.6(2)	$\langle 15^+ \rangle$	
1119.38(8)	$\langle 7^-, 9 \rangle$	
1202.1(1)	$\langle 5^-, 7, 9^+ \rangle$	
1241.2(1)	$\langle 7^-, 9^- \rangle$	
1319.4(3)	$\langle 5, 7, 9 \rangle$	
1319.6(2)	$\langle 19^- \rangle$	
1433.86(8)	$\langle 7^- \rangle$	
0+S	$2J \approx \langle 55 \rangle$	
0+V	$2J \approx \langle 53 \rangle$	
0+T	$2J \approx \langle 57 \rangle$	
0+Z	$2J \approx \langle 55 \rangle$	
0+W	$2J \approx \langle 55 \rangle$	
0+U	$2J \approx \langle 63 \rangle$	
0+Y	$2J \approx \langle 49 \rangle$	
1582.3(1)	$\langle 5^-, 7, 9 \rangle$	
1611.1(1)	$\langle 5^- \rangle$	
1629.66(8)	$\langle 7^-, 9^- \rangle$	
1663.2(1)	$\langle 5^-, 9^- \rangle$	
726.5+X	$2J+4$	
1693.4(2)	$\langle 19^+ \rangle$	
1724.5(2)	$\langle 5^- \rangle$	
1741.78(8)	$\langle 5^- \rangle$	
1773.7(1)	$\langle 5^-, 9^- \rangle$	
1841.6(1)	$\langle 5^-, 7^- \rangle$	

(continued)

¹⁵¹Tb
65

E^*	$2J^\pi$	$T_{1/2}$ or Γ_{cm}
[keV]		
2002.2(2)	$\langle 23^- \rangle$	
2045.7(2)	$\langle 21^+ \rangle$	
2120.3(4)	$\langle 23^- \rangle$	
602.1+Y	$2J+4$	
681.5+Z	$2J+4$	
2180.6(2)	$\langle 25^- \rangle$	
709.3+V	$2J+4$	
2219.9(2)	$\langle 23^+ \rangle$	
758+S	$2J+4$	
739+W	$2J+4$	
768.6+U	$2J+4$	
785+T	$2J+4$	
2375.3(2)	$\langle 27^- \rangle$	
1495.8+X	$2J+8$	
2468.6(2)	$\langle 25^+ \rangle$	
2782.6(2)	$\langle 27^+ \rangle$	
1248.5+Y	$2J+8$	
2847.3(2)	$\langle 29^+ \rangle$	
1409.2+Z	$2J+8$	
1470.2+V	$2J+8$	
1529.4+W	$2J+8$	
1566+S	$2J+8$	
1584.9+U	$2J+8$	
1617+T	$2J+8$	
3108.2(4)		
3115.7(2)	$\langle 31^+ \rangle$	
3128.6(3)	$\langle 31^- \rangle$	
3159.1(4)	$\langle 29^- \rangle$	
3196.0(5)	$\langle 31^+ \rangle$	
2307.0+X	$2J+12$	
3274.0(3)	$\langle 33^+ \rangle$	
3287.7(4)		
1940.4+Y	$2J+12$	
2183.1+Z	$2J+12$	
2282.1+V	$2J+12$	
3808.4(3)	$\langle 35^- \rangle$	
2368.0+W	$2J+12$	
2424.1+S	$2J+12$	
3900.6(3)	$\langle 35^+ \rangle$	
2450.2+U	$2J+12$	
2501+T	$2J+12$	
3161.0+X	$2J+16$	
4148.0(3)	$\langle 37^+ \rangle$	
2677.8+Y	$2J+16$	
3004.3+Z	$2J+16$	

(continued)

¹⁵¹Tb
65

E^*	$2J^\pi$	$T_{1/2}$ or
[keV]		Γ_{cm}
4564.8(3)	$\langle 39^+ \rangle$	
3145.6+V	$2J+16$	
3257.7+W	$2J+16$	
4765.4(5)	$\langle 39^- \rangle$	
4773.9(3)	$\langle 41^+ \rangle$	
3333.9+S	$2J+16$	
4840.2(3)	$\langle 39^- \rangle$	
3364.1+U	$2J+16$	
3435.9+T	$2J+16$	
3461.2+Y	$2J+20$	
4058.5+X	$2J+20$	
5034.2(4)	$\langle 41^- \rangle$	
5162.4(3)	$\langle 45^+ \rangle$	
5363.6(5)		
3872.1+Z	$2J+20$	
5467.2(4)	$\langle 43^- \rangle$	
5474.8(3)	$\langle 43^- \rangle$	
4059.8+V	$2J+20$	
5656.4(6)		
4199.0+W	$2J+20$	
4293.9+S	$2J+20$	
5818.7(4)	$\langle 45^- \rangle$	
4289.9+Y	$2J+24$	
4326.0+U	$2J+20$	
4421.8+T	$2J+20$	
5924.6(4)	$\langle 45^- \rangle$	
5001.2+X	$2J+24$	
5985.1(3)	$\langle 47^- \rangle$	
6165.3(4)	$\langle 49^- \rangle$	
6169.9(4)	$\langle 49^- \rangle$	
4787.9+Z	$2J+24$	
6485.1(3)	$\langle 49^+ \rangle$	
5025.0+V	$2J+24$	
6594.0(4)	$\langle 51^- \rangle$	
6673.7(5)	$\langle 49^- \rangle$	
5191.9+W	$2J+24$	
5164.7+Y	$2J+28$	
5305.5+S	$2J+24$	
5335.4+U	$2J+24$	
6879.9(3)	$\langle 51^- \rangle$	
5989.4+X	$2J+28$	
5460.6+T	$2J+24$	
5751.5+Z	$2J+28$	
7248.1(4)	$\langle 53^- \rangle$	
7264.6(3)	$\langle 53^+ \rangle$	

(continued)

¹⁵¹Tb
65

E^*	$2J^\pi$	$T_{1/2}$ or Γ_{cm}
[keV]		
7295.8(4)	$\langle 53^- \rangle$	
7304.3(3)	$\langle 53^+ \rangle$	
6043.2+V	$2J+28$	
7618.8(4)	$\langle 55^+ \rangle$	
6086.3+Y	$2J+32$	
7676.3(4)	$\langle 55^- \rangle$	
6236.3+W	$2J+28$	
7764.5(5)	$\langle 57^- \rangle$	
6369.7+S	$2J+28$	
7882.4(4)	$\langle 57^- \rangle$	
6392.0+U	$2J+28$	
7901.6(3)	$\langle 57^+ \rangle$	
7023.6+X	$2J+32$	
6550.5+T	$2J+28$	
6764.8+Z	$2J+32$	
8283.0(4)	$\langle 61^+ \rangle$	
8335.8(4)	$\langle 59^- \rangle$	
7054.4+Y	$2J+36$	
7114.5+V	$2J+32$	
8802.4(4)	$\langle 61^- \rangle$	
7332.7+W	$2J+32$	
7485.2+S	$2J+32$	
7495.8+U	$2J+32$	
9035.0(5)	$\langle 63 \rangle$	
8105.6+X	$2J+36$	
9123.5(4)	$\langle 63^- \rangle$	
7693.8+T	$2J+32$	
7826.6+Z	$2J+36$	
9379.5(4)	$\langle 65^+ \rangle$	
9406.2(4)	$\langle 65 \rangle$	
9445.4(5)	$\langle 63 \rangle$	
9490.2(4)	$\langle 65^+ \rangle$	
9530.3(5)	$\langle 63^- \rangle$	
8070.1+Y	$2J+40$	
9708.7(5)	$\langle 67 \rangle$	
8239.2+V	$2J+36$	
9733.6(4)	$\langle 65^+ \rangle$	
9750.5(4)	$\langle 67^- \rangle$	
8482.9+W	$2J+36$	
10032.2(4)	$\langle 67^+ \rangle$	
8655.0+S	$2J+36$	
8648.3+U	$2J+36$	
9235.6+X	$2J+40$	
10296.7(6)	$\langle 71 \rangle$	
10350.5(4)	$\langle 69^+ \rangle$	

(continued)

¹⁵¹Tb
65

E^*	$2J^\pi$	$T_{1/2}$ or Γ_{cm}
[keV]		
8890.7+T	$2J+36$	
8938.0+Z	$2J+40$	
10620.3(6)		
9133.1+Y	$2J+44$	
10772.3(6)	$\langle 71 \rangle$	
10792.0(4)	$\langle 71^- \rangle$	
9416.3+V	$2J+40$	
10997.7(5)	$\langle 69^- \rangle$	
9685.4+W	$2J+40$	
11200.5(6)	$\langle 71 \rangle$	
11201.9(6)		
11274.8(4)	$\langle 71^- \rangle$	
9876.3+S	$2J+40$	
9849.4+U	$2J+40$	
10413.6+X	$2J+44$	
11425.9(6)	$\langle 73^+ \rangle$	
11593.0(4)	$\langle 73^- \rangle$	
10098.8+Z	$2J+44$	
10139.6+T	$2J+40$	
11726.4(4)	$\langle 75^- \rangle$	
11756.6(7)		
11760.6(7)		
10243.6+Y	$2J+48$	
11830.0(6)	$\langle 73 \rangle$	
11956.8(4)	$\langle 75^- \rangle$	
10645.6+V	$2J+44$	
10941.1+W	$2J+44$	
11641.5+X	$2J+48$	
11097.9+U	$2J+44$	
11150.7+S	$2J+44$	
12704.0(4)	$\langle 75^- \rangle$	
12719.9(5)	$\langle 79^- \rangle$	
12754.2(5)	$\langle 79^- \rangle$	
11308.4+Z	$2J+48$	
11441.6+T	$2J+44$	
11402.2+Y	$2J+52$	
13019.5(5)	$\langle 79^- \rangle$	
13249.3(7)		
11928.3+V	$2J+48$	
13460.7(6)	$\langle 81 \rangle$	
13522.7(6)		
13524.6(6)		
12250.4+W	$2J+48$	
13791.2(6)	$\langle 83^- \rangle$	
13850.4(6)	$\langle 79^- \rangle$	

(continued)

¹⁵¹Tb
65

E^*	$2J^\pi$	$T_{1/2}$ or
[keV]		Γ_{cm}
12919.4+X	$2J+52$	
12394.4+U	$2J+48$	
12478.9+S	$2J+48$	
12567.2+Z	$2J+52$	
12609.1+Y	$2J+56$	
12797.6+T	$2J+48$	
14538.9(7)		
13263.7+V	$2J+52$	
14900.4(7)		
13614.2+W	$2J+52$	
14247.6+X	$2J+56$	
13739.2+U	$2J+52$	
15316.9(7)		
13859.8+S	$2J+52$	
15343.4(7)		
13876.8+Z	$2J+56$	
13863.9+Y	$2J+60$	
15641.3(7)	$\langle 87^- \rangle$	
14652.5+V	$2J+56$	
15028.8+W	$2J+56$	
15626.9+X	$2J+60$	
16589.1(8)	$\langle 91^- \rangle$	
15132.1+U	$2J+56$	
15167.1+Y	$2J+64$	
15234.5+Z	$2J+60$	
15294.8+S	$2J+56$	
16096.7+V	$2J+60$	
16502.6+W	$2J+60$	
17058.6+X	$2J+64$	
16519.1+Y	$2J+68$	
16571.4+U	$2J+60$	
16642.7+Z	$2J+64$	
16783.8+S	$2J+60$	
17597.4+V	$2J+64$	
17918.6+Y	$2J+72$	
18541.6+X	$2J+68$	
18056.9+U	$2J+64$	
18099.5+Z	$2J+68$	
19366.9+Y	$2J+76$	
20076.8+X	$2J+72$	
19604.3+Z	$2J+72$	
20861.9+Y	$2J+80$	

Additional data on this isotope can be found in [95De50, 94Pe17, 90By01].

Energy levels and branching ratios [97Si03]. Part 2

¹⁵¹Tb
65

E^* [keV]	$2J^\pi$	Branching ratios in percentage							
		$E_f^*:$ $2J_f^\pi:$	0.0 $1^{(+)}$	22.9 $3^{(+)}$	72.4 $\langle 5^+ \rangle$	99.5 $\langle 11^- \rangle$	248.8 $\langle 5^+, 7^+ \rangle$	276.4	485.6 $\langle 7^- \rangle$
22.922(20)	$3^{(+)}$		100						
72.39(3)	$\langle 5^+ \rangle$		0.5(1)	100					
99.54(6)	$\langle 11^- \rangle$				x				
248.79(3)	$\langle 5^+, 7^+ \rangle$			2.2(5)	98(2)				
276.42(4)					100				
485.64(5)	$\langle 7^- \rangle$				2.1(2)	98(2)			
548.85(5)	$\langle 3^+, 7^+ \rangle$				94(2)		2.7(4)	3.7(9)	
583.98(6)	$\langle 5^+ \rangle$		47(2)	36(3)				17(1)	
646.02(5)	$\langle 9^- \rangle$					97(2)			2.6(2)
686.70(7)	$\langle 5, 7^+ \rangle$			62(3)	38(2)				
703.8(1)	$\langle 15^- \rangle$					100			
711.93(5)	$\langle 5^+ \rangle$		≤ 20	39(1)	21(2)		37(1)		
841.11(9)	$\langle 5, 7^+ \rangle$			22(4)	55(3)				
856.81(7)	$\langle 5, 7^+ \rangle$			67(3)	3(1)			6(2)	24(1)
886.43(7)	$\langle 5-9^+ \rangle$				68(6)				
887.5(2)	$\langle 13^- \rangle$					93(5)			
917.78(7)	$\langle 5^-, 7^- \rangle$				29(1)			2.7(9)	58(2)
949.07(6)	$\langle 5^-, 7^+ \rangle$			12(1)			46(2)		
1082.61(6)	$\langle 7^- \rangle$				54(2)				28(1)
1119.38(8)	$\langle 7^-, 9 \rangle$					25(1)	42(3)		
1202.1(1)	$\langle 5^-, 7, 9^+ \rangle$				66(3)				
1241.2(1)	$\langle 7^-, 9^- \rangle$					47(3)	5.1(8)		48(2)
1319.4(3)	$\langle 5, 7, 9 \rangle$						100		
1433.86(8)	$\langle 7^- \rangle$					16(1)	17(2)		
1611.1(1)	$\langle 5^- \rangle$		4.3(14)		54(2)		7(1)		
1629.66(8)	$\langle 7^-, 9^- \rangle$					14.2(6)	6.4(7)		7(2)
1724.5(2)	$\langle 5^- \rangle$			49(1)	15.4(4)		23(1)		
1741.78(8)	$\langle 5^- \rangle$			3(1)			5.8(9)		23(1)
1773.7(1)	$\langle 5^-, 9^- \rangle$						29(1)		15(1)
1841.6(1)	$\langle 5^-, 7^- \rangle$				4.3(2)		36(1)		4.5(5)

Energy levels and branching ratios [97Si03]. Part 3

¹⁵¹Tb
65

E^* [keV]	$2J^\pi$	Branching ratios in percentage										
		$E_f^*:$ $2J_f^\pi:$	548.8	584.0 $\langle 5^+ \rangle$	646.0 $\langle 9^- \rangle$	686.7 $\langle 5, 7^+ \rangle$	703.8 $\langle 15^- \rangle$	711.9 $\langle 5^+ \rangle$	841.1 $\langle 5, 7^+ \rangle$	856.8 $\langle 5, 7^+ \rangle$	886.4	887.5 $\langle 13^- \rangle$
711.93(5)	$\langle 5^+ \rangle$		2.8(7)									
841.11(9)	$\langle 5, 7^+ \rangle$		23(2)									
886.43(7)	$\langle 5-9^+ \rangle$		32(3)									
887.5(2)	$\langle 13^- \rangle$						6.5(7)					
917.78(7)	$\langle 5^-, 7^- \rangle$			2.7(6)		7.5(9)						
949.07(6)	$\langle 5^-, 7^+ \rangle$		7.5(11)		34.6(11)							

(continued)

¹⁵¹Tb
65

E^*	$2J^\pi$	Branching ratios in percentage										
[keV]		E_f^* : $2J_f^\pi$:	548.8	584.0 $\langle 5^+ \rangle$	646.0 $\langle 9^- \rangle$	686.7 $\langle 5, 7^+ \rangle$	703.8 $\langle 15^- \rangle$	711.9 $\langle 5^+ \rangle$	841.1 $\langle 5, 7^+ \rangle$	856.8 $\langle 5, 7^+ \rangle$	886.4	887.5 $\langle 13^- \rangle$
1082.61(6)	$\langle 7^- \rangle$		5.1(8)		13.5(8)							
1096.6(2)	$\langle 15^+ \rangle$						63(3)					37(2)
1119.38(8)	$\langle 7^-, 9 \rangle$		33.2(10)									
1202.1(1)	$\langle 5^-, 7, 9^+ \rangle$		17.9(15)		8.8(15)					6.8(13)		
1319.6(2)	$\langle 19^- \rangle$						100					
1433.86(8)	$\langle 7^- \rangle$			32(2)	31(2)							
1582.3(1)	$\langle 5^-, 7, 9 \rangle$				100							
1611.1(1)	$\langle 5^- \rangle$		28(3)									
1629.66(8)	$\langle 7^-, 9^- \rangle$				35							
1663.2(1)	$\langle 5^- - 9^- \rangle$		69(3)									
1724.5(2)	$\langle 5^- \rangle$		10.7(7)								2.2(7)	
1741.78(8)	$\langle 5^- \rangle$				37(1)			7.8(9)		14(1)		
1773.7(1)	$\langle 5^- - 9^- \rangle$			8(1)					6(1)	17(2)		
1841.6(1)	$\langle 5^-, 7^- \rangle$				12.9(8)			31(1)	2.0(6)			

Energy levels and branching ratios [97Si03]. Part 4

¹⁵¹Tb
65

E^*	$2J^\pi$	Branching ratios in percentage										
[keV]		E_f^* :	917.8	0+X	949.1	1082.6	1096.6	1319.6	0+S	0+V	0+T	0+Z
		$2J_f^\pi$:	$\langle 5^-, 7^- \rangle$		$\langle 5^-, 7^+ \rangle$	$\langle 7^- \rangle$	$\langle 15^+ \rangle$	$\langle 19^- \rangle$				
1433.86(8)	$\langle 7^- \rangle$		4(3)									
1611.1(1)	$\langle 5^- \rangle$					6.7(14)						
1629.66(8)	$\langle 7^-, 9^- \rangle$		20(1)		16.5(7)							
1663.2(1)	$\langle 5^- - 9^- \rangle$		31.3(16)									
726.5+X	$2J+4$			x								
1693.4(2)	$\langle 19^+ \rangle$						100					
1741.78(8)	$\langle 5^- \rangle$				10.7(9)							
1773.7(1)	$\langle 5^- - 9^- \rangle$		25(1)									
1841.6(1)	$\langle 5^-, 7^- \rangle$				9.6(8)							
2002.2(2)	$\langle 23^- \rangle$							100				
2045.7(2)	$\langle 21^+ \rangle$							78(11)				
2120.3(4)	$\langle 23^- \rangle$							100				
681.5+Z	$2J+4$											100
709.3+V	$2J+4$									x		
758+S	$2J+4$								x			
785+T	$2J+4$										x	

Energy levels and branching ratios [97Si03]. Part 5

¹⁵¹Tb
65

E^*	$2J^\pi$	Branching ratios in percentage									
[keV]	E_f^* : $2J_f^\pi$:	0+W	0+U	0+Y	726.5+X $2J+4$	1693.4 $\langle 19^+ \rangle$	2002.2 $\langle 23^- \rangle$	2045.7 $\langle 21^+ \rangle$	2120.3 $\langle 23^- \rangle$	602.1+Y $2J+4$	681.5+Z $2J+4$
2045.7(2)	$\langle 21^+ \rangle$					22(7)					
602.1+Y	$2J+4$			100							
2180.6(2)	$\langle 25^- \rangle$						100		x		
2219.9(2)	$\langle 23^+ \rangle$					100					
739+W	$2J+4$	x									
768.6+U	$2J+4$		x								
1495.8+X	$2J+8$				100						
2468.6(2)	$\langle 25^+ \rangle$						2.9(5)	10(3)	5.9(13)		
1248.5+Y	$2J+8$									100	
1409.2+Z	$2J+8$										100

Energy levels and branching ratios [97Si03]. Part 6

¹⁵¹Tb
65

E^*	$2J^\pi$	Branching ratios in percentage										
[keV]		$E_f^*:$ $2J_f^\pi:$	2180.6 $\langle 25^- \rangle$	709.3+V $2J+4$	2219.9 $\langle 23^+ \rangle$	758+S $2J+4$	739+W $2J+4$	768.6+U $2J+4$	785+T $2J+4$	2375.3 $\langle 27^- \rangle$	1496+X $2J+8$	2468.6 $\langle 25^+ \rangle$
2375.3(2)	$\langle 27^- \rangle$		100									
2468.6(2)	$\langle 25^+ \rangle$		7(3)		75(4)							
2782.6(2)	$\langle 27^+ \rangle$				93(2)							7.0
2847.3(2)	$\langle 29^+ \rangle$									31(3)		55(3)
1470.2+V	$2J+8$			x								
1529.4+W	$2J+8$						x					
1566+S	$2J+8$				x							
1584.9+U	$2J+8$							100				
1617+T	$2J+8$								x			
3128.6(3)	$\langle 31^- \rangle$									100		
3159.1(4)	$\langle 29^- \rangle$		100									
2307.0+X	$2J+12$										100	

Energy levels and branching ratios [97Si03]. Part 7

¹⁵¹Tb
65

E^*	$2J^\pi$	Branching ratios in percentage										
		E_f^* :	2782.6	1249+Y	2847.3	1409+Z	1470+V	1529+W	1566+S	1585+U	1617+T	3115.7
[keV]		$2J_f^\pi$:	$\langle 27^+ \rangle$	$2J+8$	$\langle 29^+ \rangle$	$2J+8$	$2J+8$	$2J+8$	$2J+8$	$2J+8$	$2J+8$	$\langle 31^+ \rangle$
2847.3(2)	$\langle 29^+ \rangle$		14									
3108.2(4)			100									
3115.7(2)	$\langle 31^+ \rangle$				100							
3196.0(5)	$\langle 31^+ \rangle$				100							
3274.0(3)	$\langle 33^+ \rangle$											99(5)

(continued)

¹⁵¹Tb
65

E^*	$2J^\pi$	Branching ratios in percentage										
[keV]		E_f^* : $2J_f^\pi$:	2782.6 $\langle 27^+ \rangle$	1249+Y $2J+8$	2847.3 $\langle 29^+ \rangle$	1409+Z $2J+8$	1470+V $2J+8$	1529+W $2J+8$	1566+S $2J+8$	1585+U $2J+8$	1617+T $2J+8$	3115.7 $\langle 31^+ \rangle$
3287.7(4)					100							
1940.4+Y	$2J+12$			100								
2183.1+Z	$2J+12$				100							
2282.1+V	$2J+12$						x					
2368.0+W	$2J+12$							x				
2424.1+S	$2J+12$								x			
3900.6(3)	$\langle 35^+ \rangle$											100
2450.2+U	$2J+12$									100		
2501+T	$2J+12$										x	

Energy levels and branching ratios [97Si03]. Part 8

¹⁵¹Tb
65

E^*	$2J^\pi$	Branching ratios in percentage										
[keV]		E_{f}^* : $2J_{\text{f}}^\pi$:	3128.6 $\langle 31^- \rangle$	3196.0 $\langle 31^+ \rangle$	2307+X $2J+12$	3274.0 $\langle 33^+ \rangle$	1940+Y $2J+12$	2183+Z $2J+12$	2282+V $2J+12$	3808.4 $\langle 35^- \rangle$	2368+W $2J+12$	2424+S $2J+12$
3274.0(3)	$\langle 33^+ \rangle$		1.32(14)	x								
3808.4(3)	$\langle 35^- \rangle$		100									
3161.0+X	$2J+16$				100							
4148.0(3)	$\langle 37^+ \rangle$					85(4)				1.5(2)		
2677.8+Y	$2J+16$						100					
3004.3+Z	$2J+16$							100				
3145.6+V	$2J+16$								x			
3257.7+W	$2J+16$										x	
4765.4(5)	$\langle 39^- \rangle$									100		
3333.9+S	$2J+16$											x
4840.2(3)	$\langle 39^- \rangle$									100		

Energy levels and branching ratios [97Si03]. Part 9

¹⁵¹Tb
65

E^*	$2J^\pi$	Branching ratios in percentage										
[keV]	E_f^* : $2J_f^\pi$:	3900.6 $\langle 35^+ \rangle$	2450+U $2J+12$	2501+T $2J+12$	3161+X $2J+16$	4148.0 $\langle 37^+ \rangle$	2678+Y $2J+16$	3004+Z $2J+16$	4564.8 $\langle 39^+ \rangle$	3146+V $2J+16$	3258+W $2J+16$	
4148.0(3)	$\langle 37^+ \rangle$	14(2)										
4564.8(3)	$\langle 39^+ \rangle$	100										
4773.9(3)	$\langle 41^+ \rangle$					71(4)			29(1)			
3364.1+U	$2J+16$		100									
3435.9+T	$2J+16$			x								
3461.2+Y	$2J+20$						100					
4058.5+X	$2J+20$				100							

(continued)

¹⁵¹Tb
65

E^*	$2J^\pi$	Branching ratios in percentage										
[keV]		E_f^* :	3900.6	2450+U	2501+T	3161+X	4148.0	2678+Y	3004+Z	4564.8	3146+V	3258+W
		$2J_f^\pi$:	$\langle 35^+ \rangle$	$2J+12$	$2J+12$	$2J+16$	$\langle 37^+ \rangle$	$2J+16$	$2J+16$	$\langle 39^+ \rangle$	$2J+16$	$2J+16$
5034.2(4)	$\langle 41^- \rangle$					100						
3872.1+Z	$2J+20$								100			
4059.8+V	$2J+20$										x	
4199.0+W	$2J+20$											x

Energy levels and branching ratios [97Si03]. Part 10

¹⁵¹Tb
65

E^* [keV]	$2J^\pi$	Branching ratios in percentage										
		E_f^* : $2J_f^\pi$:	4765.4 $\langle 39^- \rangle$	4773.9 $\langle 41^+ \rangle$	3334+S $2J+16$	4840.2 $\langle 39^- \rangle$	3364+U $2J+16$	3436+T $2J+16$	3461+Y $2J+20$	4059+X $2J+20$	5034.2 $\langle 41^- \rangle$	5162.4 $\langle 45^+ \rangle$
5162.4(3)	$\langle 45^+ \rangle$			100								
5363.6(5)		100										
5467.2(4)	$\langle 43^- \rangle$					100						
5474.8(3)	$\langle 43^- \rangle$			76(8)		12(6)					12(2)	
5656.4(6)		100										
4293.9+S	$2J+20$				x							
4289.9+Y	$2J+24$								100			
4326.0+U	$2J+20$					100						
4421.8+T	$2J+20$							x				
5001.2+X	$2J+24$									100		
5985.1(3)	$\langle 47^- \rangle$											78(8)
6485.1(3)	$\langle 49^+ \rangle$											100

Energy levels and branching ratios [97Si03]. Part 11

¹⁵¹Tb
65

E^* [keV]	$2J^\pi$	Branching ratios in percentage										
		E_f^* : $2J_f^\pi$:	5363.6 $2J+20$	3872+Z $2J+20$	5467.2 $\langle 43^- \rangle$	5474.8 $\langle 43^- \rangle$	4060+V $2J+20$	4199+W $2J+20$	4294+S $2J+20$	5818.7 $\langle 45^- \rangle$	4290+Y $2J+24$	4326+U $2J+20$
5818.7(4)	$\langle 45^- \rangle$				25(6)	75(25)						
5924.6(4)	$\langle 45^- \rangle$	12(2)			88(9)							
5985.1(3)	$\langle 47^- \rangle$					14(8)				9(5)		
6165.3(4)	$\langle 49^- \rangle$									26(17)		
6169.9(4)	$\langle 49^- \rangle$									50(25)		
4787.9+Z	$2J+24$			100								
5025.0+V	$2J+24$						x					
6673.7(5)	$\langle 49^- \rangle$									100		
5191.9+W	$2J+24$							x				
5164.7+Y	$2J+28$										100	

(continued)

¹⁵¹Tb
65

E^*	$2J^\pi$	Branching ratios in percentage										
[keV]	E_f^* : $2J_f^\pi$:	5363.6	3872+Z	5467.2	5474.8	4060+V	4199+W	4294+S	5818.7	4290+Y	4326+U	
			$2J+20$	$\langle 43^- \rangle$	$\langle 43^- \rangle$	$2J+20$	$2J+20$	$2J+20$	$\langle 45^- \rangle$	$2J+24$	$2J+20$	
5305.5+S	$2J+24$							x				
5335.4+U	$2J+24$										100	

Energy levels and branching ratios [97Si03]. Part 12

¹⁵¹Tb
65

E^*	$2J^\pi$	Branching ratios in percentage										
[keV]		E^*_f : $2J^\pi_\text{f}$:	4422+T $2J+20$	5924.6 $\langle 45^- \rangle$	5001+X $2J+24$	5985.1 $\langle 47^- \rangle$	6165.3 $\langle 49^- \rangle$	6169.9 $\langle 49^- \rangle$	4788+Z $2J+24$	6485.1 $\langle 49^+ \rangle$	5025+V $2J+24$	6594.0 $\langle 51^- \rangle$
6165.3(4)	$\langle 49^- \rangle$			74(18)								
6169.9(4)	$\langle 49^- \rangle$			50(5)								
6594.0(4)	$\langle 51^- \rangle$						93(9)	7(2)				
6879.9(3)	$\langle 51^- \rangle$					96(10)						
5989.4+X	$2J+28$				100							
5460.6+T	$2J+24$	x										
5751.5+Z	$2J+28$								100			
7248.1(4)	$\langle 53^- \rangle$											19(2)
7264.6(3)	$\langle 53^+ \rangle$									99(5)		0.9(1)
7295.8(4)	$\langle 53^- \rangle$											50(6)
7304.3(3)	$\langle 53^+ \rangle$									96(5)		3.7(4)
6043.2+V	$2J+28$										x	

Energy levels and branching ratios [97Si03]. Part 13

¹⁵¹Tb
65

E^*	$2J^\pi$	Branching ratios in percentage										
[keV]		E_f^* : $2J_f^\pi$:	6673.7 $\langle 49^- \rangle$	5192+W $2J+24$	5165+Y $2J+28$	5306+S $2J+24$	5335+U $2J+24$	6879.9 $\langle 51^- \rangle$	5989+X $2J+28$	5461+T $2J+24$	5752+Z $2J+28$	7248.1 $\langle 53^- \rangle$
6879.9(3)	$\langle 51^- \rangle$		4(1)									
7248.1(4)	$\langle 53^- \rangle$							81(8)				
7295.8(4)	$\langle 53^- \rangle$							50(19)				
6086.3+Y	$2J+32$				100							
7676.3(4)	$\langle 55^- \rangle$											100
6236.3+W	$2J+28$			x								
6369.7+S	$2J+28$					x						
7882.4(4)	$\langle 57^- \rangle$											29(10)
6392.0+U	$2J+28$						100					
7901.6(3)	$\langle 57^+ \rangle$											1.4(8)
7023.6+X	$2J+32$								100			
6550.5+T	$2J+28$									x		
6764.8+Z	$2J+32$										100	

Energy levels and branching ratios [97Si03]. Part 14

¹⁵¹Tb
65

E^*	$2J^\pi$	Branching ratios in percentage									
[keV]	E_f^* : $2J_f^\pi$:	7264.6 $\langle 53^+ \rangle$	7295.8 $\langle 53^- \rangle$	7304.3 $\langle 53^+ \rangle$	6043+V $2J+28$	7618.8 $\langle 55^+ \rangle$	6086+Y $2J+32$	7676.3 $\langle 55^- \rangle$	6236+W $2J+28$	7764.5 $\langle 57^- \rangle$	6370+S $2J+28$
7618.8(4)	$\langle 55^+ \rangle$		100								
7764.5(5)	$\langle 57^- \rangle$					100					
7882.4(4)	$\langle 57^- \rangle$							68(7)		2.9(3)	
7901.6(3)	$\langle 57^+ \rangle$	68(1)		30(4)		0.8(4)					
8335.8(4)	$\langle 59^- \rangle$							100			
7054.4+Y	$2J+36$						100				
7114.5+V	$2J+32$				x						
7332.7+W	$2J+32$								x		
7485.2+S	$2J+32$										x

Energy levels and branching ratios [97Si03]. Part 15

¹⁵¹Tb
65

E^* [keV]	$2J^\pi$	Branching ratios in percentage									
		E_f^* : $2J_f^\pi$:	7882.4 $\langle 57^- \rangle$	6392+U $2J+28$	7901.6 $\langle 57^+ \rangle$	7024+X $2J+32$	6551+T $2J+28$	6765+Z $2J+32$	8283.0 $\langle 61^+ \rangle$	8335.8 $\langle 59^- \rangle$	7054+Y $2J+36$
8283.0(4)	$\langle 61^+ \rangle$		3.1(11)		97(2)						
8802.4(4)	$\langle 61^- \rangle$		22(2)							78(8)	
7495.8+U	$2J+32$			100							
9035.0(5)	$\langle 63 \rangle$								100		
8105.6+X	$2J+36$					100					
9123.5(4)	$\langle 63^- \rangle$								35(8)		
7693.8+T	$2J+32$						x				
7826.6+Z	$2J+36$							100			
9379.5(4)	$\langle 65^+ \rangle$								97(5)		
9406.2(4)	$\langle 65 \rangle$								100		
9445.4(5)	$\langle 63 \rangle$								100		
9490.2(4)	$\langle 65^+ \rangle$								57(3)		
9530.3(5)	$\langle 63^- \rangle$								100		
8070.1+Y	$2J+40$										100
9733.6(4)	$\langle 65^+ \rangle$								56(19)		

Energy levels and branching ratios [97Si03]. Part 16

¹⁵¹Tb
65

E^* [keV]	$2J^\pi$	Branching ratios in percentage									
		E_f^* : $2J_f^\pi$:	7115+V $2J+32$	8802.4 $\langle 61^- \rangle$	7333+W $2J+32$	7485+S $2J+32$	7496+U $2J+32$	9035.0 $\langle 63 \rangle$	8106+X $2J+36$	9123.5 $\langle 63^- \rangle$	7694+T $2J+32$
9123.5(4)	$\langle 63^- \rangle$			65(7)							
9379.5(4)	$\langle 65^+ \rangle$									2.5(3)	
9490.2(4)	$\langle 65^+ \rangle$							24(2)		19(2)	

(continued)

¹⁵¹Tb
65

E^* [keV]	$2J^\pi$	Branching ratios in percentage									
		E_f^* : $2J_f^\pi$:	7115+V $2J+32$	8802.4 $\langle 61^- \rangle$	7333+W $2J+32$	7485+S $2J+32$	7496+U $2J+32$	9035.0 $\langle 63 \rangle$	8106+X $2J+36$	9123.5 $\langle 63^- \rangle$	7694+T $2J+32$
8239.2+V	$2J+36$		x								
8482.9+W	$2J+36$				x						
8655.0+S	$2J+36$					x					
8648.3+U	$2J+36$						100				
9235.6+X	$2J+40$								100		
8890.7+T	$2J+36$										x

Energy levels and branching ratios [97Si03]. Part 17

¹⁵¹Tb
65

E^* [keV]	$2J^\pi$	Branching ratios in percentage										
		E_f^* : $2J_f^\pi$:	7827+Z $2J+36$	9379.5 $\langle 65^+ \rangle$	9406.2 $\langle 65 \rangle$	9445.4 $\langle 63 \rangle$	9490.2 $\langle 65^+ \rangle$	9530.3 $\langle 63^- \rangle$	8070+Y $2J+40$	9708.7 $\langle 67 \rangle$	8239+V $2J+36$	9733.6 $\langle 65^+ \rangle$
9708.7(5)	$\langle 67 \rangle$				100							
9733.6(4)	$\langle 65^+ \rangle$					44(19)						
9750.5(4)	$\langle 67^- \rangle$			89(4)			10(6)	1.7(2)				
10032.2(4)	$\langle 67^+ \rangle$			57(6)								43(22)
10296.7(6)	$\langle 71 \rangle$									100		
10350.5(4)	$\langle 69^+ \rangle$			50(5)								
8938.0+Z	$2J+40$		100									
10620.3(6)				100								
9133.1+Y	$2J+44$								100			
10772.3(6)	$\langle 71 \rangle$									100		
9416.3+V	$2J+40$										x	

Energy levels and branching ratios [97Si03]. Part 18

¹⁵¹Tb
65

E^* [keV]	$2J^\pi$	Branching ratios in percentage									
		E_f^* : $2J_f^\pi$:	9750.5 $\langle 67^- \rangle$	8483+W $2J+36$	10032.2 $\langle 67^+ \rangle$	8655+S $2J+36$	8648+U $2J+36$	9236+X $2J+40$	10350.5 $\langle 69^+ \rangle$	8891+T $2J+36$	8938+Z $2J+40$
10350.5(4)	$\langle 69^+ \rangle$				50(16)						
10792.0(4)	$\langle 71^- \rangle$		97(5)						3.3(4)		
10997.7(5)	$\langle 69^- \rangle$		100								
9685.4+W	$2J+40$			x							
11200.5(6)	$\langle 71 \rangle$		100								
11201.9(6)									100		
11274.8(4)	$\langle 71^- \rangle$		13(3)						40(4)		
9876.3+S	$2J+40$					x					
9849.4+U	$2J+40$						100				
10413.6+X	$2J+44$							100			

(continued)

¹⁵¹Tb
65

E^* [keV]	$2J^\pi$	Branching ratios in percentage									
		E_f^* : $2J_f^\pi$:	9750.5 $\langle 67^- \rangle$	8483+W $2J+36$	10032.2 $\langle 67^+ \rangle$	8655+S $2J+36$	8648+U $2J+36$	9236+X $2J+40$	10350.5 $\langle 69^+ \rangle$	8891+T $2J+36$	8938+Z $2J+40$
11425.9(6)	$\langle 73^+ \rangle$								100		
10098.8+Z	$2J+44$										100
10139.6+T	$2J+40$									x	

Energy levels and branching ratios [97Si03]. Part 19

¹⁵¹Tb
65

E^*	$2J^\pi$	Branching ratios in percentage								
[keV]		E_{f}^* : $2J_{\text{f}}^\pi$:	9133+Y $2J+44$	10772.3 $\langle 71 \rangle$	10792.0 $\langle 71^- \rangle$	9416+V $2J+40$	10997.7 $\langle 69^- \rangle$	9685+W $2J+40$	11274.8 $\langle 71^- \rangle$	9876+S $2J+40$
11274.8(4)	$\langle 71^- \rangle$						47(5)			
11593.0(4)	$\langle 73^- \rangle$				77(8)				23(12)	
11726.4(4)	$\langle 75^- \rangle$				99(10)					
11760.6(7)				100						
10243.6+Y	$2J+48$		100							
11830.0(6)	$\langle 73 \rangle$				100					
11956.8(4)	$\langle 75^- \rangle$				100					
10645.6+V	$2J+44$					x				
10941.1+W	$2J+44$							x		
11150.7+S	$2J+44$									x
12704.0(4)	$\langle 75^- \rangle$				100					

Energy levels and branching ratios [97Si03]. Part 20

¹⁵¹Tb
65

E^*	$2J^\pi$	Branching ratios in percentage								
[keV]		E_f^* : $2J_f^\pi$:	9849+U $2J+40$	10414+X $2J+44$	11425.9 $\langle 73^+ \rangle$	11593.0 $\langle 73^- \rangle$	10099+Z $2J+44$	10140+T $2J+40$	11726.4 $\langle 75^- \rangle$	10244+Y $2J+48$

11726.4(4)	$\langle 75^- \rangle$					1.2(1)				
11756.6(7)					100					
11641.5+X	$2J+48$			100						
11097.9+U	$2J+44$		100							
12719.9(5)	$\langle 79^- \rangle$								83(8)	
12754.2(5)	$\langle 79^- \rangle$								100	
11308.4+Z	$2J+48$						100			
11441.6+T	$2J+44$							x		
11402.2+Y	$2J+52$									100
13019.5(5)	$\langle 79^- \rangle$								100	
13524.6(6)									100	

Energy levels and branching ratios [97Si03]. Part 21

¹⁵¹Tb
65

E^*	$2J^\pi$	Branching ratios in percentage								
		E_f^* :	11830.0	11956.8	10646+V	10941+W	11642+X	11098+U	11151+S	12704.0
[keV]		$2J_f^\pi$:	$\langle 73 \rangle$	$\langle 75^- \rangle$	$2J+44$	$2J+44$	$2J+48$	$2J+44$	$2J+44$	$\langle 75^- \rangle$
12719.9(5)	$\langle 79^- \rangle$			17(2)						
13249.3(7)			100							
11928.3+V	$2J+48$				x					
13522.7(6)										100
12250.4+W	$2J+48$					x				
13850.4(6)	$\langle 79^- \rangle$									100
12919.4+X	$2J+52$						100			
12394.4+U	$2J+48$							100		
12478.9+S	$2J+48$								x	

Energy levels and branching ratios [97Si03]. Part 22

¹⁵¹Tb
65

E^*	$2J^\pi$	Branching ratios in percentage								
[keV]		E_f^* : $2J_f^\pi$:	12719.9 $\langle 79^- \rangle$	12754.2 $\langle 79^- \rangle$	11308+Z $2J+48$	11442+T $2J+44$	11402+Y $2J+52$	13019.5 $\langle 79^- \rangle$	11928+V $2J+48$	12250+W $2J+48$
13460.7(6)	$\langle 81 \rangle$		62(12)	38(12)						
13791.2(6)	$\langle 83^- \rangle$		88(12)					12(2)		
12567.2+Z	$2J+52$				100					
12609.1+Y	$2J+56$						100			
12797.6+T	$2J+48$					x				
13263.7+V	$2J+52$								x	
13614.2+W	$2J+52$									x

Energy levels and branching ratios [97Si03]. Part 23

¹⁵¹Tb
65

E^*	$2J^\pi$	Branching ratios in percentage								
[keV]		E_f^* : $2J_f^\pi$:	13791.2 $\langle 83^- \rangle$	13850.4 $\langle 79^- \rangle$	12919+X $2J+52$	12394+U $2J+48$	12479+S $2J+48$	12567+Z $2J+52$	12609+Y $2J+56$	13264+V $2J+52$
14538.9(7)			100							
14900.4(7)				100						
14247.6+X	$2J+56$				100					
13739.2+U	$2J+52$					100				
15316.9(7)				100						
13859.8+S	$2J+52$						x			
15343.4(7)				100						
13876.8+Z	$2J+56$							100		
13863.9+Y	$2J+60$								100	
15641.3(7)	$\langle 87^- \rangle$		100							
14652.5+V	$2J+56$									x

Energy levels and branching ratios [97Si03]. Part 24

¹⁵¹Tb
65

E^*	$2J^\pi$	Branching ratios in percentage							
[keV]	E_f^* : $2J_f^\pi$:	13614+W $2J+52$	14248+X $2J+56$	13739+U $2J+52$	13860+S $2J+52$	13877+Z $2J+56$	13864+Y $2J+60$	15641.3 $\langle 87^- \rangle$	14653+V $2J+56$
15028.8+W	$2J+56$	x							
15626.9+X	$2J+60$		100						
16589.1(8)	$\langle 91^- \rangle$							100	
15132.1+U	$2J+56$			100					
15167.1+Y	$2J+64$						100		
15234.5+Z	$2J+60$					100			
15294.8+S	$2J+56$				x				
16096.7+V	$2J+60$								x

Energy levels and branching ratios [97Si03]. Part 25

¹⁵¹Tb
65

E^* [keV]	$2J^\pi$	Branching ratios in percentage								
		E^*_f : $2J^\pi_f$:	15029+W $2J+56$	15627+X $2J+60$	15132+U $2J+56$	15167+Y $2J+64$	15235+Z $2J+60$	15295+S $2J+56$	16097+V $2J+60$	17059+X $2J+64$
16502.6+W	$2J+60$	x								
17058.6+X	$2J+64$		100							
16519.1+Y	$2J+68$				100					
16571.4+U	$2J+60$			100						
16642.7+Z	$2J+64$					100				
16783.8+S	$2J+60$						x			
17597.4+V	$2J+64$							x		
18541.6+X	$2J+68$									100

Energy levels and branching ratios [97Si03]. Part 26

¹⁵¹Tb
65

E^* [keV]	$2J^\pi$	Branching ratios in percentage							
		E_f^* : $2J_f^\pi$:	16519+Y $2J+68$	16571+U $2J+60$	16643+Z $2J+64$	17919+Y $2J+72$	18542+X $2J+68$	18100+Z $2J+68$	19367+Y $2J+76$
17918.6+Y	$2J+72$		100						
18056.9+U	$2J+64$			x					
18099.5+Z	$2J+68$				100				
19366.9+Y	$2J+76$					100			
20076.8+X	$2J+72$						100		
19604.3+Z	$2J+72$							100	
20861.9+Y	$2J+80$								100

Energy levels and branching ratios [96Ar09].

¹⁵²Tb
₆₅

E^*	J^π	$T_{1/2}$ or Γ_{cm}
[keV]		
0.0	2^-	17.5(1) h
235.39(9)	3^-	
256.93(13)	1^+	0.39(8) ns
277.19(10)	3^-	
283.29(5)	4^-	
342.15(16)	5^-	0.96 μs
501.74(19)	8^+	4.2(1) m
600.3	9^+	<2 ns
806.1	10^+	<2 ns
0+X	$J \approx \langle 31 \rangle$	
1212.4	$\langle 9^- \rangle$	<2 ns
1230.1	11^+	<2 ns
1237.7	$11^{\langle - \rangle}$	4.2(2) ns
1349.2	12^+	<2 ns
1370.2	$12^{\langle - \rangle}$	<2 ns
0+Y	$J \approx \langle 30 \rangle$	
1712.1	$13^{\langle - \rangle}$	<2 ns
1887.7	14^+	<2 ns
1887.8	$\langle 13^+ \rangle$	<2 ns
1920.3	$14^{\langle - \rangle}$	<2 ns
823+X	$J+2$	
801+Y	$J+2$	
2269.3	$15^{\langle - \rangle}$	<2 ns
2499.4	$16^{\langle - \rangle}$	<2 ns
2660.6	$\langle 16^- \rangle$	
2688.6	16^+	
2852	$\langle 17^- \rangle$	
1687.3+X	$J+4$	
2889.4	$17^{\langle - \rangle}$	<2 ns
1645+Y	$J+4$	
3126.7	$18^{\langle - \rangle}$	<2 ns
3218.3	$\langle 18^+ \rangle$	<2 ns
3250.5	$\langle 19^- \rangle$	
3596.2	$19^{\langle - \rangle}$	<2 ns
3720	$\langle 20^- \rangle$	
2596.5+X	$J+6$	
3845.3	$20^{\langle - \rangle}$	<2 ns
2532.7+Y	$J+6$	
4002	$\langle 21 \rangle$	
4234	$\langle 21^- \rangle$	
4350.2	$21^{\langle - \rangle}$	<2 ns
4354	$\langle 22 \rangle$	
4361	$\langle 21^- \rangle$	
4454	$\langle 24 \rangle$	
4502	$\langle 22^- \rangle$	

(continued)

 $^{152}_{65}\text{Tb}$

E^*	J^π	$T_{1/2}$ or Γ_{cm}
[keV]		
4694	$\langle 23 \rangle$	
3550.3+X	$J+8$	
3465.0+Y	$J+8$	
5103	$\langle 23^- \rangle$	
5182	$\langle 23^- \rangle$	
5249	$\langle 24 \rangle$	
5257	$\langle 24^- \rangle$	
4550.3+X	$J+10$	
4443.2+Y	$J+10$	
5966	$\langle 25^- \rangle$	
5969	$\langle 26^- \rangle$	
5985	$\langle 26 \rangle$	
6011	$\langle 25^- \rangle$	
6093	$\langle 26 \rangle$	
6371	$\langle 27^- \rangle$	
6696	$\langle 28 \rangle$	
5596.5+X	$J+12$	
6873	$\langle 28^+ \rangle$	
5466.2+Y	$J+12$	
6916	$\langle 29^- \rangle$	
7284	$\langle 29^- \rangle$	
7617	$\langle 30^+ \rangle$	
7728	$\langle 31^- \rangle$	
6691.1+X	$J+14$	
6536.1+Y	$J+14$	
8290	$\langle 31 \rangle$	
8371	$\langle 32^+ \rangle$	
8502	$\langle 31 \rangle$	
8565	$\langle 33^- \rangle$	
8961	$\langle 33 \rangle$	
7832.1+X	$J+16$	
7654.2+Y	$J+16$	
9147	$\langle 34^+ \rangle$	
9389	$\langle 35^- \rangle$	
9792	$\langle 36^+ \rangle$	
9804	$\langle 35 \rangle$	
9923	$\langle 37^- \rangle$	
9021.5+X	$J+18$	
8819.1+Y	$J+18$	
10283	$\langle 36^+ \rangle$	
10614	$\langle 38^+ \rangle$	
10996	$\langle 39^- \rangle$	
10261.7+X	$J+20$	
10034.7+Y	$J+20$	
11654	$\langle 40^+ \rangle$	

(continued)

¹⁵²Tb
65

E^*	J^π	$T_{1/2}$ or Γ_{cm}
[keV]		
12054	$\langle 41^- \rangle$	
11553.9+X	$J+22$	
11301.4+Y	$J+22$	
12761	$\langle 42^+ \rangle$	
13278	$\langle 43^- \rangle$	
13929	$\langle 44^+ \rangle$	
12616.8+Y	$J+24$	
12896.5+X	$J+24$	
13984+Y	$J+26$	
14291.1+X	$J+26$	
15737+X	$J+28$	

Additional data on this isotope can be found in [95Pe16].

Energy levels and branching ratios [96Ar09]. Part 2

¹⁵²Tb
65

E^*	J^π	Branching ratios in percentage							
		E_f^* :	0.0	235.4	277.2	283.3	342.1	501.7	600.3
[keV]		J_f^π :	2^-	3^-	3^-	4^-	5^-	8^+	9^+
235.39(9)	3^-		x						
256.93(13)	1^+		x						
277.19(10)	3^-		x						
283.29(5)	4^-		98.1	1.93(15)	x				
342.15(16)	5^-			3.5(2)	2.5(2)	94(6)			
501.74(19)	8^+						x		
600.3	9^+							x	
806.1	10^+							12	88
1212.4	$\langle 9^- \rangle$							71	29
1230.1	11^+								x

Energy levels and branching ratios [96Ar09]. Part 3

¹⁵²Tb
65

E^*	J^π	Branching ratios in percentage									
		E_f^* :	806.1	0+X	1212.4	1230.1	1237.7	1349.2	1370.2	0+Y	1712.1
[keV]		J_f^π :	10^+	$J \approx \langle 31 \rangle$	$\langle 9^- \rangle$	11^+	$11^{\langle - \rangle}$	12^+	$12^{\langle - \rangle}$	$J \approx \langle 30 \rangle$	$13^{\langle - \rangle}$
1237.7	$11^{\langle - \rangle}$		100		x						
1349.2	12^+		x								
1370.2	$12^{\langle - \rangle}$						x				
1712.1	$13^{\langle - \rangle}$						x				
1887.7	14^+							100			

(continued)

 $^{152}_{65}\text{Tb}$

E^* [keV]	J^π	Branching ratios in percentage										
		$E^*_\text{f}:$ $J^\pi_\text{f}:$	806.1 10 ⁺	0+X $J \approx \langle 31 \rangle$	1212.4 $\langle 9^- \rangle$	1230.1 11 ⁺	1237.7 11 ^{$\langle - \rangle$}	1349.2 12 ⁺	1370.2 12 ^{$\langle - \rangle$}	0+Y $J \approx \langle 30 \rangle$	1712.1 13 ^{$\langle - \rangle$}	1887.7 14 ⁺
1887.8	$\langle 13^+ \rangle$					x						
1920.3	14 ^{$\langle - \rangle$}								58		42	
823+X	$J+2$			x								
801+Y	$J+2$									x		
2269.3	15 ^{$\langle - \rangle$}										100	
2688.6	16 ⁺											100

Energy levels and branching ratios [96Ar09]. Part 4

 $^{152}_{65}\text{Tb}$

E^* [keV]	J^π	Branching ratios in percentage										
		$E^*_\text{f}:$ $J^\pi_\text{f}:$	1920.3 14 ^{$\langle - \rangle$}	823+X $J+2$	801+Y $J+2$	2269.3 15 ^{$\langle - \rangle$}	2499.4 16 ^{$\langle - \rangle$}	2660.6 $\langle 16^- \rangle$	2852 $\langle 17^- \rangle$	1687+X $J+4$	2889.4 17 ^{$\langle - \rangle$}	1645+Y $J+4$
2499.4	16 ^{$\langle - \rangle$}		63			37						
2660.6	$\langle 16^- \rangle$		46			54						
2852	$\langle 17^- \rangle$							x				
1687.3+X	$J+4$			x								
2889.4	17 ^{$\langle - \rangle$}					100						
1645+Y	$J+4$				x							
3126.7	18 ^{$\langle - \rangle$}						70				30	
3218.3	$\langle 18^+ \rangle$										x	
3250.5	$\langle 19^- \rangle$								x			
3596.2	19 ^{$\langle - \rangle$}										x	
2596.5+X	$J+6$									x		
2532.7+Y	$J+6$											x

Energy levels and branching ratios [96Ar09]. Part 5

 $^{152}_{65}\text{Tb}$

E^* [keV]	J^π	Branching ratios in percentage										
		$E^*_\text{f}:$ $J^\pi_\text{f}:$	3126.7 18 ^{$\langle - \rangle$}	3218.3 $\langle 18^+ \rangle$	3250.5 $\langle 19^- \rangle$	3596.2 19 ^{$\langle - \rangle$}	3720 $\langle 20^- \rangle$	2597+X $J+6$	2533+Y $J+6$	4002 $\langle 21 \rangle$	4234 $\langle 21^- \rangle$	4354 $\langle 22 \rangle$
3250.5	$\langle 19^- \rangle$		x	x								
3720	$\langle 20^- \rangle$		x		x							
3845.3	20 ^{$\langle - \rangle$}		x									
4002	$\langle 21 \rangle$						x					
4234	$\langle 21^- \rangle$				x							
4350.2	21 ^{$\langle - \rangle$}					100						
4354	$\langle 22 \rangle$									x		
4361	$\langle 21^- \rangle$					x						
4454	$\langle 24 \rangle$									x		

(continued)

 $^{152}_{65}\text{Tb}$

E^* [keV]	J^π	Branching ratios in percentage										
		E^*_f : J^π_f :	3126.7 18 ⁽⁻⁾	3218.3 (18 ⁺)	3250.5 (19 ⁻)	3596.2 19 ⁽⁻⁾	3720 (20 ⁻)	2597+X $J+6$	2533+Y $J+6$	4002 (21)	4234 (21 ⁻)	4354 (22)
4502	(22 ⁻)						x					
3550.3+X	$J+8$							x				
3465.0+Y	$J+8$								x			
5103	(23 ⁻)										x	
5249	(24)											x

Energy levels and branching ratios [96Ar09]. Part 6

 $^{152}_{65}\text{Tb}$

E^* [keV]	J^π	Branching ratios in percentage										
		E^*_f : J^π_f :	4361 (21 ⁻)	4454 (24)	4502 (22 ⁻)	4694 (23)	3550+X $J+8$	3465+Y $J+8$	5103 (23 ⁻)	5182 (23 ⁻)	5249 (24)	5257 (24 ⁻)
4694	(23)			x								
5103	(23 ⁻)	x										
5182	(23 ⁻)	x										
5249	(24)					x						
5257	(24 ⁻)			x	x							
4550.3+X	$J+10$						x					
4443.2+Y	$J+10$							x				
5966	(25 ⁻)								x	x		
5969	(26 ⁻)											x
6011	(25 ⁻)								x	x		
6093	(26)										x	

Energy levels and branching ratios [96Ar09]. Part 7

 $^{152}_{65}\text{Tb}$

E^* [keV]	J^π	Branching ratios in percentage										
		E^*_f : J^π_f :	4550+X $J+10$	4443+Y $J+10$	5966 (25 ⁻)	5969 (26 ⁻)	5985 (26)	6011 (25 ⁻)	6093 (26)	6371 (27 ⁻)	6696 (28)	5597+X $J+12$
6371	(27 ⁻)				x			x				
6696	(28)						x		x			
5596.5+X	$J+12$	x										
6873	(28 ⁺)					x				x		
5466.2+Y	$J+12$			x								
6916	(29 ⁻)										x	
7284	(29 ⁻)									x		
6691.1+X	$J+14$											x

Energy levels and branching ratios [96Ar09]. Part 8

 $^{152}_{65}\text{Tb}$

E^* [keV]	J^π	Branching ratios in percentage										
		E_f^* : J_f^π :	6873 $\langle 28^+ \rangle$	5466+Y $J+12$	6916 $\langle 29^- \rangle$	7284 $\langle 29^- \rangle$	7617 $\langle 30^+ \rangle$	7728 $\langle 31^- \rangle$	6691+X $J+14$	6536+Y $J+14$	8290 $\langle 31 \rangle$	8371 $\langle 32^+ \rangle$
7617	$\langle 30^+ \rangle$		x			x						
7728	$\langle 31^- \rangle$				x	x						
6536.1+Y	$J+14$			x								
8290	$\langle 31 \rangle$					x						
8371	$\langle 32^+ \rangle$						x					
8502	$\langle 31 \rangle$					x						
8565	$\langle 33^- \rangle$							x				
8961	$\langle 33 \rangle$										x	
7832.1+X	$J+16$								x			
7654.2+Y	$J+16$									x		
9147	$\langle 34^+ \rangle$											x

Energy levels and branching ratios [96Ar09]. Part 9

 $^{152}_{65}\text{Tb}$

E^* [keV]	J^π	Branching ratios in percentage										
		E_f^* : J_f^π :	8565 $\langle 33^- \rangle$	8961 $\langle 33 \rangle$	7832+X $J+16$	7654+Y $J+16$	9147 $\langle 34^+ \rangle$	9389 $\langle 35^- \rangle$	9792 $\langle 36^+ \rangle$	9923 $\langle 37^- \rangle$	9022+X $J+18$	8819+Y $J+18$
9389	$\langle 35^- \rangle$		x									
9792	$\langle 36^+ \rangle$						x					
9804	$\langle 35 \rangle$			x								
9923	$\langle 37^- \rangle$							x				
9021.5+X	$J+18$				x							
8819.1+Y	$J+18$					x						
10283	$\langle 36^+ \rangle$						x					
10614	$\langle 38^+ \rangle$								x	x		
10996	$\langle 39^- \rangle$									x		
10261.7+X	$J+20$										x	
10034.7+Y	$J+20$											x

Energy levels and branching ratios [96Ar09]. Part 10

 $^{152}_{65}\text{Tb}$

E^* [keV]	J^π	Branching ratios in percentage										
		E_f^* : J_f^π :	10283 $\langle 36^+ \rangle$	10614 $\langle 38^+ \rangle$	10996 $\langle 39^- \rangle$	10262+X $J+20$	10035+Y $J+20$	11654 $\langle 40^+ \rangle$	12054 $\langle 41^- \rangle$	11554+X $J+22$	11301+Y $J+22$	12761 $\langle 42^+ \rangle$
10614	$\langle 38^+ \rangle$		x									
11654	$\langle 40^+ \rangle$			x								
12054	$\langle 41^- \rangle$				x							
11553.9+X	$J+22$					x						
11301.4+Y	$J+22$							x				

(continued)

¹⁵²Tb
65

E^*	J^π	Branching ratios in percentage										
[keV]		E^*_f :	10283	10614	10996	10262+X	10035+Y	11654	12054	11554+X	11301+Y	12761
		J^π_f :	$\langle 36^+ \rangle$	$\langle 38^+ \rangle$	$\langle 39^- \rangle$	$J+20$	$J+20$	$\langle 40^+ \rangle$	$\langle 41^- \rangle$	$J+22$	$J+22$	$\langle 42^+ \rangle$
12761	$\langle 42^+ \rangle$							x				
13278	$\langle 43^- \rangle$								x			
13929	$\langle 44^+ \rangle$											x
12616.8+Y	$J+24$										x	
12896.5+X	$J+24$									x		

Energy levels and branching ratios [96Ar09]. Part 11

¹⁵²Tb
65

E^*	J^π	Branching ratios in percentage			
		$E^*_f:$	12617+Y	12897+X	14291+X
[keV]		$J^\pi_f:$	$J+24$	$J+24$	$J+26$
13984+Y	$J+26$		x		
14291.1+X	$J+26$			x	
15737+X	$J+28$				x

Energy levels and branching ratios [98He06, 06He06].

¹⁵³Tb
65

E^* [keV]	$2J^\pi$	L	$(2J+1)S$ (τ, d)	σ (τ, d) $\mu b/sr$	L	$(2J+1)S$ (α, t)	σ (α, t) $\mu b/sr$	$T_{1/2}$ or Γ_{cm}	Ref.
0.00	5^+	2	1.8	209		1.9	40	2.34(1) d	76St10
80.720(2)	7^+	4	1.4	31		1.3	20	0.49(2) ns	76St10
147.57(1)	$\langle 3 \rangle^+$							0.84(3) ns	
163.17(1)	11^-	5	6.9	119		5.4	74	186(4) μs	76St10
213.74(1)	$\langle 7 \rangle^-$								
218.63(1)	$3^+, 5^+$	2	2.6	285		2.0	31		76St10
≈ 230	$9^-, 11^-$	$\langle 5 \rangle$				0.34	≈ 5		76St10
240.53(1)	$\langle 5 \rangle^+$								
254.20(1)	7^+								
262.83(1)	9^-	>3					≈ 2	0.22(2) ns	76St10
274.73(1)	5^-								
324.97(1)	9^+								
371.54(1)	5^+	<3		9					76St10
389.55(1)	$\langle 7 \rangle^+$								
444.69(1)	9^+								
510.29(1)	7^+								
511.3	15^-								
529.38(1)	11^+	>3					≈ 2	0.60(3) ns	76St10
535.4	13^-				>3				76St10

(continued)

¹⁵³Tb
65

E^*	$2J^\pi$	L	$(2J+1)S$	σ (τ, d)	L	$(2J+1)S$	σ (α, t)	$T_{1/2}$ or	Ref.
[keV]			(τ, d)	$\mu\text{b/sr}$		(α, t)	$\mu\text{b/sr}$	Γ_{cm}	
537.37(1)	$5^-, 7^-$								
543.15(5)	5^+	2	0.63	88		0.49	6		76St10
571.95(1)	9^+								
597.29(1)	$\langle 9 \rangle^-$								
624(4)	$1-5^+$	2	0.38	43			2		76St10
630.42(2)	11^+								
651.72(4)									
660.17(2)	5^+	2	0.16	27			2		76St10
694.90(2)	$7^-, 9^-$								
≈ 710	$1-5^+$	1,2	0.18	≈ 19			≈ 1		76St10
722.42(2)	$7^+, 9^+$								
≈ 723	$[5^+]$	1,2	0.29	≈ 47			≈ 2		76St10
725.53(2)	9^-								
726.56(2)	$5^-, 7^-$								
740.55(1)	$\langle 7^+ \rangle$								
755.3	13^+								
767(4)	$1, 3^-$	<2		15					76St10
773.07(6)	$\langle 5, 7 \rangle^-$								
789.96(4)	$7^+, 9^+$								
791	$\langle 11^+ \rangle$								06He06
800.18(3)	$\langle 5 \rangle^+$								
807.46(2)	9^-								
848.4	13^+								
877									
884(4)	$9^-, 11^-$	$\langle 5 \rangle$	1,8	31		1.4	13		76St10
957.17(3)									
959.94(3)	7^-			7					
966.9	$\langle 17^- \rangle$								
968.0	$\langle 15^+ \rangle$								
979.0	$\langle 19^- \rangle$								
1010.3	$11^-, 13^-$								
1064(4)		<3		22			<2		76St10
1067.0	$\langle 15^+ \rangle$								
1082.85(5)	7^-								06He06
1104.67(4)	$5^-, 7^-$	≤ 3		9			3		76St10
1130.65(3)	$5^-, 7^-$	≤ 3		30			<2		76St10
1151.54(2)	7^-								
1170(4)	1^+	0	0.21	67			<2		76St10
1187(4)		<3		19			<2		76St10
1199.4	$\langle 17^+ \rangle$								
1219(4)		<3		19			<3		76St10
1226.47(6)	$\langle 5, 7 \rangle^+$								
1240.38(4)	$\langle 7 \rangle^+$	≤ 3		≈ 7			<1		76St10
1283(4)	$\langle 1^+ \rangle$	$\langle 0 \rangle$	0.41	119			<2		76St10
1305(4)		<4		≈ 20			2		76St10

(continued)

¹⁵³Tb
65

E^*	$2J^\pi$	L	$(2J+1)S$	σ (τ, d)	L	$(2J+1)S$	σ (α, t)	$T_{1/2}$ or	Ref.
[keV]			(τ, d)	$\mu\text{b/sr}$		(α, t)	$\mu\text{b/sr}$	Γ_{cm}	
1341.45(4)	$7^-, 9^-$					0.42			76St10
1342(4)	$3^+, 5^+$	2	0.42	86			2		76St10
1364.84(3)	9^-								
1391(4)	$1, 3, 5^+$	≤ 2		24			2		76St10
1422.6	$\langle 19^+ \rangle$								
1429.32(3)	9^-								
1674.5	$19^{\langle - \rangle}$								06He06
1495.0(13)	$\langle 21^- \rangle$								
1532.9	$\langle 23^- \rangle$								
1603(4)				25					76St10
1627.4									
1681.6	$\langle 21^+ \rangle$								
1745(4)				23					76St10
1762.03(7)	$\langle 5, 7, 9 \rangle^-$								
1779.35(10)	$\langle 7 \rangle^-$								
1791.38(3)	$5^-, 7^-, 9^-$			10					76St10
1822.56(4)	$\langle 9, 11, 13 \rangle^-$								
1824.69(8)	$\langle 9 \rangle^-$			51					76St10
1835.72(5)	$\langle 7 \rangle^-$								
1858.09(8)	7^-								
1912.50(3)	$\langle 9^- \rangle$								
1923.8	$\langle 23^+ \rangle$								
1940.26(10)	$\langle 7 \rangle^-$								
2011.35(6)	$5^-, 7^-$								
2019.7	$21^{\langle + \rangle}$								06He06
2023.78(5)	$\langle 7^-, 9^- \rangle$								
2086.7	$\langle 23^+ \rangle$								06He06
2095.2	$\langle 25^- \rangle$								
2120.07(6)	$\langle 7, 9 \rangle^-$								
2120.97(7)									
2155.6	$\langle 27^- \rangle$								
2211.2	$\langle 25^+ \rangle$								
2467.4	$\langle 27^+ \rangle$								
2534.0	$27^{\langle + \rangle}$								06He06
2611.5	27^+								06He06
2614.2	$23^{\langle + \rangle}$								06He06
2705.5	$25^{\langle + \rangle}$								06He06
2740.2	$\langle 29^- \rangle$								
2786.9	29^+								06He06
2827.0	$\langle 31^- \rangle$								06He06
2830.0	$27^{\langle + \rangle}$								06He06
2951.9	31^+								06He06
2989.8	$29^{\langle + \rangle}$								06He06
3023.3	31^+								06He06
3320.3	33^-								06He06

(continued)

¹⁵³Tb
65

E^*	$2J^\pi$	L	$(2J+1)S$	σ (τ, d)	L	$(2J+1)S$	σ (α, t)	$T_{1/2}$ or	Ref.
[keV]			(τ, d)	$\mu b/sr$		(α, t)	$\mu b/sr$	Γ_{cm}	
3392.3	33^+								06He06
3413.6	$33^{(+)}$								06He06
3472.0	35^+								06He06
3493.6	$\langle 35^- \rangle$								06He06
3608.1	$\langle 35^+ \rangle$								06He06
3672.0	$35^{(+)}$								06He06
3806.6	37^-								06He06
3957.3	$37^{(+)}$								06He06
3995.1	37^+								06He06
4083.3	39^-								06He06
4110.7	39^+								06He06
4210	$\langle 39^+ \rangle$								06He06
4268.2	$39^{(+)}$								06He06
4372.1	41^-								06He06
4601.0	$41^{(+)}$								06He06
4622	$\langle 41^+ \rangle$								06He06
4695.2	43^-								06He06
4837.0	$\langle 43^+ \rangle$								06He06
4955.9	$43^{(+)}$								06He06
5023.0	45^-								06He06
5330	$\langle 45^+ \rangle$								06He06
5375.4	47^-								06He06
5633.0	$\langle 47^+ \rangle$								06He06
5722	$\langle 47^+ \rangle$								06He06
5756.7	$\langle 49^- \rangle$								06He06
6127.8	$\langle 51^- \rangle$								06He06
6486	$\langle 51^+ \rangle$								06He06
6565.9	$\langle 53^- \rangle$								06He06
6947	$\langle 55^- \rangle$								06He06
7447	$\langle 57^- \rangle$								06He06
				76St10			76St10		Ref.

Cross sections of the (τ, d) and (α, t) reactions were measured, respectively, at 55° and 70°.

For obtaining $S_N = (d\sigma/d\Omega)/N\sigma^{DWBA}(\theta)$ normalization factors $N=6.0$ and $N=111$ were used [76St10]. Data for 30° and 40° can be found in [76St10, 06He06].

10 bands (A-J) are considered in [06He06], see parameters and branching ratios therein.

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

Energy levels and branching ratios [98He06, 06He06]. Part 2

¹⁵³Tb
65

E^* [keV]	$2J^\pi$	Branching ratios in percentage										
		E_f^* : $2J_f^\pi$:	0.00 5 ⁺	80.7 7 ⁺	148 $\langle 3 \rangle^+$	163 11 ⁻	214 $\langle 7 \rangle^-$	218.6 3 ⁺ , 5 ⁺	240.5 $\langle 5 \rangle^+$	254.201 7 ⁺	262.831 9 ⁻	274.730 5 ⁻
80.720(2)	7 ⁺		100									
147.57(1)	$\langle 3 \rangle^+$		100									
163.17(1)	11 ⁻			100								
213.74(1)	$\langle 7 \rangle^-$		97(2)	3.2(3)								
218.63(1)	3 ⁺ , 5 ⁺		98(5)		2.1(3)							
240.53(1)	$\langle 5 \rangle^+$		25(2)	6.5(8)	68.3(16)							
254.20(1)	7 ⁺		96.4(25)	3.62(20)								
262.83(1)	9 ⁻				100							
274.73(1)	5 ⁻		80(14)	10.6(6)	8.3(4)		1.2(5)				x	
324.97(1)	9 ⁺		15.4(5)	82(2)						1.6(3)	1.23(13)	
371.54(1)	5 ⁺		53(2)	36(2)			5.0(11)		2.2(6)			3.9(7)
389.55(1)	$\langle 7 \rangle^+$		53(2)	4.6(4)	7.4(12)				34(3)	1.1(2)		
444.69(1)	9 ⁺		42.0(14)	2.3(9)						55.6(13)		
510.29(1)	7 ⁺			12.0(6)			38(3)			14(1)	26(2)	8.0(6)
511.3	15 ⁻					100						
529.38(1)	11 ⁺			68(2)			5.6(4)			1.4(3)		
535.4	13 ⁻					68(7)					32(3)	
537.37(1)	5 ⁻ , 7 ⁻		23.5(6)	4.1(2)			20.8(6)			2.6(2)	35(4)	13.8(4)
543.15(5)	5 ⁺		39.1(3)		12(1)				20(7)	28(3)		
571.95(1)	9 ⁺		30(2)	10(1)		14(4)				11.3(7)		
597.29(1)	$\langle 9 \rangle^-$					57(2)	13(2)				18.7(12)	
630.42(2)	11 ⁺									62(4)	3.9(9)	
651.72(4)			43(10)				26(13)			31(2)		
660.17(2)	5 ⁺							41(2)		59(5)		
694.90(2)	7 ⁻ , 9 ⁻			66(5)								
722.42(2)	7 ⁺ , 9 ⁺			12(1)			21(2)					
725.53(2)	9 ⁻						40(2)					
726.56(2)	5 ⁻ , 7 ⁻		16(2)					6(1)	38(2)			5.3(4)
740.55(1)	$\langle 7^+ \rangle$		8.6(5)	33(1)				1.6(8)	8.8(4)			27(2)
773.07(6)	$\langle 5, 7 \rangle^-$								38(4)	62(6)		
789.96(4)	7 ⁺ , 9 ⁺			10(2)						34(2)	56(5)	
800.18(3)	$\langle 5 \rangle^+$							76(4)	<15			24(9)
807.46(2)	9 ⁻			4.3(8)		9(1)	44(1)			6.5(10)	21(2)	
877											x	
957.17(3)			6.8(15)									
959.94(3)	7 ⁻		46(2)	6(1)			10(3)		6.4(6)	18(3)	6.6(7)	
1082.85(5)	7 ⁻			31(3)		13(2)				20(3)		
1104.67(4)	5 ⁻ , 7 ⁻			64(3)					9(2)			
1130.65(3)	5 ⁻ , 7 ⁻			90(3)	5.3(9)							
1151.54(2)	7 ⁻						10(2)					
1226.47(6)	$\langle 5, 7 \rangle^+$			9(2)			59(5)					25(5)
1240.38(4)	$\langle 7 \rangle^+$		6(2)	16(2)			16(3)		11(1)	8(1)		9(1)
1341.45(4)	7 ⁻ , 9 ⁻									23(3)	7(2)	
1364.84(3)	9 ⁻			6.8(6)	2.2(6)	10(1)	8(1)					
1429.32(3)	9 ⁻						3.4(8)	2.2(5)			10.1(8)	

(continued)

¹⁵³Tb
65

E^* [keV]	$2J^\pi$	Branching ratios in percentage										
		E_f^* : $2J_f^\pi$:	0.00 5 ⁺	80.7 7 ⁺	148 $\langle 3 \rangle^+$	163 11 ⁻	214 $\langle 7 \rangle^-$	218.6 3 ⁺ , 5 ⁺	240.5 $\langle 5 \rangle^+$	254.201 7 ⁺	262.831 9 ⁻	274.730 5 ⁻
1762.03(7)	$\langle 5, 7, 9 \rangle^-$				6(1)					17(2)		
1779.35(10)	$\langle 7 \rangle^-$		0.9(2)		9(1)		2.2(6)			4(1)		
1791.38(3)	5 ⁻ , 7 ⁻ , 9 ⁻						24(1)	2(1)		17.7(6)	9(1)	0.9(3)
1822.56(4)	$\langle 9, 11, 13 \rangle^-$				2.2(4)		28(1)				0.9(2)	
1824.69(8)	$\langle 9 \rangle^-$				0.9(3)			10(1)		29(2)	5(1)	
1835.72(5)	$\langle 7 \rangle^-$	3(1)			3(1)	5(1)		6(2)				
1858.09(8)	7 ⁻										14(2)	
1912.50(3)	$\langle 9^- \rangle$			0.6(2)		3.2(3)	2.0(2)			4(1)	5.6(4)	0.9(2)
1940.26(10)	$\langle 7 \rangle^-$			2.4(4)		10(2)						
2011.35(6)	5 ⁻ , 7 ⁻	1(1)					11(3)	2(1)				
2023.78(5)	$\langle 7^-, 9^- \rangle$									1.7(5)		
2120.07(6)	$\langle 7, 9 \rangle^-$										3.6(7)	

Energy levels and branching ratios [98He06, 06He06]. Part 3

¹⁵³Tb
65

E^* [keV]	$2J^\pi$	Branching ratios in percentage										
		E_f^* : $2J_f^\pi$:	324.968 9 ⁺	371.542 5 ⁺	389.551 $\langle 7 \rangle^+$	444.695 9 ⁺	510.290 7 ⁺	511.3 15 ⁻	529.383 11 ⁺	535.4 13 ⁻	537.375 5 ⁻ , 7 ⁻	543.15 5 ⁺
444.69(1)	9 ⁺	<1.3										
510.29(1)	7 ⁺	0.5(2)		1.8(6)								
529.38(1)	11 ⁺	24.8(14)										
571.95(1)	9 ⁺				35(2)							
597.29(1)	$\langle 9 \rangle^-$	11.7(11)										
630.42(2)	11 ⁺	14.4(11)				20(4)						
694.90(2)	7 ⁻ , 9 ⁻	8.4(14)				25(3)						
722.42(2)	7 ⁺ , 9 ⁺			24(8)	21(4)							
725.53(2)	9 ⁻	3.8(3)										
726.56(2)	5 ⁻ , 7 ⁻				9(2)						3.0(9)	
740.55(1)	$\langle 7^+ \rangle$	34(1)				11(2)						
755.3	13 ⁺	67				4.6			29			
807.46(2)	9 ⁻	7.8(7)			2.0(4)						6(1)	
848.4	13 ⁺					54						
957.17(3)				3.4(9)							82(3)	
966.9	$\langle 17^- \rangle$							40		60		
968.0	$\langle 15^+ \rangle$								57			
979.0	$\langle 19^- \rangle$							100				
1010.3	11 ⁻ , 13 ⁻							32		37		
1082.85(5)	7 ⁻	17(1)		8(2)								
1151.54(2)	7 ⁻			24.2(10)					4.3(9)		42(3)	
1240.38(4)	$\langle 7 \rangle^+$	5(1)				7(1)						
1341.45(4)	7 ⁻ , 9 ⁻	10(2)										
1364.84(3)	9 ⁻	25(1)									15(2)	

(continued)

¹⁵³Tb
65

E^* [keV]	$2J^\pi$	Branching ratios in percentage										
		E_f^* : $2J_f^\pi$:	324.968 9 ⁺	371.542 5 ⁺	389.551 $\langle 7 \rangle^+$	444.695 9 ⁺	510.290 7 ⁺	511.3 15 ⁻	529.383 11 ⁺	535.4 13 ⁻	537.375 5 ⁻ , 7 ⁻	543.15 5 ⁺
1429.32(3)	9 ⁻		51.2(11)						17.0(10)			
1762.03(7)	$\langle 5, 7, 9 \rangle^-$										11(1)	
1779.35(10)	$\langle 7 \rangle^-$		14(1)		22(2)		9(1)					4(1)
1791.38(3)	5 ⁻ , 7 ⁻ , 9 ⁻						9(1)				15.8(4)	
1822.56(4)	$\langle 9, 11, 13 \rangle^-$		4(1)		9(1)				5(1)			
1824.69(8)	$\langle 9 \rangle^-$		2.7(7)						8(1)			
1835.72(5)	$\langle 7 \rangle^-$		8(2)		16(2)		6(2)					
1858.09(8)	7 ⁻		4(1)	4(1)			20(7)					
1912.50(3)	$\langle 9^- \rangle$				1.7(4)	3.1(3)	14(1)		7.3(3)		18(1)	
1940.26(10)	$\langle 7 \rangle^-$					6(2)			13(2)			
2011.35(6)	5 ⁻ , 7 ⁻			5(1)	5(1)							
2023.78(5)	$\langle 7^-, 9^- \rangle$				10(2)							
2120.97(7)			13(2)								51(3)	

Energy levels and branching ratios [98He06, 06He06]. Part 4

¹⁵³Tb
65

E^* [keV]	$2J^\pi$	Branching ratios in percentage										
		E_f^* : $2J_f^\pi$:	571.949 9 ⁺	597.286 $\langle 9 \rangle^-$	630.420 11 ⁺	651.72	660.171 5 ⁺	694.905 7 ⁻ , 9 ⁻	722.417 7 ⁺ , 9 ⁺	725.526 9 ⁻	726.557 5 ⁻ , 7 ⁻	740.555 $\langle 7^+ \rangle$
722.42(2)	7 ⁺ , 9 ⁺			22(2)								
725.53(2)	9 ⁻			7.0(4)								
740.55(1)	$\langle 7^+ \rangle$			3.3(4)								
791	$\langle 11^+ \rangle$	100										
848.4	13 ⁺				46							
957.17(3)					7.7(13)							
959.94(3)	7 ⁻	3.9(7)				2.9(1)						
968.0	$\langle 15^+ \rangle$				18							
1010.3	11 ⁻ , 13 ⁻			30								
1067.0	$\langle 15^+ \rangle$				54							
1082.85(5)	7 ⁻											6(1)
1104.67(4)	5 ⁻ , 7 ⁻				3.2(6)				3.5(6)	2.6(6)		17.7(13)
1130.65(3)	5 ⁻ , 7 ⁻									1.3(4)		
1151.54(2)	7 ⁻								9.9(10)			10.3(12)
1226.47(6)	$\langle 5, 7 \rangle^+$	8(2)										
1240.38(4)	$\langle 7 \rangle^+$			7(2)					14(1)			
1341.45(4)	7 ⁻ , 9 ⁻					19(4)		9(2)				
1364.84(3)	9 ⁻	8(1)							12(1)	7(1)		
1429.32(3)	9 ⁻	10(2)				2.8(3)						2.5(5)
1762.03(7)	$\langle 5, 7, 9 \rangle^-$				10(2)	14(2)	5(1)					
1791.38(3)	5 ⁻ , 7 ⁻ , 9 ⁻				9(1)				6(1)			
1822.56(4)	$\langle 9, 11, 13 \rangle^-$			13(1)	4(1)							4(1)
1824.69(8)	$\langle 9 \rangle^-$								17(2)	13(2)		

(continued)

¹⁵³Tb
65

E^* [keV]	$2J^\pi$	Branching ratios in percentage										
		E_f^* : $2J_f^\pi$:	571.949 9 ⁺	597.286 ⟨9⟩ ⁻	630.420 11 ⁺	651.72	660.171 5 ⁺	694.905 7 ⁻ ,9 ⁻	722.417 7 ⁺ ,9 ⁺	725.526 9 ⁻	726.557 5 ⁻ ,7 ⁻	740.555 ⟨7 ⁺ ⟩
1835.72(5)	⟨7⟩ ⁻							17(3)				
1858.09(8)	7 ⁻		20(1)			11(2)				19(2)		
1912.50(3)	⟨9⟩ ⁻		1.8(2)	17.8(4)			3.0(4)			1.6(4)	1.2(3)	
1940.26(10)	⟨7⟩ ⁻						14(2)	4(1)				19(2)
2011.35(6)	5 ⁻ ,7 ⁻									14(3)		22(3)
2023.78(5)	⟨7 ⁻ ,9 ⁻ ⟩		21(2)	8(2)					11(2)	17(3)		
2120.07(6)	⟨7,9⟩ ⁻											81(3)
2120.97(7)			14(3)									

Energy levels and branching ratios [98He06, 06He06]. Part 5

¹⁵³Tb
65

E^* [keV]	$2J^\pi$	Branching ratios in percentage										
		E_f^* : $2J_f^\pi$:	755.3 13 ⁺	773.07 ⟨5,7⟩ ⁻	789.96 7 ⁺ ,9 ⁺	791	800.18 ⟨5⟩ ⁺	807.464 9 ⁻	848.4 13 ⁺	957.17 7 ⁻ ,9 ⁻	959.94 7 ⁻	966.9 ⟨17 ⁻ ⟩
968.0	⟨15 ⁺ ⟩		25									
1067.0	⟨15 ⁺ ⟩								46			
1082.85(5)	7 ⁻				4.9(2)							
1130.65(3)	5 ⁻ ,7 ⁻				3.4(6)							
1199.4	⟨17 ⁺ ⟩		69						5			
1341.45(4)	7 ⁻ ,9 ⁻									31(4)		
1364.84(3)	9 ⁻							3.4(5)				
1495.0(13)	⟨21 ⁻ ⟩											61
1627.4												100
1762.03(7)	⟨5,7,9⟩ ⁻							6(1)		19(1)	12(1)	
1779.35(10)	⟨7⟩ ⁻			8(2)			22(2)					
1791.38(3)	5 ⁻ ,7 ⁻ ,9 ⁻										5(1)	
1822.56(4)	⟨9,11,13⟩ ⁻					3.0(7)						
1824.69(8)	⟨9⟩ ⁻				15(2)							
1835.72(5)	⟨7⟩ ⁻			9(3)								
1912.50(3)	⟨9⟩ ⁻				6(1)							
1940.26(10)	⟨7⟩ ⁻						13(2)					
2023.78(5)	⟨7 ⁻ ,9 ⁻ ⟩				6(1)							
2120.07(6)	⟨7,9⟩ ⁻										10(2)	
2120.97(7)								15(3)				

Energy levels and branching ratios [98He06, 06He06]. Part 6

¹⁵³Tb
65

E^*	$2J^\pi$	Branching ratios in percentage										
[keV]		E_f^* : $2J_f^\pi$:	968.0 $\langle 15^+ \rangle$	979.0 $\langle 19^- \rangle$	1082.85 $7^-, 9^-$	1104.67 $5^-, 7^-$	1130.65 $5^-, 7^-$	1151.55 7^-	1199.4 $\langle 17^+ \rangle$	1240.38 $\langle 7 \rangle^+$	1341.45 $7^-, 9^-$	1364.84 9^-
1199.4	$\langle 17^+ \rangle$		26									
1364.84(3)	9^-									3.6(4)		
1422.6	$\langle 19^+ \rangle$		78						22			
1429.32(3)	9^-				1.2(2)							
1495.0(13)	$\langle 21^- \rangle$			39								
1532.9	$\langle 23^- \rangle$			100								
1681.6	$\langle 21^+ \rangle$								85			
1779.35(10)	$\langle 7 \rangle^-$							4(1)				
1822.56(4)	$\langle 9, 11, 13 \rangle^-$									3.6(6)	23(1)	
1835.72(5)	$\langle 7 \rangle^-$				26(2)							
1858.09(8)	7^-									7(2)		
1912.50(3)	$\langle 9^- \rangle$						3.5(2)				5.0(4)	
1940.26(10)	$\langle 7 \rangle^-$							19(2)				
2011.35(6)	$5^-, 7^-$				8(2)	19(5)						12(2)
2023.78(5)	$\langle 7^-, 9^- \rangle$											23(5)

Energy levels and branching ratios [98He06, 06He06]. Part 7

¹⁵³Tb
65

E^* [keV]	$2J^\pi$	Branching ratios in percentage								
		E_f^* : $2J_f^\pi$:	1422.6 $\langle 19^+ \rangle$	1429.32 9^-	1495.0 $\langle 21^- \rangle$	1532.9 $\langle 23^- \rangle$	1681.6 $\langle 21^+ \rangle$	1822.56	1835.72 $\langle 7^- \rangle$	1923.8 $\langle 23^+ \rangle$
1681.6	$\langle 21^+ \rangle$		15							
1791.38(3)	$5^-, 7^-, 9^-$			2.0(5)						
1923.8	$\langle 23^+ \rangle$		78				22			
2023.78(5)	$\langle 7^-, 9^- \rangle$								3(2)	
2086.7	$\langle 23^+ \rangle$				100					
2095.2	$\langle 25^- \rangle$				70	30				
2120.97(7)								8(2)		
2155.6	$\langle 27^- \rangle$					100				
2211.2	$\langle 25^+ \rangle$						80			20
2467.4	$\langle 27^+ \rangle$									88

Energy levels and branching ratios [98He06, 06He06]. Part 8

¹⁵³Tb
65

E^* [keV]	$2J^\pi$	Branching ratios in percentage					
		E_f^* : $2J_f^\pi$:	2023.78 $\langle 7^-, 9^- \rangle$	2095.2 $\langle 25^- \rangle$	2155.6 $\langle 27^- \rangle$	2211.2 $\langle 25^+ \rangle$	2827.0 $\langle 31^- \rangle$
2120.07(6)	$\langle 7, 9 \rangle^-$		6.1(12)				
2467.4	$\langle 27^+ \rangle$					12	

(continued)

¹⁵³Tb
65

E^*	$2J^\pi$	Branching ratios in percentage					
[keV]		$E_f^*:$ $2J_f^\pi:$	2023.78 $\langle 7^-, 9^- \rangle$	2095.2 $\langle 25^- \rangle$	2155.6 $\langle 27^- \rangle$	2211.2 $\langle 25^+ \rangle$	2827.0 $\langle 31^- \rangle$
2740.2	$\langle 29^- \rangle$			42	58		
2827.0	$\langle 31^- \rangle$				100		
3493.6	$\langle 35^- \rangle$						100

Energy levels and branching ratios [98Re22].

¹⁵⁴Tb
65

E^*	J^π	$T_{1/2}$ or	Branching ratios in percentage							
[keV]		Γ_{cm}	$E_f^*:$ $J_f^\pi:$	0+X $\langle 9^- \rangle$	119.1+X $\langle 10^- \rangle$	154.3+X $\langle 11^- \rangle$	353.3+X $\langle 12^- \rangle$	469.4+X $\langle 13^- \rangle$	0+Y $\langle 7^+ \rangle$	714.0+X $\langle 14^- \rangle$
0.0	0	21.5(4) h								
0+V	3^-	9.4(4) h								
0+W	7^-	22.7(5) h								
0+T										
34.2+T										
35.4+T										
53.6+T										
0+X	$\langle 9^- \rangle$			28(3)	29(3)	16(3)	27(3)			
119.1+X	$\langle 10^- \rangle$			100						
154.3+X	$\langle 11^- \rangle$			100						
353.3+X	$\langle 12^- \rangle$				2.7(8)	97(10)				
469.4+X	$\langle 13^- \rangle$					69(7)	31(3)			
0+U										
29.7+U										
36.2+U										
0+Z		513(42) ns								
0+Y	$\langle 7^+ \rangle$									
714.0+X	$\langle 14^- \rangle$						24(5)	76(8)		
97.2+Y	$\langle 8^+ \rangle$								100	
183.9+Y	$\langle 9^+ \rangle$									
918.7+X	$\langle 15^- \rangle$							80(8)		20(4)
338.5+Y	$\langle 10^+ \rangle$									
479.1+Y	$\langle 11^+ \rangle$									
1189.2+X	$\langle 16^- \rangle$									49(5)
676.8+Y	$\langle 12^+ \rangle$									
1473.6+X	$\langle 17^- \rangle$									
870.5+Y	$\langle 13^+ \rangle$									
1760.5+X	$\langle 18^- \rangle$									
1100.6+Y	$\langle 14^+ \rangle$									
1342.5+Y	$\langle 15^+ \rangle$									
2118.3+X	$\langle 19^- \rangle$									
1599.8+Y	$\langle 16^+ \rangle$									
2413.9+X	$\langle 20^- \rangle$									

(continued)

¹⁵⁴Tb
65

E^* [keV]	J^π	$T_{1/2}$ or Γ_{cm}	Branching ratios in percentage							
			E_f^* : J_f^π :	0+X $\langle 9^- \rangle$	119.1+X $\langle 10^- \rangle$	154.3+X $\langle 11^- \rangle$	353.3+X $\langle 12^- \rangle$	469.4+X $\langle 13^- \rangle$	0+Y $\langle 7^+ \rangle$	714.0+X $\langle 14^- \rangle$
1885.1+Y	$\langle 17^+ \rangle$									
2841.7+X	$\langle 21^- \rangle$									
2166.6+Y	$\langle 18^+ \rangle$									
3146+X	$\langle 22^- \rangle$									
2490.0+Y	$\langle 19^+ \rangle$									

Energy levels and branching ratios [98Re22]. Part 2

¹⁵⁴Tb
65

E^*	J^π	Branching ratios in percentage									
[keV]		E_f^* : J_f^π :	97.2+Y $\langle 8^+ \rangle$	183.9+Y $\langle 9^+ \rangle$	918.7+X $\langle 15^- \rangle$	338.5+Y $\langle 10^+ \rangle$	479.1+Y $\langle 11^+ \rangle$	1189+X $\langle 16^- \rangle$	676.8+Y $\langle 12^+ \rangle$	1474+X $\langle 17^- \rangle$	870.5+Y $\langle 13^+ \rangle$
183.9+Y	$\langle 9^+ \rangle$	100									
338.5+Y	$\langle 10^+ \rangle$	[100]									
479.1+Y	$\langle 11^+ \rangle$					[100]					
1189.2+X	$\langle 16^- \rangle$				51(5)						
676.8+Y	$\langle 12^+ \rangle$					[100]					
1473.6+X	$\langle 17^- \rangle$				88(9)			12(3)			
870.5+Y	$\langle 13^+ \rangle$						65(12)		35(8)		
1760.5+X	$\langle 18^- \rangle$							57(5)		43(9)	
1100.6+Y	$\langle 14^+ \rangle$								65(12)		35(7)
1342.5+Y	$\langle 15^+ \rangle$										100
2118.3+X	$\langle 19^- \rangle$									88(16)	

Energy levels and branching ratios [98Re22]. Part 3

¹⁵⁴Tb
65

E^*	J^π	Branching ratios in percentage							
[keV]		E_f^* : J_f^π :	1761+X $\langle 18^- \rangle$	1101+Y $\langle 14^+ \rangle$	1343+Y $\langle 15^+ \rangle$	2118+X $\langle 19^- \rangle$	1600+Y $\langle 16^+ \rangle$	2414+X $\langle 20^- \rangle$	1885+Y $\langle 17^+ \rangle$
2118.3+X	$\langle 19^- \rangle$		12(4)						
1599.8+Y	$\langle 16^+ \rangle$			100					
2413.9+X	$\langle 20^- \rangle$		[100]						
1885.1+Y	$\langle 17^+ \rangle$				100				
2841.7+X	$\langle 21^- \rangle$					100			
2166.6+Y	$\langle 18^+ \rangle$						100		
3146+X	$\langle 22^- \rangle$							100	
2490.0+Y	$\langle 19^+ \rangle$								100

Energy levels and branching ratios [94Re10].

¹⁵⁵Tb
₆₅

E^*	$2J^\pi$	σ (τ, d)	σ (τ, d)	σ (α, t)	σ (α, t)	S_N	U^2	$T_{1/2}$ or	Ref.
[keV]		$\mu b/sr$	$\mu b/sr$	$\mu b/sr$	$\mu b/sr$			Γ_{cm}	
0.0	3^+	4.7	1.2(3)	1.0	2.0(4)	0.05	0.6	5.32(6) d	72Ti05
65.462(2)	5^+	101	34.9(28)	20	48.6(32)	1.2	0.6	0.25(3) ns	72Ti05
155.785(3)	7^+	2.2	2.5(6)	1.3	3.4(4)	0.20	0.6	≤ 0.2 ns	72Ti05
226.918(3)	5^-							0.35(3) ns	
250.030(4)	7^-	7.8	2.8(7)	1.2		0.05	0.4	0.56(5) ns	72Ti05
271.045(4)	5^+	6.8	6.1(10)	0.8		0.08	0.6		72Ti05
274.075(8)	9^+	incl	incl			0.14	0.4		
317.05(1)	9^-	<1		1					72Ti05
334.85(1)	7^+	18.5	12.8(15)	18.3	31.1(22)	1.3	0.4		72Ti05
397.4	11^-	36	21.3(15)	45	76.7(23)	2.6	0.4		72Ti05
408.7	11^+		2.5(7)						
452.6	9^+	<0.8	5.0(7)	1.5	17.1(9)	0.48	0.8		72Ti05
466.80(1)	7^+	8		7.6					72Ti05
498.64(1)	5^+	161	50.4(75)	16.5	46.6(19)	1.6	0.9		72Ti05
508.39(2)	$1^+ - 5^+$								
517.54(2)	$3^+ - 7^+$								
544.89(2)	7^-								
549.60(1)	$3^+, 5^+$	56	10.2(36)	6.9	22.1(5)				72Ti05
555.3	13^-								
576.1	13^+								
596.0	11^+								
616(3)		21	7.9(10)	1.2	6.1(4)				72Ti05
652.03(1)	5^+	≈ 1.5		0.5					72Ti05
673.2	15^-		[2.4]						
688.3	$\langle 9^- \rangle$								
727(3)	$\langle 1^+ \rangle$	20	6.3(18)	≈ 0.4	3.2(6)	0.06	0.9		72Ti05
743.92(3)	7^+	12		0.4					72Ti05
747.6	15^+								
760.63(2)	3^+	26	13.7(21)	1	7.1(22)	0.26			72Ti05
767.3	13^+				2.0(17)	0.10			
809.53(2)	5^+	11	4.0(12)	≈ 0.8	2.2(7)	0.10			72Ti05
834(3)	11^-	9.3	7.9(11)	3.3	10.3(10)				72Ti05
861.87(7)	$3^+, 5^+$		16.4(40)		7.6(8)	0.35			
863(3)	$\langle 1^- \rangle$	57	incl	≈ 0.4	incl				72Ti05
891.14(1)	3^-								
906.43(5)	$\langle 5^- \rangle$	29	8.6(12)	≈ 0.4	5.4(6)				72Ti05
917.2	17^-								
926(3)		12.5	11.4(14)	≈ 0.4	4.4(6)	0.27	0.9		72Bo47
950.38(8)	3^-	45	4.4(7)	≈ 0.4	1.1(6)				72Ti05
959.0	17^+		incl		incl				
1041(3)	$\langle 9^- \rangle$	10.5	3.8(7)	3.7	9.0(7)	0.46	1.0		72Bo47
1056.6	19								
1062.07(2)	5^-		2.5(7)		7.6(15)				72Bo47
1068.37(2)	3^-								
1085(3)			10.1(9)		7.0(46)				72Bo47

(continued)

¹⁵⁵Tb
65

E^*	$2J^\pi$	$\sigma(\tau, d)$	$\sigma(\tau, d)$	$\sigma(\alpha, t)$	$\sigma(\alpha, t)$	S_N	U^2	$T_{1/2}$ or	Ref.
[keV]		$\mu\text{b/sr}$	$\mu\text{b/sr}$	$\mu\text{b/sr}$	$\mu\text{b/sr}$			Γ_{cm}	
1112(4)		40	31.6(16)	0.4	4.5(45)				72Ti05
1120.00(2)	7^+								
1131(5)					2.4(8)				72Bo47
1155.48(1)	5^-								
1161.7	19^+								
1205(5)		89	2.6(9)	<0.5					72Ti05
1229(10)		7.8	1.5(9)						72Ti05
1251(3)		2.3	6.2(10)						72Ti05
1255.85(3)	7^-	incl	incl						
1294.96(3)	5^-								
1307(3)		6.3	2.4(6)						72Ti05
1354(3)		19	4.6(7)						72Ti05
1376.7	21^-								
1411.8	21^+								
1452.00(3)	$3^-, 5^-$	5.4	1.1(5)						72Ti05
1470.99(4)	$3^+, 5^+$	8.7	5.2(52)						72Ti05
1480(3)		incl							72Ti05
1492.64(2)	5^-								
1528.8	23^-								
1548(3)		20							72Ti05
1581(3)		≈ 4							72Ti05
1616(3)		43							72Ti05
1638.85(2)	5^-								
1641.2	23^+								
1656.39(6)	5^-	33							72Ti05
1664.91(1)	5^-								
1685(3)		15.5							72Ti05
1721(3)		12.5							72Ti05
1750.10(2)	5^-								
1793.646(24)	5^+								
1835.82(6)									
1860.95(7)									
1865.82(3)	5^-								
1868.95(5)	$3^+, 5^+$								
1910.7	$\langle 25^- \rangle$								
1911.20(4)	$\langle 5^- \rangle$								
1913.60(4)	5^-								
1954.72(4)	$3^-, 5^-$								
1991.78(6)	$3^-, 5^-$								
2070.1	$\langle 27^- \rangle$								
2482.3	$\langle 29^- \rangle$								

(continued)

¹⁵⁵Tb
65

E^*	$2J^\pi$	σ (τ ,d)	σ (τ ,d)	σ (α ,t)	σ (α ,t)	S_N	U^2	$T_{1/2}$ or	Ref.
[keV]		$\mu\text{b/sr}$	$\mu\text{b/sr}$	$\mu\text{b/sr}$	$\mu\text{b/sr}$			Γ_{cm}	
2661.4	$\langle 31^- \rangle$	72Ti05	72Bo47	72Ti05	72Bo47	72Bo47	72Bo47		Ref.

Additional data on this isotope can be found in [05Re01, 81Ow02, 72Bo47].

12 bands (with $2J$ up to $95\hbar$) are assigned to excited states of this nucleus in [05Re01].

σ (τ ,d) was measured at 40° and 60° , respectively, in [72Ti05] and [72Bo47].

σ (α ,t) was measured at 60° in [72Ti05] and [72Bo47], see also S_N and U^2 in Supplement.

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

Energy levels and branching ratios [94Re10]. Part 2

¹⁵⁵Tb
65

E^*	$2J^\pi$	Branching ratios in percentage											
[keV]		E_f^* : 0.0	65.5	156	227	250	271.0	274.075	317.047	334.848	397.4	408.7	
		$2J_f^\pi$: 3^+	5^+	7^+	5^-	7^-	5^+	9^+	9^-	7^+	11^-	11^+	
65.462(2)	5^+	100											
155.785(3)	7^+	16.2(7)	84(2)										
226.918(3)	5^-	98(2)	1.65(3)	0.063(4)									
250.030(4)	7^-		99.2(18)		0.76(20)								
271.045(4)	5^+	72(4)	21.2(8)	5.8(4)		0.9(4)							
274.075(8)	9^+		20.3(17)	80(5)									
317.05(1)	9^-			38(3)		20(2)		42					
334.85(1)	7^+	9	56(2)	6(2)	16(1)	7(2)	6(1)						
397.4	11^-					18		15	67				
408.7	11^+			47				53					
452.6	9^+			45		26	28						
466.80(1)	7^+	9(3)		15(2)		58(12)	9(2)			9(3)			
498.64(1)	5^+	70(1)	28.3(8)	1.9(1)									
508.39(2)	1^+-5^+	99(4)		1.2(2)									
517.54(2)	3^+-7^+	32(5)	68(3)										
544.89(2)	7^-				81(3)	19(2)							
549.60(1)	$3^+,5^+$	46.6(10)	52(2)		1.4(2)								
555.3	13^-								32		66	2.0	
576.1	13^+							54				46	
596.0	11^+							40	29	31			
652.03(1)	5^+		35(1)	31(1)	13(1)	7(1)							
673.2	15^-										52		
688.3	$\langle 9^- \rangle$					100							
743.92(3)	7^+	35(7)	51(3)	13(1)									
747.6	15^+											66	
760.63(2)	3^+	29(4)	71(4)										
767.3	13^+										37	≈ 16	
809.53(2)	5^+		≈ 0	46(3)									
861.87(7)	$3^+,5^+$	35(9)	48(5)	18(5)									

(continued)

¹⁵⁵Tb
65

E^* [keV]	$2J^\pi$	Branching ratios in percentage											
		E_f^* : $2J_f^\pi$:	0.0 3 ⁺	65.5 5 ⁺	156 7 ⁺	227 5 ⁻	250 7 ⁻	271.0 5 ⁺	274.075 9 ⁺	317.047 9 ⁻	334.848 7 ⁺	397.4 11 ⁻	408.7 11 ⁺
891.14(1)	3 ⁻		13.4(5)	3.0(2)		51(1)	29(1)						
906.43(5)	⟨5 ⁻ ⟩								19(6)				
950.38(8)	3 ⁻					100							
1062.07(2)	5 ⁻		29(1)	21(1)		19.3(7)	31(2)						
1068.37(2)	3 ⁻		56(2)	16.1(14)		27.4(10)							
1120.00(2)	7 ⁺		24(3)					56(3)	15(2)	5.4(7)			
1155.48(1)	5 ⁻		26.3(6)	≤35	30.7(9)	9.0(2)	30.9(7)	0.7(1)		1.62(9)	0.4(1)		
1255.85(3)	7 ⁻				≤96				91(3)				
1294.96(3)	5 ⁻		20.3(3)					3.0(6)		4.6(4)			
1452.00(3)	3 ⁻ ,5 ⁻		[53.8]	[34.6]			[11.6]						
1492.64(2)	5 ⁻		34.8(1)	25	30(1)	0.9(2)	5.4(1)	3.7(8)					
1638.85(2)	5 ⁻			[6.5]		[4.7]	[6.7]	[53]			[11.5]		
1656.39(6)	5 ⁻		10(2)			8(1)							
1664.91(1)	5 ⁻		5.9(2)	5.6(2)	6.4(1)	19.3(8)	5.5(2)	5.8			0.5(1)		
1750.10(2)	5 ⁻		1.40(6)	5.4(2)	2.7(1)			26.3(1)					
1793.646(24)	5 ⁺		10	8	17	4	2.2(2)	6			6(1)		
1835.82(6)				2.7(4)		23(3)							
1860.95(7)				34(3)				66(5)					
1865.82(3)	5 ⁻		3.1(4)		3.3(2)					1.4(2)			
1868.95(5)	3 ⁺ ,5 ⁺		0.41(7)	14.6(10)	17.9(12)	7.3(12)							
1911.20(4)	⟨5 ⁻ ⟩			3.3(10)							6.2(12)		
1913.60(4)	5 ⁻		0.47(7)		2.4(3)								
1954.72(4)	3 ⁻ ,5 ⁻		15(2)	23(2)									
1991.78(6)	3 ⁻ ,5 ⁻				21(2)	15(6)							

Energy levels and branching ratios [94Re10]. Part 3

¹⁵⁵Tb
65

E^* [keV]	$2J^\pi$	Branching ratios in percentage											
		E_f^* : $2J_f^\pi$:	452.6 9 ⁺	466.802 7 ⁺	498.640 5 ⁺	508.395	517.542	544.891 7 ⁻	549.604 3 ⁺ ,5 ⁺	555.3 13 ⁻	576.1 13 ⁺	652.033 5 ⁺	673.2 15 ⁻
652.03(1)	5 ⁺				10(1)		2.8(9)						
673.2	15 ⁻									48			
747.6	15 ⁺										34		
767.3	13 ⁺	47											
809.53(2)	5 ⁺							54(10)					
891.14(1)	3 ⁻					4.1(2)							
906.43(5)	⟨5 ⁻ ⟩			62(4)					19(4)				
917.2	17 ⁻									47			53
959.0	17 ⁺										63		
1056.6	19												83
1155.48(1)	5 ⁻							x					
1294.96(3)	5 ⁻							9.6(7)	39(8)				

(continued)

¹⁵⁵Tb
65

E^* [keV]	$2J^\pi$	Branching ratios in percentage											
		E_f^* : $2J_f^\pi$:	452.6 9 ⁺	466.802 7 ⁺	498.640 5 ⁺	508.395	517.542	544.891 7 ⁻	549.604 3 ⁺ ,5 ⁺	555.3 13 ⁻	576.1 13 ⁺	652.033 5 ⁺	673.2 15 ⁻
1470.99(4)	3 ⁺ ,5 ⁺				89(9)								
1638.85(2)	5 ⁻							[2.4]					
1664.91(1)	5 ⁻			0.6(1)	38				≤9			6.6(3)	
1750.10(2)	5 ⁻			1.10(4)	45.8(2)		2.2(3)					≤11	
1835.82(6)												31(4)	
1865.82(3)	5 ⁻					6(2)	16(1)		40(1)			8(4)	

Energy levels and branching ratios [94Re10]. Part 4

¹⁵⁵Tb
65

E^* [keV]	$2J^\pi$	Branching ratios in percentage											
		E_f^* : $2J_f^\pi$:	743.92 7 ⁺	747.6 15 ⁺	760.628 3 ⁺	809.526 5 ⁺	891.138 3 ⁻	906.43 ⟨5 ⁻ ⟩	917.2 17 ⁻	959.0 17 ⁺	1056.6 19	1062.08 5 ⁻	1068.37 3 ⁻
959.0	17 ⁺			37									
1056.6	19								17				
1155.48(1)	5 ⁻				0.4(1)								
1161.7	19 ⁺			76						24			
1255.85(3)	7 ⁻					9(2)							
1294.96(3)	5 ⁻						24(1)						
1376.7	21 ⁻								58		42		
1411.8	21 ⁺									83			
1470.99(4)	3 ⁺ ,5 ⁺											11(3)	
1528.8	23 ⁻										85		
1638.85(2)	5 ⁻				[2.6]							x	[12.62]
1656.39(6)	5 ⁻		82(7)										
1664.91(1)	5 ⁻		2.4(1)				2.3(2)					0.5(1)	0.9(2)
1750.10(2)	5 ⁻					14.7(4)						0.4(3)	
1793.646(24)	5 ⁺		4(2)										40(2)
1835.82(6)							44(5)						≤47
1868.95(5)	3 ⁺ ,5 ⁺							60(7)					

Energy levels and branching ratios [94Re10]. Part 5

¹⁵⁵Tb
65

E^*	$2J^\pi$	Branching ratios in percentage											
[keV]	$E_f^*:$ $2J_f^\pi:$	1120.00 7 ⁺	1161.7 19 ⁺	1255.85 7 [−]	1294.96 5 [−]	1376.7 21 [−]	1411.8 21 ⁺	1452.00 3 [−] ,5 [−]	1492.64 5 [−]	1528.8 23 [−]	1664.92 5 [−]	1910.7 ⟨25 [−] ⟩	2070.1 ⟨27 [−] ⟩
1411.8	21 ⁺		17										
1528.8	23 [−]					15							
1641.2	23 ⁺		81				19						
1793.646(24)	5 ⁺			1.7(7)									

(continued)

¹⁵⁵Tb
65

E^*	$2J^\pi$	Branching ratios in percentage												
	E_f^* :	1120.00	1161.7	1255.85	1294.96	1376.7	1411.8	1452.00	1492.64	1528.8	1664.92	1910.7	2070.1	
[keV]	$2J_f^\pi$:	7^+	19^+	7^-	5^-	21^-	21^+	$3^-,5^-$	5^-	23^-	5^-	$\langle 25^- \rangle$	$\langle 27^- \rangle$	
1865.82(3)	5^-			21(1)										
1910.7	$\langle 25^- \rangle$					x				x				
1911.20(4)	$\langle 5^- \rangle$							90(8)						
1913.60(4)	5^-				97(5)									
1954.72(4)	$3^-,5^-$								38(5)		24(9)			
1991.78(6)	$3^-,5^-$	65(9)												
2070.1	$\langle 27^- \rangle$									x				
2482.3	$\langle 29^- \rangle$											x		
2661.4	$\langle 31^- \rangle$												x	

Energy levels and branching ratios [03Re20].

¹⁵⁶Tb
65

E^*	J^π	σ (τ ,d)	$T_{1/2}$ or	Ref.	Branching ratios in percentage					
[keV]		$\mu\text{b/sr}$	Γ_{cm}		$\begin{smallmatrix} E^*_\text{f}: \\ J^\pi_\text{f}: \end{smallmatrix}$	0.0 3 ⁻	49.6 4 ⁺	109.7 5 ⁺	183.5 6 ⁺	281.9 7 ⁺
0.0	3 ⁻	14.1	5.35(10) d	74ElZW						
49.630(10)	4 ⁺		49(7) ns			100				
49.6+X	$\langle 7^- \rangle$		24.4(10) h							
87	4 ⁻	41.0		74ElZW						
88.4	$\langle 0^+ \rangle$		5.3(2) h			100				
100	1 ⁻	incl		74ElZW						
109.7	5 ⁺						100			
156	2 ⁻	23.0		74ElZW						
183.5	6 ⁺						24	76		
188	3 ⁻	15.9		74ElZW						
222		2.6		74ElZW						
245		7.1		74ElZW						
281.9	7 ⁺							≤ 96	100	
290	4 ⁻	13.1		74ElZW						
313		6.5		74ElZW						
378.9	$6^{\langle - \rangle}$	8.0		74ElZW				100		
393.6	8 ⁺								47	53
405		5.7		74ElZW						
442.0	$7^{\langle - \rangle}$								56	
483		13.3		74ElZW						
530.6	9 ⁺									52
546.6	$8^{\langle - \rangle}$									
550		12.2		74ElZW						
590		7.2		74ElZW						
615		16.5		74ElZW						
638		32.0		74ElZW						
646.8	$9^{\langle - \rangle}$									

(continued)

¹⁵⁶Tb
65

E^*	J^π	σ (τ, d)	$T_{1/2}$ or	Ref.	Branching ratios in percentage					
[keV]		$\mu\text{b/sr}$	Γ_{cm}		E^*_f : J^π_f :	0.0 3 ⁻	49.6 4 ⁺	109.7 5 ⁺	183.5 6 ⁺	281.9 7 ⁺
686.2	10 ⁺									
695		94.9		74ElZW						
754		27.5		74ElZW						
790		37.7		74ElZW						
800.0	10 ⁽⁻⁾									
858.2	11 ⁺									
954.5	11 ⁽⁻⁾									
1060.4	12 ⁺									
1146.9	12 ⁽⁻⁾									
1263.3	13 ⁺									
1366.8	13 ⁽⁻⁾									
1510.6	14 ⁺									
1584.3	14 ⁽⁻⁾									
1741.4	15 ⁺									
1873.9	15 ⁽⁻⁾									
2029.6	16 ⁺									
2103.2	16 ⁽⁻⁾									
2285.9	17 ⁺									
2461.5	17 ⁽⁻⁾									
2609.9	18 ⁺									
2694.2	18 ⁽⁻⁾									
2890.5	19 ⁺									
3114.5	19 ⁽⁻⁾									
3243.7	20 ⁺									
3345.7	20 ⁽⁻⁾									
3548.4	21 ⁺									
3815	21 ⁽⁻⁾									
4049	22 ⁽⁻⁾									
4255	$\langle 23^+ \rangle$									
4556	23 ⁽⁻⁾									
4794	24 ⁽⁻⁾									
5579	$\langle 26^- \rangle$									
6407	$\langle 28^- \rangle$									
7280	$\langle 30^- \rangle$									
8198	$\langle 32^- \rangle$									
9159	$\langle 34^- \rangle$									
10160	$\langle 36^- \rangle$									
11204	$\langle 38^- \rangle$									
12293	$\langle 40^- \rangle$									
13435	$\langle 42^- \rangle$									
14638	$\langle 44^- \rangle$									
15907	$\langle 46^- \rangle$									

Cross sections of the (τ, d) reaction measured at 90° [74ElZW] are reported in [03Re20].

Energy levels and branching ratios [03Re20]. Part 2

¹⁵⁶Tb
65

E^* [keV]	J^π	Branching ratios in percentage									
		$E_f^*:$ $J_f^\pi:$	378.9 6 ⁽⁻⁾	393.6 8 ⁺	442.0 7 ⁽⁻⁾	530.6 9 ⁺	546.6 8 ⁽⁻⁾	646.8 9 ⁽⁻⁾	686.2 10 ⁺	800.0 10 ⁽⁻⁾	858.2 11 ⁺
442.0	7 ⁽⁻⁾		44								
530.6	9 ⁺			48							
546.6	8 ⁽⁻⁾				100						
646.8	9 ⁽⁻⁾				29		71				
686.2	10 ⁺			55		45					
800.0	10 ⁽⁻⁾						38	62			
858.2	11 ⁺					100			≤91		
954.5	11 ⁽⁻⁾							50		50	
1060.4	12 ⁺								65		35
1146.9	12 ⁽⁻⁾									58	
1263.3	13 ⁺										74

Energy levels and branching ratios [03Re20]. Part 3

¹⁵⁶Tb
65

E^* [keV]	J^π	Branching ratios in percentage									
		$E_f^*:$ $J_f^\pi:$	954.5 11 ⁽⁻⁾	1060.4 12 ⁺	1146.9 12 ⁽⁻⁾	1263.3 13 ⁺	1366.8 13 ⁽⁻⁾	1510.6 14 ⁺	1584.3 14 ⁽⁻⁾	1741.4 15 ⁺	1873.9 15 ⁽⁻⁾
1146.9	12 ⁽⁻⁾		42								
1263.3	13 ⁺			26							
1366.8	13 ⁽⁻⁾		73		27						
1510.6	14 ⁺			82		18					
1584.3	14 ⁽⁻⁾				79		21				
1741.4	15 ⁺					80		20			
1873.9	15 ⁽⁻⁾						81		19		
2029.6	16 ⁺									[100]	
2285.9	17 ⁺									76	
2461.5	17 ⁽⁻⁾										65

Energy levels and branching ratios [03Re20]. Part 4

¹⁵⁶Tb
65

E^* [keV]	J^π	Branching ratios in percentage									
		$E_f^*:$ $J_f^\pi:$	2029.6 16 ⁺	2103.2 16 ⁽⁻⁾	2285.9 17 ⁺	2461.5 17 ⁽⁻⁾	2609.9 18 ⁺	2694.2 18 ⁽⁻⁾	2890.5 19 ⁺	3114.5 19 ⁽⁻⁾	3345.7 20 ⁽⁻⁾
2285.9	17 ⁺		24								
2461.5	17 ⁽⁻⁾			35							
2609.9	18 ⁺		100								
2694.2	18 ⁽⁻⁾			[87]		≥13					
2890.5	19 ⁺				100						
3114.5	19 ⁽⁻⁾					77		23			

(continued)

¹⁵⁶Tb
65

E^*	J^π	Branching ratios in percentage									
[keV]		E_f^* : J_f^π :	2029.6 16 ⁺	2103.2 16 ⁽⁻⁾	2285.9 17 ⁺	2461.5 17 ⁽⁻⁾	2609.9 18 ⁺	2694.2 18 ⁽⁻⁾	2890.5 19 ⁺	3114.5 19 ⁽⁻⁾	3345.7 20 ⁽⁻⁾
3243.7	20 ⁺						100				
3345.7	20 ⁽⁻⁾							100			
3548.4	21 ⁺								100		
3815	21 ⁽⁻⁾									100	
4049	22 ⁽⁻⁾										100

Energy levels and branching ratios [03Re20]. Part 5

¹⁵⁶Tb
65

E^*	J^π	Branching ratios in percentage									
[keV]		E_f^* : J_f^π :	3548.4 21 ⁺	3815 21 ⁽⁻⁾	4049 22 ⁽⁻⁾	4794 24 ⁽⁻⁾	5579 26 ⁻	6407 28 ⁻	7280 30 ⁻	8198 32 ⁻	9159 34 ⁻
4255	23 ⁺		100								
4556	23 ⁽⁻⁾			100							
4794	24 ⁽⁻⁾				100						
5579	26 ⁻					100					
6407	28 ⁻						100				
7280	30 ⁻							100			
8198	32 ⁻								100		
9159	34 ⁻									100	
10160	36 ⁻										100

Energy levels and branching ratios [03Re20]. Part 6

¹⁵⁶Tb
65

E^*	J^π	Branching ratios in percentage					
[keV]		E_f^* : J_f^π :	10160 36 ⁻	11204 38 ⁻	12293 40 ⁻	13435 42 ⁻	14638 44 ⁻
11204	38 ⁻		100				
12293	40 ⁻			100			
13435	42 ⁻				100		
14638	44 ⁻					100	
15907	46 ⁻						100

Energy levels and branching ratios [96He17].

¹⁵⁷Tb
65

E^*	$2J^\pi$	L	σ (τ ,d)	σ (τ ,d)	σ (α ,t)	σ (α ,t)	S_N	U^2	$T_{1/2}$ or	Ref.	Branching ratios in percentage				
[keV]		(p,t)	$\mu\text{b/sr}$	$\mu\text{b/sr}$	$\mu\text{b/sr}$	$\mu\text{b/sr}$			Γ_{cm}		E_f^* : 0	60.8	144	252	326
											$2J_f^\pi$: 3 ⁺	5 ⁺	7 ⁺	9 ⁺	5 ⁻
0	3 ⁺	0	21.5	2.0(3)	3.1	1.9(4)	0.05	0.6	71(7) yr	72Bo47					
60.82(6)	5 ⁺	2	94	73.4(54)	48	50.2(45)	1.0	0.6	0.49(12) ns	72Go30	100				
143.83(6)	7 ⁺	2	≈ 3	1.7(4)	2.6	2.1(6)	0.11	0.6		72Go30	5.5(9)	95(28)			
252.4	9 ⁺		≈ 6	3.2(4)	1.3	2.1(6)	0.21	0.6		72Ti05		25	75		
326.1(1)	5 ⁻		≈ 2	1.4(3)	≈ 1.5		0.02	0.4	0.20(4) ns	72Ti05	98	0.21(5)	1.7(2)		
327.3	5 ⁺		incl		incl						72	28			
358.0(10)	7 ⁻		5.4	3.0(4)	≈ 0.4	0.7(5)	0.03	0.3		72Ti05		100			
377.5	11 ⁺												40	60	
407.9	7 ⁺		11.5	9.5(7)	13	20.3(42)	0.62	0.4		72Ti05	18	82			x
425.9	9 ⁻			0.9(3)	3.8					72Ti05			75		
513.8	9 ⁺											11	51		
517.6	11 ⁻		27	23.0(47)	54	49.3(35)	1.5	0.3		72Ti05				20	
531.9	13 ⁺													46	
571.7	$\langle 7^- \rangle$														100
597.5(6)	1 ⁺		31.5	7.6(11)	≈ 2.4	1.7(6)	0.04			72Ti05	100				
637.3(6)	3 ⁺		56	21.3(24)	17	15.4(21)	0.35			72Ti05	36	64			
643.4	11 ⁺													32	
647.9	13 ⁻														
658.5	7 ⁺		33	30.6(44)	29	34.8(33)	1.3	0.9		72Ti05					
693.4	15 ⁺														
697.5(5)	5 ⁺		30	16.2(11)	5.2	6.4(20)	0.21			72Ti05	7(3)	47	47(17)		
699.5	9 ⁻														
709.3						5.3(16)									
763.6	9 ⁺														
782.9	15 ⁻														
789.7	13 ⁺														
793.6	7 ⁺		≈ 10	4.5(5)	1.9	2.3(5)	0.15			72Ti05			56	44	
838(3)	5 ⁺		147	116(7)	23	53(4)	1.5	1.0		72Ti05					
0+X	5 ⁺														
851.1	11 ⁻														
860.6					12					72Ti05					
888(3)			≈ 15	25(6)	≈ 1.5	3.3(16)				72Ti05					
890.4	17 ⁺		incl	incl											
891.9	11 ⁺														
896(3)	9 ⁺														
924(3)			52	53(3)	11.5	16(6)	0.10	1.0		72Bo47					
82.4+X	7 ⁺														
927(3)			incl	incl	incl	incl	0.44			72Ti05					
947(10)															
954.7	15 ⁺														
966(3)			32	18.6(11)	0.7	3.8(9)	0.09	1.0		72Ti05					
974.4	17 ⁻														
992.6(8)	3 ⁺	0									29(11)	71(22)			
1005(3)			29	18.3(22)	2.8	3.4(9)	0.17	1.0		72Ti05					
1025.6	13 ⁻														

(continued)

¹⁵⁷Tb
65

E^*	$2J^\pi$	L	σ (τ ,d)	σ (τ ,d)	σ (α ,t)	σ (α ,t)	S_N	U^2	$T_{1/2}$ or	Ref.	Branching ratios in percentage				
[keV]		(p,t)	$\mu\text{b/sr}$	$\mu\text{b/sr}$	$\mu\text{b/sr}$	$\mu\text{b/sr}$			Γ_{cm}		E_f^* : 0	60.8	144	252	326
											$2J_f^\pi$: 3 ⁺	5 ⁺	7 ⁺	9 ⁺	5 ⁻
186.7+X	9 ⁺														
1044.6(12)	5 ⁺	2	15	6.6(8)	12	11.3(17)	0.23	1.0		72Bo47	100	<7			
1049(3)			incl		incl					72Ti05					
1052.3	13 ⁺		incl		incl										
1067(4)				5.9(12)		4.4(15)	0.27	1.0		72Bo47					
1078(3)			8	incl	0.6	incl				72Ti05					
1082.8	19 ⁺		incl		incl										
1096.2(8)	1 ⁻ ,3 ⁻														61(22)
1102.8(6)	3 ⁻ ,5 ⁻		15	4.2(10)	1.2					72Ti05	1.8(9)				43(9)
1120(3)	7 ⁺	2	incl		incl					72Go30					
1137.0	17 ⁺														
1141.2	19 ⁻														
316.0+X	11 ⁺														
1164(3)	$\langle 7^- \rangle$		[7]							72Ti05					
1194(3)			7.4	4.5(6)						72Ti05					
1207(10)															
1222.3	15 ⁻														
1228.9	15 ⁺														
1238(5)															
1276.1(7)	1 ⁺ ,3,5										71(29)	29(14)			
467.1+X	13 ⁺														
1315.1	21 ⁺														
1318															
1337.2	19 ⁺														
1352															
1387.7	21 ⁻														
1417															
1432.7	17 ⁻														
1436.5	17 ⁺														
1454(3)			35	26(8)						72Ti05					
642.8+X	15 ⁺														
1487															
1529(3)				7.4(10)											
1533.6	23 ⁺														
1535															
1541(3)				36(3)						72Bo47					
1551.1	21 ⁺														
1562(3)			61	incl						72Ti05					
1577.1	23 ⁻														
1578															
1602															
1631															
1659															
1664.7	19 ⁻														
1668.2	19 ⁺														

(continued)

¹⁵⁷Tb
65

E^*	$2J^\pi$	L	$\sigma(\tau, d)$	$\sigma(\tau, d)$	$\sigma(\alpha, t)$	$\sigma(\alpha, t)$	S_N	U^2	$T_{1/2}$ or Ref.	Branching ratios in percentage					
[keV]		(p,t)	$\mu\text{b/sr}$	$\mu\text{b/sr}$	$\mu\text{b/sr}$	$\mu\text{b/sr}$			Γ_{cm}	E_f^* :	0	60.8	144	252	326
										$2J_f^\pi$:	3 ⁺	5 ⁺	7 ⁺	9 ⁺	5 ⁻
837.2+X	17 ⁺														
1695															
1749															
1779.5	23 ⁺														
1798.5	25 ⁺														
1875.8	25 ⁻														
1048.0+X	19 ⁺														
1905.6	21 ⁻														
1920.3	21 ⁺														
2020.2	25 ⁺														
2037.7	27 ⁺														
2082.8	27 ⁻														
1274.5+X	21 ⁺														
2164.4	23 ⁻														
2188.7	23 ⁺														
2273.4	27 ⁺														
2325.7	29 ⁺														
1515.7+X	23 ⁺														
2417.6	29 ⁻														
2429.4	25 ⁻														
2471.6	25 ⁺														
2535.5	29 ⁺														
2579.9	31 ⁺														
1767.6+X	25 ⁺														
2640.4	31 ⁻														
2705.1	27 ⁻														
2765.6	27 ⁺														
2807.1	31 ⁺														
2034.6+X	27 ⁺														
2884.4	33 ⁺														
2988.2	29 ⁻														
2989.7	33 ⁻														
3067.5	29 ⁺														
3149.7	35 ⁺														
2306.6+X	29 ⁺														
3226.3	35 ⁻														
3271.4	31 ⁻														
2591.5+X	31 ⁺														
3469.5	37 ⁺														
3567.6	37 ⁻														
3567.9	33 ⁻														
3687.4	33 ⁺														
2879.4+X	33 ⁺														
3746.3	39 ⁺														
3810.2	39 ⁻														

$$^{157}_{65}\text{Tb}$$

Additional data on this isotope can be found in [97Ad08, 81Ow02].
 $\sigma(\tau, d)$ was measured at 50° and 60° , respectively, in [72Ti05] and [72Bo47].
 $\sigma(\alpha, t)$ was measured at 60° in [72Ti05] and [72Bo47], see also S_N and U^2 in Supplement.
 Data for this isotope are considered in vol. LB I/18C.

$$^{157}_{65}\text{Tb}$$

E^*	$2J^\pi$	Branching ratios in percentage										
[keV]		E_f^* : $2J_f^\pi$:	327 5 ⁺	358 7 ⁻	377.5 11 ⁺	407.9 7 ⁺	425.9 9 ⁻	513.8 9 ⁺	517.6 11 ⁻	531.9 13 ⁺	571.7 (7 ⁻)	597.5 1 ⁺
358.0(10)	7 ⁻		x									
425.9	9 ⁻		≈3	22								
513.8	9 ⁺		8	30		x						
517.6	11 ⁻			13			68					
531.9	13 ⁺				54							
571.7	(7 ⁻)			x								
643.4	11 ⁺					30	38					
647.9	13 ⁻				10		31		60			
658.5	7 ⁺		25	51		24						
693.4	15 ⁺				56					44		
699.5	9 ⁻			x							x	
709.3				x							x	
763.6	9 ⁺							x				

(continued)

¹⁵⁷Tb
65

E^* [keV]	$2J^\pi$	Branching ratios in percentage										
		$E_f^*:$ $2J_f^\pi:$	327 5 ⁺	358 7 ⁻	377.5 11 ⁺	407.9 7 ⁺	425.9 9 ⁻	513.8 9 ⁺	517.6 11 ⁻	531.9 13 ⁺	571.7 ⟨7 ⁻ ⟩	597.5 1 ⁺
782.9	15 ⁻								42			
789.7	13 ⁺							x				
851.1	11 ⁻						x				x	
860.6							x					
890.4	17 ⁺									64		
891.9	11 ⁺							x				
1096.2(8)	1 ⁻ , 3 ⁻											39(9)
1102.8(6)	3 ⁻ , 5 ⁻			41(8)								

Energy levels and branching ratios [96He17]. Part 3

¹⁵⁷Tb
65

E^* [keV]	$2J^\pi$	Branching ratios in percentage										
		$E_f^*:$ $2J_f^\pi:$	643.4 11 ⁺	647.9 13 ⁻	658.5 7 ⁺	693.4 15 ⁺	697.5 5 ⁺	699.5 9 ⁻	763.6 9 ⁺	782.9 15 ⁻	789.7 13 ⁺	0+X 5 ⁺
763.6	9 ⁺				x							
782.9	15 ⁻			58								
789.7	13 ⁺		x									
851.1	11 ⁻							x				
890.4	17 ⁺					36						
891.9	11 ⁺				x				x			
82.4+X	7 ⁺											x
954.7	15 ⁺		x								x	
974.4	17 ⁻			63						37		
1025.6	13 ⁻							x				
186.7+X	9 ⁺											x
1052.3	13 ⁺		x						x			
1082.8	19 ⁺					72						
1102.8(6)	3 ⁻ , 5 ⁻						15(3)					
1137.0	17 ⁺										x	
1141.2	19 ⁻									64		

Energy levels and branching ratios [96He17]. Part 4

¹⁵⁷Tb
65

E^* [keV]	$2J^\pi$	Branching ratios in percentage										
		$E_f^*:$ $2J_f^\pi:$	851.1 11 ⁻	888	890.4 17 ⁺	891.9 11 ⁺	82.4+X 7 ⁺	954.7 15 ⁺	974.4 17 ⁻	1025.6 13 ⁻	186.7+X 9 ⁺	1052.3 13 ⁺
1025.6	13 ⁻		x									
186.7+X	9 ⁺						x					
1052.3	13 ⁺					x						

(continued)

¹⁵⁷Tb

65

<i>E</i> [*]	2 <i>J</i> ^π	<i>E</i> _f [*] :	851.1	888	890.4	Branching ratios in percentage						
[keV]		2 <i>J</i> _f ^π :	11 [−]		17 ⁺	891.9	82.4+X	954.7	974.4	1025.6	186.7+X	1052.3
						11 ⁺	7 ⁺	15 ⁺	17 [−]	13 [−]	9 ⁺	13 ⁺
1082.8	19 ⁺					28						
1137.0	17 ⁺							x				
1141.2	19 [−]								36			
316.0+X	11 ⁺						x				x	
1222.3	15 [−]		x							x		
1228.9	15 ⁺				x							x
467.1+X	13 ⁺										x	
1315.1	21 ⁺			x								
1337.2	19 ⁺							x				
1387.7	21 [−]								x			
1432.7	17 [−]									x		
1436.5	17 ⁺											x

Energy levels and branching ratios [96He17]. Part 5

¹⁵⁷Tb

65

<i>E</i> [*]	2 <i>J</i> ^π	<i>E</i> _f [*] :	1082.8	1137.0	316.0+X	Branching ratios in percentage						
[keV]		2 <i>J</i> _f ^π :	19 ⁺	17 ⁺	11 ⁺	1222.3	1228.9	467.1+X	1315.1	1337.2	1387.7	1432.7
						15 [−]	15 ⁺	13 ⁺	21 ⁺	19 ⁺	21 [−]	17 [−]
467.1+X	13 ⁺				x							
1315.1	21 ⁺	x										
1337.2	19 ⁺			x								
1387.7	21 [−]			x								
1432.7	17 [−]					x						
1436.5	17 ⁺						x					
642.8+X	15 ⁺				x			x				
1533.6	23 ⁺	x							x			
1551.1	21 ⁺			x						x		
1577.1	23 [−]			x							x	
1664.7	19 [−]					x						
1668.2	19 ⁺						x					
837.2+X	17 ⁺							x				
1779.5	23 ⁺									x		
1798.5	25 ⁺								x			
1875.8	25 [−]										x	
1905.6	21 [−]											x

Energy levels and branching ratios [96He17]. Part 6

¹⁵⁷Tb
65

E^*	$2J^\pi$	Branching ratios in percentage										
[keV]		E_f^* : $2J_f^\pi$:	1436.5 17 ⁺	642.8+X 15 ⁺	1533.6 23 ⁺	1551.1 21 ⁺	1577.1 23 ⁻	1578	1664.7 19 ⁻	1668.2 19 ⁺	837.2+X 17 ⁺	1779.5 23 ⁺
1664.7	19 ⁻		x									
1668.2	19 ⁺		x									
837.2+X	17 ⁺			x								
1779.5	23 ⁺					x						
1798.5	25 ⁺				x							
1875.8	25 ⁻							x				
1048.0+X	19 ⁺			x							x	
1905.6	21 ⁻								x			
1920.3	21 ⁺		x							x		
2020.2	25 ⁺					x						x
2037.7	27 ⁺				x							
2082.8	27 ⁻						x					
1274.5+X	21 ⁺										x	
2164.4	23 ⁻								x			
2188.7	23 ⁺									x		
2273.4	27 ⁺											x

Energy levels and branching ratios [96He17]. Part 7

¹⁵⁷Tb
65

E^* [keV]	$2J^\pi$	Branching ratios in percentage									
		E_f^* : $2J_f^\pi$:	1798.5 25 ⁺	1875.8 25 ⁻	1048+X 19 ⁺	1905.6 21 ⁻	1920.3 21 ⁺	2020.2 25 ⁺	2037.7 27 ⁺	2082.8 27 ⁻	1275+X 21 ⁺
2037.7	27 ⁺		x								
2082.8	27 ⁻			x							
1274.5+X	21 ⁺				x						
2164.4	23 ⁻					x					
2188.7	23 ⁺						x				
2273.4	27 ⁺							x			
2325.7	29 ⁺		x						x		
1515.7+X	23 ⁺				x						x
2417.6	29 ⁻			x						x	
2429.4	25 ⁻					x					
2471.6	25 ⁺						x				
2535.5	29 ⁺							x			
2579.9	31 ⁺								x		
1767.6+X	25 ⁺										x
2640.4	31 ⁻									x	
2705.1	27 ⁻										
											x

Energy levels and branching ratios [96He17]. Part 8

¹⁵⁷Tb
65

E^* [keV]	$2J^\pi$	Branching ratios in percentage										
		E_f^* : $2J_f^\pi$:	2188.7 23 ⁺	2273.4 27 ⁺	2325.7 29 ⁺	1516+X 23 ⁺	2417.6 29 ⁻	2429.4 25 ⁻	2471.6 25 ⁺	2535.5 29 ⁺	2579.9 31 ⁺	1768+X 25 ⁺
2471.6	25 ⁺		x									
2535.5	29 ⁺			x								
2579.9	31 ⁺				x							
1767.6+X	25 ⁺					x						
2640.4	31 ⁻						x					
2705.1	27 ⁻							x				
2765.6	27 ⁺		x						x			
2807.1	31 ⁺			x						x		
2034.6+X	27 ⁺					x						x
2884.4	33 ⁺				x						x	
2988.2	29 ⁻							x				
2989.7	33 ⁻						x					
3067.5	29 ⁺								x			
3149.7	35 ⁺										x	
2306.6+X	29 ⁺											x

Energy levels and branching ratios [96He17]. Part 9

¹⁵⁷Tb
65

E^* [keV]	$2J^\pi$	Branching ratios in percentage										
		E_f^* : $2J_f^\pi$:	2640.4 31 ⁻	2705.1 27 ⁻	2765.6 27 ⁺	2035+X 27 ⁺	2884.4 33 ⁺	2988.2 29 ⁻	2989.7 33 ⁻	3067.5 29 ⁺	3149.7 35 ⁺	2307+X 29 ⁺
2988.2	29 ⁻			x								
2989.7	33 ⁻		x									
3067.5	29 ⁺				x							
3149.7	35 ⁺						x					
2306.6+X	29 ⁺					x						
3226.3	35 ⁻		x						x			
3271.4	31 ⁻			x					x			
2591.5+X	31 ⁺					x						x
3469.5	37 ⁺						x				x	
3567.6	37 ⁻								x			
3567.9	33 ⁻							x				
3687.4	33 ⁺									x		
2879.4+X	33 ⁺											x
3746.3	39 ⁺										x	

Energy levels and branching ratios [96He17]. Part 10

¹⁵⁷Tb
65

E^*	$2J^\pi$	Branching ratios in percentage											
		E_f^* :	3226.3	3271.4	2592+X	3469.5	3567.6	3567.9	2879+X	3746.3	3810.2	3176+X	4086.5
[keV]		$2J_f^\pi$:	35 ⁻	31 ⁻	31 ⁺	37 ⁺	37 ⁻	33 ⁻	33 ⁺	39 ⁺	39 ⁻	35 ⁺	41 ⁺
<hr/>													
3567.6	37 ⁻		x										
3567.9	33 ⁻			x									
2879.4+X	33 ⁺				x								
3746.3	39 ⁺					x							
3810.2	39 ⁻		x					x					
3176.3+X	35 ⁺				x				x				
4086.5	41 ⁺					x				x			
4149.0	41 ⁻						x				x		
3478.4+X	37 ⁺								x			x	
4379.3	43 ⁺									x			x
4399.1	43 ⁻										x		
3791.2+X	39 ⁺											x	
4745.2	45 ⁺												x

Energy levels and branching ratios [96He17]. Part 11

¹⁵⁷Tb
65

E^*	$2J^\pi$	Branching ratios in percentage											
		E_f^* :	4149.0	3478+X	4379.3	4399.1	3791+X	4745.2	5031.2	5059.2	5453.8	5792.0	6579.3
[keV]		$2J_f^\pi$:	41 ⁻	37 ⁺	43 ⁺	43 ⁻	39 ⁺	45 ⁺	47 ⁻	47 ⁺	49 ⁺	51 ⁺	55 ⁺
<hr/>													
4399.1	43 ⁻		x										
3791.2+X	39 ⁺			x									
4745.2	45 ⁺				x								
4774.5	45 ⁻		x			x							
4108.2+X	41 ⁺			x			x						
5031.2	47 ⁻					x							
5059.2	47 ⁺				x			x					
5453.8	49 ⁺							x		x			
5725.4	51 ⁻								x				
5792.0	51 ⁺									x	x		
6216.3	53 ⁺										x		
6579.3	55 ⁺											x	
7423	59 ⁺												x

Energy levels and branching ratios [04He05].

¹⁵⁸Tb
65

E^* [keV]	J^π	$d\sigma/d\Omega$ (τ, d)	$d\sigma/d\Omega$ (d, t)	$d\sigma/d\Omega$ (τ, α)	$d\sigma/d\Omega$ (p, α)	$T_{1/2}$ or Γ_{cm}	Ref.	Branching ratios in percentage					
								E_f^* : J_f^π :	0.0 3 ⁻	55 4 ⁺	128 5 ⁺	217 6 ⁺	323 7 ⁺
0.0	3 ⁻	22.1	155	2		180(11) yr	89Bu03						
55.04	4 ⁺		6		3.8		89Bu03	100					
79.9	4 ⁻	27.8	66	9			89Bu03						
110.3(12)	0 ⁻		25			10.70(17) s	89Bu03	100					
115.5	1 ⁻	16.8	58				89Bu03						
128.3	5 ⁺		19	4	3.2		89Bu03			100			
167.4	2 ⁻	23.1	60				89Bu03						
178.9	5 ⁻ , 1 ⁺		61	12	1.2		89Bu03						
207.8	3 ⁻ , 2 ⁺	20.8	62	21	2.8		89Bu03						
217.3	6 ⁺		26				89Bu03			31	69		
242.0	3 ⁺		14	2	2.2		89Bu03						
280.6			≈ 8				89Bu03						
298.5	4 ⁺ , 4 ⁻ , 6 ⁻	7.9	64	10	1.5		89Bu03						
322.6	7 ⁺		11	34	0.3		89Bu03				57	43	
324		8.9					74ElZW						
338.1			11				89Bu03						
359.8	5 ⁺		18	18	0.6		89Bu03						
371.2	5 ⁻		14				89Bu03						
381.1		14.2	≈ 14				89Bu03						
388.4	7 ⁻		41	76		0.40(4) ms	89Bu03					64	36
406				0.1									
408.1	$\langle 0^+ \rangle$		88										
419.3	$\langle 1^+ \rangle$		90										
439		2.0											
444.4	8 ⁺ , 6 ⁺		38	71	0.4								
460.9	5 ⁺	6.0	≈ 10										
469.7			≈ 20										
484					0.5								
487.3	$\langle 2^+ \rangle$		90										
495.4	4 ⁻ , 5 ⁻	7.0	29	54	1.1								
505.9			100										
531	6 ⁺	22.0											
536					0.2								
540.0	7 ⁺		≈ 20	37									
556					0.1								
571		7.5											
587	6 ⁻	9.8			2.0								
590.0	3 ⁺		180	22									
601.5	5 ⁻		≈ 15	incl									
610.1			≈ 10										
613					0.9								
627	7 ⁺	35.2											
638.7	2 ⁺		700										
644				18									
650.7			≈ 26		0.4								

(continued)

¹⁵⁸Tb
65

E^* [keV]	J^π	$d\sigma/d\Omega$ (τ, d)	$d\sigma/d\Omega$ (d, t)	$d\sigma/d\Omega$ (τ, α)	$d\sigma/d\Omega$ (p, α)	$T_{1/2}$ or Γ_{cm}	Ref.	Branching ratios in percentage					
								E_f^* : J_f^π :	0.0 3 ⁻	55 4 ⁺	128 5 ⁺	217 6 ⁺	323 7 ⁺
659.7	4 ⁺	10.5	42										
665	7 ⁻				2.2								
670				10									
677.3			150										
693					0.6								
699.6	$\langle 1^+ \rangle$		340	9									
709	2 ⁻	22.1											
719.7	3 ⁺		74										
733				22									
737	$\langle 4^- \rangle$				2.0								
740.2			150										
750.0	5 ⁺	17.1	110										
753				14									
758.5			160										
759	8 ⁻				0.9								
767.5	$\langle 2^+ \rangle$		170										
781	3 ⁻	5.1			0.4								
794.6			120										
805					0.9								
814.3			80										
817	5 ⁻	30.5											
824.0			45										
832		10.9											
837					0.3		89Bu03						
840.6			≈ 15				89Bu03						
849.7	$\langle 3^+ \rangle$		38				89Bu03						
859					0.5		89Bu03						
863.3	6 ⁺	13.9	90				89Bu03						
874.4			52				89Bu03						
879	$\langle 6^- \rangle$				0.6		89Bu03						
881.9			55				89Bu03						
885		13.1					74ElZW						
891	$\langle 5^- \rangle$				1.0		89Bu03						
900.7			60				89Bu03						
916					0.7		89Bu03						
923.8			≈ 55				89Bu03						
936		9.9					74ElZW						
943					0.5		89Bu03						
944.0			78				89Bu03						
953.5			≈ 25				89Bu03						
963	4 ⁻	31.1			0.9		74ElZW						
986			≈ 79				89Bu03						
999		7.3			0.9		74ElZW						
1017			≈ 15				89Bu03						
1032		4.3	≈ 15				89Bu03						

(continued)

¹⁵⁸Tb
65

E^*	J^π	$d\sigma/d\Omega$	$d\sigma/d\Omega$	$d\sigma/d\Omega$	$d\sigma/d\Omega$	$T_{1/2}$ or	Ref.	Branching ratios in percentage					
[keV]		(τ, d)	(d, t)	(τ, α)	(p, α)	Γ_{cm}		E_f^* :	0.0	55	128	217	323
								J_f^π :	3 ⁻	4 ⁺	5 ⁺	6 ⁺	7 ⁺
1051			≈ 10				89Bu03						
1068	1 ⁻	16.4	≈ 55				89Bu03						
1094			≈ 10				89Bu03						
1110	2 ⁻	26.7	50				89Bu03						
1138					1.1		89Bu03						
1157			≈ 60				89Bu03						
1169			≈ 15				89Bu03						

Additional data on this isotope can be found in [70Jo22].

All cross sections are presented in units $\mu\text{b/sr}$.

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

Energy levels and branching ratios [03He11].

¹⁵⁹Tb
65

E^*	$2J^\pi$	S_N	U^2	σ (τ, d)	σ (τ, d)	σ (α, t)	σ (α, t)	σ (t, α)	σ (p, α)	$I_{s,0}$	$g\Gamma_o$	$g\Gamma_o^{\text{red}}$	$T_{1/2}$ or	Ref.
[keV]				(τ, d)	$\mu\text{b/sr}$	$\mu\text{b/sr}$	$\mu\text{b/sr}$	$\mu\text{b/sr}$	$\mu\text{b/sr}$	[eVb]	[meV]	[meV']	Γ_{cm}	
0.0	3 ⁺	0.05	0.6	3.6	1.8(4)	7.3	5.4(9)	17	2.9				Stable	72Bo47
57.996(2)	5 ⁺	1.3	0.6	92	72.4(65)	102	89.4(35)	175	15.4				54(1) ps	72Bo47
137.505(2)	7 ⁺	0.11	0.6	2.2	1.5(3)	4.1	2.5(9)		2.1				41(2) ps	72Bo47
241.15(4)	9 ⁺	0.31	0.6	3.7	4.5(5)	3.2	6.2(9)		3.2				27(1) ps	72Bo47
348.283(2)	5 ⁺			2.9	3.2(6)	2.0	2.2(6)		1.7					92Ga15
362.05(4)	11 ⁺								1.4				15.2(2) ps	92Ga15
363.545(1)	5 ⁻								incl				153(5) ps	92Ga15
388.4	7 ⁻	0.04		7.6		3.2			1.4					72Bo47
428.2	7 ⁺	0.46		11.5	6.7(15)	23	23.0(18)	110	7.2					72Bo47
454.6	$\langle 9^- \rangle$			≈ 3.5		4.0			1.6					92Ga15
510.40(5)	13 ⁺								1.0				9.2(2) ps	92Ga15
532	$\langle 9^+ \rangle$					≈ 4								
536.7														
545.1	11 ⁻	2.1		32	29(6)	86	83(6)	185	16.9					72Bo47
547.6	7 ⁻							incl	incl					
580.81(1)	1 ⁺	0.05		11.3	6.5(20)	≈ 3	1.6(8)		1.6				0.8(1) ps	72Bo47
617.62(2)	3 ⁺	0.52		42	27(5)	32	32(3)							72Bo47
668.91(5)	15 ⁺												6.2(4) ps	
674.23(2)	5 ⁺	0.29		24	20(5)	15	13.1(13)	24	2.4				<2.3 ps	72Bo47
677.9	$\langle 9^- \rangle$							incl	incl					
761.3	$\langle 7^+ \rangle$					3.8								
777.1	7 ⁺	1.5		27	24.1(32)	40	54(6)							72Bo47
799	15 ⁻								4.1					92Ga15
822.2	11 ⁻			9.5	6.5(10)	21	14.9(18)							72Bo47
854.96(1)	$\langle 1^- \rangle$			24	14(6)	≈ 4	3.7(7)	0.7						92Ga15
857.3	$\langle 9^+ \rangle$	0.09	1.0											72Bo47

(continued)

¹⁵⁹Tb
65

E^*	$2J^\pi$	S_N	U^2	σ (τ, d)	σ (τ, d)	σ (α, t)	σ (α, t)	σ (t, α)	σ (p, α)	$I_{s,0}$	$g\Gamma_o$	$g\Gamma_o^{\text{red}}$	$T_{1/2}$ or	Ref.
[keV]		(τ, d)		$\mu\text{b/sr}$	$\mu\text{b/sr}$	$\mu\text{b/sr}$	$\mu\text{b/sr}$	$\mu\text{b/sr}$	$\mu\text{b/sr}$	[eVb]	[meV]	[meV']	Γ_{cm}	
859.98(7)	17^+												4.0(2) ps	
891.25(6)	$\langle 5^- \rangle$	0.47	1.0	44	22(6)	21	23(4)							72Bo47
946	$\langle 1^+ \rangle$			40	27(8)	4.3	5.6(10)	8	0.4					92Ga15
971	$\langle 1^+ \rangle$	0.02	1.0		16(4)		10.9(14)	36	1.0					92Ga15
978	$\langle 3^+ \rangle$	0.07		25	incl	11.5	incl							
1008.6	$\langle 11^+ \rangle$													
1018	$\langle 5^+ \rangle$	1.9		153	106(21)	79	97(10)	30	1.4					92Ga15
1049	$\langle 7^+ \rangle$			27	24(6)	6.7	8.6(17)	19	1.0					92Ga15
1052.32(7)	19^+												2.45(8) ps	
1086.5														
1099	$\langle 5^+ \rangle$	0.14	1.0	14	11.5(18)	11	5.8(18)							72Bo47
1102.5	$\langle 7^+ \rangle$	0.10			incl		incl							72Bo47
1156	$\langle 1^+ \rangle$			4.7		0.8		63	2.6					92Ga15
1218	$3^+, 7^+$			7.3	2.6(5)		3.7(13)	94	8.8					92Ga15
1254*										35(9)	24(5)	12.2(25)		96No10
1264				16.5		≈ 1			0.5					92Ga15
1282.56(10)	21^+												1.6(2) ps	
1317*										12(3)	9.8(19)	4.29(83)		96No10
1325									0.8					92Ga15
1358			≈ 3		2.5(5)	3.5			2.2					92Ga15
1392	$7^+, 9^+$							41	6.0					92Ga15
1439									0.8					92Ga15
1505.2(1)	23^+												1.1(1) ps	
1530									0.7					92Ga15
1567			8		3.2(5)	1.0			0.5					92Ga15
1604									0.6					92Ga15
1634			≈ 11		7.0(7)	2.6			1.3	7.6(18)	8.5(16)	1.94(37)		92Ga15
1666			36		27(3)				1.0					92Ga15
1712			7		6.6(14)					7.0(20)	5.2(18)	1.04(36)		72Bo47
1743					4.1(6)									72Bo47
1769.6(1)	25^+				39(5)									72Bo47
1823					7(1)				1.6					92Ga15
1872					6(1)									72Bo47
1888					12(1)									72Bo47
1896*										2.2(11)	2.0(11)	0.29(16)		96No10
1904									1.4					92Ga15
1943									3.2					92Ga15
2019.4(1)	27^+													
2020*										5.7(12)	6.1(13)	0.74(16)		96No10
2089*										3.8(11)	4.3(12)	0.47(13)		96No10
2116*										14(2)	21(3)	2.22(32)		96No10
2183*										2.4(4)	3.0(5)	0.29(5)		96No10
2192*										4(2)	6(3)	0.57(29)		96No10
2219*										1.7(1)	2.2(1)	0.20(1)		96No10
2223*										2.6(7)	3.4(8)	0.31(7)		96No10

(continued)

¹⁵⁹Tb
65

E^*	$2J^\pi$	S_N	U^2	$\sigma(\tau, d)$	$\sigma(\tau, d)$	$\sigma(\alpha, t)$	$\sigma(\alpha, t)$	$\sigma(t, \alpha)$	$\sigma(p, \alpha)$	$I_{s,0}$	$g\Gamma_o$	$g\Gamma_o^{\text{red}}$	$T_{1/2}$ or	Ref.
[keV]		(τ, d)		$\mu\text{b/sr}$	$\mu\text{b/sr}$	$\mu\text{b/sr}$	$\mu\text{b/sr}$	$\mu\text{b/sr}$	$\mu\text{b/sr}$	[eVb]	[meV]	[meV']	Γ_{cm}	
2257*										6(2)	8(3)	0.7(3)		96No10
2270*										1.4(6)	1.9(8)	0.16(7)		96No10
2311.5(1)	29 ⁺													
2319*										9.0(12)	22(2)	1.76(16)		96No10
2339*										4.8(12)	12(2)	0.90(15)		96No10
2359*										6.6(5)	9.6(7)	0.73(5)		96No10
2372*										2.8(4)	4.1(6)	0.31(5)		96No10
2434*										2.9(11)	4.5(17)	0.31(12)		96No10
2445*										2.2(3)	3.4(4)	0.23(3)		96No10
2583.0(2)	31 ⁺													
2590*										3.3(4)	5.8(8)	0.33(5)		96No10
2595*										4.6(14)	8(2)	0.46(11)		96No10
2638*										2.0(6)	7(2)	0.38(11)		96No10
2651*										2.6(5)	9(2)	0.48(11)		96No10
2677*										2.8(3)	5.2(5)	0.27(3)		96No10
2701*										2.7(5)	5.2(9)	0.26(5)		96No10
2718*										1.9(13)	4(2)	0.20(10)		96No10
2755*										1.8(16)	4(3)	0.19(14)		96No10
2787*										2.7(7)	5.4(14)	0.25(7)		96No10
2831*										2.7(3)	5.6(7)	0.25(3)		96No10
2855*										4.5(12)	9(2)	0.39(9)		96No10
2870*										2.1(4)	11(3)	0.47(13)		96No10
2881*										3.3(6)	18(4)	0.75(17)		96No10
2890*										4.3(4)	9.3(8)	0.39(3)		96No10
2893.1(6)	33 ⁺													
2903*										17(1)	38(2)	1.55(7)		96No10
2918*										3.7(8)	19(3)	0.77(12)		96No10
2924*										2.2(9)	5(2)	0.20(8)		96No10
2938*										2.6(6)	5.8(12)	0.23(5)		96No10
2947*										3.2(9)	7(2)	0.27(8)		96No10
2963*										3.8(4)	8.6(9)	0.33(4)		96No10
2993*										4.5(8)	11(2)	0.39(7)		96No10
3018*										2.2(5)	5.1(11)	0.19(4)		96No10
3062*										5.4(12)	13(3)	0.45(10)		96No10
3079*										2.4(5)	13(4)	0.45(14)		96No10
3102*										2.7(13)	7(3)	0.24(10)		96No10
3117*										2.7(18)	7(4)	0.23(13)		96No10
3129*										3.1(1)	7.9(3)	0.26(1)		96No10
3159*										1.4(6)	3.5(17)	0.11(5)		96No10
3179.2(6)	35 ⁺													
3180*										3.2(6)	8.5(16)	0.26(5)		96No10
3198*										2.3(8)	12(4)	0.37(12)		96No10
3227*										3.9(1)	10.5(4)	0.31(1)		96No10
3368*										3.2(7)	10(2)	0.26(5)		96No10
3498.1(8)	37 ⁺													

(continued)

¹⁵⁹Tb
65

E^*	$2J^\pi$	S_N	U^2	$\sigma(\tau, d)$	$\sigma(\tau, d)$	$\sigma(\alpha, t)$	$\sigma(\alpha, t)$	$\sigma(t, \alpha)$	$\sigma(p, \alpha)$	$I_{s,0}$	$g\Gamma_o$	$g\Gamma_o^{\text{red}}$	$T_{1/2}$ or	Ref.
[keV]		(τ, d)		$\mu\text{b/sr}$	$\mu\text{b/sr}$	$\mu\text{b/sr}$	$\mu\text{b/sr}$	$\mu\text{b/sr}$	$\mu\text{b/sr}$	[eVb]	[meV]	[meV']	Γ_{cm}	
3794(1)	$\langle 39^+ \rangle$													
		72Bo47	72Ti05	72Bo47	72Ti05	72Bo47	92Ga15	92Ga15	96No10	96No10	96No10			Ref.

Additional data on this isotope can be found in [96No10, 92Ga15, 91Me04, 90Le17, 72Ti05].

Abundance: 100 %.* Levels excited in (γ, γ) experiment [96No10]; $B(M1)$ can be found therein. Γ in the last column is the product $g\Gamma_o$ of the spin factor g and the ground-state transition widths Γ_o measured in (γ, γ) experiment, cross sections I_γ and reduced widths are given in Supplement; energy levels at 1634 and 1712 keV in [92Ga15] are considered as that observed at 1637 and 1709 keV in [96No10]. $\sigma(\tau, d)$ was measured at 50° and 60°, respectively, in [72Ti05] and [72Bo47]. $\sigma(\alpha, t)$ was measured at 60° in [72Ti05] and [72Bo47], see also S_N and U^2 in Supplement.Cross sections of (t, α) and (p, α) reactions were measured at 40° and 10°, respectively [92Ga15].

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

Energy levels and branching ratios [03He11]. Part 2

¹⁵⁹Tb
65

E^*	$2J^\pi$	Branching ratios in percentage										
		E_f^* :	0.0	58.0	137.5	241	348	362	363.545	388.4	454.6	510.40
[keV]		$2J_f^\pi$:	3 ⁺	5 ⁺	7 ⁺	9 ⁺	5 ⁺	11 ⁺	5 ⁻	7 ⁻	$\langle 9^- \rangle$	13 ⁺
57.996(2)	5 ⁺		100									
137.505(2)	7 ⁺		12.1(3)	88(2)								
241.15(4)	9 ⁺			28	72							
348.283(2)	5 ⁺		82.0(8)	11.1(2)	6.9(5)							
362.05(4)	11 ⁺				42	58						
363.545(1)	5 ⁻		98(2)	0.52(1)	1.80(2)		x					
388.4	7 ⁻			95(5)	4.8(9)							
428.2	7 ⁺		15(4)	85(8)	x							
454.6	$\langle 9^- \rangle$				81					19		
510.40(5)	13 ⁺					53		47(1)				
532	$\langle 9^+ \rangle$				x							
536.7			x									
545.1	11 ⁻					30				9	61	
547.6	7 ⁻								85	15		
580.81(1)	1 ⁺		98	2								
617.62(2)	3 ⁺		42(1)	58(2)								
668.91(5)	15 ⁺							61				39.1(12)
674.23(2)	5 ⁺		8.4(6)	50(2)	42(1)							
677.9	$\langle 9^- \rangle$									48	17	
761.3	$\langle 7^+ \rangle$			10	50	40						
777.1	7 ⁺									48		
854.96(1)	$\langle 1^- \rangle$		15(1)									
857.3	$\langle 9^+ \rangle$					73		27				

(continued)

¹⁵⁹Tb
65

E^* [keV]	$2J^\pi$	Branching ratios in percentage										
		$E_f^*:$ $2J_f^\pi:$	0.0 3 ⁺	58.0 5 ⁺	137.5 7 ⁺	241 9 ⁺	348 5 ⁺	362 11 ⁺	363.545 5 ⁻	388.4 7 ⁻	454.6 ⟨9 ⁻ ⟩	510.40 13 ⁺
859.98(7)	17 ⁺											65
891.25(6)	⟨5 ⁻ ⟩				20(2)							
971	⟨1 ⁺ ⟩		x									
978	⟨3 ⁺ ⟩		x	x								
1008.6	⟨11 ⁺ ⟩							100				
1086.5					x							
1102.5	⟨7 ⁺ ⟩				x							

Energy levels and branching ratios [03He11]. Part 3

¹⁵⁹Tb
65

E^* [keV]	$2J^\pi$	Branching ratios in percentage										
		$E_f^*:$ $2J_f^\pi:$	547.6 7 ⁻	580.808 1 ⁺	617.621 3 ⁺	668.91 15 ⁺	677.9 ⟨9 ⁻ ⟩	859.98 17 ⁺	1052.32 19 ⁺	1282.56 21 ⁺	1505.18 23 ⁺	1769.61 25 ⁺
677.9	⟨9 ⁻ ⟩	35										
777.1	7 ⁺	52										
822.2	11 ⁻						100					
854.96(1)	⟨1 ⁻ ⟩			36(2)	48.5(10)							
859.98(7)	17 ⁺					35(3)						
891.25(6)	⟨5 ⁻ ⟩				80(40)							
1052.32(7)	19 ⁺					x		x				
1282.56(10)	21 ⁺							79	21(4)			
1505.2(1)	23 ⁺								74	26(2)		
1769.6(1)	25 ⁺									80	20.4(15)	
2019.4(1)	27 ⁺										80	19.9(15)
2311.5(1)	29 ⁺											83

Energy levels and branching ratios [03He11]. Part 4

¹⁵⁹Tb
65

E^* [keV]	$2J^\pi$	Branching ratios in percentage					
		$E_f^*:$ $2J_f^\pi:$	2019.40 27 ⁺	2311.51 29 ⁺	2583.00 31 ⁺	2893.1 33 ⁺	3179.2 35 ⁺
2311.5(1)	29 ⁺		17.5(18)				
2583.0(2)	31 ⁺		100				
2893.1(6)	33 ⁺			100			
3179.2(6)	35 ⁺				100		
3498.1(8)	37 ⁺					100	
3794(1)	⟨39 ⁺ ⟩						100

Energy levels and branching ratios [96Re22, 05Re18].

¹⁶⁰Tb
65

E^*	J^π	L	$d\sigma/d\Omega$	$B(GT)$	$T_{1/2}$ or	Ref.	Branching ratios in percentage					
[keV]		(d,p)	$\mu\text{b/sr}$	(τ ,t)	Γ_{cm}		E_f^* : J_f^π :	0.0 3 ⁻	63.7 1 ⁻	64.1 4 ⁺	78.9 4 ⁻	79.1 $\langle 0 \rangle^-$
0.0	3 ⁻		175		72.3(2) d	67St14						
63.6855(20)	1 ⁻		9		60(5) ns	67St14	100					
64.1096(20)	4 ⁺		79		≤ 2 ns	67St14	100					
78.8665(15)	4 ⁻		170			67St14	100					
79.0924(24)	$\langle 0 \rangle^-$		incl			67St14			100			
105.5760(22)	2 ⁻		26			67St14			100			
126.483(6)	5 ⁺									100		
133.2214(25)	$\langle 1 \rangle^-$											100
138.7354(23)	$\langle 1 \rangle^+$		140	0.054(9)	5.7(5) ns	67St14			71(15)			24(5)
139.4743(24)	$\langle 2 \rangle^-$								x			
156.4446(24)	3 ⁻								7.9(22)			
167.7537(25)	$\langle 2 \rangle^+$								41(5)			
168.7(12)												
176.833(3)	5 ⁻		158			67St14	51(4)				49(9)	
200.405(4)	$\langle 3 \rangle^+$		56			67St14						
222.629(3)	$\langle 0^+ \rangle$								45(3)			
232.780(3)	$\langle 1 \rangle^+$			0.014(2)		00Fu15						68(7)
236.977(4)	3 ⁻		152			67St14						
244.160(3)	4 ⁻											
257.541(5)	$\langle 4^- \rangle$		137			67St14	3.7(3)			78(6)	7.4(5)	
265.229(4)	$\langle 4^+ \rangle$											
268.818(3)	2 ⁺								1.2(3)			
279(2)	$\langle 4^- \rangle$		224			67St14						
305(3)			21			67St14						
318.357(4)	$\langle 3^+ \rangle$											
322.297(8)	5 ⁻		42			67St14						
354.736(11)	$\langle 5^- \rangle$		182			67St14				45(7)		
377.761(6)	$\langle 4^+ \rangle$											
381.285(6)	1 ⁻		193			67St14			19(2)			
421.433(5)	2 ⁻		149			67St14			43(4)			
478.225(6)	$\langle 1^+ \rangle$		317	0.160(30)		67St14						
478.559(7)	$\langle 1^+, 2^+ \rangle$		incl			67St14			33(3)			
480.257(6)	$\langle 3^- \rangle$		incl			67St14						
484.317(9)	1,2		incl			67St14			20(2)			
503.543(7)	$\langle 1^+, 2, 3^- \rangle$											
511.791(12)									20(2)			
515.0(2)	2 ⁻		480			67St14						
520.267(7)	$\langle 2^+ \rangle$											
532.733(9)	$\langle 1^-, 2, 3^- \rangle$		247			67St14	29(2)					
552.967(10)	$\langle 2^-, 3^+ \rangle$											
558(2)	$\langle 4^- \rangle$		28			67St14						
571.555(14)	(1)			0.021(4)		00Fu15						12(3)
576.924(9)			112			67St14						
589.005(11)	$\langle 1^-, 2 \rangle$											
592.741(11)									21(2)			

(continued)

¹⁶⁰Tb
65

E^*	J^π	L	$d\sigma/d\Omega$	$B(GT)$	$T_{1/2}$ or	Ref.	Branching ratios in percentage						
[keV]		(d,p)	$\mu\text{b/sr}$	(τ,t)	Γ_{cm}		$E_{\text{f}}^*:$ $J_{\text{f}}^\pi:$	0.0 3 ⁻	63.7 1 ⁻	64.1 4 ⁺	78.9 4 ⁻	79.1 $\langle 0 \rangle^-$	
598.668(11)	$\langle 1^+, 2^- \rangle$		137	0.031(5)		67St14		15(2)			23(2)		
620.7(2)			63			67St14							
642(2)			53			67St14							
660.087(6)			49			67St14							
664.669(18)			incl			67St14						13(2)	
678.2(3)													
684.398(10)			142			67St14							
692.5(3)													
712.8(10)			25			67St14							
729.9(6)			165			67St14							
743(1)			23			67St14							
763.4(4)													
765.471(22)			145			67St14							
767.967(25)			incl			67St14							
774.0(22)*													
785(1)			110			67St14							
791.1(20)													
798(2)			14			67St14							
813.9(3)													
823.2(5)			42			67St14							
834(2)			23			67St14							
846(2)			61			67St14							
850.9(5)													
858.8(6)			95			67St14							
862.9(5)		incl		67St14									
880.2(10)		77		67St14									
903(2)		86		67St14									
913.9(3)		33		67St14									
938(1)		60		67St14									
952.8(5)													
956(2)		39		67St14									
960.0(6)													
976.1(7)		33		67St14									
1001.9(5)		222		67St14									
1006.8(7)													
1021.6(15)		126		67St14									
1039.5(15)													
1051.7(8)		49		67St14									
1056.2(5)													
1060(3)		35		67St14									
1068.1(4)													
1075(2)		133		67St14									
1086.0(3)		172		67St14									
1103.9(7)		32		67St14									
1115.8(4)		280		67St14									

(continued)

 $^{160}_{65}\text{Tb}$

E^*	J^π	L	$d\sigma/d\Omega$	$B(GT)$	$T_{1/2}$ or	Ref.	Branching ratios in percentage					
[keV]		(d,p)	$\mu\text{b/sr}$	(τ,t)	Γ_{cm}		$E_{\text{f}}^*:$ $J_{\text{f}}^\pi:$	0.0 3 ⁻	63.7 1 ⁻	64.1 4 ⁺	78.9 4 ⁻	79.1 $\langle 0 \rangle^-$
1124.8(4)				≈ 0.034		00Fu15						
1129.4(3)			130			67St14						
1136.9(3)												
1146.5(3)												
1150.0(4)			140			67St14						
1155.9(5)												
1166(2)			93			67St14						
1170.5(4)												
1175.1(4)												
1184(2)			112			67St14						
1190.9(4)												
1198(2)			160			67St14						
1238.6(12)*												
1275.3(10)*												
1308.9(20)*				≈ 0.025		00Fu15						
1344.0(7)*												
1361.3(31)*												
1383.5(21)*												
1406.4(8)*												
1413.2(8)*												
1421.0(17)*												
1425.1(6)*												
1433.9(7)*												
1500				≈ 0.043		00Fu15						
1530.3(24)*												
1563.4(21)*												
1614.5(10)*				≈ 0.043		00Fu15						
1630.3(8)*												
1637.7(9)*												
1655.9(10)*												
1662.3(7)*												
1669.1(16)*												
1681.6(20)*				≈ 0.051		00Fu15						
1697.1(28)*												
1750				≈ 0.051		00Fu15						
1789.8(14)*												
1844.6(18)*												
1872.7(13)*												
1881.6(20)*												
1893.3(7)*				≈ 0.056		00Fu15						
1927.0(24)*												
1981.6(20)*												
2022.6(10)*												
2029.0(13)*				≈ 0.259		00Fu15						
2042.6(17)*												

(continued)

¹⁶⁰Tb
65

E^*	J^π	L	$d\sigma/d\Omega$	$B(GT)$	$T_{1/2}$ or Ref.	Branching ratios in percentage					
[keV]		(d,p)	$\mu\text{b/sr}$	(τ,t)	Γ_{cm}	$E_{\text{f}}^*:$ $J_{\text{f}}^\pi:$	0.0 3 [−]	63.7 1 [−]	64.1 4 ⁺	78.9 4 [−]	79.1 $\langle 0 \rangle^-$
2067.1(14)*											
2089.0(22)*											
2155.6(22)*											
2185.3(26)*											
2205.5(15)*											
2228.2(15)*											
2284.8(9)*											
2295.2(15)*											
2311.0(36)*											
2382.5(11)*											
2485.0(22)*											
2499.5(8)*											
2506.8(9)*											
2526.3(9)*											
2529.9(8)*											
2534.7(9)*											
2548.3(9)*											
2554.0(9)*											
2568.8(8)*											
2586.1(14)*											
2604.0(9)*											
2610.7(11)*											
2615.6(8)*											
2636.8(27)*											
2680.2(9)*											
2731.0(9)*											
2768.1(16)*											
2775.7(9)*											
2788.6(20)*											
2797.4(10)*											
2806.2(13)*											
2832.2(12)*											
2847.4(12)*											
2859.8(20)*											
2889.6(8)*											
2929.9(10)*											
2986.7(7)*											
3086.0(9)*											
3154.1(13)*											

(continued)

¹⁶⁰Tb
65

E^*	J^π	L	$d\sigma/d\Omega$	$B(GT)$	$T_{1/2}$ or	Ref.	Branching ratios in percentage					
[keV]		(d,p)	$\mu\text{b/sr}$	(τ ,t)	Γ_{cm}		E_f^* :	0.0	63.7	64.1	78.9	79.1
							J_f^π :	3 ⁻	1 ⁻	4 ⁺	4 ⁻	$\langle 0 \rangle^-$
15019(6)**				32								
			67S14	00Fu15		Ref.						

Additional data on this isotope can be found in [05Re18, 95Va42, 95Bo20].

* Proposed as the intermediate state in ($n, \gamma\gamma$) experiment [95Va42].

** IAS (Isobar Analog State) [00Fu15].

9 band are assigned to excited states of this nucleus in [05Re18].

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

Energy levels and branching ratios [96Re22, 05Re18]. Part 2

¹⁶⁰Tb
65

E^*	J^π	Branching ratios in percentage										
[keV]		E_f^* : J_f^π :	105.6 2 ⁻	126.483 5 ⁺	133.221 (1) ⁻	138.735 (1) ⁺	139.474 (2) ⁻	156.445 3 ⁻	167.754 (2) ⁺	200.405 (3) ⁺	222.629 (0 ⁺)	232.780 (1) ⁺
138.7354(23)	(1) ⁺	5.1(2)										
139.4743(24)	(2) ⁻				x							
156.4446(24)	3 ⁻	92(17)										
167.7537(25)	(2) ⁺					59(2)						
200.405(4)	(3) ⁺	30(6)							70(4)			
222.629(3)	(0 ⁺)				36(6)	19(6)						
232.780(3)	(1) ⁺					4.8(11)	28(3)					
236.977(4)	3 ⁻	4.5(11)					96(9)					
244.160(3)	4 ⁻	10(4)						90(9)				
257.541(5)	(4) ⁻			10.4(17)								
265.229(4)	(4) ⁺									100		
268.818(3)	2 ⁺	14.2(11)			59(5)			12.2(14)	8(2)	6(2)		
318.357(4)	(3 ⁺)						63(6)		33(3)	3.9(13)		
322.297(8)	5 ⁻							32(8)				
354.736(11)	(5 ⁻)			28(3)								
381.285(6)	1 ⁻	21(2)			52(3)	2.4(4)	3.8(3)		1.9(3)			
421.433(5)	2 ⁻	9(1)			21(2)	2.0(4)		4.6(4)		2.3(3)		
478.225(6)	(1 ⁺)					66(5)			28(3)	6.3(7)		
478.559(7)	(1 ⁺ , 2 ⁺)	18(2)				10(2)			5(1)	6(1)	13(1)	
480.257(6)	(3 ⁻)	24(2)			4.1(4)		17(1)	4.5(5)	3.6(4)	2.2(7)		
484.317(9)	1, 2	30(2)			35(3)	6.8(7)	1.7(3)		4.5(4)			
503.543(7)	(1 ⁺ , 2, 3 ⁻)				9.1(9)							48(4)
511.791(12)		10(2)				27(2)						
520.267(7)	(2 ⁺)							22(2)	34(3)	30(3)		
532.733(9)	(1 ⁻ , 2, 3 ⁻)	35(3)			20(2)				2.3(5)			
552.967(10)	(2 ⁻ , 3 ⁺)	36(3)					18(2)	5(1)				5(1)
571.555(14)	(1)						7(2)		12(2)		38(3)	
576.924(9)							46(4)			16(3)		
589.005(11)	(1 ⁻ , 2)				15.2(16)							68(5)

(continued)

 $^{160}_{65}\text{Tb}$

E^*	J^π	Branching ratios in percentage										
		E_f^* :	105.6	126.483	133.221	138.735	139.474	156.445	167.754	200.405	222.629	232.780
[keV]		J_f^π :	2^-	5^+	$\langle 1 \rangle^-$	$\langle 1 \rangle^+$	$\langle 2 \rangle^-$	3^-	$\langle 2 \rangle^+$	$\langle 3 \rangle^+$	$\langle 0^+ \rangle$	$\langle 1 \rangle^+$
592.741(11)					28(2)		27(2)					16(1)
598.668(11)								21(2)	6(1)	7(1)		
660.087(6)			12(2)									
664.669(18)	$\langle 1^+, 2^- \rangle$					13(7)	16(2)		9.6(10)	48(4)		
684.398(10)						11.1(13)	10.1(12)					66(5)
765.471(22)					12(3)		13(3)				11(2)	47(4)
767.967(25)					19(2)			14(2)	57(5)			

Energy levels and branching ratios [96Re22, 05Re18]. Part 3

 $^{160}_{65}\text{Tb}$

E^*	J^π	Branching ratios in percentage										
[keV]		E_f^* : J_f^π :	236.977 3 ⁻	244.160 4 ⁻	257.541 ⟨4 ⁻ ⟩	265.229 ⟨4 ⁺ ⟩	268.818 2 ⁺	318.357 ⟨3 ⁺ ⟩	381.285 1 ⁻	421.433 2 ⁻	478.225 ⟨1 ⁺ ⟩	480.257 ⟨3 ⁻ ⟩
322.297(8)	5 ⁻			68(3)								
354.736(11)	⟨5 ⁻ ⟩				27(8)							
377.761(6)	⟨4 ⁺ ⟩	81(6)					19(6)					
421.433(5)	2 ⁻	19(2)										
478.559(7)	⟨1 ⁺ ,2 ⁺ ⟩						14(1)					
480.257(6)	⟨3 ⁻ ⟩	33(2)	6.1(5)		3.2(7)	2.8(4)						
484.317(9)	1,2					1.9(6)						
503.543(7)	⟨1 ⁺ ,2,3 ⁻ ⟩					7.3(8)	36(3)					
511.791(12)						43(3)						
520.267(7)	⟨2 ⁺ ⟩	8.9(5)			5.7(5)							
532.733(9)	⟨1 ⁻ ,2,3 ⁻ ⟩	14(1)										
552.967(10)	⟨2 ⁻ ,3 ⁺ ⟩		4.1(6)		7.8(8)	26(2)						
571.555(14)	⟨1⟩					32(3)						
576.924(9)						26(2)	13.4(10)					
589.005(11)	⟨1 ⁻ ,2⟩	9.1(11)				8.1(16)						
592.741(11)							8(1)					
598.668(11)		27.8(3)										
660.087(6)							30(2)	21(2)	6(1)	24(2)	8(1)	
684.398(10)								8.4(7)	4.0(6)			
765.471(22)			18(2)									
767.967(25)		10(2)										

Energy levels and branching ratios [00Re14].

¹⁶¹Tb
65

E^*	$2J^\pi$	σ (τ ,d)	σ (τ ,d)	σ (α ,t)	σ (α ,t)	S_N	U^2	σ (t, α)	Ref.	Branching ratios in percentage					
[keV]		$\mu\text{b/sr}$	$\mu\text{b/sr}$	$\mu\text{b/sr}$	$\mu\text{b/sr}$			$\mu\text{b/sr}$		E_f^* : $2J_f^\pi$:	0.0 3 ⁺	56.3 5 ⁺	133.7 7 ⁺	231 9 ⁺	315 5 ⁺
0.0	3 ⁺	3.3	1.6(3)	11		0.07	0.6	20	92Ga15						
56.29(1)	5 ⁺	61	55(5)	134	52(5)	1.1	0.6	250	92Ga15	100					
133.68(1)	7 ⁺	1.9	1.8(4)	6.4	4.2(11)	0.11	0.6	14	92Ga15	13(2)	87(8)				
230.72(7)	9 ⁺	3.1	4.8(6)	7.3	10.7(30)	0.23	0.6	15	92Ga15			100			
314.91(1)	5 ⁺	1.2	0.4(2)	2.6		0.01	0.3	12	92Ga15	93(4)	4.0(2)	3.1(1)			
394.36(2)	7 ⁺	5	1.9(6)	24	2.4(11)	0.22	0.3	150	92Ga15	11(1)	86(5)			3.0(5)	
417.23(1)	7 ⁻	3.1	2.1(4)	3.9	7.4(16)	0.06	0.9	14	92Ga15	0.38(5)	75(1)	7.4(3)		17.3(10)	
480.13(1)	5 ⁻							36	92Ga15	48(3)	3.2(5)			46(3)	
488.78(3)	9 ⁻	\approx 0.8		3.5				incl	72Ti05						
499	9 ⁺	incl	2.5(6)	incl	2.7(10)	0.13	0.3	3	92Ga15						
520(3)	1 ⁺	3.2		3.1				2.8	92Ga15						
558(3)	3 ⁺	16.5	14(1)	34	7.0(14)	1.0	0.9	31	92Ga15						
584(3)	11 ⁻	30	42(3)	105	39(4)	3.2	0.9	215	92Ga15						
585.78(2)	7 ⁻							incl	92Ga15		35(2)	1.6(3)		24(1)	
602(3)	5 ⁺	14		17.5				18	92Ga15						
638(4)					4.6(10)				72Bo47						
698(3)	7 ⁺	1.6	2.2(7)	6.5	8.5(14)			3.3	92Ga15						
707.19(25)	9 ⁻		1.1(3)					13	92Ga15						
743(3)		0.8		2.6					72Ti05						
772(5)					3.0(10)				92Ga15						
847(3)	11 ⁻	0.8	1.4(3)	5.7	5.1(16)	0.12	0.2	64	92Ga15						
920(3)	1 ⁻	17	10(1)	6.1	4.3(10)			3.2	92Ga15						
950(3)	5 ⁻		28(2)		3.9(16)	1.3	1.0	7.3	92Ga15						
980	1 ⁺		56(8)		65(4)	0.17		7	92Ga15						
997(3)	7 ⁺	24	incl	84	incl	0.88	1.0	37	92Ga15						
1020(3)	3 ⁻	22		7.9					72Ti05						
1052(4)	[1 ⁻]				7.7(13)	0.08	1.0		72Bo47						
1064(3)	9 ⁻	14		43					72Ti05						
1080(3)		21	39(4)	20	15(2)	0.29	1.0	30	92Ga15						
1101(5)			4.4(8)		5.0(22)	0.11	1.0		72Bo47						
1118(3)	6.7		3.4(11)	5.4	4.8(32)	0.14	1.0	6.7	92Ga15						
1133(3)	incl		1.7(6)	2.3	6.7(49)			5.3	92Ga15						
1141(4)															
1149.9(1)	$\langle 3^+ \rangle$									65(3)	35(2)			\leq 6.0	
1178(3)	7 ⁻	5.9	4.3(14)	11.5	3.2(18)	0.21	1.0	5.9	92Ga15						
1209.7(1)					\approx 2			56	92Ga15	55(4)	45(6)				
1232(3)								13	92Ga15						
1252.4(1)	5 ⁺	52	44(2)	38	38(4)	0.66	1.0	17	92Ga15	10.9(7)				55(3)	
1281(3)			3.8(15)		\approx 3			114	92Ga15						
1302(3)		4.7		2.5					72Ti05						
1333								6.6	92Ga15						
1349.7(1)		34	26(2)	\approx 24	21(5)			11	92Ga15	12.6(7)				68(2)	
1386(3)		\approx 13	1.4(5)	1.9				3.5	92Ga15						
1404.7(1)		<1	2.7(5)						72Bo47						
1420.6(1)			4.6(7)		4.6(13)	0.07	1.0		72Bo47		19(2)			22(2)	

(continued)

¹⁶¹Tb
65

E^*	$2J^\pi$	$\sigma(\tau, d)$	$\sigma(\tau, d)$	$\sigma(\alpha, t)$	$\sigma(\alpha, t)$	S_N	U^2	$\sigma(t, \alpha)$	Ref.	Branching ratios in percentage					
[keV]		$\mu\text{b/sr}$	$\mu\text{b/sr}$	$\mu\text{b/sr}$	$\mu\text{b/sr}$			$\mu\text{b/sr}$		E_f^* : $2J_f^\pi$:	0.0 3 ⁺	56.3 5 ⁺	133.7 7 ⁺	231 9 ⁺	315 5 ⁺
1433(3)		3		2.3				45	92Ga15						
1446															
1460.5(1)															38(9)
1477.6(1)															
1498(3)		1.9		≈ 0.9					72Ti05						
1524								3.9	92Ga15						
1533.8(1)		2.5		< 0.6					72Ti05						
1537.4(1)															
1552.2(1)								8.9	92Ga15						
1558.2(1)		2		2.5					72Ti05						
1601.0(1)		12	8.1(14)	7.5	≈ 5				72Bo47						4.5(8)
1623.1(1)					≈ 5				72Bo47						54(4)
1655.8(1)								6.8	92Ga15						30(3)
1680(3)		1		2					72Ti05						
1718(8)		4.4	3.6(8)	2.7					72Bo47						
1756(3)		14.5	7.7(14)	6.4					72Bo47						
1778.2(1)															
1810.7(1)															
1825.2(3)								15	92Ga15						
1845								21	92Ga15						
1853.6(3)		23							72Ti05						
1856.9(2)															
1900	11 ⁻							40	92Ga15						
1946								26	92Ga15						
1979								16	92Ga15						
		72Ti05	72Bo47	72Ti05	72Bo47	72Bo47			92Ga15	Ref.					
							72Bo47			Ref.					

$\sigma(\tau, d)$ was measured at 50° and 60°, respectively, in [72Ti05] and [72Bo47].

$\sigma(\alpha, t)$ was measured at 60° in [72Ti05] and [72Bo47], see also S_N and U^2 in Supplement.

Cross sections of (t, α) reaction was measured at 40° [92Ga15].

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

Energy levels and branching ratios [00Re14]. Part 2

¹⁶¹Tb
65

E^*	$2J^\pi$	$T_{1/2}$ or	Ref.	Branching ratios in percentage						
[keV]		Γ_{cm}		E_{f}^* : $2J_{\text{f}}^\pi$:	394.364 7 ⁺	417.228 7 [−]	480.130 5 [−]	488.78 9 [−]	585.776 7 [−]	707.19 9 [−]
0.0	3 ⁺	6.906(19) d	92Ga15							
56.29(1)	5 ⁺		92Ga15							
133.68(1)	7 ⁺		92Ga15							
230.72(7)	9 ⁺		92Ga15							
314.91(1)	5 ⁺		92Ga15							

(continued)

 $^{161}_{65}\text{Tb}$

E^*	$2J^\pi$	$T_{1/2}$ or	Ref.	Branching ratios in percentage						
[keV]		Γ_{cm}		E_f^* : $2J_f^\pi$:	394.364 7 ⁺	417.228 7 ⁻	480.130 5 ⁻	488.78 9 ⁻	585.776 7 ⁻	707.19 9 ⁻
394.36(2)	7 ⁺		92Ga15							
417.23(1)	7 ⁻	0.88(2) ns	92Ga15							
480.13(1)	5 ⁻	<0.1 ns	92Ga15		2.7(5)	1.0(3)				
488.78(3)	9 ⁻		72Ti05			100				
499	9 ⁺		92Ga15							
520(3)	1 ⁺		92Ga15							
558(3)	3 ⁺		92Ga15							
584(3)	11 ⁻		92Ga15							
585.78(2)	7 ⁻	<0.2 ns	92Ga15		17.5(8)	2.3(3)	20(3)	≤4.0		
602(3)	5 ⁺		92Ga15							
638(4)			72Bo47							
698(3)	7 ⁺		92Ga15							
707.19(25)	9 ⁻		92Ga15						100	
743(3)			72Ti05							
772(5)			92Ga15							
847(3)	11 ⁻		92Ga15							
920(3)	1 ⁻		92Ga15							
950(3)	5 ⁻		92Ga15							
980	1 ⁺		92Ga15							
997(3)	7 ⁺		92Ga15							
1020(3)	3 ⁻		72Ti05							
1052(4)	[1 ⁻]		72Bo47							
1064(3)	9 ⁻		72Ti05							
1080(3)			92Ga15							
1101(5)			72Bo47							
1118(3)	6.7		92Ga15							
1133(3)	incl		92Ga15							
1141(4)										
1149.9(1)	⟨3 ⁺ ⟩									
1178(3)	7 ⁻		92Ga15							
1209.7(1)			92Ga15							
1232(3)			92Ga15							
1252.4(1)	5 ⁺		92Ga15		12.6(12)	≤7	21(2)			
1281(3)			92Ga15							
1302(3)			72Ti05							
1333			92Ga15							
1349.7(1)			92Ga15		19.5(10)					
1386(3)			92Ga15							
1404.7(1)			72Bo47				100		<47	
1420.6(1)			72Bo47		45(3)				14(3)	
1433(3)			92Ga15							
1446										
1460.5(1)					62(6)			<14		
1477.6(1)										
1498(3)			72Ti05							

(continued)

¹⁶¹Tb
65

E^*	$2J^\pi$	$T_{1/2}$ or	Ref.	Branching ratios in percentage						
[keV]		Γ_{cm}		E_f^* : $2J_f^\pi$:	394.364 7 ⁺	417.228 7 ⁻	480.130 5 ⁻	488.78 9 ⁻	585.776 7 ⁻	707.19 9 ⁻
1524			92Ga15							
1533.8(1)			72Ti05				<15		14(1)	
1537.4(1)					41(4)			39(4)	12(1)	
1552.2(1)			92Ga15			34(7)		66(11)		
1558.2(1)			72Ti05							
1601.0(1)			72Bo47				48(3)	21(6)	14(2)	
1623.1(1)			72Bo47		20(2)					
1655.8(1)			92Ga15		35(2)		36(4)			
1680(3)			72Ti05							
1718(8)			72Bo47							
1756(3)			72Bo47							
1778.2(1)							42(7)		58(9)	<23
1810.7(1)									[67(12)]	
1825.2(3)			92Ga15		<55					
1845			92Ga15							
1853.6(3)			72Ti05							
1856.9(2)						46(6)	54(8)		<31	
1900	11 ⁻		92Ga15							
1946			92Ga15							
1979			92Ga15							
			Ref.							
			Ref.							

Energy levels and branching ratios [99He21].

¹⁶²Tb
65

E^*	J^π	σ (t, α)	$T_{1/2}$ or	Ref.	Ref.
[keV]			Γ_{cm}		
0	1 ⁻	x	7.60(15) m	89BuZW	
39.10(9)	2 ⁻	x		89BuZW	
97(1)	3 ⁻	x		89BuZW	
176(1)	4 ⁻	x			89BuZW
216(1)	4 ⁻	x			89BuZW
267(2)	5 ⁻	x			89BuZW
310(1)	5 ⁻	x			89BuZW
341.41(9)	$\langle 0^-, 1 \rangle$				
442.11(8)	1 ⁺				

Energy levels and branching ratios [99He21]. Part 2

¹⁶²Tb
65

E^*	J^π	$E_f^*:$ $J_f^\pi:$	Branching ratios in percentage	
[keV]			0 1 ⁻	39.10 2 ⁻
39.10(9)	2 ⁻		100	
341.41(9)	$\langle 0^-, 1 \rangle$		63(6)	37(6)
442.11(8)	1 ⁺		54	46(2)

Energy levels and branching ratios [00Si01].

¹⁶³Tb
65

E^*	$2J^\pi$	L	S_N	$d\sigma/d\Omega$	L	S_N	$T_{1/2}$ or	Ref.	Branching ratios in percentage			
[keV]		(t, α)	(t, α)	$\mu\text{b/sr}$	(d, τ)	(d, τ)	Γ_{cm}		$E_f^*:$ $2J_f^\pi:$	0.0 3 ⁺	54 5 ⁺	128 7 ⁺
0.0	3 ⁺	$\langle 2 \rangle$	0.09	28	2	0.08	19.5(3) m	92Ga15				
54(2)	5 ⁺	2	0.60	276	2	0.68		92Ga15				
128(5)	7 ⁺	$\langle 4 \rangle$	0.11	13		0.40		92Ga15				
223(2)	9 ⁺	$\langle 4 \rangle$	0.10	20		0.22		92Ga15				
344(5)	7 ⁻	$\langle 3 \rangle$	0.03	14	3	0.05		92Ga15			68	32(2)
373(5)	5 ⁺	$\langle 2 \rangle$	0.04	16	$\langle 2 \rangle$	0.06		92Ga15	100			
422(5)	9 ⁻			9				92Ga15				
437(10)	$\langle 5^- \rangle$				$\langle 3 \rangle$	0.09						
452(2)	7 ⁺	4	1.1	163	4	1.04		92Ga15				
522(2)	11 ⁻	5	1.3	178	5	1.40		92Ga15				
552(5)	9 ⁺	4	0.12	31				92Ga15				
552	$\langle 5^- \rangle$											
574(10)	$\langle 7^- \rangle$				$\langle 3 \rangle$	0.09		76SuZR				
640(10)	$\langle 3^+ \rangle$											
662(5)	7 ⁻	3	0.15	51				92Ga15				
674(10)	3 ⁺ , 1 ⁺				$\langle 2 \rangle$	0.10		76SuZR				
678(10)	$\langle 5^+ \rangle$				$\langle 2 \rangle$	0.02		76SuZR				
771(5)	9 ⁻			17				92Ga15				
890(2)	11 ⁻	5	0.87	121	5	0.75		92Ga15				
960(5)	$\langle 1^+ \rangle$			4				92Ga15				
987(2)	$\langle 3 \rangle^+$	2	0.11	47	2	0.12		92Ga15				
1065(2)	$\langle 5 \rangle^+$	2	0.06	30				92Ga15				
1066(15)	$\langle 3^- \rangle$				$\langle 1 \rangle$	0.08		76SuZR				
1112(5)	$\langle 7 \rangle^+$	$\langle 4 \rangle$	0.06	9.2		0.04		92Ga15				
1186(5)				14		0.22		92Ga15				
1219(2)	$\langle 1^+ \rangle$	$\langle 0 \rangle$	0.11	75	$\langle 0 \rangle$	≈ 0.2		92Ga15				
	$\langle 7^- \rangle$				$\langle 3 \rangle$	0.10		76SuZR				
1281(2)	3 ⁺ , 5 ⁺	2	<0.3	127	2	0.24*		92Ga15				
1351(5)	$\langle 9^+ \rangle$			13		0.12		92Ga15				
1428(2)	7 ⁺ , 9 ⁺	$\langle 4 \rangle$	0.20	28	$\langle 4 \rangle$	0.34*		92Ga15				
1498(5)				7.2		$\approx 0.04^*$		92Ga15				
1549(5)				11		doubl		92Ga15				
1815(2)	$\langle 7 \rangle^-$	$\langle 3 \rangle$	0.10	37		0.13		92Ga15				

(continued)

¹⁶³Tb
65

E^*	$2J^\pi$	L	S_N	$d\sigma/d\Omega$	L	S_N	$T_{1/2}$ or	Ref.	Branching ratios in percentage			
[keV]		(t, α)	(t, α)	$\mu\text{b/sr}$	(d, τ)	(d, τ)	Γ_{cm}		E_f^* :	0.0	54	128
									$2J_f^\pi$:	3 ⁺	5 ⁺	7 ⁺
1902(5)				8.6				92Ga15				
1982(2)	$\langle 11 \rangle^-$	5	0.13	61	4	0.89		92Ga15				
2204(5)				28				92Ga15				
2334(5)				42				92Ga15				
2432(5)				48				92Ga15				
				92Ga15		76SuZR		Ref.				

* Doublet. S_N value is for the dominant member [76SuZR].

Parameter $S_N = V^2 C_{j,l}^2$ for (d, τ) reaction is expressed through V = fullness parameter and C = expansion coefficient [76SuZR, 00Si01]. Parameter $S_N = V^2 C_{j,l}^2 a^2$ for (t, α) reaction contains additionally a = Coriolis-mixing amplitude [00Si01].

Cross sections of (t, α) reaction were measured at 40° [92Ga15].