Energy levels and branching ratios [02He09].

$^{87}_{41}$Nb

E^* [keV]	$2J^\pi$	$T_{1/2}$ or Γ_{cm}	Branching ratios in percentage						
		E_f^*:	0.0	3.84	200.2	266.81	334.00	784.48	839.81
		$2J_f^\pi$:	$\langle 1^- \rangle$	$\langle 9^+ \rangle$	$\langle 3^- \rangle$	$\langle 7^+ \rangle$	$\langle 5^- \rangle$	$\langle 13^+ \rangle$	$\langle 7^- \rangle$
0.0	$\langle 1^- \rangle$	3.75(9) m							
3.84(14)	$\langle 9^+ \rangle$	2.6(1) m							
200.2(4)	$\langle 3^- \rangle$		100						
266.81(15)	$\langle 7^+ \rangle$			100					
334.00(10)	$\langle 5^- \rangle$	28(2) ns	93(3)			7.0(9)			
400.8	$\langle 9,7,5 \rangle^+$			86(12)		14(7)			
784.48(15)	$\langle 13^+ \rangle$	1.8(3) ps		100					
839.81(13)	$\langle 7^- \rangle$			x	x	<31	100		
962.87(16)	$\langle 13^+ \rangle$			100					
1051.39(15)	$\langle 11^+ \rangle$			x		80(3)		20(3)	
1168.69(13)	$\langle 9^- \rangle$			x			x		
1349.29(16)									
1603.58(14)	$\langle 11^- \rangle$								100
1737.04(16)	$\langle 17^+ \rangle$	0.7(2) ps						100	
1954.5(1)	$\langle 15^+ \rangle$							22(2)	
1976.7(15)	$\langle 13^- \rangle$								
2114.3(8)	$\langle 15^+ \rangle$								
2277.23(15)	$\langle 15^- \rangle$							12.7(10)	
2412.30(15)	$\langle 17^- \rangle$	58(5) ps							
2490.73(18)	$\langle 21^+ \rangle$	14(1) ps							
2694.27(16)	$\langle 17^- \rangle$								
2736.71(16)									
2860.96(18)	$\langle 21^+ \rangle$	0.8(5) ps							
2905.53(15)	$\langle 19^- \rangle$								
2988.11(16)	$\langle 19^- \rangle$								
3218.84(16)	$\langle 21^- \rangle$	1.6(3) ps							
3219.71(19)	$\langle 23^+ \rangle$	0.6(1) ps							
3445.97(19)	$\langle 25^+ \rangle$	1.7(1) ps							
3741.78(19)	$\langle 25^+ \rangle$								
3868.95(21)	$\langle 25^+ \rangle$								
4130.66(19)	$\langle 25^- \rangle$	2.1(3) ps							
4285.1(5)	$\langle 23^- \rangle$								
4300.90(19)	$\langle 27^+ \rangle$								
4591.69(20)	$\langle 29^+ \rangle$								
4939.56(21)	$\langle 29^+ \rangle$								
5009.66(21)	$\langle 29^- \rangle$	3.5(3) ps							
5301.9(8)	$\langle 27^- \rangle$								
5555.0	$\langle 31^+ \rangle$								
5592.37(23)	$\langle 31^- \rangle$								
5620.15(21)	$\langle 31^+ \rangle$								
5777.0(9)	$\langle 29^- \rangle$								
5841.09(22)	$\langle 33^+ \rangle$								
6039.15(23)	$\langle 33^- \rangle$								
6298.4(10)	$\langle 31^- \rangle$								
6393.1(3)	$\langle 33^- \rangle$								

(continued) **$^{87}_{41}$Nb**

E^*	$2J^\pi$	$T_{1/2}$ or	Branching ratios in percentage							
			E_f^*:	0.0	3.84	200.2	266.81	334.00	784.48	839.81
[keV]		Γ_{cm}	$2J_f^\pi$:	$\langle 1^- \rangle$	$\langle 9^+ \rangle$	$\langle 3^- \rangle$	$\langle 7^+ \rangle$	$\langle 5^- \rangle$	$\langle 13^+ \rangle$	$\langle 7^- \rangle$
6744.71(23)	$\langle 35^- \rangle$									
6810.39(23)	$\langle 35^+ \rangle$									
6973.3(13)	$\langle 33^- \rangle$									
7139.74(23)	$\langle 37^+ \rangle$									
7153.4	$\langle 37^- \rangle$									
7225.59(24)	$\langle 37^- \rangle$									
7619.3(3)	$\langle 37^+ \rangle$									
8062.2(4)	$\langle 39^+ \rangle$									
8254.1(7)	$\langle 39^- \rangle$									
8365.4(17)	$\langle 37^- \rangle$									
8432.5(4)	$\langle 41^+ \rangle$									
8535.8(8)	$\langle 41^- \rangle$									
9814.1(22)	$\langle 43^- \rangle$									
9887(3)	$\langle 41^- \rangle$									
9997.5(11)	$\langle 45^+ \rangle$									
10236.8(22)	$\langle 45^- \rangle$									
11948.6(15)	$\langle 49^+ \rangle$									
12015(3)	$\langle 49^- \rangle$									
13877(4)	$\langle 53^- \rangle$									
0+X	$2J$									
1250+X	$2J$+4									
2679+X	$2J$+8									
4251+X	$2J$+12									
5970+X	$2J$+16									
7849+X	$2J$+20									
9894+X	$2J$+24									
12110+X	$2J$+28									
14505+X	$2J$+32									
17090+X	$2J$+36									
0+Y	$2J_2$									
1492+Y	$2J$+4									
1870+Y	$2J_2$+4									
3134+Y	$2J_2$+8									
3378+Y	$2J_2$+8									
4924+Y	$2J_2$+12									
5035+Y	$2J_2$+12									
6795+Y	$2J_2$+16									
6916+Y	$2J_2$+16									
8759+Y	$2J_2$+20									
8994+Y	$2J_2$+20									
10876+Y	$2J_2$+24									
11170+Y	$2J_2$+24									
13150+Y	$2J_2$+28									
13438+Y	$2J_2$+28									
15582+Y	$2J_2$+32									

(continued) **$^{87}_{41}$Nb**

E^*	$2J^\pi$	$T_{1/2}$ or	Branching ratios in percentage							
			E_f^*:	0.0	3.84	200.2	266.81	334.00	784.48	839.81
[keV]		Γ_{cm}	$2J_f^\pi$:	$\langle 1^- \rangle$	$\langle 9^+ \rangle$	$\langle 3^- \rangle$	$\langle 7^+ \rangle$	$\langle 5^- \rangle$	$\langle 13^+ \rangle$	$\langle 7^- \rangle$
15831+Y	$2J_2$+32									
18169+Y	$2J_2$+36									
18374+Y	$2J_2$+36									
0+Z	$2J_4$									
1697+Z	$2J_4$+4									
3563+Z	$2J_4$+8									
5604+Z	$2J_4$+12									
7815+Z	$2J_4$+16									
10199+Z	$2J_4$+20									
12736+Z	$2J_4$+24									

Additional data on this isotope can be found in [03Pa09, 95Ka06, 91Mi15].

Energy levels and branching ratios [02He09]. Part 2 **$^{87}_{41}$Nb**

E^*	$2J^\pi$	Branching ratios in percentage										
		E_f^*:	962.87	1051.39	1168.69	1349.29	1603.58	1737.04	1954.5	1976.7	2114.3	2277.23
[keV]		$2J_f^\pi$:	$\langle 13^+ \rangle$	$\langle 11^+ \rangle$	$\langle 9^- \rangle$		$\langle 11^- \rangle$	$\langle 17^+ \rangle$	$\langle 15^+ \rangle$	$\langle 13^- \rangle$	$\langle 15^+ \rangle$	$\langle 15^- \rangle$
1349.29(16)				100								
1603.58(14)	$\langle 11^- \rangle$				<20							
1954.5(1)	$\langle 15^+ \rangle$		20(2)	58(27)								
1976.7(15)	$\langle 13^- \rangle$				100							
2114.3(8)	$\langle 15^+ \rangle$			100								
2277.23(15)	$\langle 15^- \rangle$						87(3)			<10		
2412.30(15)	$\langle 17^- \rangle$					8		8	35(2)	8	x	41(4)
2490.73(18)	$\langle 21^+ \rangle$							100				
2694.27(16)	$\langle 17^- \rangle$									64(3)		x
2860.96(18)	$\langle 21^+ \rangle$							x				
2905.53(15)	$\langle 19^- \rangle$											58(4)

Energy levels and branching ratios [02He09]. Part 3 **$^{87}_{41}$Nb**

E^*	$2J^\pi$	Branching ratios in percentage										
		E_f^*:	2412.30	2490.73	2694.27	2736.71	2860.96	2905.53	2988.11	3218.84	3219.71	3445.97
[keV]		$2J_f^\pi$:	$\langle 17^- \rangle$	$\langle 21^+ \rangle$	$\langle 17^- \rangle$		$\langle 21^+ \rangle$	$\langle 19^- \rangle$	$\langle 19^- \rangle$	$\langle 21^- \rangle$	$\langle 23^+ \rangle$	$\langle 25^+ \rangle$
2694.27(16)	$\langle 17^- \rangle$		36(7)									
2736.71(16)			100									
2860.96(18)	$\langle 21^+ \rangle$			x								
2905.53(15)	$\langle 19^- \rangle$		23(2)	x		19(4)						

(continued) $^{87}_{41}$Nb

E^*	$2J^\pi$	Branching ratios in percentage									
	E_f^*:	2412.30	2490.73	2694.27	2736.71	2860.96	2905.53	2988.11	3218.84	3219.71	3445.97
[keV]	$2J_f^\pi$:	$\langle 17^- \rangle$	$\langle 21^+ \rangle$	$\langle 17^- \rangle$		$\langle 21^+ \rangle$	$\langle 19^- \rangle$	$\langle 19^- \rangle$	$\langle 21^- \rangle$	$\langle 23^+ \rangle$	$\langle 25^+ \rangle$
2988.11(16)	$\langle 19^- \rangle$	x		x							
3218.84(16)	$\langle 21^- \rangle$	80(3)					12.8(6)	7.3(6)			
3219.71(19)	$\langle 23^+ \rangle$		100			<11					
3445.97(19)	$\langle 25^+ \rangle$		55(4)							45(4)	
3741.78(19)	$\langle 25^+ \rangle$		18(2)			46(5)				36(3)	
3868.95(21)	$\langle 25^+ \rangle$		100								
4130.66(19)	$\langle 25^- \rangle$								100		
4285.1(5)	$\langle 23^- \rangle$								100		
4300.90(19)	$\langle 27^+ \rangle$										33(3)
4591.69(20)	$\langle 29^+ \rangle$										81(6)

Energy levels and branching ratios [02He09]. Part 4 $^{87}_{41}$Nb

E^*	$2J^\pi$	Branching ratios in percentage									
	E_f^*:	3741.78	4130.66	4285.1	4300.90	4591.69	4939.56	5009.66	5301.9	5592.37	5620.15
[keV]	$2J_f^\pi$:	$\langle 25^+ \rangle$	$\langle 25^- \rangle$	$\langle 23^- \rangle$	$\langle 27^+ \rangle$	$\langle 29^+ \rangle$	$\langle 29^+ \rangle$	$\langle 29^- \rangle$	$\langle 27^- \rangle$	$\langle 31^- \rangle$	$\langle 31^+ \rangle$
4285.1(5)	$\langle 23^- \rangle$		<37								
4300.90(19)	$\langle 27^+ \rangle$	67(5)									
4591.69(20)	$\langle 29^+ \rangle$				18.8(16)						
4939.56(21)	$\langle 29^+ \rangle$	100									
5009.66(21)	$\langle 29^- \rangle$		100								
5301.9(8)	$\langle 27^- \rangle$		x	x							
5555.0	$\langle 31^+ \rangle$				x	x					
5592.37(23)	$\langle 31^- \rangle$							100			
5620.15(21)	$\langle 31^+ \rangle$				<95	<95	100				
5777.0(9)	$\langle 29^- \rangle$								100		
5841.09(22)	$\langle 33^+ \rangle$					100					<8
6039.15(23)	$\langle 33^- \rangle$							<41		100	
6298.4(10)	$\langle 31^- \rangle$								[100]		
6393.1(3)	$\langle 33^- \rangle$									100	
6744.71(23)	$\langle 35^- \rangle$									28(2)	

Energy levels and branching ratios [02He09]. Part 5 $^{87}_{41}$Nb

E^*	$2J^\pi$	Branching ratios in percentage									
	E_f^*:	5777.0	5841.09	6039.15	6298.4	6393.1	6744.71	6810.39	6973.3	7139.74	7225.59
[keV]	$2J_f^\pi$:	$\langle 29^- \rangle$	$\langle 33^+ \rangle$	$\langle 33^- \rangle$	$\langle 31^- \rangle$	$\langle 33^- \rangle$	$\langle 35^- \rangle$	$\langle 35^+ \rangle$	$\langle 33^- \rangle$	$\langle 37^+ \rangle$	$\langle 37^- \rangle$
6298.4(10)	$\langle 31^- \rangle$	<67									
6744.71(23)	$\langle 35^- \rangle$			72(4)		<17					

(continued) **$^{87}_{41}$Nb**

E^*	$2J^\pi$	Branching ratios in percentage									
	E_f^*:	5777.0	5841.09	6039.15	6298.4	6393.1	6744.71	6810.39	6973.3	7139.74	7225.59
[keV]	$2J_f^\pi$:	$\langle 29^- \rangle$	$\langle 33^+ \rangle$	$\langle 33^- \rangle$	$\langle 31^- \rangle$	$\langle 33^- \rangle$	$\langle 35^- \rangle$	$\langle 35^+ \rangle$	$\langle 33^- \rangle$	$\langle 37^+ \rangle$	$\langle 37^- \rangle$
6810.39(23)	$\langle 35^+ \rangle$		100								
6973.3(13)	$\langle 33^- \rangle$	x			x						
7139.74(23)	$\langle 37^+ \rangle$		74					26			
7153.4	$\langle 37^- \rangle$						100				
7225.59(24)	$\langle 37^- \rangle$			<77			100				
7619.3(3)	$\langle 37^+ \rangle$		58(5)					42(4)			
8254.1(7)	$\langle 39^- \rangle$						x				x
8365.4(17)	$\langle 37^- \rangle$								100		
8432.5(4)	$\langle 41^+ \rangle$									x	
8535.8(8)	$\langle 41^- \rangle$										x

Energy levels and branching ratios [02He09]. Part 6 **$^{87}_{41}$Nb**

E^*	$2J^\pi$	Branching ratios in percentage									
	E_f^*:	7619.3	8062.2	8254.1	8365.4	8432.5	8535.8	9997.5	10236.8	12015	0+X
[keV]	$2J_f^\pi$:	$\langle 37^+ \rangle$	$\langle 39^+ \rangle$	$\langle 39^- \rangle$	$\langle 37^- \rangle$	$\langle 41^+ \rangle$	$\langle 41^- \rangle$	$\langle 45^+ \rangle$	$\langle 45^- \rangle$	$\langle 49^- \rangle$	$2J$
8062.2(4)	$\langle 39^+ \rangle$	100									
8432.5(4)	$\langle 41^+ \rangle$		x								
8535.8(8)	$\langle 41^- \rangle$			x							
9814.1(22)	$\langle 43^- \rangle$			x							
9887(3)	$\langle 41^- \rangle$				x						
9997.5(11)	$\langle 45^+ \rangle$					x					
10236.8(22)	$\langle 45^- \rangle$						x				
11948.6(15)	$\langle 49^+ \rangle$							x			
12015(3)	$\langle 49^- \rangle$								x		
13877(4)	$\langle 53^- \rangle$									x	
1250+X	$2J$+4										x

Energy levels and branching ratios [02He09]. Part 7 **$^{87}_{41}$Nb**

E^*	$2J^\pi$	Branching ratios in percentage								
	E_f^*:	1250+X	2679+X	4251+X	5970+X	7849+X	9894+X	12110+X	14505+X	0+Y
[keV]	$2J_f^\pi$:	$2J$+4	$2J$+8	$2J$+12	$2J$+16	$2J$+20	$2J$+24	$2J$+28	$2J$+32	$2J_2$
1250+X	$2J$+4	x	x	x						
2679+X	$2J$+8	x	x							
4251+X	$2J$+12		x							
5970+X	$2J$+16			x						
7849+X	$2J$+20				x					
9894+X	$2J$+24					x				

(continued) $^{87}_{41}$Nb

E^*	$2J^\pi$	Branching ratios in percentage								
	E_f^*:	1250+X	2679+X	4251+X	5970+X	7849+X	9894+X	12110+X	14505+X	0+Y
[keV]	$2J_f^\pi$:	$2J$+4	$2J$+8	$2J$+12	$2J$+16	$2J$+20	$2J$+24	$2J$+28	$2J$+32	$2J_2$
12110+X	$2J$+28						x			
14505+X	$2J$+32							x		
17090+X	$2J$+36								x	
1492+Y	$2J$+4									x

Energy levels and branching ratios [02He09]. Part 8 $^{87}_{41}$Nb

E^*	$2J^\pi$	Branching ratios in percentage								
	E_f^*:	1492+Y	1870+Y	3134+Y	3378+Y	4924+Y	5035+Y	6795+Y	6916+Y	8759+Y
[keV]	$2J_f^\pi$:	$2J$+4	$2J_2$+4	$2J_2$+8	$2J_2$+8	$2J_2$+12	$2J_2$+12	$2J_2$+16	$2J_2$+16	$2J_2$+20
3134+Y	$2J_2$+8	x								
3378+Y	$2J_2$+8		x							
4924+Y	$2J_2$+12			x						
5035+Y	$2J_2$+12				x					
6795+Y	$2J_2$+16					x	x			
6916+Y	$2J_2$+16					x	x			
8759+Y	$2J_2$+20							x		
8994+Y	$2J_2$+20								x	
10876+Y	$2J_2$+24									x

Energy levels and branching ratios [02He09]. Part 9 $^{87}_{41}$Nb

E^*	$2J^\pi$	Branching ratios in percentage								
	E_f^*:	8994+Y	10876+Y	11170+Y	13150+Y	13438+Y	15582+Y	15831+Y	0+Z	1697+Z
[keV]	$2J_f^\pi$:	$2J_2$+20	$2J_2$+24	$2J_2$+24	$2J_2$+28	$2J_2$+28	$2J_2$+32	$2J_2$+32	$2J_4$	$2J_4$+4
11170+Y	$2J_2$+24	x								
13150+Y	$2J_2$+28		x							
13438+Y	$2J_2$+28			x						
15582+Y	$2J_2$+32				x					
15831+Y	$2J_2$+32					x				
18169+Y	$2J_2$+36						x			
18374+Y	$2J_2$+36							x		
1697+Z	$2J_4$+4								x	
3563+Z	$2J_4$+8									x

Energy levels and branching ratios [02He09]. Part 10

$^{87}_{41}$Nb

E^*	$2J^\pi$		Branching ratios in percentage			
		E_f^*:	3563+Z	5604+Z	7815+Z	10199+Z
[keV]		$2J_f^\pi$:	$2J_4$+8	$2J_4$+12	$2J_4$+16	$2J_4$+20
5604+Z	$2J_4$+12		x			
7815+Z	$2J_4$+16			x		
10199+Z	$2J_4$+20				x	
12736+Z	$2J_4$+24					x

Energy levels and branching ratios [88Mu09, 05Mu20].

$^{88}_{41}$Nb

E^*	J^π	$T_{1/2}$ or	Ref.	Branching ratios in percentage				
				E_f^*:	0	0+X	79.8+X	1089.51
[keV]		Γ_{cm}		J_f^π:	$\langle 8^+ \rangle$	$\langle 4^- \rangle$		$\langle 10^+ \rangle$
0	$\langle 8^+ \rangle$	14.5(1) m						
0+X	$\langle 4^- \rangle$	7.8(1) m						
79.8+X						100		
170.5+X						x	x	
610.0(3)	$\langle 9^+ \rangle$		05Mu20					
1089.51(20)	$\langle 10^+ \rangle$				100			
1553.8(4)	$\langle 9^- \rangle$		05Mu20					
1675.7(2)	$\langle 11^+ \rangle$		05Mu20					
2006.2(2)	$\langle 11^- \rangle$							100
2077.3(2)	$\langle 12^+ \rangle$							100
2216.8(3)	$\langle 11^- \rangle$		05Mu20					
2483.0(4)	$\langle 12^+ \rangle$		05Mu20					
2553.7(3)	$\langle 12^- \rangle$		05Mu20					
2717.0(3)	$\langle 12^- \rangle$		05Mu20					
2770.3(3)	$\langle 13^+ \rangle$		05Mu20					
2967.0(3)	$\langle 13^- \rangle$		05Mu20					
3085.4(4)	$\langle 13^+ \rangle$		05Mu20					
3096.5(4)	$\langle 13^- \rangle$		05Mu20					
3206.9(4)	$\langle 13^- \rangle$		05Mu20					
3296.8(6)			05Mu20					
3442.2(3)	$\langle 14^+ \rangle$		05Mu20					
3626.1(3)	$\langle 14^- \rangle$		05Mu20					
3667.2(4)	$\langle 14^+ \rangle$		05Mu20					
3671.4(4)	$\langle 15^+ \rangle$		05Mu20					
3733.7(4)	$\langle 14^- \rangle$		05Mu20					
3965.7(5)			05Mu20					
3998.3(4)	$\langle 15^+ \rangle$		05Mu20					
4086.0(5)	$\langle 15^- \rangle$		05Mu20					
4391.7(4)	$\langle 15^- \rangle$		05Mu20					
4707.7(4)	$\langle 16^- \rangle$		05Mu20					
4885.4(4)	$\langle 16^+ \rangle$		05Mu20					
5075.0(4)	$\langle 17^+ \rangle$		05Mu20					

(continued) **$^{88}_{41}$Nb**

E^*	J^π	$T_{1/2}$ or	Ref.	Branching ratios in percentage				
				E_f^*:	0	0+X	79.8+X	1089.51
[keV]		Γ_{cm}		J_f^π:	$\langle 8^+ \rangle$	$\langle 4^- \rangle$		$\langle 10^+ \rangle$
5111.2(8)			05Mu20					
5114.1(5)	$\langle 17^- \rangle$		05Mu20					
5433.0(5)	$\langle 18^- \rangle$		05Mu20					
5589.3(16)			05Mu20					
6264.3(6)	$\langle 19^- \rangle$		05Mu20					
6331.5(5)	$\langle 19^+ \rangle$		05Mu20					
6590.6(9)			05Mu20					
6795.5(7)			05Mu20					
6811.7(7)			05Mu20					
7017.7(8)			05Mu20					
7163.0(8)			05Mu20					
7335.8(7)			05Mu20					
7717.8(9)			05Mu20					
7924.4(9)			05Mu20					
9737.2(18)			05Mu20					
			Ref.					

Additional data on this isotope can be found in [95Sc37, 85Ox01].

Energy levels and branching ratios [89Si20, 98Si31]. **$^{89}_{41}$Nb**

E^*	$2J^\pi$	σ (p,α)	$T_{1/2}$ or	Ref.	Branching ratios in percentage				
					E_f^*:	0.0	<35	658.6	1003.41	1935.29
[keV]		μb/sr	Γ_{cm}		$2J_f^\pi$:	$\langle 9^+ \rangle$	$\langle 1 \rangle^-$	$\langle 7^+ \rangle$	$\langle 13^+ \rangle$	$\langle 17^+ \rangle$
0.0	$\langle 9^+ \rangle$	x	2.03(7) h	75SeZX						
<35	$\langle 1 \rangle^-$	x	66(2) m	75SeZX						
658.6(2)	$\langle 7^+ \rangle$					100				
760		x		75SeZX						
≈838		x					100			
844.0(10)	⟨7,9,11⟩					100				
1003.41(10)	$\langle 13^+ \rangle$	x		75SeZX		100				
1155.3(3)	⟨7,9,11⟩	x		75SeZX		90(9)		9.9(8)		
1272.0(3)	⟨7,9,11⟩					100				
1550		x		75SeZX						
1640.2(10)	⟨7,9,11⟩					100				
1694.0(4)		x		75SeZX				100		
1789.6(11)		x		75SeZX				100		
1935.29(14)	$\langle 17^+ \rangle$								100	
2050		x		75SeZX						
2136.4(2)	⟨15⟩								100	
2151.56(16)	$\langle 17^- \rangle$		0.51(5) ns							100
2191.5(2)									100	
2192.92(16)	$\langle 21^+ \rangle$		13.8(4) ns							100

(continued) **$^{89}_{41}$Nb**

E^*	$2J^\pi$	σ (p,α)	$T_{1/2}$ or	Ref.	Branching ratios in percentage				
				E_f^*:	0.0	<35	658.6	1003.41	1935.29
[keV]		μb/sr	Γ_{cm}	$2J_f^\pi$:	$\langle 9^+\rangle$	$\langle 1\rangle^-$	$\langle 7^+\rangle$	$\langle 13^+\rangle$	$\langle 17^+\rangle$
2221.0(10)	⟨7,9,11⟩	x		75SeZX	100				
2420.0(10)	⟨7,9,11⟩				100				
2517.8(2)	$\langle 21^-\rangle$								
2522.98(18)	$\langle 19^+\rangle$								
2728.1(3)									100
2935.0(3)									
2955.70(18)	$\langle 23^+\rangle$		<0.35 ps						
3135.2(2)	$\langle 19^-\rangle$								
3141.94(17)	$\langle 21^-\rangle$		<10 ps						
3402.99(19)	$\langle 25^+\rangle$		3.5(14) ps						
3805.68(18)	$\langle 25^-\rangle$		34.7(14) ps						
4076.02(19)	$\langle 25^+\rangle$								
4553.6(2)	$\langle 27^-\rangle$		<0.7 ps						
4797.2(3)									
4808.7(2)	$\langle 29^-\rangle$		2.70(21) ps						
4908.5(3)									
5041.3(2)	$\langle 29^+\rangle$		0.76(28) ps						
5324.1(2)	$\langle 31^-\rangle$								
5407.3(2)									
5697.7(2)	$\langle 33^-\rangle$								
5917.0(3)									
6100.2(2)	$\langle 33^+\rangle$		1.25(14) ps						
6131.5(3)									
6451.8(3)									
6547.5(2)									
6658.3(3)									
6949.6(4)									
7272.6(6)									
		75SeZX		Ref.					

Additional data on this isotope can be found in [95Ka06, 93Si14, 93Bo33, 85Ox01].

Energy levels and branching ratios [89Si20, 98Si31]. Part 2 **$^{89}_{41}$Nb**

E^*	$2J^\pi$		Branching ratios in percentage								
		E_f^*:	2151.56	2192.92	2517.8	2522.98	2728.1	2955.70	3141.94	3402.99	3805.68
[keV]		$2J_f^\pi$:	$\langle 17^-\rangle$	$\langle 21^+\rangle$	$\langle 21^-\rangle$	$\langle 19^+\rangle$		$\langle 23^+\rangle$	$\langle 21^-\rangle$	$\langle 25^+\rangle$	$\langle 25^-\rangle$
2517.8(2)	$\langle 21^-\rangle$		100								
2522.98(18)	$\langle 19^+\rangle$			100							
2935.0(3)							100				
2955.70(18)	$\langle 23^+\rangle$			100							
3135.2(2)	$\langle 19^-\rangle$				[100]						
3141.94(17)	$\langle 21^-\rangle$		84(9)	1.2(4)		14.6(20)					

(continued) **$^{89}_{41}$Nb**

E^*	$2J^\pi$	Branching ratios in percentage								
	E_f^*:	2151.56	2192.92	2517.8	2522.98	2728.1	2955.70	3141.94	3402.99	3805.68
[keV]	$2J_f^\pi$:	$\langle 17^- \rangle$	$\langle 21^+ \rangle$	$\langle 21^- \rangle$	$\langle 19^+ \rangle$		$\langle 23^+ \rangle$	$\langle 21^- \rangle$	$\langle 25^+ \rangle$	$\langle 25^- \rangle$
3402.99(19)	$\langle 25^+ \rangle$						100			
3805.68(18)	$\langle 25^- \rangle$						3.1(5)	56(7)	41(4)	
4076.02(19)	$\langle 25^+ \rangle$		66(5)				34(5)			
4553.6(2)	$\langle 27^- \rangle$									100
4808.7(2)	$\langle 29^- \rangle$									43(10)
5041.3(2)	$\langle 29^+ \rangle$								73(7)	
5407.3(2)										53(7)

Energy levels and branching ratios [89Si20, 98Si31]. Part 3 **$^{89}_{41}$Nb**

E^*	$2J^\pi$	Branching ratios in percentage								
	E_f^*:	4076.02	4553.6	4797.2	4808.7	4908.5	5041.3	5324.1	5407.3	5697.7
[keV]	$2J_f^\pi$:	$\langle 25^+ \rangle$	$\langle 27^- \rangle$		$\langle 29^- \rangle$		$\langle 29^+ \rangle$	$\langle 31^- \rangle$		$\langle 33^- \rangle$
4797.2(3)		100								
4808.7(2)	$\langle 29^- \rangle$		57(10)							
4908.5(3)			100							
5041.3(2)	$\langle 29^+ \rangle$	19(4)		7.7(7)						
5324.1(2)	$\langle 31^- \rangle$				100					
5407.3(2)			29(3)			18(3)				
5697.7(2)	$\langle 33^- \rangle$							100		
5917.0(3)							100			
6100.2(2)	$\langle 33^+ \rangle$						73(8)			21(10)
6131.5(3)									100	
6547.5(2)					40(5)			18(3)		

Energy levels and branching ratios [89Si20, 98Si31]. Part 4 **$^{89}_{41}$Nb**

E^*	$2J^\pi$	Branching ratios in percentage				
	E_f^*:	5917.0	6100.2	6131.5	6451.8	6658.3
[keV]	$2J_f^\pi$:		$\langle 33^+ \rangle$			
6100.2(2)	$\langle 33^+ \rangle$	6.0(20)				
6451.8(3)				100		
6547.5(2)				42(7)		
6658.3(3)			100			
6949.6(4)					100	
7272.6(6)						100

Energy levels and branching ratios [97Br34].

$^{90}_{41}$Nb

E^*	J^π	σ (τ,t)	L	Config.	N	$T_{1/2}$ or	Ref.	Branching ratios in percentage					
								E_f^*:	0	122.4	124.7	285.3	328
[keV]		μb/sr	(d,α)		(d,α)	Γ_{cm}		J_f^π:	8^+	6^+	4^-	5^+	$4^{\langle+\rangle}$
0	8^+	x		$\langle g9/2\rangle^2$		14.60(5) h	74Co37						
122.370(22)	6^+	x		$\langle g9/2\rangle^2$	8000	63(2) μs	74Co37		100				
124.67(25)	4^-	incl	3	p1/2g9/2		18.81(6) s	74Co37			x			
171.10(10)	7^+	x	6	$\langle g9/2\rangle^2$	20000	<1 μs	74Co37		100				
285.30(10)	5^+	x	4	$\langle g9/2\rangle^2$	35000		74Co37			100			
328.00(10)	4^+	x										100	
362.4(3)											100		
382.01(25)	1^+		0,2	$\langle p1/2\rangle^2$	13000	6.19(8) ms	74Co37				100		
651.19(19)	3^+	x	2,4	$\langle g9/2\rangle^2$	35000		74Co37						100
812.90(10)	9^+	x	8	$\langle g9/2\rangle^2$	19000		05Cu07		100				
822.6(6)													
827.4(3)													
847.7(4)	$[2^+]$		2	p1/2p3/2	1500		74Co37				x		
854.32(21)	2^-	x					82Fi09						x
958(7)													
1128.2(4)	$\langle 5^-\rangle$		$\langle 5\rangle$	p1/2g9/2	1100		74Co37				x		
1195.2(9)											x		
1231(10)													
1255(10)													
1279.7(11)											x		
1288(7)													
1344.1(4)	1^+		0,2				74Co37						
1362.7(6)	$\langle 3^+\rangle$										x		x
1372.1(4)	$[2^-]$										x		
1414.2(11)													
1433.3(8)											x		x
1498(7)	$2^-,3^-,4^-$		3	p3/2g9/2	6600		74Co37						
1558(7)	$4^-,5^-,6^-$		5	p3/2g9/2	7100		74Co37						
1630.7(11)											x		
1646.7(11)	$2^-,3^-,4^-$		3	p3/2g9/2	3000		74Co37				x		
1692(7)													
1769.1(4)	1^+		0,2				74Co37						
1804(10)													
1809.11(20)	9^-						05Cu07						
1815.7(11)											x		
1835.7(9)													
1844.8(6)	1^+												
1868(7)													
1880.21(20)	11^-					472(13) ns	05Cu07						
1971.7(11)											x		
1985.61(23)	10^+						05Cu07						
1990.4(8)											x		
2000(7)													
2037(10)													
2063.3	$\langle 10^+\rangle$						05Cu07						

(continued) **$^{90}_{41}$Nb**

E^* [keV]	J^π	σ (τ,t) μb/sr	L (d,α)	Config.	N (d,α)	$T_{1/2}$ or Γ_{cm}	Ref.	Branching ratios in percentage				
								E^*_f: 0	122.4	124.7	285.3	328
								J^π_f: 8^+	6^+	4^-	5^+	$4^{\langle+\rangle}$
2082(10)												
2104(10)												
2125.6(7)	1^+	x	0,2	$\langle g9/2\rangle^2$	65000		74Co37					
2126	3^-	x					05Cu07					
2168(7)												
2181	$\langle 12^-\rangle$	incl					05Cu07					
2309.0(7)	1^+											
2344(7)												
2370(15)												
2430(15)												
2479(15)												
2487.3(3)	12^-						05Cu07					
2530(15)												
2560(15)												
2580(15)												
2650(15)												
2690.0	$\langle 11^+\rangle$						05Cu07					
2710(15)												
2730(15)												
2793(15)							05Cu07					
2814	$\langle 13^-\rangle$						05Cu07					
2818.8	$\langle 12^+\rangle$						05Cu07					
2880(15)												
2950(15)												
2980(15)												
3020(15)												
3071.8(6)	$\langle 13^-\rangle$						05Cu07					
3160(15)												
3314.8	$\langle 13^+\rangle$						05Cu07					
3497.0	$\langle 13^+\rangle$						05Cu07					
3654	13^-						05Cu07					
3672.4	$\langle 14^-\rangle$						05Cu07					
3975.7	$\langle 14^+\rangle$						05Cu07					
4068.0	$\langle 15^+\rangle$						05Cu07					
4331	14						05Cu07					
4422.1	$\langle 15^+\rangle$						05Cu07					
5008(10)	$\langle 0^+\rangle$											
5051							05Cu07					
5558	$15^{\langle-\rangle}$						05Cu07					
5576.7	$\langle 15^-\rangle$						05Cu07					
5762.6	$\langle 17^+\rangle$						05Cu07					
6147.1	$\langle 18^+\rangle$						05Cu07					
6155	$16^{\langle-\rangle}$						05Cu07					
6230							05Cu07					
6742	$17^{\langle+\rangle}$						05Cu07					

(continued) **$^{90}_{41}$Nb**

E^* [keV]	J^π	σ (τ,t) μb/sr	L (d,α)	Config.	N (d,α)	$T_{1/2}$ or Γ_{cm}	Ref.	Branching ratios in percentage E_f^*: 0 122.4 124.7 285.3 328 J_f^π: 8^+ 6^+ 4^- 5^+ $4^{\langle+\rangle}$
7024	$18^{\langle+\rangle}$						05Cu07	
7351.1	$\langle 17^-\rangle$						05Cu07	
7768	$19^{\langle+\rangle}$						05Cu07	
8094.9	$\langle 18^-\rangle$						05Cu07	
		82Fi09	74Co37	74Co37	74Co37		Ref.	

Additional data on this isotope can be found in [05Ch65].
Branching ratios can be found in [05Cu07].
Large cross sections of the (α,t) reaction [82Fi09] support the single-multiplet assignment of 9^+ – 3^+ levels.
Normalization factor N in the comparison of the measured (α,d) cross section with the theory is defined by the relation $d\sigma/d\Omega_{exp}$ = N $d\sigma/d\Omega_{DWBA}$/(2J+1)[74Co37]; it substitutes the spectroscopic factor.
Data for this isotope are considered in vol. LB I/18B.

Energy levels and branching ratios [97Br34]. Part 2 **$^{90}_{41}$Nb**

E^* [keV]	J^π	Branching ratios in percentage E_f^*: 362.4 382.01 651.19 812.90 822.6 827.4 854.32 1195.2 1344.1 1809.11 1880.21 2487.3 J_f^π: 1^+ 3^+ $\langle 9\rangle^+$ $2^{\langle+\rangle}$ 1^+ $\langle 11^-\rangle$
822.6(6)		100 x
827.4(3)		100
847.7(4)	$[2^+]$	x
854.32(21)	2^-	18(2) 82(7)
1128.2(4)	$\langle 5^-\rangle$	x
1344.1(4)	1^+	100
1362.7(6)	$\langle 3^+\rangle$	x x
1372.1(4)	$[2^-]$	x
1414.2(11)		x
1769.1(4)	1^+	23(3) 8(3) 69(8) x
1809.11(20)	9^-	100
1835.7(9)		x x
1844.8(6)	1^+	40(12) 60(6)
1880.21(20)	11^-	73(3) 27(8)
1985.61(23)	10^+	100
1990.4(8)		x
2125.6(7)	1^+	100
2309.0(7)	1^+	10(10) 90(27)
2487.3(3)	12^-	100
3071.8(6)	$\langle 13^-\rangle$	100

Energy levels and branching ratios [99Ba23]. **$^{91}_{41}$Nb**

E^* [keV]	$2J^\pi$	L	S_N (d,n)	L	C^2S' (τ,d)	$S_{\ell j}$ (τ,d)	C^2S' (τ,d)	C^2S (τ,d)	σ (α,t) μb	$2J^\pi$	σ (^{12}C,^{11}B) μb/sr	σ (^{16}O,^{15}N) μb/sr	L	C^2S (d,τ)	Ref.
0.0	9^+	4	0.97*	4	8.8	0.97	9.0	0.918	3441	9	9290(200)	7830(80)	4	2.7**	72Ho28
104.60(5)	1^-	1	0.32*	1	0.77	0.42	0.6		144	1	incl	incl	1	1.4	79Pu01
1040(25)															
1186.88(7)	5^-														72Ch40
1312.72(9)	3^-			1	0.14	0.04	0.14		38		100(20)	220(10)	1	1.0	70Kn05
1580.98(14)	$\langle 7\rangle^+$			1	0.27	0.07			73		220(30)	340(20)			73Zi04
1612.66(9)	3^-	1	0.08				0.22		incl		incl	incl	1	2.3	72Ho28
1637.01(15)	$\langle 9^+\rangle$														
1790.62(9)	$\langle 9^-\rangle$														
1844.92(14)	$\langle 5\rangle^-$			[3]	0.34	0.03	0.06					290(20)	3	4.9	69Oh04
1885(8)	$\langle \geq 7\rangle$											incl			
1963.11(21)	$\langle 5^+\rangle$			[2]	0.06	0.016	0.05		weak						69Ca20
1984.24(11)	$\langle 13^-\rangle$														
2034.35(19)	$\langle 17^-\rangle$														
2065(8)	$\langle \geq 7\rangle$														
2120.84(15)	$\langle 7^-\rangle$														
2170	$\langle 7\text{–}11\rangle$														
2275(10)	$\langle \geq 7\rangle$														
2290.79(15)	$\langle 13\rangle^+$														
2324.54(20)	$\langle 5^-\rangle$														
2330.03(24)	$\langle 11\rangle^+$														
2345.36(11)	$\langle 3\rangle^-$			1	0.05	0.014	0.05		43						70Kn05
2390.01(22)	$\langle 3^+\rangle$								weak						
2413.48(19)	$\langle 11^-\rangle$														
2531.2(3)	$\langle 11^-\rangle$								32						
2579.55(23)	$\langle 5^+\rangle$														
2612.6(3)	$\langle 7^-\rangle$								23						
2631.97(18)	$\langle 9\rangle$				weak										70Kn05
2660.19(21)	$\langle 15^-\rangle$														
2792.54(15)	$\langle 7^+\rangle$								12						
2881.9(4)	$\langle \leq 7\rangle$								74						
2911.8(3)									incl						
2969.9(3)					weak						250(30)	340(20)			70Kn05
2991.3(3)															
3028.23(18)	7–11								36						
3065.6(4)	$\langle 5^-\rangle$														
3080(10)	$\langle \leq 7\rangle$														
3110.19(19)	$\langle 17\rangle^+$														
3126.02(23)	$\langle \geq 7\rangle$								weak						
3149.17(24)	7–11														
3179.65(22)	$\langle 3\rangle^+$			2	0.24	0.044	0.3								70Kn05
3187.5(3)	7–11														
3273.5(3)	$\langle \leq 7\rangle$														
3300(10)	$\langle \geq 7\rangle$														
3328.7(3)															

(continued) **$^{91}_{41}$Nb**

E^* [keV]	$2J^\pi$	L	S_N (d,n)	L	C^2S' (τ,d)	$S_{\ell j}$ (τ,d)	C^2S' (τ,d)	C^2S (τ,d)	σ (α,t) μb	$2J^\pi$	σ (^{12}C,^{11}B) μb/sr	σ (^{16}O,^{15}N) μb/sr	L	C^2S (d,τ)	Ref.
3370.1(15)	5^+,7^+	2	0.29						218		780(50)	2430(40)			72Ho28
3434.4	$\langle 5\rangle^+$			2	2.6	0.48	2.0			5					70Kn05
3461.6	$\langle \leq 7\rangle$														
3466.84(21)	$\langle 21\rangle^+$														
3562.1(15)	$\langle \leq 7\rangle$				weak										70Kn05
3591(25)															
3634.6	5^+,7^-														
3697.2	$\langle 5\rangle^+$			2	0.12	0.022	0.14		27						70Kn05
3780(10)	$\langle \leq 7\rangle$														
3837.7(6)	$\langle 7,9^-\rangle$														
3886.8(6)	7–11														
3916.8(6)	7–11				weak										70Kn05
4023.5					weak										70Kn05
4097.1(3)	$\langle 19\rangle$														
4112(25)															
4164(10)	1^+			0	0.11	0.06									70Kn05
4180.7(11)	7–11								107						
4237.1	$\langle 5\rangle^+$			2	0.18	0.033			incl		570(50)	470(20)			70Kn05
4351.4(2)	$\langle 21^-\rangle$														
4358(10)	3^+,5^+			2	0.12	0.022									70Kn05
4404(25)															
4441(10)	1^+	0	0.07	0	0.32	0.18									72Ho28
4546(10)	3^+,5^+			2	0.26	0.048									70Kn05
4650(10)	3^+,5^+			2	0.07	0.013									70Kn05
4738(10)	3^+,5^+			2	0.19	0.035					1050(60)	590(20)			70Kn05
4772.5(3)	$\langle 23\rangle$														
4817(10)	7^+,9^+			4	2.8	0.38			232	7					70Kn05
4852.7(3)	$\langle 21\rangle$														
4912(10)	3^+,5^+			2	0.16	0.029			96						70Kn05
5010(10)	3^+,5^+			2	0.16	0.03			weak						70Kn05
5068(10)	3^+,5^+			2	0.21	0.038									70Kn05
5135(20)									67						
5181.9(21)															
5226(10)	$\langle 1^+\rangle$	0	0.02	0	0.057	0.03			weak						72Ho28
5270.4(4)	$\langle 23\rangle$														
5307(10)	3^+,5^+	2	0.04	2	0.75	0.21					930(60)	940(30)			72Ho28
5349.7	$\langle 19$–$23\rangle$														
5392(10)	3^+,5^+	2	0.04	2	0.37	0.10									72Ho28
5455.4(6)	$\langle 25\rangle$														
5502(10)	3^+,5^+	2	0.07	2	0.87	0.24									72Ho28
5622(15)	1^+			0	0.091	0.049									70Kn05
5685(15)	1^+			0	0.14	0.077									70Kn05
5788(15)	1^+			0	0.065	0.036									70Kn05
5792.3															
5840(15)	1^+	0	0.15	0	0.48	0.26									72Ho28

(continued) **$^{91}_{41}$Nb**

E^* [keV]	$2J^\pi$	L	S_N (d,n)	L	C^2S' (τ,d)	$S_{\ell j}$ (τ,d)	C^2S' (τ,d)	C^2S (τ,d)	σ (α,t) μb	$2J^\pi$	σ (^{12}C,^{11}B) μb/sr	σ (^{16}O,^{15}N) μb/sr	C^2S (d,τ)	Ref.
5994(15)					weak									70Kn05
6009.5														
6040(15)	7^+,9^+			4	4.2									70Kn05
6121(15)	3^+,5^+			2	0.31									70Kn05
6180(15)	3^+,5^+			2	0.42									70Kn05
6215(15)	$\langle 7^+,9^+\rangle$			$\langle 4\rangle$	weak									70Kn05
6286(15)					weak									70Kn05
6345(15)					weak									70Kn05
6406(15)					weak									70Kn05
6529(15)	X^+			0+2	0.1+0.2									70Kn05
6703(15)	X^+			0+2	0.1+0.3									70Kn05
6850(15)	X^+			0+2	0.1+0.3									70Kn05
6923(15)					weak									70Kn05
7007(15)	1^+			0	0.32									70Kn05
7060(15)					weak									70Kn05
7112(15)					weak									70Kn05
7218(15)					weak									70Kn05
9823(6)****	$\langle 5\rangle^+$													
11009(4)	$\langle 1^+\rangle$													
11309(5)	5^+													
11548(10)														
11735(5)	$\langle 7^+,9^+\rangle$													
11873(3)	3^+													
11958(7)														
12036(5)														
12070(40)														
12084(5)														
12209(5)														
12366(3)	1^+													
12438(7)														
12489(10)														
12599(5)														
12662(5)														
12716(4)														
12804(5)														
12839(10)														
12907(4)	3^+													
13126(6)	3^+													
13275(5)														
13310(5)														
13380(40)	$\langle 7^+,9^+\rangle$													
13507(4)	3^+													
13635(10)														
13846(7)														
13957(7)														

(continued) **$^{91}_{41}$Nb**

E^*	$2J^\pi$	L	S_N	L	C^2S'	$S_{\ell j}$	C^2S'	C^2S	σ (α,t)	$2J^\pi$	σ (^{12}C,^{11}B)	σ (^{16}O,^{15}N)	L	C^2S	Ref.
[keV]			(d,n)		(τ,d)	(τ,d)	(τ,d)	(τ,d)	μb		μb/sr	μb/sr		(d,τ)	
14131(4)															
14311(7)															
14374(10)															
			72Ho28		70Kn05	72Ho28					73Zi04	73Zi04		69Oh04	Ref.
						70Kn05	69Pi05		71Zi03					99Bb23	Ref.

Additional data on this isotope can be found in [01Va28, 01Va10, 00Yo09, 79Fi02, 77Fe12, 71Kr21, 71Ma48, 69Gr25, 69Oh04, 69Ca20].

* Cross section of the (d,n) reaction was fitted by the expression $d\sigma/d\Omega_{exp}=(2J_1+1)C^2Sd\sigma/d\Omega_{DWBA}+(2J_2+1)C^2Sd\sigma/d\Omega_{DWBA}$.

** For calculations with deuteron zero-range nonlocal (ZRNL) potential, see also [69Oh04].

*** Normalized to 2.6 for ℓ_p=4 ground state transition, yield from θ_{lab}=27.5° to 87.5° I_α=100 [72Ch40].

**** IAS with the total cross section of the (τ,t) reaction for its populating 130 μb [74In03].

S_p values for seven IAS levels at E^*=9.8-13.4 MeV were compared in [73Fi14] with the S_{dp} values for ^{91}Zr levels.

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

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

Energy levels and branching ratios [99Ba23]. Part 2 **$^{91}_{41}$Nb**

E^*	$2J^\pi$	C^2S	L	C^2S	L	C^2S	I_α	$T_{1/2}$ or	Ref.
[keV]		(^{7}Li,^{6}He)		(^{12}C,^{11}B)		(t,α)	*rel.*	Γ_{cm}	
0.0	9	0.92	5	⟨1.0⟩	4	2.6***	100	680(130) yr	72Ho28
104.60(5)	1	0.41			1	1.66	62	60.86(22) d	79Pu01
1040(25)							2		
1186.88(7)					3	0.55	9	2.6(11) ps	72Ch40
1312.72(9)			[2]	0.06	1	1.15	61	0.166(17) ps	70Kn05
1580.98(14)			[2]	0.09				0.33(3) ps	73Zi04
1612.66(9)					1	2.35	142	0.054(12) ps	72Ho28
1637.01(15)								1.8(+11-4) ps	
1790.62(9)								>1.6 ps	
1844.92(14)					3	4.0	156	>1.5 ps	69Oh04
1885(8)									
1963.11(21)							2	0.18(3) ps	69Ca20
1984.24(11)								10.0(4) ns	
2034.35(19)								3.76(12) μs	
2065(8)							1		
2120.84(15)								>1.0 ps	
2170									
2275(10)									
2290.79(15)								0.250(21) ps	

(continued) **$^{91}_{41}$Nb**

E^* [keV]	$2J^\pi$	C^2S (^{7}Li,^{6}He)	L	C^2S (^{12}C,^{11}B)	L	C^2S (t,α)	I_α *rel.*	$T_{1/2}$ or Γ_{cm}	Ref.
2324.54(20)							7	0.111(14) ps	
2330.03(24)								0.104(21) ps	
2345.36(11)								0.104(14) ps	70Kn05
2390.01(22)								1.0(5) ps	
2413.48(19)							3	0.65(25) ps	
2531.2(3)							2	0.9(3) ps	
2579.55(23)								0.55(14) ps	
2612.6(3)								0.09(1) ps	
2631.97(18)							6	0.125(21) ps	70Kn05
2660.19(21)								≤14 ps	
2792.54(15)							2		
2881.9(4)							2		
2911.8(3)									
2969.9(3)									70Kn05
2991.3(3)							6		
3028.23(18)							incl		
3065.6(4)									
3080(10)							7		
3110.19(19)								<0.2 ns	
3126.02(23)									
3149.17(24)									
3179.65(22)									70Kn05
3187.5(3)									
3273.5(3)							4		
3300(10)							8		
3328.7(3)									
3370.1(15)							9		72Ho28
3434.4	5	0.33					4		70Kn05
3461.6									
3466.84(21)								0.92(10) ns	
3562.1(15)							2		70Kn05
3591(25)							3		
3634.6									
3697.2									70Kn05
3780(10)							4		
3837.7(6)									
3886.8(6)							3		
3916.8(6)									70Kn05
4023.5							2		70Kn05
4097.1(3)									
4112(25)							11		
4164(10)									70Kn05
4180.7(11)							2		
4237.1							2		70Kn05
4351.4(2)							7		

(continued) **$^{91}_{41}$Nb**

E^* [keV]	$2J^\pi$	C^2S (^{7}Li,^{6}He)	L	C^2S (^{12}C,^{11}B)	L	C^2S (t,α)	I_α *rel.*	$T_{1/2}$ or Γ_{cm}	Ref.
4358(10)									70Kn05
4404(25)							3		
4441(10)							6		72Ho28
4546(10)							6		70Kn05
4650(10)							3		70Kn05
4738(10)									70Kn05
4772.5(3)									
4817(10)	7	0.44							70Kn05
4852.7(3)									
4912(10)									70Kn05
5010(10)									70Kn05
5068(10)							5		70Kn05
5135(20)							3		
5181.9(21)									
5226(10)									72Ho28
5270.4(4)									
5307(10)							12		72Ho28
5349.7									
5392(10)									72Ho28
5455.4(6)								1.2(3) ns	
5502(10)									72Ho28
5622(15)									70Kn05
5685(15)									70Kn05
5788(15)									70Kn05
5792.3									
5840(15)									72Ho28
5994(15)									70Kn05
6009.5									
6040(15)									70Kn05
6121(15)									70Kn05
6180(15)									70Kn05
6215(15)									70Kn05
6286(15)									70Kn05
6345(15)									70Kn05
6406(15)									70Kn05
6529(15)									70Kn05
6703(15)									70Kn05
6850(15)									70Kn05
6923(15)									70Kn05
7007(15)									70Kn05
7060(15)									70Kn05
7112(15)									70Kn05
7218(15)									70Kn05
9823(6)****								24(2) keV	
11009(4)								83(4) keV	

(continued) **$^{91}_{41}$Nb**

E^* [keV]	$2J^\pi$	C^2S (^{7}Li,^{6}He)	L	C^2S (^{12}C,^{11}B)	L	C^2S (t,α)	I_α *rel.*	$T_{1/2}$ or Γ_{cm}	Ref.
11309(5)								5.6(10) keV	
11548(10)									
11735(5)									
11873(3)								42(3) keV	
11958(7)									
12036(5)								28(2) keV	
12070(40)									
12084(5)									
12209(5)									
12366(3)								63(5) keV	
12438(7)									
12489(10)									
12599(5)									
12662(5)									
12716(4)								40(5) keV	
12804(5)									
12839(10)									
12907(4)								47(2) keV	
13126(6)								30 keV	
13275(5)									
13310(5)								28(2) keV	
13380(40)									
13507(4)								48(5) keV	
13635(10)									
13846(7)									
13957(7)									
14131(4)									
14311(7)									
14374(10)									
		79Pu01		73Zi04		72Ch40	72Ch40		Ref.
		99Bb23		99Bb23					Ref.

Energy levels and branching ratios [99Ba23]. Part 3 **$^{91}_{41}$Nb**

E^*	$2J^\pi$					Branching ratios in percentage						
		E_f^*:	0.0	104.6	1187	1313	1581	1613	1637	1791	1844.92	1984.24
[keV]		$2J_f^\pi$:	9^+	1^-	5^-	3^-	$\langle 7\rangle^+$	3^-	$\langle 9^+\rangle$	$\langle 9^-\rangle$	$\langle 5\rangle^-$	$\langle 13^-\rangle$
104.60(5)	1		100									
1186.88(7)				100								
1312.72(9)				100								
1580.98(14)			100									
1612.66(9)				99.26	0.74(7)							

(continued) **$^{91}_{41}$Nb**

E^*	$2J^\pi$					Branching ratios in percentage						
		E_f^*:	0.0	104.6	1187	1313	1581	1613	1637	1791	1844.92	1984.24
[keV]		$2J_f^\pi$:	9^+	1^-	5^-	3^-	$\langle 7\rangle^+$	3^-	$\langle 9^+\rangle$	$\langle 9^-\rangle$	$\langle 5\rangle^-$	$\langle 13^-\rangle$
1637.01(15)			100									
1790.62(9)			96.7		3.3(5)							
1844.92(14)				65(3)	35(3)							
1963.11(21)			100									
1984.24(11)			72(1)							28.5(6)		
2034.35(19)												100
2120.84(15)			10(2)		39(2)	9(2)				42(2)		
2170			x									
2290.79(15)			100									
2324.54(20)					51(2)	45(2)	4(2)					
2330.03(24)			100									
2345.36(11)				41(1)	17(2)	33(4)		9(1)				
2390.01(22)				67(2)	33(2)							
2413.48(19)			66(2)									34(2)
2531.2(3)			88(2)									
2579.55(23)			11			61(2)	28(2)					
2612.6(3)			100									
2631.97(18)			96(2)				4.3(6)					
2792.54(15)			42(4)		43(4)				15(4)			
2881.9(4)						100						
2911.8(3)			100									
2969.9(3)			100									
2991.3(3)					100							
3028.23(18)			87(3)				13(1)					
3065.6(4)				67						33		
3126.02(23)			66				34					
3149.17(24)			100									
3179.65(22)				61		39						
3187.5(3)			100									
3273.5(3)			100									
3328.7(3)			100									
3370.1(15)			x									
3434.4	5		100									
3461.6			100									
3562.1(15)			100									
3634.6			45			x						
3697.2			100									
3837.7(6)			47				53				x	
3886.8(6)			83									
3916.8(6)			100									
4023.5			100									
4180.7(11)			x									
4237.1			100									

Energy levels and branching ratios [99Ba23]. Part 4 **$^{91}_{41}$Nb**

E^*	$2J^\pi$	Branching ratios in percentage									
	E_f^*:	2034.35	2120.84	2290.79	2324.54	2660.19	2991.3	3110.19	3328.7	3466.84	4097.13
[keV]	$2J_f^\pi$:	$\langle 17^- \rangle$	$\langle 7^- \rangle$	$\langle 13 \rangle^+$	$\langle 5^- \rangle$	$\langle 15^- \rangle$		$\langle 17 \rangle^+$		$\langle 21 \rangle^+$	$\langle 19 \rangle$
2531.2(3)			12.5(20)								
2660.19(21)		100									
3110.19(19)				91(6)		9.2(6)					
3466.84(21)								100			
3634.6					55						
3886.8(6)			17						x		
4097.1(3)		100									
4180.7(11)							x				
4351.4(2)		14								44.6(2)	42(2)
4852.7(3)											100
5181.9(21)										x	

Energy levels and branching ratios [99Ba23]. Part 5 **$^{91}_{41}$Nb**

E^*	$2J^\pi$	Branching ratios in percentage				
	E_f^*:	4351.43	4772.5	4852.7	5270.4	5349.7
[keV]	$2J_f^\pi$:	$\langle 21^- \rangle$	$\langle 23 \rangle$	$\langle 21 \rangle$	$\langle 23 \rangle$	
4772.5(3)		100				
5270.4(4)		71.9(4)	28			
5349.7				100		
5455.4(6)					100	
5792.3						100
6009.5						100

Energy levels and branching ratios [77Mo10, 00Bb11]. **$^{92}_{41}$Nb**

E^*	J^π	σ (α,d)	σ (α,t)	L	C^2S	L	C^2S'	C^2S	σ (τ,α)	L	C^2S	L	C^2S	L	C^2S	Ref.
[keV]		μb	μb		(α,t)		(τ,d)	(τ,d)	μb/sr		(τ, α)		(d,t)		(p,d)	
0.0	$\langle 7 \rangle^+$	278	590	4	1.02	4	13.3	0.75*	26	2	0.74	2	0.74	2	0.36	71Bh01
135.5(4)	$\langle 2 \rangle^+$	weak	190	4	0.82	4	4.5	0.74	14	2	0.38	2	0.38	2	0.20	77Mo10
225.7(4)	$\langle 2 \rangle^-$	weak		1	0.60	1	1.7									85De35
285.7(4)	$\langle 3 \rangle^+$	25	255	4	0.80	4	6.2	0.81	10	2	0.21	2	0.24	2	0.13	77Mo10
357.5(2)	$\langle 5 \rangle^+$	69		4	0.89	4	9.4		10	2	0.25	2	0.22	2	0.10	77Mo10
389.7(4)	$\langle 3 \rangle^-$					1	2.2									85De35
480.3(4)	$\langle 4 \rangle^+$			4	0.96	4	8.0		18	2	0.36	2	0.18	2	0.18	77Mo10
501.2(2)	$\langle 6 \rangle^+$			4	0.96	4	12.0									
975.0(4)	$\langle 1^+,2^- \rangle$															
1089.4(4)	$\langle 1 \rangle^+$					2	0.16		2	4	0.02		weak			77Mo10

(continued) **$^{92}_{41}$Nb**

E^* [keV]	J^π	σ (α,d) μb	σ (α,t) μb	L	C^2S (α,t)	L	C^2S' (τ,d)	C^2S (τ,d)	σ (τ,α) μb/sr	L	C^2S (τ,α)	L	C^2S (d,t)	L	C^2S (p,d)	Ref.
1149.9(4)	$\langle 1^-,2^-\rangle$															
1310.7(7)	$2^-,3^-$					1	0.16									85De35
1323.8(4)	$\langle 2,3\rangle^-$								2							
1345.6(4)	$\langle 2^+\rangle$								incl			$\langle 4\rangle$				77Mo10
1374(10)	X^-					1	0.02					2	0.005			77Mo10
1374(7)	X^+															
1406.2(4)	$\langle 5^+\rangle$								4	4	0.04	0	0.05	0	0.015	77Mo10
1410.2(6)	$\langle 5$–$7\rangle$															
1415.0(4)	$\langle 3,4\rangle$					1	0.38									85De35
1422.6(5)	$\langle 4^-\rangle$															
1467.9(4)	$\langle 4^+\rangle$															
1472.7(7)	$\langle 4^+\rangle$					2	0.14									85De35
1481.3(4)	$\langle 1^+\rangle$											$\langle 0\rangle$	0.001			77Mo10
1524									1							
1553.8(4)	$\langle 1^-$–$3\rangle$															
1566(1)	$\langle 4\rangle^+$											2	0.005	2	0.003	77Mo10
1607(6)	$4^+,5^+$								3	$\langle 2\rangle$	0.04	0	0.034	0	0.012	77Mo10
1633(1)	$4^+,5^+$											0	0.01	0	0.006	77Mo10
1642.0(4)	$\langle 2\rangle^-$					1	0.37									85De35
1650.2(3)	$\langle 5\rangle^+$								5	4	0.04	0	0.01			77Mo10
1666.6(4)	$\langle 1\rangle^-$					1	0.37									85De35
1678.1(4)	$\langle 1\rangle^-$					1	0.12		2							85De35
1717(6)	$3^-,4^-$					1	0.23							$\langle 1\rangle$	0.002	85De35
1730(10)	X^-					1	0.08									85De35
1738.1(4)	$\langle 3^+\rangle$											1	0.005			77Mo10
1768.1(4)	$\langle 4\rangle^+$								2	4	0.02	2	0.02	2	0.008	77Mo10
1779(10)	X^-					1	0.09									85De35
1816(10)																
1831(7)	$4^+,5^+$								3	$\langle 4\rangle$	0.03	0	0.015	0	0.006	77Mo10
1832(10)	X^-					1	0.04									85De35
1851(10)	X^-					1	0.19									85De35
1875(10)																
1907(10)	X^-					1	0.17						weak			77Mo10
1932(10)	X^-					1	0.07									85De35
1945.3(4)	$\langle 7^-,8^+\rangle$															
1972(10)	$\leq 5^+$					2	0.10									
2033(7)	X^+								5	4	0.04	2	0.013			77Mo10
2056(7)	$4^+,5^+$					2	0.15					1	0.005			77Mo10
2082(6)	X^-															
2087.5(3)	$\langle 9\rangle^-$															
2128(7)	$\leq 5^+$					2	0.15						weak			77Mo10
2142(10)	$\leq 5^+$					2	0.11									
2147(11)	$X^{\langle -\rangle}$											1	0.025			77Mo10
2162(11)	$X^{\langle +\rangle}$								10	4	0.11	2+4				77Mo10
2203.3(4)	$\langle 11^-\rangle$															

(continued) **$^{92}_{41}$Nb**

E^* [keV]	J^π	σ (α,d) μb	σ (α,t) μb	L	C^2S (α,t)	L	C^2S' (τ,d)	C^2S (τ,d)	σ (τ,α) μb/sr	L	C^2S (τ,α)	L	C^2S (d,t)	L	C^2S (p,d)	Ref.
2213(11)	X$^{\langle+\rangle}$								10	$\langle4\rangle$	0.07	2+4				77Mo10
2235.7(4)	$\langle10^-\rangle$															
2240(10)	$\leq5^+$					2	0.06		10	4	0.08					77Mo10
2243(8)	X$^-$															
2254(8)	$\langle3^-\rangle$											1	0.02	1	0.008	77Mo10
2271(11)	X$^-$											1	0.006			77Mo10
2287.1(5)	$\langle9^+\rangle$								15	4	0.13					77Mo10
2292(12)	X$^{\langle+\rangle}$															
2294(8)	X$^-$					1	0.31									85De35
2311(12)												$\langle1\rangle$	0.02			77Mo10
2335(10)																
2362(8)	X$^+$					2	0.14					$\langle2\rangle$				77Mo10
2391(6)	X$^-$											1	0.02	1	0.012	77Mo10
2403	X$^{\langle+\rangle}$								7	$\langle2+4\rangle$	0.03					77Mo10
2407(12)	X$^-$											1	0.005			77Mo10
2433(10)	$\leq5^+$								4	$\langle4\rangle$	0.03					77Mo10
2463(8)	$\langle4,5\rangle^+$					2	0.28					$\langle0\rangle$	0.002			77Mo10
2498(11)									10	4+$\langle2\rangle$	0.08		x			77Mo10
2515(13)												1	0.02	$\langle1\rangle$	0.006	77Mo10
2530(10)	X$^+$															
2563(8)	X$^+$											4	0.044			77Mo10
2580(30)**	$\langle10^-\rangle$															88La18
2594(7)	X$^{\langle+\rangle}$								24	4	0.18	$\langle4\rangle$	0.10			77Mo10
2610(8)	$\leq5^+$					2	0.53					$\langle4\rangle$				77Mo10
2656(8)	X$^{\langle+\rangle}$											$\langle2\rangle$	0.015			77Mo10
2666(12)	X$^-$													1	0.012	
2680(13)	X$^+$											4	0.15			77Mo10
2700(14)	X$^{\langle+\rangle}$											$\langle2+4\rangle$				77Mo10
2720(14)	X$^{\langle+\rangle}$											$\langle2\rangle$				77Mo10
2739(7)	X$^+$								144	4	1.09	4	0.65	4	0.43	77Mo10
2756(8)													x			77Mo10
2785(10)																
2802(8)	$\langle3\rangle^-$													1	0.14	
2811(10)	$\leq5^+$					2	0.19									85De35
2832(10)																
2867(10)	X$^{\langle+\rangle}$															
2905(9)																
2926(8)													x			77Mo10
2948(6)	$\langle6,5\rangle^+$								503	4	3.75		x	4	1.60	77Mo10
2964(8)													x			77Mo10
2981(10)																
2998.2(5)	$\langle11^+\rangle$															
3010(10)																
3020(10)														4	0.24	
3045(6)	$\langle4,3\rangle^+$													4	0.34	

(continued) **$^{92}_{41}$Nb**

E^* [keV]	J^π	σ (α,d) μb	σ (α,t) μb	L	C^2S (α,t)	L	C^2S' (τ,d)	C^2S (τ,d)	σ (τ,α) μb/sr	L	C^2S (τ,α)	L	C^2S (d,t)	L	C^2S (p,d)	Ref.
3064(10)									191	4	1.42					77Mo10
3072(10)																
3090(10)	$\leq 5^+$					2	0.60									85De35
3110(12)	X^-													1	0.029	
3119(7)	3^+,4^+								64	4	0.47					77Mo10
3134(10)																
3142(10)																
3160(10)																
3185(10)																
3200(10)														1	0.015	
3228(10)									24	$\langle 4 \rangle$	0.18					77Mo10
3242(10)																
3260(10)														1	0.043	
3280(10)	$\leq 5^+$					2	0.61		16	4	0.20					77Mo10
3294(10)	$\leq 5^+$					2	0.16									85De35
3316(8)	X^-													1	0.039	
3325.9(5)	$\langle 13^+ \rangle$															
3330(10)	$\leq 5^+$					2	0.13									85De35
3342(12)	X^-													1	0.069	
3345(10)	$\leq 5^+$					2	0.39		14	4	0.10					77Mo10
3372(10)	$\leq 5^+$					2	0.68									85De35
3385(10)	$\leq 5^+$					2	0.96									85De35
3403(8)	X^-													1	0.038	
3445(10)	$\leq 5^+$					2	1.06		[25]	4	0.18					77Mo10
3455(8)	X^-													1	0.038	
3489(12)	$X^{\langle + \rangle}$								285	4	1.88			$\langle 4 \rangle$	0.54	77Mo10
3516(8)	X^-													1	0.065	
3530(10)	$\leq 5^+$					2	0.76									85De35
3550(10)																
3560(10)																
3580(10)																
3590(10)																
3619(8)	$\leq 5^+$					2	0.57		104	4	0.76					77Mo10
3650(10)	$\leq 5^+$					2	1.05									85De35
3665(12)	X^-													1	0.086	
3672(10)	$\leq 5^+$					2	0.72		27	4						77Mo10
3696(10)	$\leq 5^+$					2	0.91									85De35
3716(12)	X^-													1	0.034	
3753	X^+								68	4	0.42					77Mo10
3790(10)																
3796.9(11)	$\langle 12,13 \rangle$															
3805(8)	X^-								[15]					1	0.043	77Mo10
3837(10)																
3875									21							77Mo10
3882									36							77Mo10

(continued) **$^{92}_{41}$Nb**

E^*	J^π	σ (α,d)	σ (α,t)	L	C^2S	L	C^2S'	C^2S	σ (τ,α)	L	C^2S	L	C^2S	L	C^2S	Ref.
[keV]		μb	μb		(α,t)		(τ,d)	(τ,d)	μb/sr		(τ,α)		(d,t)		(p,d)	
3920(30)									[12]							77Mo10
4032									x							77Mo10
4079(12)	X^-													1	0.077	
4135(12)	X^+													4	0.37	
4172									x							77Mo10
4285									x							77Mo10
4355									x							77Mo10
4450(30)																
4830(30)																
4930(100)																
5210(100)																
5620(30)																
6000(100)	$X^{\langle+\rangle}$															
6280	$X^{\langle+\rangle}$															73Zi04
9008(18)	$\langle0^+\rangle$					$\langle2\rangle$	4.1									85De35
9956(10)	$\langle2^+\rangle$					$\langle2\rangle$	10.4									85De35
10470(40)	$\langle4^+\rangle$					$\langle2\rangle$	22.7									85De35
10830(40)	$\langle2^+\rangle$					$\langle2\rangle$	3.9									85De35
11089	$\langle2^+\rangle$															
11540(300)	$\langle5\rangle^-$													1		
11800(300)	$\langle4\rangle^-$													1		
							85De35	69Ca20	77Mo10		77Mo10					Ref.

Additional data on this isotope can be found in [69Ca20, 67Ba30].
* C^2S from the normalized values $(2J+1)C^2S$ given in [69Ca20].
** Analyzed and discussed in [88La18] as the strongly populated level in (α,d) reaction.
Values σ (t,d) and σ (t,α) are intensities integrated from 16° to 57° and from 13° to 52° [72Zi01].
The third and forth columns contain information on experimental results $d\sigma/d\Omega$ and spectroscopic factor $S_{\ell j}$=C^2S derived from a study of neutron pick-up reaction ^{93}Nb(τ,α)^{92}Nb [77Mo10], they are compared in the same work with values $S_{\ell j}$ obtained in another pick-up reaction ^{93}Nb(d,t)^{92}Nb; corresponding orbital momenta ℓ are given in Supplement.
In the case of the (p,d) reaction only values corresponding to $p_{3/2}$ transfer are given.
S_p for four IAS levels at E^*=9.0-10.8 MeV were compared in [73Fi14] with S_{dp} for low-lying ^{92}Zr levels.

Energy levels and branching ratios [77Mo10, 00Bb11]. Part 2 **$^{92}_{41}$Nb**

E^*	J^π	ℓ_p	σ (^{16}O,^{15}N)	$T_{1/2}$ or	Ref.	Branching ratios in percentage						
					E_f^*:	0.0	135.5	225.7	285.7	357.49	389.7	480.3
[keV]			μb/sr	Γ_{cm}	J_f^π:	$\langle7\rangle^+$	$\langle2\rangle^+$	$\langle2\rangle^-$	$\langle3\rangle^+$	$\langle5\rangle^+$	$\langle3\rangle^-$	$\langle4\rangle^+$
0.0	$\langle7\rangle^+$	4	7220	$3.5(2)\cdot10^7$ yr	71Bh01							
135.5(4)	$\langle2\rangle^+$	4	incl	10.15(2) d	77Mo10							
225.7(4)	$\langle2\rangle^-$			5.9(2) μs	85De35		100					

(continued) **$^{92}_{41}$Nb**

E^* [keV]	J^π	ℓ_p	σ (^{16}O,^{15}N) μb/sr	$T_{1/2}$ or Γ_{cm}	Ref.	Branching ratios in percentage							
						E_f^*:	0.0	135.5	225.7	285.7	357.49	389.7	480.3
						J_f^π:	$\langle 7\rangle^+$	$\langle 2\rangle^+$	$\langle 2\rangle^-$	$\langle 3\rangle^+$	$\langle 5\rangle^+$	$\langle 3\rangle^-$	$\langle 4\rangle^+$
285.7(4)	$\langle 3\rangle^+$	4	incl	1.1(+6-3) ns	77Mo10			100					
357.5(2)	$\langle 5\rangle^+$		incl	1.91(4) ns	77Mo10		100						
389.7(4)	$\langle 3\rangle^-$		incl	≤10 ns	85De35			3(1)	97(1)	<1			
480.3(4)	$\langle 4\rangle^+$		incl	0.62(10) ns	77Mo10					76(3)	24(3)		
501.2(2)	$\langle 6\rangle^+$		incl	0.35(5) ns			100						
975.0(4)	$\langle 1^+,2^-\rangle$			≤10 ns					100				
1089.4(4)	$\langle 1\rangle^+$			≤10 ns	77Mo10			20(2)	54(2)	26(2)			
1149.9(4)	$\langle 1^-,2^-\rangle$								93(2)			5.0(10)	
1310.7(7)	$2^-,3^-$			≤10 ns	85De35							100	
1323.8(4)	$\langle 2,3\rangle^-$								95(3)			5(3)	
1345.6(4)	$\langle 2^+\rangle$			≤10 ns	77Mo10			71(2)		29(2)			
1374(10)	X^-				77Mo10								
1374(7)	X^+												
1406.2(4)	$\langle 5^+\rangle$				77Mo10					100			
1410.2(6)	$\langle 5–7\rangle$												
1415.0(4)	$\langle 3,4\rangle$			≤10 ns	85De35					50(10)			50(10)
1422.6(5)	$\langle 4^-\rangle$			≤10 ns								100	
1467.9(4)	$\langle 4^+\rangle$							100					
1472.7(7)	$\langle 4^+\rangle$				85De35							100	
1481.3(4)	$\langle 1^+\rangle$				77Mo10			83	17				
1524													
1553.8(4)	$\langle 1^-–3\rangle$			≤10 ns					38(2)			62(2)	
1566(1)	$\langle 4\rangle^+$				77Mo10					100			
1607(6)	$4^+,5^+$				77Mo10								
1633(1)	$4^+,5^+$				77Mo10					100			
1642.0(4)	$\langle 2\rangle^-$				85De35				23	38		14	
1650.2(3)	$\langle 5\rangle^+$				77Mo10								
1666.6(4)	$\langle 1\rangle^-$				85De35				32			68	
1678.1(4)	$\langle 1\rangle^-$				85De35				92				
1717(6)	$3^-,4^-$				85De35								
1730(10)	X^-				85De35								
1738.1(4)	$\langle 3^+\rangle$				77Mo10				100				
1768.1(4)	$\langle 4\rangle^+$				77Mo10					35			65
1779(10)	X^-		650		85De35								
1816(10)													
1831(7)	$4^+,5^+$		incl		77Mo10								
1832(10)	X^-		incl		85De35								
1851(10)	X^-		incl		85De35								
1875(10)													
1907(10)	X^-				77Mo10								
1932(10)	X^-				85De35								
1945.3(4)	$\langle 7^-,8^+\rangle$			≤6 ns									
1972(10)	$\leq 5^+$												
2033(7)	X^+				77Mo10								
2056(7)	$4^+,5^+$				77Mo10								

(continued) **$^{92}_{41}$Nb**

E^* [keV]	J^π	ℓ_p	σ (^{16}O,^{15}N) μb/sr	$T_{1/2}$ or Γ_{cm}	Ref.	Branching ratios in percentage						
						E_f^*:	0.0	135.5	225.7	285.7	357.49	389.7	480.3
						J_f^π:	$\langle 7\rangle^+$	$\langle 2\rangle^+$	$\langle 2\rangle^-$	$\langle 3\rangle^+$	$\langle 5\rangle^+$	$\langle 3\rangle^-$	$\langle 4\rangle^+$
2082(6)	X^-												
2087.5(3)	$\langle 9\rangle^-$			≤6 ns			96(1)						
2128(7)	$\leq 5^+$				77Mo10								
2142(10)	$\leq 5^+$												
2147(11)	$X^{\langle -\rangle}$				77Mo10								
2162(11)	$X^{\langle +\rangle}$				77Mo10								
2203.3(4)	$\langle 11^-\rangle$			167(4) ns									
2213(11)	$X^{\langle +\rangle}$				77Mo10								
2235.7(4)	$\langle 10^-\rangle$			≤6 ns									
2240(10)	$\leq 5^+$				77Mo10								
2243(8)	X^-												
2254(8)	$\langle 3^-\rangle$				77Mo10								
2271(11)	X^-				77Mo10								
2287.1(5)	$\langle 9^+\rangle$			≤6 ns	77Mo10		100						
2292(12)	$X^{\langle +\rangle}$												
2294(8)	X^-				85De35								
2311(12)					77Mo10								
2335(10)													
2362(8)	X^+				77Mo10								
2391(6)	X^-				77Mo10								
2403	$X^{\langle +\rangle}$				77Mo10								
2407(12)	X^-				77Mo10								
2433(10)	$\leq 5^+$				77Mo10								
2463(8)	$\langle 4,5\rangle^+$				77Mo10								
2498(11)					77Mo10								
2515(13)					77Mo10								
2530(10)	X^+												
2563(8)	X^+				77Mo10								
2580(30)**	$\langle 10^-\rangle$				88La18								
2594(7)	$X^{\langle +\rangle}$				77Mo10								
2610(8)	$\leq 5^+$				77Mo10								
2656(8)	$X^{\langle +\rangle}$				77Mo10								
2666(12)	X^-												
2680(13)	X^+				77Mo10								
2700(14)	$X^{\langle +\rangle}$				77Mo10								
2720(14)	$X^{\langle +\rangle}$				77Mo10								
2739(7)	X^+				77Mo10								
2756(8)					77Mo10								
2785(10)													
2802(8)	$\langle 3\rangle^-$												
2811(10)	$\leq 5^+$				85De35								
2832(10)													
2867(10)	$X^{\langle +\rangle}$												
2905(9)													
2926(8)					77Mo10								

(continued) **$^{92}_{41}$Nb**

E^* [keV]	J^π	ℓ_p	σ (^{16}O,^{15}N) μb/sr	$T_{1/2}$ or Γ_{cm}	Ref.	Branching ratios in percentage							
						E_f^*:	0.0	135.5	225.7	285.7	357.49	389.7	480.3
						J_f^π:	$\langle 7\rangle^+$	$\langle 2\rangle^+$	$\langle 2\rangle^-$	$\langle 3\rangle^+$	$\langle 5\rangle^+$	$\langle 3\rangle^-$	$\langle 4\rangle^+$
2948(6)	$\langle 6,5\rangle^+$				77Mo10								
2964(8)					77Mo10								
2981(10)													
2998.2(5)	$\langle 11^+\rangle$			≤6 ns									
3010(10)													
3020(10)													
3045(6)	$\langle 4,3\rangle^+$												
3064(10)					77Mo10								
3072(10)													
3090(10)	$\leq 5^+$				85De35								
3110(12)	X^-												
3119(7)	$3^+,4^+$				77Mo10								
3134(10)													
3142(10)													
3160(10)													
3185(10)													
3200(10)													
3228(10)					77Mo10								
3242(10)													
3260(10)													
3280(10)	$\leq 5^+$				77Mo10								
3294(10)	$\leq 5^+$				85De35								
3316(8)	X^-												
3325.9(5)	$\langle 13^+\rangle$			≤6 ns									
3330(10)	$\leq 5^+$				85De35								
3342(12)	X^-												
3345(10)	$\leq 5^+$				77Mo10								
3372(10)	$\leq 5^+$				85De35								
3385(10)	$\leq 5^+$				85De35								
3403(8)	X^-												
3445(10)	$\leq 5^+$				77Mo10								
3455(8)	X^-												
3489(12)	$X^{\langle +\rangle}$				77Mo10								
3516(8)	X^-												
3530(10)	$\leq 5^+$				85De35								
3550(10)													
3560(10)													
3580(10)													
3590(10)													
3619(8)	$\leq 5^+$		1380		77Mo10								
3650(10)	$\leq 5^+$		incl		85De35								
3665(12)	X^-		incl										
3672(10)	$\leq 5^+$		incl		77Mo10								
3696(10)	$\leq 5^+$		incl		85De35								
3716(12)	X^-												

(continued) **$^{92}_{41}$Nb**

E^*	J^π	ℓ_p	σ (^{16}O,^{15}N)	$T_{1/2}$ or	Ref.	Branching ratios in percentage							
						E_f^*:	0.0	135.5	225.7	285.7	357.49	389.7	480.3
[keV]			μb/sr	Γ_{cm}		J_f^π:	$\langle 7\rangle^+$	$\langle 2\rangle^+$	$\langle 2\rangle^-$	$\langle 3\rangle^+$	$\langle 5\rangle^+$	$\langle 3\rangle^-$	$\langle 4\rangle^+$
3753	X^+				77Mo10								
3790(10)													
3796.9(11)	$\langle 12,13\rangle$			≤6 ns									
3805(8)	X^-				77Mo10								
3837(10)													
3875					77Mo10								
3882					77Mo10								
3920(30)					77Mo10								
4032					77Mo10								
4079(12)	X^-												
4135(12)	X^+												
4172					77Mo10								
4285					77Mo10								
4355					77Mo10								
4450(30)													
4830(30)													
4930(100)													
5210(100)													
5620(30)													
6000(100)	$X^{\langle+\rangle}$												
6280	$X^{\langle+\rangle}$		6850		73Zi04								
9008(18)	$\langle 0^+\rangle$				85De35								
9956(10)	$\langle 2^+\rangle$			33(2) keV	85De35								
10470(40)	$\langle 4^+\rangle$				85De35								
10830(40)	$\langle 2^+\rangle$				85De35								
11089	$\langle 2^+\rangle$												
11540(300)	$\langle 5\rangle^-$												
11800(300)	$\langle 4\rangle^-$												
			73Zi04		Ref.								

Energy levels and branching ratios [77Mo10, 00Bb11]. Part 3 **$^{92}_{41}$Nb**

E^*	J^π	Branching ratios in percentage										
		E_f^*:	501.23	975.0	1089.4	1945.3	2087.5	2203.3	2235.7	2287.1	2998.2	3325.9
[keV]		J_f^π:	$\langle 6\rangle^+$	$\langle 1^+,2^-\rangle$	$\langle 1\rangle^+$	$\langle 7^-,8^+\rangle$	$\langle 9\rangle^-$	$\langle 11^-\rangle$	$\langle 10^-\rangle$	$\langle 9^+\rangle$	$\langle 11^+\rangle$	$\langle 13^+\rangle$
1149.9(4)	$\langle 1^-,2^-\rangle$			2.0(10)								
1410.2(6)	$\langle 5\text{–}7\rangle$		100									
1642.0(4)	$\langle 2\rangle^-$				25							
1650.2(3)	$\langle 5\rangle^+$		100									
1678.1(4)	$\langle 1\rangle^-$			8.0								
1945.3(4)	$\langle 7^-,8^+\rangle$		[100]									
2087.5(3)	$\langle 9\rangle^-$		1.2(4)			3.0(10)						

(continued) **$^{92}_{41}$Nb**

E^*	J^π	Branching ratios in percentage									
	E^*_f:	501.23	975.0	1089.4	1945.3	2087.5	2203.3	2235.7	2287.1	2998.2	3325.9
[keV]	J^π_f:	$\langle 6\rangle^+$	$\langle 1^+,2^-\rangle$	$\langle 1\rangle^+$	$\langle 7^-,8^+\rangle$	$\langle 9\rangle^-$	$\langle 11^-\rangle$	$\langle 10^-\rangle$	$\langle 9^+\rangle$	$\langle 11^+\rangle$	$\langle 13^+\rangle$
2203.3(4)	$\langle 11^-\rangle$					100					
2235.7(4)	$\langle 10^-\rangle$					100					
2998.2(5)	$\langle 11^+\rangle$						≤4	65(2)	35(2)		
3325.9(5)	$\langle 13^+\rangle$									100	
3796.9(11)	$\langle 12,13\rangle$										100

Energy levels and branching ratios [97Ba13]. **$^{93}_{41}$Nb**

E^*	$2J^\pi$	σ (α,d)	σ (α,t)	C^2S	L	S_N	L	C^2S	L	$T_{1/2}$ or	Ref.
[keV]		μb	μb	(τ,d)		(τ,d)		(d,τ)	(p,α)	Γ_{cm}	
0	9^+	20	2672	0.79	4	7.90(4)*	4	2.9	4	Stable	69Ca20
30.77(2)	1^-			0.53	1	1.06(6)	1	1.6	1	16.13(14) yr	68Oh01
687.09(4)	3^-		79	0.07	1	0.28(2)	1	1.2	1	0.3(+5-1) ps	68Oh01
743.86(9)	7^+									0.57(7) ps	
808.49(11)	5^+	10	70	0.06	2	0.36(2)			2+3	6.16(20) ps	69Ca20
810.25(19)	5^-									>1.0 ps	
949.82(3)	13^+		64						6	4.36(15) ps	
970(10)	1^-,3^-	56		0.006	1	0.024					69Ca20
978.91(11)	11^+									0.251(19) ps	
1082.57(12)	9^+		144	0.04	4	0.4				2.9(+5-1) ps	69Ca20
1126.76(20)	$\langle 5\rangle$										
1284.4(3)	$\langle 1^+\rangle$		304	0.05							
1290(12)	1^-,3^-		incl	incl	1	0.20(4)	1	1.9			68Oh01
1297.15(12)	9^+		incl	incl						0.2(+2-1) ps	
1315.15(23)	$5^{\langle -\rangle}$						3	3.5			68Oh01
1330(10)	$\langle 3^+,5^+\rangle$	77		0.04	$\langle 2\rangle$	0.24					69Ca20
1335.16(9)	17^+									<14 ns	
1364(10)	5^-,7^-		weak								
1369.7(4)	$\langle 3^+\rangle$		incl								
1395.10(24)	5										
1454.2(5)	$\langle 1^+,3^+\rangle$										
1483.0(3)	$\langle 7^+,9^+\rangle$	52									
1491.04(7)	$15^{\langle +\rangle}$									<14 ns	
1499.7(3)	7										
1571(7)	1^-,3^-		28	0.02	1	0.08					69Ca20
1603.16(21)	$\langle 7^-,9^-\rangle$										
1603.8(4)	$\langle 11,13^+\rangle$										
1665.3(5)	5^+	39	55	0.008	2	0.048					69Ca20
1679.10(19)	$\langle 9^+\rangle$		incl								
1682.6(4)	$\langle 9^+\rangle$		incl								
1686.2(4)	$\langle 13^+\rangle$										

(continued) **$^{93}_{41}$Nb**

E^* [keV]	$2J^\pi$	σ (α,d) μb	σ (α,t) μb	C^2S (τ,d)	L	S_N (τ,d)	L	C^2S (d,τ)	L (p,α)	$T_{1/2}$ or Γ_{cm}	Ref.
1693.9	$3^+,5^+$			0.006	2	0.036					69Ca20
1772.6(4)	$\langle 5^+\rangle$										
1779.5(3)	$\langle 5^-\rangle$										
1784.3(3)	$\langle 5^+\rangle$										
1812.7(4)	$\langle 19^-\rangle$										
1908.1(11)	$\langle 5\rangle$										
1910.5(4)	$7^{\langle +\rangle}$										
1915.9(5)	$\langle 9^-\rangle$										
1948.0(5)	$\langle 3^+,5^+\rangle$										
1949.6(3)	$\langle 9\rangle$										
1949.7(4)	$\langle 5\rangle$										
1951(3)	11										
1968.5(3)	$\langle 13^-\rangle$										
1968.66(24)	$\langle 11^-\rangle$										
2002.4(5)	$15^{\langle +\rangle}$										
2019.7(5)	$\langle 7^-,9^-\rangle$		21								72Zi01
2037.0(4)	$\langle 9^+,11^+\rangle$										
2098.8(5)	$\langle 3^+\rangle$										
2132.6(6)			125								72Zi01
2153.7(4)	$\langle 3^+\rangle$		incl								
2162.6(5)	$\langle 9^+\rangle$		incl								
2171.46(25)	$\langle 13^+\rangle$										
2180(10)	$3^+,5^+$			0.03	2	0.18					69Ca20
2180.12(9)	$\langle 19^+\rangle$										
2203.3(3)	$\langle 9^+\rangle$										
2250											
2280.6(7)	$\langle 7^-\rangle$										
2320(10)	$3^+,5^+$			0.03	2	0.36					69Ca20
2330.0(6)											
2367.5(10)	$9,13^{\langle +\rangle}$										
2520(10)	$\langle 1^+\rangle$		89		$\langle 0\rangle$						72Zi01
2583.9(7)	$3^+,5^+$		38	0.02	2	0.12					69Ca20
2752.90(10)	$\langle 19,21\rangle^+$										
2833	$\langle 21^+\rangle$										
2839(3)	$\langle 11\rangle$		67								72Zi01
2980(20)			91								72Zi01
3150(20)			54								73Zi04
3512(17)		78	66								72Zi01
3720(30)			38								72Zi01
3840(17)		94	44								72Zi01
3930(30)		50									72Zi01
4060(30)		80									72Zi01
4105	$\langle 25^+\rangle$										
4224(17)		52	72								72Zi01
4340(20)			43								72Zi01

(continued) **$^{93}_{41}$Nb**

E^* [keV]	$2J^\pi$	σ (α,d) μb	σ (α,t) μb	C^2S (τ,d)	L	S_N (τ,d)	L	C^2S (d,τ)	L (p,α)	$T_{1/2}$ or Γ_{cm}	Ref.
4460(20)			120								72Zi01
4548(17)		100	80								72Zi01
4650(20)											
4700(30)			67								72Zi01
4810(30)			84								72Zi01
5000(30)			66								72Zi01
5145	$\langle 29^+ \rangle$										
5340(40)			71								72Zi01
5490(40)											
5905	$\langle 33^+ \rangle$										
6463.8(10)	$11^{\langle + \rangle}$										
11059	5^+				2	3.9				13(5) keV	69Ca20
11981(5)	1^+									90(9) keV	
≈12170										24 keV	
12503	3^+				2	2.12				38(3) keV	69Ca20
12570(40)	$7^+,9^+$				4	3.0					69Ca20
12993	1^+									42(3) keV	
13090(40)	$9^-,11^-$				5	2.4					69Ca20
13542										68(5) keV	
13581	3^+									45(5) keV	
13838	3^+									63(3) keV	
14091										30(3) keV	
14363	5^+									51(5) keV	
14477	7^-									43(7) keV	
16400(50)	X^-									5.05 MeV	
		72Zi01	72Zi01			69Ca20		68Oh01	73Pa01		Ref.
				69Ca20							Ref.

Additional data on this isotope can be found in [02Ka05, 97DeZW, 92De08, 73Pa01, 72Ke32].
Abundance: 100 %.
* Values $S_N = C^2S'$ given in [97Ba13] were calculated from the normalized C^2S from [69Ca20].
Values σ (t,d) and σ (t,α) are intensities integrated from 16° to 57° and from 13° to 52° [72Zi01].
S_p for four IAS levels at E^*=11.0-13.1 MeV were compared in [73Fi14] with S_{dp} for low-lying ^{93}Zr levels.
Data for this isotope are considered in vol. LB I/18B.

Energy levels and branching ratios [97Ba13]. Part 2 **$^{93}_{41}$Nb**

E^* [keV]	$2J^\pi$	σ (p,α) μb/sr	σ (^{16}O,^{15}N) μb/sr	S'^+_p (^{16}O,^{15}N)	Ref.	E^*_f: / $2J^\pi_f$:	Branching ratios in percentage 0 / 9^+	30.8 / 1^-	687 / 3^-	744 / 7^+	808 / 5^+	810 / 5^-	950 / 13^+	979 / 11^+
0	9^+	x	x		69Ca20									
30.77(2)	1^-	incl	incl	incl	68Oh01		100							

(continued) **$^{93}_{41}$Nb**

E^*	$2J^\pi$	σ (p,α)	σ (^{16}O,^{15}N)	S'^{+}_{p}	Ref.	Branching ratios in percentage							
						E^*_f:	0	30.8	687	744	808	810	950	979
[keV]		μb/sr	μb/sr	(^{16}O,^{15}N)		$2J^\pi_f$:	9^+	1^-	3^-	7^+	5^+	5^-	13^+	11^+
687.09(4)	3^-	x			68Oh01			100						
743.86(9)	7^+	weak					100							
808.49(11)	5^+	x			69Ca20		98.77			1.23(8)				
810.25(19)	5^-	incl						100						
949.82(3)	13^+	x					100							
970(10)	1^-,3^-				69Ca20									
978.91(11)	11^+						100							
1082.57(12)	9^+	x			69Ca20		29(5)			71(1)				
1126.76(20)	$\langle 5\rangle$										100			
1284.4(3)	$\langle 1^+\rangle$	x						100						
1290(12)	1^-,3^-				68Oh01									
1297.15(12)	9^+						51(2)			26(1)				23(4)
1315.15(23)	$5^{\langle -\rangle}$				68Oh01					81(2)	19(1)			
1330(10)	$\langle 3^+,5^+\rangle$				69Ca20									
1335.16(9)	17^+												100	
1364(10)	5^-,7^-	x												
1369.7(4)	$\langle 3^+\rangle$											100		
1395.10(24)	5								35			65		
1454.2(5)	$\langle 1^+,3^+\rangle$										100			
1483.0(3)	$\langle 7^+,9^+\rangle$	x					81(2)				19(1)			
1491.04(7)	$15^{\langle +\rangle}$												85(15)	
1499.7(3)	7						85			6		9		
1571(7)	1^-,3^-				69Ca20									
1603.16(21)	$\langle 7^-,9^-\rangle$									27				43
1603.8(4)	$\langle 11,13^+\rangle$						15						68	17
1665.3(5)	5^+				69Ca20					100				
1679.10(19)	$\langle 9^+\rangle$	x					16(1)			42(2)				
1682.6(4)	$\langle 9^+\rangle$						28(1)			48(2)				24(1)
1686.2(4)	$\langle 13^+\rangle$						39(2)						61(3)	
1693.9	3^+,5^+				69Ca20					100				
1772.6(4)	$\langle 5^+\rangle$	x									80			
1779.5(3)	$\langle 5^-\rangle$											100		
1784.3(3)	$\langle 5^+\rangle$													
1812.7(4)	$\langle 19^-\rangle$													
1908.1(11)	$\langle 5\rangle$						100							
1910.5(4)	$7^{\langle +\rangle}$						100							
1915.9(5)	$\langle 9^-\rangle$													
1948.0(5)	$\langle 3^+,5^+\rangle$											100		
1949.6(3)	$\langle 9\rangle$									46(3)	54(3)			
1949.7(4)	$\langle 5\rangle$						100							
1951(3)	11													
1968.5(3)	$\langle 13^-\rangle$													
1968.66(24)	$\langle 11^-\rangle$						50(3)						14(1)	17(3)
2002.4(5)	$15^{\langle +\rangle}$												100	
2019.7(5)	$\langle 7^-,9^-\rangle$				72Zi01							100		

(continued) **$^{93}_{41}$Nb**

E^*	$2J^\pi$	σ (p,α)	σ (^{16}O,^{15}N)	S'^{+}_{p}	Ref.	Branching ratios in percentage							
						E^*_f:	0	30.8	687	744	808	810	950	979
[keV]		μb/sr	μb/sr	(^{16}O,^{15}N)		$2J^\pi_f$:	9^+	1^-	3^-	7^+	5^+	5^-	13^+	11^+
2037.0(4)	$\langle 9^+,11^+\rangle$												22	
2098.8(5)	$\langle 3^+\rangle$	x												
2132.6(6)					72Zi01									100
2153.7(4)	$\langle 3^+\rangle$							100						
2162.6(5)	$\langle 9^+\rangle$													100
2171.46(25)	$\langle 13^+\rangle$												45(2)	55(2)
2180(10)	$3^+,5^+$				69Ca20									
2180.12(9)	$\langle 19^+\rangle$													
2203.3(3)	$\langle 9^+\rangle$						21							
2250														
2280.6(7)	$\langle 7^-\rangle$									100				
2320(10)	$3^+,5^+$				69Ca20									
2330.0(6)														100
2367.5(10)	$9,13^{\langle+\rangle}$						100							
2520(10)	$\langle 1^+\rangle$				72Zi01									
2583.9(7)	$3^+,5^+$				69Ca20						100			
2752.90(10)	$\langle 19,21\rangle^+$													
2833	$\langle 21^+\rangle$													
2839(3)	$\langle 11\rangle$				72Zi01									
2980(20)					72Zi01									
3150(20)					73Zi04									
3512(17)					72Zi01									
3720(30)					72Zi01									
3840(17)					72Zi01									
3930(30)					72Zi01									
4060(30)					72Zi01									
4105	$\langle 25^+\rangle$													
4224(17)					72Zi01									
4340(20)					72Zi01									
4460(20)					72Zi01									
4548(17)					72Zi01									
4650(20)														
4700(30)					72Zi01									
4810(30)					72Zi01									
5000(30)					72Zi01									
5145	$\langle 29^+\rangle$													
5340(40)					72Zi01									
5490(40)														
5905	$\langle 33^+\rangle$													
6463.8(10)	$11^{\langle+\rangle}$						13.8(3)						38.8(7)	0.3(3)
11059	5^+				69Ca20									
11981(5)	1^+													
≈12170														
12503	3^+				69Ca20									
12570(40)	$7^+,9^+$				69Ca20									

(continued) **$^{93}_{41}$Nb**

E^*	$2J^\pi$	σ (p,α)	σ (^{16}O,^{15}N)	S'^{+}_{p}	Ref.	Branching ratios in percentage							
						E^*_f:	0	30.8	687	744	808	810	950	979
[keV]		μb/sr	μb/sr	(^{16}O,^{15}N)		$2J^\pi_f$:	9^+	1^-	3^-	7^+	5^+	5^-	13^+	11^+
12993	1^+													
13090(40)	9^-,11^-				69Ca20									
13542														
13581	3^+													
13838	3^+													
14091														
14363	5^+													
14477	7^-													
16400(50)	X^-													
		73Pa01	74Gi03	74Gi03	Ref.									
					Ref.									

Energy levels and branching ratios [97Ba13]. Part 3 **$^{93}_{41}$Nb**

E^*	$2J^\pi$					Branching ratios in percentage						
		E^*_f:	1082.6	1297.1	1315.1	1335.2	1395.1	1454.2	1483.0	1491.0	1499.7	1603.2
[keV]		$2J^\pi_f$:	9^+	9^+	$5^{\langle-\rangle}$	17^+	5	$\langle1^+,3^+\rangle$	$\langle7^+,9^+\rangle$	$15^{\langle+\rangle}$	7	$\langle7^-,9^-\rangle$
1491.04(7)	$15^{\langle+\rangle}$					15(4)						
1603.16(21)	$\langle7^-,9^-\rangle$		30									
1679.10(19)	$\langle9^+\rangle$			15	26(1)							
1772.6(4)	$\langle5^+\rangle$							20				
1784.3(3)	$\langle5^+\rangle$		100									
1812.7(4)	$\langle19^-\rangle$					100						
1915.9(5)	$\langle9^-\rangle$		100									
1968.5(3)	$\langle13^-\rangle$									100		
2037.0(4)	$\langle9^+,11^+\rangle$										78	
2098.8(5)	$\langle3^+\rangle$						100					
2180.12(9)	$\langle19^+\rangle$					22(11)				78(11)		
2203.3(3)	$\langle9^+\rangle$						64					15
2752.90(10)	$\langle19,21\rangle^+$					38(12)						
2833	$\langle21^+\rangle$					100						
6463.8(10)	$11^{\langle+\rangle}$		6.5(3)	4.1(3)					1.7(4)	3.6(2)		

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

$^{93}_{41}$Nb

E^*	$2J^\pi$	Branching ratios in percentage									
	E_f^*:	1679.1	1682.6	1686.2	1949.7	2180.1	2367.5	2833	2839	4105	5145
[keV]	$2J_f^\pi$:	$\langle 9^+\rangle$	$\langle 9^+\rangle$	$\langle 13^+\rangle$	$\langle 5\rangle$	$\langle 19^+\rangle$	$9,13^{\langle +\rangle}$	$\langle 21^+\rangle$	$\langle 11\rangle$	$\langle 25^+\rangle$	$\langle 29^+\rangle$
1968.66(24)	$\langle 11^-\rangle$		10(3)	9(2)							
2752.90(10)	$\langle 19,21\rangle^+$					62(12)					
4105	$\langle 25^+\rangle$							100			
5145	$\langle 29^+\rangle$									100	
5905	$\langle 33^+\rangle$										100
6463.8(10)	$11^{\langle +\rangle}$	4.3(2)			4.4(4)		11(3)		11(3)		

Energy levels and branching ratios [00Ma63, 06Ab37, 92Tu02, 85Mu05].

$^{94}_{41}$Nb

E^*	J^π	σ (α,d)	L	$d\sigma/d\Omega$	S'	$2j$	σ (^{16}O,^{15}O)	$T_{1/2}$ or	Ref.
[keV]		μb	(d,p)	μb/sr	(d,p)			Γ_{cm}	
0.0*	6^+	178	2	2440	0.22	5^+	1680(60)	2.03(16)·10^4 y	69Mo24
40.892(12)	3^+	incl	2	900	0.081	5^+	incl	6.263(4) min	69Mo24
58.708(10)	$\langle 4\rangle^+$	incl	2	1330	0.12	5^+	incl		69Mo24
78.668(1)*	$\langle 7\rangle^+$		2	1760	0.16		incl		00Ma63
113.401(1)	$\langle 5\rangle^+$		0+2	630+1920	0.05+0.17	1^++5^+		<5 ns	69Mo24
140.298(12)	$\langle 2\rangle^-$							30(5) ns	
301.558(12)	$\langle 2\rangle^-$	10							
311.821(19)	$\langle 4,5\rangle^+$	incl	2	229	0.020	5^+			69Mo24
334.102(12)	$\langle 3\rangle^+$	incl	2	568	0.049	5^+			69Mo24
396.227(12)	$\langle 3\rangle^-$							<5 ns	
450.204(14)	$\langle 3\rangle^-$								
631.533(13)	$\langle 4\rangle^+$	10	2	395	0.059	3^+			69Mo24
640.988(10)	$\langle 5\rangle^+$	incl	2	600	0.088	3^+			69Mo24
666.10(3)	$\langle 3\rangle^+$	incl							
785.66(3)	$\langle 3\rangle^+$								
792.595(16)	$\langle 3,4\rangle^+$		2	61	0.009	3^+			69Mo24
816.83(3)	$\langle 3\rangle^-$								
895.650(14)	$3^+,4^-$								
924.25(3)	$\langle 2^+\rangle$								
932.70(3)									
936.04(2)	X^+	40	2	178	0.025	3^+			69Mo24
948.0(9)	$\langle 8\rangle$	incl							00Ma63
957.36(3)	$\langle 5\rangle^+$	incl	0	3110	0.24	1^+			69Mo24
970.16(2)									
976.76(4)									
979.29(18)	$\langle 2\rangle$								
991.3(9)*	$\langle 9\rangle$								00Ma63
1006.2(2)	$4^+,5^+$		0+2	478	0.04+0.05	1^++3^+			69Mo24
1010.9(3)									
1023.35(4)									

(continued) **$^{94}_{41}$Nb**

E^* [keV]	J^π	σ (α,d) μb	L (d,p)	$d\sigma/d\Omega$ μb/sr	S' (d,p)	$2j$	σ (^{16}O,^{15}O)	$T_{1/2}$ or Γ_{cm}	Ref.
1030.19(2)									
1061.22(2)	$4^+,5^+$		0	513	0.039				69Mo24
1085.95(2)	$\langle 2^+–4\rangle$								69Mo24
1158.71(4)									
1163.2(9)	$\langle 3^+–5^+\rangle$								
1169.88(6)	$4^+,5^+$	weak	0+2	721+885	0.006+0.12	1^++3^+			
1179.61(6)		incl							
1182.4(8)		incl							
1202	X^+		4	61	0.052	7^+			69Mo24
1230.10(7)	$\langle 4^+,5^-\rangle$	49							
1231.92(3)	$\langle 2–4\rangle^+$	incl	2	735	0.100	3^+			69Mo24
1247.26(7)		incl							
1256.9(1)	X^+	incl	2	176	0.024	3^+			69Mo24
1262.82(7)	$\langle 3,4^-\rangle$								
1272.83(4)									
1281.44(11)	$4^+,5^+$		0	1380	0.11	1^+			69Mo24
1323.41(15)	$4^+,5^+$		0	1690	0.13	$^+$			69Mo24
1332.6(3)	$\langle 3^+–5^+\rangle$								
1346.7(2)									
1361.1(7)	X^+	44	2	283	0.037	3^+			69Mo24
1392.7(1)	X^+	incl	2	175	0.023	3^+			69Mo24
1405(1)	X^+		4	179	0.15	7^+			69Mo24
1428	$X^{\langle +\rangle}$		[2]						
1448.1(13)									
1458.1(1)									
1464.1(11)									
1484.9(15)									
1488.9(3)									
1492.9(4)									
1499.9(1)			1	1010	0.004	3^-–			69Mo24
1519.0(10)	X^-		1	1100	0.047	3^-–			69Mo24
1559.7(16)									
1569.6(16)	$4^+,5^+$		0	900	0.069	1^+			69Mo24
1581.9(1)									
1609.6(12)**	$\langle 11\rangle$								00Ma63
1615.4(7)									
1620.6(4)	$4^+,5^+$		0+2	464+368	0.04+0.05	1^++3^+			69Mo24
1636.1(1)									
1639.3(2)									
1655.1(2)									
1659.0(7)	$\langle 4^+,5^+\rangle$	27	$\langle 0\rangle$	720	0.055	1^+			69Mo24
1678.5(3)									
1695.7(2)									
1716.7(2)									
1720.1(3)									

(continued) **$^{94}_{41}$Nb**

E^* [keV]	J^π	σ (α,d) μb	L (d,p)	$d\sigma/d\Omega$ μb/sr	S' (d,p)	$2j$	σ (^{16}O,^{15}O)	$T_{1/2}$ or Γ_{cm}	Ref.
1731.4(13)									
1763.7(3)									
1770.3(4)									
1776.92(14)									
1779.72(5)	X^+		2+4	259+147	0.03+0.12	5^++7^+			69Mo24
1805.5(3)	X^+	20	2	538	0.067	3^+	1230(50)		69Mo24
1815.75(18)									
1821.2(7)	X^+		2	495	0.060	3^+	incl		
1828.1(3)									69Mo24
1858.75(11)									
1864.13(14)	4^+,5^+		0	587	0.044	1^+			69Mo24
1879.35(14)									
1882.39(17)									
1900									
1912.1(15)									
1920.0(4)									
1926.8(4)	4^+,5^+		0+2	213+110	0.016+0.013	1^++3^+			69Mo24
1930.9(11)	⟨9⟩								
1937.45(17)									
1943.76(23)									
1950.4(3)									
1956.73(22)									
1970.22(17)									
1975.5(4)									
1983.1(9)									
1997.37(20)									
2000.0(6)	4^+,5^+		0+2	124+64	0.010+0.007	1^++3^+			69Mo24
2010.4(3)									
2014.19(20)									
2020.0(3)									
2033.6(3)									
2047.94(15)		59	2	417	0.049	3^+			69Mo24
2062.0(14)		incl	2	754	0.089	3^+			69Mo24
2071.4(5)		incl							
2076.8(4)	4^+,5^+	incl	0	331	0.026	1^+			69Mo24
2098.78(16)									
2102.0(4)									
2124.62(15)									
2134.9(4)									
2140.57(17)									
2150.1(5)									
2157.67(15)									
2162.28(16)									
2168.2(3)									
2175.2(4)		98							

(continued) **$^{94}_{41}$Nb**

E^* [keV]	J^π	σ (α,d) μb	L (d,p)	$d\sigma/d\Omega$ μb/sr	S' (d,p)	$2j$	σ (^{16}O,^{15}O)	$T_{1/2}$ or Γ_{cm}	Ref.
2181.7(7)		incl							
2189.5(8)		incl							
2195.86(16)									
2207.0(3)									
2215.4(3)			2	340	0.039	3^+	969(40)		69Mo24
2221.16(24)									
2229.98(17)									
2236.48(24)	4^+,5^+		0+2	182+266	0.014+0.03	1^++3^+			69Mo24
2245.3(5)									
2250.5(11)*	[10]								00Ma63
2253			2	358	0.041	3^+			69Mo24
2278.5(7)									
2284.9(4)									
2286.41(25)									
2291.4(10)***									
2300.04(22)									
2304.7(3)			2	936	0.10	3^+			69Mo24
2314.4(3)									
2320.5(4)									
2325.9(3)	4^+,5^+		0	196	0.015	1^+			69Mo24
2336.7(7)									
2346.3(5)									
2355.3(14)									
2363.54(21)									
2369.8(3)									
2378.5(5)									
2393.1(4)									
2398.6(15)									
2407.0(6)									
2412.3(5)									
2417.8(3)									
2420.6(5)									
2436.5(5)									
2442.3(15)									
2449.2(13)*	[11]								00Ma63
2449.7(6)									
2455.7(4)									
2471.68(17)									
2478.9(3)									
2488.98(17)									
2502.98(23)									
2509.6(3)									
2516.38(18)									
2528.3(4)									
2537.3(7)									

(continued) **$^{94}_{41}$Nb**

E^* [keV]	J^π	σ (α,d) μb	L (d,p)	$d\sigma/d\Omega$ μb/sr	S' (d,p)	$2j$	σ (^{16}O,^{15}O)	$T_{1/2}$ or Γ_{cm}	Ref.
2545.93(25)									
2555.80(17)									
2565.63(18)									
2576.0(9)									
2585.8(4)									
2592.54(17)									
2598.07(17)									
2607.71(20)									
2620.1(3)									
2633.52(17)									
2645.0(5)									
2649.6(8)									
2654.1(5)									
2662.2(13)									
2669.45(18)									
2674.1(3)									
2685.0(4)									
2689.34(17)									
2696.5(5)									
2703.87(18)									
2709.0(9)									
2722.3(4)									
2726.55(18)									
2730.2(3)									
2738.1(4)									
2742.6(7)									
2757.27(20)									
2761.5(3)									
2769.1(5)									
2772.67(19)									
2777.4(4)									
2780.9(8)									
2790.6(7)									
2796.01(18)									
2801.6(6)									
2810.4(19)									
2817.9(13)**	⟨12⟩								00Ma63
2821.32(20)									
2824.8(4)									
2832.91(18)									
2838.98(21)									
2843.73(20)									
2849.8(3)									
2855.8(3)									
2875.96(23)									

(continued) **$^{94}_{41}$Nb**

E^*	J^π	σ (α,d)	L	$d\sigma/d\Omega$	S'	$2j$	σ (^{16}O,^{15}O)	$T_{1/2}$ orRef.
[keV]		μb	(d,p)	μb/sr	(d,p)			Γ_{cm}
2880.38(21)								
2889.7(3)								
2897.17(19)								
2900.67(20)								
2913.75(22)								
2923.22(19)								
2930.0(9)								
2942.79(25)								
2950.6(9)								
2955.68(19)								
2967.3(6)								
2981.8(6)								
2985.86(23)								
2990.84(20)								
2995.9(5)								
3003.6(8)								
3007.09(23)								
3019.65(20)								
3031.31(20)								
3036.8(3)								
3042.1(3)								
3047.09(21)								
3055.44(22)								
3059.4(11)								
3071.48(22)								
3074.18(22)								
3084.48(22)								
3088.48(22)								
3097.68(22)								
3106.68(22)								
3112.68(22)								
3118.88(22)								
3126.78(22)								
3137.6(3)								
3142.3(5)								
3148.7(3)								
3153.4(4)								
3169.8(4)								
3172.3(5)								
3177.6(6)								
3183.48(20)								
3195.2(4)								
3199.4(3)								
3204.49(22)								
3212.09(22)								

(continued) **$^{94}_{41}$Nb**

E^* [keV]	J^π	σ (α,d) μb	L (d,p)	$d\sigma/d\Omega$ μb/sr	S' (d,p)	$2j$	σ (^{16}O,^{15}O)	$T_{1/2}$ or Γ_{cm}	Ref.
3217.29(22)									
3222.4(13)									
3227.79(22)									
3245.39(22)									
3249.3(4)									
3255.99(22)									
3267.0(14)									
3272.29(22)									
3281.79(22)									
3291.29(22)									
3296.29(22)									
3300.19(22)									
3304.49(22)									
3307.3(15)*	⟨12⟩								00Ma63
3308.39(22)									
3315.29(22)									
3320.99(22)									
3325.8(3)									
3335.19(22)									
3339.29(22)									
3342.09(22)									
3348.89(22)									
3356.6(4)									
3360.49(22)									
3369.1(3)									
3371.69(22)									
3376.8(4)									
3390.89(22)									
3393.3(3)									
3399.2(3)									
3406.6(3)									
3411.1(3)									
3417.30(22)									
3421.3(7)									
3424.5(3)									
3431.2(3)									
3434.1(3)									
3438.50(20)									
3442.3(8)									
3454.10(20)									
3462.8(3)									
3467.10(22)									
3473.30(22)									
3475.0(15)*	⟨13⟩								00Ma63
3482.50(22)									

(continued) **$^{94}_{41}$Nb**

E^* [keV]	J^π	σ (α,d) μb	L (d,p)	$d\sigma/d\Omega$ μb/sr	S' (d,p)	$2j$	σ (^{16}O,^{15}O)	$T_{1/2}$ orRef. Γ_{cm}
3487.10(22)								
3492.6(3)								
3498.30(22)								
3507.40(20)								
3520.3(3)								
3524.3(4)								
3533.20(20)								
3536.2(4)								
3544.50(20)								
3547.50(20)								
3551.40(20)								
3569.50(20)								
3576.80(20)								
3582.00(20)								
3590.3(4)								
3594.00(20)								
3600.2(4)								
3622.4(5)								
3633.9(3)								
3638.5(3)								
3647.9(3)								
3656.9(8)								
3666.51(20)								
3671.0(3)								
3674.71(20)								
3684.61(20)								
3689.11(20)								
3695.2(3)								
3703.4(3)								
3706.4(3)								
3713.81(22)								
3720.01(22)								
3725.41(22)								
3732.7(3)								
3738.1(3)								
3744.6(3)								
3747.21(22)								
3750.6(4)								
3762.51(22)								
3769.71(22)								
3774.6(5)								
3778.8(4)								
3785.0(4)								
3787.8(4)								
3796.31(22)								

(continued) **$^{94}_{41}$Nb**

E^* [keV]	J^π	σ (α,d) μb	L (d,p)	$d\sigma/d\Omega$ μb/sr	S' (d,p)	$2j$	σ (^{16}O,^{15}O)	$T_{1/2}$ or Γ_{cm}	Ref.
3799.71(22)									
3807.2(3)									
3811.7(3)									
3819.5(3)									
3831.0(3)									
3835.4(3)									
3839.51(22)									
3844.51(22)									
3853.7(6)									
3861.01(22)									
3866.41(22)									
3874.41(22)									
3877.2(3)									
3884.11(22)									
3888.1(3)									
3897.31(22)									
3902.81(22)									
3908.12(22)									
3912.3(3)									
3915.8(5)									
3920.1(6)									
3923.3(4)									
3926.6(6)									
3933.0(6)									
3936.62(22)									
3942.2(3)									
3947.7(4)									
3953.1(4)									
3961.62(22)									
3967.72(22)									
3972.1(3)									
3975.7(3)									
3983.2(3)									
3987.02(22)									
3992.1(3)									
4001.0(3)									
4290.3(17)**									00Ma63
4549.9(18)*	⟨15⟩								00Ma63
5331.4(21)*	⟨17⟩								00Ma63
5814.2(23)*	⟨18⟩								00Ma63

(continued) **$^{94}_{41}$Nb**

E^* [keV]	J^π	σ (α,d) μb	L (d,p)	$d\sigma/d\Omega$ μb/sr	S' (d,p)	$2j$	σ (^{16}O,^{15}O)	$T_{1/2}$ or Γ_{cm}	Ref.
6496(3)*		72Zi01	69Mo24	69Mo24	69Mo24	69Mo24	73Zi04		00Ma63 Ref.

Additional data on this isotope can be found in [88Ke09, 00Ma63].
* Cascade based on the ground state [06Ab37].
** Cascade based on the level at E^*=1609.6 keV [06Ab37].
** not included in [06Ab37].
The low-lying levels with J^π=6$^+$,3$^+$,4$^+$,7$^+$,5$^+$ are considered as possible candidate for a multiplet with configuration $(\pi 1g_{9/2})^1(\nu 1d_{5/2})^{-1}$ [06Ab37].
S' as defined by $\sigma_{exp} = (2j+1)S' \cdot \sigma_{DWBA}$ in [69Mo24, 85Mu05].

Energy levels and branching ratios [00Ma63, 06Ab37, 92Tu02, 85Mu05]. Part 2 **$^{94}_{41}$Nb**

E^*	J^π	Branching ratios in percentage								
	E^*_f:	0.0	40.9	58.7	78.7	113.4	140.3	301.6	311.8	334.1
[keV]	J^π_f:	$\langle 6\rangle^+$	3^+	$\langle 4\rangle^+$		$\langle 5\rangle^+$	$\langle 2\rangle^-$	$\langle 2\rangle^-$	$\langle 4,5\rangle^+$	$\langle 3\rangle^+$
40.892(12)	3^+	100								
58.708(10)	$\langle 4\rangle^+$		100							
78.668(1)*	$\langle 7\rangle^+$	100								
113.401(1)	$\langle 5\rangle^+$	95(2)		5.4(1)						
140.298(12)	$\langle 2\rangle^-$		100							
301.558(12)	$\langle 2\rangle^-$						100			
311.821(19)	$\langle 4,5\rangle^+$			100						
334.102(12)	$\langle 3\rangle^+$		97(1)				3.3(6)			
396.227(12)	$\langle 3\rangle^-$		2.8(1)	24(1)			73(3)			
450.204(14)	$\langle 3\rangle^-$		2.0(3)				98(1)	0.2(1)		
631.533(13)	$\langle 4\rangle^+$		12.3(8)	2.4(2)	1.7(3)	80(3)			3.99(16)	
640.988(10)	$\langle 5\rangle^+$	8.6(3)			50(1)	21(1)			20.6(7)	
666.10(3)	$\langle 3\rangle^+$					12(2)	84(8)	4(2)		
785.66(3)	$\langle 3\rangle^+$					22(2)	20(2)	57(7)		
792.595(16)	$\langle 3,4\rangle^+$		34.3(2)	3.4(4)						60(2)
816.83(3)	$\langle 3\rangle^-$		80(6)							10.6(8)
895.650(14)	3^+,4^-					7.3(7)	14(1)		1.61(17)	
924.25(3)	$\langle 2^+\rangle$		56(3)					2.6(4)	3.0(5)	
932.70(3)		17(3)			20(2)					19(2)
936.04(2)	X^+		66(4)	25(2)						
957.36(3)	$\langle 5\rangle^+$	42(3)		23(1)	32(2)					
970.16(2)				43(3)					3.4(4)	15.6(1)
976.76(4)		21(7)								79(5)
979.29(18)	$\langle 2\rangle$						[32]			
1023.35(4)		7(1)	8(2)	9(2)	41(4)				11.6(9)	
1030.19(2)									14(3)	25(3)
1061.22(2)	4^+,5^+		17(1)	22(4)					19(1)	

(continued) **$^{94}_{41}$Nb**

E^*	J^π	Branching ratios in percentage									
	E_f^*:	0.0	40.9	58.7	78.7	113.4	140.3	301.6	311.8	334.1	
[keV]	J_f^π:	$\langle 6\rangle^+$	3^+	$\langle 4\rangle^+$		$\langle 5\rangle^+$	$\langle 2\rangle^-$	$\langle 2\rangle^-$	$\langle 4,5\rangle^+$	$\langle 3\rangle^+$	
1158.71(4)			46(4)	32(4)							
1163.2(9)	$\langle 3^+–5^+\rangle$		35(8)	53(8)		13(4)					
1169.88(6)	$4^+,5^+$		76(6)	6(1)		8(3)					
1179.61(6)				43(4)							
1182.4(8)							66(11)	34(4)			
1230.10(7)	$\langle 4^+,5^-\rangle$	30(4)			37(7)						
1231.92(3)	$\langle 2–4\rangle^+$		14(1)			38(10)					
1247.26(7)			46(3)	12(1)			17(2)				
1256.9(1)	X^+	57(8)	33(6)								
1262.82(7)	$\langle 3,4^-\rangle$						34(3)		13(1)		
1272.83(4)				20(3)		29(3)					
1281.44(11)	$4^+,5^+$	8(4)	42(5)	50(5)							
1323.41(15)	$4^+,5^+$			100							
1332.6(3)	$\langle 3^+–5^+\rangle$		50(3)	26(3)		24(3)					
1519.0(10)	X^-			58.8	41.2						
1731.4(13)									100		
1815.75(18)										100	

Energy levels and branching ratios [00Ma63, 06Ab37, 92Tu02, 85Mu05]. Part 3 **$^{94}_{41}$Nb**

E^*	J^π	Branching ratios in percentage									
	E_f^*:	396.3	450.2	631.5	641.0	666.2	785.9	792.6	816.9	895.7	924.5
[keV]	J_f^π:	$\langle 3\rangle^-$	$\langle 3\rangle^-$	$\langle 4\rangle^+$	$\langle 5\rangle^+$	$\langle 3\rangle^+$	$\langle 3\rangle^+$	$\langle 3,4\rangle^+$	$\langle 3\rangle^-$	$\langle 3^+,4^-\rangle$	$\langle 2^+\rangle$
792.595(16)	$\langle 3,4\rangle^+$	1.9(4)									
816.83(3)	$\langle 3\rangle^-$					9.0(5)					
895.650(14)	$3^+,4^-$	75.7(12)				0.76(14)					
924.25(3)	$\langle 2^+\rangle$						39(8)				
932.70(3)							4(1)	39(28)			
936.04(2)	X^+			7.2(5)				1.5(2)			
957.36(3)	$\langle 5\rangle^+$				3(2)						
970.16(2)				8.1(4)	29(1)						0.53(11)
979.29(18)	$\langle 2\rangle$					[68]					
1010.9(3)									100		
1023.35(4)			9.5(9)		9.5(7)					1.7(4)	
1030.19(2)				13(2)						47(2)	
1061.22(2)	$4^+,5^+$							12(2)			24.9
1085.95(2)	$\langle 2^+–4\rangle$	59(3)	21.4(1)	8.9(5)						3.1(2)	
1158.71(4)								1.6(5)		3.5(4)	
1169.88(6)	$4^+,5^+$			3.3(7)				7.0(7)			
1179.61(6)		29(3)		20(1)	3.3(7)						
1230.10(7)	$\langle 4^+,5^-\rangle$			13(1)				6.2(7)	8.5(8)		
1231.92(3)	$\langle 2–4\rangle^+$	42(2)		3.5(2)							

(continued) **$^{94}_{41}$Nb**

E^*	J^π	Branching ratios in percentage									
	E_f^*:	396.3	450.2	631.5	641.0	666.2	785.9	792.6	816.9	895.7	924.5
[keV]	J_f^π:	$\langle 3\rangle^-$	$\langle 3\rangle^-$	$\langle 4\rangle^+$	$\langle 5\rangle^+$	$\langle 3\rangle^+$	$\langle 3\rangle^+$	$\langle 3,4\rangle^+$	$\langle 3\rangle^-$	$\langle 3^+,4^-\rangle$	$\langle 2^+\rangle$
1247.26(7)		4.3(4)						5.5(3)			
1256.9(1)	X^+										9.5(9)
1262.82(7)	$\langle 3,4^-\rangle$		45(4)							3.2(6)	
1272.83(4)			7.9(6)						37.2(6)	6.2(6)	
1346.7(2)										100	
1655.1(2)		100									
1858.75(11)				100							
2355.3(14)										100	

Energy levels and branching ratios [00Ma63, 06Ab37, 92Tu02, 85Mu05]. Part 4 **$^{94}_{41}$Nb**

E^*	J^π	Branching ratios in percentage									
	E_f^*:	932.7	935.2	957.4	976.8	1005.2	1023.4	1060.4	1086.1	1158.8	1232.0
[keV]	J_f^π:		X^+	$\langle 5\rangle^+$		$4^+,5^+$		$4^+,5^+$			
1023.35(4)					2.7(2)						
1061.22(2)	$4^+,5^+$	2.0(4)	3.0(4)								
1085.95(2)	$\langle 2^+–4\rangle$	0.9(4)	7(2)								
1158.71(4)							17(5)				
1179.61(6)								4.1(3)			
1230.10(7)	$\langle 4^+,5^-\rangle$									4.9(7)	
1231.92(3)	$\langle 2–4\rangle^+$								2.34(10)		
1247.26(7)					14.8(5)						
1262.82(7)	$\langle 3,4^-\rangle$									4.8(5)	
1779.72(5)	X^+								100		
2033.6(3)											100
2284.9(4)					100						
2398.6(15)				53.9		46.1					
2442.3(15)				100							

Energy levels and branching ratios [93Bu08]. **$^{95}_{41}$Nb**

E^*	$2J^\pi$	L	I_p	L	C^2S	C^2S	C^2S	σ (t,α)	σ (^{16}O,^{15}N)	C^2S	L	C^2S	$T_{1/2}$ or	Ref.
[keV]		(t,p)	(t,p)		(τ,d)	(τ,d)	(t,α)	μb/sr	μb/sr	(d,τ)		(d,τ)	Γ_{cm}	
0.0	9^+	0	297	4	7.8	0.86(9)	2.9	470	3240(90)	2.9**	4	2.54	34.991(6) d	73Me02
235.690(20)	1^-		5	1	0.60	0.34(3)	1.7	250	640(40)	1.6	1	1.50	3.61(3) d	73Me02
724.195(4)	7^+			2	0.84	0.045(8)		35	1120(50)				≤70 ps	73Me02
730(6)	$\langle 5\rangle^+$						0.50							83Fl06
756.728(12)	7^+		53										≤70 ps	05Ra30

(continued) **$^{95}_{41}$Nb**

E^* [keV]	$2J^\pi$	L (t,p)	I_p (t,p)	L (τ,d)	C^2S (τ,d)	C^2S (τ,d)	C^2S (t,α)	σ (t,α) μb/sr	σ (^{16}O,^{15}N) μb/sr	C^2S (d,τ)	L	C^2S (d,τ)	$T_{1/2}$ or Γ_{cm}	Ref.
799(5)	3^-			1	0.24	0.077(3)	1.8	340		1.8	1	1.74		73Me02
824.7	$\langle 13^+ \rangle$	2	90											05Bu08
877(7)	$\langle 5–13 \rangle^+$	2	64											05Ra30
1011(8)	$\langle 5 \rangle^-$		48			0.030(9)	$\langle 2.6 \rangle$	210		2.1	3	1.98		83Fl06
1088(11)	9^+	0	80						170(20)					05Ra30
1149(11)	$\langle 5–13 \rangle^+$	2	11											05Ra30
1216(7)*	$\langle 7–11 \rangle^-$	1	5											05Ra30
1219(6)*	3^-			1	0.08	0.022(2)	1.8	290			2	1.72		73Me02
1268(7)*	9^+	0	64											05Ra30
1273(8)*	5^-			1	0.10		4.4	490						73Me02
1337(9)	9^+	0	16											05Ra30
1364(8)														
1394(9)			74											05Ra30
1430(12)	$\langle 3^+ \rangle$						$\langle 0.03 \rangle$	11						83Fl06
1464(5)			27											05Ra30
1518(8)	$\langle 5–13 \rangle^+$	2	58						240(20)					05Ra30
1565(8)	9^+	0	21											05Ra30
1589(8)	3^-						0.16	39						83Fl06
1590(8)	$3^+,5^+$			2	0.18									73Me02
1616(8)	$3^+,5^+$	4	58								1+2	0.1+0.06		74Bi08
1645(8)	$1^-,3^-$			$\langle 1 \rangle$	0.14									73Me02
1649.4	$\langle 17^+ \rangle$													05Bu08
1658(8)*	9^+	0	58											05Ra30
1662(8)*	$\langle 5^- \rangle$						$\langle 0.38 \rangle$	33						83Fl06
1710(10)	$\langle 7^+ \rangle$						$\langle 0.32 \rangle$	20						83Fl06
1730(7)	$\langle 5–13 \rangle^+$	2	21						310(30)					05Ra30
1767(4)	$\langle 7–11 \rangle^-$	1	5											05Ra30
1813(6)	5^+			2	0.36		0.25	30						73Me02
1847(2)	$\langle 5–13 \rangle^+$	2	11											05Ra30
1903(10)	$3^+–9^+$	0	16	2	0.24			30						73Me02
1952(8)*	X^-							45			1+3	0.07+0.6		74Bi08
1958(9)*	9^+	0	58											05Ra30
2018(16)	9^+	0	21						940(50)					05Ra30
2052(6)	$3^+,5^+$	3	27	2	0.36			20						73Me02
2100(9)			37											05Ra30
2135(14)	$3^+,5^+$			2	0.42			35						73Me02
2165(11)*	$\langle 3–15 \rangle^-$	3	11											05Ra30
2172(8)*	$3^+,5^+$			2	0.72			18						73Me02
2200(5)	$\langle 5–13 \rangle^+$	2	90											05Ra30
2247(8)	$\langle 3^+,5^- \rangle$							21						83Fl06
2275(14)	$\langle 1–17 \rangle^+$	4	74											05Ra30
2302(8)	5^-						0.82	80						83Fl06
2305(14)	$\langle 5–13^+ \rangle$	2	133											05Ra30
2328(12)	$1^-,3^-$										1+3	0.14+1.1		74Bi08
2328.4	$\langle 21^+ \rangle$													05Bu08

(continued) **$^{95}_{41}$Nb**

E^* [keV]	$2J^\pi$	L (t,p)	I_p (t,p)	L (τ,d)	C^2S (τ,d)	C^2S (τ,d)	C^2S (t,α)	σ (t,α) μb/sr	σ (^{16}O,^{15}N) μb/sr	C^2S (d,τ)	L (d,τ)	C^2S (d,τ)	$T_{1/2}$ or Γ_{cm}	Ref.
2362(4)	$\langle 1–13\rangle^+$	2	32	$\langle 0\rangle$	0.08									73Me02
2383(8)*	1^-						0.13	30						83Fl06
2390(7)*	$\langle 5–13\rangle^+$	2	58											05Ra30
2414(8)	$\langle 3^+\rangle$			$\langle 0,2\rangle$	0.06,0.1		$\langle 0.09\rangle$	25						73Me02
2435(6)	$\langle 3^+,5^+\rangle$	2	106	$\langle 2\rangle$	0.18									73Me02
2486(7)	$5^-,7^-$	3	11								3	1.17		74Bi08
2486(8)	1^-						0.27	50						83Fl06
2536(4)	$\langle 5–13\rangle^+$	2	48											05Ra30
2586(2)*	$\langle 1–17\rangle^+$	4	58											05Ra30
2599(8)*	5^-						0.31	20						83Fl06
2637(4)	9^+	0	90				0.10	15						83Fl06
2670(8)	$\langle 5^-\rangle$						0.42	30						83Fl06
2706(2)	$\langle 5–13\rangle^+$	2	48											05Ra30
2724(8)	5^-						0.47	35						83Fl06
2765(4)*	9^+	0	27											05Ra30
2768(8)*	3^-						0.12	28						83Fl06
2786(15)	$5^-,7^-$										3	1.12		74Bi08
2817(6)	$\langle 3–15\rangle^-$	3	74											05Ra30
2888(6)	$\langle 5–13\rangle^+$	2	53											05Ra30
2947(6)	9^+	0	254											05Ra30
2977(10)	$3^+,5^+$			2	0.30									73Me02
2993(5)	$\langle 1–17\rangle^+$	4	27											05Ra30
3045(7)	$\langle 3–15\rangle^-$	3	53						400(30)					05Ra30
3111(10)	9^+	0	48											05Ra30
3149(3)	9^+	0	53											05Ra30
3196(15)	9^+	0	106											05Ra30
3198.3	$\langle 25^+\rangle$													05Bu08
3233(9)	$\langle 1–17\rangle^+$	4	85						210(20)					05Ra30
3307(7)	9^+	0	53											05Ra30
3358(6)	9^+	0	85											05Ra30
3408(8)	$\langle 1–17\rangle^+$	4	74											05Ra30
3481(7)	$\langle 1–17\rangle^+$	4	148											05Ra30
3545(3)	$\langle 1–17\rangle^+$	4	69											05Ra30
3585(8)	$\langle 5–13\rangle^+$	2	11											05Ra30
3625(5)	$\langle 1–17\rangle^+$	4	58											05Ra30
3669(9)	$\langle 5–13\rangle^+$	2	53											05Ra30
3900(20)														
4050(20)														
4070.9	$\langle 29\rangle^+$													05Bu08
4160(20)														
4360(20)														
4520(20)														
4610(20)														
4830(20)														
5140.0	$\langle 33^+\rangle$													05Bu08

(continued) **$^{95}_{41}$Nb**

E^* [keV]	$2J^\pi$	L (t,p)	I_p (t,p)	L (τ,d)	C^2S (τ,d)	C^2S (τ,d)	C^2S (t,α)	σ (t,α) μb/sr	σ (^{16}O,^{15}N) μb/sr	C^2S (d,τ)	L (d,τ)	C^2S (d,τ)	$T_{1/2}$ or Γ_{cm}	Ref.
5200(20)														
5360(20)														
5770(20)														
6487.7														05Bu08
7493.3														05Bu08
8695.2														05Bu08
11990	$\langle 5\rangle^+$			2	0.42									73Fi14
12852(9)	1^+													
13274(5)	$\langle 5^+\rangle$													
13601(6)	3^+													
13690	7^+,9^+			2	1,23									73Fi14
				+4	0.31									73Fi14
13721(6)	5^+													
13922(6)	$\langle 5^+\rangle$													
14070	9^-,11^-			5	0.12									73Fi14
14262(10)														
14301(10)	$\langle 3^+\rangle$													
14365(7)	$\langle 3^+\rangle$													
14456(10)	$\langle 7^+,9^+\rangle$													
14630(11)	3^+													
14732(10)	$\langle 7\rangle^+$			4	0.36									73Fi14
14832(12)				4	0.35									73Fi14
14978(6)	$\langle 3^+\rangle$													
15006(6)	$\langle 3^+\rangle$													
15057(12)	$\langle 7^-\rangle$													
		05Ra30	05Ra30		73Me02		83Fl06	83Fl06		69Oh04	74Bi08			Ref.
					73Fi14	69Ca20			73Zi04					Ref.

Additional data on this isotope can be found in [91De24].

* These levels with the same E^* but different spin-parity are considered as independent states.

** For calculations with deuteron zero-range nonlocal (ZRNL) potential see also [69Oh04].

I_p is proton yield from the (t,p) reaction in units number of protons per 0.25 mm strip [05Ra30].

Systematics of levels along the N=54 isotones and the interpretation of low-lying levels of ^{95}Nb as a $g_{9/2}$ proton hole weakly coupled to the 0^+, 2^+ and 4^+ states of the even-even ^{96}Mo core can be found in [05Bu08].

S_p for six IAS levels at E^*=12.0-14.8 MeV were compared in [73Fi14] with S_{dp} for low-lying ^{95}Zr levels.

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

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

$^{95}_{41}$Nb

E^* [keV]	$2J^\pi$	Branching ratios in percentage E^*_f: 0.0 $2J^\pi_f$: 9^+
235.690(20)	1^-	100
724.195(4)	7^+	100
756.728(12)	7^+	100

Energy levels and branching ratios [93Pe02].

$^{96}_{41}$Nb

E^* [keV]	J^π	σ (α,d) μb	L (t,α)	$d\sigma/d\Omega$ μb/sr	σ (d,α) μb/sr	L (d,α)	L (d,α)	Config.	N (d,α)	$T_{1/2}$ or Γ_{cm}	Ref.
0	6^+		4	102			6	g9/2d5/2	20000	23.35(5) h	84Cl01
44.19(6)	$\langle 5^+ \rangle$	14	4	92	12600(1100)	5	4	g9/2d5/2	6000		74Co37
146.10(10)	$\langle 4^+ \rangle$		4	56	2200(600)	3	4	g9/2d5/2	10000	<0.8 ns	72Zi01
184.58(12)	$\langle 3^+ \rangle$		4	44	5400(900)	3	2,4	g9/2d5/2	4500	<0.8 ns	74ScYV
233(5)	$\langle 7^+ \rangle$	71	4	62	30300(1600)	6	6	g9/2d5/2	3500		74ScYV
511.87(17)	$\langle 2^- \rangle$		1	177	61000(2200)	2	1,3	p1/2d5/2	40000	<0.4 ns	74ScYV
634.95(20)	$\langle 2^+ \rangle$		4	18	4600(700)	3				<1.4 ns	74ScYV
694.63(15)	$\langle 3^- \rangle$	20			3300(800)	2	3	p1/2d5/2	10000	<1.4 ns	74Co37
867.88(30)	$\langle 3^- \rangle$	weak	1	258	24900(1400)						84Cl01
1002.66(17)	$3^-,2^-$	20			3200(600)						74ScYV
1045.42(37)	$\langle 4,3 \rangle$				3100(600)						74ScYV
1116(10)					2300(800)						74ScYV
1140.77(29)	$\langle 0^-,2 \rangle$										
1156.19(53)					2200(700)						74ScYV
1242.34(34)	$\langle 3 \rangle$	10			3800(700)						74ScYV
1258.27(82)					incl						
1270.18(17)					incl						
1325.59(41)	$\langle 4 \rangle$				8000(1400)						74ScYV
1346.35(28)											
1368.45(31)					5200(1000)						74ScYV
1427(5)	$[4]^-$	70			76600(3100)		3	p3/2d5/2	10000		74Co37
1498.56(40)	$\langle 0,3 \rangle$				9000(1500)						74ScYV
1519.97(64)	$\langle 3,0 \rangle$										
1537(10)					6000(1300)						74ScYV
1614.65(42)					8700(1400)						74ScYV
1652(10)					13000(2800)						74ScYV
1720(10)		20			21300(1900)						74ScYV
1810(10)					21300(1800)						74ScYV
1872(10)		20			13100(1500)						74ScYV
1937(10)					9800(2100)						74ScYV
1973(10)					4500(1500)						74ScYV
2100(30)		60									72Zi01
2240(30)		40									72Zi01

(continued) **$^{96}_{41}$Nb**

E^* [keV]	J^π	σ (α,d) μb	L (t,α)	$d\sigma/d\Omega$ μb/sr	σ (d,α) μb/sr	L (d,α)	L (d,α)	Config.	N (d,α)	$T_{1/2}$ or Γ_{cm}	Ref.
2380(30)		212									72Zi01
2470(30)		40									72Zi01
2730(40)		20									72Zi01
2960(40)		40									72Zi01
		72Zi01		84Cl01	74ScYV	74ScYV	74Co37	74Co37	74Co37		Ref.

σ (α,d) is an intensity in μb integrated from 12.5° to 33.2° or to 51.8° [72Zi01, 82Mu12].
$d\sigma/d\Omega$=σ (t,α) was measured at 50° [84Cl01].
σ (d,α) was measured at 45° [74ScYV].
Normalization factor N in the comparison of the measured (α,d) cross section with the theory is defined by the relation $d\sigma/d\Omega_{exp}$= N $d\sigma/d\Omega_{DWBA}$/(2J+1) [74Co37].

Energy levels and branching ratios [93Pe02]. Part 2 **$^{96}_{41}$Nb**

E^*	J^π	Branching ratios in percentage							
	E^*_f:	0	44.19	146.10	184.58	511.87	634.95	694.63	1002.66
[keV]	J^π_f:	6^+	$\langle 5^+\rangle$	$\langle 4^+\rangle$	$\langle 3^+\rangle$	$\langle 2^-\rangle$	$\langle 2^+\rangle$	$\langle 3^-\rangle$	$\langle 3^-,2^-\rangle$
44.19(6)	$\langle 5^+\rangle$	100							
146.10(10)	$\langle 4^+\rangle$		100						
184.58(12)	$\langle 3^+\rangle$			100					
511.87(17)	$\langle 2^-\rangle$				100				
634.95(20)	$\langle 2^+\rangle$				100				
694.63(15)	$\langle 3^-\rangle$				17(5)	83(2)			
867.88(30)	$\langle 3^-\rangle$					100			
1002.66(17)	$3^-,2^-$				12(2)			88(3)	
1045.42(37)	$\langle 4,3\rangle$			100					
1140.77(29)	$\langle 0^-,2\rangle$					100			
1156.19(53)						100			
1242.34(34)	$\langle 3\rangle$				100				
1258.27(82)						100			
1270.18(17)						<44		85(4)	14.8(26)
1325.59(41)	$\langle 4\rangle$			100					
1346.35(28)								100	
1368.45(31)							57(3)	43(5)	
1498.56(40)	$\langle 0,3\rangle$					100			
1519.97(64)	$\langle 3,0\rangle$					100			
1614.65(42)					100				

Energy levels and branching ratios [93Ar09]. **$^{97}_{41}$Nb**

E^* [keV]	$2J^\pi$	L	$S_{\ell j}$ (d,n)	L	C^2S (τ,d)	$G_{\ell j}$ (τ,d)	C^2S (τ,d)	S_N (τ,d)	C^2S (d,τ)	L	C^2S (d,τ)	C^2S (t,α)	σ (t,α) μb/sr	$T_{1/2}$ or Γ_{cm}	Ref.
0.0	9^+	4	0.67	4	0.88	8.8	0.95(5)		2.2	4	2.27	2.2	350	72.1(7) m	72Ho28
743.35(3)	1^-			1	0.14	0.27	0.084(8)		1.1	1	2.06	2.1	330	52.7(18) s	73Me06
1148.0(1)	7^+													≤0.15 ns	
1160(10)	9^+											1.2	170		
1251.0(1)	3^-	1	0.047	1	0.065	0.26	0.084(8)		2.5	1	2.43	2.6	540		73Me06
1276.1(1)	5^+			2	0.025	0.15									73Me06
1433.9(1)	5^-			⟨3⟩		0.31			2.5	3	5.8	3.2	480		73Me06
1548.4(2)	$3^+,5^-$														
1554(15)	$1^-,3^-$			1	0.007	0.024	0.008(2)								73Me06
1652.8(2)															
1750.4(1)	5^+	2	0.05*	2	0.11	0.66	0.18(2)			2	0.06	0.24	67	≤0.2 ns	72Ho28
1764.4(1)	⟨3^-⟩	1	0.09*	⟨1⟩	0.04	0.17				1	0.12				72Ho28
1851.7(1)	5^+			2	0.053	0.32	0.050(6)							≤0.2 ns	73Me06
1945(15)	$7^+,9^+$			4	0.042	0.37									73Me06
1958.4(6)															
2047(10)	⟨3^-⟩	1	0.059	⟨1⟩	0.025	0.066						0.07	41		72Ho28
2092(15)	$3^+,5^+$			2	0.085	0.41	0.14(2)								73Me06
2105.9(1)	⟨3^+⟩			⟨2⟩	0.05					2	0.08			≤0.2 ns	73Me06
2113(10)	5^-					0.19				3	1.0	1.2	120		74Bi08
2247.5(2)	3^-									1	0.28		81		74Bi08
2357(15)	⟨1^+⟩	0	0.025	⟨0⟩	0.08	0.15									72Ho28
2388(10)	⟨3^-⟩									⟨1⟩	0.29	0.34	85		74Bi08
2525(15)	$3^+,5^+$			2	0.045	0.20	0.07(1)								73Me06
2541(10)	⟨5^-⟩											1.0	95		
2550(20)	$1^-,3^-$									1	0.37				74Bi08
2654(10)		[1]	0.14										56		72Ho28
2676(15)	$3^+,5^+$			2	0.029	0.14									73Me06
2702(15)	$3^+,5^+$			2	0.035	0.17									73Me06
2727(15)	$3^+,5^+$			2	0.06	0.29									73Me06
2748(15)	⟨$3^+,5^+$⟩			⟨2⟩	0.024	0.12									73Me06
2792(15)	⟨1^+⟩			⟨0⟩	0.025	0.05									73Me06
2948(15)										1	0.15				74Bi08
										+3	0.98				74Bi08
2981(15)	⟨1^+⟩			⟨0⟩	0.015	0.03							139		73Me06
3067(15)	⟨$3^+,5^+$⟩			⟨2⟩	0.024	0.12									73Me06
3212(15)	⟨$3^+,5^+$⟩			⟨2⟩	0.015	0.075									73Me06
3326(15)	⟨$1^-,3^-$⟩			⟨1⟩	0.016	0.047									73Me06
3362(15)	$3^+,5^+$			2	0.053	0.25									73Me06
3418(15)	$3^+,5^+$			2	0.028	0.13									73Me06
3486(15)	⟨$3^+,5^+$⟩	2	0.02	⟨2⟩	0.013	0.065									72Ho28
3518(15)	$3^+,5^+$			2	0.048	0.24									73Me06
3537(15)	⟨$3^+,5^+$⟩			⟨2⟩	0.014	0.069									73Me06
3586(15)	$3^+,5^+$			2	0.014	0.070									73Me06
3643(15)	$3^+,5^+$			2	0.017	0.083									73Me06
3759(15)	⟨$5^-,7^-$⟩			⟨3⟩	0.064	0.45									73Me06

(continued) **$^{97}_{41}$Nb**

E^* [keV]	$2J^\pi$	L	$S_{\ell j}$ (d,n)	L	C^2S (τ,d)	$G_{\ell j}$ (τ,d)	C^2S (τ,d)	$S_{\rm N}$ (τ,d)	C^2S (d,τ)	L	C^2S (d,τ)	C^2S (t,α)	σ (t,α) μb/sr	$T_{1/2}$ or $\Gamma_{\rm cm}$	Ref.
3799(15)	$\langle 3^+,5^+\rangle$			$\langle 2\rangle$	0.018	0.088									73Me06
3862(15)	$3^+,5^+$			2	0.02	0.10									73Me06
3945(15)	$3^+,5^+$			2	0.026	0.13									73Me06
4038(15)	$3^+,5^+$			2	0.024	0.12									73Me06
4080(20)															
4200(20)															
4350(20)															
4530(20)															
4660(20)															
4780(20)															
4880(20)															
4960(20)															
5220(20)															
5330(20)															
5460(20)															
5630(20)															
14430(30)	3^+							0.73							80Ga01
14650(30)	7^+							0.98							80Ga01
15640(30)	11^-							0.48							80Ga01
			72Ho28		73Me06			80Ga01	68Oh01		74Bi08	83Fl06	83Fl06		Ref.
						73Me06	69Ca20								Ref.

* Cross section of the (d,n) reaction was fitted by expression $d\sigma/d\Omega_{exp}=(2J_1+1)C^2Sd\sigma/d\Omega_{DWBA}+(2J_2+1)C^2Sd\sigma/d\Omega_{DWBA}$.

For $S_{\ell j}=d\sigma/d\Omega_{exp}/d\sigma/d\Omega_{theory}$ in [72Ho28] values $d\sigma/d\Omega_{theory}$=(2J+1)$C^2d\sigma/d\Omega_{DWBA}$ were used.

$S_{\rm p}$ for three IAS levels at E^*=14.6-15.8 MeV were compared in [73Fi14] with $S_{\rm dp}$ for low-lying ^{97}Zr levels.

Energy levels and branching ratios [93Ar09]. Part 2 **$^{97}_{41}$Nb**

E^*	$2J^\pi$		Branching ratios in percentage									
		$E^*_{\rm f}$:	0.0	743	1148	1251	1276	1433.9	1548.4	1652.8	1750.4	1851.7
[keV]		$2J^\pi_{\rm f}$:	9^+	1^-	7^+	3^-	5^+	5^-	$\langle 3^+,5^-\rangle$		5^+	5^+
743.35(3)	1^-		100									
1148.0(1)	7^+		100									
1251.0(1)	3^-			100								
1276.1(1)	5^+		100									
1433.9(1)	5^-			85(9)		15(3)						
1548.4(2)	$3^+,5^-$				45(3)	12(2)	43(5)					
1652.8(2)								100				
1750.4(1)	5^+		42(4)		54(3)		2.9(14)		1.1(3)			
1764.4(1)	$\langle 3^-\rangle$			57(9)		31(3)		8.1(9)		3.7(5)		

(continued) **$^{97}_{41}$Nb**

E^*	$2J^\pi$	Branching ratios in percentage									
	E^*_f:	0.0	743	1148	1251	1276	1433.9	1548.4	1652.8	1750.4	1851.7
[keV]	$2J^\pi_f$:	9^+	1^-	7^+	3^-	5^+	5^-	$\langle 3^+,5^-\rangle$		5^+	5^+
1851.7(1)	5^+	23(2)		75(4)	<14			2(2)			
1958.4(6)					100						
2105.9(1)	$\langle 3^+\rangle$		21(2)		7.3(5)	4.9(3)		0.6(4)		43(2)	24(2)
2247.5(2)	3^-					74(4)		26(5)			

Energy levels [03Si07]. **$^{98}_{41}$Nb**

E^*	J^π	L	I_p	$T_{1/2}$ or	Ref.
[keV]		(τ,p)	(τ,p)	Γ_{cm}	
0	1^+	0+2	208	2.86(6) s	75Me13
84(4)	$\langle 5^+\rangle$	4	58	51.3(4) m	75Me13
226(5)	$\langle 4^+\rangle$	4	100		75Me13
534(7)					
617(7)					
680(7)					
737(4)	$\langle 3^+\rangle$	2+4	290		75Me13
807(10)					
907(5)					
1034(6)			25		75Me13
1382(6)			33		75Me13
1483(5)					
1598(8)					
1723(7)					
1771(10)					
1869(10)					
2023(10)			91		75Me13
		75Me13			Ref.

I_p is proton yield at 26° in units counts per 1/4 mm strip [75Me13].

Energy levels and branching ratios [94Pe15, 98Lh03]. **$^{99}_{41}$Nb**

E^*	$2J^\pi$	L	C^2S	C^2S	σ (t,α)	$T_{1/2}$ or	Ref.	Branching ratios in percentage				
								E^*_f:	0.0	365	387.4	469	544
[keV]			(d,τ)	(t,α)	μb/sr	Γ_{cm}		$2J^\pi_f$:	9^+	1^-	$\langle 7^+,5^+\rangle$	$\langle 5^+\rangle$	3^-
0.0	9^+	4	2.65	2.6	260	15.0(2) s	74Bi08						
365.29(14)	1^-	1	1.55	1.0	180	2.6(2) m	74Bi08		100				
387.40(9)	7^+					17(4) ps	98Lh03		100				
469.141(10)	5^+			2.9	290	0.173(4) ns	83Fl06		95(1)		4.8(10)		

(continued) **$^{99}_{41}$Nb**

E^*	$2J^\pi$	L	C^2S	C^2S	σ (t,α)	$T_{1/2}$ or	Ref.	Branching ratios in percentage				
								E_f^*:	0.0	365	387.4	469	544
[keV]			(d,τ)	(t,α)	μb/sr	Γ_{cm}		$2J_f^\pi$:	9^+	1^-	$\langle 7^+,5^+\rangle$	$\langle 5^+\rangle$	3^-
544.26(14)	3^-	1	2.52	2.7	410	56(10) ps	74Bi08			100			
631.0	$\langle 5^-\rangle$			3.4	240		83Fl06						
765.2	$\langle 3^+\rangle$			0.06	22		83Fl06						
816.7	5^+	$\langle 2\rangle$	0.16	0.5	50		74Bi08						
930.89(16)	3^+				63	<10 ps	83Fl06					100	
959.4(1)	$\langle 1^+\rangle$					<10 ps	98Lh03			79(2)		2.4(8)	14(1)
970(10)	1^-,3^-	1	1.0		120		74Bi08						
1015.27(4)	3^+				23	<5 ps	83Fl06			4.0(10)	3.6(4)	88(3)	
1044.5							98Lh03						
1264(9)	3^-	1	0.50	0.52	87		74Bi08						
1305(12)					43		83Fl06						
1408(9)	5^-,7^-	3	2.30	3.2	110		74Bi08						
1543(12)					16		83Fl06						
1579(8)	5^-,7^-	3	1.00		27		74Bi08						
1703(15)					35		83Fl06						
1759(13)	$\langle 3\rangle^-$	1	0.27	0.39	38		74Bi08						
1831(20)					17		83Fl06						
1921(20)					33		83Fl06						
1976.3(4)	$\langle 1,3\rangle$	$\langle 1\rangle$	0.27		39	<5 ns	74Bi08						
2336.4							98Lh03						
			74Bi08	83Fl06	83Fl06		Ref.						

Additional data on this isotope can be found in [98Lh03].
C^2S is defined by $d\sigma/d\Omega_{exp}(2J+1)=NC^2S$.

Energy levels and branching ratios [94Pe15, 98Lh03]. Part 2 **$^{99}_{41}$Nb**

E^*	$2J^\pi$		Branching ratios in percentage		
		E_f^*:	930.9	959.3	1015.3
[keV]		$2J_f^\pi$:		$\langle 3^+,1^+\rangle$	$\langle 3^+,1^+\rangle$
959.4(1)	$\langle 1^+\rangle$		≈4.7		
1015.27(4)	3^+			4(2)	
1976.3(4)	$\langle 1,3\rangle$				100

Energy levels and branching ratios [97Si09].

$^{100}_{41}$Nb

E^*	J^π	σ (t,τ)	$T_{1/2}$ or	Ref.	Branching ratios in percentage			
					E_f^*:	0.0	400.48	498.0
[keV]		μb/sr	Γ_{cm}		J_f^π:	1^+	1^+	$\langle\leq 3\rangle$
0.0	1^+		1.5(2) s					
400.48(4)	1^+		0.19(23) ns			100		
0+X		x						
25+X		x						
468(40)	5^+		2.99(11) s	00Lh01				
498.0(3)	$\langle\leq 3\rangle$					100		
504.25(4)	1^+					98(13)	2.11(19)	
131+X		x						
210+X		x						
653.9(1)	$\langle\leq 3\rangle$						100	
695.0(5)								x
703.6(1)	$\langle\leq 3\rangle$					62(9)	38(5)	
348+X		x						
410+X		x						
450+X		x						
520+X		x						
565+X		x						
595+X		x						
680+X		x						
0+y				00Lh01				
720+X		x						
34.3+y				00Lh01				
784+X		x						
101.7+y				00Lh01				
820+X		x						
865+X		x						
893+X		x						
207.6+y				00Lh01				
945+X		x						
1040+X		x						
1075+X		x						
392.8+y				00Lh01				
1136+X		x						
1180+X		x						
1260+X		x						
1300+X		x						
		79Aj03		Ref.				

Additional data on this isotope can be found in [01Su11, 00Lh01].

It was noticed in [00Lh01] that levels with energies E^*+y seen in the decay of $12\mu S$ isomer (they are not included in the Adopted Levels [97Si09]) could be the same as seen in (t,τ) reaction [79Aj03] with energies E^*+x if the shift is set to be y=685 keV (see them together in the Table); see another level scheme in [99Ge01].