Energy levels and branching ratios [94Pe19].

$^{140}_{60}$Nd

E^* [keV]	J^π	$d\sigma/d\Omega$ μb/sr	σ (p,t) μb/sr	S_α (d,^{6}Li)	σ (d,^{6}Li) μb/sr	γ^2_α [keV]	$T_{1/2}$ or Γ_{cm}	Ref.
0.0	0^+	574(5)	700(70)	0.071	3.26(164)	0.45	3.37(2) d	96Po12
773.73(6)	2^+	829(8)	1300(65)	0.025	0.75(70)	0.12		77Mi02
1413.3(2)	0^+	9(1)	50(15)					96Po12
1490.1(4)	$\langle 2\rangle^+$	67(2)	100(10)					96Po12
1801.9(1)	4^+	201(4)	250(13)					96Po12
1936	3^-	7.3(7)	30(9)					96Po12
2124.0(8)	3^-							
2140.2(5)	2^+	166(3)	210(11)					96Po12
2221.4(1)	7^-	48(2)	115(6)				0.60(5) ms	96Po12
2276.1(1)	5^-	78(2)	160(16)					96Po12
2330(10)	0^+							
2332.5(5)	2^+	77(2)	120(12)					96Po12
2360	0^+	78(2)	108(16)					96Po12
2366.2(1)	6^+							
2400	4^+	44(2)	55(6)					96Po12
2468	2^+	140(3)	200(10)					96Po12
2514	5^-	3.0(5)	3.3(5)					96Po12
2547.8(4)	$\langle 0^+\rangle$	4.7(6)	11(2)					96Po12
2606	3^-	20(2)	20(1)					96Po12
2686	4^+	61(2)	90(5)					96Po12
2710	2^+	37(2)	60(9)					96Po12
2830	$\langle 2^+\rangle$	123(3)	122(24)					96Po12
2842.2(6)	6^-							
2889	$\langle 5^-\rangle$	3.5(7)	4.5(7)					96Po12
2911	0^+	32(2)	50(5)					96Po12
2943.4(3)	$\langle 6^+\rangle$	25(2)	20(4)					96Po12
3014	4^+	88(3)	125(6)					96Po12
3061	4^+	18(1)	28(3)					96Po12
3062.0(1)	7^-							
3136	$\langle 4^+\rangle$	30(2)	30(6)					96Po12
3206	$\langle 2^+\rangle$	66(2)	90(9)					96Po12
3239	$\langle 2^+\rangle$	18(2)	40(6)					96Po12
3239.4(1)	8^-							
3286	4^+	18(2)	30(3)					96Po12
3324	2^+,4^+	59(2)	40(8)					96Po12
3387	2^+	48(2)	80(12)					96Po12
3418.9(2)								
3454.7(1)	9^-							
3460	4^+	14(1)	16(2)					96Po12
3494	4^+	15(1)	16(3)					96Po12
3510		8(1)	8(1)					96Po12
3561	$\langle 2^+\rangle$	38(2)	60(9)					96Po12
3574	3^-	21(2)	26(3)					96Po12
3621	$\langle 4^+\rangle$	7(2)	12(2)					96Po12
3621.2(1)	10^+						22(1) ns	

(continued) **$^{140}_{60}$Nd**

E^* [keV]	J^π	$d\sigma/d\Omega$ μb/sr	σ (p,t) μb/sr	S_α (d,^{6}Li)	σ (d,^{6}Li) μb/sr	γ^2_α [keV]	$T_{1/2}$ or Γ_{cm}	Ref.
3667.7(2)	10^-							
3673.2(3)	7^-	7(1)	16(2)					96Po12
3733		18(1)	15(3)					96Po12
3755	6^+	8(1)	20(2)					96Po12
3810		12(1)	20(4)					96Po12
3844	$\langle 6^+ \rangle$	5(1)	7(2)					96Po12
3889	$\langle 1^- \rangle$	21(1)	45(5)					96Po12
3925		6.8(1)	7(2)					96Po12
3949		2.0(14)	6(1)					96Po12
4030.9(1)	10^-							
4170(10)								
4323.0(1)	11^-							
4349.6(6)								
4367.1(6)								
4388.6(2)	$\langle 11^- \rangle$							
4514.2(1)	$12^{\langle - \rangle}$						0.25 ns	
4703.2(2)	13							
4914.8(2)	11^+							
5311.9(2)	$\langle 13^- \rangle$							
5351.6(2)	$\langle 13^- \rangle$							
5431.9(2)	14							
5526.5(2)	$\langle 14 \rangle$							
5613.8(2)	$\langle 15 \rangle$							
5644.2(6)	$\langle 15 \rangle$							
5854.3(2)	$\langle 16 \rangle$							
5902.7(6)	$\langle 16 \rangle$							
5970.7(3)	$\langle 15 \rangle$							
6158.2(2)	$\langle 16 \rangle$							
6408.0(6)	$\langle 17 \rangle$							
6410.5(3)								
		96Po12	96Po12	77Mi02	77Mi02	77Mi02		Ref.

Additional data on this isotope can be found in [96Po12, 87Gu22, 72Ya07].
Data for this isotope are considered in vol. LB I/18B.

Energy levels and branching ratios [94Pe19]. Part 2 **$^{140}_{60}$Nd**

E^*	J^π		Branching ratios in percentage								
		E^*_f:	0.0	774	1490	1802	2221	2276	2366	3062.0	3239.4
[keV]		J^π_f:	0^+	2^+	$\langle 2 \rangle^+$	4^+	7^-	5^-	6^+	7^-	8^-
773.73(6)	2^+		100								
1413.3(2)	0^+		<0.2	100							
1490.1(4)	$\langle 2 \rangle^+$		49(3)	51(8)							

(continued) **$^{140}_{60}$Nd**

E^*	J^π	Branching ratios in percentage								
	E_f^*:	0.0	774	1490	1802	2221	2276	2366	3062.0	3239.4
[keV]	J_f^π:	0^+	2^+	$\langle 2\rangle^+$	4^+	7^-	5^-	6^+	7^-	8^-
1801.9(1)	4^+		100							
2124.0(8)	3^-		92(9)		7.7(39)					
2140.2(5)	2^+		100							
2221.4(1)	7^-				100					
2276.1(1)	5^-				100					
2332.5(5)	2^+	65(14)	35(9)							
2366.2(1)	6^+				27(13)	47(5)	26(4)			
2547.8(4)	$\langle 0^+\rangle$		47(9)	53(9)						
2842.2(6)	6^-						100			
2943.4(3)	$\langle 6^+\rangle$					50(25)	50(25)			
3062.0(1)	7^-					71(14)		29(6)		
3239.4(1)	8^-					75(2)			25.0(8)	
3418.9(2)						100				
3454.7(1)	9^-					12.5(6)				87(2)
3673.2(3)	7^-					50(10)	27(6)	23(6)		
4367.1(6)						100				

Energy levels and branching ratios [94Pe19]. Part 3 **$^{140}_{60}$Nd**

E^*	J^π	Branching ratios in percentage								
	E_f^*:	3418.9	3454.7	3621.2	3667.7	4030.9	4323.0	4388.6	4514.2	4703.2
[keV]	J_f^π:		9^-	10^+	10^-	10^-	11^-	$\langle 11^-\rangle$	$12^{\langle -\rangle}$	13
3621.2(1)	10^+		100							
3667.7(2)	10^-		100							
4030.9(1)	10^-		100							
4323.0(1)	11^-		87(3)			12.5(6)				
4349.6(6)		100								
4388.6(2)	$\langle 11^-\rangle$				100					
4514.2(1)	$12^{\langle -\rangle}$					13.6(10)	86(3)			
4703.2(2)	13								100	
4914.8(2)	11^+			100						
5311.9(2)	$\langle 13^-\rangle$							x	100	
5351.6(2)	$\langle 13^-\rangle$							100		
5431.9(2)	14									100
5970.7(3)	$\langle 15\rangle$									100

Energy levels and branching ratios [94Pe19]. Part 4

$^{140}_{60}$Nd

E^*	J^π		Branching ratios in percentage						
		E^*_f:	5311.9	5351.6	5431.9	5613.8	5644.2	5902.7	5970.7
[keV]		J^π_f:	$\langle 13^- \rangle$	$\langle 13^- \rangle$	14	$\langle 15 \rangle$	$\langle 15 \rangle$	$\langle 16 \rangle$	$\langle 15 \rangle$
5431.9(2)	14		x						
5526.5(2)	$\langle 14 \rangle$			100					
5613.8(2)	$\langle 15 \rangle$				100				
5644.2(6)	$\langle 15 \rangle$				100				
5854.3(2)	$\langle 16 \rangle$					100			
5902.7(6)	$\langle 16 \rangle$						100		
6158.2(2)	$\langle 16 \rangle$					100			
6408.0(6)	$\langle 17 \rangle$							100	
6410.5(3)									100

Energy levels and branching ratios [01Tu02].

$^{141}_{60}$Nd

E^*	$2J^\pi$	L	C^2S	σ (τ,α)	S_N	L	$S_{\ell j}$	$d\sigma/d\Omega$	S_N	S_N	σ (d,t)	$S_{\ell j}$	$T_{1/2}$ or	Ref.
[keV]			(τ, α)	μb/sr	(^{12}C,^{14}C)		(p,d)	μb/sr	(p,d)	(p,d)	μb/sr	(d,t)	Γ_{cm}	
0.0	3^+	2	3.0	73	3.4	2	3.57	2300	4.1	4.06	2048	2.7	2.49 h	84Va33
193.684(10)	1^+	0	2.1	17	1.9	0	1.51	4100	1.9	2.12	2571	1.3	1.17 ns	76Be10
756.51(5)	11^-	5	5.4	537	6.8	5	7.48	2700	9.0	11.6	377	4.6	62.0 s	71Jo04
1223.24(3)	5^+	2	1.8	89	2.8	2	2.57	2000	3.3	3.68	1048	1.9		76Be10
1345.48(4)	7^+	4	1.2	38		4	1.72	720	3.6		78	1.5		76Be10
1403.4(7)	$\langle 7^- \rangle$					$\langle 3 \rangle$	0.02							84Va33
1416.1(10)	7^-													
1564.78(5)	$\langle 3 \rangle^+$	2	0.10	11	0.77	2	0.24	230	0.5		121	0.28		76Be10
1581.65(8)														
1596.99(5)	$\langle 5,3 \rangle^+$					2	0.04							84Va33
1624.9(9)	$\langle 9 \rangle$													
1670.5(10)														
1715.2(13)														
1804.8(7)														
1808.31(10)														
1820.46(5)	$5^+,3^+$	2	0.62	43	0.52	2	0.76	350	1.2		192	0.51		76Th05
1870.8(10)														
1876.0(5)														
1890.3(7)	1^+					0	0.20	240	0.34		60	0.12		77El02
1897.3(5)														
1967.55(5)	7^+	4	0.41	14		4	0.37							76Be10
2011(3)														
2018.8(9)														
2066.39(6)	$3^+,5^+$													
2073.61(10)	$\langle 3^+,5^+ \rangle$	2	0.38	26		2	0.44	380	0.8					76Be10
2109.38(5)	$3^+,5^+$					2	0.13							84Va33
2145.32(20)														

(continued) **$^{141}_{60}$Nd**

E^* [keV]	$2J^\pi$	L	C^2S (τ,α)	σ (τ,α) μb/sr	S_N (^{12}C,^{14}C)	L	$S_{\ell j}$ (p,d)	$d\sigma/d\Omega$ μb/sr	S_N (p,d)	S_N (p,d)	σ (d,t) μb/sr	$S_{\ell j}$ (d,t)	$T_{1/2}$ or Γ_{cm}	Ref.
2180(3)	1^+					0	0.06							84Va33
2202.9(9)														
2211.6(9)	9^-	5	0.9	147		5	1.69	680	2.4					76Be10
2221.0(7)														
2246.55(5)	$\langle 7^-,5^-\rangle$					$\langle 3\rangle$	0.03							84Va33
2265.22(20)														
2303.64(5)	7^+													
2311.8(7)	$7^+,9^+$					4	1.21	620	3.9					84Va33
2313(10)	$11^-,9^-$	5	0.86	42										76Be10
2336.02(20)	$\langle 7^+\rangle$	$\langle 4\rangle$	0.75											76Be10
2349(5)	$\langle 11^-,9^-\rangle$					$\langle 5\rangle$	0.44							84Va33
2349.6(10)	13													
2354.36(15)	$\langle 3,5^+\rangle$													
2365.60(10)														
2370.90(10)														
2388.53(10)	7^+	4	0.35			4	0.45		3.0					76Be10
2429.62(20)														
2439.5(10)														
2460.2(7)														
2463.45(10)														
2505.47(10)	$3^+,5^+$													
2514.82(20)	$\langle 7\rangle^+$					$\langle 4\rangle$	0.48							84Va33
2538.8(9)	$15^{\langle -\rangle}$													
2581(5)	$\langle 7^-,5^-\rangle$					$\langle 3\rangle$	0.20	60						84Va33
2616	$\langle 9^-,11^-\rangle$					$\langle 5\rangle$	0.12	incl						84Va33
2619.03(20)														
2643(5)														
2705(5)														
2732.53(20)														
2764(5)														
2803.9(4)	$\langle 3^+,5^+\rangle$					2	0.04							84Va33
2830.5(9)	$15^{\langle -\rangle}$													
2838(5)														
2865.3(4)														
2887.1(10)	17													
2887.5+X													26 ns	
2915(10)	$11^-,9^-$	$\langle 5\rangle$	0.96	86		5	0.68	80						76Be10
2944.68(11)	$3^+,5^+$					2	0.24	incl						84Va33
2951.9(13)	$\langle 19\rangle$													
3007(10)	$\langle 5^+,3^+\rangle$					$\langle 2\rangle$	0.04							84Va33
3042(10)	$9^+,7^+$	4	1.1	39		4	0.04	450						76Be10
3056.06(7)	7^+							incl						
3093(10)	$\langle 1^+\rangle$					$\langle 0\rangle$	0.02							84Va33
3105.2(13)	$\langle 21\rangle$													
3112(10)	$7^+,9^+$	4	1.8	65		4	1.22							76Be10

(continued) **$^{141}_{60}$Nd**

E^* [keV]	$2J^\pi$	L	C^2S (τ,α)	σ (τ,α) μb/sr	S_N (^{12}C,^{14}C)	L	$S_{\ell j}$ (p,d)	$d\sigma/d\Omega$ μb/sr	S_N (p,d)	S_N (p,d)	σ (d,t) μb/sr	$S_{\ell j}$ (d,t)	$T_{1/2}$ or Γ_{cm}	Ref.
3137(25)	7^+,9^+													
3163(10)														
3208(10)														
3262(10)														
3315(10)														
3369(10)	3^+,5^+					2	0.23	940	0.9					84Va33
3408(10)	3^+,5^+	2	0.45	46		2	0.37	incl						76Be10
3498(10)	3^+,5^+					2	0.08	incl						84Va33
3578(10)														
3618(10)														
3657(10)														
3890(10)														
4246.2(13)	21												<1 ns	
4376.7(16)	$\langle 23\rangle$													
4494.8(16)	$\langle 23\rangle$													
4582.9(16)	$\langle 23\rangle$													
5270.9(16)	$\langle 25\rangle$													
			77El02	77El02	76Th05		84Va33		71Jo04	73He02		77El02		Ref.
								71Jo04			77El02	71Fo10		Ref.

Additional data on this isotope can be found in [81To05, 76Za03, 75Ya04, 71Fo10, 71Ya10].
The levels structure up to spin 48 and 12 bands of levels are considered in [05Pe24].

Energy levels and branching ratios [01Tu02]. Part 2 **$^{141}_{60}$Nd**

E^*	$2J^\pi$	Branching ratios in percentage										
	E_f^*:	0.0	194	756	1223	1345	1403.4	1564.8	1581.6	1597.0	1624.9
[keV]	$2J_f^\pi$:	3^+	1^+	11^-	5^+	7^+	$\langle 7^-\rangle$	$\langle 3\rangle^+$		$\langle 5,3\rangle^+$	$\langle 9\rangle$
193.684(10)	1^+	100									
756.51(5)	11^-	100									
1223.24(3)	5^+	93	6.5								
1345.48(4)	7^+	100									
1403.4(7)	$\langle 7^-\rangle$			100							
1416.1(10)	7^-			100							
1564.78(5)	$\langle 3\rangle^+$	88	12								
1581.65(8)		100									
1596.99(5)	$\langle 5,3\rangle^+$	51	49								
1624.9(9)	$\langle 9\rangle$					100					
1670.5(10)					100						
1715.2(13)							100				
1804.8(7)		53	47								
1808.31(10)		1.4		99							
1820.46(5)	5^+,3^+	18	68		14						

(continued)

$^{141}_{60}$Nd

E^*	$2J^\pi$	Branching ratios in percentage									
	E_f^*:	0.0	194	756	1223	1345	1403.4	1564.8	1581.6	1597.0	1624.9
[keV]	$2J_f^\pi$:	3^+	1^+	11^-	5^+	7^+	$\langle 7^- \rangle$	$\langle 3 \rangle^+$		$\langle 5,3 \rangle^+$	$\langle 9 \rangle$
1870.8(10)					100						
1876.0(5)		6.5			66	24.5				3.5	
1890.3(7)	1^+	47	53								
1897.3(5)		64	24.2		2.6					8.8	
1967.55(5)	7^+	15			3.9	77	1.5	1.9(2)			
2018.8(9)				100							
2066.39(6)	$3^+,5^+$	73	27								
2073.61(10)	$\langle 3^+,5^+ \rangle$	66	34								
2109.38(5)	$3^+,5^+$	2.8			90			1.9(2)			
2145.32(20)		65	6.7		28.0						
2202.9(9)				57							
2211.6(9)	9^-			75							25(2)
2221.0(7)					81						
2246.55(5)	$\langle 7^-,5^- \rangle$	16	29		34	13					
2265.22(20)		100									
2303.64(5)	7^+	40			18	23		10(1)		8(2)	
2311.8(7)	$7^+,9^+$	22.8				77					
2336.02(20)	$\langle 7^+ \rangle$	100									
2349.6(10)	13			100							
2354.36(15)	$\langle 3,5^+ \rangle$	83	17								
2365.60(10)			100								
2370.90(10)		x	100								
2388.53(10)	7^+	60				40					
2429.62(20)		100									
2439.5(10)		100									
2460.2(7)		4.4	96								
2463.45(10)		50				50					
2505.47(10)	$3^+,5^+$	18	15		13						
2514.82(20)	$\langle 7 \rangle^+$	100									
2538.8(9)	$15^{\langle - \rangle}$			96							
2619.03(20)		100									
2732.53(20)		100									
2803.9(4)	$\langle 3^+,5^+ \rangle$	100									
2830.5(9)	$15^{\langle - \rangle}$			100							
2865.3(4)		100									
2944.68(11)	$3^+,5^+$	46	23						31(7)		
3056.06(7)	7^+	8							20(5)		

Energy levels and branching ratios [01Tu02]. Part 3

$^{141}_{60}$Nd

E^*	$2J^\pi$	Branching ratios in percentage											
	E_f^*:	1820.5	1967.5	2018.8	2066.4	2073.6	2349	2538.8	2830.5	2887.1	2951.9	3105.2	4246.2
[keV]	$2J_f^\pi$:	5^+,3^+	7^+		3^+,5^+	$\langle 3^+,5^+\rangle$		$15^{\langle -\rangle}$	$15^{\langle -\rangle}$	17	$\langle 19\rangle$	$\langle 21\rangle$	21
2109.38(5)	3^+,5^+	5.6(5)											
2202.9(9)				43									
2221.0(7)		19											
2246.55(5)	$\langle 7^-,5^-\rangle$				8(1)								
2505.47(10)	3^+,5^+		43(6)			10(2)							
2538.8(9)	$15^{\langle -\rangle}$						4.0(6)						
2887.1(10)	17							95.4(48)	4.6(8)				
2887.5+X										x			
2951.9(13)	$\langle 19\rangle$									100			
3056.06(7)	7^+	23(5)	49(9)										
3105.2(13)	$\langle 21\rangle$									28(3)	72(6)		
4246.2(13)	21									21(1)	73(4)	6.0(9)	
4376.7(16)	$\langle 23\rangle$												100
4494.8(16)	$\langle 23\rangle$												100
4582.9(16)	$\langle 23\rangle$												100
5270.9(16)	$\langle 25\rangle$												100

Energy levels and branching ratios [00Tu01].

$^{142}_{60}$Nd

E^*	J^π	L	C^2S	L	β_L	$d\sigma/d\Omega$	σ (p,t)	I_t	${\Gamma_\circ}^2/\Gamma$	$B(E1)$	ε	$T_{1/2}$ or	Ref.
[keV]			(τ,d)		(p,p′)	μb/sr	μb/sr	(p,t)	[meV]	$10^{-3}ef$	(^{14}C,^{16}O)	Γ_{cm}	
0.0	0^+	2	2.10			504(5)	500(25)	100.0			13*	Stable	71Jo16
1575.78(1)	2^+	2	3.13		0.073(4)	42(1)	90(14)		4.0(3)		4	0.110(2) ps	71Jo16
2083.94(2)	3^-				0.117(5)	10(1)	40(8)				8	0.44(+37-14) ps	82Pe13
2100.79(1)	4^+	2	7.80		0.061(5)	29(1)	22(3)					28(2) ns	71Jo16
2209.31(2)	6^+												96Go29
2217.49(2)	0^+					25(1)	25(3)	5			<0.2		82Pe13
2244(4)	1^-												
2340(25)													
2384.34(2)	2^+		7.37		0.023(3)	2.2(6)	1.0(4)		2.4(4)		<0.2	0.14(3) ps	82Pe13
2437.17(2)	4^+		7.37										96Go29
2513.89(2)	5^+												96Go29
2515(4)	$\langle 1^-\rangle$												
2529(3)						0.9(2)	3.5(5)						96Po12
2547.28(2)	3^+	0	1.50										71Jo16
2583.09(2)	2^+					1.5(3)	2.0(3)		0.6(7)				96Po12
2585.55(2)	$1^{\langle +\rangle}$											>0.2 ps	96Go29
2656(3)	0^+					1.6(3)	1.7(3)						96Po12
2737.26(3)	4^+												96Go29
2757(5)	$\langle 1^-\rangle$					1.6(3)	3.0(6)						96Po12
2845.86(5)	2^+	2	0.7		0.032(2)	9.2(7)	2.0(8)		11.5(10)			34(7) fs	71Jo16

(continued) **$^{142}_{60}$Nd**

E^* [keV]	J^π	L	C^2S (τ,d)	L	S_N (d,t)	β_L (p,p′)	$d\sigma/d\Omega$ μb/sr	σ (p,t) μb/sr	I_t (p,t)	${\Gamma_\circ}^2/\Gamma$ [meV]	$B(E1)$ $10^{-3}ef$	ε (^{14}C,^{16}O)	$T_{1/2}$ or Γ_{cm}	Ref.
2873(3)	$\langle 4^+ \rangle$	0	0.3				2.5(4)	2.6(4)						71Jo16
2886.31(4)	6^+													96Go29
2958(3)	0^+						267(3)	280(10)						96Po12
2975.90(6)	5^-	5	7.6											71Jo16
2983.1(10)	0^+	2	3.2				22(1)	20(2)	57					71Jo16
3009.97(5)	4^+						4.2(7)	5.0(7)						96Po12
3045.20(4)	2^+					0.014(1)	1.0(6)	5(2)		1.4(6)				96Po12
3078						0.029(5)	1.1(6)	2(1)						96Po12
3081.06(4)	4^+													96Go29
3085.85(6)	5^+													96Go29
3128.06(7)	2^+													96Go29
3134	0^+						46(2)	50(5)						96Po12
3242.62(6)	7^-	5	12.6				2.2(4)	2.2(3)						71Jo16
3244.83(6)	4^-			0	0.01									73Fo13
3246(6)	7^-			2	0.03									73Fo13
3248	4^-			2	0.60									73Fo13
3296.2(10)	$\langle 5^- \rangle$			0	0.12		2.3(4)	2.8(4)						73Fo13
3318.73(6)	4^+	0	0.63			0.037(2)								71Jo16
3319	1^-						4.0(5)	7.0(4)						96Po12
3358.68(9)	2^+	2	3.50											71Jo16
3361	$\langle 5^- \rangle$						3.2(5)	3.3(4)						96Po12
3365.26(6)	$\langle 3^- \rangle$			0	0.31									73Fo13
3408(4)	6^+	2	0.65											71Jo16
3414.24(8)	$\langle 5 \rangle^-$	5	10.7	2	0.13		32(1)	35(2)						73Fo13
3424.2(1)**	1^-									295(44)	21.1(32)		1.9(3) fs	06Vo0A
3439.81(11)														96Go29
3448.55(13)														96Go29
3453.6(5)	8^+													96Go29
3456.02(13)	8^-													96Go29
3466.83(9)														96Go29
3470.31(11)	2^+						389(4)	600(30)						96Po12
3484.9(5)	9^-												1.6(2) ns	
3499.17(22)	$\langle 7^- \rangle$													96Go29
3511.9(4)														96Go29
3519.92(16)	$\langle 7^+ \rangle$													96Go29
3541(4)	$\langle 7^- \rangle$													
3576.81(8)	$\langle 3^- \rangle$			0	0.15	0.039(4)	48(2)	55(3)						73Fo13
3579.11(6)	2^+													96Go29
3584.2(3)	$\langle 0^+ \rangle$													96Go29
3598.31(10)	5^-			2	0.05		12(1)	12(1)						73Fo13
3633.2(4)	6^+													96Go29
3670(25)														
3675(4)	6^+	0	2.40											71Jo16
3708.65(6)	$\langle 5 \rangle^-$			0	0.46		69(2)	80(4)						73Fo13
3709.77(13)	$\langle 3 \rangle^-$			2	0.13									73Fo13

(continued) **$^{142}_{60}$Nd**

E^* [keV]	J^π	L	C^2S (τ,d)	L	S_N (d,t)	β_L (p,p′)	$d\sigma/d\Omega$ μb/sr	σ (p,t) μb/sr	I_t (p,t)	$\Gamma_\circ{}^2/\Gamma$ [meV]	$B(E1)$ $10^{-3}ef$	ε (^{14}C,^{16}O)	$T_{1/2}$ or Γ_{cm}	Ref.
3743.7(3)	$\langle 1^-,2^+\rangle$													96Go29
3757.6(5)	$1,2^+$	0	2.60											71Jo16
3763.2(5)	$\langle 0^+\rangle$													96Go29
3766.4(6)	$\langle 8^-\rangle$	5	17.5											71Jo16
3781.31(13)	3^-			2	0.03									73Fo13
3785.0(3)	$1,2^+$													96Go29
3803.7(7)	$\langle 4^+\rangle$													96Go29
3831.11(20)	2^-			2	0.09									73Fo13
3832.1(6)	8^+													
3834(4)	$\langle 0^+\rangle$													
3861.18(18)														96Go29
3871.80(19)	$[3^-]$			0	0.53		14(1)	14(1)						73Fo13
3896.0(5)	$\langle 2^+\rangle$						25(1)	44(4)						96Po12
3897(4)	0^+	2	10.3											71Jo16
3908(4)	$\langle 2\rangle^-$			2	0.26									73Fo13
3918(5)	$\langle 5^-\rangle$	5	6.0				12(1)	20(4)						71Jo16
3923.3(10)	$\langle 1^-\rangle$													96Go29
3925.1(6)	10^+												0.6(1) ns	
3939.1(7)														96Go29
3953.0(7)	$\langle 8^-\rangle$													
3982.0(4)	1													96Go29
3985.88(17)	$[6^+]$	2	14.0				9.4(1)	16(1)						71Jo16
4004(4)	$\langle 4^+\rangle$	0	2.5				18(1)	20(1)						71Jo16
4053.8(4)														96Go29
4062	$\langle 5^-\rangle$						3.9(1)	4.0(6)						96Po12
4068.9(3)														96Go29
4093.7(6)	1									112(17)	4.7(7)			06Vo0A
4104(4)	4^+						5.3(10)	8(1)						96Po12
4127(4)														
4144.9(6)	$\langle 1^-\rangle$									136(21)	5.5(9)			06Vo0A
4146(6)	5^-						8(1)	11(1)						96Po12
4169(6)	2^+						17(1)	25(2)						96Po12
4174.4(4)	$\langle 4^+\rangle$													96Go29
4189(6)	1^-						34(1)	78(11)						96Po12
4203.04(23)	2^+													96Go29
4243.1(8)	$\langle 9^+\rangle$													
4255.7(9)	$1,2^+$									20(7)				78Me16
4269.1(8)	$[4^+]$						18(1)	22(1)						96Po12
4272(4)	5^-													
4286(6)	4^+						15(1)	22(2)						96Po12
4286.4(11)	3^-													96Go29
4298(4)	$\langle 5^-\rangle$													
4319.3(6)														
4320.1(11)	$\langle 9\rangle$													96Go29
4326(4)	6^+													

(continued) **$^{142}_{60}$Nd**

E^* [keV]	J^π	L	C^2S (τ,d)	L	S_N (d,t)	β_L (p,p′)	$d\sigma/d\Omega$ μb/sr	σ (p,t) μb/sr	I_t (p,t)	$\Gamma_\circ{}^2/\Gamma$ [meV]	$B(E1)$ $10^{-3}ef$	ε (^{14}C,^{16}O)	$T_{1/2}$ or Γ_{cm}	Ref.
4335.0(10)	$\langle 1^- \rangle$													96Go29
4346(4)	6^+													
4362.8(8)														96Go29
4390.2(4)	$\langle 1^- \rangle$													96Go29
4403(6)	$\langle 4^+ \rangle$						6.5(10)	7(1)						96Po12
4423(6)	$\langle 3^- \rangle$						10(1)	12(2)						96Po12
4456.1(3)	3^-													96Go29
4464.3(8)														96Go29
4480(6)	$\langle 4^+,5^- \rangle$						3(1)	3.5(5)						96Po12
4500(2)	2^+						6.8(12)	7(1)						96Po12
4511(1)	3^-													96Go29
4530(4)														
4553(1)														96Go29
4567(4)	2^+						47(2)	85(13)						96Po12
4581(4)	2^+													
4605(1)	$\langle 10^+ \rangle$													
4606(1)	10^-													
4615(7)	2^+						111(3)	179(17)						96Po12
4618(1)	$\langle 10 \rangle$													
4625.6(7)	1									97(16)	2.8(5)			06Vo0A
4638(4)	$\langle 2^+ \rangle$													
4662(4)	5^-													
4682	$[6^+]$						12(2)	10(2)						96Po12
4707(4)	3^-													
4712(7)	$\langle 1^-,2^+ \rangle$						21(2)	32(4)						96Po12
4717(1)	11^-													
4735(7)	$\langle 3^- \rangle$						5.4(15)	7.0(14)						96Po12
4739	$\langle 0^+ \rangle$													
4747	6^+													
4793(4)	3^-						14(2)	15(2)						96Po12
4818(7)	$\langle 2^+,3^- \rangle$						21(2)	24(4)						96Po12
4833	$\langle 3^- \rangle$													
4837(7)							10(2)	10(1)						
4862(4)														
4888(7)	$3^-,4^+$						22(2)	30(3)						96Po12
4901.4(10)	1									78(14)	1.9(3)			06Vo0A
4908(4)	$\langle 3^-,4^+ \rangle$													
4971(4)														
4986(1)	$\langle 11^- \rangle$													
4993(4)	4^+													
5040(4)	3^-													
5054(4)														
5087(1)	$\langle 11^- \rangle$													
5089(4)	3^-													
5102(4)	$\langle 0^+,1^- \rangle$													

(continued) **$^{142}_{60}$Nd**

E^* [keV]	J^π	L	C^2S (τ,d)	L	S_N (d,t)	β_L (p,p′)	$d\sigma/d\Omega$ μb/sr	σ (p,t) μb/sr	I_t (p,t)	$\Gamma_\circ{}^2/\Gamma$ [meV]	$B(E1)$ $10^{-3}ef$	ε (^{14}C,^{16}O)	$T_{1/2}$ or Γ_{cm}	Ref.
5130(4)	$\langle 3^- \rangle$													
5145(4)	2^+													
5164.4(9)	$\langle 1^- \rangle$									62(12)	1.3(3)			06Vo0A
5172(4)	$\langle 3^- \rangle$													
5182(1)	$\langle 11 \rangle$													
5193(4)														
5202(1)	$\langle 12^- \rangle$													
5219.5(8)	1									208(34)	4.2(7)			06Vo0A
5228(4)	4^+													
5252(4)	2^+													
5260(1)	$\langle 13^- \rangle$													
5266(4)	4^+													
5277(4)	2^+													
5307(1)	$\langle 12^- \rangle$													
5316														
5322(4)														
5332(4)	3^-													
5355(4)	$\langle 2^+,3^- \rangle$													
5377(4)	0^+													
5381.6(10)	1									69(16)	1.3(3)			06Vo0A
5412.7(7)	$\langle 1^- \rangle$									141(24)	2.6(4)			06Vo0A
5432.7(7)	1									139(23)	2.5(4)			06Vo0A
5438														
5447(1)														
5468(1)	$\langle 13^- \rangle$													
5471(4)														
5496(4)														
5511(4)	3^-													
5523.2(7)	1									459(71)	7.8(12)			06Vo0A
5525(4)	3^-													
5551.1(8)	1									156(28)	2.6(5)			06Vo0A
5586.7(12)	1									107(22)	1.8(4)			06Vo0A
5660.6(13)	1									150(28)	2.4(5)			06Vo0A
5713.8(14)	1									124(25)	1.9(4)			06Vo0A
5733.0(11)	1									135(26)	2.1(4)			06Vo0A
5746(1)	$\langle 14^- \rangle$													
5824.5(8)	1									237(40)	3.4(6)			06Vo0A
5862.2(7)	1									518(82)	7.2(11)			06Vo0A
5956.1(9)	1									101(23)	1.4(3)			06Vo0A
5995.8(8)	1									305(49)	4.1(7)			06Vo0A
6016.0(8)	1									315(51)	4.2(7)			06Vo0A
6034.8(7)	1									510(79)	6.7(10)			06Vo0A
6047.4(8)	1									308(50)	4.0(7)			06Vo0A
6149.6(7)	1									869(133)	10.7(17)			06Vo0A
6171.4(7)	1									874(134)	19.7(16)			06Vo0A

(continued) **$^{142}_{60}$Nd**

E^* [keV]	J^π	L	C^2S (τ,d)	L	S_N (d,t)	β_L (p,p′)	$d\sigma/d\Omega$ μb/sr	σ (p,t) μb/sr	I_t (p,t)	$\Gamma_\circ{}^2/\Gamma$ [meV]	$B(E1)$ $10^{-3}ef$	ε (^{14}C,^{16}O)	$T_{1/2}$ or Γ_{cm}	Ref.
6223.7(8)	1									538(85)	6.4(10)			06Vo0A
6322.2(6)	1									1272(194)	14.4(22)			06Vo0A
6246(1)	$\langle 14^+ \rangle$													
6363.8(11)	1									891(139)	9.9(16)			06Vo0A
6440(1)	$\langle 14^+ \rangle$													
6555.1(10)	1									233(44)	2.4(5)			06Vo0A
6562.2(7)	1									427(72)	4.3(7)			06Vo0A
6586.7(11)	1									374(69)	3.8(7)			06Vo0A
6596.3(11)	1									386(70)	3.9(7)			06Vo0A
6606(1)														
6615.2(13)	1									261(53)	2.6(5)			06Vo0A
6625.8(10)	1									476(82)	4.7(8)			06Vo0A
6652.7(12)	1									209(46)	2.0(4)			06Vo0A
6656(1)	$\langle 15^+ \rangle$													
6678.0(9)	1									372(65)	3.6(6)			06Vo0A
6733.4(10)	1									512(86)	4.8(8)			06Vo0A
6760(1)														
6802.4(10)	1									372(68)	3.4(6)			06Vo0A
6816(1)														
6878(1)***	1^-												1.34(16) fs	
6888(1)														
6931.8(13)	1									283(59)	2.4(5)			06Vo0A
7005(1)	$\langle 15^+ \rangle$													
7068.5(8)	1									1075(172)	8.7(14)			06Vo0A
7113.6(9)	1									820(135)	6.5(11)			06Vo0A
7123(1)														
7129(1)	$\langle 16^+ \rangle$													
7184(1)														
7403(1)														
7650(1)														
7751(1)														
7760(1)														
7901(1)														
7921(1)	$\langle 16^+ \rangle$													
8077(1)														
8152(1)														
8409(1)														
8518(1)														
8525(1)	$\langle 18^+ \rangle$													
8913(1)														
9257(2)														
9533(2)	$\langle 20^+ \rangle$													
9661(2)														
10343(2)	$\langle 22^+ \rangle$													
11080(2)	$\langle 24^+ \rangle$													

(continued) **$^{142}_{60}$Nd**

E^*	J^π	L	C^2S	L	S_N	β_L	$d\sigma/d\Omega$	σ (p,t)	I_t	${\Gamma_\circ}^2/\Gamma$	$B(E1)$	ε	$T_{1/2}$ or	Ref.
[keV]			(τ,d)		(d,t)	(p,p′)	μb/sr	μb/sr	(p,t)	[meV]	$10^{-3}ef$	(^{14}C,^{16}O)	Γ_{cm}	
11487(3)														
12159(3)														
			71Jo16		73Fo13	89Tr03	82Pe13			78Me16				Ref.
								96Po12	92Tr01	93Vo05	93Vo05	82Pe13		Ref.

Additional data on this isotope can be found in [04Zi01, 04En0A, 01Er09, 98Wi05, 96Po12, 96Go29, 96Wi07, 96Zi02, 93Vo05, 91Sa27, 90Pi04].
Abundance: 27.2(5) %.
* Parameter $d\sigma(exp)/d\sigma(DWBA)$ for (^{14}C,^{16}O) reaction [82Pe13, 00Tu01].
** Ratio Γ_o^2/Γ=229(25) meV for this level was obtained by nuclear resonance fluorescence (NRF) method in [90He03].
*** Level observed by photoexcitation [72Wo21] with $\Gamma_\circ/\Gamma$=0.85(10) and Γ_γ=275(60) meV.
Data for this isotope are considered in vol. LB I/18B.

Energy levels and branching ratios [00Tu01]. Part 2 **$^{142}_{60}$Nd**

E^*	J^π		Branching ratios in percentage									
		E_f^*:	0.0	1575	2084	2101	2209	2217	2384.3	2437.2	2513.89	2547.28
[keV]		J_f^π:	0^+	2^+	3^-	4^+	6^+	0^+	2^+	4^+	5^+	3^+
1575.78(1)	2^+		100									
2083.94(2)	3^-		≈0.2	100								
2100.79(1)	4^+			[100]	x							
2209.31(2)	6^+					100						
2217.49(2)	0^+		x	100								
2384.34(2)	2^+		83(5)	17(1)								
2437.17(2)	4^+			8.5(6)	1.5(6)	90(6)						
2513.89(2)	5^+					41(2)	59.2(7)			x		
2547.28(2)	3^+			49(3)		51(3)						
2583.09(2)	2^+		63(4)	37(3)								
2585.55(2)	$1^{\langle+\rangle}$		17(2)	83(5)								
2737.26(3)	4^+					84(5)					7.8(11)	8.6(11)
2845.86(5)	2^+		93(6)	6.6(8)								
2886.31(4)	6^+						79(6)				21.4(13)	
2975.90(6)	5^-				<23	78(5)				22.1(17)		
2983.1(10)	0^+			100								
3009.97(5)	4^+			84(5)	<8	15.8(15)						
3045.20(4)	2^+		49(2)	31(2)	20(2)							
3081.06(4)	4^+			77(5)		15(3)	8.8(16)					
3085.85(6)	5^+					22(3)	71(7)			6.6(11)		
3128.06(7)	2^+		25(2)	57(3)	11(2)	6.7(12)						
3244.83(6)	4^-				100							
3318.73(6)	4^+				<10	75(4)			<5	25(6)		
3358.68(9)	2^+		29(3)	45(5)	26(4)							

(continued)

$^{142}_{60}$Nd

E^*	J^π		Branching ratios in percentage									
		E_f^*:	0.0	1575	2084	2101	2209	2217	2384.3	2437.2	2513.89	2547.28
[keV]		J_f^π:	0^+	2^+	3^-	4^+	6^+	0^+	2^+	4^+	5^+	3^+
3365.26(6)	$\langle 3^- \rangle$			100								
3414.24(8)	$\langle 5 \rangle^-$					92(7)					7.8(23)	
3424.2(1)**	1^-		97(6)	3.0(9)	<3							
3439.81(11)						91(13)				9(4)	<45	
3448.55(13)							100				<18	
3453.6(5)	8^+						x					
3466.83(9)					100							
3470.31(11)	2^+		42(5)	22(3)	36(4)							
3484.9(5)	9^-						x					
3511.9(4)			100									
3519.92(16)	$\langle 7^+ \rangle$						x				x	
3576.81(8)	$\langle 3^- \rangle$			41(4)	31(4)	28(3)						
3579.11(6)	2^+		69(6)	31(14)					<19			
3584.2(3)	$\langle 0^+ \rangle$			100								
3598.31(10)	5^-				79(5)	21(5)						
3708.65(6)	$\langle 5 \rangle^-$					100					<46	
3709.77(13)	$\langle 3 \rangle^-$				100							
3743.7(3)	$\langle 1^-,2^+ \rangle$		18(8)		82(16)							
3757.6(5)	$1,2^+$		74(15)	26(10)								
3763.2(5)	$\langle 0^+ \rangle$			100								
3781.31(13)	3^-			40(7)	60(7)							<25.29
3785.0(3)	$1,2^+$		45(8)	27(1)					27(10)			
3803.7(7)	$\langle 4^+ \rangle$				100						<93	
3831.11(20)	2^-			39(6)	61(8)							
3861.18(18)				83(9)		17(9)				<33		
3871.80(19)	$[3^-]$			61(8)		39(13)						
3896.0(5)	$\langle 2^+ \rangle$		[56]		[44]							
3939.1(7)			100									
3982.0(4)	1		71(12)					29(12)				
3985.88(17)	$[6^+]$			65(5)		35(6)						
4053.8(4)			26(12)	20(11)	55(22)							
4068.9(3)				100								
4093.7(6)	1		x									
4144.9(6)	$\langle 1^- \rangle$		x									
4174.4(4)	$\langle 4^+ \rangle$			100								
4203.04(23)	2^+			23(6)	32(9)				45(9)			
4255.7(9)	$1,2^+$		100									
4269.1(8)	$[4^+]$		57(17)	43(14)								
4286.4(11)	3^-			100								
4319.3(6)			38(2)	62(25)								
4335.0(10)	$\langle 1^- \rangle$		100									
4362.8(8)			100									
4390.2(4)	$\langle 1^- \rangle$		30(13)									
4456.1(3)	3^-				100							
4464.3(8)				100								

(continued) **$^{142}_{60}$Nd**

E^*	J^π	Branching ratios in percentage									
	E_f^*:	0.0	1575	2084	2101	2209	2217	2384.3	2437.2	2513.89	2547.28
[keV]	J_f^π:	0^+	2^+	3^-	4^+	6^+	0^+	2^+	4^+	5^+	3^+
4500(2)	2^+		100								
4511(1)	3^-		24(11)	76(18)							
4553(1)			53(10)		47(9)						
4625.6(7)	1	100									
4901.4(10)	1	100									
6878(1)***	1^-	84					3				

Energy levels and branching ratios [00Tu01]. Part 3 **$^{142}_{60}$Nd**

E^*	J^π	Branching ratios in percentage									
	E_f^*:	2583.09	2886.31	3242.62	3453.6	3456.02	3484.9	3519.92	3584.2	3766.4	3832.1
[keV]	J_f^π:	2^+	6^+	7^-	8^+	8^-	9^-	$\langle 7^+\rangle$	$\langle 0^+\rangle$	$\langle 8^-\rangle$	8^+
3453.6(5)	8^+			x							
3456.02(13)	8^-			100							
3484.9(5)	9^-			x	x	x					
3766.4(6)	$\langle 8^-\rangle$			x		x	x				
3832.1(6)	8^+		x		x			x			
3925.1(6)	10^+				x		x				
3953.0(7)	$\langle 8^-\rangle$					x	x	x			
4243.1(8)	$\langle 9^+\rangle$				x						x
4320.1(11)	$\langle 9\rangle$				x					x	
4390.2(4)	$\langle 1^-\rangle$	70(15)									
4605(1)	$\langle 10^+\rangle$						x				
4606(1)	10^-					x					
4717(1)	11^-						x				
4986(1)	$\langle 11^-\rangle$						x				
5087(1)	$\langle 11^-\rangle$						x				
6878(1)***	1^-	7							7		

Energy levels and branching ratios [00Tu01]. Part 4 **$^{142}_{60}$Nd**

E^*	J^π	Branching ratios in percentage									
	E_f^*:	3925.1	4243.1	4606.1	4716.6	4986.2	5087.5	5202.3	5259.6	5307.2	5446.7
[keV]	J_f^π:	10^+	$\langle 9^+\rangle$	10^-	11^-	$\langle 11^-\rangle$	$\langle 11^-\rangle$	$\langle 12^-\rangle$	$\langle 13^-\rangle$	$\langle 12^-\rangle$	
4243.1(8)	$\langle 9^+\rangle$	x									
4605(1)	$\langle 10^+\rangle$		x								
4618(1)	$\langle 10\rangle$		x								
4717(1)	11^-	x									
5087(1)	$\langle 11^-\rangle$	x									

(continued) **$^{142}_{60}$Nd**

E^*	J^π	Branching ratios in percentage									
	E_f^*:	3925.1	4243.1	4606.1	4716.6	4986.2	5087.5	5202.3	5259.6	5307.2	5446.7
[keV]	J_f^π:	10^+	$\langle 9^+ \rangle$	10^-	11^-	$\langle 11^- \rangle$	$\langle 11^- \rangle$	$\langle 12^- \rangle$	$\langle 13^- \rangle$	$\langle 12^- \rangle$	
5182(1)	$\langle 11 \rangle$	x									
5202(1)	$\langle 12^- \rangle$			x	x		x				
5260(1)	$\langle 13^- \rangle$	x			x		x				
5307(1)	$\langle 12^- \rangle$				x	x		x			
5447(1)									x		
5468(1)	$\langle 13^- \rangle$							x		x	
5733.0(11)	1							x	x		
5746(1)	$\langle 14^- \rangle$							x	x		
6246(1)	$\langle 14^+ \rangle$								x		
6440(1)	$\langle 14^+ \rangle$								x		
6606(1)									x		
7123(1)									x		
7184(1)									x		x

Energy levels and branching ratios [00Tu01]. Part 5 **$^{142}_{60}$Nd**

E^*	J^π	Branching ratios in percentage									
	E_f^*:	5468.2	5728.4	5745.6	6246.5	6440.4	6605.9	6618.3	6656.1	6759.7	6815.6
[keV]	J_f^π:	$\langle 13^- \rangle$		$\langle 14^- \rangle$	$\langle 14^+ \rangle$	$\langle 14^+ \rangle$			$\langle 15^+ \rangle$		
5733.0(11)	1	x									
5746(1)	$\langle 14^- \rangle$	x									
6440(1)	$\langle 14^+ \rangle$	x									
6615.2(13)	1	x	x	x							
6656(1)	$\langle 15^+ \rangle$			x	x	x					
6760(1)								x			
6816(1)				x							
6888(1)			x								
7005(1)	$\langle 15^+ \rangle$					x					
7123(1)		x									
7129(1)	$\langle 16^+ \rangle$								x		x
7184(1)		x		x	x		x	x			
7403(1)				x						x	
7760(1)										x	
7901(1)					x						
7921(1)	$\langle 16^+ \rangle$				x			x			x
8152(1)									x		

Energy levels and branching ratios [00Tu01]. Part 6 **$^{142}_{60}$Nd**

E^*	J^π	Branching ratios in percentage									
	E_f^*:	6887.8	7005.2	7129.5	7184.1	7402.9	7650.5	7751.3	7759.7	7901.5	7921.0
[keV]	J_f^π:		$\langle 15^+ \rangle$	$\langle 16^+ \rangle$							$\langle 16^+ \rangle$
7129(1)	$\langle 16^+ \rangle$	x	x								
7403(1)					x						
7650(1)					x	x					
7751(1)						x	x				
7901(1)		x									
7921(1)	$\langle 16^+ \rangle$	x		x							
8077(1)						x		x			
8152(1)										x	x
8409(1)								x			
8525(1)	$\langle 18^+ \rangle$			x					x		
8913(1)								x			

Energy levels and branching ratios [00Tu01]. Part 7 **$^{142}_{60}$Nd**

E^*	J^π	Branching ratios in percentage									
	E_f^*:	8077.3	8152.3	8408.8	8525.0	8912.7	9257.4	9533.3	10343.5	11079.8	11487.1
[keV]	J_f^π:				$\langle 18^+ \rangle$			$\langle 20^+ \rangle$	$\langle 22^+ \rangle$	$\langle 24^+ \rangle$	
8409(1)		x									
8518(1)			x								
8525(1)	$\langle 18^+ \rangle$		x								
8913(1)				x							
9257(2)						x					
9533(2)	$\langle 20^+ \rangle$				x						
9661(2)							x				
10343(2)	$\langle 22^+ \rangle$							x			
11080(2)	$\langle 24^+ \rangle$								x		
11487(3)										x	
12159(3)											x

Energy levels and branching ratios [98Tu04, 01Tu07]. **$^{143}_{60}$Nd**

E^*	$2J^\pi$	L	C^2S	S'	S'	L	S_N	L	C^2S	L	σ (τ,α)	$S_{\ell j}$	L	σ (d,d′)	$I_{s,0}$	$\Gamma_\circ$	$\Gamma_\circ^{red}$	Ref.
[keV]			(d,p)	(d,p)	(d,p)		(p,d)		(d,t)	(τ,α)	μb/sr	(τ,α)	(d,d′)	μb/sr	[eVb]	[meV]	[meV′]	
0.0	7^-	3	0.75	7.67	3.69	3	1.23	3	0.96	3	57	1.0		35500				75Ve08
742.05(4)	3^-	1	0.40	2.26		1	0.19	1	0.20				$\langle 2 \rangle$	93.1				81To05
1228.0(1)	13^+	6	0.45	6.12						6	54	0.40	$\langle 2 \rangle$**	95.5				75Ve08
1305.9(1)	1^-	1	0.38	1.03				1	0.07					17.6				75Ve08
1407.1(1)	9^-	5	0.58	6.24						5	17	0.17	$\langle 2 \rangle$	31.3	21(7)	8.6(28)	1.56(50)	75Ve08

(continued)

$^{143}_{60}$Nd

E^* [keV]	$2J^\pi$	L	C^2S (d,p)	S' (d,p)	S' (d,p)	L	C^2S (d,t)	L (τ,α)	σ (τ,α) μb/sr	$S_{\ell j}$ (τ,α)	L (d,d′)	σ (d,d′) μb/sr	$I_{s,0}$ [eVb]	$\Gamma_\circ$ [meV]	$\Gamma_\circ^{red}$ [meV′]	Ref.
1431.2(1)	11^-								27		⟨2⟩	87.1	19(6)	6.7(22)	1.12(37)	88Lo04
1506	$X^{\langle+\rangle}$										⟨3⟩	12.9				67Ch16
1555.5(1)	5^-	3	0.19	1.60							⟨2⟩	21.4	26(7)	22(6)	2.39(67)	75Ve08
1556.4(1)	3^+					2	2.11	⟨2⟩	75	2.7						89Ka21
1558.8(4)																
1608.4(1)	1^+	0	0.01			0	0.53		12		⟨3⟩	12.4				89Ka21
1690(1)													15(5)	11(4)	2.2(7)*	95He05
1739.2(1)	9^-	5	0.23	2.52					11		⟨2⟩	21.2	11(3)	7.1(20)	0.44(12)	75Ve08
1774.8(2)	1^+					0	0.42									89Ka21
1799.5(1)	3^+					2	0.025				⟨2⟩*	25.8				89Ka21
1851.5(3)	7^-	3	0.13	0.85							⟨2⟩	21.6	10(3)	9.2(26)	0.42(12)	75Ve08
1852.6(1)	3^-	1	0.10	0.28												75Ve08
1900.3(4)				1.52												
1910.8(1)	5^-	3	0.20									5.4	5.4(15)	6.8(18)	0.27(7)	75Ve08
1920.6(3)																
1966(6)	5^+,3^+					⟨2⟩	0.27									
1988.2(1)	11^-							⟨5⟩	132	1.3						88Lo04
1996.4(1)	5^+											26.1	4.1(17)	5.7(23)	0.72(29)	67Ch16
2004.7(1)	1^-	1	0.01	0.45												75Ve08
2011.3(3)	9^+												20(2)	17(2)	2.12(19)	95He05
2018.9(1)	15^-											38.0				67Ch16
2019.2(5)	5^-,7^-	3	0.04													75Ve08
2035.6(1)	7^-															
2063.8(2)	⟨7,9⟩															
2066.8(1)	13^-															
2074(10)	$X^{\langle+\rangle}$										⟨3⟩	19.8				67Ch16
2075.1(1)	11^-	5	0.03					⟨5⟩	12	0.1						75Ve08
2090.6(1)	7^+										⟨3⟩	47.1	2.3(12)	15(8)	1.6(9)	67Ch16
2094.4(1)	11^-															
2101(5)	7^-,5^-	3	0.05													75Ve08
2125.8(1)	3^-			0.19								2.3				67Ch16
2134.4(2)	9^-															
2137(5)	3^-,1^-	1	0.06													75Ve08
2147.9(3)																
2173.6(2)	7^+															
2183(10)	9^-,11^-							⟨5⟩	67	0.60		3.8				88Lo04
2187.0(1)	5^-			0.65												
2196.9(2)	7^-	3	0.05													75Ve08
2201.2(1)	11^-					⟨5⟩	0.28			2.3						73Ga01
2220.7(2)	5^+												3.6(9)	6.2(16)	0.57(15)	95He05
2223.2(1)	13^-															
2242.2(2)	11^+															
2249.3(1)	11^-							⟨5⟩	236			54.0				88Lo04
2255.7(1)	⟨5$^-$⟩	⟨3⟩														
2257(5)	3^-,1^-	1	0.05													75Ve08

(continued) **$^{143}_{60}$Nd**

E^* [keV]	$2J^\pi$	L (d,p)	C^2S (d,p)	S' (d,p)	S' (d,p)	L (p,d)	S_N (p,d)	L (d,t)	C^2S (d,t)	L (τ,α)	σ (τ,α) μb/sr	$S_{\ell j}$ (τ,α)	$I_{s,0}$ [eVb]	$\Gamma_\circ$ [meV]	$\Gamma_\circ^{red}$ [meV′]	Ref.
2283.9(2)	7^-															
2294.5(1)	13^-															
2317.9(4)	$\langle 7\rangle$												2.0(10)	2.7(14)	0.22(11)	95He05
2323.2(1)	3^-,1^-	1	0.03	0.18												75Ve08
2323.3(1)	11^-															
2347.0(2)	$9^{\langle -\rangle}$															
2359.5(2)	15^+															
2361.6(1)	3^-	1	0.05	1.05												75Ve08
2398.2(2)	17^-															
2398.6(1)	9^-									$\langle 5\rangle$	24	0.18				
2405.5(2)	5															
2405.7(1)	$\langle 1^-$,$3^-\rangle$	$\langle 1\rangle$	0.01	0.22												75Ve08
2415.5(3)													4.0(11)	7.4(17)	0.5(1)*	95He05
2420.0(1)	3^-	1	0.02													75Ve08
2433.4(3)	5^-	3	0.02													75Ve08
2443.3(2)	9^-															
2451.5(1)	1,3															
2451.9(3)																
2460.0(2)	5^-	3	0.02													75Ve08
2462(10)	$\langle 3^-$,$1^-\rangle$	$\langle 1\rangle$	0.06	0.08												75Bo03
2463.7(2)	11^-															
2475.9(2)	$\langle 1^-$,$3^-\rangle$															
2483.1(1)	17^+															
2489.8(6)	19^-															
2496.2(1)	7^-	3	0.02										4.4(10)	7.1(16)	0.4(1)*	75Ve08
2504.6(2)	$\langle 15\rangle^-$															
2506.4(1)	1^-,3^-	1	0.03	0.11												75Bo03
2517.4(2)	$\langle 11$,$13\rangle^-$															
2528.2(2)	7^-															
2530.0(1)	3^-	1	0.05	0.35												75Ve08
2554(1)													3.5(12)	6.0(20)	0.3(1)*	95He05
2557.0(5)	$\langle 9\rangle^+$												14(3)	19(3)	1.11(20)	95He05
2563(5)	7^-,5^-	3	0.07	0.59							14					75Ve08
2577.8(2)	11,13															
2588.0(2)	5^-															
2588.8(1)	1,3															
2590.2(2)	11^-															
2596(5)																
2623.1(2)	3^-,1^-	1	0.01													75Ve08
2626.0(1)	1,3												2.3(8)	4.2(14)	0.22(8)*	95He05
2662.5(1)	3^-	1	0.01													75Ve08
2672.2(2)	$\langle 9^-\rangle$															
2683.7(1)	3^-	1	0.05	0.08												75Ve08
2700.6(2)																
2730.8(5)																

(continued) **$^{143}_{60}$Nd**

E^* [keV]	$2J^\pi$	L (d,p)	C^2S (d,p)	S' (d,p)	S' (d,p)	L (p,d)	S_N (p,d)	L (d,t)	C^2S (d,t)	L (τ,α)	σ (τ,α) μb/sr	$S_{\ell j}$ (τ,α)	$I_{s,0}$ [eVb]	$\Gamma_\circ$ [meV]	$\Gamma_\circ^{red}$ [meV′]	Ref.
2737.9(1)	3^-										11					
2750.0(4)	13^-															
2752.9(5)	17^+			3.31												
2759.2(4)																
2775.2(2)	1,3															
2785.1(3)																
2788.0(5)																
2791																
2798.2(3)																
2799.9(3)																
2805.3(3)	13^+	6	0.21								15					75Ve08
2821.6(2)	3,1															
2834																
2840.7(2)	$1^{\langle-\rangle}$,$3^{\langle-\rangle}$	$\langle1\rangle$	0.006													75Ve08
2876.1(2)	1,3															
2884.5(6)																
2886.1(5)																
2891.5(2)																
2905(10)	$\langle3^+,5^+\rangle$									$\langle2\rangle$	51	1.1				88Lo04
2910.7(6)	21^+															
2911.7(5)																
2922.6(1)	1,3															
2926(5)	5^-,7^-	3	0.009										36(3)	79(6)	3.0(2)*	75Ve08
2939.3(3)	1,3															
2943.0(5)	$\langle13\rangle$															
2954.1(2)	$3^{\langle+\rangle}$									$\langle2\rangle$	53	1.2				88Lo04
2957.4(2)	3^-															
2969.8(2)	1,3												12(1)	27(3)	1.0(1)*	95He05
2987.9(3)	1,3															
2998.6(2)	3^-															
3008(10)																
3013.4(2)	3^-										15					88Lo04
3023.0(1)																
3023.7(7)	21^+															
3033.9(2)	1,3															
3040	7^-															
3047.8(1)	1,3												14(1)	34(3)	1.2(1)*	95He05
3049(5)	$\langle9\rangle^+$	4	0.008													75Ve08
3058(10)											16					88Lo04
3064.0(2)	1,3															
3071	7^-												9.9(13)	24(3)	0.8(1)*	95He05
3080.4(2)													4.8(10)	12(3)	0.4(1)*	95He05
3084.5(7)	23^+															
3090.9(2)	1,3												4.1(10)	10(1)	0.33(4)*	95He05
3103(2)																

(continued) **$^{143}_{60}$Nd**

E^* [keV]	$2J^\pi$	L	C^2S (d,p)	S' (d,p)	S' (d,p)	L	S_N (p,d)	L	C^2S (d,t)	L (τ,α)	σ (τ,α) μb/sr	$S_{\ell j}$ (τ,α)	$I_{s,0}$ [eVb]	$\Gamma_\circ$ [meV]	$\Gamma_\circ^{red}$ [meV′]	Ref.
3112(2)																
3122(5)	X^-			0.09												
3132	X^-															
3153	X^-															
3168(10)	$\langle 9^-,11^-\rangle$									$\langle 5\rangle$	55	0.5				88Lo04
3168.1(10)	1^+	0	0.006													75Ve08
3185.5(1)	1,3															
3189.6(8)																
3202(5)	$3^-,1^-$	1	0.008													75Ve08
3214(1)													4.2(10)	45(10)	1.3(3)*	95He05
3220.8(2)																
3225(10)	$\langle 9^-,11^-\rangle$									$\langle 5\rangle$	92	0.81				88Lo04
3233(5)	$7^-,5^-$	3	0.01													75Ve08
3245													24(2)	66(6)	1.8(2)*	95He05
3255(5)	$7^-,5^-$	3	0.01													75Ve08
3271.9(3)													17(2)	47(5)	1.3(1)*	95He05
3293.7(3)																
3297.7(2)	$1^-,3^-$															
3311(5)	$\langle 9^-,11^-\rangle$									$\langle 5\rangle$	31	0.28				88Lo04
3317(1)													9.2(12)	26(4)	0.7(1)*	95He05
3329(5)																
3334.6(9)																
3379(5)	$5^-,7^-$	3	0.03	0.45												75Ve08
3400(5)	X^-			0.26							17					88Lo04
3413(5)	X^-															
3425.9(2)																
3435(5)	$5^-,7^-$	3	0.009													75Ve08
3448(1)													6.4(14)	20(4)	0.5(1)*	95He05
3456																
3456.9(7)	25^+															
3457.6(9)	$\langle 3\rangle^+$	2	0.02													75Ve08
3470.7(3)																
3485.5(2)	X^-			0.27												
3515(5)	$7^-,5^-$	3	0.02													75Ve08
3519(1)													8.1(13)	26(4)	0.6(1)*	95He05
3538(5)	$7^-,5^-$	3	0.008													75Ve08
3579(5)	X^-			0.20												
3603(5)																
3619.3(7)																
3625(5)											45					88Lo04
3645(5)																
3668(5)	$5^-,7^-$	3	0.015													75Ve08
3685(5)	X^-	[1]	0.08	0.19												75Bo03
3703(10)											84					88Lo04
3733(5)																

(continued) **$^{143}_{60}$Nd**

E^* [keV]	$2J^\pi$	L	C^2S (d,p)	S' (d,p)	S' (d,p)	L	S_N (p,d)	L	C^2S (d,t)	L (τ,α)	σ (τ,α) μb/sr	$S_{\ell j}$ (τ,α)	L (d,d′)	$I_{s,0}$ [eVb]	$\Gamma_\circ$ [meV]	$\Gamma_\circ^{red}$ [meV′]	Ref.
3744(5)											103						88Lo04
3759(1)														12(2)	43(8)	0.8(1)*	95He05
3774(5)																	
3790	X^-																
3806.3(12)																	
3815(5)	3^-,1^-	1	0.03														75Ve08
3831(5)																	
3856(5)																	
3882(5)																	
3899.5(4)																	
3916(5)	7^-,5^-	3	0.025														75Ve08
3939(5)																	
3955(5)																	
3970(5)																	
4010(5)																	
4062.8(8)																	
4075.5(7)	$\langle 27^+ \rangle$																
4087(5)																	
4129(5)																	
4168(5)																	
4198(5)																	
4224.3(7)	27^+																
4267(5)																	
4287(5)																	
4316.0(12)																	
4348(5)																	
4399(5)																	
4430(5)																	
4523.5(7)	29^+																
4634.6(8)	29^+																
4706.2(7)																	
4821.0(8)																	
4999.1(7)	31^+																
5129.1(8)	31^+																
5282.6(8)	31^+																
5343.6(8)	33^+																
5426.9(8)	33																
5506.1(8)	33^+																
5791.3(9)	35																
5913.7(8)	35^-																
5990.7(8)	$35^{\langle - \rangle}$																
6056.1(8)																	
6237.3(8)																	
6489.5(8)																	
6502.3(8)	35																

(continued) **$^{143}_{60}$Nd**

E^*	$2J^\pi$	L	C^2S	S'	S'	L	S_N	L	C^2S	L	σ (τ,α)	$S_{\ell j}$	$I_{s,0}$	$\Gamma_\circ$	$\Gamma_\circ^{red}$	Ref.
[keV]			(d,p)	(d,p)	(d,p)		(p,d)		(d,t)	(τ,α)	μb/sr	(τ,α)	[eVb]	[meV]	[meV′]	
6516.5(9)																
6695.9(8)	$\langle 39^- \rangle$															
6800.9(11)																
6824.9(9)																
7019.3(8)																
7294.4(9)																
7296.0(9)																
7529.2(9)	43^-															
7847.9(9)	43^-															
7889.4(8)																
7967.5(9)																
8649.3(9)	47^-															
8686.8(9)																
8987.7(9)	49^+															
9167.4(10)																
10130.9(10)	53^+															
10529.3(11)																
10668.6(11)																
10754.8(11)																
11466.6(11)																
11557.4(12)																
11788.2(12)																
12559.5(16)																
			75Ve08	75Bo03							88Lo04		95He05	95He05	95He05	Ref.
				75Ve08			73Ga01									Ref.

Additional data on this isotope can be found in [00Zh03, 93Zi03, 93Bo29, 93Vo05, 92Tr01, 90Wr01, 89Tr03, 83Tr16, 81To05, 74Ba49, 74Bo32, 71Ya10, 67Wi08, 67Ch16].

Abundance: 12.2(2) %.

* $B(E1)$ in units $10^{-3}ef$ under the assumption of E1 transition [95He05].

$\Gamma_\circ^{red}$ are in units $meV/MeV^{2\lambda+1}$ with λ=1 or 2 for E1 and E2 transitions, respectively [95He05].

** marked as inconsistent with adopted parity of the state in [98Tu04].

I_t – the relative populations of L=0 transition in the (p,t) reaction – were found to be close each other in the neighbour near-magic nuclei ^{143}Nd and ^{142}Nd [92Tr01].

The last two columns contain $d\sigma/d\Omega$ for the (τ,α) and (d,d′) reactions [88Lo04, 67Ch16].

Data on parameters of inelastic proton scattering can be found in [89Tr03].

For comparison S_N from measurement of the (d,p) reaction in [77St33] can be found in Supplement.

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

Energy levels and branching ratios [98Tu04, 01Tu07]. Part 2

$^{143}_{60}$Nd

E^* [keV]	$2J^\pi$	S_N (d,p)	σ (d,p) μb/sr	S_n^+ (^{13}C,^{12}C)	S_{dt} (^{13}C,^{12}C)	$S_{\ell j}$ (d,t)	I_t (p,t)	$T_{1/2}$ or Γ_{cm}	Ref.
0.0	7^-	0.85	5670	0.76	0.94	1.36	100.0	Stable	75Ve08
742.05(4)	3^-	0.51	6700	0.41	0.45	0.27		2.8(1) ps	81To05
1228.0(1)	13^+							6.79(2) ns	75Ve08
1305.9(1)	1^-	0.44		0.45	0.40	0.10			75Ve08
1407.1(1)	9^-	0.59						53(+26-13) fs	75Ve08
1431.2(1)	11^-							68(+33-17) fs	88Lo04
1506	$X^{\langle+\rangle}$								67Ch16
1555.5(1)	5^-	0.23		0.21				0.19(+7-4) ps	75Ve08
1556.4(1)	3^+					2.7			89Ka21
1558.8(4)									
1608.4(1)	1^+					0.9			89Ka21
1690(1)									95He05
1739.2(1)	9^-							63(+25-14) fs	75Ve08
1774.8(2)	1^+					0.68			89Ka21
1799.5(1)	3^+								89Ka21
1851.5(3)	7^-	0.19		0.29				50(+19-11) fs	75Ve08
1852.6(1)	3^-								75Ve08
1900.3(4)									
1910.8(1)	5^-	0.22		0.29				67(+24-14) fs	75Ve08
1920.6(3)									
1966(6)	$5^+,3^+$					0.30			
1988.2(1)	11^-								88Lo04
1996.4(1)	5^+							<0.1 ps	67Ch16
2004.7(1)	1^-								75Ve08
2011.3(3)	9^+							27(+3-2) fs	95He05
2018.9(1)	15^-								67Ch16
2019.2(5)	$5^-,7^-$								75Ve08
2035.6(1)	7^-						5.7(3)		
2063.8(2)	$\langle 7,9\rangle$								
2066.8(1)	13^-								
2074(10)	$X^{\langle+\rangle}$								67Ch16
2075.1(1)	11^-								75Ve08
2090.6(1)	7^+							≈30 fs	67Ch16
2094.4(1)	11^-								
2101(5)	$7^-,5^-$								75Ve08
2125.8(1)	3^-								67Ch16
2134.4(2)	9^-								
2137(5)	$3^-,1^-$								75Ve08
2147.9(3)									
2173.6(2)	7^+								
2183(10)	$9^-,11^-$								88Lo04
2187.0(1)	5^-								
2196.9(2)	7^-								75Ve08
2201.2(1)	11^-								73Ga01
2220.7(2)	5^+							<0.1 ps	95He05

(continued) **$^{143}_{60}$Nd**

E^* [keV]	$2J^\pi$	S_N (d,p)	σ (d,p) μb/sr	S_n^+ (^{13}C,^{12}C)	S_{dt} (^{13}C,^{12}C)	$S_{\ell j}$ (d,t)	I_t (p,t)	$T_{1/2}$ or Γ_{cm}	Ref.
2223.2(1)	13^-								
2242.2(2)	11^+								
2249.3(1)	11^-								88Lo04
2255.7(1)	$\langle 5^- \rangle$								
2257(5)	$3^-,1^-$								75Ve08
2283.9(2)	7^-								
2294.5(1)	13^-								
2317.9(4)	$\langle 7 \rangle$								95He05
2323.2(1)	$3^-,1^-$								75Ve08
2323.3(1)	11^-								
2347.0(2)	$9^{\langle - \rangle}$								
2359.5(2)	15^+								
2361.6(1)	3^-								75Ve08
2398.2(2)	17^-							$\leq$0.3 ns	
2398.6(1)	9^-								
2405.5(2)	5								
2405.7(1)	$\langle 1^-,3^- \rangle$								75Ve08
2415.5(3)									95He05
2420.0(1)	3^-								75Ve08
2433.4(3)	5^-								75Ve08
2443.3(2)	9^-								
2451.5(1)	1,3								
2451.9(3)									
2460.0(2)	5^-								75Ve08
2462(10)	$\langle 3^-,1^- \rangle$								75Bo03
2463.7(2)	11^-								
2475.9(2)	$\langle 1^-,3^- \rangle$								
2483.1(1)	17^+								
2489.8(6)	19^-							$\leq$0.3 ns	
2496.2(1)	7^-								75Ve08
2504.6(2)	$\langle 15 \rangle^-$								
2506.4(1)	$1^-,3^-$								75Bo03
2517.4(2)	$\langle 11,13 \rangle^-$								
2528.2(2)	7^-								
2530.0(1)	3^-								75Ve08
2554(1)									95He05
2557.0(5)	$\langle 9 \rangle^+$								95He05
2563(5)	$7^-,5^-$								75Ve08
2577.8(2)	11,13								
2588.0(2)	5^-								
2588.8(1)	1,3								
2590.2(2)	11^-								
2596(5)									
2623.1(2)	$3^-,1^-$								75Ve08
2626.0(1)	1,3								95He05

(continued) **$^{143}_{60}$Nd**

E^* [keV]	$2J^\pi$	S_N (d,p)	σ (d,p) μb/sr	S_n^+ (^{13}C,^{12}C)	S_{dt} (^{13}C,^{12}C)	$S_{\ell j}$ (d,t)	I_t (p,t)	$T_{1/2}$ or Γ_{cm}	Ref.
2662.5(1)	3^-								75Ve08
2672.2(2)	$\langle 9^- \rangle$								
2683.7(1)	3^-								75Ve08
2700.6(2)									
2730.8(5)									
2737.9(1)	3^-								
2750.0(4)	13^-								
2752.9(5)	17^+								
2759.2(4)									
2775.2(2)	1,3								
2785.1(3)									
2788.0(5)									
2791									
2798.2(3)									
2799.9(3)									
2805.3(3)	13^+								75Ve08
2821.6(2)	3,1								
2834									
2840.7(2)	$1^{\langle - \rangle}$,$3^{\langle - \rangle}$								75Ve08
2876.1(2)	1,3								
2884.5(6)									
2886.1(5)									
2891.5(2)									
2905(10)	$\langle 3^+,5^+ \rangle$								88Lo04
2910.7(6)	21^+							0.48(3) ns	
2911.7(5)									
2922.6(1)	1,3								
2926(5)	5^-,7^-								75Ve08
2939.3(3)	1,3								
2943.0(5)	$\langle 13 \rangle$								
2954.1(2)	$3^{\langle + \rangle}$								88Lo04
2957.4(2)	3^-								
2969.8(2)	1,3								95He05
2987.9(3)	1,3								
2998.6(2)	3^-								
3008(10)									
3013.4(2)	3^-								88Lo04
3023.0(1)									
3023.7(7)	21^+							$\leq$1.04 ps	
3033.9(2)	1,3								
3040	7^-						40.0(8)		
3047.8(1)	1,3								95He05
3049(5)	$\langle 9 \rangle^+$								75Ve08
3058(10)									88Lo04
3064.0(2)	1,3								

(continued) **$^{143}_{60}$Nd**

E^* [keV]	$2J^\pi$	S_N (d,p)	σ (d,p) μb/sr	S_n^+ (^{13}C,^{12}C)	S_{dt} (^{13}C,^{12}C)	$S_{\ell j}$ (d,t)	I_t (p,t)	$T_{1/2}$ or Γ_{cm}	Ref.
3071	7^-						14.7(5)		95He05
3080.4(2)									95He05
3084.5(7)	23^+							7.6(35) ps	
3090.9(2)	1,3								95He05
3103(2)									
3112(2)									
3122(5)	X^-								
3132	X^-								
3153	X^-								
3168(10)	$\langle 9^-,11^-\rangle$								88Lo04
3168.1(10)	1^+								75Ve08
3185.5(1)	1,3								
3189.6(8)									
3202(5)	$3^-,1^-$								75Ve08
3214(1)									95He05
3220.8(2)									
3225(10)	$\langle 9^-,11^-\rangle$								88Lo04
3233(5)	$7^-,5^-$								75Ve08
3245									95He05
3255(5)	$7^-,5^-$								75Ve08
3271.9(3)									95He05
3293.7(3)									
3297.7(2)	$1^-,3^-$								
3311(5)	$\langle 9^-,11^-\rangle$								88Lo04
3317(1)									95He05
3329(5)									
3334.6(9)									
3379(5)	$5^-,7^-$								75Ve08
3400(5)	X^-								88Lo04
3413(5)	X^-								
3425.9(2)									
3435(5)	$5^-,7^-$								75Ve08
3448(1)									95He05
3456									
3456.9(7)	25^+							48(24) ps	
3457.6(9)	$\langle 3\rangle^+$								75Ve08
3470.7(3)									
3485.5(2)	X^-								
3515(5)	$7^-,5^-$								75Ve08
3519(1)									95He05
3538(5)	$7^-,5^-$								75Ve08
3579(5)	X^-								
3603(5)									
3619.3(7)									
3625(5)									88Lo04

(continued) **$^{143}_{60}$Nd**

E^* [keV]	$2J^\pi$	S_N (d,p)	σ (d,p) μb/sr	S_n^+ (^{13}C,^{12}C)	S_{dt} (^{13}C,^{12}C)	$S_{\ell j}$ (d,t)	I_t (p,t)	$T_{1/2}$ or Γ_{cm}	Ref.
3645(5)									
3668(5)	5^-,7^-								75Ve08
3685(5)	X^-								75Bo03
3703(10)									88Lo04
3733(5)									
3744(5)									88Lo04
3759(1)									95He05
3774(5)									
3790	X^-								
3806.3(12)									
3815(5)	3^-,1^-								75Ve08
3831(5)									
3856(5)									
3882(5)									
3899.5(4)									
3916(5)	7^-,5^-								75Ve08
3939(5)									
3955(5)									
3970(5)									
4010(5)									
4062.8(8)									
4075.5(7)	$\langle 27^+ \rangle$								
4087(5)									
4129(5)									
4168(5)									
4198(5)									
4224.3(7)	27^+								
4267(5)									
4287(5)									
4316.0(12)									
4348(5)									
4399(5)									
4430(5)									
4523.5(7)	29^+								
4634.6(8)	29^+								
4706.2(7)									
4821.0(8)									
4999.1(7)	31^+								
5129.1(8)	31^+							≤36 ps	
5282.6(8)	31^+								
5343.6(8)	33^+							≤36 ps	
5426.9(8)	33								
5506.1(8)	33^+								
5791.3(9)	35							0.6(3) ps	
5913.7(8)	35^-								

(continued) **$^{143}_{60}$Nd**

E^* [keV]	$2J^\pi$	S_N (d,p)	σ (d,p) μb/sr	S_n^+ (^{13}C,^{12}C)	S_{dt} (^{13}C,^{12}C)	$S_{\ell j}$ (d,t)	I_t (p,t)	$T_{1/2}$ or Γ_{cm}	Ref.
5990.7(8)	$35^{\langle - \rangle}$								
6056.1(8)									
6237.3(8)								≤2.8 ps	
6489.5(8)									
6502.3(8)	35								
6516.5(9)									
6695.9(8)	$\langle 39^- \rangle$								
6800.9(11)									
6824.9(9)									
7019.3(8)									
7294.4(9)									
7296.0(9)									
7529.2(9)	43^-								
7847.9(9)	43^-								
7889.4(8)									
7967.5(9)									
8649.3(9)	47^-								
8686.8(9)									
8987.7(9)	49^+							35(8) ns	
9167.4(10)									
10130.9(10)	53^+								
10529.3(11)									
10668.6(11)									
10754.8(11)									
11466.6(11)									
11557.4(12)									
11788.2(12)									
12559.5(16)									
				76Th05		88Lo04	92Tr01		Ref.
									Ref.

Energy levels and branching ratios [98Tu04, 01Tu07]. Part 3 **$^{143}_{60}$Nd**

E^*	$2J^\pi$		Branching ratios in percentage							
		E_f^*:	0.0	742	1228	1306	1407	1431	1555	1556	1608.4
[keV]		$2J_f^\pi$:	7^-	3^-	13^+	1^-	9^-	11^-	5^-	3^+	1^+
742.05(4)	3^-		100								
1228.0(1)	13^+		100								
1305.9(1)	1^-			100							
1407.1(1)	9^-		100								
1431.2(1)	11^-		99		0.63						
1555.5(1)	5^-		90(2)	10(1)							

(continued) **$^{143}_{60}$Nd**

E^*	$2J^\pi$		Branching ratios in percentage								
		E_f^*:	0.0	742	1228	1306	1407	1431	1555	1556	1608.4
[keV]		$2J_f^\pi$:	7^-	3^-	13^+	1^-	9^-	11^-	5^-	3^+	1^+
1556.4(1)	3^+			96(1)		4(2)					
1558.8(4)			100								
1608.4(1)	1^+			100							
1739.2(1)	9^-		98(1)					2(1)			
1774.8(2)	1^+		1.2	90		9					
1799.5(1)	3^+			71(8)		8(2)			8(2)	1.6	11.1(16)
1851.5(3)	7^-		100								
1852.6(1)	3^-		31(4)	46(2)		23(1)					
1900.3(4)			100								
1910.8(1)	5^-		97(4)						3(1)		
1920.6(3)			100								
1988.2(1)	11^-		9(5)		3.7(8)		85(2)	2.2(8)			
1996.4(1)	5^+		90(2)	10(2)							
2004.7(1)	1^-			64		35					
2011.3(3)	9^+		100								
2018.9(1)	15^-				100						
2035.6(1)	7^-		53(3)	29(3)			3.0		15(2)		
2063.8(2)	$\langle 7,9\rangle$		91(9)				9(2)				
2066.8(1)	13^-				65(6)			35(4)			
2075.1(1)	11^-				100						
2090.6(1)	7^+		16(8)				43(4)		41(6)		
2094.4(1)	11^-		44(8)		39(11)						
2125.8(1)	3^-		12(1)	37(3)						45(15)	
2134.4(2)	9^-		76(6)				19(2)	5(2)			
2147.9(3)			100								
2173.6(2)	7^+		83(7)							17(2)	
2187.0(1)	5^-			97(6)					3(2)		
2196.9(2)	7^-		68(6)				24(2)				
2201.2(1)	11^-						54(3)	17(2)			
2220.7(2)	5^+		84(8)	8(3)						7.9(26)	
2223.2(1)	13^-				62(6)						
2242.2(2)	11^+				59(6)		35(9)	6(3)			
2249.3(1)	11^-						60(13)	13(2)			
2255.7(1)	$\langle 5^-\rangle$		16(3)	51(4)		5.5(14)			2.3		
2283.9(2)	7^-		49(5)	33(5)					18(2)		
2294.5(1)	13^-				8(3)			3(1)			
2317.9(4)	$\langle 7\rangle$		81(8)				19(2)				
2323.2(1)	$3^-,1^-$					75(8)					10
2323.3(1)	11^-		36(19)				8(3)	39(5)			
2347.0(2)	$9^{\langle -\rangle}$		57(7)				25(7)	18(7)			
2359.5(2)	15^+				33(17)						
2361.6(1)	3^-			24(9)		43(5)			33(5)		
2398.6(1)	9^-		70(7)					27(3)			
2405.5(2)	5		46(5)	15(2)					24(2)	7(2)	
2405.7(1)	$\langle 1^-,3^-\rangle$					18					8

(continued)

$^{143}_{60}$Nd

E^*	$2J^\pi$		Branching ratios in percentage								
		E_f^*:	0.0	742	1228	1306	1407	1431	1555	1556	1608.4
[keV]		$2J_f^\pi$:	7^-	3^-	13^+	1^-	9^-	11^-	5^-	3^+	1^+
2415.5(3)			100								
2420.0(1)	3^-		34	29(11)		37(4)					
2433.4(3)	5^-		61(7)	29(4)					5(2)		
2443.3(2)	9^-							27(7)			
2451.5(1)	1,3			23		27					29
2451.9(3)								71(29)			
2460.0(2)	5^-		57(5)	43(5)							
2463.7(2)	11^-				12(6)		50(6)	12(6)			
2475.9(2)	$\langle 1^-,3^-\rangle$			100							
2483.1(1)	17^+				100						
2496.2(1)	7^-			65(10)			20(5)	15(5)			
2504.6(2)	$\langle 15\rangle^-$							80(14)			
2506.4(1)	$1^-,3^-$			34							
2517.4(2)	$\langle 11,13\rangle^-$			x							
2528.2(2)	7^-			34(11)			50(6)		16(6)		
2530.0(1)	3^-		7	12		58				7	9
2557.0(5)	$\langle 9\rangle^+$		100								
2577.8(2)	11,13							23(8)			
2588.0(2)	5^-			45(9)		27(9)	27(9)				
2588.8(1)	1,3			78							
2590.2(2)	11^-							30(10)			
2623.1(2)	$3^-,1^-$					26					
2626.0(1)	1,3			87							
2662.5(1)	3^-		7	60		9			21		
2672.2(2)	$\langle 9^-\rangle$						15(7)	85(7)			
2683.7(1)	3^-		39	39(4)		22(4)					
2737.9(1)	3^-		19	75							
2750.0(4)	13^-						17(8)	83(8)			
2752.9(5)	17^+				100						
2759.2(4)							67(11)	33(11)			
2775.2(2)	1,3			100							
2785.1(3)							100				
2798.2(3)								100			
2799.9(3)							100				
2805.3(3)	13^+				53(26)			37(11)			
2821.6(2)	3,1			100							
2840.7(2)	$1^{\langle-\rangle},3^{\langle-\rangle}$			48		39					
2876.1(2)	1,3		19	71							
2886.1(5)							100				
2891.5(2)					100						
2911.7(5)								100			
2922.6(1)	1,3		14	40		26					6
2939.3(3)	1,3			87							
2954.1(2)	$3^{\langle+\rangle}$			72		23					
2957.4(2)	3^-		57								

(continued) **$^{143}_{60}$Nd**

E^*	$2J^\pi$	Branching ratios in percentage								
	E_f^*:	0.0	742	1228	1306	1407	1431	1555	1556	1608.4
[keV]	$2J_f^\pi$:	7^-	3^-	13^+	1^-	9^-	11^-	5^-	3^+	1^+
2969.8(2)	1,3		100							
2987.9(3)	1,3		78		12					
2998.6(2)	3^-	37								56
3013.4(2)	3^-	32	32					24		
3023.0(1)		9	63		23					
3033.9(2)	1,3		65		35					
3047.8(1)	1,3		50					24		12
3064.0(2)	1,3		92					8		
3080.4(2)		22	53							
3090.9(2)	1,3		25		25					50
3168.1(10)	1^+		100							
3185.5(1)	1,3		29		12			4		
3220.8(2)			100							
3271.9(3)			100							
3293.7(3)					100					
3297.7(2)	1^-,3^-		16							
3425.9(2)			100							
3470.7(3)			29		71					
3485.5(2)	X^-		55		45					
3899.5(4)		44	56							

Energy levels and branching ratios [98Tu04, 01Tu07]. Part 4 **$^{143}_{60}$Nd**

E^*	$2J^\pi$	Branching ratios in percentage								
	E_f^*:	1739.2	1774.8	1799.5	1851.5	1852.6	1910.8	1988.2	2004.7	2018.9
[keV]	$2J_f^\pi$:	9^-	1^+	3^+	7^-	3^-	5^-	11^-	1^-	15^-
2004.7(1)	1^-					1				
2094.4(1)	11^-	18(4)								
2125.8(1)	3^-					6(1)				
2196.9(2)	7^-	8(2)								
2201.2(1)	11^-	11(2)						17(3)		
2223.2(1)	13^-							12(3)		25(6)
2249.3(1)	11^-							28(5)		
2255.7(1)	$\langle 5^- \rangle$					19(3)	5.5(14)			
2294.5(1)	13^-							16(3)		56(6)
2323.2(1)	3^-,1^-					15(8)				
2323.3(1)	11^-	17(3)								
2359.5(2)	15^+									67(17)
2398.2(2)	17^-									100
2398.6(1)	9^-							1.7(8)		
2405.5(2)	5						7(2)			
2405.7(1)	$\langle 1^-,3^- \rangle$			55					18	

(continued) **$^{143}_{60}$Nd**

E^*	$2J^\pi$		Branching ratios in percentage								
		E_f^*:	1739.2	1774.8	1799.5	1851.5	1852.6	1910.8	1988.2	2004.7	2018.9
[keV]		$2J_f^\pi$:	9^-	1^+	3^+	7^-	3^-	5^-	11^-	1^-	15^-
2433.4(3)	5^-							4.5(23)			
2451.5(1)	1,3				20						
2451.9(3)											29(14)
2463.7(2)	11^-		25(6)								
2506.4(1)	1^-,3^-						57				
2517.4(2)	$\langle 11,13\rangle^-$								57(14)		
2530.0(1)	3^-						6				
2577.8(2)	11,13		15(8)								
2588.8(1)	1,3							14			
2590.2(2)	11^-										70(10)
2623.1(2)	3^-,1^-				68						
2700.6(2)											100
2788.0(5)			100								
2805.3(3)	13^+								11(5)		
2876.1(2)	1,3						9				
2884.5(6)						100					
2922.6(1)	1,3						14				
2943.0(5)	$\langle 13\rangle$								100		
3013.4(2)	3^-			12							
3185.5(1)	1,3									18	
3297.7(2)	1^-,3^-						84				

Energy levels and branching ratios [98Tu04, 01Tu07]. Part 5 **$^{143}_{60}$Nd**

E^*	$2J^\pi$		Branching ratios in percentage								
		E_f^*:	2019.2	2066.8	2075.1	2094.4	2125.8	2201.2	2223.2	2255.7	2294.5
[keV]		$2J_f^\pi$:	5^-,7^-	13^-	11^-	11^-	3^-	11^-	13^-	$\langle 5^-\rangle$	13^-
2294.5(1)	13^-					16(3)					
2398.6(1)	9^-			1.7(8)							
2443.3(2)	9^-				47(7)			27(7)			
2504.6(2)	$\langle 15\rangle^-$		20(6)								
2517.4(2)	$\langle 11,13\rangle^-$							29(14)			
2577.8(2)	11,13								46(8)		15(8)
2588.8(1)	1,3						9				
2626.0(1)	1,3						9			4	
2662.5(1)	3^-									2	
2730.8(5)								100			
2840.7(2)	$1^{\langle-\rangle}$,$3^{\langle-\rangle}$						13				
3185.5(1)	1,3						11			9	

Energy levels and branching ratios [98Tu04, 01Tu07]. Part 6 **$^{143}_{60}$Nd**

E^*	$2J^\pi$	Branching ratios in percentage								
	E_f^*:	2323.2	2323.3	2347.0	2398.2	2405.7	2420.0	2489.8	2506.4	2530.0
[keV]	$2J_f^\pi$:	3^-,1^-	11^-	$9^{\langle-\rangle}$	17^-	$\langle 1^-,3^-\rangle$	3^-	19^-	1^-,3^-	3^-
2489.8(6)	19^-				100					
2506.4(1)	1^-,3^-		9							
2517.4(2)	$\langle 11,13\rangle^-$			14(7)						
2530.0(1)	3^-	2								
2623.1(2)	3^-,1^-					5				
2737.9(1)	3^-					4				1
2910.7(6)	21^+							100		
2939.3(3)	1,3									13
2954.1(2)	$3^{\langle+\rangle}$								5	
2957.4(2)	3^-					30				
3023.7(7)	21^+							100		
3047.8(1)	1,3									14
3080.4(2)			13							
3185.5(1)	1,3						8			10
3619.3(7)								100		

Energy levels and branching ratios [98Tu04, 01Tu07]. Part 7 **$^{143}_{60}$Nd**

E^*	$2J^\pi$	Branching ratios in percentage								
	E_f^*:	2588.8	2737.9	2752.9	2775.2	2910.7	3023.7	3084.5	3189.6	3456.9
[keV]	$2J_f^\pi$:	1,3	3^-	17^+	1,3	21^+	21^+	23^+		25^+
2957.4(2)	3^-	13								
2987.9(3)	1,3	10								
2998.6(2)	3^-				7					
3023.0(1)		4								
3080.4(2)			13							
3084.5(7)	23^+					x	x			
3189.6(8)				100						
3334.6(9)									100	
3456.9(7)	25^+							100		
3806.3(12)										100
4062.8(8)								100		
4075.5(7)	$\langle 27^+\rangle$					11(5)				67(27)
4224.3(7)	27^+							89(4)		3.4(17)
4316.0(12)										100
4706.2(7)										78(19)
4821.0(8)										100

Energy levels and branching ratios [98Tu04, 01Tu07]. Part 8 **$^{143}_{60}$Nd**

E^*	$2J^\pi$		Branching ratios in percentage								
		E^*_f:	3457.6	3619.3	4062.8	4075.5	4224.3	4523.5	4634.6	4706.2	4821.0
[keV]		$2J^\pi_f$:	$\langle 3\rangle^+$			$\langle 27^+\rangle$	27^+	29^+	29^+		
4075.5(7)	$\langle 27^+\rangle$			22(11)							
4224.3(7)	27^+				8(4)						
4523.5(7)	29^+					65(13)	35(4)				
4634.6(8)	29^+		48(8)				52(3)				
4706.2(7)							22(12)				
4999.1(7)	31^+						10(4)		52(5)	23(4)	15(4)
5129.1(8)	31^+								87(11)	13(4)	
5282.6(8)	31^+					100					
5343.6(8)	33^+								23(5)		
5506.1(8)	33^+							72(15)			

Energy levels and branching ratios [98Tu04, 01Tu07]. Part 9 **$^{143}_{60}$Nd**

E^*	$2J^\pi$		Branching ratios in percentage								
		E^*_f:	4999.1	5129.1	5282.6	5343.6	5426.9	5506.1	5791.3	5913.7	5990.7
[keV]		$2J^\pi_f$:	31^+	31^+	31^+	33^+	33	33^+	35	35^-	$35^{\langle -\rangle}$
5343.6(8)	33^+		11.1(15)	66(7)							
5426.9(8)	33		100								
5506.1(8)	33^+				28(7)						
5791.3(9)	35					x					
5913.7(8)	35^-					80(7)	10(4)	10(2)			
5990.7(8)	$35^{\langle -\rangle}$					39(6)	45(9)	16(6)			
6056.1(8)								100			
6237.3(8)									26(10)	23(10)	51(6)
6489.5(8)										100	
6502.3(8)	35					100					
6516.5(9)											100
6695.9(8)	$\langle 39^-\rangle$									55(9)	
6800.9(11)									x		

Energy levels and branching ratios [98Tu04, 01Tu07]. Part 10 **$^{143}_{60}$Nd**

E^*	$2J^\pi$		Branching ratios in percentage								
		E^*_f:	6056.1	6237.3	6489.5	6502.3	6516.5	6695.9	6800.9	6824.9	7019.3
[keV]		$2J^\pi_f$:				35		$\langle 39^-\rangle$			
6695.9(8)	$\langle 39^-\rangle$		10(5)		8(6)	26(11)					
6824.9(9)				100							
7019.3(8)				38(2)			62(19)				
7294.4(9)					100				x		

(continued) **$^{143}_{60}$Nd**

E^*	$2J^\pi$	Branching ratios in percentage								
	E_f^*:	6056.1	6237.3	6489.5	6502.3	6516.5	6695.9	6800.9	6824.9	7019.3
[keV]	$2J_f^\pi$:				35		$\langle 39^- \rangle$			
7296.0(9)					100					
7529.2(9)	43^-						100			
7847.9(9)	43^-						100			
7889.4(8)							23(7)		34(14)	31(1)

Energy levels and branching ratios [98Tu04, 01Tu07]. Part 11 **$^{143}_{60}$Nd**

E^*	$2J^\pi$	Branching ratios in percentage							
	E_f^*:	7294.4	7296.0	7529.2	7847.9	7889.4	7967.5	8649.3	8686.8
[keV]	$2J_f^\pi$:			43^-	43^-			47^-	
7889.4(8)			11(3)						
7967.5(9)		100							
8649.3(9)	47^-			9(4)	32(7)	47(9)	12(3)		
8686.8(9)					100				
8987.7(9)	49^+							88(4)	12(4)

Energy levels and branching ratios [98Tu04, 01Tu07]. Part 12 **$^{143}_{60}$Nd**

E^*	$2J^\pi$	Branching ratios in percentage							
	E_f^*:	8987.7	9167.4	10130.9	10529.3	10668.6	10754.8	11466.6	11557.4
[keV]	$2J_f^\pi$:	49^+		53^+					
9167.4(10)		100							
10130.9(10)	53^+	86(13)	14(4)						
10529.3(11)				100					
10668.6(11)				49(8)	51(20)				
10754.8(11)				100					
11466.6(11)						69(14)	31(8)		
11557.4(12)						100			
11788.2(12)								56(28)	44(3)

Energy levels and branching ratios [01So16]. **$^{144}_{60}$Nd**

E^*	J^π	σ (t,p)	L	C^2S'	β_L	$d\sigma/d\Omega$	σ (p,t)	S_α	I_γ	Γ	$T_{1/2}$ or	Ref.
[keV]		arb.u		(d,p)	(p,p′)	μb/sr	μb/sr	(d,^{6}Li)	[eVb]	[meV]	Γ_{cm}	
0.0	0^+	100	3	0.09(.01)		639(5)	650(30)	0.078			$2.3(2)\cdot10^{15}$ yr	76Ra26
696.56(1)	2^+	118	1	0.09	0.130(3)	9.2(6)	80(20)	0.010			2.97(5) ps	91Co01
			+3	0.23								
1314.67(1)	4^+	75	1	0.11	0.09(1)	60(2)	60(6)	0.013			7.4(9) ps	77Mi02
			+3	0.67								
1510.87(2)	3^-	37	6	0.22(.03)	0.126(3)	23(1)	72(14)				0.56(+8-6) ps	91Co01
1560.92(1)	2^+	13	1	0.06		37(1)	70					76Ra26
			+3	0.18								
1791.46(4)	6^+	21	3	1.37		38(1)					20.8(21) ps	76Ra26
			+5	0.25								
2072.91(3)	2^+	86	1	0.04	0.027(3)	33(1)			5.44(63)	2.03(23)	59(+11-8) fs	91Co01
			+3	0.14								
			+5	0.39								
2084.68(4)	0^+	incl				28(1)					0.13(+8-4) ps	96Po12
2093.28(3)	5^-	incl			0.07(1)						0.80(+7-4) ps	91Co01
2109.79(3)	4^+	incl				5.9(5)					>0.2 ps	96Po12
2178.97(3)	3^+	21	1	0.04	0.032(3)						0.06(+4-2) ps	76Ra26
			+3	0.02								
			+5	0.81								
2185.75(3)	1^-					2.3(3)			60(4)	35(2)	15(2) fs	96Po12
2204.80(4)	4^-										0.7(+3-1) ps	
2218.31(5)	6^+					2.9(3)					>0.7 ps	96Po12
2295.41(3)	4^+	19	1	0.16		1.8(3)					>0.27 ps	76Ra26
			+3	0.28								
2321.9(3)												
2328.18(4)	0^+					4.0(4)					0.3(+6-1) ps	96Po12
2347(25)	$\langle 2^+\rangle$				0.028(3)							91Co01
2368.82(4)	2^+		1	0.01		13.2(7)					39(+14-10) fs	76Ra26
			+3	0.03								
2399.5(10)												
2420.21(7)	5^+										>0.7 ps	
2451.71(4)	4^+	10				42.0(12)					39(+14-10) fs	96Po12
2464	1								1.19(40)	0.63(21)		97Ec01
2490(25)	$\langle 2^+\rangle$											
2508.42(20)					0.030(3)							91Co01
2527.79(4)	2^+	31	1	0.01		1.5(3)			8.9(7)	4.09(34)	40(+8-6) fs	76Ra26
			+3	0.07								
2564.51(4)	$\langle 3^+\rangle$											
2582.32(6)	$\langle 3^+\rangle$											
2590(4)	$\langle 1^-\rangle$											
2592.53(3)	2^+										0.19(+13-6) ps	
2599(7)	$\langle 3^-\rangle$					12.0(7)						96Po12
2601.73(4)	4^+		3	0.01							0.13(+12-5) ps	76Ra26
			+5	0.74								
2603												

(continued) **$^{144}_{60}$Nd**

E^* [keV]	J^π	σ (t,p) arb.u	L	C^2S' (d,p)	β_L (p,p′)	$d\sigma/d\Omega$ μb/sr	σ (p,t) μb/sr	S_α (d,^{6}Li)	I_γ [eVb]	Γ [meV]	$T_{1/2}$ or Γ_{cm}	Ref.
2605.93(4)	3^-	29									0.106(11) ps	72Ch11
2613.07(14)	7^-	incl				5.5(5)						96Po12
2614.0(7)												
2655.097(24)	$\langle 3^+ \rangle$										>0.7 ps	
2655.54(3)	1^+								31(2)	24(2)	9.9(8) fs	97Ec01
2656(7)	$\langle 4^+ \rangle$					19.0(8)						96Po12
2675.61(8)	0^+					60.0(15)					0.2(+5-1) ps	96Po12
2681.67(21)												
2692.97(4)	2^+					9.0(6)					>0.12 ps	96Po12
2710.11(13)	8^+	16	1	0.07								76Ra26
			+3	0.33								
			+5	0.65								
2715.79(7)	$\langle 5,6 \rangle$										>0.7 ps	
2717(4)	$\langle 1^- \rangle$											
2719(25)	$\langle 3^- \rangle$				0.065(3)							91Co01
2720.29(10)	2^+										0.14(+8-4) ps	
2732(7)	$\langle 3^- \rangle$					5.6(5)						96Po12
2732.85(3)	4^+										0.2(+11-1) ps	
2742.99(7)	0^+	34									0.07(+5-2) ps	72Ch11
2775.44(4)	$\langle 6,4^+ \rangle$				0.033(3)							91Co01
2779.01(3)	3^-					7.7(6)					0.07(+5-2) ps	96Po12
2803.69(10)												
2808.83(9)	6^+										>44 fs	
2821.0												
2829.32(4)	$\langle 2^+ \rangle$	28	1	0.29							0.07(+7-3) ps	76Ra26
			+3	0.37								
			+5	0.50								
2830												
2834(3)	$\langle 3^- \rangle$											
2834.58(4)	$\langle 4^+ \rangle$										>0.7 ps	
2839.62(2)	2^+					6.7(5)			1.70(40)	4.12(96)	0.2(+4-1) ps	96Po12
2868.26(5)	$\langle 3,2^+ \rangle$	24				4.3(5)					>0.14 ps	96Po12
2876.58(10)	$\langle 6^+,8^+ \rangle$											
2887.98(6)	$\langle 5,4 \rangle$				0.030(3)	2.7(4)					>0.7 ps	91Co01
2901.34(3)	2^+	31			0.021(3)						>0.06 ps	91Co01
2903.38(12)	9^-											
2905.15(3)	$1^{\langle + \rangle}$		1	0.14					8.97(74)	6.57(54)	24(+10-7) fs	76Ra26
			+3	0.19								
			+5	0.44								
2909(25)	$\langle 2^+ \rangle$											
2945.92(21)												
2946.04(10)	$\langle 2^- – 4^- \rangle$											
2950.98(6)	$3^{\langle + \rangle}$										>58 fs	
2961.78(7)	$\langle 2^+ \rangle$	37									0.13(+24-6) ps	72Ch11
2968.34(5)	3^-					10.3(7)					24(+51-17) fs	96Po12

(continued) **$^{144}_{60}$Nd**

E^* [keV]	J^π	σ (t,p) arb.u	L	C^2S' (d,p)	β_L (p,p′)	$d\sigma/d\Omega$ μb/sr	σ (p,t) μb/sr	S_α (d,^{6}Li)	I_γ [eVb]	Γ [meV]	$T_{1/2}$ or Γ_{cm}	Ref.
2972.40(10)	8^+											
2975.47(8)	1^-								9.59(77)	15.5(12)	17(+12-8) fs	97Ec01
2980.07(6)	4^+										33(+30-15) fs	
2986.017(24)	$\langle 4^+ \rangle$					3.1(5)						96Po12
3000.24(5)												
3020.47(9)	$\langle 4^+,3 \rangle$	28										72Ch11
3026.60(9)	$\langle 4^+,5^- \rangle$	incl				56.0(14)						96Po12
3029.04(12)												
3031.2(3)												
3043.50(9)	$\langle 3^+ \rangle$										0.10(+78-6) ps	
3048.27(8)												
3053.38(9)	$\langle 5^- \rangle$					15.0(9)						96Po12
3056.5(4)												
3065.14(16)	$\langle 5,4 \rangle$											
3070.93(7)	$\langle 3^+ \rangle$										26(+12-8) fs	
3085.2(3)												
3100.29(7)	2^+					31(1)					0.07(+10-3) ps	96Po12
3104.59(12)												
3126.59(8)	$\langle 4^+ \rangle$	25				16.0(9)						96Po12
3133.5(4)	$\langle 1^- \rangle$	incl										
3136.6(3)												
3146.62(16)		incl										
3157(7)	$\langle 0^+ \rangle$					88(2)						96Po12
3161.5	$\langle 2^+,5^+ \rangle$											
3169.72(14)	$1^{\langle + \rangle}$											
3178.23(20)												
3180(4)	$\langle 6^+ \rangle$											
3185.61(13)	$\langle 1,2 \rangle$											
3201.88(15)	$\langle 3 \rangle$											98Hi09
3214.0(5)	1^+								21.2(15)	21.9(15)		97Ec01
3222.06(13)	$\langle 2^+ \rangle$					5.1(6)						96Po12
3233.74(18)	$\langle 9^+ \rangle$											
3240(4)	$\langle 3^- \rangle$											
3245.5(5)	1^-								76(5)	69(5)		97Ec01
3251.73(20)												
3254.53(15)												
3273.3(3)	1								1.37(48)	1.27(45)		97Ec01
3281.68(20)												
3286.7(4)	$\langle 3^- \rangle$	17				45.0(14)						96Po12
3316	1								1.34(33)	1.27(31)		97Ec01
3341.7(5)	$\langle 3^-,4^+ \rangle$					11.0(8)						96Po12
3351.59(20)												
3377.54(18)												
3381.53(20)	$\langle 2^+,4^+ \rangle$					96(2)						96Po12
3396.53(14)	9^-											

(continued) **$^{144}_{60}$Nd**

E^* [keV]	J^π	σ (t,p) arb.u	L	C^2S' (d,p)	β_L (p,p′)	$d\sigma/d\Omega$ μb/sr	σ (p,t) μb/sr	S_α (d,^{6}Li)	I_γ [eVb]	Γ [meV]	$T_{1/2}$ or Γ_{cm}	Ref.
3401(4)	⟨5$^-$⟩											
3404(7)	⟨2$^+$⟩					42(1)						96Po12
3409.43(14)												
3432(4)	⟨5$^-$⟩					7.5(7)						96Po12
3461.23(15)	⟨4$^+$⟩					23(1)						96Po12
3486.0(3)	1								6.69(72)	7.06(75)		97Ec01
3487.03(14)	⟨9$^+$⟩											
3494.6(4)	⟨5$^-$⟩					13(2)						96Po12
3522(4)	⟨2$^+$⟩											
3534(7)	⟨2$^+$⟩					87(2)						96Po12
3555(4)	⟨2$^+$⟩											
3560.6(3)												
3576.8(3)												
3589(7)	⟨3$^-$⟩					25(1)						96Po12
3602		23										72Ch11
3614	1$^-$								23(2)	40(3)		97Ec01
3660.88(11)	⟨3$^-$⟩					11(1)						96Po12
3672.76(15)	⟨10$^+$⟩											
3678(7)						8.7(8)						96Po12
3702(7)	⟨2$^+$⟩					24(1)						96Po12
3737.7(10)	⟨2$^+$⟩					9.3(9)						96Po12
3759(7)	⟨6$^+$⟩					6.6(8)						96Po12
3762		24										72Ch11
3782.2(3)	1								26.5(23)	33(3)		97Ec01
3796(7)						4.1(8)						96Po12
3802.79(23)	⟨10⟩											
3813(7)	⟨2$^+$⟩					6.5(9)						96Po12
3829.70(17)	11$^-$											
3834(7)	⟨1$^-$⟩					11(1)			36(3)	46(4)		96Po12
3838	1											
3849	1								35(3)	48(4)		97Ec01
3853(7)	⟨0$^+$⟩					7.4(3)						96Po12
3860	1								15.4(17)	20(2)		97Ec01
3871(7)						3.1(8)						96Po12
3875.09(23)	⟨9,10⟩											
3902(7)	⟨1$^-$⟩					14.2(10)						96Po12
3910.5(10)	⟨10$^+$⟩											
3910.59(16)	⟨10$^-$⟩											
3933(7)	⟨6$^+$,7$^-$⟩					4.1(9)						96Po12
3962.1(10)												
3975(7)	⟨2$^+$⟩					10(1)						96Po12
3993.6(5)												
4032(7)	⟨6$^+$⟩					2.4(10)						96Po12
4045.69(18)	⟨11$^-$,11$^+$⟩											
4065.64(14)	11$^-$											

(continued) **$^{144}_{60}$Nd**

E^* [keV]	J^π	σ (t,p) arb.u	L	C^2S' (d,p)	β_L (p,p′)	$d\sigma/d\Omega$ μb/sr	σ (p,t) μb/sr	S_α (d,^{6}Li)	I_γ [eVb]	Γ [meV]	$T_{1/2}$ or Γ_{cm}	Ref.
4106(7)	$\langle 7^- \rangle$					5.6(10)						96Po12
4133(7)	$\langle 1^- \rangle$					23(1)						96Po12
4184(7)	$\langle 3^- \rangle$					20(1)						96Po12
4227(7)	$\langle 3^- \rangle$					20(1)						96Po12
4299(7)	$\langle 4^+ \rangle$					14(1)						96Po12
4317(7)	$\langle 2^+ \rangle$					16(1)						96Po12
4344(7)	$\langle 3^- \rangle$					17.0(15)						96Po12
4354.73(19)	$\langle 12^+ \rangle$											
4415(7)	$\langle 5^- \rangle$					14(1)						96Po12
4461.66(17)	$\langle 12^- \rangle$											
4469(7)	$\langle 3^- \rangle$					27(2)						96Po12
4543(7)	$\langle 3^- \rangle$					51(2)						96Po12
4623.94(18)	13^-											
4635(7)	$\langle 2^+ \rangle$					12.3(16)						96Po12
4657(7)	$\langle 2^+ \rangle$					21.0(17)						96Po12
4685(7)	$\langle 7^- \rangle$					8(2)						96Po12
4708(7)						5						96Po12
4742.87(18)	13^-											
4765(7)						22						96Po12
4794(7)						34						96Po12
4821						32						96Po12
4845(7)	$\langle 2^+ \rangle$					26(2)						96Po12
4885(7)						25						96Po12
4936.49(21)	$\langle 14^- \rangle$											
5023(7)	$\langle 5^-, 6^+ \rangle$					7.7(20)						96Po12
5238.98(22)	$\langle 15^- \rangle$											
5378.7(11)	$\langle 14^+ \rangle$											
5472.86(22)	$\langle 15^- \rangle$											
5553.07(24)	$\langle 16^- \rangle$											
5962.3(3)	$\langle 17^- \rangle$											
5966.6(3)	$\langle 17^- \rangle$											
6648.7(3)	$\langle 18^- \rangle$											
6963.5(3)	$\langle 19^- \rangle$											
7003.4(4)	$\langle 19^- \rangle$											
7376.8(4)	$\langle 20^- \rangle$											
7545.5(4)	$\langle 20^- \rangle$											
7814.4(4)	$\langle 21^- \rangle$											
7817.4(5)	$\langle 3^- \rangle$											
7915*	1^+											
7965.2(4)	$\langle 22^- \rangle$											

(continued) **$^{144}_{60}$Nd**

E^*	J^π	σ (t,p)	L	C^2S'	β_L	$d\sigma/d\Omega$	σ (p,t)	S_α	I_γ	Γ	$T_{1/2}$ or	Ref.
[keV]		arb.u		(d,p)	(p,p′)	μb/sr	μb/sr	(d,^{6}Li)	[eVb]	[meV]	Γ_{cm}	
8946.0(5)	$\langle 24^- \rangle$											
		72Ch11		76Ra26	91Co01	96Po12	96Po12	77Mi02	97Ec01	97Ec01		Ref.

Additional data on this isotope can be found in [00Ho25, 99Ro18, 98Hi09, 96Ba19, 95Ho20, 95Je03, 95Ba57, 93Pe10, 90Co20, 88Bo44, 69Me22, 68Ra13].
Abundance: 23.8(3) %.
* Level observed by photoexcitation [72Wo21] with $\Gamma_\circ/\Gamma$=0.24(6) and Γ_γ=8(3) meV.
** Normalized such that γ^2_α is the same for the (d,^{6}Li) reaction and the α-decay of ^{148}Sm [77Mi02].
6 bands are assigned to excited states of this nucleus in [95Je03].
Data for this isotope are considered in vol. LB I/18B.

Energy levels and branching ratios [01So16]. Part 2 **$^{144}_{60}$Nd**

E^*	J^π	σ (d,^{6}Li)	γ^2_α	Ref.	Branching ratios in percentage					
					E^*_f:	0	696.6	1315	1511	1561
[keV]		μb/sr	[keV]		J^π_f:	0^+	2^+	4^+	3^-	2^+
0.0	0^+	5.56(64)	1.20**	76Ra26						
696.56(1)	2^+	0.52(19)	0.13	91Co01		100				
1314.67(1)	4^+	0.40(12)	0.037	77Mi02			100			
1510.87(2)	3^-			91Co01		0.023(4)	97(3)	2.7(4)		
1560.92(1)	2^+			76Ra26		8.64(7)	91(1)			
1791.46(4)	6^+			76Ra26				100		
2072.91(3)	2^+			91Co01		29.8(6)	70(1)			
2084.68(4)	0^+			96Po12			100			
2093.28(3)	5^-			91Co01			0.024(4)	76(2)	12(2)	
2109.79(3)	4^+			96Po12			97(1)	3.0(10)		
2178.97(3)	3^+			76Ra26			33.2(4)	58.5(4)	8.3(2)	
2185.75(3)	1^-			96Po12		71(1)	28.6(4)		0.30(3)	0.116(3)
2204.80(4)	4^-						0.04(3)	6.6(2)	93(17)	
2218.31(5)	6^+			96Po12						
2295.41(3)	4^+			76Ra26			11.8(4)	72(1)	11.3(2)	5.3(7)
2321.9(3)								100		
2328.18(4)	0^+			96Po12			100			
2347(25)	$\langle 2^+ \rangle$			91Co01						

(continued) **$^{144}_{60}$Nd**

E^*	J^π	σ (d,^{6}Li)	γ_α^2	Ref.	Branching ratios in percentage				
				E_f^*:	0	696.6	1315	1511	1561
[keV]		μb/sr	[keV]	J_f^π:	0^+	2^+	4^+	3^-	2^+
2368.82(4)	2^+			76Ra26	19(1)	80.8(16)			
2399.5(10)									
2420.21(7)	5^+								
2451.71(4)	4^+			96Po12		25(2)	75(2)		
2464	1			97Ec01	x				
2490(25)	$\langle 2^+ \rangle$								
2508.42(20)				91Co01					100
2527.79(4)	2^+			76Ra26	48.6(9)	29.9(9)			21.5(9)
2564.51(4)	$\langle 3^+ \rangle$					25(1)		8(1)	23(1)
2582.32(6)	$\langle 3^+ \rangle$					100			
2590(4)	$\langle 1^- \rangle$								
2592.53(3)	2^+				3(1)	83(1)		7(1)	7(1)
2599(7)	$\langle 3^- \rangle$			96Po12					
2601.73(4)	4^+			76Ra26		25(1)	75(1)		
2603									
2605.93(4)	3^-			72Ch11		64(4)		36(5)	
2613.07(14)	7^-			96Po12					
2614.0(7)						100			
2655.097(24)	$\langle 3^+ \rangle$						100		
2655.54(3)	1^+			97Ec01	81(2)	19(3)			
2656(7)	$\langle 4^+ \rangle$			96Po12					
2675.61(8)	0^+			96Po12		100			
2681.67(21)								100	
2692.97(4)	2^+			96Po12	17(1)	4(1)	52(2)	12(3)	15(1)
2710.11(13)	8^+			76Ra26					
2715.79(7)	$\langle 5,6 \rangle$						71(3)		
2717(4)	$\langle 1^- \rangle$								
2719(25)	$\langle 3^- \rangle$			91Co01					
2720.29(10)	2^+				3(1)	97(1)			
2732(7)	$\langle 3^- \rangle$			96Po12					
2732.85(3)	4^+					23(3)	74(4)		3.0(9)
2742.99(7)	0^+			72Ch11		83			17
2775.44(4)	$\langle 6,4^+ \rangle$			91Co01				53(3)	
2779.01(3)	3^-			96Po12		40(2)	13(2)	35(3)	12(2)
2803.69(10)					60(2)		40(4)		
2808.83(9)	6^+						54(2)		
2821.0									
2829.32(4)	$\langle 2^+ \rangle$			76Ra26		31(3)	41(5)	11(1)	17(2)

(continued)

$^{144}_{60}$Nd

E^*	J^π	σ (d,^{6}Li)	γ_α^2	Ref.	Branching ratios in percentage				
				E_f^*:	0	696.6	1315	1511	1561
[keV]		μb/sr	[keV]	J_f^π:	0^+	2^+	4^+	3^-	2^+
2830									
2834(3)	$\langle 3^- \rangle$								
2834.58(4)	$\langle 4^+ \rangle$							32(3)	
2839.62(2)	2^+			96Po12	19(1)	37.2(7)	33(1)		
2868.26(5)	$\langle 3,2^+ \rangle$			96Po12		16(1)	12(1)	72(1)	
2876.58(10)	$\langle 6^+,8^+ \rangle$								
2887.98(6)	$\langle 5,4 \rangle$			91Co01			74(7)		
2901.34(3)	2^+			91Co01	9(1)	13(1)	7(1)	37(1)	24(3)
2903.38(12)	9^-								
2905.15(3)	$1^{\langle + \rangle}$			76Ra26	60(1)				40(1)
2909(25)	$\langle 2^+ \rangle$								
2945.92(21)									
2946.04(10)	$\langle 2^- – 4^- \rangle$						100		
2950.98(6)	$3^{\langle + \rangle}$					41(1)			
2961.78(7)	$\langle 2^+ \rangle$			72Ch11	21(1)			79(1)	
2968.34(5)	3^-			96Po12		75(1)	25(1)		
2972.40(10)	8^+								
2975.47(8)	1^-			97Ec01	40(1)	60(1)			
2980.07(6)	4^+					53(1)	47(1)		
2986.017(24)	$\langle 4^+ \rangle$			96Po12		16(2)	84(8)		
3000.24(5)						x		x	
3020.47(9)	$\langle 4^+,3 \rangle$			72Ch11		61(1)			39(1)
3026.60(9)	$\langle 4^+,5^- \rangle$			96Po12			15.7(4)	55.4(8)	
3029.04(12)						100			
3031.2(3)									
3043.50(9)	$\langle 3^+ \rangle$					49(1)	21(2)		
3048.27(8)							100		
3053.38(9)	$\langle 5^- \rangle$			96Po12			22(7)	17(6)	
3056.5(4)									
3065.14(16)	$\langle 5,4 \rangle$						56(7)		
3070.93(7)	$\langle 3^+ \rangle$					89(1)			
3085.2(3)									
3100.29(7)	2^+			96Po12	20(1)	57(1)			
3104.59(12)						x			
3126.59(8)	$\langle 4^+ \rangle$			96Po12		43(4)	12(3)		25(4)
3133.5(4)	$\langle 1^- \rangle$								
3136.6(3)							50(9)		
3146.62(16)						x	65(1)	35(3)	
3157(7)	$\langle 0^+ \rangle$			96Po12					
3161.5	$\langle 2^+,5^+ \rangle$								
3169.72(14)	$1^{\langle + \rangle}$				29(2)				71(2)
3178.23(20)									
3180(4)	$\langle 6^+ \rangle$								

(continued)

$^{144}_{60}$Nd

E^*	J^π	σ (d,^{6}Li)	γ^2_α	Ref.	Branching ratios in percentage					
					E^*_f:	0	696.6	1315	1511	1561
[keV]		μb/sr	[keV]		J^π_f:	0^+	2^+	4^+	3^-	2^+
3185.61(13)	⟨1,2⟩					12(2)	63(4)			
3201.88(15)	⟨3⟩			98Hi09			69(2)			
3214.0(5)	1^+			97Ec01		100				
3222.06(13)	⟨2^+⟩			96Po12						100
3233.74(18)	⟨9^+⟩									
3240(4)	⟨3^-⟩									
3245.5(5)	1^-			97Ec01		100				
3251.73(20)										100
3254.53(15)							52(2)	21(1)	27(1)	
3273.3(3)	1			97Ec01		x		100		
3281.68(20)								100		
3286.7(4)	⟨3^-⟩			96Po12					100	
3316	1			97Ec01		x				
3341.7(5)	⟨3^-,4^+⟩			96Po12				100		
3351.59(20)							100			
3377.54(18)									75(3)	
3381.53(20)	⟨2^+,4^+⟩			96Po12						100
3396.53(14)	9^-									
3401(4)	⟨5^-⟩									
3404(7)	⟨2^+⟩			96Po12						
3409.43(14)							33(1)	24(1)		
3432(4)	⟨5^-⟩			96Po12						
3461.23(15)	⟨4^+⟩			96Po12					69(1)	
3486.0(3)	1			97Ec01		x		x		
3487.03(14)	⟨9^+⟩									
3494.6(4)	⟨5^-⟩			96Po12					100	
3522(4)	⟨2^+⟩									
3534(7)	⟨2^+⟩			96Po12						
3555(4)	⟨2^+⟩									
3560.6(3)									100	
3576.8(3)								100		
3589(7)	⟨3^-⟩			96Po12						
3602				72Ch11						
3614	1^-			97Ec01		66	34(5)			
3660.88(11)	⟨3^-⟩			96Po12						
3672.76(15)	⟨10^+⟩									
3678(7)				96Po12						
3702(7)	⟨2^+⟩			96Po12						
3737.7(10)	⟨2^+⟩			96Po12						
3759(7)	⟨6^+⟩			96Po12						
3762				72Ch11						
3782.2(3)	1			97Ec01		x			x	
3796(7)				96Po12						
3802.79(23)	⟨10⟩									
3813(7)	⟨2^+⟩			96Po12						

(continued) **$^{144}_{60}$Nd**

E^*	J^π	σ (d,^{6}Li)	γ_α^2	Ref.	Branching ratios in percentage				
				E_f^*:	0	696.6	1315	1511	1561
[keV]		μb/sr	[keV]	J_f^π:	0^+	2^+	4^+	3^-	2^+
3829.70(17)	11^-								
3834(7)	$\langle 1^- \rangle$			96Po12					
3838	1				x				
3849	1			97Ec01	93	7(4)			
3853(7)	$\langle 0^+ \rangle$			96Po12					
3860	1			97Ec01	x				
3871(7)				96Po12					
3875.09(23)	$\langle 9,10 \rangle$								
3902(7)	$\langle 1^- \rangle$			96Po12					
3910.5(10)	$\langle 10^+ \rangle$								
3910.59(16)	$\langle 10^- \rangle$								
3933(7)	$\langle 6^+,7^- \rangle$			96Po12					
3962.1(10)									
3975(7)	$\langle 2^+ \rangle$			96Po12					
3993.6(5)									
4032(7)	$\langle 6^+ \rangle$			96Po12					
4045.69(18)	$\langle 11^-,11^+ \rangle$								
4065.64(14)	11^-								
4106(7)	$\langle 7^- \rangle$			96Po12					
4133(7)	$\langle 1^- \rangle$			96Po12					
4184(7)	$\langle 3^- \rangle$			96Po12					
4227(7)	$\langle 3^- \rangle$			96Po12					
4299(7)	$\langle 4^+ \rangle$			96Po12					
4317(7)	$\langle 2^+ \rangle$			96Po12					
4344(7)	$\langle 3^- \rangle$			96Po12					
4354.73(19)	$\langle 12^+ \rangle$								
4415(7)	$\langle 5^- \rangle$			96Po12					
4461.66(17)	$\langle 12^- \rangle$								
4469(7)	$\langle 3^- \rangle$			96Po12					
4543(7)	$\langle 3^- \rangle$			96Po12					
4623.94(18)	13^-								
4635(7)	$\langle 2^+ \rangle$			96Po12					
4657(7)	$\langle 2^+ \rangle$			96Po12					
4685(7)	$\langle 7^- \rangle$			96Po12					
4708(7)				96Po12					
4742.87(18)	13^-								
4765(7)				96Po12					
4794(7)				96Po12					
4821				96Po12					
4845(7)	$\langle 2^+ \rangle$			96Po12					
4885(7)				96Po12					
4936.49(21)	$\langle 14^- \rangle$								
5023(7)	$\langle 5^-,6^+ \rangle$			96Po12					
5238.98(22)	$\langle 15^- \rangle$								
5378.7(11)	$\langle 14^+ \rangle$								

(continued) **$^{144}_{60}$Nd**

E^*	J^π	σ (d,^{6}Li)	γ_α^2	Ref.	Branching ratios in percentage					
					E_f^*:	0	696.6	1315	1511	1561
[keV]		μb/sr	[keV]		J_f^π:	0^+	2^+	4^+	3^-	2^+
5472.86(22)	$\langle 15^- \rangle$									
5553.07(24)	$\langle 16^- \rangle$									
5962.3(3)	$\langle 17^- \rangle$									
5966.6(3)	$\langle 17^- \rangle$									
6648.7(3)	$\langle 18^- \rangle$									
6963.5(3)	$\langle 19^- \rangle$									
7003.4(4)	$\langle 19^- \rangle$									
7376.8(4)	$\langle 20^- \rangle$									
7545.5(4)	$\langle 20^- \rangle$									
7814.4(4)	$\langle 21^- \rangle$									
7817.4(5)	$\langle 3^- \rangle$							x	x	x
7915*	1^+									
7965.2(4)	$\langle 22^- \rangle$									
8946.0(5)	$\langle 24^- \rangle$									
		77Mi02		Ref.						

Energy levels and branching ratios [01So16]. Part 3 **$^{144}_{60}$Nd**

E^*	J^π		Branching ratios in percentage							
		E_f^*:	1791	2073	2093	2109.8	2179.0	2204.8	2218.3	2295.4
[keV]		J_f^π:	6^+	2^+	5^-	4^+	3^+	4^-	6^+	4^+
2093.28(3)	5^-		12(1)							
2218.31(5)	6^+		100							
2399.5(10)			100							
2420.21(7)	5^+		14(1)			34.4(10)			51.5(10)	
2564.51(4)	$\langle 3^+ \rangle$					44.0(10)				
2613.07(14)	7^-		100		x					
2710.11(13)	8^+		93(9)							
2715.79(7)	$\langle 5,6 \rangle$		29(3)							
2775.44(4)	$\langle 6,4^+ \rangle$				47(2)					
2808.83(9)	6^+		46(2)							
2834.58(4)	$\langle 4^+ \rangle$					18(2)				50(5)
2839.62(2)	2^+						10.7(7)			
2876.58(10)	$\langle 6^+,8^+ \rangle$		x						100	
2887.98(6)	$\langle 5,4 \rangle$				26(3)					
2901.34(3)	2^+						10(1)			
2945.92(21)									100	
2950.98(6)	$3^{\langle + \rangle}$			11.0(10)		48.0(10)				
2972.40(10)	8^+		44(6)						53(4)	
3026.60(9)	$\langle 4^+,5^- \rangle$					7.0(4)				
3031.2(3)									100	
3043.50(9)	$\langle 3^+ \rangle$					30.0(10)				

(continued) **$^{144}_{60}$Nd**

E^*	J^π	Branching ratios in percentage							
	E_f^*:	1791	2073	2093	2109.8	2179.0	2204.8	2218.3	2295.4
[keV]	J_f^π:	6^+	2^+	5^-	4^+	3^+	4^-	6^+	4^+
3053.38(9)	$\langle 5^- \rangle$							61(8)	
3056.5(4)		100							
3065.14(16)	$\langle 5,4 \rangle$			24(6)	20(5)				
3070.93(7)	$\langle 3^+ \rangle$		11.0(10)						
3085.2(3)						100			
3100.29(7)	2^+		23.0(10)						
3126.59(8)	$\langle 4^+ \rangle$					20(3)			
3133.5(4)	$\langle 1^- \rangle$			x					
3136.6(3)				50(9)					
3178.23(20)		36(6)							
3185.61(13)	$\langle 1,2 \rangle$					25(4)			
3201.88(15)	$\langle 3 \rangle$					31(2)			
3377.54(18)				25(3)					
3409.43(14)					43.0(10)				
3461.23(15)	$\langle 4^+ \rangle$			31.2(13)					
3660.88(11)	$\langle 3^- \rangle$					100			
7817.4(5)	$\langle 3^- \rangle$						x		

Energy levels and branching ratios [01So16]. Part 4 **$^{144}_{60}$Nd**

E^*	J^π	Branching ratios in percentage							
	E_f^*:	2451.7	2601.7	2613.1	2710.1	2876.6	2901.3	2903.4	2972.4
[keV]	J_f^π:	4^+	4^+	7^-	8^+	$\langle 6^+,8^+ \rangle$	2^+	9^-	8^+
2710.11(13)	8^+			7(5)					
2903.38(12)	9^-			11(5)	89(5)				
2972.40(10)	8^+					2		1	
3026.60(9)	$\langle 4^+,5^- \rangle$	21.9(8)							
3178.23(20)								49(5)	12(4)
3233.74(18)	$\langle 9^+ \rangle$			x		100		x	
3396.53(14)	9^-				10(3)		27(10)		63(20)
3487.03(14)	$\langle 9^+ \rangle$					25(13)			75(13)
3672.76(15)	$\langle 10^+ \rangle$								63(40)
3737.7(10)	$\langle 2^+ \rangle$		100						
3802.79(23)	$\langle 10 \rangle$							100	
3829.70(17)	11^-							100	
3875.09(23)	$\langle 9,10 \rangle$							100	
3962.1(10)					100				
3993.6(5)								100	
4065.64(14)	11^-							16(3)	
4354.73(19)	$\langle 12^+ \rangle$							x	

Energy levels and branching ratios [01So16]. Part 5 **$^{144}_{60}$Nd**

E^*	J^π	Branching ratios in percentage							
	E_f^*:	3056.5	3233.7	3396.5	3487.0	3672.8	3829.7	3910.5	3910.6
[keV]	J_f^π:		$\langle 9^+ \rangle$	9^-	$\langle 9^+ \rangle$	$\langle 10^+ \rangle$	11^-	$\langle 10^+ \rangle$	$\langle 10^- \rangle$
3178.23(20)		3(1)							
3487.03(14)	$\langle 9^+ \rangle$		x						
3672.76(15)	$\langle 10^+ \rangle$			x	37(10)				
3910.5(10)	$\langle 10^+ \rangle$			100					
3910.59(16)	$\langle 10^- \rangle$		17(8)		83(33)				
4045.69(18)	$\langle 11^-, 11^+ \rangle$				x	100			
4065.64(14)	11^-			68(7)		11.9(3)	2.4(10)	1.2(2)	
4354.73(19)	$\langle 12^+ \rangle$						43(14)		
4461.66(17)	$\langle 12^- \rangle$								15(6)
4742.87(18)	13^-						33(4)		

Energy levels and branching ratios [01So16]. Part 6 **$^{144}_{60}$Nd**

E^*	J^π	Branching ratios in percentage								
	E_f^*:	4045.7	4065.6	4354.7	4461.7	4623.9	4742.9	4936.5	5239.0	5472.9
[keV]	J_f^π:		11^-	$\langle 12^+ \rangle$	$\langle 12^- \rangle$	13^-	13^-	$\langle 14^- \rangle$	$\langle 15^- \rangle$	$\langle 15^- \rangle$
4354.73(19)	$\langle 12^+ \rangle$	57(14)								
4461.66(17)	$\langle 12^- \rangle$	44(3)	41(6)	x						
4623.94(18)	13^-		63(13)	6(3)	31(3)					
4742.87(18)	13^-		46(4)		21(4)					
4936.49(21)	$\langle 14^- \rangle$					54(7)	46(7)			
5238.98(22)	$\langle 15^- \rangle$					47(4)		53(4)		
5378.7(11)	$\langle 14^+ \rangle$			x						
5472.86(22)	$\langle 15^- \rangle$					47(5)	53(5)			
5553.07(24)	$\langle 16^- \rangle$							19(8)	81(16)	
5962.3(3)	$\langle 17^- \rangle$								40(20)	
5966.6(3)	$\langle 17^- \rangle$									100

Energy levels and branching ratios [01So16]. Part 7 **$^{144}_{60}$Nd**

E^*	J^π	Branching ratios in percentage								
	E_f^*:	5553.1	5962.3	5966.6	6648.7	6963.5	7003.4	7545.5	7814.4	7965.2
[keV]	J_f^π:	$\langle 16^- \rangle$	$\langle 17^- \rangle$	$\langle 17^- \rangle$	$\langle 18^- \rangle$	$\langle 19^- \rangle$	$\langle 19^- \rangle$	$\langle 20^- \rangle$	$\langle 21^- \rangle$	$\langle 22^- \rangle$
5962.3(3)	$\langle 17^- \rangle$	60(25)								
6648.7(3)	$\langle 18^- \rangle$	83(17)	17(8)							
6963.5(3)	$\langle 19^- \rangle$		56(22)		44(22)					
7003.4(4)	$\langle 19^- \rangle$			100						
7376.8(4)	$\langle 20^- \rangle$						100			
7545.5(4)	$\langle 20^- \rangle$				100					

(continued) **$^{144}_{60}$Nd**

E^*	J^π	Branching ratios in percentage									
		E^*_f:	5553.1	5962.3	5966.6	6648.7	6963.5	7003.4	7545.5	7814.4	7965.2
[keV]		J^π_f:	$\langle 16^- \rangle$	$\langle 17^- \rangle$	$\langle 17^- \rangle$	$\langle 18^- \rangle$	$\langle 19^- \rangle$	$\langle 19^- \rangle$	$\langle 20^- \rangle$	$\langle 21^- \rangle$	$\langle 22^- \rangle$
7814.4(4)	$\langle 21^- \rangle$						60(20)		40(20)		
7965.2(4)	$\langle 22^- \rangle$									100	
8946.0(5)	$\langle 24^- \rangle$										100

Energy levels and branching ratios [93Pe07]. **$^{145}_{60}$Nd**

E^*	$2J^\pi$	L	C^2S'	$(2J+1)S$	L	C^2S'	L	C^2S	σ (τ,α)	L	S_N	$2J^\pi$	$d\sigma/d\Omega$	σ (d,t)	S_n^-	Ref.
[keV]			(d,p)	(d,p)		(α,τ)		(p,d)	μb/sr		(τ,α)	(p,p′)	μb/sr	(d,t)	(d,t)	
0.0	7^-	3	4.08	3.69	3	2.9	3	1.9	59	3	1.4			646	1.81	80Ja15
67.22(2)	3^-	1	0.21				1	0.16						152	0.15	80Ja15
72.50(1)	5^-											7–	0.25			80Ja15
657.67(1)	11^-	5	0.25	0.01	5		$\langle 5 \rangle$	0.8				11–	0.20	20	0.35	75Hi03
748.28(5)	9^-	5	2.17	2.70			5	0.5	20	5	0.64	9–	0.04	6	0.16	80Ja15
780.45(4)	3^-	1	1.41	1.67			1	0.17				3–	0.03	155	0.20	80Ja15
919.83(11)	1^-	1	0.58	0.64			1	0.11						56	0.08	80Ja15
920.72(2)	9^-				5	2.7						9–	0.04			75Hi03
937.05(5)	5^-	3	1.13	1.55	3	1.9								30	0.13	80Ja15
1011.22(10)	$11^{\langle + \rangle}$	6	3.70									11–	0.01			80Ja15
1051.41(1)	7^-,5^-															80Ja15
1085.25(2)	3^+						2	0.17						37	0.14	75Hi03
1111.2	13^+			3.04	6	4.2			65	6	0.64	13+	0.01	1.5	0.07	75Hi03
1150.26(1)	7^-	3	0.05													
1161.05(4)	3^-–7^-			0.02												
1162.32(8)	9^-											9–	0.03			
1213.7(3)	$\langle 1 \rangle^-$		weak											1		80Ja15
1249.73(3)	5^-	3	0.24	0.34	3	0.42						5–	0.01	6	0.02	80Ja15
1285.6(1)	5^-	3	0.01	<0.01												80Ja15
1306	3^+,5^+													24	0.09	
1316.8(3)	$\langle 3 \rangle^-$															
1326.3(2)	1^+						0	0.5						171	0.43	75Hi03
1338.6(1)	5^-,7^-	3	0.62	0.74	3	0.72						5–	0.01			80Ja15
1400.9(7)	3^-			0.02												80Ja15
1401.3	15^-															
1403.9(1)	$\langle 5^- \rangle$											5–	0.02			
1427.6	13^-															
1527.1(1)	9^-	5	0.44	0.09	5	0.34										80Ja15
1532.3(2)	$\langle 5^- \rangle$															
1533.3(11)	3^+						2	2.3	61	2	2.0			497	2.32	75Hi03
1576.0(4)	5^-,7^-	3	0.12	0.25										4	0.02	80Ja15
1591.1(5)	5^-,7^-															
1592.6(7)	$\langle 1 \rangle^-$	1	0.18	0.18												80Ja15

(continued) **$^{145}_{60}$Nd**

E^* [keV]	$2J^\pi$	L	C^2S' (d,p)	$(2J+1)S$ (d,p)	L	C^2S' (α,τ)	L	C^2S (p,d)	σ (τ,α) μb/sr	L	S_N (τ,α)	$2J^\pi$ (p,p′)	$d\sigma/d\Omega$ μb/sr	σ (d,t)	S_n^- (d,t)	Ref.
1654.0(3)	$\langle 7\rangle^-$	3	0.02													80Ja15
1681.3(7)	5^-,7^-	3	0.03	<0.01												80Ja15
1709.9	17^+															
1713(6)	5^-,7^-	3	0.03	<0.01												80Ja15
1714.0(4)	1^+						0	0.8						276	0.90	75Hi03
1715.4	$15^{\langle+\rangle}$															
1724(10)									35							
1744.8(3)	3^-	1	0.09	0.10												80Ja15
1762(3)	5^-,7^-	3	0.36	0.43	3	0.52										80Ja15
1802.0(2)	$\langle 11\rangle^-$						$\langle 5\rangle$	3.7	173	5	1.9			67	2.09	75Hi03
1820(2)	5^+													25	0.12	
1822(6)	9^-,11^-	5	0.10													80Ja15
1846(3)	13^+,11^+	6	2.10	1.72	6	1.54										80Ja15
1874.3(7)																
1884.5(10)	3^-	1	0.09	0.09												80Ja15
1917.5(5)	$\langle 5\rangle^-$	3	0.02	0.01												80Ja15
1940(6)														4		
1954(4)	11^-,9^-						$\langle 5\rangle$	0.45						16	0.37	75Hi03
1957.3(4)				0.19												
1960(2)	1^+															
1967.4(3)	$\langle 5\rangle^-$	3	0.18	0.01	3	0.14										80Ja15
2004.1(4)	3^-	1	0.02	0.01												80Ja15
2011.8	17^-															
2018(6)	11^-,9^-	5	0.08	<0.01	5	0.32										80Ja15
2035.7(6)	3^-															
2054(2)	$\langle 5\rangle^+$						2	0.33						42	0.29	75Hi03
2071.2	17^-															
2090(6)	9^-,11^-	5	0.65		5	0.94										80Ja15
2107.2	3^-			0.01												73Ga01
2117(6)	$\langle 11^-,9^-\rangle$	$\langle 5\rangle$	0.14	<0.01												80Ja15
2125(4)	3^+,5^+						2	0.08						[6]	0.05	75Hi03
2133(6)	$\langle 11^-,9^-\rangle$	$\langle 5\rangle$	0.08													80Ja15
2146.0(6)					[3]	0.38										75Hi03
2161.0				0.05	[5]	0.31										75Hi03
2176(3)	1^-,3^-	1	0.27	0.15										6		80Ja15
2204(2)	5^+						2	0.13						18	0.13	75Hi03
2223(3)	5^-,7^-	3	0.20			≈0.5										80Ja15
2246(6)	1^-,3^-	1	0.02													80Ja15
2270.4	3^-	1	0.09	0.09												80Ja15
2291(3)	5^-,7^-	3	0.20	0.05												80Ja15
2331(3)	1^-,3^-	1	0.09	0.05												80Ja15
2347.6	$19^{\langle-\rangle}$															
2355(3)		3	0.21	0.07												80Ja15
2374(3)	5^-,7^-	3	0.46	0.68												80Ja15
2408.2	$19^{\langle-\rangle}$															

(continued) **$^{145}_{60}$Nd**

E^* [keV]	$2J^\pi$	L	C^2S' (d,p)	$(2J+1)S$ (d,p)	L	C^2S' (α,τ)	L	C^2S (p,d)	σ (τ,α) μb/sr	L	S_N (τ,α)	$2J^\pi$ (p,p′)	$d\sigma/d\Omega$ μb/sr	σ (d,t)	S_n^- (d,t)	Ref.
2421.1	21^+															
2423	$1^-,3^-$	1	0.08	0.05												80Ja15
2427.3(10)																
2449(3)	$5^-,7^-$	3	0.07													80Ja15
2471(6)	$1^-,3^-$	1	0.02	0.06												80Ja15
2481(3)		⟨6⟩	1.27													80Ja15
2510(3)	$5^-,7^-$	3	0.37	0.28		≈0.4										80Ja15
2533(3)	$5^-,7^-$	3	0.06	0.02												80Ja15
2534.4	21^-															
2546.8	$19^{\langle+\rangle}$															
2566(3)	⟨$5^-,7^-$⟩	⟨3⟩	0.22	0.03												80Ja15
2606(3)	⟨$5^-,7^-$⟩	⟨3⟩	0.33	0.11												80Ja15
2626.2	1,3															
2627(3)	⟨$5^-,7^-$⟩	⟨3⟩	0.20	0.20												80Ja15
2643(6)	⟨$1^-,3^-$⟩	⟨1⟩	0.02													80Ja15
2647(2)	5^+						⟨2⟩	0.18								75Hi03
2670(3)	$11^+,13^+$	⟨6⟩	1.58													80Ja15
2703	3^-															
2713(3)	⟨$5^-,7^-$⟩	⟨3⟩	0.45	0.49												80Ja15
2717(2)	$\langle5\rangle^+$						2	0.7	46	2	1.1					75Hi03
2748(3)	$1^-,3^-$	1	0.11	0.27												80Ja15
2752(2)	$\langle5\rangle^+$															
2781(3)	$1^-,3^-$	1	0.08	0.17												80Ja15
2799(2)	5^+															
2810(3)	$1^-,3^-$	1	0.11	0.09												80Ja15
2826(2)	1^+															
2839(3)	$1^-,3^-$	1	0.02													80Ja15
2858(3)	$1^-,3^-$	1	0.02													80Ja15
2866.8	$21^{\langle-\rangle}$															
2882(3)	⟨$5^-,7^-$⟩	⟨3⟩	0.12	0.03												80Ja15
2907(6)	⟨$1^-,3^-$⟩	⟨1⟩														
2938(3)	$1^-,3^-$	1	0.03													80Ja15
2977(3)	$5^-,7^-$	3	0.06	0.12												80Ja15
3001(6)	$1^-,3^-$	1	0.03													80Ja15
3026(10)	⟨11^-⟩								60	5	1.1					80Lo06
3027(3)	$1^-,3^-$	1	0.06													80Ja15
3030.3	23															
3051(3)	$1^-,3^-$	1	0.05	0.04												80Ja15
3086(6)	$1^-,3^-$	1	0.01													80Ja15
3117(3)	$1^-,3^-$	1	0.04													80Ja15
3137.4	23															
3140(3)	$5^-,7^-$	3	0.11													80Ja15
3153(10)	⟨11⟩$^-$								44	5	0.57					80Lo06
3159(3)	$5^-,7^-$	3	0.10													80Ja15
3181(3)	$5^-,7^-$	3	0.09													80Ja15

(continued) **$^{145}_{60}$Nd**

E^* [keV]	$2J^\pi$	L	C^2S' (d,p)	$(2J+1)S$ (d,p)	L	C^2S' (α,τ)	L	C^2S (p,d)	σ (τ,α) μb/sr	L	S_N (τ,α)	$2J^\pi$ (p,p′)	$d\sigma/d\Omega$ μb/sr	σ (d,t)	S_n^- (d,t)	Ref.
3220	1^-,3^-	1	0.09	0.04												80Ja15
3270.4	25^+															
3349.1	$23–25^{\langle+\rangle}$															
3374	1^-,3^-			0.03												73Ga01
3517.2	27															
3599.2	$\langle 27^+\rangle$															
3758																
3961.5	29^+															
4081.7																
4201	$\langle 31^+\rangle$															
4474																
4568.2	$31^{\langle+\rangle}$															
4586	$\langle 33\rangle$															
4730																
4847.6																
5512.5																
6081.4																
			80Ja15			75Hi03		75Hi03			80Lo06			80Ja15	80Ja15	Ref.
				73Ga01												Ref.

Abundance: 8.3(1) %.
σ (d,p) and σ (d,t) reactions were measured at 90°, data for 60° and 125° can be found in [80Ja15].
Data for this isotope are considered in vol. LB I/18B.

Energy levels and branching ratios [93Pe07]. Part 2 **$^{145}_{60}$Nd**

E^* [keV]	$d\sigma/d\Omega$ μb/sr	$2J^\pi$ (p,p′)	$T_{1/2}$ or Γ_{cm}	Ref.	E_f^*: $2J_f^\pi$:	0.0 7–	67.2 3–	72.5 5–	657.7 11–	748.3 9–	780.4 3–
						Branching ratios in percentage					
0.0	780		Stable	80Ja15							
67.22(2)	88		29(1) ns	80Ja15		100					
72.50(1)		7–	0.72(5) ns	80Ja15		100					
657.67(1)	6	11–		75Hi03		100					
748.28(5)	80	9–	3.7(11) ps	80Ja15		52.9(2)		46.4(2)	0.7(1)		
780.45(4)	885	3–	0.9(2) ps	80Ja15		18(2)	38(2)	44(2)			
919.83(11)	358			80Ja15			98(10)				1.9(5)
920.72(2)		9–	0.7(2) ps	75Hi03		66(1)		32.5(7)	1.9(1)		
937.05(5)	313			80Ja15		56(11)	19(7)	26(6)			
1011.22(10)	100	11–		80Ja15		12(5)			50(7)	38(4)	
1051.41(1)				80Ja15		42(1)		56(1)		1.57(1)	
1085.25(2)				75Hi03			63(3)	37(2)			
1111.2		13+		75Hi03					100		
1150.26(1)	9					87(1)			12(1)	0.3(1)	

(continued) **$^{145}_{60}$Nd**

E^*	$d\sigma/d\Omega$	$2J^\pi$	$T_{1/2}$ or	Ref.		Branching ratios in percentage					
					E_f^*:	0.0	67.2	72.5	657.7	748.3	780.4
[keV]	μb/sr	(p,p′)	Γ_{cm}		$2J_f^\pi$:	7–	3–	5–	11–	9–	3–
1161.05(4)						57(2)	21(1)	22(1)			
1162.32(8)		9–				80(4)		15(2)	5(2)		
1213.7(3)	1			80Ja15			100				
1249.73(3)	82	5–		80Ja15		34(4)	11(2)	54(3)			
1285.6(1)	5			80Ja15		27(8)	35(11)	38(11)			
1306											
1316.8(3)							51(5)	49(5)			
1326.3(2)				75Hi03			100				
1338.6(1)	185	5–		80Ja15		6(1)	66(9)	28(7)			
1400.9(7)				80Ja15		100					
1401.3									90		
1403.9(1)		5–				5.2(6)	1.8(2)	7.2(4)			26(7)
1427.6									58	42	
1527.1(1)	23			80Ja15		9(1)			4(2)	4(2)	
1532.3(2)						73(1)	20(10)			7(2)	
1533.3(11)				75Hi03				100			
1576.0(4)	42			80Ja15		100		<16			
1591.1(5)						100					
1592.6(7)	143			80Ja15			100				
1654.0(3)	6			80Ja15		49(13)				51(17)	
1681.3(7)	5			80Ja15		100					
1709.9											
1713(6)	10			80Ja15							
1714.0(4)				75Hi03			29(6)				31(7)
1715.4											
1724(10)											
1744.8(3)	79			80Ja15		8(3)	32(3)	57(6)			3.3(6)
1762(3)	115			80Ja15							
1802.0(2)				75Hi03					100		
1820(2)											
1822(6)	5			80Ja15							
1846(3)	53			80Ja15							
1874.3(7)						100					
1884.5(10)	85			80Ja15		17	31(6)	52(11)			
1917.5(5)	11			80Ja15		22(4)					
1940(6)											
1954(4)				75Hi03							
1957.3(4)						[100]					
1960(2)											
1967.4(3)	83			80Ja15		50(15)	25(10)				
2004.1(4)	5			80Ja15		55(12)	45(12)				
2011.8											
2018(6)	3			80Ja15							
2035.7(6)						22	78				
2054(2)				75Hi03							

(continued) **$^{145}_{60}$Nd**

E^*	$d\sigma/d\Omega$	$2J^\pi$	$T_{1/2}$ or	Ref.	Branching ratios in percentage					
					E_f^*:	0.0	67.2	72.5	657.7	748.3	780.4
[keV]	μb/sr	(p,p′)	Γ_{cm}		$2J_f^\pi$:	7–	3–	5–	11–	9–	3–
2071.2											
2090(6)	28			80Ja15							
2107.2				73Ga01		33	67				
2117(6)	3			80Ja15							
2125(4)				75Hi03							
2133(6)	3			80Ja15							
2146.0(6)				75Hi03		16(6)					
2161.0				75Hi03		27(11)			<9		
2176(3)	235			80Ja15							
2204(2)				75Hi03							
2223(3)	65			80Ja15							
2246(6)	22			80Ja15							
2270.4	90			80Ja15		10	65				16(3)
2291(3)	70			80Ja15							
2331(3)	85			80Ja15							
2347.6											
2355(3)	73			80Ja15							
2374(3)	214			80Ja15							
2408.2											
2421.1											
2423	84			80Ja15							
2427.3(10)						9(4)			30(10)		
2449(3)	21			80Ja15							
2471(6)	18			80Ja15							
2481(3)	47			80Ja15							
2510(3)	184			80Ja15							
2533(3)	24			80Ja15							
2534.4											
2546.8											
2566(3)	91			80Ja15							
2606(3)	138			80Ja15							
2626.2							20				40(9)
2627(3)	87			80Ja15							
2643(6)	20			80Ja15							
2647(2)				75Hi03							
2670(3)	38			80Ja15							
2703						25	75				
2713(3)	179			80Ja15							
2717(2)				75Hi03							
2748(3)	111			80Ja15							
2752(2)											
2781(3)	78			80Ja15							
2799(2)											
2810(3)	122			80Ja15							
2826(2)											

(continued) **$^{145}_{60}$Nd**

E^*	$d\sigma/d\Omega$	$2J^\pi$	$T_{1/2}$ or	Ref.	Branching ratios in percentage						
					E_f^*:	0.0	67.2	72.5	657.7	748.3	780.4
[keV]	μb/sr	(p,p′)	Γ_{cm}		$2J_f^\pi$:	7–	3–	5–	11–	9–	3–
2839(3)	30			80Ja15							
2858(3)	22			80Ja15							
2866.8											
2882(3)	57			80Ja15							
2907(6)											
2938(3)	57			80Ja15							
2977(3)	76			80Ja15							
3001(6)	38			80Ja15							
3026(10)				80Lo06							
3027(3)	75			80Ja15							
3030.3											
3051(3)	83			80Ja15							
3086(6)	15			80Ja15							
3117(3)	46			80Ja15							
3137.4											
3140(3)	61			80Ja15							
3153(10)				80Lo06							
3159(3)	56			80Ja15							
3181(3)	47			80Ja15							
3220	107			80Ja15							14
3270.4											
3349.1											
3374				73Ga01							
3517.2											
3599.2											
3758											
3961.5											
4081.7											
4201											
4474											
4568.2											
4586											
4730											
4847.6											
5512.5											
6081.4											
				Ref.							
	80Ja15			Ref.							

Energy levels and branching ratios [93Pe07]. Part 3 **$^{145}_{60}$Nd**

E^*	$2J^\pi$		Branching ratios in percentage									
		E_f^*:	919.8	920.7	937.05	1011.22	1051.41	1085.25	1111.2	1150.26	1161.05	1162.32
[keV]	(p,p′)	$2J_f^\pi$:	1–	9–	5–	11⟨+⟩	7–,5–	3+	13+	7–	3–,5,7–	9–
1051.41(1)				0.08(4)								
1401.3									10			
1403.9(1)	5–				2.8(3)		40(1)	15			1.8(2)	
1527.1(1)				11(2)		45(3)	26(2)					1.6(6)
1709.9									58			
1714.0(4)			40(8)									
1715.4						100						
1884.5(10)			<17									
1967.4(3)							25(14)					
2146.0(6)										56(11)	28(9)	
2161.0				58(17)								
2270.4			6(1)									
2427.3(10)				51							<51	
2626.2			41(9)									

Energy levels and branching ratios [93Pe07]. Part 4 **$^{145}_{60}$Nd**

E^*	$2J^\pi$		Branching ratios in percentage									
		E_f^*:	1213.7	1249.73	1401.3	1427.6	1709.9	1713	1715.4	1874.3	2011.8	2071.2
[keV]	(p,p′)	$2J_f^\pi$:	⟨1⟩–	5–	15–	13–	17+	5–,7–	15⟨+⟩		17–	17–
1532.3(2)			<15									
1709.9					42							
1917.5(5)			41(16)	37(3)								
1967.4(3)			<20									
2004.1(4)				<37								
2011.8					65	35						
2071.2						100						
2161.0				14(7)								
2270.4			3(1)									
2347.6					64		36					
2408.2					100							
2421.1							100					
2427.3(10)										10(5)		
2534.4											88	
2546.8									100			
2703			<57									
2866.8												x
3220			17					69				

Energy levels and branching ratios [93Pe07]. Part 5 **$^{145}_{60}$Nd**

E^*	$2J^\pi$		Branching ratios in percentage								
		E^*_f:	2347.6	2408.2	2421.1	2533	2534.4	2866.8	3030.3	3137.4	3270.4
[keV]	(p,p′)	$2J^\pi_f$:	19⟨−⟩	19⟨−⟩	21+	5−,7−	21−	21⟨−⟩	23	23	25+
2534.4			12								
2866.8			72	28	≤18						
3030.3					x	x		x			
3137.4					x		x				
3270.4					100						
3349.1					x				x		
3517.2										x	x
3599.2									x		x
3961.5											100

Energy levels and branching ratios [93Pe07]. Part 6 **$^{145}_{60}$Nd**

E^*	$2J^\pi$		Branching ratios in percentage									
		E^*_f:	3349.1	3517.2	3599.2	3758	3961.5	4201	4474	4568.2	4847.6	5512.5
[keV]	(p,p′)	$2J^\pi_f$:		27	⟨27+⟩		29+	⟨31+⟩		31⟨+⟩		
3758			100									
4081.7			100			x						
4201					100							
4474							100					
4568.2				100								
4586								100				
4730									100			
4847.6										100		
5512.5											100	
6081.4												100

Energy levels and branching ratios [97Pe22]. **$^{146}_{60}$Nd**

E^*	J^π	L	σ (t,p)	L	$d\sigma/d\Omega$	σ (t,p)	σ (p,t)	S_α	σ (d,^{6}Li)	γ^2_α	$\Gamma_{\gamma\circ}$	$T_{1/2}$ or	Ref.
[keV]		(t,p)	arb.u	(d,d′)	μb/sr	μb/sr	μb/sr	(d,^{6}Li)	μb/sr	[keV]	[meV]	Γ_{cm}	
0.0	0^+	0	100.0	0	38730	826*	2200*	0.048	4.57(60)	0.63		Stable	96Po12
453.77(5)	2^+	⟨2⟩	45	2	1269	98(4)	150(8)	0.016	0.39(18)	0.17		21.6(13) ps	77Mi02
915.4(3)	0^+												
1042.2(1)	4^+		6	4	65	30(2)	33(2)					4.0(10) ps	96Po12
1189.6(1)	3^-		22	3	441	4.3(9)	50(12)					0.62(+90-24) ps	96Po12
1303.1(4)	2^+,0^+					3.6(8)	10(1)						96Po12
1376.8(1)	1^-				7	1.2(5)	3.0(6)					64(20) fs	96Po12
1470.6(1)	2^+			⟨2⟩	32	10(1)	10(1)					≈0.3 ps	96Po12

(continued) **$^{146}_{60}$Nd**

E^* [keV]	J^π	L (t,p)	σ (t,p) arb.u	L (d,d′)	$d\sigma/d\Omega$ μb/sr	σ (t,p) μb/sr	σ (p,t) μb/sr	σ (d,^{6}Li) μb/sr	γ_α^2 [keV]	$\Gamma_{\gamma\circ}$ [meV]	$B(M1)$ [μ_N^2]	$T_{1/2}$ or $\Gamma_{\rm cm}$	Ref.
1517.5(1)	5^-		6		20	1.6(5)	2.6(3)						96Po12
1572(2)	$\langle 0^+ \rangle$												
1602.6(1)	0^+					279(7)	550(50)						96Po12
1688(3)													
1696.8(2)	0^+	0	9			16(2)	38(4)						96Po12
1745.0(1)	4^+		18		79	45(3)	53(5)						96Po12
1769.4(8)													
1777.2(1)	3^+					1.0(4)	1.3(3)						96Po12
1780.0(2)	6^+				14								
1787.3(1)	2^+					25(2)	30(2)						96Po12
1812.0													
1834(10)													
1884.7													
1905.3(1)	2^+					3.0(7)	5.0(5)						96Po12
1918.8(3)	4^+												
1978.4(1)	2^+		17		15	50(3)	61(3)						96Po12
1988.9(2)	4^+					1.5(5)	3.3(5)						96Po12
2027(2)	1^-												
2029.4(2)	7^-												
2045.5(2)	4^-,5												
2069(2)	5^-												
2072.6(1)	3^-		8		13								
2083.5(2)	$\langle 6^+ \rangle$					21(2)	30(3)						96Po12
2090(2)	$\langle 0^+ \rangle$												
2095.8(2)	$\langle 4 \rangle^+$					2.5(7)	3.4(7)						96Po12
2119.4(2)	2^+												
2143.9(1)	2^+					1.6(5)	1.8(3)						96Po12
2148.9(2)	$\langle 1,2^+ \rangle$												
2166.0(1)	3^-					0.3(2)	0.9(2)						96Po12
2197.3(2)	2^+					1.2(5)	2.3(5)						96Po12
2208.4(2)	2^+												
2219.7(1)	3^+		23		10								
2225(2)	1^-												
2225.6(1)	3^+,4^+												
2232.2(3)	3^-					2.9(7)	4.6(7)						96Po12
2265.8(2)	2^+,1^-					4.3(9)	5.8(8)						96Po12
2269(2)	1^-												
2286.0(1)	2^+,0^+					49(3)	160(16)						96Po12
2302(1)													
2310.4(6)													
2324.6(2)													
2327.3(4)													
2335.5(2)	7^-												
2335.6(2)	3^-					4.4(9)	11(1)						96Po12
2355.8(2)	1^+									17.2(22)	0.341(43)	19(3) fs	93Ma08

(continued) **$^{146}_{60}$Nd**

E^* [keV]	J^π	L (t,p)	σ (t,p) arb.u	L (d,d′)	$d\sigma/d\Omega$ μb/sr	σ (t,p) μb/sr	σ (p,t) μb/sr	σ (d,^{6}Li) μb/sr	γ_α^2 [keV]	$\Gamma_{\gamma\circ}$ [meV]	$B(M1)$ [μ_N^2]	$T_{1/2}$ or $\Gamma_{\rm cm}$	Ref.
2356.5(2)	$\langle 4^+\rangle$					33(2)	31(4)						96Po12
2419.4													
2433(1)													
2434.5(3)	4^+												
2436.5(2)	2^+					6.3(10)	7.0(7)						96Po12
2457.1(2)	2^+												
2460.1(2)													
2469.4(3)													
2474.5(2)	8^+					4.2(1)	1.4(5)						96Po12
2478.8(4)	$\langle 2^+\rangle$					incl	4.0(8)						96Po12
2483.8(3)													
2491.1(2)	2^+,3^+											0.18(+6-4) ps	
2517.1(7)	X^-												
2521.3(2)	4^+,5^-					9.2(13)	14(1)						96Po12
2528.8(5)	2^+					2.2(6)	3.4(7)						96Po12
2547.8													
2551.8(2)	2^+–4^+												
2552.6(6)	2^+					2.0(9)	2.0(3)						96Po12
2556.0													
2561.6(2)	3^+												
2570(3)	5^-												
2574.5(3)	2^+					58(3)	79(4)						96Po12
2587(3)	2^+					2.1(6)	3.8(4)						96Po12
2590.5(2)													
2593.5(2)	8^+												
2600.9(7)										2.5(5)	0.037(8)	0.14(3) ps	93Ma08
2602.9(3)													
2611.0	0^+					50(3)	92(9)						96Po12
2623(3)	4^+					2.0(6)	3.0(4)						96Po12
2628.3(12)	$\langle 8^+\rangle$												
2641(3)	$\langle 1^-\rangle$					2.8(7)	6(1)						96Po12
2660.8(3)													
2663.4(13)	$\langle 1^-\rangle$					34(3)	40(6)						96Po12
2681.6(2)	1^-											0.08(3) ps	
2690(3)	$\langle 3^-\rangle$					3.1(7)	6.0(6)						96Po12
2705(4)	4^+,6^+					7(1)	10(1)						96Po12
2705.8(1)	$\langle 2^-\rangle$												
2706.2(2)	9^-												
2709.4(10)													
2729(3)	0^+					143(5)	250(25)						96Po12
2750.1	5^-					3.1(7)	4.4(4)						96Po12
2756.8(3)	1^-											5.3(13) fs	
2777.2(5)	$1,2^+$												
2783.8													
2803.4(3)													

(continued) **$^{146}_{60}$Nd**

E^* [keV]	J^π	L (t,p)	σ (t,p) arb.u	L (d,d′)	$d\sigma/d\Omega$ μb/sr	σ (t,p) μb/sr	σ (p,t) μb/sr	σ (d,^{6}Li) μb/sr	γ_α^2 [keV]	$\Gamma_{\gamma\circ}$ [meV]	$B(M1)$ [μ_N^2]	$T_{1/2}$ or $\Gamma_{\rm cm}$	Ref.
2806(3)	$\langle 4^- \rangle$					8(1)	8(1)						96Po12
2820(3)	0^+					100(4)	176(17)						96Po12
2829.9(7)	1^-									5.8(9)		67(11) fs	93Ma08
2844.6	$\langle 3^- \rangle$					8(1)	8(1)						96Po12
2855.4	2^+												
2856(3)	3^-					4.3(9)	5.6(5)						96Po12
2870.6	2^+					63(3)	72(3)						96Po12
2885.3	$\langle 4^+ \rangle$					24(2)	24(3)						96Po12
2905.8	$\langle 6 \rangle^+$												
2913.5(2)	$\langle 3^+ \rangle$					3.0(7)	4.8(7)						96Po12
2916(4)	5^-												
2929.1(10)	3^-					10(1)	13(1)						96Po12
2932(4)	4^+												
2945(3)	0^+					74(4)	138(11)						96Po12
2958.6													
2970.8(2)	2^+					11(1)	16(2)						96Po12
2997.0(2)	3^-					12(1)	15(1)						96Po12
3000	1												
3005(4)	5^-												
3013.5(6)	3^-												
3028(20)	0^+					30(2)	66(5)						96Po12
3034.7	$\langle 2 \rangle^+$					37(3)	58(6)						96Po12
3043.0(10)	2^+					18(2)	34(5)						96Po12
3064.7													
3091.2	2^+					11(1)	11(1)						96Po12
3102(4)	2^+												
3109.0(2)	9^-												
3123.8(2)	10^+												
3126(4)	1^-					27(2)	50(5)						96Po12
3148(4)	4^+					5(1)	9(1)						96Po12
3161(4)	4^+												
3172.1	2^+												
3178.3(2)	2^+–5^+					22(2)	30(2)						96Po12
3208(4)	4^+												
3220(4)	2^+					23(2)	30(2)						96Po12
3229.8	2^+												
3230(4)	$\langle 4^- \rangle$												
3236(4)	2^+					22(2)	26(1)						96Po12
3245.5(2)	10^-												
3248(4)	3^-												
3272(3)	$\langle 6^+ \rangle$												
3275.9(7)	1^+									16.3(24)	0.120(17)	22(3) fs	93Ma08
3283(4)	2^+					21(2)	26(1)						96Po12
3292.5(3)	1											13(4) fs	
3310(4)	4^+												

(continued) **$^{146}_{60}$Nd**

E^* [keV]	J^π	L (t,p)	σ (t,p) arb.u	L (d,d′)	$d\sigma/d\Omega$ μb/sr	σ (t,p) μb/sr	σ (p,t) μb/sr	σ (d,^{6}Li) μb/sr	γ^2_α [keV]	$\Gamma_{\gamma\circ}$ [meV]	$B(M1)$ [μ^2_N]	$T_{1/2}$ or $\Gamma_{\rm cm}$	Ref.
3319.7(2)	10^+												
3329(3)	2^+					40(3)	56(3)						96Po12
3329.3(3)													
3335.5(4)													
3346.9(9)													
3356(4)	$\langle 3^-\rangle$					27(2)	32(2)						96Po12
3368.9(2)	3^-					19(2)	30(2)						96Po12
3389(4)	1^-					11(1)	38(6)						96Po12
3391.8(3)													
3404.7(2)	11^-												
3410.9(7)	1^+									41.7(61)	0.273(40)	8.4(12) fs	93Ma08
3419(4)	$\langle 0^+\rangle$					33(2)	70(7)						96Po12
3428.9(7)	1											31(8) fs	
3434(4)	5^-												
3443(4)	2^+					15(1)	18(1)						96Po12
3455(4)	4^+					5(2)	10(1)						96Po12
3468(4)	3^-					30(2)	38(2)						96Po12
3472(4)	4^+												
3481(4)	2^+					7(1)	7(1)						96Po12
3496(4)	5^-,6^+					6.6(12)	7.0(7)						96Po12
3500.7(2)	11^-												
3503(4)	5^-												
3521(5)	3^-					3.6(2)	4.0(2)						96Po12
3534.2(4)	1^-					30(2)	52(1)						96Po12
3546(5)	2^+					9(1)	9(1)						96Po12
3558(5)	5^-					12(2)	17(2)						96Po12
3569(5)	2^+					18(2)	22(1)						96Po12
3576.9(7)	$1^{\langle+\rangle}$									45.2(72)	0.256(41)	6.9(11) fs	93Ma08
3583(4)	2^+												
3594.7(5)													
3601(5)	4^+					14(2)	14(2)						96Po12
3610(5)	5^-					14(2)	20(4)						96Po12
3618.5(4)													
3625(5)	$\langle 2^+\rangle$					7.2(12)	9.0(5)						96Po12
3633.9(7)	1									12.4(23)	0.067(12)	25(5) fs	93Ma08
3646(5)						9.4(14)	14(2)						96Po12
3667(5)	5^-					47(3)	50(4)						96Po12
3670(5)	$\langle 2^+\rangle$					45(2)	90(4)						96Po12
3692(5)	$\langle 5^-\rangle$					8.0(14)	7.0(14)						96Po12
3701(5)	$\langle 2^+\rangle$					5.1(9)	6(1)						96Po12
3709.2(14)	2^+					15(2)	15(2)					45(14) fs	96Po12
3727(5)	2^+					7.0(12)	12.0(6)						96Po12
3742(5)	3^-					28(1)	36(2)						96Po12
3750.9(7)	1^-					25(2)	50(3)			20.5(36)		16(3) fs	96Po12
3753(4)	$\langle 4^+\rangle$												

(continued) **$^{146}_{60}$Nd**

E^* [keV]	J^π	L (t,p)	σ (t,p) arb.u	L (d,d′)	$d\sigma/d\Omega$ μb/sr	σ (t,p) μb/sr	σ (p,t) μb/sr	σ (d,^{6}Li) μb/sr	γ_α^2 [keV]	$\Gamma_{\gamma\circ}$ [meV]	$B(M1)$ [μ_N^2]	$T_{1/2}$ or $\Gamma_{\rm cm}$	Ref.
3762(5)						3(1)	9(2)						96Po12
3770	$\langle 2^+,1\rangle$												
3779.9(7)	1					5(1)	4(1)			17.5(31)	0.084(15)	22(4) fs	96Po12
3789(5)						1.0(4)	3.0(6)						96Po12
3797.9(7)	1									15.2(30)	0.072(15)	21(4) fs	93Ma08
3810(5)	3^-					29(2)	34(3)						96Po12
3833	1					6(1)	5(1)						96Po12
3847(5)						2.0(6)	3.0(6)						96Po12
3866(5)	$\langle 2^+\rangle$					6(1)	11(1)						96Po12
3875(5)	$\langle 5^-\rangle$					6(1)	5.0(7)						96Po12
3884(5)	$\langle 4^+\rangle$					6(1)	6.0(9)						96Po12
3892.9(7)	1					1.4(6)	2.8(3)			25.9(52)	0.114(23)		96Po12
3902.2(2)	12^+												
3913(5)	$\langle 3^-\rangle$					7.6(12)	12(2)						96Po12
3922(5)	3^-					4.0(14)	7.0(7)						96Po12
3931(5)						6(2)	7(1)						96Po12
3939(5)	$\langle 2^+\rangle$					9.2(14)	24(2)						96Po12
3949(5)	$\langle 2^+\rangle$					7.0(12)	7(1)						96Po12
3958.1(2)	12^-												
3974.9(7)	1									21.8(47)	0.090(20)	17(4) fs	93Ma08
3993.7(2)	12^+												
4006(6)	$\langle 2^+\rangle$					4.6(10)	14(2)						96Po12
4014	$\langle 1\rangle$												
4022(6)													
4028.1(2)	13^-												
4031(6)													
4039(6)	$\langle 2^+,3^-\rangle$					10(2)	10(1)						96Po12
4042	$\langle 1\rangle$												
4054(6)	$\langle 2^+\rangle$					14(2)	15(2)						96Po12
4066(6)	$\langle 2^+\rangle$					4.2(8)	13(2)						96Po12
4095(6)													
4121(6)	$\langle 2^+\rangle$					14(2)	22(2)						96Po12
4138(6)	$\langle 2^+,3^-\rangle$					14(2)	17(2)						96Po12
4168(6)	2^+					15(2)	36(2)						96Po12
4179(6)	3^-					12(2)	20(2)						96Po12
4196(6)	2^+					10(1)	12(1)						96Po12
4212(6)	2^+					9(1)	24(2)						96Po12
4243(6)	1^-					36(2)	60(9)						96Po12
4256(6)	2^+					9.6(14)	28(2)						96Po12
4269(6)													
4295.0(2)	13^-												
4302(6)	$\langle 4^+\rangle$					7.0(12)	7.0(7)						96Po12
4310(6)	$\langle 1^-\rangle$					8.4(12)	10(2)						96Po12
4325(6)	$\langle 4^+\rangle$					7.6(12)	7.6(15)						96Po12
4341(6)	$\langle 2^+,3^-\rangle$												

(continued) **$^{146}_{60}$Nd**

E^* [keV]	J^π	L (t,p)	σ (t,p) arb.u	L (d,d′)	$d\sigma/d\Omega$ μb/sr	σ (t,p) μb/sr	σ (p,t) μb/sr	S_α (d,^{6}Li)	σ (d,^{6}Li) μb/sr	γ^2_α [keV]	$\Gamma_{\gamma\circ}$ [meV]	$T_{1/2}$ or $\Gamma_{\rm cm}$	Ref.
4360(6)						7.6(12)	18(2)						96Po12
4380(6)	$\langle 3^-\rangle$												
4388(6)	$\langle 2^+\rangle$					8.6(12)	20(2)						96Po12
4404(6)	4^+					5(1)	7(1)						96Po12
4411(6)	$\langle 4^+\rangle$					5.2(10)	6.0(9)						96Po12
4422(6)	$\langle 3^-\rangle$					7.0(12)	9(1)						96Po12
4442(6)	3^-					8.2(12)	14(1)						96Po12
4461(6)	$\langle 3^-\rangle$					9.0(14)	18(2)						96Po12
4479(6)													
4491(6)	$\langle 3^-\rangle$					9.0(14)	9(1)						96Po12
4501(7)	$\langle 3^-\rangle$					7(1)	16(3)						96Po12
4517(7)	$\langle 4^+\rangle$					13(2)	13(2)						96Po12
4533(7)	$\langle 3^-\rangle$					9(1)	16(3)						96Po12
4545(7)	4^+					8.0(14)	8(1)						96Po12
4558(7)	$\langle 3^-\rangle$					7.4(12)	15(2)						96Po12
4571(7)	$\langle 3^-\rangle$					11(2)	13(2)						96Po12
4591(7)	$\langle 2^+,3^-\rangle$					9.6(14)	13(2)						96Po12
4601(7)													
4637(7)													
4649(7)	$\langle 3^-\rangle$					9.6(14)	17(3)						96Po12
4669(7)													
4683(7)													
4694.2(2)	14^+												
4695.5(2)	14^+												
4696(7)	$\langle 3^-\rangle$					9.0(16)	18(2)						96Po12
4707(7)	$\langle 3^-\rangle$					8.0(12)	10(2)						96Po12
4720(7)													
4738(7)	3^-					12(2)	24(2)						96Po12
4755(7)	3^-					12(2)	13(2)						96Po12
4761.3(2)	15^-												
4765(7)	2^+					7.0(12)	10(1)						96Po12
4773(7)													
4784(7)													
4786.7(2)	14^-												
4794(7)													
4802(7)	$\langle 3^-\rangle$					10(1)	16(3)						96Po12
4822(7)													
4832(7)													
4860(7)													
4866(7)													
4877(7)													
4887(7)													
4899(7)	4^+					7.6(12)	9.0(13)						96Po12
4911(7)													
4931(7)													

(continued) **$^{146}_{60}$Nd**

E^*	J^π	L	σ (t,p)	L	$d\sigma/d\Omega$	σ (t,p)	σ (p,t)	S_α	σ (d,^{6}Li)	γ^2_α	$\Gamma_{\gamma\circ}$	$B(M1)$	$T_{1/2}$ or	Ref.
[keV]		(t,p)	arb.u	(d,d′)	μb/sr	μb/sr	μb/sr	(d,^{6}Li)	μb/sr	[keV]	[meV]	[μ^2_N]	$\Gamma_{\rm cm}$	
4948(7)	$\langle 4^+\rangle$					1.2(16)	10(1)							96Po12
4964(7)	$\langle 3^-\rangle$					10(1)	13(3)							96Po12
4982(7)	3^-					11(1)	14(1)							96Po12
5057.94(18)	15^-													
5160.93(23)	15^+													
5362.83(21)	16^+													
5460.53(19)	16^+													
5559.03(21)	17^-													
5612.43(23)	16^-													
5899.73(22)	18^+													
6202.53(23)	19^-													
6513.73(23)	20^+													
6807.04(25)	$\langle 21^-\rangle$													
7364(24)	$\langle 22^+\rangle$													
			72Ch11		xxxxxx	96Po12	96Po12	77Mi02	77Mi02	77Mi02	93Ma08	93Ma08		Ref.

Additional data on this isotope can be found in [00Ho25, 95Bo20, 95Di06, 95Ho20, 93Co03, 91Bo14, 90Pi04, 90Pi14, 89Bo55, 89BoYS, 72Ya07].
Abundance: 17.2(3) %.
* Uncertainty in these values of σ (t,p) and σ (p,t) is 26 and 100 μb/sr, respectively [96Po12].
Data for this isotope are considered in vol. LB I/18B.

Energy levels and branching ratios [97Pe22]. Part 2 **$^{146}_{60}$Nd**

E^*	J^π	Branching ratios in percentage					
		$E^*_{\rm f}$:	0.0	454	1042	1190	1377
[keV]		$J^\pi_{\rm f}$:	0^+	2^+	4^+	3^-	1^-
453.77(5)	2^+		100				
915.4(3)	0^+			100			
1042.2(1)	4^+			100			
1189.6(1)	3^-			99.4(6)	0.60(6)		
1303.1(4)	2^+,0^+		47(6)	53(6)			
1376.8(1)	1^-		64(2)	36(1)			
1470.6(1)	2^+		49(3)	51(3)			
1517.5(1)	5^-				99.6	0.42	
1602.6(1)	0^+			100			
1696.8(2)	0^+			100			
1745.0(1)	4^+			14.7(9)	37(3)	48(2)	
1769.4(8)					100		
1777.2(1)	3^+			86(3)	3.2	11(3)	
1780.0(2)	6^+				89.9		
1787.3(1)	2^+		10.0(5)	81(4)		9.3(10)	
1905.3(1)	2^+		1.8(3)	94(4)		4.3(13)	

(continued) **$^{146}_{60}$Nd**

E^*	J^π			Branching ratios in percentage			
		E^*_f:	0.0	454	1042	1190	1377
[keV]		J^π_f:	0^+	2^+	4^+	3^-	1^-
1918.8(3)	4^+			35(1)	35(2)	9.3	
1978.4(1)	2^+		0.9(5)	61(3)		25(1)	11.7(5)
1988.9(2)	4^+			10.0(7)	21(1)	31(7)	
2045.5(2)	4^-,5				65(3)		
2072.6(1)	3^-				33(13)	67(4)	
2083.5(2)	$\langle 6^+ \rangle$				100		
2095.8(2)	$\langle 4 \rangle^+$			17(3)	46(3)	37(3)	
2119.4(2)	2^+		52(6)	48(8)			
2143.9(1)	2^+		19(1)	67(3)		1.7(3)	4.0(9)
2148.9(2)	$\langle 1,2^+ \rangle$		45(7)	27(9)			28(10)
2166.0(1)	3^-				21(2)	32(3)	
2197.3(2)	2^+			100			
2208.4(2)	2^+		100				
2219.7(1)	3^+			34(2)	20(2)	31(11)	
2225.6(1)	3^+,4^+			37(4)	42(4)	21(4)	
2232.2(3)	3^-			100			
2265.8(2)	2^+,1^-		28(5)	72(5)			
2286.0(1)	2^+,0^+			23(3)	77(3)		
2310.4(6)					45(8)		
2327.3(4)				100			
2335.6(2)	3^-			100			
2355.8(2)	1^+		73	27(4)			x
2356.5(2)	$\langle 4^+ \rangle$			15(2)	38(2)	47(3)	
2433(1)						100	
2434.5(3)	4^+				100		
2436.5(2)	2^+			86(5)		14(4)	
2457.1(2)	2^+			59(6)			15(4)
2460.1(2)			64(3)	31(2)			
2469.4(3)					65(6)		
2478.8(4)	$\langle 2^+ \rangle$				100		
2483.8(3)				100			
2491.1(2)	2^+,3^+			66(7)	34(7)		
2517.1(7)	X^-		x				100
2521.3(2)	4^+,5^-			x	51(5)	30(2)	
2551.8(2)	2^+–4^+			7.9(10)	6.3(6)		
2552.6(6)	2^+				37	63	
2561.6(2)	3^+			100			
2574.5(3)	2^+			100			
2590.5(2)				64(4)			
2600.9(7)			75	25(13)			
2602.9(3)				100			
2611.0	0^+			22			78
2660.8(3)				100			
2681.6(2)	1^-		49(3)	51(3)			
2705.8(1)	$\langle 2^- \rangle$			31(2)		7.8(9)	17.3(9)

(continued) **$^{146}_{60}$Nd**

E^*	J^π			Branching ratios in percentage			
		E_f^*:	0.0	454	1042	1190	1377
[keV]		J_f^π:	0^+	2^+	4^+	3^-	1^-
2756.8(3)	1^-		31(5)	40(6)			
2777.2(5)	$1,2^+$		100				
2803.4(3)							44(4)
2829.9(7)	1^-		85	15(7)			
2855.4	2^+		13	30		57	
2885.3	$\langle 4^+ \rangle$				x		
2905.8	$\langle 6 \rangle^+$				x		
2913.5(2)	$\langle 3^+ \rangle$			37(4)	x		
2929.1(10)	3^-					100	
2970.8(2)	2^+			46(3)		10.5(6)	19.0(13)
3043.0(10)	2^+		100				
3178.3(2)	2^+–5^+				53(5)		
3275.9(7)	1^+		80	20(3)			
3292.5(3)	1		30(2)				17(1)
3335.5(4)				25(2)			60(4)
3346.9(9)				15(2)			
3368.9(2)	3^-			9(1)		41(2)	12(1)
3391.8(3)				37(3)			
3410.9(7)	1^+		78	22(3)			
3428.9(7)	1		61	39(12)			
3534.2(4)	1^-			39(2)			25(3)
3576.9(7)	$1^{\langle + \rangle}$		68	32(5)			
3594.7(5)				49(4)			51(7)
3618.5(4)				10(1)			
3633.9(7)	1		68	32(7)			
3709.2(14)	2^+		74(8)	26(3)			
3750.9(7)	1^-		75	25(5)			
3779.9(7)	1		88	12(4)			
3797.9(7)	1		69	31(7)			
3892.9(7)	1		86	14(7)			
3974.9(7)	1		81	19(5)			

Energy levels and branching ratios [97Pe22]. Part 3 **$^{146}_{60}$Nd**

E^*	J^π					Branching ratios in percentage				
		E_f^*:	1471	1517	1696.8	1745.0	1769.4	1777.2	1780.0	1787.3	1812.0
[keV]		J_f^π:	2^+	5^-	0^+	4^+		3^+	6^+	2^+	
1780.0(2)	6^+			10.13							
1918.8(3)	4^+		20(4)								
1978.4(1)	2^+		1.8(1)							0.06(3)	
1988.9(2)	4^+			5.6			31(7)				
2029.4(2)	7^-			55.6					44.39		

(continued) **$^{146}_{60}$Nd**

E^*	J^π	Branching ratios in percentage								
	E_f^*:	1471	1517	1696.8	1745.0	1769.4	1777.2	1780.0	1787.3	1812.0
[keV]	J_f^π:	2^+	5^-	0^+	4^+		3^+	6^+	2^+	
2045.5(2)	4^-,5		35(4)							
2143.9(1)	2^+			8.3(11)						
2166.0(1)	3^-		8(1)						39(5)	
2302(1)							100			
2310.4(6)					55(4)					
2324.6(2)			100							
2335.5(2)	7^-							74.6		
2434.5(3)	4^+						x			
2469.4(3)					35(8)					
2474.5(2)	8^+							27.07		
2521.3(2)	4^+,5^-				19(2)					
2528.8(5)	2^+									100
2551.8(2)	2^+–4^+	65(3)					21.1(12)			
2590.5(2)			36(3)							
2593.5(2)	8^+							33.80		
2628.3(12)	$\langle 8^+ \rangle$							100		
2663.4(13)	$\langle 1^- \rangle$					100				
2705.8(1)	$\langle 2^- \rangle$	10.9(6)					5.1(3)			
2709.4(10)			100							
2756.8(3)	1^-	29(6)								
2803.4(3)					56(3)					
2913.5(2)	$\langle 3^+ \rangle$				63(6)					
2970.8(2)	2^+	11.9(13)							12.8(11)	
3292.5(3)	1								8(2)	
3329.3(3)			89(6)							
3346.9(9)				85(9)						
3391.8(3)		25(3)					25(3)			
3618.5(4)									90(5)	

Energy levels and branching ratios [97Pe22]. Part 4 **$^{146}_{60}$Nd**

E^*	J^π	Branching ratios in percentage								
	E_f^*:	1905.3	1978.4	1988.9	2029.4	2083.5	2143.9	2208.4	2225.6	2335.5
[keV]	J_f^π:	2^+	2^+	4^+	7^-	$\langle 6^+ \rangle$	2^+	2^+	3^+,4^+	7^-
2219.7(1)	3^+	15(2)								
2335.5(2)	7^-				25.44					
2457.1(2)	2^+							26(4)		
2460.1(2)			5(3)							
2474.5(2)	8^+				62.41	10.53				
2593.5(2)	8^+				66.2					
2705.8(1)	$\langle 2^- \rangle$		17.0(9)				11.1(6)			
2706.2(2)	9^-				98.03					

(continued) **$^{146}_{60}$Nd**

E^*	J^π	Branching ratios in percentage								
	E_f^*:	1905.3	1978.4	1988.9	2029.4	2083.5	2143.9	2208.4	2225.6	2335.5
[keV]	J_f^π:	2^+	2^+	4^+	7^-	$\langle 6^+ \rangle$	2^+	2^+	3^+,4^+	7^-
3109.0(2)	9^-									87.9
3178.3(2)	2^+–5^+			47(8)						
3292.5(3)	1						45(3)			
3329.3(3)									11(7)	
3335.5(4)							15(2)			
3368.9(2)	3^-	10(1)								
3534.2(4)	1^-		36(3)							

Energy levels and branching ratios [97Pe22]. Part 5 **$^{146}_{60}$Nd**

E^*	J^π	Branching ratios in percentage								
	E_f^*:	2356.5	2474.5	2552.6	2593.5	2706.2	3109.0	3123.8	3245.5	3319.7
[keV]	J_f^π:	$\langle 4^+ \rangle$	8^+	2^+	8^+	9^-	9^-	10^+	10^-	10^+
2706.2(2)	9^-				1.970					
3109.0(2)	9^-		12.12							
3123.8(2)	10^+		66.1			33.95				
3245.5(2)	10^-					53.9	46.10			
3319.7(2)	10^+				3.030	97.0				
3368.9(2)	3^-	26(7)		3.2(14)						
3391.8(3)				13(4)						
3404.7(2)	11^-					49.7		47.98	2.312	
3500.7(2)	11^-					91.8				8.197
3902.2(2)	12^+							73.2		
3958.1(2)	12^-								100	
3993.7(2)	12^+									41.07

Energy levels and branching ratios [97Pe22]. Part 6 **$^{146}_{60}$Nd**

E^*	J^π	Branching ratios in percentage								
	E_f^*:	3404.7	3500.7	3902.2	3958.1	3993.7	4028.1	4295.0	4694.2	4761.3
[keV]	J_f^π:	11^-	11^-	12^+	12^-	12^+	13^-	13^-	14^+	15^-
3902.2(2)	12^+	26.83								
3993.7(2)	12^+		58.9							
4028.1(2)	13^-	91.04	5.970	2.985						
4295.0(2)	13^-	13.34	50.0			36.67				
4694.2(2)	14^+					32.50		67.5		
4695.5(2)	14^+			50.9			49.09			
4761.3(2)	15^-						100			
4786.7(2)	14^-				100					

(continued) **$^{146}_{60}$Nd**

E^*	J^π	Branching ratios in percentage								
	E_f^*:	3404.7	3500.7	3902.2	3958.1	3993.7	4028.1	4295.0	4694.2	4761.3
[keV]	J_f^π:	11^-	11^-	12^+	12^-	12^+	13^-	13^-	14^+	15^-
5057.94(18)	15^-							50.0	50.0	
5362.83(21)	16^+									100
5460.53(19)	16^+								36.00	
5559.03(21)	17^-									83.3

Energy levels and branching ratios [97Pe22]. Part 7 **$^{146}_{60}$Nd**

E^*	J^π	Branching ratios in percentage								
	E_f^*:	4786.7	5057.9	5160.9	5362.8	5559.0	5899.7	6202.5	6513.7	6807.0
[keV]	J_f^π:	14^-	15^-	15^+	16^+	17^-	18^+	19^-	20^+	$\langle 21^- \rangle$
5160.93(23)	15^+	100								
5460.53(19)	16^+		64.0							
5559.03(21)	17^-				16.67					
5612.43(23)	16^-	76.9		23.08						
5899.73(22)	18^+				52.1	47.95				
6202.53(23)	19^-					100				
6513.73(23)	20^+						66.13	33.87		
6807.04(25)	$\langle 21^- \rangle$								100	
7364(24)	$\langle 22^+ \rangle$								81	19

Energy levels and branching ratios [92De38]. **$^{147}_{60}$Nd**

E^*	$2J^\pi$	L	$(2J+1)S$	σ (d,p)	σ (d,t)	S_{dt}	L	S_N	$S_{\ell j}$	σ (d,t)	σ (τ,α)	L	S_N	Ref.
[keV]			(d,p)	μb/sr	μb/sr			(d,t)	(d,t)	μb/sr	μb/sr		(τ, α)	
0.0[a]	5^-	3	0.06	12	11	0.04	3	0.06	0.08	124	<2	3		82Ja09
49.927(1)	7^-	3	3.01	697	531	1.61	3	1.79	1.7	3782	26	3	1.4	82Ja09
127.919(1)	5^-	3	0.66	158	78	0.24	3	0.36	0.41	643	3	3	0.16	82Ja09
190.291(6)[a]	$\langle 9 \rangle^-$	5	1.40	79	30	0.52	5	1.3	1.3	166	28	5	1.3	82Ja09
214.595(1)	1^-	1	0.14	77	25	0.04	1	0.04	0.07	363				82Ja09
314.673(2)	3^-	1	0.04	25	152	0.18	1	0.25	0.44	2147				82Ja09
463.622(3)	3^-	1	0.60	374	92	0.12	1	0.16						82Ja09
516.709(6)	5^-	3	0.12	26	42	0.13	3	0.19				3	0.18	82Ja09
581.31(15)	7^-	3	0.13	35	117	0.49	3	0.23				3		82Ja09
596[a]	$\langle 13^- \rangle$													05Ve09
604.520(4)	1^-	1	0.22	134	32	0.05	1	0.07						82Ja09
631.491(4)	3^-	1	0.74	484	108	0.16	1	0.21						82Ja09
656(2)		5	0.50	≤14	30	0.50	5	0.50						82Ja09
749(5)														

(continued) **$^{147}_{60}$Nd**

E^* [keV]	$2J^\pi$	L	$(2J+1)S$ (d,p)	σ (d,p) μb/sr	σ (d,t) μb/sr	S_{dt}	L	S_N (d,t)	$S_{\ell j}$ (d,t)	σ (d,t) μb/sr	σ (τ,α) μb/sr	L	S_N (τ,α)	Ref.
769.18(2)	3^+	2	0.06	23	31	0.07	2	0.11				2	0.24	82Ja09
792.56(2)	1,3													
809(2)														
859(2)	1^-,3^-	1	0.07	55	6	0.01	1	0.01						82Ja09
904(2)														
934(2)	$\langle 13\rangle^+$	6	4.44	100	8	0.54	6	0.76				6	0.99	80Lo06
942.06(9)														
957.26(10)	3^-	1	0.12	78	41	0.07	1	0.10						82Ja09
983(5)	5^-,7^-	3	0.20	44	6	0.03								82Ja09
1029(2)														
1041.5(1)	1^-	1	0.26	192	65	0.10	1	0.13						82Ja09
1111.9(1)	3^+	2	0.18	90	144	0.42	2	0.55						82Ja09
1115[b]	$\langle 15^+\rangle$													05Ve09
1154(2)	5^-,7^-	3	0.24	73	9	0.03	3	0.03						82Ja09
1190[a]	$\langle 17^-\rangle$													05Ve09
1205(2)	5^-,7^-	3	0.40	137	19	0.08	3	0.11						80Lo06
1215(2)														
1236(10)	$\langle 9^-,11^-\rangle$				6	0.17						$\langle 5\rangle$	0.13	80Lo06
1264.2(1)	3^+	2	0.04	19	67	0.19	2	0.21						82Ja09
1293(6)	5^-,7^-	3	0.16	56										82Ja09
1310.7(1)	3^+				69	0.21	2	0.24						77St22
1333(2)	$\langle 9^-,11^-\rangle$				10	0.17								
1334(6)	1^-,3^-	1	0.02	25										82Ja09
1350.5(1)	5^-,7^-	3	0.16											82Ja09
1353(2)	1^+				352	0.65	0	0.57						77St22
1355	5^-,7^-	3	0.16	38										
1377(2)														
1386(6)	1^-,3^-	1	0.08	73										82Ja09
1398.3(1)	3^+				302	1.06	2	0.96				2	1.5	77St22
1445.1(1)	1^+				166	0.35	0	0.39						77St22
1464(2)	$\langle 11^-\rangle$				78	2.17	4=6	2.02				5	1.8	77St22
1499[b]	$\langle 19^+\rangle$													05Ve09
1503(6)	5^-,7^-	3	0.12	55									0.50	82Ja09
1509(2)	9^-,11^-				52	1.30	5	1.30						82Ja09
1523.5(1)	$\langle 1^-,3^-\rangle$	1	0.06	52										82Ja09
1544.7(1)					46	0.05								
1550.0(1)	3^-	1	0.12	110			1	0.08						82Ja09
1593.4(1)	$\langle 5\rangle^+$				72	0.28	2	0.27						80Lo06
1610(6)	$\langle 5^-,7^-\rangle$	3	0.14	70										82Ja09
1616.5(1)	3^+,5^+				8	0.05	2	0.10						80Lo06
1647(5)	3^-,5^-	1	0.08	74										82Ja09
1671(10)	$\langle 9^-,11^-\rangle$											$\langle 5\rangle$	0.18	80Lo06
1673(2)	1^+				98	0.28	0	0.27						77St22
1674.5(1)														
1694(6)	5^-,7^-	3	0.12	40										82Ja09

(continued) **$^{147}_{60}$Nd**

E^* [keV]	$2J^\pi$	L	$(2J+1)S$ (d,p)	σ (d,p) μb/sr	σ (d,t) μb/sr	S_{dt}	L	S_N (d,t)	$S_{\ell j}$ (d,t)	σ (d,t) μb/sr	σ (τ,α) μb/sr	L	S_N (τ,α)	Ref.
1698	$\langle 9^-,11^-\rangle$				9	0.12	$\langle 5\rangle$	0.12						82Ja09
1711(2)	$5^-,7^-$	3	0.16											82Ja09
1733.2(1)	$5^-,7^-$	3	0.10	33	11	0.06	3	0.09						80Lo06
1759(5)	$\langle 1^-,3^-\rangle$	$\langle 1\rangle$	0.04	38										82Ja09
1770(2)														
1791(6)	$5^-,7^-$	3	0.42	151										82Ja09
1817(6)	$5^-,7^-$	3	0.26	109										82Ja09
1824(5)	$5^-,7^-$						3	0.09						80Lo06
1841.0(1)	$\langle 1^-,3^-\rangle$	$\langle 5\rangle$			8	0.10								
1846(5)	$3^+,5^+$				45	0.23	2	0.24						80Lo06
1851(6)	$1^-,3^-$	1	0.20	202										82Ja09
1854(10)	$\langle 5^+\rangle$													
1881(6)	$5^-,7^-$	3	0.16	51										82Ja09
1936(6)	$1^-,3^-$	1	0.10	69										82Ja09
1943(5)	$5^-,7^-$			52			3	0.09						80Lo06
1979.5(2)	$\langle 1^-,3^-\rangle$	$\langle 1\rangle$	0.04	46										82Ja09
2010(6)	$1^-,3^-$	1	0.03	37										82Ja09
2018(5)	1^+						0	0.03						80Lo06
2030[b]	$\langle 23^+\rangle$													05Ve09
2038(5)	$3^+,5^+$						2	0.07						80Lo06
2042(6)	$\langle 5^-,7^-\rangle$	$\langle 3\rangle$	0.08	16										82Ja09
2068(5)														
2086(5)	$1^-,3^-$	1	0.02	27			1	0.03						80Lo06
2110(6)	$\langle 5^-,7^-\rangle$	$\langle 3\rangle$	0.18	79										82Ja09
2122.9(1)														
2146(5)	$3^+,5^+$						2	0.07						80Lo06
2164.5(2)														
2177(5)	$3^+,5$						2	0.11						80Lo06
2189(6)	$\langle 1^-,3^-\rangle$	$\langle 1\rangle$	0.10	106										82Ja09
2204(5)	$5^-,7^-$						3	0.07						80Lo06
2226(6)	$\langle 5^-,7^-\rangle$	$\langle 3\rangle$	0.16	68										82Ja09
2230(5)														
2250(5)	$3^+,5^+$						2	0.13						80Lo06
2276(6)	$\langle 9^-,11^-\rangle$	$\langle 5\rangle$	0.40	22										82Ja09
2281(10)														80Lo06
2297(5)					6									
2301(6)	$1^-,3^-$	1	0.04	40										82Ja09
2309.7(1)														
2336.1(2)														
2350(5)														80Lo06
2366(6)	$\langle 5^-,7^-\rangle$	$\langle 3\rangle$	0.24	112										82Ja09
2373(5)														
2392(6)	$1^-,3^-$	1	0.04	36										82Ja09
2398(5)	$3^+,5^+$						2	0.30						80Lo06
2413(10)														80Lo06

(continued)

$^{147}_{60}$Nd

E^* [keV]	$2J^\pi$	L	$(2J+1)S$ (d,p)	σ (d,p) μb/sr	σ (d,t) μb/sr	S_{dt}	L	S_N (d,t)	$S_{\ell j}$ (d,t)	σ (d,t) μb/sr	σ (τ,α) μb/sr	L	S_N (τ, α)	Ref.
2423.6(3)	1^+						0	0.08						80Lo06
2425(6)	$\langle 1^-,3^-\rangle$	$\langle 1\rangle$	0.02	19										82Ja09
2430(5)	$\langle 9^-,11^-\rangle$											$\langle 5\rangle$	0.29	80Lo06
2445(6)	$5^-,7^-$	3	0.06	37										82Ja09
2468(5)														
2484(5)	$3^+,5^+$						2	0.15						80Lo06
2484(10)	$\langle 9^-,11^-\rangle$											$\langle 5\rangle$	0.20	80Lo06
2486(6)	$5^-,7^-$	3	0.07	36										82Ja09
2513(5)														
2524(6)	$\langle 1^-,3^-\rangle$	$\langle 1\rangle$	0.08	80										82Ja09
2536(5)	$3^+,5^+$						2	0.08						80Lo06
2541(10)	$\langle 9^-,11^-\rangle$											$\langle 5\rangle$	0.24	80Lo06
2563(4)	$3^+,5^+$			40			2	0.25						80Lo06
2591(6)	$1^-,3^-$	1	0.09	75										82Ja09
2593(5)	1^+						0	0.04						80Lo06
2622(5)	$1^+,3^+$						2	0.09						80Lo06
2641(6)	$\langle 1^-,3^-\rangle$	$\langle 1\rangle$	0.04	≈56										82Ja09
2653(5)	$3^+,5^+$						2	0.13						80Lo06
2676(6)	$1^-,3^-$	1	0.05	≈63										82Ja09
2689(5)	$3^+,5^+$						2	0.59				2	1.4	80Lo06
2711[b]	$\langle 27^+\rangle$													05Ve09
2713(10)														
2722(5)	$3^+,5^+$						2	0.16						80Lo06
2724(6)	$\langle 1^-,3^-\rangle$	$\langle 1\rangle$	0.06	≈85										82Ja09
2754(6)	$1^-,3^-$	1	0.04	≈66										82Ja09
2787(5)														
2805(6)	$1^-,3^-$	1	0.1	≈160										82Ja09
2866(5)	$5^-,7^-$	3	0.16	≈85										82Ja09
2900(6)	$5^-,7^-$	3	0.08	≈43										82Ja09
2928(6)	$\langle 1^-,3^-\rangle$	$\langle 1\rangle$	0.02	≈46										82Ja09
3195[c]	$\langle 29^+\rangle$													05Ve09
3504[b]	$\langle 31^+\rangle$													05Ve09
3807[c]	$\langle 33^+\rangle$													05Ve09
4493[c]	$\langle 37^+\rangle$													05Ve09
5207[c]	$\langle 41^+\rangle$													05Ve09
			82Ja09		82Ja09				80Lo06				80Lo06	Ref.
				82Ja09		82Ja09		77St22		80Lo06	80Lo06			Ref.

Additional data on this isotope can be found in [93Sh33, 77St23].

Levels of three high-spin bands built on states with E^*=0.0, 1115 and 3195 keV [05Ve09] are marked a,b,c.

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

Energy levels and branching ratios [92De38]. Part 2

$^{147}_{60}$Nd

E^*	$2J^\pi$	S_n^-	$T_{1/2}$ or	Ref.	Branching ratios in percentage				
				E_f^*:	0.0	49.9	128	215	315
[keV]		eval	Γ_{cm}	$2J_f^\pi$:	5^-	7^-	5^-	1^-	3^-
0.0[a]	5^-	0.08	10.98(1) d	82Ja09					
49.927(1)	7^-	1.6	2.5(5) ns	82Ja09	100				
127.919(1)	5^-	0.41	≤0.8 ns	82Ja09	29(2)	71(7)			
190.291(6)[a]	$\langle 9\rangle^-$	1.3	1.1(3) ns	82Ja09		100			
214.595(1)	1^-	0.07	5.8(8) ns	82Ja09	13(1)		87(8)		
314.673(2)	3^-	0.44		82Ja09	91(7)	1.8(2)	3.7(3)	3.2(3)	
463.622(3)	3^-			82Ja09	2.1(2)	15(1)	67(5)	17(1)	
516.709(6)	5^-			82Ja09	27(2)	30(2)	33(3)		9(1)
581.31(15)	7^-			82Ja09	31(3)			69(4)	
596[a]	$\langle 13^-\rangle$			05Ve09					
604.520(4)	1^-			82Ja09	68(5)			5(1)	
631.491(4)	3^-			82Ja09	46(3)		26(3)	3(1)	10(1)
656(2)				82Ja09					
749(5)									
769.18(2)	3^+			82Ja09	1.8(1)	2.7(1)	63(5)	26(2)	
792.56(2)	1,3						1.8(1)	63(5)	11(4)
809(2)									
859(2)	1^-,3^-			82Ja09					
904(2)									
934(2)	$\langle 13\rangle^+$			80Lo06					
942.06(9)					65(5)		6(1)		29(2)
957.26(10)	3^-			82Ja09	37(3)				21(11)
983(5)	5^-,7^-			82Ja09					
1029(2)									
1041.5(1)	1^-			82Ja09					45(4)
1111.9(1)	3^+			82Ja09				60(5)	40(3)
1115[b]	$\langle 15^+\rangle$			05Ve09					
1154(2)	5^-,7^-			82Ja09					
1190[a]	$\langle 17^-\rangle$			05Ve09					
1205(2)	5^-,7^-			80Lo06					
1215(2)									
1236(10)	$\langle 9^-,11^-\rangle$			80Lo06					
1264.2(1)	3^+			82Ja09	38(2)	12(1)	43(2)		2.1(4)
1293(6)	5^-,7^-			82Ja09					
1310.7(1)	3^+			77St22	5.5(3)	45(3)	11(1)	2.1(2)	14(1)
1333(2)	$\langle 9^-,11^-\rangle$								
1334(6)	1^-,3^-			82Ja09					
1350.5(1)	5^-,7^-			82Ja09		80(6)			6(1)
1353(2)	1^+			77St22					
1355	5^-,7^-								
1377(2)									
1386(6)	1^-,3^-			82Ja09					
1398.3(1)	3^+			77St22	6(1)				63(4)
1445.1(1)	1^+			77St22					35(3)
1464(2)	$\langle 11^-\rangle$			77St22					

(continued)

$^{147}_{60}$Nd

E^* [keV]	$2J^\pi$	S_n^- eval	$T_{1/2}$ or Γ_{cm}	Ref.	Branching ratios in percentage				
				E_f^*:	0.0	49.9	128	215	315
				$2J_f^\pi$:	5^-	7^-	5^-	1^-	3^-
1499[b]	$\langle 19^+ \rangle$			05Ve09					
1503(6)	$5^-,7^-$			82Ja09					
1509(2)	$9^-,11^-$			82Ja09					
1523.5(1)	$\langle 1^-,3^- \rangle$			82Ja09					68(5)
1544.7(1)							37(4)		63(4)
1550.0(1)	3^-			82Ja09					61(6)
1593.4(1)	$\langle 5 \rangle^+$			80Lo06	29(3)	31(2)	12(1)		
1610(6)	$\langle 5^-,7^- \rangle$			82Ja09					
1616.5(1)	$3^+,5^+$			80Lo06	17(2)				
1647(5)	$3^-,5^-$			82Ja09					
1671(10)	$\langle 9^-,11^- \rangle$			80Lo06					
1673(2)	1^+			77St22					
1674.5(1)					10(1)	12(1)	10(1)		9(1)
1694(6)	$5^-,7^-$			82Ja09					
1698	$\langle 9^-,11^- \rangle$			82Ja09					
1711(2)	$5^-,7^-$			82Ja09					
1733.2(1)	$5^-,7^-$			80Lo06	60(8)	40(4)			
1759(5)	$\langle 1^-,3^- \rangle$			82Ja09					
1770(2)									
1791(6)	$5^-,7^-$			82Ja09					
1817(6)	$5^-,7^-$			82Ja09					
1824(5)	$5^-,7^-$			80Lo06					
1841.0(1)	$\langle 1^-,3^- \rangle$				40(3)				20(2)
1846(5)	$3^+,5^+$			80Lo06					
1851(6)	$1^-,3^-$			82Ja09					
1854(10)	$\langle 5^+ \rangle$								
1881(6)	$5^-,7^-$			82Ja09					
1936(6)	$1^-,3^-$			82Ja09					
1943(5)	$5^-,7^-$			80Lo06					
1979.5(2)	$\langle 1^-,3^- \rangle$			82Ja09					
2010(6)	$1^-,3^-$			82Ja09					
2018(5)	1^+			80Lo06					
2030[b]	$\langle 23^+ \rangle$			05Ve09					
2038(5)	$3^+,5^+$			80Lo06					
2042(6)	$\langle 5^-,7^- \rangle$			82Ja09					
2068(5)									
2086(5)	$1^-,3^-$			80Lo06					
2110(6)	$\langle 5^-,7^- \rangle$			82Ja09					
2122.9(1)							36(4)		17(2)
2146(5)	$3^+,5^+$			80Lo06					
2164.5(2)					30(3)				
2177(5)	$3^+,5$			80Lo06					
2189(6)	$\langle 1^-,3^- \rangle$			82Ja09					
2204(5)	$5^-,7^-$			80Lo06					
2226(6)	$\langle 5^-,7^- \rangle$			82Ja09					

(continued) **$^{147}_{60}$Nd**

E^*	$2J^\pi$	S_n^-	$T_{1/2}$ or	Ref.	Branching ratios in percentage				
					E_f^*: 0.0	49.9	128	215	315
[keV]		eval	Γ_{cm}		$2J_f^\pi$: 5^-	7^-	5^-	1^-	3^-
2230(5)									
2250(5)	$3^+,5^+$			80Lo06					
2276(6)	$\langle 9^-,11^-\rangle$			82Ja09					
2281(10)				80Lo06					
2297(5)									
2301(6)	$1^-,3^-$			82Ja09					
2309.7(1)					13(1)				
2336.1(2)					41(3)		32(3)		
2350(5)				80Lo06					
2366(6)	$\langle 5^-,7^-\rangle$			82Ja09					
2373(5)									
2392(6)	$1^-,3^-$			82Ja09					
2398(5)	$3^+,5^+$			80Lo06					
2413(10)				80Lo06					
2423.6(3)	1^+			80Lo06				83(8)	17(5)
2425(6)	$\langle 1^-,3^-\rangle$			82Ja09					
2430(5)	$\langle 9^-,11^-\rangle$			80Lo06					
2445(6)	$5^-,7^-$			82Ja09					
2468(5)									
2484(5)	$3^+,5^+$			80Lo06					
2484(10)	$\langle 9^-,11^-\rangle$			80Lo06					
2486(6)	$5^-,7^-$			82Ja09					
2513(5)									
2524(6)	$\langle 1^-,3^-\rangle$			82Ja09					
2536(5)	$3^+,5^+$			80Lo06					
2541(10)	$\langle 9^-,11^-\rangle$			80Lo06					
2563(4)	$3^+,5^+$			80Lo06					
2591(6)	$1^-,3^-$			82Ja09					
2593(5)	1^+			80Lo06					
2622(5)	$1^+,3^+$			80Lo06					
2641(6)	$\langle 1^-,3^-\rangle$			82Ja09					
2653(5)	$3^+,5^+$			80Lo06					
2676(6)	$1^-,3^-$			82Ja09					
2689(5)	$3^+,5^+$			80Lo06					
2711[b]	$\langle 27^+\rangle$			05Ve09					
2713(10)									
2722(5)	$3^+,5^+$			80Lo06					
2724(6)	$\langle 1^-,3^-\rangle$			82Ja09					
2754(6)	$1^-,3^-$			82Ja09					
2787(5)									
2805(6)	$1^-,3^-$			82Ja09					
2866(5)	$5^-,7^-$			82Ja09					
2900(6)	$5^-,7^-$			82Ja09					
2928(6)	$\langle 1^-,3^-\rangle$			82Ja09					
3195[c]	$\langle 29^+\rangle$			05Ve09					

(continued) **$^{147}_{60}$Nd**

E^*	$2J^\pi$	S_n^-	$T_{1/2}$ or	Ref.	Branching ratios in percentage					
					E_f^*:	0.0	49.9	128	215	315
[keV]		eval	Γ_{cm}		$2J_f^\pi$:	5^-	7^-	5^-	1^-	3^-
3504[b]	$\langle 31^+ \rangle$			05Ve09						
3807[c]	$\langle 33^+ \rangle$			05Ve09						
4493[c]	$\langle 37^+ \rangle$			05Ve09						
5207[c]	$\langle 41^+ \rangle$			05Ve09						
				Ref.						
		80Lo06		Ref.						

Energy levels and branching ratios [92De38]. Part 3 **$^{147}_{60}$Nd**

E^*	$2J^\pi$		Branching ratios in percentage							
		E_f^*:	464	516.7	581.3	604.520	631.491	769.178	792.563	1310.71
[keV]		$2J_f^\pi$:	3^-	5^-	7^-	1^-	3^-	3^+	1,3	3^+
604.520(4)	1^-		27(3)							
631.491(4)	3^-		12(1)	4(1)						
769.18(2)	3^+		6.5(5)							
792.56(2)	1,3		24(2)							
957.26(10)	3^-		42(11)							
1041.5(1)	1^-					34(3)	21(2)			
1111.9(1)	3^+			<4.5						
1264.2(1)	3^+		5.2(5)							
1310.7(1)	3^+		2.1(2)	14(1)		5.5(3)				
1350.5(1)	5^-,7^-		14(1)							
1398.3(1)	3^+			31(3)						
1445.1(1)	1^+					65(5)				
1523.5(1)	$\langle 1^-,3^- \rangle$							20(2)	12(1)	
1550.0(1)	3^-			39(2)						
1593.4(1)	$\langle 5 \rangle^+$		28(2)							
1616.5(1)	3^+,5^+			83(6)						
1674.5(1)				8(1)				50(2)		
1841.0(1)	$\langle 1^-,3^- \rangle$		40(3)							
1979.5(2)	$\langle 1^-,3^- \rangle$					24(2)			76(6)	
2122.9(1)				24(2)		22(4)				
2164.5(2)						29(5)				41(4)
2309.7(1)			31(4)	56(4)						
2336.1(2)					27(4)					

Energy levels and branching ratios [00Bh03].

$^{148}_{60}$Nd

E^*	J^π	σ (t,p)	L	$\Gamma_{\gamma 0}$	$B(M1)$	$T_{1/2}$ or	Ref.	Branching ratios in percentage				
								E_f^*:	0.0	302	752	917	999
[keV]		arb.u	(p,t)	[meV]	[μ_N^2]	Γ_{cm}		J_f^π:	0^+	2^+	4^+	0^+	3^-
0.0	0^+	100	0			Stable	72Ya07						
301.70(2)	2^+	46	2			80(3) ps	72Ya07		100				
752.2(1)	4^+					6.9(3) ps				100			
916.8(1)	0^+	15	0			4.4(3) ps	72Ya07			100			
999.2(1)	3^-	10					72Ch11			88(11)	12(4)		
1023.1(1)	1^-								60(7)	40(7)			
1170.9(1)	2^+	30				1.4(1) ps	72Ch11		14(1)	84(6)	2(1)		
1242.1(1)	5^-					1.0(1) ps					100		
1248.81(8)	2^+					1.4(2) ps			67(4)	30(2)	3(2)		
1279.7(1)	6^+					2.9(2) ps					100		
1400(2)	$\langle 0^+,1^-\rangle$												
1432(2)	$\langle 0^+,1^-\rangle$												
1475(2)	$\langle 1^-\rangle$												
1511.5(1)	3^+									82(6)	18(2)		
1515.6													
1521.5(2)	1								69(6)			31(6)	
1577(2)	2^+												
≈1600	0^+		0				72Ya07						
1602(2)	4^+									x	x		x
1644.6	7^-					1.0(2) ps							
1645.6(3)									8(2)	43(6)			
1654(2)	$\langle 3^-\rangle$												
1659.91(6)	2^+									70(12)			18(2)
1683.4(4)	4^+	15					72Ch11			81(10)	7(2)		
1687.9(1)	$\langle 3\text{–}5\rangle^+$									8(3)	92(6)		
1725(2)	3^-	15					72Ch11						
1729.0(2)	3^+									55(8)	45(8)		
1778(2)	$\langle 3^-\rangle$												
1808.6(4)		11					72Ch11						
1824.4											29(10)		71(12)
1837(2)	$\langle 1^-\rangle$												
1856.3	8^+					1.4(2) ps							
1858.6(6)	$\langle 2^+,3\rangle$	10					72Ch11			54(4)	46(4)		
1887(2)	4^+	incl											
2034(2)	3^-	8					72Ch11						
2073.7	$2^{\langle+\rangle}$									26(2)		9(2)	
2098(2)	4^+	10					72Ch11						
2099	6^+										x		
2132.0	9^-												
2145(2)	4^+												
2149	6^+										x		
2153(1)	$\langle 1,2^+\rangle$					0.6(4) ps			100				
2182.2(4)										x			
2197(2)	5^-	5											
2236.1													

(continued) **$^{148}_{60}$Nd**

E^*	J^π	σ (t,p)	L	$\Gamma_{\gamma\circ}$	$B(M1)$	$T_{1/2}$ or	Ref.	Branching ratios in percentage				
								E_f^*: 0.0	302	752	917	999
[keV]		arb.u	(p,t)	[meV]	[μ_N^2]	Γ_{cm}		J_f^π: 0^+	2^+	4^+	0^+	3^-
2257(4)	$\langle 2^+ \rangle$	23										
2286	$\langle 3^- \rangle$											
2341(4)	3^-											
2376(1)	1			4.8(10)	0.09(2)		93Ma08	51	49(15)			
2388(4)	4^+											
2406.0(2)	2^+											
2431.3(2)	2^+								60(10)			
2472	$\langle 10^+ \rangle$											
2481(1)	1					0.14(4) ps		100				
2484(4)	3^-											
2545.0(7)	$\langle 1^- \rangle$					0.25(10) ps		x				
2590(4)	4^+											
2642(4)	4^+											
2676.7	$\langle 11^- \rangle$											
2682(4)	0^+											
2689(1)	1					86(22) fs		100				
2709(4)	4^+											
2726	8^+											
2730(1)	$\langle 1 \rangle$							44(12)	56			
2736(1)	1					0.12(7) ps		100				
2770(4)	4^+											
2795(1)	$\langle 1,2^+ \rangle$					0.25(10) ps		100				
2807(4)	3^-											
2839(1)	1					0.08(3) ps		100				
2845(1)	$\langle 1 \rangle$					0.27(18) ps		100				
2871(4)	$\langle 3^- \rangle$											
2913(4)	4^+											
2920(1)	1					0.08(3) ps		100				
2923(1)	1			8.0(21)	0.08(2)		93Ma08	54	46(14)			
2930.63(22)	$\langle 2^- \rangle$								36(9)			15(6)
2961(4)	4^+											
2982(1)	1					27(11) fs		100				
3002(1)	$\langle 1,2^+ \rangle$					0.12(6) ps		100				
3022(4)	4^+											
3036.7(9)									67(28)			
3068(4)	$\langle 3^- \rangle$											
3092(1)	1							48(4)	52			
3107	$\langle 12^+ \rangle$											
3113(1)	1					0.11(3) ps		100				
3129.9(9)												
3136(1)	1					54(15) fs		100				
3142(4)	4^+											
3176(1)	$\langle 1 \rangle$					57(23) fs		100				
3191(4)	4^+											
3191.0(10)	$\langle 1 \rangle$					0.13(4) ps		100				

(continued) **$^{148}_{60}$Nd**

E^*	J^π	σ (t,p)	L	$\Gamma_{\gamma\circ}$	$B(M1)$	$T_{1/2}$ or	Ref.	Branching ratios in percentage				
								E_f^*: 0.0	302	752	917	999
[keV]		arb.u	(p,t)	[meV]	$[\mu_N^2]$	Γ_{cm}		J_f^π: 0^+	2^+	4^+	0^+	3^-
3205(1)	$\langle 1,2^+\rangle$					0.16(9) ps		x				
3215(1)	1			16.6(31)	0.13(2)		93Ma08	76	24(9)			
3241(4)	4^+											
3265	$\langle 13^-\rangle$											
3265.0(10)	1					0.11(4) ps		100				
3281(1)	$\langle 1,2^+\rangle$					0.21(15) ps		100				
3341(1)	1			29.2(54)	0.20(4)		93Ma08	62	38(8)			
3370(1)	1			8.4(22)	0.06(2)		93Ma08	59	41(15)			
3378(1)	1							49(15)	51			
3405(1)	1			11.4(28)	0.07(2)		93Ma08	60	40(11)			
3415(1)	1							28(17)	72			
3490(1)	$\langle 1\rangle$					71(23) fs		100				
3528(1)	$\langle 1,2^+\rangle$			7.3(24)	0.04(1)		93Ma08	56	44(22)			
3545(1)	1			10.6(33)	0.06(2)		93Ma08	59	41(24)			
3597(1)	$\langle 1\rangle$			12.4(35)	0.07(2)		93Ma08	59	41(18)			
≈3650	2^+		2				72Ya07					
3689(1)	1					11(3) fs		100				
3717(1)	$\langle 1\rangle$			14.4(44)	0.07(2)		93Ma08	x	x			
3755(1)	$\langle 1\rangle$					0.07(3) ps		100				
3771(1)	$\langle 1\rangle$					57(24) fs		100				
3793(1)	1							100				
3805(1)	1					35(13) fs		100				
3826(1)	$\langle 1,2^+\rangle$					57(24) fs		100				
3861(1)	1			56.4(118)	0.25(5)		93Ma08	84	16(7)			
		72Ch11	72Ya07	93Ma08	93Ma08		Ref.					

Additional data on this isotope can be found in [00Ho25, 93Co03, 93Bu06, 90Pi04].
Abundance: 5.7(1) %.
Data for this isotope are considered in vol. LB I/18B.

Energy levels and branching ratios [00Bh03]. Part 2 **$^{148}_{60}$Nd**

E^*	J^π	Branching ratios in percentage									
	E_f^*:	1023	1171	1242.14	1248.81	1279.69	1511.51	1644.6	1659.91	1856.3	2132.0
[keV]	J_f^π:	1^-	2^+	5^-	2^+	6^+	3^+	7^-	2^+	8^+	9^-
1515.6		100									
1644.6	7^-			13(4)		87(4)					
1645.6(3)		49(12)									
1659.91(6)	2^+	12(2)									
1683.4(4)	4^+		12(7)								
1808.6(4)			32(11)				68(20)				
1856.3	8^+					72(4)		28(4)			
2073.7	$2^{\langle+\rangle}$	7(1)	23(3)		30(2)		6(1)				

(continued) **$^{148}_{60}$Nd**

E^*	J^π	Branching ratios in percentage									
	E_f^*:	1023	1171	1242.14	1248.81	1279.69	1511.51	1644.6	1659.91	1856.3	2132.0
[keV]	J_f^π:	1^-	2^+	5^-	2^+	6^+	3^+	7^-	2^+	8^+	9^-
2099	6^+					x					
2132.0	9^-							44(6)		56(6)	
2149	6^+			x		x		x			
2182.2(4)									x		
2236.1			100								
2406.0(2)	2^+				72(21)		28(4)				
2431.3(2)	2^+	4(4)	22(8)		8(2)		7(5)				
2472	$\langle 10^+ \rangle$									40(20)	60(20)
2545.0(7)	$\langle 1^- \rangle$	x									
2676.7	$\langle 11^- \rangle$										71(14)
2726	8^+					100					
2930.63(22)	$\langle 2^- \rangle$	26(8)					11(5)		12(3)		
3129.9(9)		100									

Energy levels and branching ratios [00Bh03]. Part 3 **$^{148}_{60}$Nd**

E^*	J^π	Branching ratios in percentage		
	E_f^*:	2236.1	2472	2676.7
[keV]	J_f^π:		$\langle 10^+ \rangle$	$\langle 11^- \rangle$
2676.7	$\langle 11^- \rangle$		29(14)	
3036.7(9)		33(28)		
3107	$\langle 12^+ \rangle$		100	
3265	$\langle 13^- \rangle$			100

Energy levels and branching ratios [85Sz01, 94Si18]. **$^{149}_{60}$Nd**

E^*	$2J^\pi$	L	$d\sigma/d\Omega$	S_N	L	$d\sigma/d\Omega$	S_N	$T_{1/2}$ or	Ref.	Branching ratios in percentage				
										E_f^*: 0.0	108	138	165	258
[keV]		(d,t)	μb/sr	(d,t)	(τ,α)	μb/sr	(τ,α)	Γ_{cm}		$2J_f^\pi$: 5^-	7^-	5^-	1^-,3^-	3^-
0.0	5^-	3	73	0.06	3	≈1	0.04	1.728(1) h	81Ha39					
108.521(1)	7^-	3	676	0.36	3	10	0.40	<0.7 ns	81Ha39	100				
138.447(1)	5^-	3	265	0.22	⟨3⟩	1**		<0.6 ns	80Lo06	100				
165.087(1)	1^-,3^-	1	768	0.12				<0.5 ns	81Ha39	100				
192(2)	⟨9^-,11^-⟩	⟨5⟩	20	0.10					81Ha39					
220.706(2)	9^-	5	90	1.08	5	27	1.6	2.1(5) ns	81Ha39	29(4)	71(21)			
258.330(1)	3^-	1	216	0.04				<0.7 ns	81Ha39	85(9)	1.1(2)	8.4(9)	5.0(5)	
270.859(2)	⟨7^-,9^+⟩	3,4	267	0.26	⟨3⟩	5**		5.1(3) ns	81Ha39		100			
285.481(1)	1^-	1	340	0.06				<0.6 ns	81Ha39	9(1)		3.8(4)	87(9)	
316.230(3)	⟨5^-,7^-⟩	3	717	0.66		6**		<0.8 ns	81Ha39	46(5)	45(5)	6	3.3(3)	

(continued)

$^{149}_{60}$Nd

E^*	$2J^\pi$	L	$d\sigma/d\Omega$	S_N	L	$d\sigma/d\Omega$	S_N	$T_{1/2}$ or	Ref.	Branching ratios in percentage				
										E_f^*:	0.0	108	138	165	258
[keV]		(d,t)	μb/sr	(d,t)	(τ,α)	μb/sr	(τ,α)	Γ_{cm}		$2J_f^\pi$:	5^-	7^-	5^-	$1^-,3^-$	3^-
321.144(2)	$\langle 5^-,7^-\rangle$							<0.9 ns			32(3)	14(2)	25(3)	29(3)	
332.936(5)	5^+	2	192	0.10				<0.4 ns	81Ha39		93(9)	5.8(6)	1.5(2)		
340.6(10)	$11^+,13^+$	6	42**		6	98	1.5		80Lo06						
365.930(1)	3^-	1	992	0.16	$\langle 1\rangle$	1**		<0.5 ns	81Ha39		50(5)	2.8(3)	25(3)	4.9(5)	
403.728(1)	1^-	1	257	0.04					81Ha39		17(3)		21(2)	50(5)	10(1)
447(2)	$5^-,7^-$	3	242	0.14	3	6	0.24		81Ha39						
459.529(4)	$\langle 3^-,5^-\rangle$		15**						80Lo06		34(3)	21(3)	<3	20(2)	
474.56(6)	$\langle 3,5,7\rangle$										67(4)	33(3)			
482.672(1)	1^+	0	600	0.04				<0.8 ns	81Ha39					6(1)	15(2)
517.44(4)	$\langle 3,5,7\rangle$		117			6			81Ha39		88(9)	12(2)			
548.656(6)	3^-	1	881	0.16	$\langle 1\rangle$	0.4**		<0.5 ns	81Ha39		5(1)		24(3)	24(3)	
571.440(8)	3^+	2	106						81Ha39				31(3)	52(5)	9(1)
591(2)	$\langle 5^+\rangle$	2	64	0.08					81Ha39						
591(2)	$\langle 9^-,11^-\rangle$				5	14	0.33								
613(2)			4**						80Lo06						
647(2)	$\langle 9,11\rangle$	5	222	1.20	5	92	2.0		81Ha39						
689(2)			132						81Ha39						
705.128(25)	$\langle 3,5\rangle$												27(3)		
709.044(18)	$\langle 3,5^-\rangle$	2	1526	0.90	2	18	1.4		81Ha39				34(3)		31(3)
741.06(8)	3^+	2	618	0.44	2	12	0.88		81Ha39					82(8)	
796(2)	1^+	0	198	0.06					81Ha39						
804(2)			43**						80Lo06						
814.40(3)	1^+	0	1586	0.30		20			81Ha39				57(5)	5(1)	
836(2)			152						81Ha39						
861(2)			80			6			81Ha39						
881.36(7)	3^+	2	360	0.26	2	4	0.81		81Ha39				40(5)	10(5)	51(7)
913.58(8)	$\langle 1,3\rangle$		55						81Ha39						
920.65(7)	$\langle 3\text{–}7^-\rangle$					1.7**							25(3)	16(2)	35(2)
956(2)			435			1.7**			81Ha39						
963(2)			35**						80Lo06						
985.15(10)	1^+	0	3249	0.76	$\langle 0\rangle$	10			81Ha39					x	
1025(2)	$1^-,3^-$	1	195	0.04					81Ha39						
1045(2)	$3^+,5^+$	2	230	0.16		4**			81Ha39						
1067(2)			55						81Ha39						
1081(2)			35						81Ha39						
1129(2)	$3^+,5^+$	2	347	0.18		4**			73Bu02						
1149(2)	$3^+,5^+$	2	84	0.08	[5]				81Ha39						
1168(4)			7**						80Lo06						
1178(2)			53						81Ha39						
1189(4)			12**						80Lo06						
1220(2)			20						81Ha39						
1231(2)			134						81Ha39						
1245(2)			85						81Ha39						
1282(2)	1^-	1	85	0.06					81Ha39						
1311(4)			5**						73Bu02						

(continued) **$^{149}_{60}$Nd**

E^*	$2J^\pi$	L	$d\sigma/d\Omega$	S_N	L	$d\sigma/d\Omega$	S_N	$T_{1/2}$ or	Ref.	Branching ratios in percentage					
										E_f^*:	0.0	108	138	165	258
[keV]		(d,t)	μb/sr	(d,t)	(τ,α)	μb/sr	(τ,α)	Γ_{cm}		$2J_f^\pi$:	5^-	7^-	5^-	$1^-,3^-$	3^-
1359(2)	1^+	0	122	0.02					81Ha39						
1465(2)			40						81Ha39						
1481(2)			70						81Ha39						
1505(2)	$1^-,3^-$	1	244	0.08					81Ha39						
1531(2)	$1^-,3^-$	1	116	0.04					81Ha39						
1553(2)	$1^-,3^-$	1	110	0.04		13			81Ha39						
1622(2)	$9^-,11^-$	5	40	0.72	5	34	0.57		81Ha39						
1709(2)	$9^-,11^-$	5	86	1.1	5	44	0.77		81Ha39						
1718(5)	$3^+,5^+$	2	103*	0.09					81Ha39						
1736(5)	$3^+,5^+$	2	107*	0.10					81Ha39						
1785(5)	$3^+,5^+$	2	340*	0.32					81Ha39						
1797(2)	$3^+,5^+$	2		0.24		9			81Ha39						
1817(5)			98*						81Ha39						
1858(5)	$3^+,5^+$	2	326*	0.31					81Ha39						
1882(5)			103*			8									
1909(5)			78*												
1957(5)	$3^+,5^+$	2	75*	0.08					81Ha39						
1980(5)	$3^+,5^+$	2	179*	0.16		10			81Ha39						
2029(5)	$3^+,5^+$	2	305*	0.26					81Ha39						
2055(5)			135*						81Ha39						
2078(5)	$3^+,5^+$	2	333*	0.34					81Ha39						
2102(5)			162*												
2121(5)			79*												
2151(5)			78*												
2227(5)	$3^+,5^+$	2	174*	0.19					81Ha39						
2266(5)			113*						81Ha39						
2293(5)	$3^+,5^+$	2	569*	0.54					81Ha39						
2321(10)						16			80Lo06						
		81Ha39	81Ha39	81Ha39		80Lo06	80Lo06		Ref.						
		04Si16	04Si16	04Si16					Ref.						

* additional data from [73Bu02, 04Si16]
** additional data from [80Lo06, 04Si16, 73Bu02]

Energy levels and branching ratios [85Sz01, 94Si18]. Part 2 **$^{149}_{60}$Nd**

E^*	$2J^\pi$	Branching ratios in percentage										
		E_f^*:	271	285	316	321.1	332.9	365.9	403.7	459.5	482.7	548.7
[keV]		$2J_f^\pi$:	$\langle 7^-,9^+\rangle$	1^-	$\langle 5^-,7^-\rangle$	$\langle 5^-,7^-\rangle$	5^+	3^-	1^-	$\langle 3^-,5^-\rangle$	1^+	3^-
340.6(10)	$11^+,13^+$		100									
365.930(1)	3^-			8(1)			≈9					
403.728(1)	1^-			2.9(3)								
459.529(4)	$\langle 3^-,5^-\rangle$			4(1)	21(2)							

(continued) **$^{149}_{60}$Nd**

E^*	$2J^\pi$	Branching ratios in percentage										
		E^*_f:	271	285	316	321.1	332.9	365.9	403.7	459.5	482.7	548.7
[keV]		$2J^\pi_f$:	$\langle 7^-,9^+\rangle$	1^-	$\langle 5^-,7^-\rangle$	$\langle 5^-,7^-\rangle$	5^+	3^-	1^-	$\langle 3^-,5^-\rangle$	1^+	3^-
482.672(1)	1^+			38(4)				35(3)	6(1)			
548.656(6)	3^-					33(5)	14(2)					
571.440(8)	3^+						7(1)				1.1(2)	
705.128(25)	$\langle 3,5\rangle$				40(4)					33(4)		
709.044(18)	$\langle 3,5^-\rangle$					12(1)	9(1)		12(1)	3(1)		
741.06(8)	3^+			18(2)								
814.40(3)	1^+			30(3)						9(1)		
913.58(8)	$\langle 1,3\rangle$										100	
920.65(7)	$\langle 3\text{–}7^-\rangle$				23(2)							
985.15(10)	1^+											x

Energy levels and branching ratios [95De28]. **$^{150}_{60}$Nd**

E^*	J^π	L	σ (t,p)	J^π	S_N	σ (d,^{6}Li)	γ^2_α	$\Gamma_\circ$	$B(M1)$	S_α	σ (d,^{6}Li)	γ^2_α	Ref.
[keV]		(t,p)	arb.u	(d,^{6}Li)	*rel.*	μb/sr	[keV]	[meV]	[μ^2_N]	(d,^{6}Li)	μb/sr	[keV]	
0	0^+	0	100	0+	1.00	0.143(18)	0.062			0.009	0.42(10)	0.062	72Ch11
130.21(8)	2^+	$\langle 2\rangle$	55	2+	1.77	0.180(21)	0.101			0.013	0.30(8)	0.10	77Mi02
381.45(11)	4^+			4+	2.17	0.126(17)	0.100						82Ja04
675.37(17)	0^+	0	128	0+	0.14	0.023(7)	0.008						72Ch11
720.4(5)	6^+			6+	2.84	0.054(11)	0.093						82Ja04
850.66(12)	2^+	$\langle 2\rangle$	53	2+	0.42	0.035(9)	0.022						72Ch11
852.94(10)	1^-					incl		3.3(14)	0.161(63)				
934.86(12)	3^-			3–	0.44	0.037(9)	0.017						82Ja04
1061.95(10)	2^+			2+	0.30	0.026(8)	0.015						82Ja04
1129.0(5)	5^-					0.080(14)							82Ja04
1129.7(11)	8^+			8+		incl							82Ja04
1137.8	4^+			4+		incl							82Ja04
1182.31(18)	≤ 2												
1200.63(15)	$3^{\langle +\rangle}$												
1250													
1283.91(14)	$\langle 1^-\rangle$					0.014(6)							82Ja04
1307.5	$\langle 3,4\rangle$												
1318(2)	$\langle 1^-\rangle$												
1353.4	4^+			4+		0.070(13)							82Ja04
1426.7	$\langle 2^+\rangle$												
1432.6	$\langle 7^-\rangle$												
1435.16(17)	4^+												
1482(6)	3^-					0.042(10)							82Ja04
1518.5	3^-												
1541.2	$\langle 6^+\rangle$												
1545.19(22)	3^-												

(continued) **$^{150}_{60}$Nd**

E^* [keV]	J^π	L (t,p)	σ (t,p) arb.u	J^π (d,^{6}Li)	S_N *rel.*	σ (d,^{6}Li) μb/sr	γ^2_α [keV]	$\Gamma_\circ$ [meV]	$B(M1)$ [μ^2_N]	σ (d,^{6}Li) μb/sr	γ^2_α [keV]	Ref.
1579.8	3^-											
1599	10^+											
1604(2)						0.063(12)						82Ja04
1648(2)	4^+											
1687(2)	3^-											
1714.3(4)												
1738.3(4)	0^+											
1754(2)	$\langle 4^+ \rangle$											
1782(2)	4^+											
1802(2)	$\langle 5^- \rangle$											
1830(2)	$\langle 5^- \rangle$											
1866(2)	3^-											
1885(2)	4^+											
1906(2)	4^+											
1911.5(4)												
1921(2)	4^+											
1967.5(4)												
1988(2)	3^-											
1994.20(18)												
2009.26(12)	$\langle 1^-,2,3^- \rangle$											
2033(2)	4^+											
2050(25)	$\langle 0^+ \rangle$			$\langle 0+ \rangle$	1.01	0.077(13)	0.048					82Ja04
2069.16(13)	2^+											
2077(2)	3^-											
2090(2)	3^-											
2109(2)	3^-											
2119	$\langle 12^+ \rangle$											
2129(2)	4^+											
2174(2)	4^+											
2194(2)	2^+											
2206(4)	4^+											
2223(4)	2^+			$\langle 2+ \rangle$	2.70	0.182(21)	0.116					82Ja04
2242(4)	2^+											
2269(1)	1							2.8(13)				
2271(4)	$\langle 3^- \rangle$											
2328(4)	3^-											
2384(4)	2^+											
2408(1)	1							1.7(8)				
2412(4)	$\langle 3^- \rangle$											
2414(1)	1^-							14.9(20)	3.0(4)*			92Fr02
2441(4)	4^+											
2458	1							5.6(11)				
2475(4)	4^+			$\langle 4+ \rangle$	$\langle 2.6 \rangle$	0.208(22)	$\langle 0.09 \rangle$					82Ja04
2496.2(10)	$\langle 1^- \rangle$							7.2(16)	0.013(1)*			
2528(4)	4^+											

(continued) **$^{150}_{60}$Nd**

E^* [keV]	J^π	L (t,p)	σ (t,p) arb.u	J^π (d,^{6}Li)	S_N *rel.*	σ (d,^{6}Li) μb/sr	γ^2_α [keV]	$\Gamma_\circ$ [meV]	$B(M1)$ [μ^2_N]	S_α (d,^{6}Li)	σ (d,^{6}Li) μb/sr	γ^2_α [keV]	Ref.
2539.2(10)													
2563(4)	4^+												
2571(1)	$\langle 1\rangle$							3.4(12)	0.006(2)*				
2588(1)	$1,2^+$							1.5(8)					
2596(4)	5^-												
2620(25)						0.075(13)							82Ja04
2638(4)	4^+												
2652(4)	4^+												
2681(4)	4^+												
2681(4)	1^+							7.0(14)	0.09(2)				93Ma08
2682.5	$\langle 14^+\rangle$												
2707(4)	4^+												
2737(4)	4^+												
2755(4)	4^+												
2789(4)	4^+												
2818(4)	3^-												
2836(4)	3^-												
2837.2(10)													
2880(4)	3^-												
2895(4)	4^+												
2895(1)	1^+							12.1(17)	0.13(2)				92Fr02
2920(1)	$2^+,1$							2.4					
2925(4)	4^+												
2961(4)	2^+												
2993(4)	$\langle 1\rangle$							67.0(73)	0.65(7)				92Fr02
3039(4)	4^+												
3058(1)	1^+							38.2(43)	0.35(4)				92Fr02
3069(4)	3^-												
3085(4)	4^+												
3096(1)	1^+							14.9(30)	0.13(3)				92Fr02
3103(1)	1^+							14.4(22)	0.13(2)				92Fr02
3112(4)	2^+												
3157(4)	$\langle 2^+\rangle$												
3160(1)	$1,2^+$							2.3(19)					
3180(4)	$\langle 2^+\rangle$												
3186(1)	$1,2^+$							3.2(14)					
3221(4)	$\langle 2^+\rangle$							7.5(18)					
3244(1)	$2^+,1$							2.1(9)					
3252(4)	4^+												
3301(4)	4^+												
3315(4)	3^-												
3327	1							10.1(22)					
3340(4)	$\langle 4^+\rangle$												
3342(1)	1							11.8(21)	0.08(1)				93Ma08
3375(1)	$1,2^+$												

(continued) **$^{150}_{60}$Nd**

E^* [keV]	J^π	L (t,p)	σ (t,p) arb.u	J^π (d,^{6}Li)	S_N *rel.*	σ (d,^{6}Li) μb/sr	γ^2_α [keV]	$\Gamma_\circ$ [meV]	$B(M1)$ [μ^2_N]	S_α (d,^{6}Li)	σ (d,^{6}Li) μb/sr	γ^2_α [keV]	Ref.
3418(1)	1							14(3)					
3423(1)	1,2$^+$							8(4)					
3553(1)	$\langle 2^+ \rangle$							8.3(22)					
3582(1)	2$^+$,1							4.5(18)					
3590(1)	1,2$^+$							4.0(23)					
3606(1)	1							8(3)					
3642(1)	1							9.2(27)	0.05(1)				93Ma08
3653(1)	1							28(5)					
3672(1)	1							19(5)					
3698(1)	2$^+$,1							3.0(13)					
3706(1)	1							16(5)	0.009(3)*				
3711(1)	1							18.9(42)	0.10(2)				93Ma08
3720(1)	1							10(4)	0.005(2)*				
3737(1)	2$^+$,1							2.3(14)					
3751(1)	1							24.4(47)	0.12(2)				93Ma08
3768(1)	1							9(3)					
3860(1)	1							7(3)					
3888(1)	1,2$^+$												
		72Ch11	72Ch11		82Ja04	82Ja04	82Ja04	92Fr02	92Fr02	77Mi02	77Mi02	77Mi02	Ref.
								93Ma08	93Ma08				Ref.

Additional data on this isotope can be found in [04Zi02, 02Kr09, 00Ho25, 01Ca36, 93Sa06, 93Bu06, 93Fr06, 90Pi14, 90Pi04, 90Zi05].

Abundance: 5.6(2) %.

* $B(E1)$ in units $10^{-3}ef$ from [92Fr02].

For the levels at 2895, 2993 and 3058 keV ratios Γ^2_o/Γ=8.4(11), 45(5) and 27(3) meV, respectively, were obtained by nuclear resonance fluorescence (NRF) method [90He03].

For the level at E^*=853 keV $\Gamma^{\rm red}_\circ$=5.3(22) meV and $B(E1)$=15(6) in units $10^{-3}e^2fm^2$ were given in [91Zi01].

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

Energy levels and branching ratios [95De28]. Part 2 **$^{150}_{60}$Nd**

E^* [keV]	J^π (d,^{6}Li)	$T_{1/2}$ or $\Gamma_{\rm cm}$	Ref.	$E^*_{\rm f}$: $J^\pi_{\rm f}$:	Branching ratios in percentage 0 0+	130.2 2+	381.4 4+	675.4 0+	720.4 6+
0	0+	0.79(7)·10^{19} yr	72Ch11						
130.21(8)	2+	1.492(15) ns	77Mi02		100				
381.45(11)	4+	63(3) ps	82Ja04			100			
675.37(17)	0+	5.5(2) ps	72Ch11			100			
720.4(5)	6+	12.6(7) ps	82Ja04				100		
850.66(12)	2+	4.6(7) ps	72Ch11		7(1)	74	17.2(6)	1.0(7)	
852.94(10)					47(3)	53(3)			

(continued) **$^{150}_{60}$Nd**

E^*	J^π	$T_{1/2}$ or	Ref.	Branching ratios in percentage				
			E_f^*:	0	130.2	381.4	675.4	720.4
[keV]	(d,^{6}Li)	Γ_{cm}	J_f^π:	0+	2+	4+	0+	6+
934.86(12)	3–		82Ja04		72(4)	28(2)		
1061.95(10)	2+	1.47(6) ps	82Ja04	49(2)	49(2)	3(2)		
1129.0(5)			82Ja04			x		x
1129.7(11)	8+	4.4(2) ps	82Ja04					100
1137.8	4+		82Ja04		x	x		x
1182.31(18)		<0.5 ns						
1200.63(15)					83(8)	17(4)		
1250								
1283.91(14)		<0.5 ns	82Ja04					
1307.5								
1318(2)								
1353.4	4+		82Ja04		x	x		
1426.7								
1432.6								x
1435.16(17)								
1482(6)			82Ja04					
1518.5								
1541.2						x		
1545.19(22)					100			
1579.8								
1599								
1604(2)			82Ja04					
1648(2)								
1687(2)								
1714.3(4)					100			
1738.3(4)					100			
1754(2)								
1782(2)								
1802(2)								
1830(2)								
1866(2)								
1885(2)								
1906(2)								
1911.5(4)					100			
1921(2)								
1967.5(4)					100			
1988(2)								
1994.20(18)								
2009.26(12)					3.9(6)			
2033(2)								
2050(25)	⟨0+⟩		82Ja04					
2069.16(13)					10(1)			
2077(2)								
2090(2)								
2109(2)								

(continued) **$^{150}_{60}$Nd**

E^*	J^π	$T_{1/2}$ or	Ref.	Branching ratios in percentage					
				E_f^*:	0	130.2	381.4	675.4	720.4
[keV]	(d,^{6}Li)	Γ_{cm}		J_f^π:	0+	2+	4+	0+	6+
2119									
2129(2)									
2174(2)									
2194(2)									
2206(4)									
2223(4)	⟨2+⟩		82Ja04						
2242(4)									
2269(1)		6(3) meV							
2271(4)									
2328(4)									
2384(4)									
2408(1)		1.7(8) meV							
2412(4)									
2414(1)		26(4) meV	92Fr02						
2441(4)									
2458		5.6(11) meV							
2475(4)	⟨4+⟩		82Ja04						
2496.2(10)		18(4) meV				100			
2528(4)									
2539.2(10)						100			
2563(4)									
2571(1)		8(3) meV							
2588(1)		1.5(8) meV							
2596(4)									
2620(25)			82Ja04						
2638(4)									
2652(4)									
2681(4)									
2681(4)		12(3) meV	93Ma08						
2682.5									
2707(4)									
2737(4)									
2755(4)									
2789(4)									
2818(4)									
2836(4)									
2837.2(10)						100			
2880(4)									
2895(4)									
2895(1)		17(3) meV	92Fr02						
2920(1)		2.4(9) meV							
2925(4)									
2961(4)									
2993(4)		100(11) meV	92Fr02						
3039(4)									

(continued) **$^{150}_{60}$Nd**

E^*	J^π	$T_{1/2}$ or	Ref.	Branching ratios in percentage					
				E_f^*:	0	130.2	381.4	675.4	720.4
[keV]	(d,^{6}Li)	Γ_{cm}		J_f^π:	0+	2+	4+	0+	6+
3058(1)		54(6) meV	92Fr02						
3069(4)									
3085(4)									
3096(1)		27(6) meV	92Fr02						
3103(1)		23(4) meV	92Fr02						
3112(4)									
3157(4)									
3160(1)		2.3(19) meV							
3180(4)									
3186(1)		3.2(14) meV							
3221(4)		7.5(18) meV							
3244(1)		2.1(9) meV							
3252(4)									
3301(4)									
3315(4)									
3327		10.1(22) meV							
3340(4)									
3342(1)		15(3) meV	93Ma08						
3375(1)		2.1(17) meV							
3418(1)		28(6) meV							
3423(1)		8(4) meV							
3553(1)									
3582(1)		4.5(18) meV							
3590(1)									
3606(1)		8(3) meV							
3642(1)		17(6) meV	93Ma08						
3653(1)		59(12) meV							
3672(1)		19(5) meV							
3698(1)		3.0(13) meV							
3706(1)		43(15) meV							
3711(1)		33(8) meV	93Ma08						
3720(1)		25(10) meV							
3737(1)		2.3(14) meV							
3751(1)		42(9) meV	93Ma08						
3768(1)		9(3) meV							
3860(1)		7(3) meV							
3888(1)		5.6(23) meV							
			Ref.						
			Ref.						

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

$^{150}_{60}$Nd

E^*	J^π		Branching ratios in percentage								
		E_f^*:	850.66	852.94	934.86	1061.95	1129.7	1200.63	1435.16	1599	2119
[keV]	(d,^{6}Li)	J_f^π:	2+	1–	3–	2+	8+	3⟨+⟩	4+	10+	⟨12+⟩
1137.8	4+		x		x						
1182.31(18)				100							
1283.91(14)			23(2)	45(2)	32(2)						
1435.16(17)						90(9)		10(2)			
1599							100				
1994.20(18)				100							
2009.26(12)			24(2)	10(2)	40(2)	23(1)					
2069.16(13)			18(2)	35(2)		30(2)			8		
2119										x	
2682.5											x

Energy levels and branching ratios [97Si03].

$^{151}_{60}$Nd

E^*	$2J^\pi$	L	I_p	$T_{1/2}$ or	Ref.		Branching ratios in percentage				
						E_f^*:	0.0	22.4	57.7	75.9	0.0+X
[keV]		(d,p)	*rel.*	Γ_{cm}		$2J_f^\pi$:	3^+	$\langle 5\rangle^+$	$\langle 3\rangle^-$	$\langle 7\rangle^+$	$\langle 9^+\rangle$
0.0	3^+	2	x	12.44(7) m	67Ne08						
22.4506(10)	$\langle 5\rangle^+$	2			94Sh37		100				
57.6741(4)	$\langle 3\rangle^-$		x		67Ne08		85	14.7(14)			
75.857(4)	$\langle 7\rangle^+$						12(2)	88(8)			
95.9(10)	$\langle 9^+\rangle$	>2	x								
0.0+X	$\langle 9^+\rangle$										
105.7524(8)	5^-	3	x		94Sh37		61(3)	36(3)		2.6(4)	
177.714(2)	$\langle 7^-\rangle$		x								
189.054(1)	$\langle 3\rangle^-$	1	x	<0.7 ns	94Sh37		68(3)	22.8(12)	7.0(5)		
149.4+X	$\langle 13^+\rangle$	6,5									100
249.568(2)	$\langle 5^-\rangle$	3					40(3)	23(4)	10(1)	15(1)	
258.9(10)	$\langle 13^+\rangle$		x								
335.72(4)	$\langle 7\rangle^-$		x					58(5)		10(2)	
404.8(10)			x								
443.62(11)	$\langle 9\rangle^-$		x								
376.5+X	$\langle 17^+\rangle$										
495.305(4)	$\langle 1\rangle^-$		x				61(4)		30(2)		
506.953(5)	$\langle 3\rangle^-$		x				15(1)	61(3)	8(1)		
531.85(4)	$\langle 5^-,7^-\rangle$		x						100		
542.80(2)	$\langle 5^-\rangle$		x				100				
581.0(2)			x						100		
599.22(7)	$\langle 5^+\rangle$		x								
622.53(4)	$5^-,7^-$		x								
626.68(10)							100				
634.8(15)	$5^-,7^-$		x								
673.90(3)	$1,3,5^+$										

(continued) **$^{151}_{60}$Nd**

E^*	$2J^\pi$	L	I_p	$T_{1/2}$ or	Ref.	Branching ratios in percentage				
						E_f^*: 0.0	22.4	57.7	75.9	0.0+X
[keV]		(d,p)	*rel.*	Γ_{cm}		$2J_f^\pi$: 3^+	$\langle 5\rangle^+$	$\langle 3\rangle^-$	$\langle 7\rangle^+$	$\langle 9^+\rangle$
685.30(6)	$\langle 3,5\rangle$					20.2(10)	59(3)	5.5(8)		
703(3)			x							
725(3)			x							
736.30(2)	$\langle 5,7^-\rangle$		x				[100]			
752.4(15)			x							
766(3)			x							
684.4+X	$\langle 21^+\rangle$									
846.65(2)	$1^-,3^-$		x			36(7)				
877.23(9)	$\langle 1^-$–$5\rangle$					65(5)		15(3)		
880.10(3)	$\langle 1^+,3\rangle$					60(4)	2.7(8)	2.1(6)		
892.97(3)	$1^-,3^-$		x			7(1)				
942.57(10)	$\langle 1$–$5\rangle$		x			40(18)				
949.34(8)	$\langle 1^-$–$5^-\rangle$		x					21(7)		
964.09(8)	$1,3,5^+$		x				75(9)			
986.0(15)	$1,3,5^+$									
995.9(20)			x							
1034.0(20)	$5^-,7^-$		x							
1065.72(2)										
1079(7)			x							
1104.1(2)					94Sh37	100				
1110.0(15)			x		67Ne08					
1130.68(7)	$1,3,5^+$							21(2)		
1150.70(6)	$1,3,5^+$		x		67Ne08	26(3)			74(7)	
1068.2+X	$\langle 25^+\rangle$									
1183.96(14)	$1,3,5^+$									
1212.17(9)	$1,3,5^+$									
1220.3(3)	$1,3,5^+$		x		67Ne08					
1229.84(15)	$\langle 1,3,5\rangle$				94Sh37	12(8)		31(3)		
1256.48(6)						72(22)				
1380(4)										
1409.6(15)			x		67Ne08					
1436.82(8)						100				
1449.6(2)	$\langle 1^-$–$5\rangle$				94Sh37	42(7)		13(4)		
1474(6)			x		67Ne08					
1512.1(3)					94Sh37	100				
1519(7)			x		67Ne08					
1523.73(17)	$\langle 1,3,5\rangle$				94Sh37	37(5)		63(10)		
1559(7)			x		67Ne08					
1575.57(8)	$1,3,5^+$									
1616(8)			x		67Ne08					
1520.6+X	$\langle 29^+\rangle$									
1638.2(1)	X^-		x		94Sh37	100				
1672(5)			x							
1697(8)			x							
1745.85(8)			x							

(continued) **$^{151}_{60}$Nd**

E^*	$2J^\pi$	L	I_p	$T_{1/2}$ or	Ref.	Branching ratios in percentage					
						E_f^*:	0.0	22.4	57.7	75.9	0.0+X
[keV]		(d,p)	*rel.*	Γ_{cm}		$2J_f^\pi$:	3^+	$\langle 5\rangle^+$	$\langle 3\rangle^-$	$\langle 7\rangle^+$	$\langle 9^+\rangle$
1777(7)			x								
1792.13(13)	$1,3,5^+$										
1813(5)			x								
1836.27(8)			x								
1844.28(18)	$\langle 1^-,3,5\rangle$				94Sh37		44(6)				
1878.09(15)	X^-		x		94Sh37		68(9)		23(4)		
1907.9(2)					94Sh37				66(21)		
1918(4)			x								
1951.94(11)			x								
2001(7)			x								
2024(5)			x								
2040(7)			x								
2080(4)			x		67Ne08						
2094.31(11)	$1,3,5^+$										
2129(5)			x		67Ne08						
2033.2+X	$\langle 33^+\rangle$										
2160(5)			x		67Ne08						
2182(8)			x		67Ne08						
2205(6)			x		67Ne08						
2235(6)			x		67Ne08						
2312.5(2)	$\langle 1^-,3,5\rangle$				94Sh37		18(9)		52(16)		
2341.4(2)	$\langle 1^-,3,5\rangle$				94Sh37		20(12)		54(14)		
2429.8(3)	X^-				94Sh37				72(24)		
2600.8+X	$\langle 37^+\rangle$										
3220.8+X	$\langle 41^+\rangle$										

Additional data on this isotope can be found in [03Ko13, 94Sh37].

Energy levels and branching ratios [97Si03]. Part 2 **$^{151}_{60}$Nd**

E^*	$2J^\pi$	Branching ratios in percentage										
	E_f^*:	105.7	177.7	189.0	149+X	249.6	335.7	376+X	495.3	506.9	531.8
[keV]	$2J_f^\pi$:	5^-	$\langle 7^-\rangle$	$\langle 3\rangle^-$	$\langle 13^+\rangle$	$\langle 5^-\rangle$	$\langle 7\rangle^-$	$\langle 17^+\rangle$	$\langle 1\rangle^-$	$\langle 3\rangle^-$	$\langle 5^-,7^-\rangle$
189.054(1)	$\langle 3\rangle^-$	1.8(10)									
249.568(2)	$\langle 5^-\rangle$	1(1)		11(1)							
335.72(4)	$\langle 7\rangle^-$	≈6		<4		26(5)					
443.62(11)	$\langle 9\rangle^-$		≈33			x	67				
376.5+X	$\langle 17^+\rangle$				100						
495.305(4)	$\langle 1\rangle^-$	1.5(1)		7.0(11)							
506.953(5)	$\langle 3\rangle^-$	8.3(9)		5.7(7)		2.2(2)					
531.85(4)	$\langle 5^-,7^-\rangle$			x			<26				
599.22(7)	$\langle 5^+\rangle$	[48]	[52]								
622.53(4)	$5^-,7^-$					50(25)					50(7)

(continued) **$^{151}_{60}$Nd**

E^*	$2J^\pi$		Branching ratios in percentage									
		E^*_f:	105.7	177.7	189.0	149+X	249.6	335.7	376+X	495.3	506.9	531.8
[keV]		$2J^\pi_f$:	5^-	$\langle 7^-\rangle$	$\langle 3\rangle^-$	$\langle 13^+\rangle$	$\langle 5^-\rangle$	$\langle 7\rangle^-$	$\langle 17^+\rangle$	$\langle 1\rangle^-$	$\langle 3\rangle^-$	$\langle 5^-,7^-\rangle$
685.30(6)	$\langle 3,5\rangle$		14(2)		2.1(6)							
684.4+X	$\langle 21^+\rangle$								100			
846.65(2)	$1^-,3^-$			<33	60(5)							
877.23(9)	$\langle 1^-–5\rangle$		8(6)		13(2)							
880.10(3)	$\langle 1^+,3\rangle$									22(2)	11(1)	
892.97(3)	$1^-,3^-$		21(2)		≈46		26(2)					
942.57(10)	$\langle 1–5\rangle$				60(30)							
949.34(8)	$\langle 1^-–5^-\rangle$		35(7)		44(10)							
964.09(8)	$1,3,5^+$						25(2)					
1065.72(2)					88(13)							
1130.68(7)	$1,3,5^+$				61(7)			18(2)				
1212.17(9)	$1,3,5^+$							[80]				
1220.3(3)	$1,3,5^+$						100					
1229.84(15)	$\langle 1,3,5\rangle$				56(10)							
1256.48(6)										12(1)		11(1)
1449.6(2)	$\langle 1^-–5\rangle$		45(12)									
1836.27(8)										79(8)		
1844.28(18)	$\langle 1^-,3,5\rangle$		15(3)		41(9)							
1878.09(15)	X^-				9(2)							
1907.9(2)			34(17)									
1951.94(11)												100
2312.5(2)	$\langle 1^-,3,5\rangle$		30(8)									
2341.4(2)	$\langle 1^-,3,5\rangle$		26(5)									
2429.8(3)	X^-		28(24)									

Energy levels and branching ratios [97Si03]. Part 3 **$^{151}_{60}$Nd**

E^*	$2J^\pi$		Branching ratios in percentage									
		E^*_f:	542.8	581.0	599.2	626.7	673.9	736.30	684+X	880.1	893.0	949.3
[keV]		$2J^\pi_f$:	$\langle 5^-\rangle$		$\langle 5^+\rangle$		$1,3,5^+$	$\langle 5,7^-\rangle$	$\langle 21^+\rangle$	$\langle 1^+,3\rangle$	$1^-,3^-$	
673.90(3)	$1,3,5^+$		100									
846.65(2)	$1^-,3^-$						1.9(2)	1.9(2)				
880.10(3)	$\langle 1^+,3\rangle$					1.6(4)						
1065.72(2)								<66			12(1)	
1068.2+X	$\langle 25^+\rangle$								100			
1183.96(14)	$1,3,5^+$		100									
1212.17(9)	$1,3,5^+$									[20]		
1575.57(8)	$1,3,5^+$		<50									93(9)
1745.85(8)											<81	
1792.13(13)	$1,3,5^+$				93(12)							

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

$^{151}_{60}$Nd

E^*	$2J^\pi$	Branching ratios in percentage										
	E_f^*:	1065.7	1150.7	1068+X	1212.2	1256.5	1436.8	1575.6	1521+X	2033+X	2601+X	
[keV]	$2J_f^\pi$:		1,3,5$^+$	$\langle 25^+\rangle$	1,3,5$^+$			1,3,5$^+$	$\langle 29^+\rangle$	$\langle 33^+\rangle$	$\langle 37^+\rangle$	
1256.48(6)			4(1)									
1575.57(8)	1,3,5$^+$						7(1)					
1520.6+X	$\langle 29^+\rangle$			100								
1745.85(8)							[66]	[34]				
1792.13(13)	1,3,5$^+$				7(1)							
1836.27(8)			17(2)			5(1)						
2094.31(11)	1,3,5$^+$	100										
2033.2+X	$\langle 33^+\rangle$								100			
2600.8+X	$\langle 37^+\rangle$									100		
3220.8+X	$\langle 41^+\rangle$										100	

Energy levels and branching ratios [96Ar09].

$^{152}_{60}$Nd

E^*	J^π	L	σ (t,p)	$T_{1/2}$ or	Ref.	Branching ratios in percentage					
						E_f^*:	0.0	72.5	237	484	805
[keV]		(t,p)	arb.u	Γ_{cm}		J_f^π:	0$^+$	2$^+$	4$^+$	6$^+$	$\langle 8^+\rangle$
0.0	0$^+$	0	100	11.4(2) m	72Ch11						
72.51(19)	2$^+$	$\langle 2\rangle$	40	4.5(3) ns	72Ch11		x				
236.62(21)	4$^+$		4	330(14) ps	72Ch11			x			
483.95(23)	6$^+$			53(10) ps					x		
805.4	$\langle 8^+\rangle$				98Ga12					x	
868(20)			12		72Ch11						
1139(15)	0$^+$	0	72		72Ch11						
1148.57(24)	$\langle 1^-\rangle$				99To04		39(6)	61(5)			
1195.3	$\langle 10^+\rangle$				98Zh12						x
1239.0(3)	$\langle 3^-\rangle$				99To04			52(5)	48(3)		
1250.9(3)	$\langle 2^+\rangle$	$\langle 2\rangle$	58		72Ch11			45(4)	55(3)		
1405.9(4)	$\langle 5^-\rangle$				99To04				53(6)	47(4)	
1474.3(4)	$\langle 4^+\rangle$				99To04				29(5)	39(4)	
1541.95(22)	$2^{\langle -\rangle}$			145(11) ps	99To04		1.0(5)	79(5)			
1600.4(3)	$3^{\langle -\rangle}$			12(7) ps	99To04			7.9(7)	82(5)		
1647.6	$\langle 12^+\rangle$			2.1 ps	98Zh12						
1651					98Ga12						
1672					99To04						
1683.2(3)	$\langle 4^-\rangle$			64(56) ps	98Ga12				79(4)		
1772.7(5)	$\langle 4^+,5,6^+\rangle$		9		72Ch11					x	
1784.5(10)	[5$^-$]				99To04				x		
1826.98(24)	[3$^-$]			42(6) ps	98Zh12				0.6(2)		
1886.6(4)	$\langle 3,4^-\rangle$				99To04				53(4)		
1893.5(4)	$\langle 3,4^+\rangle$				99To04			35(7)	7(2)		
1898.1(3)	$\langle 4^-\rangle$			30(10) ps	99To04				8.2(12)		
1904.7	6$^-$				98Zh12						

(continued) **$^{152}_{60}$Nd**

E^*	J^π	L	σ (t,p)	$T_{1/2}$ or	Ref.	Branching ratios in percentage					
						E_f^*:	0.0	72.5	237	484	805
[keV]		(t,p)	arb.u	Γ_{cm}		J_f^π:	0^+	2^+	4^+	6^+	$\langle 8^+\rangle$
1950.1(6)					99To04				x		
1958.1(6)					99To04				x		
1986					98Ga12						
1990.8(7)	$\langle 4^+,5,6^+\rangle$				99To04					x	
2037					98Ga12						
2064.0(9)	$\langle 4^+,5,6^+\rangle$									x	
2157.9	$\langle 14^+\rangle$			1.2 ps	98Zh12						
2176.8(4)	$\langle 3,4,5^-\rangle$		15		72Ch11						
2202.3	$\langle 8^-\rangle$				98Zh12						
2256					99To04						
2421.4(6)	$\langle 3,4^-\rangle$			≈80 ns	98Ga12						
2497(20)			13		72Ch11						
2571.8	$\langle 10^-\rangle$				98Zh12						
2574.0(8)	$\langle 3,4,5\rangle$								x		
2581.2(7)	$\langle 3,4^+\rangle$							19(3)	81(6)		
2612.8(10)	$\langle 3,4,5\rangle$								x		
2629.9(13)	$\langle 3,4,5\rangle$								x		
2709.0(15)	$\langle 3,4,5\rangle$								x		
2722.4	$\langle 16^+\rangle$			0.7 ps	98Zh12						
2722.6(15)									x		
2854(20)			12		72Ch11						
2986.1(15)	$\langle 3,4,5\rangle$								x		
3007.2	$\langle 12^-\rangle$				98Zh12						
3103.6(16)									x		
3146.7(16)									x		
3335.7	$\langle 18^+\rangle$				98Zh12						
3351(20)			25		72Ch11						
4008.4	20^+				98Zh12						
		72Ch11	72Ch11		Ref.						

Additional data on this isotope can be found in [99To04, 98To23, 98Ga12, 98Zh12, 91He03].

Energy levels and branching ratios [96Ar09]. Part 2 **$^{152}_{60}$Nd**

E^*	J^π	Branching ratios in percentage									
	E_f^*:	1149	1195	1239	1251	1474	1541.95	1600.4	1647.6	1683.2	1826.98
[keV]	J_f^π:	$\langle 1^-\rangle$	$\langle 10^+\rangle$	$\langle 3^-\rangle$	$\langle 2^+\rangle$	$\langle 4^+\rangle$	$2^{\langle -\rangle}$	$3^{\langle -\rangle}$	$\langle 12^+\rangle$	$\langle 4^-\rangle$	$3^{\langle -\rangle}$
1474.3(4)	$\langle 4^+\rangle$			22(5)	9(3)						
1541.95(22)	$2^{\langle -\rangle}$	9.7(5)		4.9(5)	5.7(5)						
1600.4(3)	$3^{\langle -\rangle}$			5.9(5)	4.0(12)						
1647.6	$\langle 12^+\rangle$		x								
1683.2(3)	$\langle 4^-\rangle$						21(5)				
1826.98(24)	$[3^-]$						76.9(5)	20.0(10)		2.5(5)	

(continued) **$^{152}_{60}$Nd**

E^*	J^π	Branching ratios in percentage									
	E_f^*:	1149	1195	1239	1251	1474	1541.95	1600.4	1647.6	1683.2	1826.98
[keV]	J_f^π:	$\langle 1^- \rangle$	$\langle 10^+ \rangle$	$\langle 3^- \rangle$	$\langle 2^+ \rangle$	$\langle 4^+ \rangle$	$2^{\langle - \rangle}$	$3^{\langle - \rangle}$	$\langle 12^+ \rangle$	$\langle 4^- \rangle$	$3^{\langle - \rangle}$
1886.6(4)	$\langle 3,4^- \rangle$						26(3)			21(11)	
1893.5(4)	$\langle 3,4^+ \rangle$				31(7)	26(1)					
1898.1(3)	$\langle 4^- \rangle$							57(3)		34(2)	
2157.9	$\langle 14^+ \rangle$								x		
2176.8(4)	$\langle 3,4,5^- \rangle$										x
2421.4(6)	$\langle 3,4^- \rangle$						x				

Energy levels and branching ratios [96Ar09]. Part 3 **$^{152}_{60}$Nd**

E^*	J^π	Branching ratios in percentage		
		E_f^*:	2157.9	2722.4
[keV]		J_f^π:	$\langle 14^+ \rangle$	$\langle 16^+ \rangle$
2722.4	$\langle 16^+ \rangle$		x	
3335.7	$\langle 18^+ \rangle$			x