

Energy levels and branching ratios [97Ba13].

**<sup>93</sup>Tc**  
**<sub>43</sub>**

$E^*$	$2J^\pi$	$L$	$S_N$	$G_{\ell j}$	$G_{\ell j}$	$L$	$S_N$	$S_N$	$\sigma$ ( $\alpha, t$ )	$C^2S$	$T_{1/2}$ or	Ref.
[keV]			(d,n)	(d,n)	( $\tau, d$ )	( $\tau, d$ )	( $\tau, d$ )	( $\tau, d$ )	$\mu b$	(d, $\tau$ )	$\Gamma_{cm}$	
0.0	9 <sup>+</sup>	4	0.72	7.3	6.7	4	0.58	0.56	3709	0.69	2.75(5) h	71Ri12
391.84(8)	1 <sup>-</sup>	1	0.23	0.45	0.6	1	0.32	0.31	118	0.34	43.5(10) m	71Ri12
680.59(8)	$\langle 7^+ \rangle$								40		<35 ns	
1190(9)	1 <sup>-</sup> , 3 <sup>-</sup>					1	0.04, 0.01	0.04, 0.02	19			72Sh28
1194.13(10)	$\langle 5, 7 \rangle$								incl		<35 ns	
1407.80(12)	$\langle 5^- \rangle$								37		<35 ns	
1434.42(13)	$\langle 13 \rangle^+$								incl		<10 ns	
1503.04(12)	1 <sup>-</sup> , 3 <sup>-</sup>	1	0.08, 0.03	0.2	0.2	1	0.13, 0.05	0.14, 0.06	44			71Ri12
1515.95(11)	$\langle 11 \rangle^+$								incl			
1555(2)												
1788.09(13)	1 <sup>-</sup> , 3 <sup>-</sup>	1	0.10, 0.04	0.1	0.2	1	0.13, 0.05	0.12, 0.05	55			71Ri12
1801.42(10)	$\langle 7-11 \rangle$								incl			
1969.09(19)												
2133.70(24)	5 <sup>-</sup> , 7 <sup>-</sup>					3	0.054	0.051	97			72Sh28
2145.45(13)	$\langle 13 \rangle^-$											
2184.84(15)	$\langle 17 \rangle^+$										27(5) ps	
2185.16(15)	$\langle 17 \rangle^-$										10.2(3) $\mu s$	
2257.73(10)	$\langle 7-11 \rangle$											
2290(20)												
2338.89(14)												
2431.08(15)	$\langle 1, 3 \rangle^-$											
2490.2(4)												
2535.3(4)	$\langle 21 \rangle^+$										1.72(11) ns	
2563(3)	3 <sup>+</sup> , 5 <sup>+</sup>	2	0.011			2	0.04, 0.02	0.04, 0.02	82			71Ri12
2631.11(22)	$\langle 7-11 \rangle$								incl			
2710(20)												
2840(20)												
3100(20)									91			
3150(11)	$\langle 3^+, 5^+ \rangle$					2	0.04, 0.02	0.38, 0.02	incl			72Sh28
3213.5(25)	3 <sup>+</sup> , 5 <sup>+</sup>	2	0.023									71Ri12
3280.9(4)	$\langle 21^- \rangle$											
3353(7)	3 <sup>+</sup> , 5 <sup>+</sup>	2	0.30	2.0	2.7	2	0.87, 0.44	0.87, 0.46	390			71Ri12
3580(20)									64			
3888.4(5)	$\langle 25^- \rangle$											
3897(12)	1 <sup>+</sup>	0	0.024			0	0.024	0.12				71Ri12
3914.75(16)	$\langle 7-11 \rangle^+$								245			
3927.8(8)	$\langle 19^+ \rangle$											
3950(20)				$\approx 2.7$								
4104(11)	1 <sup>+</sup>	0	0.096	0.33	0.3	0	0.23	0.25	59			71Ri12
4158.5(3)	$\langle 7-11 \rangle^+$								incl			
4187.4(3)	$\langle 7-11 \rangle^+$											
4257.3(4)	$\langle 21^+ \rangle$											
4344.4(5)	$\langle 7-11 \rangle$								192			
4389.6(3)	$\langle 7-11 \rangle^+$								incl			
4451(16)									66			

(continued)

**<sup>93</sup>Tc**  
**43**

$E^*$	$2J^\pi$	$L$	$S_N$	$G_{\ell j}$	$G_{\ell j}$	$L$	$S_N$	$S_N$	$\sigma$ ( $\alpha, t$ )	$C^2S$	$T_{1/2}$ or	Ref.
[keV]			(d,n)	(d,n)	( $\tau, d$ )	( $\tau, d$ )	( $\tau, d$ )	( $\tau, d$ )	$\mu b$	(d, $\tau$ )	$\Gamma_{cm}$	
4608.9(4)	$\langle 7-11 \rangle^+$											
4619.0(4)	$\langle 7-11 \rangle^+$											
4668.63(14)	$\langle 7-11 \rangle^+$								70			
4760.6(5)	$\langle 7-11 \rangle$											
4764(11)	$3^+, 5^+$	2	0.07,0.04			2	0.11,0.06		87			71Ri12
4775.0(5)	$\langle 7-11 \rangle^+$								incl			
4900(12)	$3^+, 5^+$	2	0.03,0.02			2	0.08,0.04		166			71Ri12
4937.8(5)	$\langle 7-11 \rangle^+$											
4955.0(8)	$\langle 7-11 \rangle^+$											
4973.9(9)	$\langle 25^+ \rangle$											
5032(21)	$3^+, 5^+$	2	0.03,0.02			2	0.06,0.03					71Ri12
5076.4(6)	$\langle 23^+ \rangle$											
5176(10)	$3^+, 5^+$			0.05		2	0.13,0.07	0.25,0.09	97			72Sh28
5298.2(9)	$\langle 7-11 \rangle^+$								incl			
5316(18)	$3^+, 5^+$	2	0.09,0.05	0.05		2	0.09,0.05	0.07,0.04				71Ri12
5490(20)	$1^+$	0	0.066									71Ri12
5492(18)	$\langle 3^+, 5^+ \rangle$			0.06		2		0.06,0.03				72Sh28
5564.3(7)	$\langle 25^+ \rangle$											
5620	$1^+$	0	0.036					0.039				71Ri12
5648(18)	$3^+, 5^+$					2		0.021				72Sh28
5680	$1^+$	0	0.018									71Ri12
5780	$3^+, 5^+$	2	0.06,0.04									71Ri12
5830(20)												
5980(18)	$1^+$	0	0.074			0	0.1					71Ri12
5980	$[11^-]$					5		0.086	160			71Ko16
6017.4(8)	$\langle 27^+ \rangle$											
6053.3(9)	$\langle 25^- \rangle$											
6087.8(8)	$\langle 29^+ \rangle$											
6106	$1, 3$											
6232(18)									170			
6366	$1, 3, 5$											
6373.1(7)	$\langle 27^- \rangle$											
6454.0(9)	$\langle 29^- \rangle$											
6463	$3$								110			
6469	$5$											
6477	$5, 7$											
6531	$3$											
6576	$3$											
6596	$3$											
6600	$1, 3, 5$											
6670.6(9)	$\langle 31^+ \rangle$											
6857.1(7)	$\langle 29^- \rangle$											
7160(50)												
7282.2(9)	$\langle 33^+ \rangle$											
7373.5(9)	$\langle 31^- \rangle$											

(continued)

 **$^{93}_{43}\text{Tc}$** 

$E^*$	$2J^\pi$	$L$	$S_N$	$G_{\ell j}$	$G_{\ell j}$	$L$	$S_N$	$S_N$	$\sigma(\alpha, t)$	$C^2S$	$T_{1/2}$ or	Ref.
[keV]			(d,n)	(d,n)	( $\tau, d$ )	( $\tau, d$ )	( $\tau, d$ )	( $\tau, d$ )	$\mu b$	(d, $\tau$ )	$\Gamma_{\text{cm}}$	
7650(50)												
7811.9(11)	$\langle 35^+ \rangle$											
7880.2(9)	$\langle 33^- \rangle$											
8100(50)												
8397(2)	$\langle 5^+ \rangle$	2	0.32			2	0.72	0.72			15(2) eV	70Za09
8487.6(13)	$\langle 35^- \rangle$											
8497.5(9)	$\langle 35^- \rangle$											
8852.3(10)	$\langle 37^- \rangle$											
9139.7(17)	$\langle 37^- \rangle$											
9332(3)	$1^+$	0	0.031			0					36(4) eV	70Za09
9372.4(14)	$\langle 37^- \rangle$											
9420.6(11)	$\langle 39^- \rangle$											
9540(190)												
9780(16)	$\langle 7^+ \rangle$					4	0.28	0.35				70Za09
9906(16)	$\langle 3^+ \rangle$	2	0.18								22(2) eV	
9948(16)	$\langle 7^+ \rangle$					4	0.15	0.2				72Sh28
10110(16)	$\langle 5^+ \rangle$					2	0.32				17(3) eV	72Sh28
10272.2(15)	$\langle 39^+ \rangle$											
10566	$\langle 3^+ \rangle$										14(4) eV	
10728(16)	$\langle 11^- \rangle$					5	0.33	0.52				72Sh28
10833	$\langle 1^+ \rangle$										37 eV	
11097.8(13)	$\langle 41^- \rangle$											
11190	$\langle 1^+ \rangle$										49 eV	
11289	$\langle 3^+ \rangle$										20 eV	
11526.4(13)	$\langle 43^- \rangle$											
11600(50)	$\langle 5^+ \rangle$										30 eV	
11790(190)												
11852	$\langle 5^+ \rangle$										40 eV	
12016	$\langle 3^+ \rangle$										20 eV	
12100	$\langle 3^+ \rangle$										35 eV	
12209	$\langle 5^- \rangle$										25 eV	
12218.2(18)	$\langle 43^+ \rangle$											
12436	$\langle 3^- \rangle$										70 eV	
12584	$\langle 3^+ \rangle$										30 eV	
13258.3(15)	$41^-, 43^-$											
15080(70)												
16860(90)												
19530(20)												
20480(110)												
33730(260)											5.1(11) MeV	
47300												

(continued)

 **$^{93}_{43}\text{Tc}$** 

$E^*$	$2J^\pi$	$L$	$S_N$	$G_{\ell j}$	$G_{\ell j}$	$L$	$S_N$	$S_N$	$\sigma$ ( $\alpha, t$ )	$C^2S$	$T_{1/2}$ or	Ref.
[keV]			(d,n)	(d,n)	( $\tau, d$ )	( $\tau, d$ )	( $\tau, d$ )	( $\tau, d$ )	$\mu b$	(d, $\tau$ )	$\Gamma_{\text{cm}}$	
			71Ri12	71Bo33			72Sh28	71Ko16		68Oh01		Ref.
					69Pi05				71Zi03			Ref.

Additional data on this isotope can be found in [03Ha22, 93Ka03, 93Gh01, 80Ga01, 72As02, 72As07, 72Ag04, 71Ko16, 70Za09].

$\sigma$  ( $\alpha, t$ ) is the integrated intensity from  $12^\circ$  to  $57^\circ$  [71Zi03].

Experimental systematics of isomers in N=51 isotones are given in [05Fu01].

Energy levels and branching ratios [97Ba13]. Part 2

 **$^{93}_{43}\text{Tc}$** 

$E^*$	$2J^\pi$	$\sigma$ ( $^{16}\text{O}, ^{15}\text{N}$ )	$\sigma$ ( $^{12}\text{C}, ^{11}\text{B}$ )	Ref.	Branching ratios in percentage					
					$E_f^*$ :	0.0	392	681	1194	1408
[keV]		$\mu b/\text{sr}$	$\mu b/\text{sr}$		$2J_f^\pi$ :	$9^+$	$1^-$	$\langle 7^+ \rangle$	$\langle 5, 7 \rangle$	$\langle 5^- \rangle$
0.0	$9^+$	4700(190)	5190(150)	71Ri12						
391.84(8)	$1^-$	750(80)	380(40)	71Ri12		100				
680.59(8)	$\langle 7^+ \rangle$					100				
1190(9)	$1^-, 3^-$			72Sh28						
1194.13(10)	$\langle 5, 7 \rangle$					100				
1407.80(12)	$\langle 5^- \rangle$						100			
1434.42(13)	$\langle 13 \rangle^+$					100				
1503.04(12)	$1^-, 3^-$			71Ri12			100			
1515.95(11)	$\langle 11 \rangle^+$					96		4		
1555(2)										
1788.09(13)	$1^-, 3^-$			71Ri12			100			
1801.42(10)	$\langle 7-11 \rangle$					100				
1969.09(19)										
2133.70(24)	$5^-, 7^-$			72Sh28				39(7)		61(6)
2145.45(13)	$\langle 13 \rangle^-$									100
2184.84(15)	$\langle 17 \rangle^+$									
2185.16(15)	$\langle 17 \rangle^-$									
2257.73(10)	$\langle 7-11 \rangle$					100				
2290(20)										
2338.89(14)						72(15)		28(7)		
2431.08(15)	$\langle 1, 3 \rangle^-$						76(3)			6(1)
2490.2(4)								100		
2535.3(4)	$\langle 21 \rangle^+$									
2563(3)	$3^+, 5^+$	230(40)	210(30)	71Ri12						
2631.11(22)	$\langle 7-11 \rangle$							100		
2710(20)										
2840(20)										
3100(20)										
3150(11)	$\langle 3^+, 5^+ \rangle$	370(50)		72Sh28						
3213.5(25)	$3^+, 5^+$	incl		71Ri12						

(continued)

 **$^{93}_{43}\text{Tc}$** 

$E^*$	$2J^\pi$	$\sigma$ ( $^{16}\text{O},^{15}\text{N}$ )	$\sigma$ ( $^{12}\text{C},^{11}\text{B}$ )	Ref.	Branching ratios in percentage					
[keV]		$\mu\text{b/sr}$	$\mu\text{b/sr}$		$\begin{smallmatrix} E^*_\text{f}: \\ 2J^\pi_\text{f}: \end{smallmatrix}$	$\begin{smallmatrix} 0.0 \\ 9^+ \end{smallmatrix}$	$\begin{smallmatrix} 392 \\ 1^- \end{smallmatrix}$	$\begin{smallmatrix} 681 \\ \langle 7^+ \rangle \end{smallmatrix}$	$\begin{smallmatrix} 1194 \\ \langle 5,7 \rangle \end{smallmatrix}$	$\begin{smallmatrix} 1408 \\ \langle 5^- \rangle \end{smallmatrix}$
3280.9(4)	$\langle 21^- \rangle$									
3353(7)	$3^+, 5^+$	1390(100)	510(50)	71Ri12						
3580(20)										
3888.4(5)	$\langle 25^- \rangle$									
3897(12)	$1^+$	260(40)	410(40)	71Ri12						
3914.75(16)	$\langle 7-11 \rangle^+$					63(4)			26(1)	
3927.8(8)	$\langle 19^+ \rangle$									
3950(20)										
4104(11)	$1^+$			71Ri12						
4158.5(3)	$\langle 7-11 \rangle^+$					81(6)		19(2)		
4187.4(3)	$\langle 7-11 \rangle^+$					100				
4257.3(4)	$\langle 21^+ \rangle$									
4344.4(5)	$\langle 7-11 \rangle$					100				
4389.6(3)	$\langle 7-11 \rangle^+$	420(60)				100				
4451(16)										
4608.9(4)	$\langle 7-11 \rangle^+$					67(11)		33(7)		
4619.0(4)	$\langle 7-11 \rangle^+$					100				
4668.63(14)	$\langle 7-11 \rangle^+$					17(2)		21(3)		
4760.6(5)	$\langle 7-11 \rangle$					15(8)		85(25)		
4764(11)	$3^+, 5^+$	430(60)	310(40)	71Ri12						
4775.0(5)	$\langle 7-11 \rangle^+$					9(5)		91(15)		
4900(12)	$3^+, 5^+$			71Ri12						
4937.8(5)	$\langle 7-11 \rangle^+$					31(10)		69(17)		
4955.0(8)	$\langle 7-11 \rangle^+$					100				
4973.9(9)	$\langle 25^+ \rangle$									
5032(21)	$3^+, 5^+$	290(50)		71Ri12						
5076.4(6)	$\langle 23^+ \rangle$	incl								
5176(10)	$3^+, 5^+$	incl		72Sh28						
5298.2(9)	$\langle 7-11 \rangle^+$					39(12)			61(20)	
5316(18)	$3^+, 5^+$			71Ri12						
5490(20)	$1^+$			71Ri12						
5492(18)	$\langle 3^+, 5^+ \rangle$			72Sh28						
5564.3(7)	$\langle 25^+ \rangle$									
5620	$1^+$			71Ri12						
5648(18)	$3^+, 5^+$			72Sh28						
5680	$1^+$			71Ri12						
5780	$3^+, 5^+$			71Ri12						
5830(20)										
5980(18)	$1^+$			71Ri12						
5980	$[11^-]$			71Ko16						
6017.4(8)	$\langle 27^+ \rangle$									
6053.3(9)	$\langle 25^- \rangle$									
6087.8(8)	$\langle 29^+ \rangle$									
6106	1,3						83			
6232(18)										

(continued)

 **$^{93}_{43}\text{Tc}$** 

$E^*$	$2J^\pi$	$\sigma$ ( $^{16}\text{O}, ^{15}\text{N}$ )	$\sigma$ ( $^{12}\text{C}, ^{11}\text{B}$ )	Ref.	Branching ratios in percentage					
[keV]		$\mu\text{b/sr}$	$\mu\text{b/sr}$		$E_{\text{f}}^*:$ $2J_{\text{f}}^\pi:$	0.0 9 <sup>+</sup>	392 1 <sup>−</sup>	681 ⟨7 <sup>+</sup> ⟩	1194 ⟨5,7⟩	1408 ⟨5 <sup>−</sup> ⟩
6366	1,3,5						100			
6373.1(7)	⟨27 <sup>−</sup> ⟩									
6454.0(9)	⟨29 <sup>−</sup> ⟩									
6463	3						80			
6469	5									
6477	5,7							78		
6531	3						88		3	
6576	3						79			
6596	3						40		25	
6600	1,3,5						62			
6670.6(9)	⟨31 <sup>+</sup> ⟩									
6857.1(7)	⟨29 <sup>−</sup> ⟩									
7160(50)										
7282.2(9)	⟨33 <sup>+</sup> ⟩									
7373.5(9)	⟨31 <sup>−</sup> ⟩									
7650(50)										
7811.9(11)	⟨35 <sup>+</sup> ⟩									
7880.2(9)	⟨33 <sup>−</sup> ⟩									
8100(50)										
8397(2)	⟨5 <sup>+</sup> ⟩			70Za09						
8487.6(13)	⟨35 <sup>−</sup> ⟩									
8497.5(9)	⟨35 <sup>−</sup> ⟩									
8852.3(10)	⟨37 <sup>−</sup> ⟩									
9139.7(17)	⟨37 <sup>−</sup> ⟩									
9332(3)	1 <sup>+</sup>			70Za09						
9372.4(14)	⟨37 <sup>−</sup> ⟩									
9420.6(11)	⟨39 <sup>−</sup> ⟩									
9540(190)										
9780(16)	⟨7 <sup>+</sup> ⟩			70Za09						
9906(16)	⟨3 <sup>+</sup> ⟩						54(8)			
9948(16)	⟨7 <sup>+</sup> ⟩			72Sh28						
10110(16)	⟨5 <sup>+</sup> ⟩			72Sh28						
10272.2(15)	⟨39 <sup>+</sup> ⟩									
10566	⟨3 <sup>+</sup> ⟩									
10728(16)	⟨11 <sup>−</sup> ⟩			72Sh28						
10833	⟨1 <sup>+</sup> ⟩									
11097.8(13)	⟨41 <sup>−</sup> ⟩									
11190	⟨1 <sup>+</sup> ⟩									
11289	⟨3 <sup>+</sup> ⟩									
11526.4(13)	⟨43 <sup>−</sup> ⟩									
11600(50)	⟨5 <sup>+</sup> ⟩									
11790(190)										
11852	⟨5 <sup>+</sup> ⟩									
12016	⟨3 <sup>+</sup> ⟩									
12100	⟨3 <sup>+</sup> ⟩									

(continued)

<sup>93</sup><sub>43</sub>Tc

<i>E</i> <sup>*</sup>	2 <i>J</i> <sup>π</sup>	σ ( <sup>16</sup> O, <sup>15</sup> N)	σ ( <sup>12</sup> C, <sup>11</sup> B)	Ref.	<i>E</i> <sub>f</sub> <sup>*</sup> :	Branching ratios in percentage				
[keV]		μb/sr	μb/sr		2 <i>J</i> <sub>f</sub> <sup>π</sup> :	0.0	392	681	1194	1408
						9 <sup>+</sup>	1 <sup>−</sup>	⟨7 <sup>+</sup> ⟩	⟨5,7⟩	⟨5 <sup>−</sup> ⟩
12209	⟨5 <sup>−</sup> ⟩									
12218.2(18)	⟨43 <sup>+</sup> ⟩									
12436	⟨3 <sup>−</sup> ⟩									
12584	⟨3 <sup>+</sup> ⟩									
13258.3(15)	41 <sup>−</sup> ,43 <sup>−</sup>									
15080(70)										
16860(90)										
19530(20)										
20480(110)										
33730(260)										
47300										
		73Zi04	73Zi04	Ref.						
				Ref.						

Energy levels and branching ratios [97Ba13]. Part 3

<sup>93</sup><sub>43</sub>Tc

<i>E</i> <sup>*</sup>	2 <i>J</i> <sup>π</sup>	Branching ratios in percentage									
[keV]		<i>E</i> <sub>f</sub> <sup>*</sup> :	1434	1503	1516	1555	1788.1	1801.4	2145.4	2184.8	2338.9
		2 <i>J</i> <sub>f</sub> <sup>π</sup> :	⟨13⟩ <sup>+</sup>	1 <sup>−</sup> ,3 <sup>−</sup>	⟨11⟩ <sup>+</sup>		1 <sup>−</sup> ,3 <sup>−</sup>		⟨13⟩ <sup>−</sup>	⟨17⟩ <sup>+</sup>	
2145.45(13)	⟨13⟩ <sup>−</sup>		67.5(10)		32.5(10)						
2184.84(15)	⟨17⟩ <sup>+</sup>		100								
2185.16(15)	⟨17⟩ <sup>−</sup>		26.3(10)						73.7(10)	x	
2431.08(15)	⟨1,3⟩ <sup>−</sup>			14(1)			3.8(10)				
3914.75(16)	⟨7−11⟩ <sup>+</sup>										10.6(16)
3927.8(8)	⟨19 <sup>+</sup> ⟩									100	
4668.63(14)	⟨7−11⟩ <sup>+</sup>		54(3)								9(2)
6106	1,3			1.0		5					
6463	3			3.1		10	6.0				
6469	5					100					
6477	5,7			11		11					
6531	3					10					
6576	3			2.0		8			9		
6596	3			22			13				
6600	1,3,5			38							
9906(16)	⟨3⟩ <sup>+</sup>				31(8)			15(8)			

Energy levels and branching ratios [97Ba13]. Part 4

 **$^{93}_{43}\text{Tc}$** 

$E^*$ [keV]	$2J^\pi$	Branching ratios in percentage									
		$E_f^*$ : $2J_f^\pi$ :	2535.3 $\langle 21 \rangle^+$	3213.5 $3^+, 5^+$	3280.9 $\langle 21^- \rangle$	3888.4 $\langle 25^- \rangle$	3927.8 $\langle 19^+ \rangle$	4257.3 $\langle 21^+ \rangle$	4973.9 $\langle 25^+ \rangle$	5076.4 $\langle 23^+ \rangle$	5564.3 $\langle 25^+ \rangle$
3888.4(5)	$\langle 25^- \rangle$				100						
4257.3(4)	$\langle 21^+ \rangle$		94.3(24)				5.7(5)				
4973.9(9)	$\langle 25^+ \rangle$		100								
5076.4(6)	$\langle 23^+ \rangle$		7(4)		18(7)			75(3)			
5564.3(7)	$\langle 25^+ \rangle$							65(3)		35.4(12)	
6017.4(8)	$\langle 27^+ \rangle$					78(3)					22.1(11)
6053.3(9)	$\langle 25^- \rangle$					100					
6087.8(8)	$\langle 29^+ \rangle$										82.0(15)
6106	1,3			11							
6373.1(7)	$\langle 27^- \rangle$					88.1(20)			5.2(7)		
6454.0(9)	$\langle 29^- \rangle$					100					
6576	3			2.0							
6857.1(7)	$\langle 29^- \rangle$					2.2(6)					

Energy levels and branching ratios [97Ba13]. Part 5

 **$^{93}_{43}\text{Tc}$** 

$E^*$	$2J^\pi$	Branching ratios in percentage									
[keV]	$E_f^*$ : $2J_f^\pi$ :	6017.4 $\langle 27^+ \rangle$	6053.3 $\langle 25^- \rangle$	6087.8 $\langle 29^+ \rangle$	6373.1 $\langle 27^- \rangle$	6454.0 $\langle 29^- \rangle$	6670.6 $\langle 31^+ \rangle$	6857.1 $\langle 29^- \rangle$	7282.2 $\langle 33^+ \rangle$	7373.5 $\langle 31^- \rangle$	7811.9 $\langle 35^+ \rangle$
<hr/>											
6087.8(8)	$\langle 29^+ \rangle$	18.0(8)									
6373.1(7)	$\langle 27^- \rangle$		6.7(5)								
6670.6(9)	$\langle 31^+ \rangle$			100							
6857.1(7)	$\langle 29^- \rangle$				89.4(20)	8.4(6)					
7282.2(9)	$\langle 33^+ \rangle$			2.5(12)			97.5(19)				
7373.5(9)	$\langle 31^- \rangle$				27.0(10)			73.0(14)			
7811.9(11)	$\langle 35^+ \rangle$								100		
7880.2(9)	$\langle 33^- \rangle$						3.4(11)	12.6(7)		84.0(15)	
8497.5(9)	$\langle 35^- \rangle$								3.5(14)	4.6(9)	
8852.3(10)	$\langle 37^- \rangle$										16.9(9)
10272.2(15)	$\langle 39^+ \rangle$										100

Energy levels and branching ratios [97Ba13]. Part 6

 **$^{93}_{43}\text{Tc}$** 

$E^*$ [keV]	$2J^\pi$	Branching ratios in percentage									
		$E_f^*$ : $2J_f^\pi$ :	7880.2 $\langle 33^- \rangle$	8487.6 $\langle 35^- \rangle$	8497.5 $\langle 35^- \rangle$	8852.3 $\langle 37^- \rangle$	9420.6 $\langle 39^- \rangle$	10272.2 $\langle 39^+ \rangle$	11097.8 $\langle 41^- \rangle$	2185.0	2185.0
2535.3(4)	$\langle 21 \rangle^+$									100	
3280.9(4)	$\langle 21^- \rangle$									98.3(11)	1.7(6)
8487.6(13)	$\langle 35^- \rangle$		100								



(continued)

 **$^{93}_{43}\text{Tc}$** 

$E^*$ [keV]	$2J^\pi$	Branching ratios in percentage									
		$E_f^*:$ $2J_f^\pi:$	7880.2 $\langle 33^- \rangle$	8487.6 $\langle 35^- \rangle$	8497.5 $\langle 35^- \rangle$	8852.3 $\langle 37^- \rangle$	9420.6 $\langle 39^- \rangle$	10272.2 $\langle 39^+ \rangle$	11097.8 $\langle 41^- \rangle$	2185.0	2185.0
8497.5(9)	$\langle 35^- \rangle$		91.9(17)								
8852.3(10)	$\langle 37^- \rangle$		20.3(11)		62.9(13)						
9139.7(17)	$\langle 37^- \rangle$			100							
9372.4(14)	$\langle 37^- \rangle$				100						
9420.6(11)	$\langle 39^- \rangle$				20.6(11)	79.4(17)					
11097.8(13)	$\langle 41^- \rangle$					100					
11526.4(13)	$\langle 43^- \rangle$						85(8)		15(5)		
12218.2(18)	$\langle 43^+ \rangle$							100			
13258.3(15)	$41^-, 43^-$						100				

Energy levels and branching ratios [92Tu02, 06Ab37].

 **$^{94}_{43}\text{Tc}$** 

$E^*$ [keV]	$J^\pi$	$L$ $(\tau, p)$	$\sigma$ ( $\alpha, d$ ) $\mu b$	$T_{1/2}$ or $\Gamma_{\text{cm}}$	Ref.	Branching ratios in percentage					
						$E_f^*:$ $J_f^\pi:$	0.0 $7^+$	75.5 $\langle 2 \rangle^+$	98.0 $\langle 3^+ \rangle$	101.9 $\langle 6^+ \rangle$	243 $\langle 4 \rangle^+$
0.0	$7^+$	6	336	293(1) m	79Ra16						
75.5(19)	$\langle 2 \rangle^+$	2	incl	52.0(10) m	79Ra16						
98.0(19)	$\langle 3^+ \rangle$		40								
103.4(3)	$\langle 6^+ \rangle$		incl	<5 ns	06Ab37		100				
212.4(10)	$\langle 5^+ \rangle$	4+6	83	<5 ns	72Zi01					100	
244(3)	$\langle 4 \rangle^+$	4			79Ra16				100		
336(3)	$\langle 2^- \rangle$	1+3	weak	1.5(3) ns	79Ra16			1.6(2)	98.4(2)		
443(3)	$1^+$	0+2	27		79Ra16			100			
478(3)	$\langle 3^- \rangle$	3	incl					9(1)	27(2)		16(1)
801(3)	$\langle 2^- \rangle$			0.27(+83-13) ps					x		
826(3)	$\langle 2^+ \rangle$			0.103(28) ps				45(5)	44(3)		
921(3)	$\langle 3^+ \rangle$			0.063(18) ps					48(2)		52(2)
929(3)	$\langle 4^+ \rangle$			0.07(3) ps					57(4)		43(3)
956(3)	$\langle 3^- \rangle$	0+2		0.17(6) ps	79Ra16						
968(2)	$1^+$			0.074(19) ps				91(4)			
1048(3)	$\langle 3^+ \rangle$	2+4		0.054(14) ps	79Ra16			31(1)	3(1)		
1181(3)	$\langle 2^-, 3^- \rangle$							5(3)			
1267(3)	$\langle 3^+ \rangle$	2+4			79Ra16			7(1)	6(2)		55(3)
1317(3)	$\langle 4^- \rangle$			0.07(3) ps					34(13)		
1355(3)	$\langle 3^- \rangle$			0.08(+6-3) ps				17(2)	9(2)		
1368(3)	$\langle 2^+ \rangle$			0.075(18) ps				68(4)			
1374.0(3)	$\langle 9^+ \rangle$						100				
1397(3)	$\langle 3^- \rangle$			0.080(21) ps				14(1)			
1410(3)	$\langle 3^+ \rangle$	0+2		0.078(21) ps	79Ra16			20(1)	58(3)		
1432(3)	$\langle 1^+ \rangle$			0.10(4) ps				x			
1447.8(3)	$\langle 8^+ \rangle$						85			15(3)	
1543(3)	$\langle 3^+ \rangle$	2		0.066(16) ps	79Ra16			23(6)	26(2)		51(2)

(continued)

 **$^{94}_{43}\text{Tc}$** 

$E^*$	$J^\pi$	$L$	$\sigma$ ( $\alpha, d$ )	$T_{1/2}$ or	Ref.	Branching ratios in percentage					
[keV]		( $\tau, p$ )	$\mu b$	$\Gamma_{\text{cm}}$		$E_{\text{f}}^*$ : $J_{\text{f}}^\pi$ :	0.0 7 <sup>+</sup>	75.5 (2) <sup>+</sup>	98.0 (3 <sup>+</sup> )	101.9 (6 <sup>+</sup> )	243 (4) <sup>+</sup>
1663(3)											
1682(3)	(2-4 <sup>-</sup> )			0.044(11) ps					3.0(10)		
1743											
1781(3)	(3 <sup>+</sup> )	2+4			79Ra16			36(3)			
1860(3)				0.04(+4-2) ps				x			
1868(3)	(3 <sup>+</sup> )	2+4			79Ra16			27(2)	21(2)		
1887(3)								21(2)			
1977(3)											
2005(3)											
2025(3)											
2064.1(5)	(11 <sup>+</sup> )										
2067.1(4)**	(9 <sup>-</sup> )										
2097(3)								36(3)	39(3)		
2135(3)	(1 <sup>+</sup> )	0+2			79Ra16			5(1)	9(1)		
2170(3)											
2211(3)	(1 <sup>+</sup> )	0+2			79Ra16						
2217(3)											
2244(3)	(1 <sup>-</sup> -3 <sup>+</sup> )							x			
2254.2(4)	(10 <sup>-</sup> )										
2267(3)	1 <sup>+</sup>	0+2			79Ra16			100	x		
2271(3)											
2310(3)								39(9)			
2347.1(5)	(13 <sup>+</sup> )			4.5(6) ns							
2397											
2424.5(5)	(11 <sup>-</sup> )										
2504											
2719	(1 <sup>+</sup> )	0			79Ra16						
2860(30)											
2960	(3 <sup>+</sup> )	2+4			79Ra16						
3014.0(6)											
3082	(3 <sup>+</sup> )	2+4			79Ra16						
3144	1 <sup>+</sup> -3 <sup>+</sup>	2			79Ra16						
3187	1 <sup>+</sup> -3 <sup>+</sup>	2			79Ra16						
3261											
3310											
3363											
3431											
3456.8(6)	(13 <sup>-</sup> )										
3499											
3574											
3627	1 <sup>+</sup> -3 <sup>+</sup>	2			79Ra16						
3677	1 <sup>+</sup> -3 <sup>+</sup>	2			79Ra16						
3756											
3792	3 <sup>+</sup>	2+4			79Ra16						
3840	3 <sup>+</sup>	2+4			79Ra16						

(continued)

 **$^{94}_{43}\text{Tc}$** 

$E^*$	$J^\pi$	$L$	$\sigma$ ( $\alpha$ ,d)	$T_{1/2}$ or	Ref.	Branching ratios in percentage					
[keV]		( $\tau$ ,p)	$\mu b$	$\Gamma_{\text{cm}}$		$\begin{smallmatrix} E^*_\text{f}: \\ J^\pi_\text{f}: \end{smallmatrix}$	0.0 $7^+$	75.5 $\langle 2 \rangle^+$	98.0 $\langle 3^+ \rangle$	101.9 $\langle 6^+ \rangle$	243 $\langle 4 \rangle^+$
3889											
3956	$3^+$	2+4			79Ra16						
3970.0(7)											
4036											
4061.9(7)	$\langle 15^- \rangle$										
4071	$1^+ - 3^+$	2									
4132	$3^+$	2+4			79Ra16						
4227	$3^+$	2+4			79Ra16						
4272											
4293.2(8)	$\langle 15^+ \rangle$										
4356											
4427											
4547.0(8)	$\langle 16^- \rangle$										
4567.1(8)	$\langle 16^- \rangle$										
4575.5(25)*											
5070(30)											
5240(30)											
5276.1(9)	$\langle 17^- \rangle$										
5284.2(9)	$\langle 17^- \rangle$										
5292.0(8)	$\langle 16^- \rangle$										
5380(30)											
5458(3)*											
5639.4(10)	$\langle 18^- \rangle$										
5652.3(10)	$\langle 18^- \rangle$										
5829.2(10)	$\langle 18^- \rangle$										
6453.9(12)	$\langle 16^- \rangle$										
6544.4(10)	$\langle 19^- \rangle$										
6553.9(12)	$\langle 16^- \rangle$										
6571.1(10)	$\langle 16^+ \rangle$										
6624.1(13)	$\langle 18^- \rangle$										
6757.5(10)	$\langle 19^- \rangle$										
6900.6(11)	$\langle 20^- \rangle$										
6974.2(13)	$\langle 19^- \rangle$										
7114.9(14)	$\langle 17^- \rangle$										
7728.0(13)	$\langle 18^- \rangle$										
7924.6(11)	$\langle 20^- \rangle$										
8022.2(11)	$\langle 17^+ \rangle$										
8537.8(12)	$\langle 21^- \rangle$										
8559.2(11)	$\langle 18^+ \rangle$										
9120.2(12)	$\langle 19^+ \rangle$										
9186.4(12)	$\langle 19^+ \rangle$										
			72Zi01		Ref.						

Additional data on this isotope can be found in [00Gh01, 77Ha05].

\* Absent in [06Ab37].

\*\* Assignment of 5 sequences based on highly excited states can be found in [06Ab37].

Energy levels and branching ratios [92Tu02, 06Ab37]. Part 2

 **$^{94}_{43}\text{Tc}$** 

$E^*$ [keV]	$J^\pi$	Branching ratios in percentage										
		$E_f^*:$ $J_f^\pi:$	335 2 <sup>-</sup>	442 1 <sup>+</sup>	477 $\langle 3 \rangle^-$	800.4 $\langle 2^- \rangle$	825.7 $\langle 2^+ \rangle$	920.3 $\langle 3^+ \rangle$	928.8 $\langle 4^+ \rangle$	955.9 $\langle 3^- \rangle$	967.1 1 <sup>+</sup>	1047.6 3 <sup>+</sup>
478(3)	$\langle 3 \rangle^-$		48(3)									
801(3)	$\langle 2^- \rangle$		70(2)	30(1)								
826(3)	$\langle 2^+ \rangle$			11(1)								
956(3)	$\langle 3^- \rangle$		98(1)		2(1)							
968(2)	1 <sup>+</sup>			9(1)								
1048(3)	$\langle 3^+ \rangle$			66(2)								
1181(3)	$\langle 2^-, 3^- \rangle$		37(5)		58(10)							
1267(3)	$\langle 3^+ \rangle$						28(2)		4(3)			
1317(3)	$\langle 4^- \rangle$				56(3)					10(2)		
1355(3)	$\langle 3^- \rangle$		74(4)									
1368(3)	$\langle 2^+ \rangle$			5(1)			12(2)	5(1)			10(1)	
1397(3)	$\langle 3^- \rangle$		82(4)			4(1)						
1410(3)	$\langle 3^+ \rangle$						19(1)		3(2)			
1432(3)	$\langle 1^+ \rangle$			21(2)			75(10)				4(3)	
1663(3)				76(13)							24(8)	
1682(3)	$\langle 2-4^- \rangle$		15(3)		82(5)							
1781(3)	$\langle 3^+ \rangle$		64(22)									
1860(3)				29(5)								
1868(3)	$\langle 3^+ \rangle$		36(2)							16(8)		
1887(3)				79(15)								x
1977(3)			77(6)		23(4)							
2005(3)			77(5)		23(4)							
2025(3)			24(3)			76(4)						
2097(3)								25(3)				
2135(3)	$\langle 1^+ \rangle$			10(1)							x	8.0(20)
2170(3)			80(8)									
2211(3)	$\langle 1^+ \rangle$										100	
2217(3)				100								
2244(3)	$\langle 1^- - 3^+ \rangle$			45(7)						55(5)		
2267(3)	1 <sup>+</sup>										x	
2271(3)				44(5)							56(5)	
2310(3)				x							61(6)	

Energy levels and branching ratios [92Tu02, 06Ab37]. Part 3

 **$^{94}_{43}\text{Tc}$** 

$E^*$ [keV]	$J^\pi$	Branching ratios in percentage										
		$E_f^*:$ $J_f^\pi:$	1180.8 $\langle 2^-, 3^- \rangle$	1373.6 $\langle 9^+ \rangle$	1396.7 $\langle 3^- \rangle$	1431.8 1 <sup>+</sup>	1446.8 $\langle 8^+ \rangle$	2064.2 $\langle 11^+ \rangle$	2067.2 $\langle 9^- \rangle$	2253.1 $\langle 10^- \rangle$	2347.2 $\langle 13^+ \rangle$	2421.5 $\langle 11^- \rangle$
1860(3)						71(4)						
2064.1(5)	$\langle 11^+ \rangle$			100								
2067.1(4)**	$\langle 9^- \rangle$			56(10)			44(6)					
2135(3)	$\langle 1^+ \rangle$					68(12)						

(continued)

 **$^{94}_{43}\text{Tc}$** 

$E^*$	$J^\pi$	Branching ratios in percentage										
		$E_f^*$ :	1180.8	1373.6	1396.7	1431.8	1446.8	2064.2	2067.2	2253.1	2347.2	2421.5
[keV]		$J_f^\pi$ :	$\langle 2^-, 3^- \rangle$	$\langle 9^+ \rangle$	$\langle 3^- \rangle$	$1^+$	$\langle 8^+ \rangle$	$\langle 11^+ \rangle$	$\langle 9^- \rangle$	$\langle 10^- \rangle$	$\langle 13^+ \rangle$	$\langle 11^- \rangle$
2170(3)		x			20(9)							
2254.2(4)	$\langle 10^- \rangle$								100			
2347.1(5)	$\langle 13^+ \rangle$							100				
2424.5(5)	$\langle 11^- \rangle$									100		
3456.8(6)	$\langle 13^- \rangle$											100
3970.0(7)											100	

Energy levels and branching ratios [92Tu02, 06Ab37]. Part 4

 **$^{94}_{43}\text{Tc}$** 

$E^*$ [keV]	$J^\pi$	Branching ratios in percentage		
		$E_f^*$ : $J_f^\pi$ :	3454.7 $\langle 13^- \rangle$	4060.1 $\langle 15^- \rangle$
4061.9(7)	$\langle 15^- \rangle$		100	
4575.5(25)*				100
5458(3)*				

Energy levels and branching ratios [93Bu08].

 **$^{95}_{43}\text{Tc}$** 

$E^*$ [keV]	$2J^\pi$	$L$	$G_{\ell j}$	$C^2S$	$L$	$C^2S$	$L$	$C^2S$	Ref.	Branching ratios in percentage				
										$E_f^*$ : $2J_f^\pi$ :	0.0 $9^+$	38.9 $1^-$	336 $7^+$	627 $5^+$
0.0	$9^+$	4	5.1	0.773	4	0.55	4	0.68	75Ch23					
38.89(5)	$1^-$	1	0.49	0.32	1	0.21	1	0.27	71Ri12	100				
336.397(21)	$7^+$									100				
626.810(22)	$5^+$	2	0.10			0.08			72Sh28	82(1)			17.8(2)	
646.55(6)	$3^-$	1	incl	0.11	1	0.18	1	0.072	71Ri12		100			
667.79(4)	$5^-$										98(1)	1.9(2)		
882.19(6)	$13^+$									100				
927.78(4)	$3^+$										31(1)	24.3(2)	45.2(3)	
957.10(6)	$11^+$									98(1)			2(1)	
980(20)	$3^+, 5^+$													
1033.90(8)	$\langle 1^+ \rangle$										100			
1084.96(5)	$\langle 5^+ \rangle$	$\langle 2 \rangle$		0.003	2	0.015	2	0.017	71Ri12	1.8(2)			95(7)	3.2(4)
1178.59(3)	$7^+$									55(3)			19(2)	26(2)
1201(10)	$1^-, 3^-$				1	0.039	1	0.012	72Sh28					
1213.16(8)	9				4	0.058			72Sh28	9.3(3)			91(2)	
1214.48(4)	$9^-$									16(2)			17(2)	
1275.89(5)	$\langle 3^+ \rangle$	[4]		0.054			2	0.041	71Ri12		69(1)	x		
1281.47(5)	$7^{\langle - \rangle}$	[1]		0.04					71Ri12	14.6(4)			9.8(4)	

(continued)

**<sup>95</sup>Tc  
43**

$E^*$	$2J^\pi$	$L$	$G_{\ell j}$	$C^2S$	$L$	$C^2S$	$L$	$C^2S$	Ref.	Branching ratios in percentage					
[keV]			(d,n)	(d,n)		( $\tau$ ,d)		( $\tau$ ,d)		$E_f^*$ : $2J_f^\pi$ :	0.0 9 <sup>+</sup>	38.9 1 <sup>-</sup>	336 7 <sup>+</sup>	627 5 <sup>+</sup>	646 3 <sup>-</sup>
1307.19(8)	11 <sup>+</sup>										82(1)		18(4)		
1416.39(6)	3,5 <sup>(-)</sup>											9.9(3)			30(1)
1433.21(4)	5 <sup>+</sup>	2	0.17	0.028	2	0.058	2	0.060	71Ri12		2.3(2)		78(1)	16(1)	0.2(1)
1515.33(11)	17 <sup>+</sup>														
1549.48(7)	15 <sup>+</sup>														
1618.50(5)	⟨3 <sup>+</sup> ,5 <sup>-</sup> ⟩						1	0.046	75Ch23			30(1)			17(1)
1631.99(10)	11								71Ri12		42(4)				
1639.39(6)	⟨3 <sup>-</sup> ⟩	1		0.011	1	0.012			71Ri12						13(2)
1660(20)	⟨1 <sup>+</sup> ⟩	0	0.03												
1691.30(5)	5 <sup>+</sup> ,7 <sup>+</sup>										6.6(3)		48(2)	39.5(5)	
1694.52(5)	3 <sup>+</sup> -7 <sup>-</sup>												20(1)	21(1)	27(1)
1702.17(7)	13 <sup>-</sup>														
1733(10)	1 <sup>-</sup> ,3 <sup>-</sup>	⟨1⟩		0.035			1	0.014	71Ri12						
1746.99(6)	⟨5 <sup>+</sup> ⟩				2	0.008			72Sh28		0.6(2)		57(1)	20(2)	2.7(11)
1785.21(4)	⟨7 <sup>+</sup> ⟩										42(4)		8.6(4)	41(4)	
1837.70(22)	⟨7 <sup>+</sup> ,9 <sup>+</sup> ⟩										45(6)		55(6)		
1873.9(10)	⟨7 <sup>+</sup> ,9 <sup>+</sup> ⟩										100				
1888.13(9)	⟨5 <sup>-</sup> ⟩													51(3)	
1920.02(7)	⟨1 <sup>-</sup> -5⟩														21(4)
1920.99(10)	9										24(5)		76(2)		
1949(19)	1 <sup>+</sup>	0	0.02				⟨0⟩	0.007	71Bo33						
1958.97(10)	⟨5 <sup>-</sup> ⟩										33(6)		67(2)		
1978.54(6)	3 <sup>+</sup> -7 <sup>+</sup>										0.4(1)		2.6(2)	21.2(10)	
2032.33(13)	5 <sup>+</sup> -9 <sup>(-)</sup>										13		9		
2086.07(4)	3 <sup>+</sup>				2	0.025	2	0.012	75Ch23			7.2(3)		43.6(10)	
2118.1	⟨7 <sup>+</sup> ,9 <sup>+</sup> ⟩										100				
2119.64(15)	15 <sup>(+)</sup>														
2164.1(6)											58(11)		42(16)		
2168.29(5)	7 <sup>+</sup>										2.1(3)		12(1)	14.4(6)	
2183.90(11)	19 <sup>+</sup>														
2189.08(5)	5 <sup>+</sup> ,7 <sup>+</sup>										2.2(2)		6.8(3)	7(2)	
2210.6(4)											14(3)		86(3)		
2212.92(13)	⟨17 <sup>-</sup> ⟩														
2219.61(20)	⟨7 <sup>+</sup> ⟩										7(2)		20(2)		
2231.5(3)	⟨17 <sup>+</sup> ⟩														
2238(2)	⟨≥5⟩													100	
2240.6(4)											50(13)		50(8)		
2251.97(10)	⟨7 <sup>+</sup> ⟩				2	0.020	2	0.016	75Ch23		69(3)			18.5(2)	
2267.57(8)	⟨7 <sup>+</sup> ⟩										3(1)		20(3)		
2318.3(4)											13(4)		87(13)		
2324.46(9)	5 <sup>+</sup> ,7 <sup>+</sup>	⟨2⟩		0.02			2	0.006	71Ri12		58(2)		29(1)	5.17(9)	
2328.69(16)	⟨3 <sup>+</sup> ⟩											7(1)		30(4)	
2382.6(4)	⟨5 <sup>+</sup> ,7 <sup>+</sup> ⟩										15(3)			21(11)	
2410.2(3)	⟨5 <sup>+</sup> ,7⟩										9(2)				
2454(15)															

(continued)

 **$^{95}_{43}\text{Tc}$** 

$E^*$ [keV]	$2J^\pi$	$L$	$G_{\ell j}$ (d,n)	$C^2S$ (d,n)	$L$	$C^2S$ ( $\tau$ ,d)	$L$	$C^2S$ ( $\tau$ ,d)	Ref.	Branching ratios in percentage					
										$E_f^*$ : $2J_f^\pi$ :	0.0 9 <sup>+</sup>	38.9 1 <sup>-</sup>	336 7 <sup>+</sup>	627 5 <sup>+</sup>	646 3 <sup>-</sup>
2474.7(5)															
2547.1(0,1)	21 <sup>+</sup>														
2554(12)	1 <sup>-</sup> ,3 <sup>-</sup>	⟨1⟩		0.04	⟨0⟩	0.021	1	0.018	71Ri12						
2556(3)	⟨≥5⟩														
2696(15)	3 <sup>+</sup> ,5 <sup>+</sup>						2	0.009	75Ch23						
2706.6(5)	⟨15⟩														
2769(12)	1 <sup>+</sup>	0	0.07				0	0.089	71Bo33						
2821(12)	3 <sup>+</sup> ,5 <sup>+</sup>	2	0.79	0.21	2	0.20	2	0.153	71Ri12						
2846.8(4)															
2906.5(1)	⟨23 <sup>+</sup> ⟩														
2938(15)	⟨1 <sup>+</sup> ⟩						⟨0⟩	0.022	75Ch23						
3001(20)	⟨3 <sup>+</sup> ,5 <sup>+</sup> ⟩														
3024.1(2)	⟨21 <sup>-</sup> ⟩														
3039.4(1)	19														
3065.5(2)	⟨17,19 <sup>+</sup> ⟩														
3119(20)	1 <sup>+</sup>						0	0.020							
3197(20)	1 <sup>+</sup>	0		0.016			0	0.048	71Ri12						
3210.3(5)	⟨21 <sup>+</sup> ⟩														
3339(20)	1 <sup>+</sup>						0	0.034	75Ch23						
3401(20)	3 <sup>+</sup> ,5 <sup>+</sup>				2	0.047	2	0.017	75Ch23						
3481(20)	3 <sup>+</sup> ,5 <sup>+</sup>	⟨2⟩		0.019			2	0.030	71Ri12						
3516.0(2)	25 <sup>+</sup>														
3520(20)	1 <sup>+</sup>	0	0.02						71Bo33						
3578.5(8)	⟨23⟩														
3633(17)	3 <sup>+</sup> ,5 <sup>+</sup>	2	0.25	0.021	2	0.032	⟨2⟩	0.041	71Ri12						
3700(20)															
3805(14)	1 <sup>+</sup>	0	0.03	0.029			⟨0⟩	0.057	71Ri12						
3821.8(2)	⟨25 <sup>-</sup> ⟩														
3905(20)	1 <sup>+</sup>	⟨0⟩		0.006			⟨0⟩	0.035	71Ri12						
3918.3(2)	29 <sup>+</sup>														
3986(20)	⟨3 <sup>+</sup> ,5 <sup>+</sup> ⟩			0.009	2	0.024	⟨2⟩	0.037	75Ch23						
4040(20)	1 <sup>+</sup>	0	0.02						71Bo33						
4081.6(10)	23 <sup>-</sup> -27 <sup>-</sup>														
4110(25)	⟨1 <sup>+</sup> ⟩						⟨0⟩	0.017	75Ch23						
4127.4(2)	⟨27 <sup>-</sup> ⟩														
4180(25)	3 <sup>+</sup> ,5 <sup>+</sup>						2	0.017	75Ch23						
4254(25)	3 <sup>+</sup> ,5 <sup>+</sup>						2	0.022	75Ch23						
4293.0(2)	27 <sup>+</sup>														
4400	3 <sup>+</sup> ,5 <sup>+</sup>	⟨2⟩													
4500	3 <sup>+</sup> ,5 <sup>+</sup>	⟨2⟩													
4740(20)	1 <sup>+</sup>	0	0.05						71Bo33						
4783.2(4)															
4971.3(2)	⟨29 <sup>-</sup> ⟩														
5220(20)	1 <sup>+</sup>	0	0.01						71Bo33						
5350(20)	1 <sup>+</sup>	0	0.03						71Bo33						

(continued)

**<sup>95</sup>Tc**  
**43**

$E^*$	$2J^\pi$	$L$	$G_{\ell j}$	$C^2S$	$L$	$C^2S$	$L$	$C^2S$	Ref.	Branching ratios in percentage					
[keV]			(d,n)	(d,n)		( $\tau$ ,d)		( $\tau$ ,d)		$E_f^*$ :	0.0	38.9	336	627	646
										$2J_f^\pi$ :	9 <sup>+</sup>	1 <sup>-</sup>	7 <sup>+</sup>	5 <sup>+</sup>	3 <sup>-</sup>
9840	[5 <sup>+</sup> ]				2	0.6			72Sh28						
10640	X <sup>+</sup>				2,4	0.3			72Sh28						
11800	11 <sup>-</sup>				5	0.33			72Sh28						
			71Bo33	71Ri12		72Sh28		75Ch23	Ref.						

Additional data on this isotope can be found in [01Sh15, 00Gh01, 97Am10, 70Za09].

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

Energy levels and branching ratios [93Bu08]. Part 2

**<sup>95</sup>Tc**  
**43**

$E^*$	$2J^\pi$	$T_{1/2}$ or	Ref.	Branching ratios in percentage							
[keV]		$\Gamma_{\text{cm}}$		$E_f^*$ :	668	882	928	957.1	1085.0	1178.6	1213.2
				$2J_f^\pi$ :	5 <sup>-</sup>	13 <sup>+</sup>	3 <sup>+</sup>	11 <sup>+</sup>	$\langle 5 \rangle^+$	7 <sup>+</sup>	9
0.0	9 <sup>+</sup>	20.0(1) h	75Ch23								
38.89(5)	1 <sup>-</sup>	61(2) d	71Ri12								
336.397(21)	7 <sup>+</sup>										
626.810(22)	5 <sup>+</sup>		72Sh28								
646.55(6)	3 <sup>-</sup>	0.44(+90-19) ps	71Ri12								
667.79(4)	5 <sup>-</sup>										
882.19(6)	13 <sup>+</sup>	1.2(+11-5) ps									
927.78(4)	3 <sup>+</sup>	$\geq 589$ fs									
957.10(6)	11 <sup>+</sup>	1.3(+5-3) ps									
980(20)	3 <sup>+</sup> , 5 <sup>+</sup>										
1033.90(8)	$\langle 1^+ \rangle$	53(+13-9) fs									
1084.96(5)	$\langle 5 \rangle^+$	$\geq 347$ fs	71Ri12				<1				
1178.59(3)	7 <sup>+</sup>	0.37(+19-9) ps									
1201(10)	1 <sup>-</sup> , 3 <sup>-</sup>		72Sh28								
1213.16(8)	9		72Sh28								
1214.48(4)	9 <sup>-</sup>	$\geq 624$ fs					67(1)				
1275.89(5)	$\langle 3 \rangle^+$	69(+9-8) fs	71Ri12				31(7)				
1281.47(5)	7 $\langle - \rangle$	134(+70-38) fs	71Ri12				76(1)				
1307.19(8)	11 <sup>+</sup>	173(+28-21) fs									
1416.39(6)	3, 5 $\langle - \rangle$	$\geq 492$ fs					60(12)				
1433.21(4)	5 <sup>+</sup>	57(+7-6) fs	71Ri12					1.2(8)	1.2(4)	1.2(5)	
1515.33(11)	17 <sup>+</sup>	<5 ns				100					
1549.48(7)	15 <sup>+</sup>					47(2)		53(2)			
1618.50(5)	$\langle 3^+, 5^- \rangle$	0.22(+18-7) ps	75Ch23				42(1)				
1631.99(10)	11	30(+9-7) fs	71Ri12				58(12)				
1639.39(6)	$\langle 3^- \rangle$	83(+25-18) fs	71Ri12					87.0(17)			
1660(20)	$\langle 1^+ \rangle$										
1691.30(5)	5 <sup>+</sup> , 7 <sup>+</sup>	136(+30-21) fs							5.5(6)		
1694.52(5)	3 <sup>+</sup> -7 <sup>-</sup>	129(+36-18) fs					31.6(5)				
1702.17(7)	13 <sup>-</sup>								52(11)		



(continued)

 **$^{95}_{43}\text{Tc}$** 

$E^*$ [keV]	$2J^\pi$	$T_{1/2}$ or $\Gamma_{\text{cm}}$	Ref.	Branching ratios in percentage							
				$E^*_f$ : $2J^\pi_f$ :	668 5 <sup>-</sup>	882 13 <sup>+</sup>	928 3 <sup>+</sup>	957.1 11 <sup>+</sup>	1085.0 (5) <sup>+</sup>	1178.6 7 <sup>+</sup>	1213.2 9
1733(10)	1 <sup>-</sup> , 3 <sup>-</sup>		71Ri12								
1746.99(6)	(5) <sup>+</sup>	44(+8-7) fs	72Sh28				14.7(7)				
1785.21(4)	(7) <sup>+</sup>	40(5) fs									9(4)
1837.70(22)	(7 <sup>+</sup> , 9 <sup>+</sup> )										
1873.9(10)	(7 <sup>+</sup> , 9 <sup>+</sup> )										
1888.13(9)	(5 <sup>-</sup> )				15(3)		34(3)				
1920.02(7)	(1 <sup>-</sup> -5)	80(+23-16) fs			67(1)		6.7(9)				
1920.99(10)	9	73(+23-16) fs									
1949(19)	1 <sup>+</sup>		71Bo33								
1958.97(10)	(5 <sup>-</sup> )	≥596 fs									
1978.54(6)	3 <sup>+</sup> -7 <sup>+</sup>	40(+9-7) fs					68.3(10)		8(3)		
2032.33(13)	5 <sup>+</sup> -9 <sup>(-)</sup>	118(+67-35) fs			78						
2086.07(4)	3 <sup>+</sup>	34(+16-11) fs	75Ch23		0.7(1)		26(8)				
2118.1	(7 <sup>+</sup> , 9 <sup>+</sup> )										
2119.64(15)	15 <sup>(+)</sup>	0.20(+7-5) ps				83(8)					
2164.1(6)											
2168.29(5)	7 <sup>+</sup>	50(+11-9) fs					4.0(5)			35.7(8)	
2183.90(11)	19 <sup>+</sup>	0.8(+9-5) ps									
2189.08(5)	5 <sup>+</sup> , 7 <sup>+</sup>	37(+12-9) fs					19(1)		12(4)	41(1)	
2210.6(4)											
2212.92(13)	(17 <sup>-</sup> )	≥1.4 ps									
2219.61(20)	(7 <sup>+</sup> )						73(6)				
2231.5(3)	(17 <sup>+</sup> )	0.10(3) ps				5(2)					
2238(2)	(≥5)										
2240.6(4)											
2251.97(10)	(7) <sup>+</sup>		75Ch23				3.2(16)				
2267.57(8)	(7) <sup>+</sup>	0.22(+52-11) ps					18(1)		24(1)	25(2)	
2318.3(4)											
2324.46(9)	5 <sup>+</sup> , 7 <sup>+</sup>		71Ri12								
2328.69(16)	(3) <sup>+</sup>						9(2)		12(9)		
2382.6(4)	(5 <sup>+</sup> , 7 <sup>+</sup> )								21(11)		
2410.2(3)	(5 <sup>+</sup> , 7)										
2454(15)											
2474.7(5)											
2547.1(0,1)	21 <sup>+</sup>	2.1(7) ps									
2554(12)	1 <sup>-</sup> , 3 <sup>-</sup>		71Ri12								
2556(3)	(≥5)										
2696(15)	3 <sup>+</sup> , 5 <sup>+</sup>		75Ch23								
2706.6(5)	(15)										
2769(12)	1 <sup>+</sup>		71Bo33								
2821(12)	3 <sup>+</sup> , 5 <sup>+</sup>		71Ri12								
2846.8(4)											
2906.5(1)	(23 <sup>+</sup> )	0.28(7) ps									
2938(15)	(1 <sup>+</sup> )		75Ch23								
3001(20)	(3 <sup>+</sup> , 5 <sup>+</sup> )										

(continued)

 **$^{95}_{43}\text{Tc}$** 

$E^*$ [keV]	$2J^\pi$	$T_{1/2}$ or $\Gamma_{\text{cm}}$	Ref.	Branching ratios in percentage							
				$E^*_f$ : $2J^\pi_f$ :	668 5 <sup>-</sup>	882 13 <sup>+</sup>	928 3 <sup>+</sup>	957.1 11 <sup>+</sup>	1085.0 $\langle 5 \rangle^+$	1178.6 7 <sup>+</sup>	1213.2 9
3024.1(2)	$\langle 21^- \rangle$										
3039.4(1)	19	187(49) fs									
3065.5(2)	$\langle 17, 19^+ \rangle$	0.28(7) ps									
3119(20)	1 <sup>+</sup>										
3197(20)	1 <sup>+</sup>		71Ri12								
3210.3(5)	$\langle 21 \rangle^+$	0.38(7) ps									
3339(20)	1 <sup>+</sup>		75Ch23								
3401(20)	3 <sup>+</sup> , 5 <sup>+</sup>		75Ch23								
3481(20)	3 <sup>+</sup> , 5 <sup>+</sup>		71Ri12								
3516.0(2)	25 <sup>+</sup>	>5 ps									
3520(20)	1 <sup>+</sup>		71Bo33								
3578.5(8)	$\langle 23 \rangle$										
3633(17)	3 <sup>+</sup> , 5 <sup>+</sup>		71Ri12								
3700(20)											
3805(14)	1 <sup>+</sup>		71Ri12								
3821.8(2)	$\langle 25^- \rangle$										
3905(20)	1 <sup>+</sup>		71Ri12								
3918.3(2)	29 <sup>+</sup>										
3986(20)	$\langle 3^+, 5^+ \rangle$		75Ch23								
4040(20)	1 <sup>+</sup>		71Bo33								
4081.6(10)	23 <sup>-</sup> –27 <sup>-</sup>										
4110(25)	$\langle 1^+ \rangle$		75Ch23								
4127.4(2)	$\langle 27^- \rangle$										
4180(25)	3 <sup>+</sup> , 5 <sup>+</sup>		75Ch23								
4254(25)	3 <sup>+</sup> , 5 <sup>+</sup>		75Ch23								
4293.0(2)	27 <sup>+</sup>										
4400	3 <sup>+</sup> , 5 <sup>+</sup>										
4500	3 <sup>+</sup> , 5 <sup>+</sup>										
4740(20)	1 <sup>+</sup>		71Bo33								
4783.2(4)											
4971.3(2)	$\langle 29^- \rangle$										
5220(20)	1 <sup>+</sup>		71Bo33								
5350(20)	1 <sup>+</sup>		71Bo33								
9840	[5 <sup>+</sup> ]		72Sh28								
10640	X <sup>+</sup>		72Sh28								
11800	11 <sup>-</sup>		72Sh28								
			Ref.								

Energy levels and branching ratios [93Bu08]. Part 3

 **$^{95}_{43}\text{Tc}$** 

$E^*$	$2J^\pi$	Branching ratios in percentage									
[keV]		$E_f^*:$ $2J_f^\pi:$	1214.5 $9^-$	1275.9 $\langle 3 \rangle^+$	1433.2 $5^+$	1515 $17^+$	1549.5 $15^+$	1618.5 $\langle 3^+, 5^- \rangle$	1639.4 $\langle 3^- \rangle$	1691.3 $5^+, 7^+$	1702.2 $13^-$
1618.50(5)	$\langle 3^+, 5^- \rangle$			12.3(7)							
1702.17(7)	$13^-$		48(11)								
1746.99(6)	$\langle 5 \rangle^+$				5(3)						
1920.02(7)	$\langle 1^- - 5 \rangle$			5.7(6)							
1978.54(6)	$3^+ - 7^+$							x			
2086.07(4)	$3^+$				21.2(8)				1.7(8)		
2119.64(15)	$15^{\langle + \rangle}$					17(2)					
2168.29(5)	$7^+$				26(2)					2.5(5)	
2183.90(11)	$19^+$					54(3)	46(3)				
2189.08(5)	$5^+, 7^+$				13(1)						
2212.92(13)	$\langle 17^- \rangle$					7.1(8)	76(4)				17(4)
2231.5(3)	$\langle 17^+ \rangle$					85(4)	10(3)				
2251.97(10)	$\langle 7 \rangle^+$									10(6)	
2267.57(8)	$\langle 7 \rangle^+$				6(1)					4(3)	
2324.46(9)	$5^+, 7^+$				8(4)						
2328.69(16)	$\langle 3 \rangle^+$								24(3)		
2410.2(3)	$\langle 5^+, 7 \rangle$				53(9)						
2474.7(5)						100					
2547.1(0,1)	$21^+$					36(2)					
2706.6(5)	$\langle 15 \rangle$										100
3039.4(1)	19					61(5)					
3065.5(2)	$\langle 17, 19^+ \rangle$					74(19)	26(10)				
3210.3(5)	$\langle 21 \rangle^+$					100					

Energy levels and branching ratios [93Bu08]. Part 4

 **$^{95}_{43}\text{Tc}$** 

$E^*$	$2J^\pi$	Branching ratios in percentage										
[keV]		$E_f^*$ : $2J_f^\pi$ :	1747.0 $\langle 5 \rangle^+$	1978.5	2183.9 $19^+$	2212.9 $\langle 17^- \rangle$	2547.1 $21^+$	3024.1 $\langle 21^- \rangle$	3516.0 $25^+$	3821.8 $\langle 25^- \rangle$	3918.3 $29^+$	4127.4 $\langle 27^- \rangle$
2168.29(5)	$7^+$		3.5(5)									
2328.69(16)	$\langle 3 \rangle^+$		18(18)									
2382.6(4)	$\langle 5^+, 7^+ \rangle$			42(11)								
2410.2(3)	$\langle 5^+, 7 \rangle$		37(6)									
2547.1(0,1)	$21^+$				64(3)							
2846.8(4)						100						
2906.5(1)	$\langle 23^+ \rangle$				61(7)		39(5)					
3024.1(2)	$\langle 21^- \rangle$					100						
3039.4(1)	19						39(4)					
3516.0(2)	$25^+$						100					
3578.5(8)	$\langle 23 \rangle$							100				
3821.8(2)	$\langle 25^- \rangle$							100				
3918.3(2)	$29^+$								100			

(continued)

 **$^{95}_{43}\text{Tc}$** 

$E^*$	$2J^\pi$	Branching ratios in percentage										
[keV]		$E_f^*$ : $2J_f^\pi$ :	1747.0 $\langle 5 \rangle^+$	1978.5 $19^+$	2183.9 $\langle 17^- \rangle$	2212.9 $21^+$	2547.1 $\langle 21^- \rangle$	3024.1 $25^+$	3516.0 $\langle 25^- \rangle$	3821.8 $29^+$	3918.3 $\langle 27^- \rangle$	4127.4 $\langle 27 \rangle^-$
4081.6(10)	$23^- - 27^-$								100			
4127.4(2)	$\langle 27 \rangle^-$									100		
4293.0(2)	$27^+$								69(3)		31(3)	
4783.2(4)												100
4971.3(2)	$\langle 29^- \rangle$									78(5)		22(5)

Energy levels and branching ratios [93Pe02].

 **$^{96}_{43}\text{Tc}$** 

$E^*$ [keV]	$J^\pi$	$L$	$(2J+1)C^2S$ $(\tau, d)$	$T_{1/2}$ or $\Gamma_{\text{cm}}$	Ref.	Branching ratios in percentage					
						$E_f^*:$ $J_f^\pi:$	0.0 $7^+$	34.3 $4^+$	35.4 $\langle 2 \rangle^+$	36.2 $3^+$	45.3 $5^+$
0.0	$7^+$	4	2.42	4.28(7) d	79Em01						
34.28(7)	$4^+$	4	4.24	51.5(10) m	79Em01		100				
35.4(1)	$\langle 2 \rangle^+$										
36.24(8)	$3^+$										
45.33(6)	$5^+$										
49.21(6)	$6^+$						100				
121.26(8)	$2^-$	1+4	0.22+0.94	25.6(+4-2) ns	79Em01				17	83	
177.01(6)	$5^+$	1+4	0.14+0.64		79Em01		0.34	68			
227.15(9)	$3^-$	1+4	0.10+0.50	<0.35 ns	79Em01				12.0		
228.81(7)	$4^+$		incl		79Em01					7.1	89
239.36(12)	$3^+$			<0.35 ns				100			
256.07(9)	$\langle 2 \rangle^+$			<0.35 ns					24	76	
316.62(8)	$3^-$	1+4	0.29+1.29	2.0(+4-2) ns	79Em01			1.6		11.7	
319.22(6)	$6^+$						45				55
321.57(8)	$3^-$							15	7.2	75	
352.53(9)	$3^-$	1	0.21	<0.35 ns	79Em01					3.7	
444.94(9)	$3^+$							57	33.4		
458.18(12)	$3^+$								49.4		
493.16(11)	$3^+$							<17			
506.34(7)	$5^+$	4	0.35		79Em01			19.2			2.7
530.28(8)	$4^+$									26	66
530.45(9)	$\langle 4 \rangle^-$										
542.12(21)	$5^+$										
547.8(4)	$\langle 3 \rangle$										
551.90(7)	$4^-$							19		38	23.4
564.14(14)	$3^+$							50	41.9		
565.61(8)	$5^+$							52			11.8
568.05(22)	$\langle 3 \rangle^-$	1	0.04		79Em01						
574.95(7)	$7^+$						6.3				
585.85(16)	$4^+$										
619.63(11)	$3^-$									21.3	

(continued)

 **$^{96}_{43}\text{Tc}$** 

$E^*$	$J^\pi$	$L$	$(2J+1)C^2S$	$T_{1/2}$ or $\Gamma_{\text{cm}}$	Ref.	$E^*_f$ : $J^\pi_f$ :	Branching ratios in percentage				
[keV]			( $\tau, d$ )				0.0 7 <sup>+</sup>	34.3 4 <sup>+</sup>	35.4 (2) <sup>+</sup>	36.2 3 <sup>+</sup>	45.3 5 <sup>+</sup>
622.79(21)	4 <sup>+</sup>	4	0.22		79Em01						69
627.33(9)	3 <sup>-</sup>								21.0	21.0	
646.68(13)	4 <sup>-</sup>										
656.0(4)											
720.57(20)	6 <sup>+</sup>						78				
732.62(10)	4 <sup>-</sup>										
739.8(4)											
749.78(12)	(3) <sup>-</sup>	1	0.05		79Em01						
752.53(8)	6 <sup>+</sup>						46.3				
788.85(10)	4 <sup>-</sup>							6.6			
794.18(18)	4 <sup>-</sup>										
801.47(10)	4 <sup>-</sup>	1+4	0.09,0.36		79Em01						
815.14(8)	4 <sup>+</sup>										11.0
816.45(11)	(3)							14.8			
820.98(23)											
821.74(10)	(6)										
828.4(3)	(4 <sup>+</sup> )								65		
840.0(4)											
867.18(11)	4 <sup>-</sup>	1	0.07		79Em01						
885.86(10)	6 <sup>+</sup>						10.3				19.3
909.54(15)	4										19.2
927.23(9)	9 <sup>+</sup>						100				
934.29(15)	(3 <sup>+</sup> )	2	0.08		79Em01			23			42
942.43(22)	(4,2)										
946.93(9)	8 <sup>+</sup>						27.4				
971.23(16)	3								29		
979.05(8)	5 <sup>-</sup>							9.8			3.2
980.72(15)	(5)										
1040.91(15)	7 <sup>+</sup>	2	0.05		79Em01		62				
1042.28(25)	5								62		
1053.9(5)	5,7										
1062.46(9)	8 <sup>+</sup>										
1065.7(4)		1+4	0.04+0.16		79Em01						
1071.6(3)	(4,6)										
1103.12(21)	5,7										
1118.27(22)	(5 <sup>+</sup> ,7 <sup>+</sup> )										
1138.96(12)	8 <sup>+</sup>						84				
1139.96(22)	(5 <sup>-</sup> )							60			
1149.1(4)	(5)							62			
1152.07(8)	6 <sup>-</sup>						6.2				25.6
1158(4)	X <sup>-</sup>	1	0.05		79Em01						
1183.26(10)	5										
1187.59(12)	5										
1202.78(11)	(6 <sup>+</sup> )							16			
1211.6(3)	(2,4)	1	0.07		79Em01						

(continued)

**<sup>96</sup>Tc**  
**43**

$E^*$	$J^\pi$	$L$	$(2J+1)C^2S$	$T_{1/2}$ or	Ref.	Branching ratios in percentage					
[keV]			$(\tau, d)$	$\Gamma_{\text{cm}}$		$E^*_\text{f}$ : $J^\pi_\text{f}$ :	0.0 7 <sup>+</sup>	34.3 4 <sup>+</sup>	35.4 $\langle 2 \rangle^+$	36.2 3 <sup>+</sup>	45.3 5 <sup>+</sup>
1255.66(11)	$\langle 4 \rangle$										47
1271.0(4)											
1290.23(16)	4										
1294.4(3)	$\langle 5 \rangle$	$\langle 1+2 \rangle$	0.03+0.08		79Em01						
1314.12(7)	5 <sup>+</sup>						29				15.4
1338(8)	X <sup>−</sup>	1	0.08		79Em01						
1366.63(22)	$\langle 4, 2 \rangle$										
1408.32(21)	$\langle 4^− \rangle$	1	0.13		79Em01						
1437.95(25)	3 <sup>−</sup>	1	0.06		79Em01						
1447.73(9)	9 <sup>+</sup>										
1482.3(3)	$\langle 4^− \rangle$										
1487.46(21)	8										
1516.22(22)	$\langle 7^+, 5 \rangle$										
1536.2(4)	X <sup>−</sup>	1	0.05		79Em01						
1557.05(23)	$\langle 4, 6 \rangle$										
1596.42(21)											
1597.40(9)	6 <sup>−</sup>	$\langle 1+2 \rangle$	0.03+0.02		79Em01		33.3				
1610.2(5)											
1636.3(5)											
1661(8)		$\langle 1+2 \rangle$	0.02+0.06		79Em01						
1703.32(11)	10 <sup>+</sup>										
1767.43(21)		$\langle 1+2 \rangle$	0.03+0.07		79Em01						
1825(8)		$\langle 2 \rangle$	0.06		79Em01						
1861.73(12)	9 <sup>+</sup>										
1884(15)		$\langle 1+2 \rangle$	0.02+0.05		79Em01						
1922.79(18)	11 <sup>+</sup>										
1940(15)	X <sup>+</sup>	2	0.07		79Em01						
1974.4(6)	8										
2020(15)											
2148.45(17)	11 <sup>+</sup>										
2213.98(10)	10 <sup>+</sup>										
2317.91(20)	12 <sup>+</sup>										
2397.47(15)	11 <sup>+</sup>										
2599.9(4)	13 <sup>+</sup>										
2643.1(3)	10 <sup>+</sup>										
3020.6(3)	12 <sup>+</sup>										

Additional data on this isotope can be found in [01Bu19, 00Gh01].

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

Energy levels and branching ratios [93Pe02]. Part 2

 **$^{96}_{43}\text{Tc}$** 

$E^*$ [keV]	$J^\pi$	Branching ratios in percentage									
		$E_f^*:$ $J_f^\pi:$	49.2 6 <sup>+</sup>	121.3 2 <sup>-</sup>	177.0 5 <sup>+</sup>	227.15 3 <sup>-</sup>	228.81 4 <sup>+</sup>	239.36 3 <sup>+</sup>	256.07 $\langle 2 \rangle^+$	316.62 3 <sup>-</sup>	319.22 6 <sup>+</sup>
177.01(6)	5 <sup>+</sup>		32.0								
227.15(9)	3 <sup>-</sup>			88							
228.81(7)	4 <sup>+</sup>				3.6						
316.62(8)	3 <sup>-</sup>			87							
321.57(8)	3 <sup>-</sup>								3.2		
352.53(9)	3 <sup>-</sup>			91		5.4					
444.94(9)	3 <sup>+</sup>						7.2		2.4		
458.18(12)	3 <sup>+</sup>								51		
493.16(11)	3 <sup>+</sup>			4.5			87		8.2		
506.34(7)	5 <sup>+</sup>	72			1.8		1.0				3.2
530.28(8)	4 <sup>+</sup>				2.4		5.7				
530.45(9)	$\langle 4 \rangle^-$			46		5.4				19.4	
542.12(21)	5 <sup>+</sup>	100									
547.8(4)	$\langle 3 \rangle$								100		
551.90(7)	4 <sup>-</sup>				2.9		6.7			10.0	
564.14(14)	3 <sup>+</sup>			1.8					6.7		
565.61(8)	5 <sup>+</sup>	17.8			16.8						2.0
568.05(22)	$\langle 3 \rangle^-$					100					
574.95(7)	7 <sup>+</sup>	79			0.7						13.6
585.85(16)	4 <sup>+</sup>							71		29	
619.63(11)	3 <sup>-</sup>			38		29.5					
622.79(21)	4 <sup>+</sup>							31.3			
627.33(9)	3 <sup>-</sup>			37			3.2			10.5	
646.68(13)	4 <sup>-</sup>					17.0					
720.57(20)	6 <sup>+</sup>				22						
732.62(10)	4 <sup>-</sup>			21.6		2.4				36.5	
739.8(4)		100									
749.78(12)	$\langle 3 \rangle^-$								100		
752.53(8)	6 <sup>+</sup>	3.8			50						
788.85(10)	4 <sup>-</sup>			57						36.9	
794.18(18)	4 <sup>-</sup>			15.9						84	
801.47(10)	4 <sup>-</sup>			62						17.9	
815.14(8)	4 <sup>+</sup>	26			63						
816.45(11)	$\langle 3 \rangle$			42.1		43					
820.98(23)				100							
821.74(10)	$\langle 6 \rangle$	35.3			37						27.3
828.4(3)	$\langle 4^+ \rangle$								35.1		
840.0(4)						100					
867.18(11)	4 <sup>-</sup>									100	
909.54(15)	4				9.6		11.2				
934.29(15)	$\langle 3^+ \rangle$						21				
942.43(22)	$\langle 4, 2 \rangle$									100	
946.93(9)	8 <sup>+</sup>	15.2									
971.23(16)	3								34		
979.05(8)	5 <sup>-</sup>						8.2			33.6	

(continued)

 **$^{96}_{43}\text{Tc}$** 

$E^*$ [keV]	$J^\pi$	Branching ratios in percentage									
		$E_f^*:$ $J_f^\pi:$	49.2 6 <sup>+</sup>	121.3 2 <sup>-</sup>	177.0 5 <sup>+</sup>	227.15 3 <sup>-</sup>	228.81 4 <sup>+</sup>	239.36 3 <sup>+</sup>	256.07 (2) <sup>+</sup>	316.62 3 <sup>-</sup>	319.22 6 <sup>+</sup>
980.72(15)	(5)		48		52						
1040.91(15)	7 <sup>+</sup>										38
1042.28(25)	5		38								
1053.9(5)	5,7		100								
1062.46(9)	8 <sup>+</sup>		56								
1065.7(4)									100		
1071.6(3)	(4,6)				100						
1103.12(21)	5,7		100								
1118.27(22)	(5 <sup>+</sup> ,7 <sup>+</sup> )				56						44
1138.96(12)	8 <sup>+</sup>		4.6								
1139.96(22)	(5 <sup>-</sup> )					40					
1149.1(4)	(5)										38.5
1152.07(8)	6 <sup>-</sup>				5.3						11.6
1183.26(10)	5		27		18						
1187.59(12)	5		24.5								
1202.78(11)	(6 <sup>+</sup> )		51								33
1211.6(3)	(2,4)									100	
1255.66(11)	(4)				53						
1290.23(16)	4				44						
1294.4(3)	(5)				100						
1314.12(7)	5 <sup>+</sup>		18.0		6.0		8.2				20.2
1366.63(22)	(4,2)									100	
1408.32(21)	(4 <sup>-</sup> )				100						
1437.95(25)	3 <sup>-</sup>						36.5				
1482.3(3)	(4 <sup>-</sup> )			33	67						
1516.22(22)	(7 <sup>+</sup> ,5)				37						63
1536.2(4)	X <sup>-</sup>				100						
1557.05(23)	(4,6)				30.0						
1596.42(21)					100						
1636.3(5)					100						
1767.43(21)											100

Energy levels and branching ratios [93Pe02]. Part 3

 **$^{96}_{43}\text{Tc}$** 

$E^*$ [keV]	$J^\pi$	Branching ratios in percentage									
		$E_f^*:$ $J_f^\pi:$	321.57 3 <sup>-</sup>	352.53 3 <sup>-</sup>	493.16 3 <sup>+</sup>	506.34 5 <sup>+</sup>	551.90 4 <sup>-</sup>	565.61 5 <sup>+</sup>	574.95 7 <sup>+</sup>	585.85 4 <sup>+</sup>	788.85 4 <sup>-</sup>
530.45(9)	(4) <sup>-</sup>		21.5	7.5							
619.63(11)	3 <sup>-</sup>			11.5							
627.33(9)	3 <sup>-</sup>			6.8							
646.68(13)	4 <sup>-</sup>			83							
656.0(4)					100						



(continued)

 **$^{96}_{43}\text{Tc}$** 

$E^*$ [keV]	$J^\pi$	Branching ratios in percentage									
		$E_f^*$ : $J_f^\pi$ :	321.57 3 <sup>-</sup>	352.53 3 <sup>-</sup>	493.16 3 <sup>+</sup>	506.34 5 <sup>+</sup>	551.90 4 <sup>-</sup>	565.61 5 <sup>+</sup>	574.95 7 <sup>+</sup>	585.85 4 <sup>+</sup>	788.85 4 <sup>-</sup>
732.62(10)	4 <sup>-</sup>			40							
801.47(10)	4 <sup>-</sup>			19.6							
885.86(10)	6 <sup>+</sup>					9.4		15.2	46		
909.54(15)	4		50			10.4					
934.29(15)	⟨3 <sup>+</sup> ⟩		13.7								
946.93(9)	8 <sup>+</sup>								57		
971.23(16)	3										37
979.05(8)	5 <sup>-</sup>						44				
1062.46(9)	8 <sup>+</sup>								36.6		
1138.96(12)	8 <sup>+</sup>								7.1		
1152.07(8)	6 <sup>-</sup>						45				
1183.26(10)	5					25				19.9	10.3
1187.59(12)	5						51				
1271.0(4)				100							
1290.23(16)	4					56					
1447.73(9)	9 <sup>+</sup>								56		
1487.46(21)	8								100		
1597.40(9)	6 <sup>-</sup>						23.3				
1974.4(6)	8								100		

Energy levels and branching ratios [93Pe02]. Part 4

 **$^{96}_{43}\text{Tc}$** 

$E^*$ [keV]	$J^\pi$	Branching ratios in percentage									
		$E_f^*$ : $J_f^\pi$ :	820.98	867.18 4 <sup>-</sup>	909.54 4	927.23 9 <sup>+</sup>	946.93 8 <sup>+</sup>	979.05 5 <sup>-</sup>	1062.46 8 <sup>+</sup>	1118.27 ⟨5 <sup>+</sup> ,7 <sup>+</sup> ⟩	1152.07 6 <sup>-</sup>
979.05(8)	5 <sup>-</sup>			1.2							
1062.46(9)	8 <sup>+</sup>					7.0					
1138.96(12)	8 <sup>+</sup>					4.2					
1152.07(8)	6 <sup>-</sup>							6.8			
1187.59(12)	5		5.0	19.6							
1314.12(7)	5 <sup>+</sup>										3.0
1437.95(25)	3 <sup>-</sup>			63							
1447.73(9)	9 <sup>+</sup>						35.3		8.6		
1557.05(23)	⟨4,6⟩				70						
1597.40(9)	6 <sup>-</sup>							43			
1610.2(5)										100	
1703.32(11)	10 <sup>+</sup>					25.9	29.6				
1861.73(12)	9 <sup>+</sup>						59		41.0		
1922.79(18)	11 <sup>+</sup>					100					
2148.45(17)	11 <sup>+</sup>					30.6					
2213.98(10)	10 <sup>+</sup>								10.6		

Energy levels and branching ratios [93Pe02]. Part 5

**<sup>96</sup>Tc**  
**43**

$E^*$	$J^\pi$	Branching ratios in percentage							
[keV]		$E^*_\text{f}:$ $J^\pi_\text{f}:$	1447.73 9 <sup>+</sup>	1703.32 10 <sup>+</sup>	1861.73 9 <sup>+</sup>	1922.79 11 <sup>+</sup>	2148.45 11 <sup>+</sup>	2213.98 10 <sup>+</sup>	2317.91 12 <sup>+</sup>
1703.32(11)	10 <sup>+</sup>		44						
2148.45(17)	11 <sup>+</sup>			49		20.4			
2213.98(10)	10 <sup>+</sup>				89				
2317.91(20)	12 <sup>+</sup>			30.6		54	15.5		
2397.47(15)	11 <sup>+</sup>				43.5			57	
2599.9(4)	13 <sup>+</sup>								100
2643.1(3)	10 <sup>+</sup>								100
3020.6(3)	12 <sup>+</sup>							100	

Energy levels and branching ratios [93Ar09].

**<sup>97</sup>Tc**  
**43**

$E^*$	$2J^\pi$	$L$	$C^2S$	$L$	$C^2S$	$C^2S$	$T_{1/2}$ or	Ref.	Branching ratios in percentage					
[keV]			(d,n)		( $\tau$ ,d)	( $\tau$ ,d)	$\Gamma_{\text{cm}}$		$E^*_\text{f}:$ $2J^\pi_\text{f}:$	0.0 9 <sup>+</sup>	96.6 1 <sup>-</sup>	216 7 <sup>+</sup>	324 5 <sup>+</sup>	580 3 <sup>-</sup>
0.0	9 <sup>+</sup>	4	0.42	4	0.63	0.50	4.2(2)·10 <sup>6</sup> yr	71Ri12						
96.56(6)	1 <sup>-</sup>	1	0.23	1	0.43	0.20	90.1(10) d	71Ri12	100					
215.71(2)	7 <sup>+</sup>			4	0.05		69(19) ps	75Ch23	100					
324.48(2)	5 <sup>+</sup>			2	0.016		0.39(5) ns	75Ch23	99(2)			1.2(4)		
580.19(6)	3 <sup>-</sup>	1	0.06	1	0.095	0.21		71Ri12		100				
656.90(6)	5 <sup>-</sup>			3	0.036		≥0.76 ps	75Ch23		99(2)	<3		0.6(1)	
765.7(2)		2	0.02			0.046		71Ri12					100	
772.72(6)	13 <sup>+</sup>						≥0.35 ps		100					
785.05(2)	5 <sup>+</sup>			2	0.077		0.33(0,10) ps	75Ch23	6.8(2)			82(2)	11(1)	
832.82(7)	11 <sup>(+)</sup>						≥0.35 ps		100					
833.6(2)												100		
852	3 <sup>+</sup> ,5 <sup>+</sup>			⟨2⟩	0.01			75Ch23						
855.44(3)	7 <sup>+</sup>						≥0.37 ps		80(2)			14(1)	6.1(5)	
861.92(9)	⟨9 <sup>+</sup> ⟩						≥0.38 ps		84(1)			16(8)		
941.95(15)												x	x	
946.7(1)	3 <sup>-</sup>	1	0.03	1	0.014	0.047	0.22(6) ps	71Ri12		80(2)			≈3	15(2)
969.70(4)	7 <sup>+</sup>								0.6(1)			53(2)	42(2)	
994.69(3)	⟨3,5 <sup>-</sup> ⟩						0.17(4) ps			3(2)			97(3)	
1003.6(1)													100	
1049.2(1)	3 <sup>-</sup>			1	0.014	0.01		75Ch23					34(7)	25(2)
1060(5)	⟨5,7 <sup>+</sup> ⟩											100		
1126.63(3)	11 <sup>(+)</sup>								68(3)			32(9)		
1138(2)	⟨5⟩													100
1141.2(1)	⟨7 <sup>+</sup> ⟩						0.28(10) ps					4.0(10)	71(4)	
1165.2(5)	⟨9,7⟩											100		
1167.2(2)														
1199.9(1)	⟨9 <sup>+</sup> ⟩						0.24(10) ps					67(4)	33(6)	
1219.9(1)	⟨7 <sup>+</sup> ⟩								47(3)			10(3)	43(3)	

(continued)

**<sup>97</sup>Tc**  
**43**

$E^*$	$2J^\pi$	$L$	$C^2S$	$L$	$C^2S$	$C^2S$	$T_{1/2}$ or	Ref.	Branching ratios in percentage					
[keV]			(d,n)		( $\tau$ ,d)	( $\tau$ ,d)	$\Gamma_{\text{cm}}$		$E_f^*$ : $2J_f^\pi$ :	0.0 9 <sup>+</sup>	96.6 1 <sup>-</sup>	216 7 <sup>+</sup>	324 5 <sup>+</sup>	580 3 <sup>-</sup>
1240.02(7)	$\langle 7^- \rangle$						$\geq 0.26$ ps					11(3)	7(2)	32(1)
1271.4(4)														
1274.5(3)											x			24(2)
1277.83(8)	$\langle 9^- \rangle$											$\leq 5$		
1310*	9 <sup>+</sup>	4	0.03	4	0.068	0.04		71Ri12		49(6)		51(2)		
1348*		2	0.01					71Ri12				x	100	
1366(2)	$\langle 3^+ \rangle$										x			
1372.3(3)	$\langle 3, 5^- \rangle$										29(4)		28(5)	
1379	3 <sup>+</sup> , 5 <sup>+</sup>			2	0.02			75Ch23	x				x	
1379.9(2)	$\langle 9^+ \rangle$						0.09(+5-3) ps					54(2)		
1382.3(2)												100		
1387(4)	$\langle 3^+, 5 \rangle$													
1393.49(8)	$\langle 13^+ \rangle$									[100]				
1396.9(1)														100
1409.5(3)	$\langle 7^- \rangle$											41(1)	21(3)	11
1441.1(10)							$\geq 0.21$ ps						100	
1480.3(6)														
1512.4(1)	$\langle 3-7^- \rangle$						0.25(9) ps						56(2)	10
1518.6(3)	$\langle 3^- \rangle$						0.21(8) ps				43(14)			57(2)
1523.1(4)	5 <sup>+</sup> -9 <sup>+</sup>						0.04(1) ps		16			22(12)	62(2)	
1537	1 <sup>+</sup>			0	0.014			75Ch23						
1573(3)	3 <sup>+</sup> , 5													
1580.0(4)	$\langle 5, 7^- \rangle$											12(1)	10(1)	27(2)
1599	3 <sup>+</sup> , 5 <sup>+</sup>													
1649.5(2)	3 <sup>+</sup> , 5 <sup>+</sup>			2	0.04	0.034	0.4(3) ps	75Ch23					12	
1654.54(9)	17 <sup>+</sup>													
1676	3 <sup>+</sup> , 5 <sup>+</sup>	2	0.02					71Ri12						
1677.2(7)												x	32(4)	68(7)
1685.5(1)	15 <sup>+</sup>							01Ba39						
1692.9(3)	$\langle 3^+-7 \rangle$											72(4)	28(10)	
1707.7(3)	$\langle 7 \rangle$						0.025(6) ps					20(6)	38(6)	
1712	1 <sup>+</sup>			0	0.035			75Ch23						
1722.4(7)	$\langle 3^+-7 \rangle$													
1733.3(4)	3 <sup>+</sup> -7 <sup>-</sup>						$\geq 0.54$ ps					76(4)		24(16)
1779.1(5)	$\langle 5, 7 \rangle$								x			38(2)		
1796.7(4)	$\langle 3-7 \rangle$												36(5)	
1815.7(4)	$\langle 9^+ \rangle$											30(4)	70(6)	
1834.84(9)	$\langle 13^- \rangle$													
1847	1 <sup>+</sup>			0	0.08			75Ch23						
1849.9(1)	$\langle 15^+ \rangle$													
1850.6(3)	$\langle 3 \rangle$						0.2(1) ps				x			
1856.1(5)	3 <sup>+</sup> , 5 <sup>-</sup>										x	68(5)	32(3)	x
1864.8(2)	$\langle 9^+ \rangle$											14(3)	86(6)	
1879.4(1)														
1896.0(7)	$\langle 9 \rangle$								x			x		

(continued)

**<sup>97</sup>Tc  
43**

$E^*$ [keV]	$2J^\pi$	$L$	$C^2S$ (d,n)	$L$	$C^2S$ ( $\tau$ ,d)	$C^2S$ ( $\tau$ ,d)	$T_{1/2}$ or $\Gamma_{\text{cm}}$	Ref.	Branching ratios in percentage					
									$E_f^*$ : $2J_f^\pi$ :	0.0 9 <sup>+</sup>	96.6 1 <sup>-</sup>	216 7 <sup>+</sup>	324 5 <sup>+</sup>	580 3 <sup>-</sup>
1914.1(4)	$\langle 3,5 \rangle$											x	25(3)	
1924.6(4)	$\langle 3,5 \rangle$											x	6(3)	18(3)
1940	$1^-, 3^-$	1	0.06					71Ri12						
1940.6(7)	$\langle 7 \rangle$											x	x	
1949.5(4)	$\langle 9^+ \rangle$											x	32(4)	
1951	$3^+, 5^+$			2	0.07,0.13	0.061		75Ch23						
1987.0(5)	$\langle 3 \rangle$										x			51(4)
1994.9(6)												x	x	
2001.3(5)														72(5)
2013	$3^+, 5^+$			2	0.02,0.03			75Ch23						
2023.7(6)														100
2036.0(6)	$\langle 1^--5^- \rangle$										x			
2060.0(7)	$\langle 9,11 \rangle$											x		
2069.0(5)														
2111	$3^+, 5^+$			2	0.01,0.02			75Ch23						
2121.8(1)	$13^+-17^+$													
2150.1(5)	$\langle 3^+-7 \rangle$											x	x	
2151	$1^+$			0	0.016			75Ch23						
2168.5(6)										x		x		
2208.2(7)														100
2217.4(6)												x	x	
2255.1(5)	$\langle 5^+, 7^- \rangle$											x	x	x
2260	$3^+, 5^+$	2	0.02			0.042		71Ri12						
2264	$1^+$			0	0.071			75Ch23						
2307	$3^+, 5^+$			2	0.02,0.04			75Ch23						
2331.4(1)	$\langle 19^+ \rangle$													
2337.7(1)	$\langle 17^- \rangle$													
2480														
2491.6(2)														
2533.8(1)	$\langle 21^+ \rangle$													
2564.8(1)	$\langle 19 \rangle$													
2653	$1^+$	0	0.05	0	0.11	0.03		71Ri12						
2661.8(1)														
2672.2(3)														
2713	$3^+, 5^+$			2	0.02,0.04			75Ch23						
2730														
2733.9(1)	$\langle 21^+ \rangle$													
2783	$3^+, 5^+$			2	0.02,0.03			75Ch23						
2878	$3^+, 5^+$			2	0.03,0.05	0.024		75Ch23						
2908	$3^+, 5^+$			2	0.02,0.04			75Ch23						
2916.9(2)	$17^+-21^+$													
3018	$3^+, 5^+$			2	0.02,0.04			75Ch23						
3060	$3^+, 5^+$	2	0.01	2	0.03,0.06	0.047		71Ri12						
3143.2(1)	$\langle 21^- \rangle$													
3145	$1^+$			0	0.087			75Ch23						

(continued)

**<sup>97</sup><sub>43</sub>Tc**

$E^*$ [keV]	$2J^\pi$	$L$	$C^2S$ (d,n)	$L$	$C^2S$ ( $\tau$ ,d)	$C^2S$ ( $\tau$ ,d)	$T_{1/2}$ or $\Gamma_{\text{cm}}$	Ref.	Branching ratios in percentage					
									$E_f^*$ : $2J_f^\pi$ :	0.0 9 <sup>+</sup>	96.6 1 <sup>-</sup>	216 7 <sup>+</sup>	324 5 <sup>+</sup>	580 3 <sup>-</sup>
3214	1 <sup>+</sup>			0	0.035			75Ch23						
3254.5(2)														
3296.6(2)														
3372	3 <sup>+</sup> ,5 <sup>+</sup>			$\langle 2 \rangle$				72Sh28						
3486	3 <sup>+</sup> ,5 <sup>+</sup>			2	0.04,0.08	0.042		72Sh28						
3530.2(2)	$\langle 25^+ \rangle$													
3575.7(1)	$\langle 23^+ \rangle$													
3586.0(2)														
3600(20)	3 <sup>+</sup> ,5 <sup>+</sup>			2	0.03,0.05	0.027		72Sh28						
3643.7(2)	$\langle 25^+ \rangle$							03Bu06						
3720(20)	3 <sup>+</sup> ,5 <sup>+</sup>			2	0.03,0.05	0.027		72Sh28						
3731.2(2)	$\langle 25 \rangle$													
4060(20)														
4334	$\langle 27^+ \rangle$													
4376.2(3)	27 <sup>+</sup>													
4430	$\langle 29^+ \rangle$													
4580(20)														
4681	29 <sup>+</sup>													
4780(20)														
4990(20)														
4580(20)														
4580(20)														
5051	$\langle 29^+ \rangle$							03Bu06						
5323	31 <sup>+</sup>							03Bu06						
5461	$\langle 31^+ \rangle$							03Bu06						
5536	33 <sup>+</sup>							03Bu06						
5587	$\langle 33^+ \rangle$							03Bu06						
7017	$\langle 37^+ \rangle$							03Bu06						
7714	$\langle 39^+ \rangle$							03Bu06						
8345	$\langle 43^+ \rangle$							03Bu06						
11050(20)	5 <sup>+</sup>			2	0.38	0.38		72Sh28						
11730	1 <sup>+</sup>													
11810(20)				2,4		0.5,0.1		72Sh28						
11840	3 <sup>+</sup> ,5 <sup>+</sup>													
11980														
12120	$\langle 1^+ \rangle$													
12360	3 <sup>+</sup> ,5 <sup>+</sup>													
12550(20)	11 <sup>-</sup>			5	0.21	0.21		72Sh28						
12600														
12680	$\langle 5^-, 7^- \rangle$													
12820	$\langle 1^+ \rangle$													
12960	$\langle 1^+ \rangle$													
13080	$\langle 1^+ \rangle$													

(continued)

 **$^{97}_{43}\text{Tc}$** 

$E^*$	$2J^\pi$	$L$	$C^2S$	$L$	$C^2S$	$C^2S$	$T_{1/2}$ or	Ref.	Branching ratios in percentage					
[keV]			(d,n)		( $\tau$ ,d)	( $\tau$ ,d)	$\Gamma_{\text{cm}}$		$E_{\text{f}}^*$ :	0.0	96.6	216	324	580
									$2J_{\text{f}}^\pi$ :	9 <sup>+</sup>	1 <sup>-</sup>	7 <sup>+</sup>	5 <sup>+</sup>	3 <sup>-</sup>
13200	3 <sup>+</sup> ,5 <sup>+</sup>		71Ri12		75Ch23	72Sh28		Ref.						

Additional data on this isotope can be found in [03Bu06, 01Ba76, 79Xe01, 70Za09].

\* Unresolved doublet with  $J^\pi=9/2^+$  and  $5/2^+$  [71Ri12,85Ha28].

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

Energy levels and branching ratios [93Ar09]. Part 2

 **$^{97}_{43}\text{Tc}$** 

$E^*$	$2J^\pi$	Branching ratios in percentage									
[keV]		$E_{\text{f}}^*$ :	657	773	785	832.8	855.4	861.9	946.7	969.7	994.7
		$2J_{\text{f}}^\pi$ :	5 <sup>-</sup>	13 <sup>+</sup>	5 <sup>+</sup>	11 <sup>(+)</sup>	7 <sup>+</sup>	$\langle 9^+ \rangle$	3 <sup>-</sup>	7 <sup>+</sup>	$\langle 3,5^- \rangle$
946.7(1)	3 <sup>-</sup>		1.9(4)								
969.70(4)	7 <sup>+</sup>				3(2)		1.2(2)				
1049.2(1)	3 <sup>-</sup>		41(2)								
1141.2(1)	$\langle 7^+ \rangle$				25(5)						
1167.2(2)								100			
1199.9(1)	$\langle 9^+ \rangle$					x					
1240.02(7)	$\langle 7^- \rangle$		37(1)						13		
1271.4(4)							100				
1274.5(3)			76(3)								
1277.83(8)	$\langle 9^- \rangle$		87(10)				13.2(18)				
1366(2)	$\langle 3^+ \rangle$				x						
1372.3(3)	$\langle 3,5^- \rangle$		43(6)								
1379.9(2)	$\langle 9^+ \rangle$					46(2)					
1409.5(3)	$\langle 7^- \rangle$		27(2)								
1480.3(6)			100								
1512.4(1)	$\langle 3-7^- \rangle$		34(2)								
1580.0(4)	$\langle 5,7^- \rangle$		42(2)								
1649.5(2)	3 <sup>+</sup> ,5 <sup>+</sup>						14			74	
1654.54(9)	17 <sup>+</sup>			100							
1676	3 <sup>+</sup> ,5 <sup>+</sup>						x				
1685.5(1)	15 <sup>+</sup>			60(3)		40(2)					
1692.9(3)	$\langle 3^+-7 \rangle$										x
1707.7(3)	(7)				43(7)						
1722.4(7)	$\langle 3^+-7 \rangle$								x		x
1779.1(5)	$\langle 5,7 \rangle$				62(5)						
1796.7(4)	$\langle 3-7 \rangle$		24(4)		40(4)						
1834.84(9)	$\langle 13^- \rangle$			30(1)							
1849.9(1)	$\langle 15^+ \rangle$			56(3)							
1850.6(3)	(3)		x								
1864.8(2)	$\langle 9^+ \rangle$						x				
1879.4(1)				100							

(continued)

 **$^{97}_{43}\text{Tc}$** 

$E^*$ [keV]	$2J^\pi$	Branching ratios in percentage									
		$E^*_f$ : $2J^\pi_f$ :	657 5 <sup>-</sup>	773 13 <sup>+</sup>	785 5 <sup>+</sup>	832.8 11 <sup>(+)</sup>	855.4 7 <sup>+</sup>	861.9 (9 <sup>+</sup> )	946.7 3 <sup>-</sup>	969.7 7 <sup>+</sup>	994.7 (3,5 <sup>-</sup> )
1896.0(7)	(9)					x					
1914.1(4)	(3,5)				75(5)		x			x	
1924.6(4)	(3,5)		76(4)								
1949.5(4)	(9 <sup>+</sup> )				68(4)		x				
1987.0(5)	(3)		49(4)								
1994.9(6)										x	
2001.3(5)			28(3)								
2036.0(6)	(1 <sup>-</sup> -5 <sup>-</sup> )		x								
2060.0(7)	(9,11)							x			
2069.0(5)			100								
2121.8(1)	13 <sup>+</sup> -17 <sup>+</sup>			60(2)							
2150.1(5)	(3 <sup>+</sup> -7)		x								
2217.4(6)							x				
2255.1(5)	(5 <sup>+</sup> ,7 <sup>-</sup> )							x			

Energy levels and branching ratios [93Ar09]. Part 3

 **$^{97}_{43}\text{Tc}$** 

$E^*$ [keV]	$2J^\pi$	Branching ratios in percentage									
		$E^*_f$ : $2J^\pi_f$ :	1060 (5,7 <sup>+</sup> )	1199.9 (9 <sup>+</sup> )	1240.0 (7 <sup>-</sup> )	1277.8 (9 <sup>-</sup> )	1310.1 9 <sup>+</sup>	1393.5 (13 <sup>+</sup> )	1654.5 17 <sup>+</sup>	1685.5 15 <sup>(+)</sup>	1834.8 (13 <sup>-</sup> )
1580.0(4)	(5,7 <sup>-</sup> )				8(4)						
1676	3 <sup>+</sup> ,5 <sup>+</sup>		x								
1815.7(4)	(9 <sup>+</sup> )			x							
1834.84(9)	(13 <sup>-</sup> )					70(2)					
1849.9(1)	(15 <sup>+</sup> )							34(2)	9(1)	x	
2121.8(1)	13 <sup>+</sup> -17 <sup>+</sup>								40(5)		
2168.5(6)							x				
2331.4(1)	(19 <sup>+</sup> )								100		
2337.7(1)	(17 <sup>-</sup> )									30(2)	27(3)
2491.6(2)									100		
2533.8(1)	(21 <sup>+</sup> )								96(2)		
2661.8(1)									30(3)		
2672.2(3)									100		
2733.9(1)	(21 <sup>+</sup> )								83(2)		
2916.9(2)	17 <sup>+</sup> -21 <sup>+</sup>								x		

Energy levels and branching ratios [93Ar09]. Part 4

 **$^{97}_{43}\text{Tc}$** 

$E^*$ [keV]	$2J^\pi$	Branching ratios in percentage										
		$E_f^*$ : $2J_f^\pi$ :	1849.9 $\langle 15^+ \rangle$	2121.8	2331.4 $\langle 19^+ \rangle$	2337.7 $\langle 17^- \rangle$	2533.8 $\langle 21^+ \rangle$	2564.8 $\langle 19 \rangle$	2733.8 $\langle 21^+ \rangle$	2916.8	3575.6 $\langle 23^+ \rangle$	3731.1 $\langle 25 \rangle$
2337.7(1)	$\langle 17^- \rangle$		42(3)									
2533.8(1)	$\langle 21^+ \rangle$				3.9(5)							
2564.8(1)	$\langle 19 \rangle$					100						
2661.8(1)				70(9)								
2733.9(1)	$\langle 21^+ \rangle$							17(1)				
2916.9(2)	$17^+ - 21^+$						100					
3143.2(1)	$\langle 21^- \rangle$					78(7)	22(2)					
3254.5(2)										100		
3296.6(2)							100					
3530.2(2)	$\langle 25^+ \rangle$						100					
3575.7(1)	$\langle 23^+ \rangle$						49(3)		51(2)			
3586.0(2)							100					
3643.7(2)	$\langle 25^+ \rangle$						100					
3731.2(2)	$\langle 25 \rangle$										100	
4376.2(3)	$27^+$											100

Energy levels and branching ratios [03Si07].

 **$^{98}_{43}\text{Tc}$** 

$E^*$ [keV]	$J^\pi$	$L$	$C^2S$ ( $\tau, d$ )	$L$	$C^2S$ (p, d)	$T_{1/2}$ or $\Gamma_{\text{cm}}$	Ref.
0.0	$\langle 6 \rangle^+$	4	2.10	2	0.48	$4.2(3) \cdot 10^6$ yr	76Ma16 77Em02 76Sl06
21.80(9)	$\langle 5 \rangle^+$	4	1.92	2	0.62	2.4(6) ns	76Ma16 77Em02
65.43(12)	$\langle 4 \rangle^+$	4	0.87	2	0.39	<1.4 ns	76Ma16 77Em02
73.28(15)	$X^-$			2	0.39		77Em02
81.68(13)	$X^+$	4	0.50			<1.4 ns	76Ma16
90.76(16)	$\langle 2 \rangle^-$					14.7(3) $\mu\text{s}$	
106.43(6)	$\langle 7 \rangle^+$	4	1.89	2	0.93		76Ma16 77Em02
138.55(14)	$\langle 2 \rangle^-$	1	0.18			8.2(3) ns	76Ma16
142.0(10)	$\langle 2-7 \rangle^+$			2	0.077, 0.097		77Em02
152.09(13)	$\langle 3-5 \rangle^+$					<1.4 ns	
190.21(15)	$\langle 3, 4 \rangle^-$					<1.4 ns	
203.67(13)	$\langle 4 \rangle^+$			0+2	0.030+0.08, 0.10	<1.4 ns	77Em02
268.14(14)	$4^+, 5^+$			0+2	0.003+0.01, 0.012		77Em02
306.20(15)	$\langle 3-5 \rangle^+$			$\langle 4 \rangle$	0.055, 0.085		77Em02
321.82(15)	$\langle 1-3 \rangle^-$						
328.45(13)	$\langle 3-5 \rangle^+$			2	0.087, 0.11		77Em02
346.93(12)	$\langle 6, 7 \rangle^+$			2	0.083, 0.11		77Em02
351.27(15)	$\langle 3 \rangle^-$	1	0.22				76Ma16
375.09(17)	$\langle 3-5 \rangle^+$						
390.04(15)	$\langle 3 \rangle^+$	4	0.43	2	0.044		76Ma16 77Em02
424.04(20)	$4^+, 5^+$	2	0.02	0+2	0.067+0.051, 0.063		76Ma16 77Em02



(continued)

<sup>98</sup>Tc  
43

$E^*$	$J^\pi$	$L$	$C^2S$	$L$	$C^2S$	$T_{1/2}$ or $\Gamma_{\text{cm}}$	Ref.
[keV]			( $\tau, d$ )		(p, d)		
441.02(5)	$\langle 7 \rangle^+$						
447.0(3)	$X^+$			$4\langle +2 \rangle$	0.30, 0.46		77Em02
457.83(15)	$\langle 2, 3 \rangle^-$						
484.23(17)	$\langle 2-4 \rangle^-$						
502.09(19)							
537.5(20)	$X^+$			2	0.027, 0.034		77Em02
543.22(15)	$\langle \leq 4 \rangle^-$						
568(4)	$X^{\langle + \rangle}$			$\langle 2 \rangle$	0.005, 0.006		77Em02
609.5(15)	$4^+, 5^+$			$0+2$	0.025+0.031, 0.041		77Em02
622.18(19)	$\langle 2, 3 \rangle^-$						
624.5(25)	$\langle 4^+, 5^+ \rangle$			$\langle 2+0 \rangle$	0.078, 0.097		77Em02
639.5(25)	$X^+$			2	0.038, 0.047		77Em02
652.72(16)							
665.60(17)	$\langle 2-4 \rangle^+$						
670.2(2)							
688.2(8)	$\langle \leq 4 \rangle^+$			$2\langle +0 \rangle$	0.034, 0.042+0.013		77Em02
707.5(10)	$4^+, 5^+$			$0+2$	0.060+0.087, 0.11		77Em02
713.62(17)	$\langle 4, 5 \rangle^+$						
747.0(20)	$4^+, 5^+$			$0+2$	0.025+0.046, 0.059		77Em02
764.34(14)	$\langle 8 \rangle^+$						
766.0(20)	$\langle 4^+, 5^+ \rangle$			$\langle 2+0 \rangle$	0.056, 0.082+0.069		77Em02
799.5(15)	$4^+, 5^+$			$0+2$	0.020+0.012, 0.015		77Em02
863.5(15)	$X^+$			2	0.071, 0.089		77Em02
888.5(15)	$4^+, 5^+$			$0+2$	0.015+0.029, 0.036		77Em02
923.5(25)	$X^+$			2	0.015, 0.018		77Em02
951.5(25)	$4^+, 5^+$			$0+2$	0.003+0.015, 0.018		77Em02
988(4)							
1018.7(5)	$\langle 7-9 \rangle^+$			4	0.074, 0.11		77Em02
1048(4)	$X^+$			2	0.027, 0.034		77Em02
1057.5(25)	$X^+$			4	0.14, 0.22		77Em02
1090.66(14)	$\langle 8 \rangle^-$						
1102.84(17)	$\langle 9 \rangle^+$			4	0.14, 0.22		77Em02
1126.5(10)	$X^+$			2	0.041, 0.051		77Em02
1157.5(10)	$X^+$			2	0.037, 0.045		77Em02
1166.34(16)	$\langle 9 \rangle^-$						
1201.5(10)	$X^+$			4	0.151, 0.23		77Em02
1207.82(16)	$\langle 8, 9 \rangle^+$			2	0.065, 0.082		77Em02
1254.3(3)	$4^+, 5^+$			$0+2$	0.010+0.016, 0.020		77Em02
1275(4)	$4^+, 5^+$			$0+2$	0.014+0.015, 0.019		77Em02
1296(4)	$4^+, 5^+$			$0+2$	0.007+0.039, 0.048		77Em02
1310.5(30)	$4^+, 5^+$			$0+2$	0.045+0.040, 0.050		77Em02
1338.0(20)	$4^+, 5^+$			$0+2$	0.016+0.008, 0.010		77Em02
1354(4)	$X^+$			$2+0$	0.008, 0.010+0.008		77Em02
1373(5)							
1388(4)	$X^{\langle + \rangle}$			$\langle 2 \rangle$	0.013, 0.016		77Em02

${}^{98}_{43}\text{Tc}$ Ref.

Energy levels and branching ratios [03Si07]. Part 2

 ${}^{98}_{43}\text{Tc}$ 

$E^*$	$J^\pi$	Branching ratios in percentage									
[keV]		$E_f^*$ : $J_f^\pi$ :	0.0 $\langle 6 \rangle^+$	21.8 $\langle 5 \rangle^+$	65.4 $\langle 4 \rangle^+$	73.3 $X^-$	81.7 $X^+$	90.8 $\langle 2 \rangle^-$	106.4 $\langle 7 \rangle^+$	138.5 $\langle 2 \rangle^-$	152.1
21.80(9)	$\langle 5 \rangle^+$		100								
65.43(12)	$\langle 4 \rangle^+$			100							
81.68(13)	$X^+$			100							
106.43(6)	$\langle 7 \rangle^+$		100								
138.55(14)	$\langle 2 \rangle^-$					2.3	4.5	93			
152.09(13)	$\langle 3-5 \rangle^+$				100						

(continued)

 **$^{98}_{43}\text{Tc}$** 

$E^*$ [keV]	$J^\pi$	Branching ratios in percentage									
		$E_f^*:$ $J_f^\pi:$	0.0 $\langle 6 \rangle^+$	21.8 $\langle 5 \rangle^+$	65.4 $\langle 4 \rangle^+$	73.3 $X^-$	81.7 $X^+$	90.8 $\langle 2 \rangle^-$	106.4 $\langle 7 \rangle^+$	138.5 $\langle 2 \rangle^-$	152.1
190.21(15)	$\langle 3,4 \rangle^-$					12(1)		24(2)		64	
203.67(13)	$\langle 4 \rangle^+$				54(4)		46(4)			x	
268.14(14)	$4^+, 5^+$				100						
306.20(15)	$\langle 3-5 \rangle^+$				100						
321.82(15)	$\langle 1-3 \rangle^-$									91(1)	
328.45(13)	$\langle 3-5 \rangle^+$			10(2)	80(3)		10(3)				
346.93(12)	$\langle 6,7 \rangle^+$								100		
351.27(15)	$\langle 3 \rangle^-$									93(2)	
375.09(17)	$\langle 3-5 \rangle^+$				100						
441.02(5)	$\langle 7 \rangle^+$		87(3)	5.3(9)					7.4(9)		
457.83(15)	$\langle 2,3 \rangle^-$									64(1)	
484.23(17)	$\langle 2-4 \rangle^-$									7(1)	
502.09(19)											100
543.22(15)	$\langle \leq 4 \rangle^-$									37(8)	
622.18(19)	$\langle 2,3 \rangle^-$									50(2)	x
665.60(17)	$\langle 2-4 \rangle^+$						41(2)				
713.62(17)	$\langle 4,5 \rangle^+$			18(2)							
764.34(14)	$\langle 8 \rangle^+$								30(2)		
1018.7(5)	$\langle 7-9 \rangle^+$								100		
1090.66(14)	$\langle 8 \rangle^-$								53(2)		
1102.84(17)	$\langle 9 \rangle^+$								100		
1207.82(16)	$\langle 8,9 \rangle^+$								30(4)		

Energy levels and branching ratios [03Si07]. Part 3

 **$^{98}_{43}\text{Tc}$** 

$E^*$ [keV]	$J^\pi$	Branching ratios in percentage									
		$E_f^*:$ $J_f^\pi:$	190.2 $\langle 3,4 \rangle^-$	203.7 $\langle 4 \rangle^+$	268.1 $4^+, 5^+$	321.8	328.4	346.9 $\langle 6,7 \rangle^+$	351.3 $\langle 3 \rangle^-$	390.0 $\langle 3 \rangle^+$	441.0 $\langle 7 \rangle^+$
321.82(15)	$\langle 1-3 \rangle^-$		9(1)								
351.27(15)	$\langle 3 \rangle^-$			7(2)							
390.04(15)	$\langle 3 \rangle^+$			100							
424.04(20)	$4^+, 5^+$		61(4)						39(4)		
447.0(3)	$X^+$									x	
457.83(15)	$\langle 2,3 \rangle^-$		28(1)						8(1)		
484.23(17)	$\langle 2-4 \rangle^-$		93(1)								
543.22(15)	$\langle \leq 4 \rangle^-$					63(8)					
622.18(19)	$\langle 2,3 \rangle^-$		50(2)								
652.72(16)					32(3)		68(3)				
665.60(17)	$\langle 2-4 \rangle^+$									59(2)	
670.2(2)								100			
688.2(8)	$\langle \leq 4 \rangle^+$		x			x					
713.62(17)	$\langle 4,5 \rangle^+$		56(4)								

(continued)

 **$^{98}_{43}\text{Tc}$** 

$E^*$ [keV]	$J^\pi$	Branching ratios in percentage									
		$E_f^*$ : $J_f^\pi$ :	190.2 $\langle 3,4 \rangle^-$	203.7 $\langle 4 \rangle^+$	268.1 $4^+, 5^+$	321.8	328.4	346.9 $\langle 6,7 \rangle^+$	351.3 $\langle 3 \rangle^-$	390.0 $\langle 3 \rangle^+$	441.0 $\langle 7 \rangle^+$
764.34(14)	$\langle 8 \rangle^+$										70(2)
1090.66(14)	$\langle 8 \rangle^-$										17(1)
1207.82(16)	$\langle 8,9 \rangle^+$										70(5)

Energy levels and branching ratios [03Si07]. Part 4

 **$^{98}_{43}\text{Tc}$** 

$E^*$ [keV]	$J^\pi$	Branching ratios in percentage									
		$E_f^*$ : $J_f^\pi$ :	457.8 $\langle 2,3 \rangle^-$	670.2	764.3 $\langle 8 \rangle^+$	1018.7	1090.7 $\langle 8 \rangle^-$	1102.8 $\langle 9 \rangle^+$	1166.3 $\langle 9 \rangle^-$	1207.8 $\langle 8,9 \rangle^+$	
713.62(17)	$\langle 4,5 \rangle^+$		26(2)								
1090.66(14)	$\langle 8 \rangle^-$				30(2)	x					
1166.34(16)	$\langle 9 \rangle^-$				24(1)		76(17)				
1254.3(3)	$4^+, 5^+$			100							
1549.74(17)	$\langle 8-10 \rangle$							19(7)		81(6)	
1582.43(18)	$\langle 10 \rangle^-$								100		
1851.39(19)	$\langle 11 \rangle^-$								43(2)		
1920.4(5)									100		
1995.5(5)	$\langle 11^+ \rangle$							100			

Energy levels and branching ratios [03Si07]. Part 5

 **$^{98}_{43}\text{Tc}$** 

$E^*$ [keV]	$J^\pi$	Branching ratios in percentage							
		$E_f^*$ : $J_f^\pi$ :	1549.7	1582.4 $\langle 10 \rangle^-$	1851.4 $\langle 11 \rangle^-$	1995.5 $\langle 11^+ \rangle$	2303.8 $\langle 12 \rangle^-$	2481.8	2677.3 $\langle 13 \rangle^-$
1851.39(19)	$\langle 11 \rangle^-$			57(2)					
2303.8(3)	$\langle 12 \rangle^-$			35(4)	65(9)				
2367.8(5)				100					
2481.8(6)			100						
2677.3(3)	$\langle 13 \rangle^-$						[100]		
2810.6(6)								100	
3055.1(7)	$\langle 13^+ \rangle$				100				
3129.4(4)	$\langle 14^- \rangle$								[100]

Energy levels and branching ratios [94Pe15, 01Tu04].

**<sup>99</sup>Tc**  
**43**

$E^*$	$2J^\pi$	$L$	$C^2S$	$L$	$\beta_L$	$T_{1/2}$ or	Ref.	Branching ratios in percentage					
[keV]			( $\tau, d$ )	( $d, d'$ )	( $d, d'$ )	$\Gamma_{\text{cm}}$		$E_f^*$ : $2J_f^\pi$ :	0.0 9 <sup>+</sup>	140 7 <sup>+</sup>	143 1 <sup>-</sup>	181 5 <sup>+</sup>	509 3 <sup>-</sup>
0.0	9 <sup>+</sup>	4	0.668			211(1)·10 <sup>3</sup> yr	77Ch06						
140.5107(10)	7 <sup>+</sup>	4	0.045	2	0.088	0.19(2) ns	77Ch06	100					
142.6832(11)	1 <sup>-</sup>	1	0.290		incl	6.015(9) h	77Ch06	x	x				
181.0941(19)	5 <sup>+</sup>	2	0.007	2	0.056	3.61(7) ns	77Ch06	85(1)	14.7(4)				
509.096(10)	3 <sup>-</sup>	1	0.089				77Ch06				100		
534.44(8)	⟨3 <sup>+</sup> ⟩	⟨2⟩					77Ch06				100		
536.89(10)												x	
612.37(3)	5 <sup>-</sup>										93(1)		7.1(6)
625.53(4)	⟨9 <sup>+</sup> ⟩	4	0.067	2	0.028		77Ch06	82	16			2	
652.77(17)									x			x	
671.478(11)	3 <sup>-</sup>	1		5			77Ch06				83(3)		17(1)
719.41(4)	7 <sup>+</sup>	4	0.027				77Ch06			6.3		93.7	
726.76(5)	11 <sup>+</sup>			2	0.067	1.8(2) ps		86(2)	13.6(3)				
739.213(25)	⟨7 <sup>+</sup> ⟩							69.2	23.4			7.5	
761.781(17)	5 <sup>+</sup>	2	0.056	2	0.097	0.7(4) ps	77Ch06	13	74(4)			12(1)	
761.95(5)	13 <sup>+</sup>				incl	2.4(3) ps		100	<2.23			<0.56	
884.259(25)	⟨5 <sup>-</sup> ⟩								15.5			14.8	2.8
920.579(11)	1 <sup>+</sup>	0	0.009	⟨4⟩	0.019	<0.1 ns	77Ch06				26(1)	74(2)	0.09(1)
986.17(4)	⟨7 <sup>-</sup> ⟩							x	9.7			21.3	7.8
1004.07(2)	3 <sup>⟨-⟩</sup>										5(3)	92(5)	
1017.46(7)	⟨3 <sup>+</sup> , 5 <sup>+</sup> ⟩			⟨2⟩	0.022					53(4)		47(3)	
1019.76(4)	⟨5 <sup>+</sup> , 7 <sup>+</sup> ⟩	⟨2⟩	0.008		incl		77Ch06			59.8		40.2	
1072.23(17)	⟨7 <sup>+</sup> ⟩												
1081.46(8)	⟨11 <sup>+</sup> ⟩	⟨4⟩		2	0.040	0.9(3) ps	77Ch06	65(5)	35(2)				
1127.40(20)													100
1129.11(2)	⟨3 <sup>-</sup> ⟩										13(1)		22(8)
1135.04(4)	⟨5 <sup>-</sup> ⟩											14	19
1141.854(14)	3 <sup>+</sup>	2					77Ch06		5.0(4)			86(3)	
1149.43(5)	⟨9 <sup>+</sup> ⟩								48			52	
1172.05(11)	3 <sup>+</sup>												
1176.48(4)	9 <sup>-</sup>												
1198.89(5)	⟨3 <sup>-</sup> ⟩										51(4)	29(11)	20(9)
1203.46(5)	⟨9 <sup>+</sup> ⟩							28.8	71.2				
1205.0(10)	⟨3 <sup>-</sup> ⟩												
1207.26(3)	⟨7 <sup>-</sup> ⟩	⟨1⟩	0.006	3	0.057		77Ch06	18.3				19.7	
1243.78(5)	⟨7 <sup>+</sup> ⟩							29.8	10.5			52.6	
1268.69(8)	7 <sup>+</sup> -11 <sup>+</sup>								33(5)				
1306.28(5)	⟨7 <sup>+</sup> ⟩								18.0			82.0	
1309.11(15)									40.0			60.0	
1320.74(4)	3 <sup>-</sup>	1	0.012				77Ch06						59.2
1329.40(4)	⟨7 <sup>-</sup> ⟩								34.1				
1405.45(5)	⟨1 <sup>-</sup> , 3 <sup>-</sup> ⟩												28.6
1426.24(7)	⟨9 <sup>+</sup> , 7 <sup>+</sup> ⟩								48.3				
1435(4)	⟨3 <sup>-</sup> ⟩												
1444.13(5)	⟨1 <sup>+</sup> -5⟩	2	0.021				77Ch06					54.1	25.0

(continued)

 **$^{99}_{43}\text{Tc}$** 

$E^*$	$2J^\pi$	$L$	$C^2S$	$L$	$\beta_L$	$T_{1/2}$ or	Ref.	Branching ratios in percentage					
[keV]			$(\tau, d)$	$(d, d')$	$(d, d')$	$\Gamma_{\text{cm}}$		$E_f^*$ : $2J_f^\pi$ :	0.0 9 <sup>+</sup>	140 7 <sup>+</sup>	143 1 <sup>-</sup>	181 5 <sup>+</sup>	509 3 <sup>-</sup>
1469.1(10)													
1494.15(12)										41.2			
1503.71(4)	$\langle 3^+, 5^+ \rangle$	$\langle 2 \rangle$	0.010				77Ch06			44			
1507.06(6)	$13^+, 15^+$								28.2				
1526.48(11)	$\langle 15^+ \rangle$												
1543.22(22)													
1552.12(15)	$\langle 3^+ \rangle$												
1552.48(5)	$\langle 7^+ \rangle$									38		62	
1554.55(20)	$1^+$	0	0.083				77Ch06						
1563.12(5)	$\langle 5^+ - 9^+ \rangle$									100			
1565.06(5)	$\langle 5^+ - 9^+ \rangle$									100			
1566.21(20)	$\langle 11^+ \rangle$								100				
1581.21(5)	$11^+, 13^+$												
1585.01(8)	$17^+$												
1604.28(11)	$\langle 11^- \rangle$												
1611.37(15)	$\langle 1^- - 5^- \rangle$												
1621.92(20)										100			
1659.02(5)	$\langle 3^+ - 7^+ \rangle$											100	
1678.14(5)	$\langle 5 \rangle^+$	2	0.020				77Ch06			68.7			
1747.52(8)	$13^-$												
1752.94(21)													
1760(5)	$3^+, 5^+$	2	0.013				77Ch06						
1774.68(8)	$\langle 5^- - 9^- \rangle$												
1790.34(21)													
1803(5)	$\langle 1^+ \rangle$	$\langle 0 \rangle$	0.027				77Ch06						
1808.31(20)	$\langle 3^+, 5^+ \rangle$											100	
1823.65(15)	$\langle 3^+, 5^+ \rangle$	$\langle 2 \rangle$	0.064				77Ch06						
1853.28(21)													
1874.89(20)													
1911(6)	$1^+$	0					77Ch06						
1947.28(21)													
1982(6)	$\langle 3^+, 5^+ \rangle$	$\langle 2 \rangle$	0.044				77Ch06						
2000(6)	$\langle 3^+, 5^+ \rangle$	$\langle 2 \rangle$	0.030				77Ch06						
2064(6)			weak				77Ch06						
2111(6)	$3^+, 5^+$	2	0.055				77Ch06						
2155.25(14)	$\langle 17^+ \rangle$												
2160(6)	$\langle 3^+, 5^+ \rangle$	$\langle 2 \rangle$	0.023				77Ch06						
2176(7)	$\langle 1^+ \rangle$	$\langle 0 \rangle$	0.020				77Ch06						
2203(7)	$3^+, 5^+$	2	0.022				77Ch06						
2223.02(13)	$\langle 15^- \rangle$												
2281(7)	$1^+$	0	0.068				77Ch06						
2330.15(9)	$17^-$												
2363.41(21)			weak				77Ch06						
2396(7)	$\langle 3^+, 5^+ \rangle$	$\langle 2 \rangle$	0.012				77Ch06						
2414(7)	$\langle 3^+, 5^+ \rangle$	$\langle 2 \rangle$	0.013				77Ch06						

(continued)

**<sup>99</sup>Tc**  
**43**

$E^*$ [keV]	$2J^\pi$	$L$	$C^2S$ ( $\tau, d$ )	$L$ ( $d, d'$ )	$\beta_L$ ( $d, d'$ )	$T_{1/2}$ or $\Gamma_{\text{cm}}$	Ref.	Branching ratios in percentage					
								$E_f^*$ :	0.0	140	143	181	509
								$2J_f^\pi$ :	9 <sup>+</sup>	7 <sup>+</sup>	1 <sup>-</sup>	5 <sup>+</sup>	3 <sup>-</sup>
2424.34(13)													
2466(7)	$\langle 1^+ \rangle$	$\langle 0 \rangle$	0.020				77Ch06						
2486(7)	$\langle 1^+ \rangle$	$\langle 0 \rangle$	0.030				77Ch06						
2487.32(12)													
2522(8)	3 <sup>+</sup> , 5 <sup>+</sup>	2	0.026				77Ch06						
2553.12(22)	$\langle 21^+ \rangle$												
2581(8)	3 <sup>+</sup> , 5 <sup>+</sup>	2	0.030				77Ch06						
2588.84(11)													
2611(8)			weak				77Ch06						
2646.93(10)	19 <sup>-</sup>												
2653(8)	$\langle 1^+ \rangle$	$\langle 0 \rangle$	0.026				77Ch06						
2675(8)	$\langle 1^+ \rangle$	$\langle 0 \rangle$	0.013				77Ch06						
2703.62(12)													
2714(8)	3 <sup>+</sup> , 5 <sup>+</sup>	2					77Ch06						
2761.23(11)													
2765(8)	3 <sup>+</sup> , 5 <sup>+</sup>	2					77Ch06						
2785.24(13)	21 <sup>-</sup>												
2846(9)	3 <sup>+</sup> , 5 <sup>+</sup>	2					77Ch06						
2855.92(15)													
2916(9)		0+2					77Ch06						
2997(9)	3 <sup>+</sup> , 5 <sup>+</sup>	2					77Ch06						
3066(9)	3 <sup>+</sup> , 5 <sup>+</sup>	2					77Ch06						
3115(9)	1 <sup>+</sup>	0					77Ch06						
3129.84(15)	$\langle 23^- \rangle$												
3186(10)	$\langle 3^+, 5^+ \rangle$	$\langle 2 \rangle$					77Ch06						
3203.7(3)													
3245(10)	$\langle 1^+ \rangle$	$\langle 0 \rangle$					77Ch06						
3296.5(4)													
3376.84(15)	$\langle 25^- \rangle$												
3623.14(18)	$\langle 23, 25 \rangle$												
3649.13(24)	$\langle 25^+ \rangle$												
3814.44(18)													
3884.4(4)													
4177.92(21)													
			77Ch06	77Pe18	77Pe18		Ref.						

Additional data on this isotope can be found in [02LaZX, 01Tu04, 01Ba76, 98Cr01, 97Am10, 90An21].

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

Energy levels and branching ratios [94Pe15, 01Tu04]. Part 2

 **$^{99}_{43}\text{Tc}$** 

$E^*$ [keV]	$2J^\pi$	Branching ratios in percentage									
		$E_f^*:$ $2J_f^\pi:$	534 $\langle 3^+ \rangle$	612 $5^-$	625 $\langle 9 \rangle^+$	671.5 $3^-$	719.4 $7^+$	726.8 $11^+$	739.2 $\langle 7^+ \rangle$	761.8 $5^+$	761.9 $13^+$
726.76(5)	$11^+$				x						
884.259(25)	$\langle 5^- \rangle$			35.9		31.0					
920.579(11)	$1^+$					0.01				0.12(1)	
986.17(4)	$\langle 7^- \rangle$			52.4			8.8				
1004.07(2)	$3 \langle - \rangle$		1.9(4)							1.0(2)	
1072.23(17)	$\langle 7^+ \rangle$		100								
1081.46(8)	$\langle 11^+ \rangle$										$\leq 5$
1129.11(2)	$\langle 3 \rangle^-$					65(5)					
1135.04(4)	$\langle 5^- \rangle$			56							
1141.854(14)	$3^+$									9.4(8)	
1172.05(11)	$3^+$									100	
1176.48(4)	$9^-$			86.3					10.5		
1207.26(3)	$\langle 7^- \rangle$				5.6	26.8					
1243.78(5)	$\langle 7^+ \rangle$				7.0						
1320.74(4)	$3^-$			40.8							
1329.40(4)	$\langle 7^- \rangle$			31.8			34.1				
1405.45(5)	$\langle 1^-, 3^- \rangle$					71.4					
1426.24(7)	$\langle 9^+, 7^+ \rangle$							51.7			
1444.13(5)	$\langle 1^+ - 5 \rangle$			20.8							
1469.1(10)											100
1503.71(4)	$\langle 3^+, 5^+ \rangle$								56		
1507.06(6)	$13^+, 15^+$							38.5			33.3
1526.48(11)	$\langle 15^+ \rangle$							38.1(4)			61.9(4)
1581.21(5)	$11^+, 13^+$				51.9			11.1			37.0
1585.01(8)	$17^+$										92.6(10)
1611.37(15)	$\langle 1^- - 5^- \rangle$			61.5							
1678.14(5)	$\langle 5 \rangle^+$								31.3		
1747.52(8)	$13^-$										9.4(5)
1752.94(21)					100						
1774.68(8)	$\langle 5^- - 9^- \rangle$			x							
1790.34(21)					100						
1823.65(15)	$\langle 3^+, 5^+ \rangle$								52.9	47.1	
1874.89(20)										100	
2155.25(14)	$\langle 17^+ \rangle$										100

Energy levels and branching ratios [94Pe15, 01Tu04]. Part 3

 **$^{99}_{43}\text{Tc}$** 

$E^*$ [keV]	$2J^\pi$	Branching ratios in percentage									
		$E_f^*:$ $2J_f^\pi:$	884.3 $\langle 5^- \rangle$	920.6 $1^+$	986.2 $\langle 7^- \rangle$	1081.5 $\langle 11^+ \rangle$	1141.8 $3^+$	1176.5 $9^-$	1507.1	1526.5 $\langle 15^+ \rangle$	1543.2
1135.04(4)	$\langle 5^- \rangle$		11								
1176.48(4)	$9^-$				3.2						



(continued)

 **$^{99}_{43}\text{Tc}$** 

$E^*$ [keV]	$2J^\pi$	Branching ratios in percentage									
		$E^*_f:$ $2J^\pi_f:$	884.3 $\langle 5^- \rangle$	920.6 $1^+$	986.2 $\langle 7^- \rangle$	1081.5 $\langle 11^+ \rangle$	1141.8 $3^+$	1176.5 $9^-$	1507.1	1526.5 $\langle 15^+ \rangle$	1543.2
1207.26(3)	$\langle 7^- \rangle$		29.6								
1268.69(8)	$7^+ - 11^+$					67(8)					
1494.15(12)			35.3		23.5						
1543.22(22)								100			
1552.12(15)	$\langle 3^+ \rangle$			64.7			35.3				
1554.55(20)	$1^+$						100				
1585.01(8)	$17^+$								7.4(5)		
1604.28(11)	$\langle 11^- \rangle$				100						
1611.37(15)	$\langle 1^- - 5^- \rangle$		38.5								
1747.52(8)	$13^-$							88.0(8)			2.6(5)
1774.68(8)	$\langle 5^- - 9^- \rangle$							x			
1853.28(21)								100			
1947.28(21)								100			
2330.15(9)	$17^-$									19.0(3)	

Energy levels and branching ratios [94Pe15, 01Tu04]. Part 4

 **$^{99}_{43}\text{Tc}$** 

$E^*$ [keV]	$2J^\pi$	Branching ratios in percentage									
		$E^*_f:$ $2J^\pi_f:$	1581.2	1585.0 $17^+$	1747.5 $13^-$	2155.2 $\langle 17^+ \rangle$	2330.1 $17^-$	2424.3	2487.3	2553.1 $\langle 21^+ \rangle$	2588.8
2223.02(13)	$\langle 15^- \rangle$				100						
2330.15(9)	$17^-$			x	81.0(9)						
2363.41(21)		x									
2424.34(13)						100					
2487.32(12)				100							
2553.12(22)	$\langle 21^+ \rangle$			100							
2588.84(11)							78(2)	22(2)			
2646.93(10)	$19^-$			31.3(8)			69(1)				
2703.62(12)				100							
2761.23(11)				51(4)							49(2)
2785.24(13)	$21^-$						x				
2855.92(15)									x		
3296.5(4)										100	
3649.13(24)	$\langle 25^+ \rangle$									100	

Energy levels and branching ratios [94Pe15, 01Tu04]. Part 5

**<sup>99</sup>Tc**  
**43**

$E^*$ [keV]	$2J^\pi$	Branching ratios in percentage								
		$E_f^*:$ $2J_f^\pi:$	2646.9 19 <sup>-</sup>	2703.6	2785.2 21 <sup>-</sup>	2855.9	3129.8 ⟨23 <sup>-</sup> ⟩	3376.8 ⟨25 <sup>-</sup> ⟩	3814.4	3884.4
2785.24(13)	21 <sup>-</sup>		x							
2855.92(15)				x						
3129.84(15)	⟨23 <sup>-</sup> ⟩				100					
3203.7(3)						100				
3376.84(15)	⟨25 <sup>-</sup> ⟩				79(7)		20.8(8)			
3623.14(18)	⟨23,25⟩						100			
3814.44(18)								100		
3884.4(4)								100		
4177.92(21)									39(2)	61(2)

Energy levels and branching ratios [97Si09].

**<sup>100</sup>Tc**  
**43**

$E^*$ [keV]	$J^\pi$	$L$	$S'$ (d,p)	$\sigma$ (d,p) $\mu\text{b/sr}$	$B(GT)$	$T_{1/2}$ or $\Gamma_{\text{cm}}$	Ref.	Branching ratios in percentage					
								$E_f^*:$ $J_f^\pi:$	0.0 1 <sup>+</sup>	172 2 <sup>+</sup>	201 ⟨4 <sup>+</sup> ⟩	223 2 <sup>-</sup>	244 ⟨6 <sup>+</sup> ⟩
0.0	1 <sup>+</sup>	4	2.80	40	0.33(4)	15.8(1) s	76Sl03						
172.21(2)	2 <sup>+</sup>	4	2.83	40		<3 ns	76Sl03	100					
200.73(3)	⟨4 <sup>+</sup> ⟩	2	0.81	120		8.32(14) $\mu\text{s}$	78Ba18			100			
223.48(3)	2 <sup>-</sup>					<3 ns		100					
243.99(4)	⟨6 <sup>+</sup> ⟩	2	4.95	740		3.2(2) $\mu\text{s}$	76Sl03				100		
263.56(2)	⟨3 <sup>+</sup> ⟩	2	1,23	180		<3 ns	76Sl03	47(3)	33(2)		20(1)		
287.57(3)	⟨5 <sup>+</sup> ⟩	0+2	0.3,0.2	940		<3 ns	76Sl03				67(3)		33(3)
295.00(4)	⟨4 <sup>+</sup> ⟩			incl		0.87(14) ns					1.3(4)		
299.68(5)	⟨2-4 <sup>+</sup> ⟩			incl		<3 ns				100	<15		
319.59(4)	5 <sup>+</sup>	0+2	0.5,1.4	560			76Sl03				2.4(6)		98(5)
335.26(4)	⟨2 <sup>+</sup> ,3 <sup>+</sup> ⟩					<3 ns		66(12)	34(12)				
341.00(2)	⟨3 <sup>+</sup> ⟩	2	2.61	420			76Sl03	26(3)	60(3)	7(1)			
355.67(4)	⟨1-3⟩			incl		<3 ns		x					
400.63(4)	⟨5 <sup>+</sup> ⟩	2	0.46	70			76Sl03				6.0(6)		
424.36(4)	2 <sup>+</sup> -4 <sup>+</sup>									86(4)	7(2)		
440.4(2)	⟨7 <sup>+</sup> ⟩	0+2	8.66,13	8690		<0.28 ns	76Sl03						100
454.24(3)	⟨4,5 <sup>+</sup> ⟩			incl							12(1)		
457.1(2)	⟨7 <sup>+</sup> ⟩			incl		<0.28 ns							100
459.03(4)	⟨≤3⟩			incl				40(6)	26(5)				
461.69(4)	⟨5 <sup>+</sup> ⟩			incl							2.4(6)		71(4)
476.1(1)								x					
483.9(1)	⟨≤3⟩							100					
493.77(3)	⟨4,5 <sup>+</sup> ⟩	0+2	0.91,1.18	860			76Sl03					x	
500.03(4)	3 <sup>-</sup>									1.5(4)		95(5)	
500.24(3)	⟨3-5 <sup>-</sup> ⟩										98(5)		
514.03(5)	⟨2-7 <sup>+</sup> ⟩	2	1.56	230			76Sl03						
521.0(5)										x			

(continued)

 **$^{100}_{43}\text{Tc}$** 

$E^*$	$J^\pi$	$L$	$S'$	$\sigma$ (d,p)	$B(GT)$	$T_{1/2}$ or	Ref.	Branching ratios in percentage					
[keV]			(d,p)	$\mu\text{b/sr}$		$\Gamma_{\text{cm}}$		$E^*_\text{f}$ : $J^\pi_\text{f}$ :	0.0 1 <sup>+</sup>	172 2 <sup>+</sup>	201 $\langle 4 \rangle^+$	223 2 <sup>-</sup>	244 $\langle 6 \rangle^+$
539.69(4)	$\langle 3^- - 5^- \rangle$										64(3)		
545.04(4)	$\langle 6 \rangle^-$					0.43(10) ns							43(2)
552.34(4)	$4^+, 5^+$	0	4.56	4280			76Sl03						
580.47(4)	$\langle 3-5 \rangle^+$	0+2	0.5,3.3	739							10(1)		
599.96(6)	$\langle 2-7 \rangle^+$			incl									
608.7(1)	$\langle 7 \rangle^-$					<0.28 ns							7.0(7)
635.6(1)	$\langle 3^+ - 5^+ \rangle$	0+2	0.4,1.2	480									
639.92(4)	$\langle 3 \rangle^+$			incl				10(1)					
680.23(7)	$\langle 4-6 \rangle^-$												
689(10)	$\langle 4^+, 5^+ \rangle$	0+2	0.1,0.8	140									
707.8(2)	$\langle 8 \rangle^-$			850									
709(10)	$4^+, 5^+$			incl									
710.8(2)	$\langle 8 \rangle^+$			incl									
747.92(7)	$4^+, 5^+$	0+2	0.1,1.4	260									
758.8(4)				incl									
776(10)	$4^+, 5^+$	0=4		590									
777.9(3)	$\langle 9 \rangle^-$			incl		<0.28 ns							
821.80(6)****													
830.2(1)	$\langle 2,3 \rangle^+$	2	2.91	490				76(16)	24(5)				
853.97(15)	$2^+ - 7^+$	2	2.86	430									
882(10)	$2^+ - 7^+$	2	1.57	250			76Sl03						
906.14(7)	$\langle \leq 3 \rangle$							10(5)				57(8)	
929.87(4)****	$X^+$	0+2	0.2,1	300			76Sl03						
952.77(5)****	$X^+$			incl			76Sl03						
972(10)	$2^+ - 7^+$	2	1.37	200			76Sl03						
1000(10)	$4^+, 5^+$	0+2	2.4,4	2410			76Sl03						
1051.18(4)****													
1074.6(3)	$\langle 8^- \rangle$												
1154.9(3)	$\langle 10 \rangle^-$					<0.28 ns							
1284.6(3)	$\langle 9 \rangle^+$												
1400*	$\langle 1^+ \rangle$				0.13(2)		97Ak02						
1406.6(3)	$\langle 11 \rangle^-$					<0.28 ns							
1581.9(4)	$\langle 11^- \rangle$												
1720.9(4)	$\langle 10^+ \rangle$												
1840.2(4)	$\langle 12 \rangle^-$					<0.28 ns							
2175.5(4)	$\langle 11^+ \rangle$												
2238.4(4)	$\langle 13 \rangle^-$					<0.28 ns							
2600*	$\langle 1^+ \rangle$				0.23(3)		97Ak02						
2693.3(4)	$\langle 14^- \rangle$					<0.28 ns							
2695.9(6)	$\langle 12^+ \rangle$												
3075.7(6)	$\langle 13^+ \rangle$												
8000**					23(4)		97Ak02						

(continued)

 **$^{100}_{43}\text{Tc}$** 

$E^*$	$J^\pi$	$L$	$S'$	$\sigma$ (d,p)	$B(GT)$	$T_{1/2}$ or	Ref.	Branching ratios in percentage					
[keV]			(d,p)	$\mu\text{b/sr}$		$\Gamma_{\text{cm}}$		$E_{\text{f}}^*$ :	0.0	172	201	223	244
								$J_{\text{f}}^\pi$ :	1 <sup>+</sup>	2 <sup>+</sup>	$\langle 4 \rangle^+$	2 <sup>-</sup>	$\langle 6 \rangle^+$
13300***			76Sl03	76Sl03	2.9(5)		97Ak02						
					97Ak02		Ref.						

Additional data on this isotope can be found in [05Jo04, 04Fu30].

\* Broad peak in the ( $\tau$ ,t) reaction at 0° [97Ak02].\*\* GTR2 Centroid energy of a broad bump in the ( $\tau$ ,t) reaction at 0° [97Ak02].\*\*\* GTR1 Centroid energy of a broad bump in the ( $\tau$ ,t) reaction at 0° [97Ak02].

\*\*\*\* Introduced in [04Fu30].

Two high-spin bands (A  $J^\pi=6^- - 17^-$ , B  $10^- - 16^-$ ) were proposed in [05Jo04].

Energy levels and branching ratios [97Si09]. Part 2

 **$^{100}_{43}\text{Tc}$** 

$E^*$	$J^\pi$	Branching ratios in percentage									
[keV]		$E_f^*$ : $J_f^\pi$ :	264 $\langle 3 \rangle^+$	287 $\langle 5 \rangle^+$	295 $\langle 4 \rangle^+$	299.7	319.5 $\langle 5 \rangle^+$	335.2 $\langle 2^+, 3^+ \rangle$	341.0 $\langle 3 \rangle^+$	355.5 $\langle 1-5 \rangle$	400.6 $\langle 5 \rangle^+$
295.00(4)	$\langle 4 \rangle^+$		99(10)								
335.26(4)	$\langle 2^+, 3^+ \rangle$		x								
341.00(2)	$\langle 3 \rangle^+$		0.5(1)		7						
355.67(4)	$\langle 1-3 \rangle$		100								
400.63(4)	$\langle 5 \rangle^+$				94(5)						
424.36(4)	$2^+ - 4^+$		3(1)		3(1)						
454.24(3)	$\langle 4, 5 \rangle^+$		7(1)	62(3)					19(2)		
459.03(4)	$\langle \leq 3 \rangle$							19(5)		15(5)	
461.69(4)	$\langle 5 \rangle^+$		0.9(2)	0.4(1)	23(3)		2.4(6)				
476.1(1)						100					
493.77(3)	$\langle 4, 5 \rangle^+$		17(2)	63(6)	0.7(3)				19(2)		
500.03(4)	$3^-$		3.7(4)								
500.24(3)	$\langle 3-5 \rangle^-$						0.04(1)		1.6(2)		
521.0(5)			x								
539.69(4)	$\langle 3^- - 5^- \rangle$				2.8(3)		17(2)				
545.04(4)	$\langle 6 \rangle^-$						45(2)				11(1)
552.34(4)	$4^+, 5^+$		29(3)	5(1)	23(2)		1		25(2)		
580.47(4)	$\langle 3-5 \rangle^+$			30(3)			26(3)		19(2)		14(2)
635.6(1)	$\langle 3^+ - 5^+ \rangle$		21(9)	79(17)					<92		
639.92(4)	$\langle 3 \rangle^+$		2.6(7)		64(3)		7(1)				2.1(5)
680.23(7)	$\langle 4-6 \rangle^-$			11(2)							
906.14(7)	$\langle \leq 3 \rangle$								16(8)		

Energy levels and branching ratios [97Si09]. Part 3

 **$^{100}_{43}\text{Tc}$** 

$E^*$ [keV]	$J^\pi$	Branching ratios in percentage								
		$E_f^*:$ $J_f^\pi:$	424.4	440.4 $\langle 7 \rangle^+$	454.2 $\langle 4,5 \rangle^+$	457.1 $\langle 7 \rangle^+$	461.1 $\langle 5 \rangle^+$	483.9 $\langle \leq 3 \rangle$	493.68 $\langle 4,5 \rangle^+$	500.1 544.9 $\langle 6 \rangle^-$
500.24(3)	$\langle 3-5 \rangle^-$		0.17(4)							
539.69(4)	$\langle 3^- - 5^- \rangle$						0.4(1)		16	
545.04(4)	$\langle 6 \rangle^-$						0.8(2)			
552.34(4)	$4^+, 5^+$		8(2)				9(2)			
580.47(4)	$\langle 3-5 \rangle^+$						0.7(2)			
608.7(1)	$\langle 7 \rangle^-$			12(2)						81(2)
639.92(4)	$\langle 3 \rangle^+$				10(1)				2.6(7)	2.1(5)
680.23(7)	$\langle 4-6 \rangle^-$									89(12)
707.8(2)	$\langle 8 \rangle^-$			5.7(7)		6.7(13)				
710.8(2)	$\langle 8 \rangle^+$			49(4)		51(9)				
758.8(4)						100				
906.14(7)	$\langle \leq 3 \rangle$							16(5)		
1074.6(3)	$\langle 8^- \rangle$			71.4(143)		28.6(107)				
1284.6(3)	$\langle 9 \rangle^+$					[100]				

Energy levels and branching ratios [97Si09]. Part 4

 **$^{100}_{43}\text{Tc}$** 

$E^*$	$J^\pi$	Branching ratios in percentage									
[keV]		$E_f^*:$ $J_f^\pi:$	608.7 $\langle 7 \rangle^-$	707.8 $\langle 8 \rangle^-$	710.8 $\langle 8 \rangle^+$	777.9 $\langle 9 \rangle^-$	1154.9 $\langle 10 \rangle^-$	1284.6 $\langle 9 \rangle^+$	1406.6 $\langle 11 \rangle^-$	1720.9 $\langle 10^+ \rangle$	1840.2 $\langle 12 \rangle^-$
707.8(2)	$\langle 8 \rangle^-$		88(3)								
777.9(3)	$\langle 9 \rangle^-$			100							
1154.9(3)	$\langle 10 \rangle^-$					100					
1406.6(3)	$\langle 11 \rangle^-$					47.1(19)	52.9(34)				
1581.9(4)	$\langle 11^- \rangle$					100					
1720.9(4)	$\langle 10^+ \rangle$				100						
1840.2(4)	$\langle 12 \rangle^-$						30.6(59)		69.4(47)		
2175.5(4)	$\langle 11^+ \rangle$							100			
2238.4(4)	$\langle 13 \rangle^-$								57.9(42)		42.1(53)
2693.3(4)	$\langle 14^- \rangle$										30.6(82)

Energy levels and branching ratios [97Si09]. Part 5

 **$^{100}_{43}\text{Tc}$** 

$E^*$ [keV]	$J^\pi$	Branching ratios in percentage		
		$E_f^*:$ $J_f^\pi:$	2175.5 $\langle 11^+ \rangle$	2238.4 $\langle 13 \rangle^-$
2693.3(4)	$\langle 14^- \rangle$			69.4(61)
3075.7(6)	$\langle 13^+ \rangle$		100	

Energy levels and branching ratios [98Bl03].

 **$^{101}_{43}\text{Tc}$** 

$E^*$	$2J^\pi$	$L$	$S_N$	$T_{1/2}$ or	Ref.	Branching ratios in percentage					
[keV]			$(\tau, d)$	$\Gamma_{\text{cm}}$		$\frac{E_f^*}{2J_f^\pi}$ :	0.0 9 <sup>+</sup>	9.32 7 <sup>+</sup>	15.6 5 <sup>+</sup>	207.5 1 <sup>-</sup>	288.4 3 <sup>-</sup>
0.0	9 <sup>+</sup>	4	0.55	14.22(1) m	75Ch23						
9.32(2)	7 <sup>+</sup>			14.3(3) ns			100				
15.601(13)	5 <sup>+</sup>			26.8(6) ns			0.25	100			
207.53(4)	1 <sup>-</sup>	1	0.41	636(8) $\mu s$	75Ch23				100		
288.5(1)	3 <sup>-</sup>	1	0.13,0.31*		75Ch23					100	
394.9(2)	5 <sup>-</sup>	3	0.089		75Ch23				100		
500.5(1)	5 <sup>-</sup>							12(2)			88(4)
515.3(1)	5 <sup>+</sup>	2	0.05,9,1**		75Ch23			89(4)	11(1)		
520.6(2)									100		
533.50(10)	7 <sup>+</sup>						70(3)	30(2)			
589.9(3)	11 <sup>+</sup>						100				
606.5(1)	1 <sup>+</sup> ,3 <sup>+</sup>								95(5)	5.2(5)	
616.3(1)	3 <sup>-</sup>	1	0.01,0.02*		75Ch23			10(2)		78(4)	10.3(5)
618.8(11)	7 <sup>-</sup>										17
622.1(2)	$\langle 1^-, 3^- \rangle$										100
642.2(3)	13 <sup>+</sup>						100				
669.9(6)	5 <sup>-</sup>	3	0.076		75Ch23			36(3)			49(2)
676.47(9)	5 <sup>-</sup>									77	
711.24(6)	3 <sup>+</sup> ,5 <sup>+</sup>							3.6(3)	69(6)		
742.3(2)								72(7)			
777.5(13)	7 <sup>-</sup>										
884.6(11)	9 <sup>-</sup>										
886.73(6)			x		75Ch23		4.0(5)	59(5)	31(4)		
911.5(4)											
947.0(11)	11 <sup>-</sup>										
980.44(15)	3 <sup>-</sup> ,5 <sup>-</sup>										
1028.12(5)	$\langle 3^+ \rangle$							4(1)	80(5)		1.9(4)
1034.0(15)	5 <sup>-</sup> , $\langle 7^- \rangle$										
1042.5(12)	9 <sup>-</sup>										
1045(10)	1 <sup>-</sup> ,3 <sup>-</sup>	1	0.01,0.02*		75Ch23						
1103.7(2)										30(3)	25(2)
1122.1(2)											
1170.9(13)	11 <sup>-</sup>										
1174.97(13)											
1188.1(2)	1 <sup>-</sup> ,3 <sup>-</sup>										
1191.37(14)	5 <sup>-</sup> ,7 <sup>-</sup>	1	0.02,0.05*		75Ch23						
1232.2(3)											60(4)
1249.53(11)											
1264.6(12)	13 <sup>+</sup>										
1270.88(11)											
1280(10)	3 <sup>+</sup> ,5 <sup>+</sup>	2	0.01,0.03**		75Ch23						
1295.09(13)	9 <sup>+</sup> ,11 <sup>+</sup>										
1319.57(6)	3 <sup>+</sup>	2	0.01,0.03**		75Ch23				34(2)		
1322.9(2)	5 <sup>+</sup> -9 <sup>+</sup>										
1332.2(5)	$\langle 15^+ \rangle$										

(continued)

 **$^{101}_{43}\text{Tc}$** 

$E^*$ [keV]	$2J^\pi$	$L$	$S_N$ ( $\tau, d$ )	$T_{1/2}$ or $\Gamma_{\text{cm}}$	Ref.	Branching ratios in percentage					
						$E^*_f$ : $2J^\pi_f$ :	0.0 9 <sup>+</sup>	9.32 7 <sup>+</sup>	15.6 5 <sup>+</sup>	207.5 1 <sup>-</sup>	288.4 3 <sup>-</sup>
1400.0(4)	$\langle 17^+ \rangle$				00Fo13						
1420.4(3)	$7^- - 11^-$										
1421.7(3)	$7^- - 11^-$										
1429(10)	$3^+, 5^+$	2	0.07, 0.1**		75Ch23						
1441.85(13)											
1477.9(3)	$7^-$										
1490(10)	$3, 5^+$	2	0.04, 0.1**		75Ch23						
1498.7(13)	$13^-$										
1500.2(12)	$\langle 15^- \rangle$										
1520.97(14)											
1534.7(11)	$9^+, 13^+$										
1558.79(11)											
1564.89(12)											
1578(10)	$3, 5^+$	2	0.06, 0.1**		75Ch23						
1579.40(13)											
1594.73(10)							1.8(8)				
1599.1(1)								48(2)	14(1)		10(6)
1614.8(1)							2.8(3)	2.2(3)	85(4)		
1617.8(2)	$1^+$	0	0.053		75Ch23						
1644.3(2)											
1678.0(2)									91(3)		
1703(10)	$3^+, 5^+$	2	0.06, 0.1**		75Ch23						
1775.4(2)									50(2)		
1806.45(8)	$1^+, 3^+$										6.6(5)
1808.5(3)											38(5)
1836.5(6)											
1844.00(14)											
1892.5(10)											
1897.91(12)	$1^+, 3^+$							1.7(3)	3.3(2)		
1928.79(12)											
1962.37(5)	$1^+, 3^+$								0.56(4)	2.6(1)	11.7(5)
2001.3(2)											22(1)
2047.76(6)	$1^+, 3^+$								32(1)	6.8(4)	
2056.8(1)	$\langle 1^+, 3^+ \rangle$							3.3(2)	78(2)		5.1(3)
2129.85(12)	$\langle 1^+, 3^+ \rangle$								26(1)		
2171.0(14)	$[19^+]$				00Fo13						
2174.0(13)											
2218.4(4)	$\langle 1^+, 3^+ \rangle$										
2237.9(2)	$\langle 1^+, 3^+ \rangle$										
2271.7(7)	$\langle 21^+ \rangle$										
2401.1(7)	$\langle 21^+ \rangle$										
2442.3(2)	$\langle 1^+, 3^+ \rangle$										
2557.9(3)	$\langle 1^+, 3^+ \rangle$										
2573.6(5)	$\langle 1^+, 3^+ \rangle$										
2594***					00Fo13						

(continued)

**<sup>101</sup>Tc**  
**43**

$E^*$	$2J^\pi$	$L$	$S_N$	$T_{1/2}$ or	Ref.	Branching ratios in percentage					
[keV]			( $\tau, d$ )	$\Gamma_{\text{cm}}$		$E_f^*:$ $2J_f^\pi:$	0.0 9 <sup>+</sup>	9.32 7 <sup>+</sup>	15.6 5 <sup>+</sup>	207.5 1 <sup>-</sup>	288.4 3 <sup>-</sup>
2616***	$\langle 23^+ \rangle$				00Fo13						
2745***					00Fo13						
2871***	$\langle 25^+ \rangle$				00Fo13						
2918***	$\langle 23^+ \rangle$				00Fo13						
3097***	$\langle 27^+ \rangle$				00Fo13						
3136***	$\langle 25^+ \rangle$				00Fo13						
3500***	$\langle 27^+ \rangle$				00Fo13						
3688***	$\langle 29^+ \rangle$				00Fo13						
4232***	$\langle 31^+ \rangle$				00Fo13						
		75Ch23			Ref.						

Additional data on this isotope can be found in [01Ba76, 00Fo13, 97Sa01, 91De14].

\*  $C^2S$  obtained for  $J=3/2, 1/2$ , respectively.\*\*  $C^2S$  obtained for  $J=5/2, 3/2$ , respectively.

\*\*\* Additional from [00Fo13].

Energy levels and branching ratios [98Bl03]. Part 2

**<sup>101</sup>Tc**  
**43**

$E^*$	$2J^\pi$	Branching ratios in percentage										
[keV]		$E_f^*:$ $2J_f^\pi:$	394.9 5 <sup>-</sup>	500.4 5 <sup>-</sup>	515.3 5 <sup>+</sup>	520.6	533.50 7 <sup>+</sup>	589.9 11 <sup>+</sup>	606.50 1 <sup>+</sup> ,3 <sup>+</sup>	616.25 3 <sup>-</sup>	618.8 7 <sup>-</sup>	622.1 (1 <sup>-</sup> ,3 <sup>-</sup> )
616.3(1)	3 <sup>-</sup>			1.6(2)								
618.8(11)	7 <sup>-</sup>		69(7)	14(3)								
669.9(6)	5 <sup>-</sup>		14.7(2)									
676.47(9)	5 <sup>-</sup>		13.4	10.0								
711.24(6)	3 <sup>+</sup> ,5 <sup>+</sup>				28(1)							
742.3(2)						28(3)						
777.5(13)	7 <sup>-</sup>		38	62								
884.6(11)	9 <sup>-</sup>		53(8)								47(8)	
886.73(6)					3.2(7)		2.4(2)					
911.5(4)							100					
947.0(11)	11 <sup>-</sup>										100	
980.44(15)	3 <sup>-</sup> ,5 <sup>-</sup>		10								9	15
1028.12(5)	(3 <sup>+</sup> )				10.9(6)				3.5(4)			
1034.0(15)	5 <sup>-</sup> , (7 <sup>-</sup> )		21.6	16.2							36	
1042.5(12)	9 <sup>-</sup>			32.7							56	
1103.7(2)				14(1)		13(1)			19(2)			
1122.1(2)									87(7)			
1174.97(13)				100								
1188.1(2)	1 <sup>-</sup> ,3 <sup>-</sup>									100		
1232.2(3)									40(4)			
1249.53(11)				55							45.4	
1264.6(12)	13 <sup>+</sup>						55					



(continued)

 **$^{101}_{43}\text{Tc}$** 

$E^*$ [keV]	$2J^\pi$	Branching ratios in percentage										
		$E_f^*$ : $2J_f^\pi$ :	394.9 5 <sup>-</sup>	500.4 5 <sup>-</sup>	515.3 5 <sup>+</sup>	520.6	533.50 7 <sup>+</sup>	589.9 11 <sup>+</sup>	606.50 1 <sup>+</sup> ,3 <sup>+</sup>	616.25 3 <sup>-</sup>	618.8 7 <sup>-</sup>	622.1 ⟨1 <sup>-</sup> ,3 <sup>-</sup> ⟩
1319.57(6)	3 <sup>+</sup>				12(1)				41(3)			
1322.9(2)	5 <sup>+</sup> -9 <sup>+</sup>						100					
1332.2(5)	⟨15 <sup>+</sup> ⟩							37(6)				
1421.7(3)	7 <sup>-</sup> -11 <sup>-</sup>								80			
1477.9(3)	7 <sup>-</sup>			100								
1534.7(11)	9 <sup>+</sup> ,13 <sup>+</sup>							100				
1558.79(11)		60									40.0	
1564.89(12)					100							
1594.73(10)									11(2)			
1599.1(1)							27(5)					
1617.8(2)	1 <sup>+</sup>								26(3)			
1644.3(2)		28(2)										
1775.4(2)		5.73(6)			7.4(7)				11.0(8)			
1806.45(8)	1 <sup>+</sup> ,3 <sup>+</sup>				3.5(2)				55(2)			5.5(4)
1808.5(3)				15(2)	36(2)							
1892.5(10)									100			
1897.91(12)	1 <sup>+</sup> ,3 <sup>+</sup>				44(1)							
1928.79(12)					100							
1962.37(5)	1 <sup>+</sup> ,3 <sup>+</sup>								11.9(5)	6.6(3)		
2001.3(2)					10.8(6)				67(3)			
2047.76(6)	1 <sup>+</sup> ,3 <sup>+</sup>	0.37(3)			30(1)		0.86(5)		0.73(4)	1.76(6)		
2056.8(1)	⟨1 <sup>+</sup> ,3 <sup>+</sup> ⟩											3.0(2)
2129.85(12)	⟨1 <sup>+</sup> ,3 <sup>+</sup> ⟩			2.2(2)		4.1(3)			12.8(6)			
2237.9(2)	⟨1 <sup>+</sup> ,3 <sup>+</sup> ⟩				4(1)							
2442.3(2)	⟨1 <sup>+</sup> ,3 <sup>+</sup> ⟩					8.5(12)						
2557.9(3)	⟨1 <sup>+</sup> ,3 <sup>+</sup> ⟩						8(1)			6.3(6)		

Energy levels and branching ratios [98Bl03]. Part 3

 **$^{101}_{43}\text{Tc}$** 

$E^*$ [keV]	$2J^\pi$	Branching ratios in percentage										
		$E_f^*$ : $2J_f^\pi$ :	642.2 13 <sup>+</sup>	669.9 5 <sup>-</sup>	676.47 5 <sup>-</sup>	711.24 3 <sup>+</sup> ,5 <sup>+</sup>	742.3	777.5 7 <sup>-</sup>	884.6 9 <sup>-</sup>	886.73	911.5	947.0 11 <sup>-</sup>
980.44(15)	3 <sup>-</sup> ,5 <sup>-</sup>			66								
1034.0(15)	5 <sup>-</sup> ,⟨7 <sup>-</sup> ⟩			17.6				8.1				
1042.5(12)	9 <sup>-</sup>							11.5				
1122.1(2)				12.7(7)								
1170.9(13)	11 <sup>-</sup>								100			
1191.37(14)	5 <sup>-</sup> ,7 <sup>-</sup>				100							
1232.2(3)				x								
1264.6(12)	13 <sup>+</sup>		44.7									
1270.88(11)					82				18.4			
1295.09(13)	9 <sup>+</sup> ,11 <sup>+</sup>		100									

(continued)

 **$^{101}_{43}\text{Tc}$** 

$E^*$	$2J^\pi$	Branching ratios in percentage										
[keV]		$E_f^*$ : $2J_f^\pi$ :	642.2 13 <sup>+</sup>	669.9 5 <sup>-</sup>	676.47 5 <sup>-</sup>	711.24 3 <sup>+</sup> ,5 <sup>+</sup>	742.3	777.5 7 <sup>-</sup>	884.6 9 <sup>-</sup>	886.73	911.5	947.0 11 <sup>-</sup>
1319.57(6)	3 <sup>+</sup>					13(1)						
1332.2(5)	$\langle 15^+ \rangle$		63(10)									
1400.0(4)	$\langle 17^+ \rangle$		100									
1420.4(3)	7 <sup>-</sup> -11 <sup>-</sup>							40.0	60			
1441.85(13)				100								
1498.7(13)	13 <sup>-</sup>								100			
1500.2(12)	$\langle 15^- \rangle$											100
1520.97(14)					100							
1579.40(13)									100			
1594.73(10)						41(3)				4(1)		
1614.8(1)						9.8(8)						
1644.3(2)						72(7)						
1775.4(2)						13.8(7)				11.9(7)		
1836.5(6)			100									
1897.91(12)	1 <sup>+</sup> ,3 <sup>+</sup>					40(1)						
1962.37(5)	1 <sup>+</sup> ,3 <sup>+</sup>					33(1)						
2047.76(6)	1 <sup>+</sup> ,3 <sup>+</sup>			1.16(6)		0.74(4)				19.5(6)		
2056.8(1)	$\langle 1^+,3^+ \rangle$						7.7(4)					
2129.85(12)	$\langle 1^+,3^+ \rangle$					41(2)	3.3(2)				2.6(3)	
2218.4(4)	$\langle 1^+,3^+ \rangle$			41(3)		14(4)						
2237.9(2)	$\langle 1^+,3^+ \rangle$					13(1)				6.7(8)		
2557.9(3)	$\langle 1^+,3^+ \rangle$										9(1)	

Energy levels and branching ratios [98Bl03]. Part 4

 **$^{101}_{43}\text{Tc}$** 

$E^*$	$2J^\pi$	Branching ratios in percentage										
[keV]		$E_f^*$ : $2J_f^\pi$ :	1028.12 $\langle 3^+ \rangle$	1103.7	1122.1	1170.9 11 <sup>-</sup>	1188.1 1 <sup>-</sup> ,3 <sup>-</sup>	1232.2	1319.57 3 <sup>+</sup>	1400.0 $\langle 17^+ \rangle$	1498.7 13 <sup>-</sup>	1500.2 $\langle 15^- \rangle$
1421.7(3)	7 <sup>-</sup> -11 <sup>-</sup>		19.5									
1594.73(10)			43(3)									
1617.8(2)	1 <sup>+</sup>		65(15)	9.3(8)								
1678.0(2)			3.3(7)						5.7(9)			
1806.45(8)	1 <sup>+</sup> ,3 <sup>+</sup>		29.7(12)									
1808.5(3)					11.4(9)							
1844.00(14)						100						
1897.91(12)	1 <sup>+</sup> ,3 <sup>+</sup>		11.2(7)									
1962.37(5)	1 <sup>+</sup> ,3 <sup>+</sup>		29(2)	0.9(1)					0.7(1)			
2047.76(6)	1 <sup>+</sup> ,3 <sup>+</sup>		1.87(8)						0.48(4)			
2056.8(1)	$\langle 1^+,3^+ \rangle$								1.0(2)			
2129.85(12)	$\langle 1^+,3^+ \rangle$				7.9(7)							
2171.0(14)	[19 <sup>+</sup> ]										100	
2174.0(13)												100

(continued)

 **$^{101}_{43}\text{Tc}$** 

$E^*$	$2J^\pi$	Branching ratios in percentage										
[keV]		$E_f^*$ :	1028.12	1103.7	1122.1	1170.9	1188.1	1232.2	1319.57	1400.0	1498.7	1500.2
		$2J_f^\pi$ :	$\langle 3^+ \rangle$			$11^-$	$1^-, 3^-$		$3^+$	$\langle 17^+ \rangle$	$13^-$	$\langle 15^- \rangle$
2218.4(4)	$\langle 1^+, 3^+ \rangle$						19(2)					
2237.9(2)	$\langle 1^+, 3^+ \rangle$		18(1)				48(2)					
2271.7(7)	$\langle 21^+ \rangle$									100		
2401.1(7)	$\langle 21^+ \rangle$									100		
2442.3(2)	$\langle 1^+, 3^+ \rangle$		79(4)									
2557.9(3)	$\langle 1^+, 3^+ \rangle$		17(6)					32(4)				
2573.6(5)	$\langle 1^+, 3^+ \rangle$				21(2)							

Energy levels and branching ratios [98Bl03]. Part 5

 **$^{101}_{43}\text{Tc}$** 

$E^*$ [keV]	$2J^\pi$	Branching ratios in percentage									
		$E_f^*:$ $2J_f^\pi:$	1594.73	1599.1	1614.8	1644.3	1678.0	1775.4	1897.91 $1^+, 3^+$	1962.37 $1^+, 3^+$	2047.76 $1^+, 3^+$
1962.37(5)	$1^+, 3^+$		0.8(3)		0.7(1)	1.6(8)					
2047.76(6)	$1^+, 3^+$			3.3(1)			0.57(7)				
2056.8(1)	$\langle 1^+, 3^+ \rangle$				1.9(2)						
2218.4(4)	$\langle 1^+, 3^+ \rangle$						26(3)				
2237.9(2)	$\langle 1^+, 3^+ \rangle$						9.5(10)				
2442.3(2)	$\langle 1^+, 3^+ \rangle$		12.0(14)								
2557.9(3)	$\langle 1^+, 3^+ \rangle$										28(4)
2573.6(5)	$\langle 1^+, 3^+ \rangle$							22(3)	15(2)	43(6)	

Energy levels and branching ratios [98De15].

 **$^{102}_{43}\text{Tc}$** 

$E^*$	$J^\pi$	$L$	$T_{1/2}$ or	Ref.	Branching ratios in percentage				
[keV]		$(\tau, p)$	$\Gamma_{\text{cm}}$		$E^*_\text{f}:$ $J^\pi_\text{f}:$	0 1 <sup>+</sup>	211.66 ⟨0 <sup>+</sup> , 2 <sup>+</sup> ⟩	223.83 ⟨1 <sup>+</sup> ⟩	266.63 ⟨0 <sup>+</sup> , 2 <sup>+</sup> ⟩
0	1 <sup>+</sup>	0+2	5.28(15) s	82De03					
0.0+X	⟨4,5⟩		4.35(7) m						
20									
34									
174									
195									
211.66(3)	⟨0 <sup>+</sup> , 2 <sup>+</sup> ⟩					100			
223.83(4)	⟨1 <sup>+</sup> ⟩					100			
248									
266.63(6)	⟨0 <sup>+</sup> , 2 <sup>+</sup> ⟩					77(7)		23(5)	
298	⟨3 <sup>+</sup> ⟩	2+4		82De03					
315									

(continued)

 **$^{102}_{43}\text{Tc}$** 

$E^*$ [keV]	$J^\pi$	$L$ ( $\tau, p$ )	$T_{1/2}$ or $\Gamma_{\text{cm}}$	Ref.	Branching ratios in percentage				
					$E_f^*$ : $J_f^\pi$ :	0 1 <sup>+</sup>	211.66 $\langle 0^+, 2^+ \rangle$	223.83 $\langle 1^+ \rangle$	266.63 $\langle 0^+, 2^+ \rangle$
359.86(4)	1 <sup>+</sup>	0+2		82De03		6.1(17)	86(4)	5.3(3)	2.3(3)
393									
416	$\langle 2^- \rangle$	1+3		82De03					
443									
472									
509									
526									
573									
618									
637									
689									
727									
868									
Ref.									

Energy levels and branching ratios [01De37].

 **$^{103}_{43}\text{Tc}$** 

$E^*$	$2J^\pi$	$L$	$C^2S$	$C^2S$	$T_{1/2}$ or	Ref.	Branching ratios in percentage					
[keV]			(d, $\tau$ )	(t, $\alpha$ )	$\Gamma_{\text{cm}}$		$E_{\text{f}}^*$ : $2J_{\text{f}}^\pi$ :	0.0 5 <sup>+</sup>	45.9 7 <sup>+</sup>	83.4 3 <sup>-</sup>	139 9 <sup>+</sup>	178 5 <sup>-</sup>
0.0	5 <sup>+</sup>	2	0.11	$\langle 0.11 \rangle$	54.2(8) s	01De37						
45.86(11)	7 <sup>+</sup>	4	0.49	$\langle 0.52 \rangle$		01De37		100				
83.38(16)	3 <sup>-</sup>	1	1.5	1.6		01De37		100				
138.9(5)	9 <sup>+</sup>	4	4.6	4.8		01De37			100			
178.3(8)	5 <sup>-</sup>	3	2.6	3.2		01De37				100		
259.0(6)	5 <sup>-</sup>	3	0.65	0.73		01De37		18.2(18)		82(21)		
338(3)	1 <sup>-</sup> ,3 <sup>-</sup>	1				01De37						
383.2(3)	$\langle 3,5,7^- \rangle$							9(4)		73(8)		18(8)
469.77(11)	$\langle 3^+,5^+ \rangle$	$\langle 2 \rangle$				01De37		18(1)	79(8)		2.9(3)	
487.1(4)	1 <sup>-</sup>	1	0.70	1.5		83De20		6.5(15)		94(32)		
519.22(20)	3 <sup>-</sup>	1	0.083			83De20		98(8)		2.4(24)		
620.76(17)				0.34				50(4)	15(2)			
686.6(7)				incl							100	
687.60(15)	$\langle 3^+,5,7 \rangle$							54(5)	11(1)			
691.59(16)	$\langle 1^+,3,5^- \rangle$							24(2)		37(3)		
779(5)	3 <sup>-</sup>	1	0.32			83De20						
859(5)	$\langle 7^+ \rangle$	$\langle 4 \rangle$	0.71	0.40		83De20						
887.2(4)								35(4)				
918(5)	7 <sup>+</sup> ,9 <sup>+</sup>	4	0.63,0.27			83De20						
1085.98(15)								42(7)	55(8)			
1097(7)	3 <sup>-</sup>	1	0.62	0.68		01De37						
1150(7)	$\langle 3^- \rangle$	$\langle 1 \rangle$	0.12	[0.2]		83De20						

(continued)

**<sup>103</sup>Tc**  
**43**

$E^*$	$2J^\pi$	$L$	$C^2S$	$C^2S$	$T_{1/2}$ or	Ref.	Branching ratios in percentage					
[keV]			(d, $\tau$ )	(t, $\alpha$ )	$\Gamma_{\text{cm}}$		$E_{\text{f}}^*$ : $2J_{\text{f}}^\pi$ :	0.0 5 <sup>+</sup>	45.9 7 <sup>+</sup>	83.4 3 <sup>-</sup>	139 9 <sup>+</sup>	178 5 <sup>-</sup>
1219(7)	1 <sup>-</sup>	1	0.13	[0.4]		83De20						
1219.82(20)	$\langle 5^+, 7, 9^+ \rangle$							2(1)	21(2)		8(2)	
1256(7)	$\langle 5^-, 7^- \rangle$	$\langle 3 \rangle$	0.99,0.55			83De20						
1310(7)	5 <sup>-</sup> ,7 <sup>-</sup>	3	0.30,0.17			83De20						
1494.49(21)								21(2)	79(6)			
1591												
1621.1(6)												
1692(10)												
1727(7)	5 <sup>-</sup> ,7 <sup>-</sup>	3	0.57,0.32			83De20						
1766(7)	1 <sup>-</sup> ,3 <sup>-</sup>	1	0.23,0.16			83De20						
1817(7)	$\langle 5^-, 7^- \rangle$	$\langle 3 \rangle$	0.38,0.21			83De20						
			83De20	81Fl02		Ref.						

Additional data on this isotope can be found in [01Ba76, 01Ba39].

Energy levels and branching ratios [01De37]. Part 2

**<sup>103</sup>Tc**  
**43**

$E^*$	$2J^\pi$	Branching ratios in percentage						
[keV]		$E_f^*$ : $2J_f^\pi$ :	259.0 5 <sup>-</sup>	383.2	469.77 $\langle 3^+, 5^+ \rangle$	487.1 1 <sup>-</sup>	519.22 3 <sup>-</sup>	620.76
620.76(17)					35(4)			
687.60(15)	$\langle 3^+, 5, 7 \rangle$		0.6(2)		27(2)	7(2)		
691.59(16)	$\langle 1^+, 3, 5^- \rangle$			6.5(4)		18(2)	15(4)	
887.2(4)					65(9)			
1085.98(15)					3.7(7)			
1219.82(20)	$\langle 5^+, 7, 9^+ \rangle$				40(3)			29(2)
1621.1(6)					100			