PROPERTIES OF NUCLIDES (D3)

Nuclide	Daughter Nuclide/ Decay Product	Atomic Number *Z*	Neutron Number *N*	Isotopic Mass (Uncertainty) [u or Da]	Half-Life (Uncertainty)	Decay Mode (Probability)	Natural Abundance (Uncertainty) [mole fraction]
					Stable Nuclide		
Hydrogen							
^{1}H ***Protium***	-	1	0	1.007 825 032 23(9)	**Stable**		0.999 885(70)
^{2}H ***Deuterium***	-	1	1	2.014 101 778 12(12)	**Stable**		0.000 115(70)
^{3}H ***Tritium***	**^{3}He**	1	2	3.016 049 277 9(24)	12.32 a	β^-	Trace
^{4}H	^{3}H	1	3	4.026 43(11)	99.1 739 130 434 8 ys	n	-
^{5}H	^{3}H	1	4	5.035 311(96)	80.035 087 719 3 ys	2n	-
^{6}H	^{5}H	1	5	6.044 96(27)	290 ys	n	-
	^{3}H					3n	
	^{2}H					4n	
^{7}H	^{3}H	1	6	7.052 7(11#)	23 ys	4n	-
Helium							
^{2}He	**2 ^{1}H**	2	0	2.015 894(2)	$\ll 10^{-9}$ s	p (> 99.99%)	-
	^{2}H					β^+ (< 0.01%)	
^{3}He	-	2	1	3.016 029 320 1(25)	**Stable**		0.000 001 34(3)
^{4}He	-	2	2	4.002 603 254 13(6)	**Stable**		0.999 998 66(3)
^{5}He	^{4}He	2	3	5.012 057(21)	760.333 333 333 3 ys	n	-
^{6}He	**^{6}Li**	2	4	6.018 885 891(57)	806.92 ms	β^- (99.99%)	-
	^{4}He					β^-, α (0.000 28%)	
^{7}He	^{6}He	2	5	7.027 990 7(81)	3.041 333 333 333 zs	n	-
^{8}He	^{8}Li	2	6	8.033 934 390(95)	119.5 ms	β^- (83.0%)	-
	^{7}Li					β^-, n (16.1%)	
	^{5}He					β^-, fission (0.9%)	
^{9}He	^{8}He	2	7	9.043 946(50)	2.5 zs	n	-
^{10}He	^{8}He	2	8	10.052 79(11)	1.520 666 666 667 zs	2n	-
Lithium							
^{3}Li	^{2}He	3	0	3.030 8(21#)	-	p	-
^{4}Li	**^{3}He**	3	1	4.027 19(23)	75.655 058 043 12 ys	p	-

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					Stable Nuclide		
^{5}Li	^{4}He	3	2	5.012 538(54)	304.133 333 333 3 ys	p	-
^{6}Li	-	3	3	6.015 122 887 4(16)	**Stable**		0.075 9(4)
^{7}Li	-	3	4	7.016 003 436 6(45)	**Stable**		0.924 1(4)
^{8}Li	^{8}Be	3	5	8.022 486 246(50)	838.7 ms	β^-	-
	^{4}He					β^-, α	
^{9}Li	^{8}Be	3	6	9.026 790 19(20)	178.2 ms	β^-, n (50.8%)	-
	^{9}Be					β^- (49.2%)	
^{10}Li	^{9}Li	3	7	10.035 483(14)	2 zs	n	-
^{11}Li	^{10}Be	3	8	11.043 723 58(66)	8.75 ms	β^-, n (86.3%)	-
	^{11}Be					β^- (5.978%)	
	^{9}Be					β^-, 2n (4.1%)	
	^{8}Be					β^-, 3n (1.9%)	
	^{7}He					β^-, α (1.7%)	
	^{6}He					β^-, n, α	
	^{8}Li					β^-, fission (0.009%)	
	^{9}Li					β^-, fission (0.013%)	
^{12}Li	^{11}Li	3	9	12.052 517(16)	10 ns	n	-
^{13}Li	^{11}Li	3	10	13.062 63(38)	3.3 zs	2n	-
Beryllium							
^{5}Be	^{4}Li	4	1	5.039 9(22#)	-	p	-
^{6}Be	**^{4}He**	4	2	6.019 726 4(58)	5 zs	2p	-
^{7}Be	**^{7}Li**	4	3	7.016 928 717(76)	53.217 592 592 59 d	ε	Trace
^{8}Be	**^{4}He**	4	4	8.005 305 102(37)	81.903 052 064 63 as	α	-
^{9}Be	-	4	5	9.012 183 065(82)	**Stable**		1.000 000(00)
^{10}Be	**^{10}B**	4	6	10.013 534 695(86)	1 512.557 077 626 ka	β^-	Trace
^{11}Be	**^{11}B**	4	7	11.021 661 08(26)	13.76 s	β^- (97.1%)	-
	^{7}Li					β^-, α (2.9%)	
^{12}Be	^{12}B	4	8	12.026 922 1(20)	21.46 ms	β^- (99.5%)	-
	^{11}B					β^-, n (0.5%)	
^{13}Be	^{12}Be	4	9	13.036 135(11)	1 zs	n	-
^{14}Be	^{13}B	4	10	14.042 89(14)	4.53 ms	β^-, n (98.0%)	-
	^{14}B					β^- (1.2%)	

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					Stable Nuclide		
	^{12}B					β^-, 2n (0.8%)	
	^{11}B					β^-, 3n (0.2%)	
	^{11}Be					β^-, fission (0.02%)	
	^{10}Li					β^-, α (0.004%)	
^{15}Be	^{14}Be	4	11	15.053 42(43#)	790 ys	n	-
^{16}Be	^{14}Be	4	12	16.061 67(18)	650 ys	2n	-
Boron							
^{6}B	^{4}Li	5	1	6.050 8(22#)	-	2p	-
^{7}B	^{6}Be	5	2	7.029 712(27)	325.857 142 857 1 ys	p	-
^{8}B	**2 ^{4}He**	5	3	8.024 607 3(11)	770(3) ms	β^+, α	-
^{9}B	**2 ^{4}He**	5	4	9.013 329 65(97)	844.814 814 814 8 zs	p, α	-
	^{8}Be					p	
^{10}B	-	5	5	10.012 936 95(41)	**Stable**		0.199(7)
^{11}B	-	5	6	11.009 305 36(45)	**Stable**		0.801(7)
^{12}B	**^{12}C**	5	7	12.014 352 7(14)	20.20(2) ms	β^- (98.4%)	-
	^{8}Be					β^-, α (1.6%)	
^{13}B	**^{13}C**	5	8	13.017 780 2(12)	17.33(17) ms	β^- (99.72%)	-
	^{12}C					β^-, n (0.28%)	
^{14}B	^{14}C	5	9	14.025 404(23)	12.5(5) ms	β^- (93.96%)	-
	^{13}C					β^-, n (6.04%)	
^{15}B	^{14}C	5	10	15.031 088(23)	9.93(7) ms	β^-, n (93.6%)	-
	^{15}C					β^- (6.0%)	
	^{13}C					β^-, 2n (0.4%)	
^{16}B	^{15}B	5	11	16.039 842(26)	> 4.6 zs	n	-
^{17}B	^{16}C	5	12	17.046 99(18)	5.08(5) ms	β^-, n (63.0%)	-
	^{17}C					β^- (63.0%)	
	^{15}C					β^-, 2n (11.0%)	
	^{14}C					β^-, 3n (3.5%)	
	^{13}C					β^-, 4n (0.4%)	
^{18}B	^{17}B	5	13	18.055 66(18)	< 26 ns	n	-
^{19}B	^{18}C	5	14	19.063 10(43#)	2.92(13) ms	β^-, n (71.0%)	-
	^{17}C					β^-, 2n (17.0%)	
	^{19}C					β^- (12%)	

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					Stable Nuclide		
20B	^{19}B	5	15	20.072 07(75#)	-	n	-
21B	^{19}B	5	16	21.081 29(97#)	< 260 ns	2n	-
Carbon							
8C	^{6}Be	6	2	8.037 643(20)	3.5(1.4) zs	2p	-
9C	^{9}B	6	3	9.031 037 2(23)	126.5(9) ms	β^+ (60.0%)	-
	^{8}Be					β^+, p (23.0%)	
	^{5}Li					β^+, α (17.0%)	
10C	**^{10}B**	6	4	10.016 853 31(42)	19.300 9(17) s	β^+	-
11C	**^{11}B**	6	5	11.011 433 6(10)	20.364(14) min	β^+ (99.79%)	-
	^{11}B					ε (0.21%)	
12C	-	6	6	12.000 000 000(00)	**Stable**		0.989 3(8)
13C	-	6	7	13.003 354 835 07(23)	**Stable**		0.010 7(8)
14C	**^{14}N**	6	8	14.003 241 988 4(40)	570 7.762 557 078 a	β^-	Trace
15C	**^{15}N**	6	9	15.010 599 26(86)	2.449(5) s	β^-	-
16C	**^{15}N**	6	10	16.014 701 3(38)	747(8) ms	β^-, n (97.9%)	-
	^{16}N					β^- (2.1%)	
17C	^{17}N	6	11	17.022 577(19)	193(5) ms	β^- (71.6%)	-
	^{16}N					β^-, n (28.4%)	
18C	^{18}N	6	12	18.026 751(32)	92(2) ms	β^- (68.5%)	-
	^{17}N					β^-, n (31.5%)	
19C	^{18}N	6	13	19.034 80(11)	46.2(23) ms	β^-, n (47.0%)	-
	^{19}N					β^- (46.0%)	
	^{17}N					β^-, 2n (7.0%)	
20C	^{19}N	6	14	20.040 32(26)	16(3) ms	β^-, n (70.0%)	-
	^{20}N					β^- (30.0%)	
21C	^{20}C	6	15	21.049 00(43#)	29.999 999 999 98 ns	n	-
22C	^{22}N	6	16	22.057 53(26)	6.2(13) ms	β^-	-
	^{21}N					β^-, n	
	^{20}N					β^-, 2n	
23C	-	6	17	23.068 9(11#)	-	-	-
Nitrogen							
10N	^{9}C	7	3	10.041 65(43)	200(140) ys	p	-
11N	^{10}C	7	4	11.026 091(50)	550(20) ys	p	-

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					Stable Nuclide		
^{12}N	**^{12}C**	7	5	12.018 613 2(11)	11.000(16) ms	β^+ (96.5%)	-
	^{8}Be					β^+, α (3.5%)	
^{13}N	**^{13}C**	7	6	13.005 738 61(29)	9.965(4) min	β^+	-
^{14}N	-	7	7	14.003 074 004 43(20)	**Stable**		0.996 36(20)
^{15}N	-	7	8	15.000 108 898 88(64)	**Stable**		0.003 64(20)
^{16}N	**^{16}O**	7	9	16.006 101 9(25)	7.13(2) s	β^- (99.998 55%)	-
	^{12}C					β^-, α (0.001 45%)	
^{17}N	**^{16}O**	7	10	17.008 449(16)	4.173(4) s	β^-, n (95.0%)	-
	^{17}O					β^- (4.997 5%)	
	^{13}C					β^-, α (0.002 5%)	
^{18}N	**^{18}O**	7	11	18.014 078(20)	619.2(19) ms	β^- (80.8%)	-
	^{14}C					β^-, α (12.2%)	
	^{17}O					β^-, n (7.0%)	
^{19}N	^{19}O	7	12	19.017 022(18)	336(3) ms	β^- (7.0%)	-
	^{18}O					β^-, n (41.8%)	
^{20}N	^{20}O	7	13	20.023 366(60)	136(3) ms	β^- (57.1%)	-
	^{19}O					β^-, n (42.9%)	
^{21}N	^{20}O	7	14	21.027 11(10)	84(7) ms	β^-, n (90.5%)	-
	^{21}O					β^- (9.5%)	
^{22}N	^{22}O	7	15	22.034 39(21)	23(3) ms	β^- (54.0%)	-
	^{21}O					β^-, n (34.0%)	
	^{20}O					β^-, 2n (12.0%)	
^{23}N	^{23}O	7	16	23.041 14(32#)	13.9(14) ms	β^- (50.0%)	-
	^{22}O					β^-, n (42.0%)	
	^{21}O					β^-, 2n (8.0%)	
^{24}N	^{23}N	7	17	24.050 39(43#)	52.000 000 000 01 ns	n	-
^{25}N	^{25}O	7	18	25.060 10(54#)	< 260 ns	β^-	-
	^{23}N					2n	
	^{24}N					n	
				Oxygen			
^{11}O	^{9}C	8	3	-	-	2p	-
^{12}O	^{10}C	8	4	12.034 262(26)	1.140 5 zs	2p (60.0%)	-
	^{11}N					p (40.0%)	
	^{12}N					β^+	
^{13}O	^{13}N	8	5	13.024 815(10)	8.58(5) ms	β^+ (89.1%)	-
	^{12}C					β^+, p (10.9%)	
^{14}O	**^{14}N**	8	6	14.008 596 36(12)	1.176 766 666 667 min	β^+	-
^{15}O	**^{15}N**	8	7	15.003 065 62(53)	2.037 333 333 333 min	β^+	-

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					Stable Nuclide		
^{16}O	-	8	8	15.994 914 619 57(17)	**Stable**		0.997 57(16)
^{17}O	-	8	9	16.999 131 756 50(69)	**Stable**		0.000 38(1)
^{18}O	-	8	10	17.999 159 612 86(76)	**Stable**		0.002 05(14)
^{19}O	^{19}F	8	11	19.003 578 0(28)	26.470(6) s	β^-	-
^{20}O	^{20}F	8	12	20.004 075 35(95)	13.51(5) s	β^-	-
^{21}O	^{21}F	8	13	21.008 655(13)	3.42(10) s	β^-	-
^{22}O	^{22}F ^{21}F	8	14	22.009 966(61)	2.25(9) s	β^- (78.0%) β^-, n (22.0%)	-
^{23}O	^{23}F ^{22}F	8	15	23.015 696(97)	97(8) ms	β^- (93.0%) β^-, n (7.0%)	-
^{24}O	^{24}F ^{23}F	8	16	24.019 86(12)	77.4(45) ms	β^- (57.0%) β^-, n (43.0%)	-
^{25}O	^{24}O	8	17	25.029 36(12)	49.999 999 999 97 ns	n	-
^{26}O	^{24}O ^{25}O ^{26}F	8	18	26.037 29(17)	39.999 999 999 98 ns	2n (70.0%) n (30.0%) β^-	-
^{27}O	^{26}O ^{25}O	8	19	27.047 72(54#)	260 ns	n 2n	-
^{28}O	^{28}F ^{26}O ^{27}O	8	20	28.055 91(75#)	100 ns	β^- 2n n	-
Fluorine							
^{13}F	^{12}O	9	4	-	-	p	-
^{14}F	^{13}O	9	5	14.034 315(44)	500(60) ys	p	-
^{15}F	^{14}O	9	6	15.018 043(67)	0.456 2 zs	p	-
^{16}F	^{15}O	9	7	16.011 465 7(89)	11.405 zs	p	-
^{17}F	^{17}O	9	8	17.002 095 24(27)	1.074 833 333 333 min	β^+	-
^{18}F	^{18}O ^{18}O	9	9	18.000 937 33(50)	1.829 516 666 667 h	β^+ (96.86%) ε (3.14%)	Trace
^{19}F	-	9	10	18.998 403 162 73(92)	**Stable**		1.000 000(00)
^{20}F	^{20}Ne	9	11	19.999 981 252(31)	11.163(8) s	β^-	-

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					Stable Nuclide		
^{21}F	**^{21}Ne**	9	12	20.999 948 9(19)	4.158(20) s	β^-	-
^{22}F	**^{22}Ne**	9	13	22.002 999(13)	4.23(4) s	β^- (89.0%)	-
	^{21}Ne					β^-, n (11.0%)	
^{23}F	^{23}Ne	9	14	23.003 557(54)	2.23(14) s	β^- (86.0%)	-
	^{22}Ne					β^-, n (14.0%)	
^{24}F	^{24}Ne	9	15	24.008 115(78)	384(16) ms	β^- (94.1%)	-
	^{23}Ne					β^-, n (5.9%)	
^{25}F	^{25}Ne	9	16	25.012 199(81)	80(9) ms	β^- (76.9%)	-
	^{24}Ne					β^-, n (23.1%)	
^{26}F	^{26}Ne	9	17	26.020 038(83)	8.2(9) ms	β^- (86.5%)	-
	^{25}Ne					β^-, n (13.5%)	
^{27}F	^{26}Ne	9	18	27.026 44(20)	4.9(2) ms	β^-, n (77.0%)	-
	^{27}Ne					β^- (23.0%)	
^{28}F	^{27}F	9	19	28.035 34(21)	39.999 999 999 98 ns	n	-
^{29}F	^{28}Ne	9	20	29.042 54(54#)	2.5(3) ms	β^-, n (60.0%)	-
	^{29}Ne					β^- (40.0%)	
	^{27}Ne					β^-, 2n	
^{30}F	^{29}F	9	21	30.051 65(64#)	260 ns	n	-
^{31}F	^{31}Ne	9	22	31.059 71(56#)	250 ns	β^-	-
	^{30}Ne					β^-, n	
Neon							
^{15}Ne	^{13}O	10	5	15.043 17(7)	0.77(3) zs	2p	-
^{16}Ne	^{14}O	10	6	16.025 750(22)	3.739 344 262 295 zs	2p	-
^{17}Ne	**^{16}O**	10	7	17.017 713 96(38)	109.2(6) ms	β^+, p (96.0%)	-
	^{13}N					β^+, α (2.7%)	
	^{17}F					β^+ (1.3%)	
^{18}Ne	^{18}F	10	8	18.005 708 70(39)	1.664 20(47) s	β^+	-
^{19}Ne	^{19}F	10	9	19.001 880 91(17)	17.274(10) s	β^+	-
^{20}Ne	-	10	10	19.992 440 176 2(17)	**Stable**		0.904 8(3)
^{21}Ne	-	10	11	20.993 846 685(41)	**Stable**		0.002 7(1)
^{22}Ne	-	10	12	21.991 385 114(18)	**Stable**		0.092 5(3)
^{23}Ne	**^{23}Na**	10	13	22.994 466 91(11)	37.140(28) s	β^-	-
^{24}Ne	^{24}Na	10	14	23.993 610 65(55)	3.383 333 333 333 min	β^-	-

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					Stable Nuclide		
^{25}Ne	^{25}Na	10	15	24.997 789(48)	602(8) ms	β^-	-
^{26}Ne	^{26}Na	10	16	26.000 515(20)	197(2) ms	β^- (99.87%)	-
	^{25}Na					β^-, n (0.13%)	
^{27}Ne	^{27}Na	10	17	27.007 553(70)	31.5(13) ms	β^- (98.0%)	-
	^{26}Na					β^-, n (2.0%)	
^{28}Ne	^{28}Na	10	18	28.012 12(10)	20(1) ms	β^- (84.3%)	-
	^{27}Na					β^-, n (12.0%)	
	^{26}Na					β^-, 2n (3.7%)	
^{29}Ne	^{29}Na	10	19	29.019 75(11)	14.7(4) ms	β^- (68.0%)	-
	^{28}Na					β^-, n (28.0%)	
	^{27}Na					β^-, 2n (4.0%)	
^{30}Ne	^{30}Na	10	20	30.024 73(30)	7.22(18) ms	β^- (78.1%)	-
	^{29}Na					β^-, n (13.0%)	
	^{28}Na					β^-, 2n (8.9%)	
^{31}Ne	^{31}Na	10	21	31.033 1(17)	3.4(8) ms	β^-	-
	^{30}Na					β^-, n	
^{32}Ne	^{32}Na	10	22	32.039 72(54#)	3.5(9) ms	β^-	-
	^{31}Na					β^-, n	
^{33}Ne	^{32}Ne	10	23	33.049 38(64#)	180 ns	n	-
^{34}Ne	^{34}Na	10	24	34.056 73(55#)	60.000 000 000 02 ns	β^-	-
	^{33}Na					β^-, n	
Sodium							
^{18}Na	^{17}Ne	11	7	18.026 88(12)	1.3(4) zs	p (> 99.9%)	-
	^{18}Ne					β^+ (< 0.1%)	
^{19}Na	^{18}Ne	11	8	19.013 880(11)	39.999 999 999 98 ns	p	-
^{20}Na	**^{20}Ne**	11	9	20.007 354 4(12)	447.9(23) ms	β^+ (75.0%)	-
	^{16}O					β^+, α (25.0%)	
^{21}Na	**^{21}Ne**	11	10	20.997 654 69(30)	22.422(10) s	β^+	-
^{22}Na	**^{22}Ne**	11	11	21.994 437 41(18)	2.601 8(22) a	β^+	Trace
^{23}Na	-	11	12	22.989 769 282 0(19)	**Stable**		1.000 000(00)
^{24}Na	**^{24}Mg**	11	13	23.990 962 950(38)	14.957(4) h	β^-	Trace
^{25}Na	**^{25}Mg**	11	14	24.989 954 0(13)	59.1(6) s	β^-	-
^{26}Na	**^{26}Mg**	11	15	25.992 634 6(38)	1.071 28(25) s	β^-	-
^{27}Na	^{27}Mg	11	16	26.994 076 5(40)	301(6) ms	β^- (99.87%)	-
	^{26}Mg					β^-, n (0.13%)	
^{28}Na	^{28}Mg	11	17		30.5(4) ms	β^- (99.42%)	-

Nuclide	Daughter Nuclide/ Decay Product	Atomic Number *Z*	Neutron Number *N*	Isotopic Mass (Uncertainty) [u or Da]	Half-Life (Uncertainty)	Decay Mode (Probability)	Natural Abundance (Uncertainty) [mole fraction]
					Stable Nuclide		
	^{27}Mg			27.998 939(11)		β⁻, n (0.58%)	
^{29}Na	^{29}Mg	11	18	29.002 877 1(79)	44.1(9) ms	β⁻ (25.9%)	-
	^{28}Mg					β⁻, n (25.9%)	
^{30}Na	^{30}Mg	11	19	30.009 097 9(51)	48.4(17) ms	β⁻ (68.85%)	-
	^{29}Mg					β⁻, n (30.0%)	
	^{28}Mg					β⁻, 2n (1.15%)	
	^{26}Ne					β⁻, α (0.000 055%)	
^{31}Na	^{31}Mg	11	20	31.013 163(25)	17.35(40) ms	β⁻ (61.78%)	-
	^{30}Mg					β⁻, n (37.3%)	
	^{29}Mg					β⁻, 2n (0.87%)	
	^{28}Mg					β⁻, 3n (0.05%)	
^{32}Na	^{32}Mg	11	21	32.020 19(13)	12.9(3) ms	β⁻ (68.0%)	-
	^{31}Mg					β⁻, n (24.0%)	
	^{30}Mg					β⁻, 2n (8.0%)	
^{33}Na	^{32}Mg	11	22	33.025 73(64#)	8.2(4) ms	β⁻, n (47.0%)	-
	^{33}Mg					β⁻ (40.0%)	
	^{31}Mg					β⁻, 2n (13.0%)	
^{34}Na	^{32}Mg	11	23	34.033 59(54#)	5.5(10) ms	β⁻, 2n (50.0%)	-
	^{34}Mg					β⁻ (35.0%)	
	^{33}Mg					β⁻, n (15.0%)	
^{35}Na	^{35}Mg	11	24	35.040 62(63#)	1.5(5) ms	β⁻	-
	^{34}Mg					β⁻, n	
^{36}Na	^{35}Na	11	25	36.049 29(64#)	180 ns	n	-
^{37}Na	^{37}Mg	11	26	37.057 05(65#)	60.000 000 000 02 ns	β⁻	-
	^{36}Mg					β⁻, n	
^{39}Na	^{38}Mg	11	28	-	-	β−, n (#)	-
Magnesium							
^{19}Mg	^{17}Ne	12	7	19.034 169(54)	5(3) ps	2p	-
^{20}Mg	^{20}Na	12	8	20.018 850(29)	93(5) ms	β⁺ (69.7%)	-
	^{19}Ne					β⁺, p (30.3%)	
^{21}Mg	^{21}Na	12	9	21.011 716(18)	118.6(5) ms	β⁺ (66.9%)	-
	^{20}Ne					β⁺, p (32.6%)	
	^{17}F					β⁺, α (0.5%)	
^{22}Mg	^{22}Na	12	10	21.999 570 65(34)	3.875 5(12) s	β⁺	-
^{23}Mg	**^{23}Na**	12	11	22.994 124 21(74)	11.317(11) s	β⁺	-
^{24}Mg	-	12	12	23.985 041 697(14)	**Stable**		0.789 9(4)

Nuclide	Daughter Nuclide/ Decay Product	Atomic Number *Z*	Neutron Number *N*	Isotopic Mass (Uncertainty) [u or Da]	Half-Life (Uncertainty)	Decay Mode (Probability)	Natural Abundance (Uncertainty) [mole fraction]
					Stable Nuclide		
^{25}Mg	-	12	13	24.985 836 976(50)	**Stable**		0.100 0(1)
^{26}Mg	-	12	14	25.982 592 968(31)	**Stable**		0.110 1(3)
^{27}Mg	**^{27}Al**	12	15	26.984 340 624(53)	9.458 333 333 333 min	β^-	-
^{28}Mg	^{28}Al	12	16	27.983 876 7(22)	20.915(9) h	β^-	-
^{29}Mg	^{29}Al	12	17	28.988 617(12)	1.30(12) s	β^-	-
^{30}Mg	^{30}Al	12	18	29.990 462 9(37)	313(4) ms	β^- (99.94%)	-
	^{29}Al					β^-, n (0.06%)	
^{31}Mg	^{31}Al	12	19	30.996 648 0(33)	236(20) ms	β^- (93.8%)	-
	^{30}Al					β^-, n (6.2%)	
^{32}Mg	^{32}Al	12	20	31.999 110 2(34)	86(5) ms	β^- (94.5%)	-
	^{31}Al					β^-, n (94.5%)	
^{33}Mg	^{33}Al	12	21	33.005 327 1(31)	90.5(16) ms	β^- (86.0%)	-
	^{32}Al					β^-, n (14.0%)	
^{34}Mg	^{34}Al	12	22	34.008 935(31)	20.197 730 572 45 ms	β^- (70.0%)	-
	^{33}Al					β^-, n (30.0%)	
^{35}Mg	^{34}Al	12	23	35.016 79(19)	70.692 057 003 56 ms	β^- (52.0%)	-
	^{35}Al					β^-, n (48.0%)	
^{36}Mg	^{36}Al	12	24	36.021 88(49)	3.9(13) ms	β^-	-
^{37}Mg	^{37}Al	12	25	37.030 37(54#)	8(4) ms	β^-	-
	^{36}Al					β^-, n	
^{38}Mg	^{38}Al	12	26	38.036 58(54#)	260 ns	β^-	-
^{39}Mg	^{38}Mg	12	27	39.045 38(55#)	180 ns	n	-
^{40}Mg	^{39}Al	12	28	40.052 18(64#)	170 ns	β^-, n	-
	^{40}Al					β^-	
Aluminium							
^{21}Al	^{20}Mg	13	8	21.028 97(43#)	35.000 000 000 01 ns	p	-
^{22}Al	^{21}Na	13	9	22.019 54(43#)	91.1(5) ms	β^+, p (55.0%)	-
	^{22}Mg					β^+ (43.862%)	
	^{20}Ne					β^+, 2p (1.1%)	
	^{18}Ne					β^+, α (0.038%)	
^{23}Al	^{23}Mg	13	10	23.007 244 35(37)	470(30) ms	β^+ (99.54%)	-
	^{22}Na					β^+, p (0.46%)	
^{24}Al	**^{24}Mg**	13	11	23.999 948 9(12)	2.053(4) s	β^+ (99.963 4%)	-
	^{20}Ne					β^+, α (0.035%)	

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	^{23}Na				**Stable Nuclide**	β^+, p (0.001 6%)	
^{25}Al	**^{25}Mg**	13	12	24.990 428 10(51)	7.183(12) s	β^+	-
^{26}Al	**^{26}Mg**	13	13	25.986 891 904(69)	716 641.298 833 1 a	β^+ (85.0%) ε (15.0%)	Trace
^{27}Al	-	13	14	26.981 538 53(11)	**Stable**		1.000 000(00)
^{28}Al	**^{28}Si**	13	15	27.981 910 21(13)	2.241 333 333 333 min	β^-	-
^{29}Al	**^{29}Si**	13	16	28.980 456 5(10)	6.566 666 666 667 min	β^-	-
^{30}Al	**^{30}Si**	13	17	29.982 960(15)	3.62(6) s	β^-	-
^{31}Al	^{31}Si ^{30}Si	13	18	30.983 945(22)	644(25) ms	β^- (98.4%) β^-, n (1.6%)	-
^{32}Al	^{32}Si ^{31}Si	13	19	31.988 085(13)	33.0(2) ms	β^- (99.3%) β^-, n (0.7%)	-
^{33}Al	^{33}Si ^{32}Si	13	20	32.990 909(81)	41.7(2) ms	β^- (91.5%) β^-, n (8.5%)	-
^{34}Al	^{34}Si ^{33}Si	13	21	33.996 705(74)	56.3(5) ms	β^- (74.0%) β^-, n (26.0%)	-
^{35}Al	^{35}Si ^{34}Si	13	22	34.999 764(75)	37.2(8) ms	β^- (62.0%) β^-, n (38.0%)	-
^{36}Al	^{36}Si ^{35}Si	13	23	36.006 39(11)	90(40) ms	β^- (70.0%) β^-, n (30.0%)	-
^{37}Al	^{37}Si ^{36}Si	13	24	37.010 53(13)	11.5(4) ms	β^- (71.0%) β^-, n (29.0%)	-
^{38}Al	^{38}Si	13	25	38.017 40(27)	9.0(7) ms	β^-	-
^{39}Al	^{38}Si ^{39}Si	13	26	39.022 54(54#)	7.6(16) ms	β^-, n (90.0%) β^- (10.0%)	-
^{40}Al	^{40}Si ^{39}Si	13	27	40.030 03(54#)	260 ns	β^- β^-, n	-
^{41}Al	^{41}Si	13	28	41.036 38(64#)	260 ns	β^-	-
^{42}Al	^{42}Si ^{41}Si	13	29	42.043 84(64#)	170 ns	β^- β^-, n	-
^{43}Al	^{43}Si	13	30	43.051 47(75#)	1(#) ms	β^-	-
Silicon							
^{22}Si	^{22}Mg ^{23}Al ^{21}Na	14	8	22.035 79(54#)	29(2) ms	β^+, p (88.0%) β^+ (8.4%) β^+, 2p (3.6%)	-
^{23}Si	^{22}Mg ^{23}Al	14	9	23.025 44(54#)	42.3(4) ms	β^+, p (88.0%) β^+ (8.4%)	-

Nuclide	Daughter Nuclide/ Decay Product	Atomic Number *Z*	Neutron Number *N*	Isotopic Mass (Uncertainty) [u or Da]	Half-Life (Uncertainty)	Decay Mode (Probability)	Natural Abundance (Uncertainty) [mole fraction]
	^{21}Na				Stable Nuclide	β^+, 2p (3.6%)	
^{24}Si	^{24}Al	14	10	24.011 535(21)	140(8) ms	β^+, p (62.4%)	-
	^{23}Mg					β^+ (37.6%)	
^{25}Si	^{25}Al	14	11	25.004 109(11)	220(3) ms	β^+ (64.8%)	-
	^{24}Mg					β^+, p (35.2%)	
^{26}Si	^{26}Al	14	12	25.992 333 84(11)	2.245 3(7) s	β^+	-
^{27}Si	^{27}Al	14	13	26.986 704 81(15)	4.15(4) s	β^+	-
^{28}Si	-	14	14	27.976 926 534 65(44)	**Stable**		0.922 23(19)
^{29}Si	-	14	15	28.976 494 664 90(52)	**Stable**		0.046 85(8)
^{30}Si	-	14	16	29.973 770 136(23)	**Stable**		0.030 92(11)
^{31}Si	**^{31}P**	14	17	30.975 363 194(46)	2.621 666 666 667 h	β^-	-
^{32}Si	^{32}P	14	18	31.974 151 54(32)	153(19) a	β^-	Trace
^{33}Si	^{33}P	14	19	32.977 976 96(75)	6.18(18) s	β^-	-
^{34}Si	^{34}P	14	20	33.978 576(15)	2.77(20) s	β^-	-
^{35}Si	^{35}P	14	21	34.984 583(41)	780(120) ms	β^- (94.74%)	-
	^{34}P					β^-, n (5.26%)	
^{36}Si	^{36}P	14	22	35.986 695(77)	450(60) ms	β^- (87.5%)	-
	^{35}P					β^-, n (12.5%)	
^{37}Si	^{37}P	14	23	36.992 921(89)	90(60) ms	β^- (83.0%)	-
	^{36}P					β^-, n (17.0%)	
^{38}Si	^{37}P	14	24	37.995 523(75)	90(#) ms	β^-, n	-
	^{38}P					β^-	
^{39}Si	^{39}P	14	25	39.002 491(97)	47.5(20) ms	β^-	-
^{40}Si	^{40}P	14	26	40.005 83(25)	33.0(10) ms	β^-	-
	^{39}P					β^-, n	
^{41}Si	^{41}P	14	27	41.013 01(40)	20.0(25) ms	β^-	-
^{42}Si	^{42}P	14	28	42.017 78(54#)	12.5(35) ms	β^-	-
	^{41}P					β^-, n	
^{43}Si	^{43}P	14	29	43.024 80(64#)	60.000 000 000 02 ns	β^-	-
	^{42}P					β^-, n	
^{44}Si	^{44}P	14	30	44.030 61(64#)	360.673 760 222 2 ns	β^-	-
	^{43}P					β^-, n	
^{45}Si	-	14	31	45.039 95(75#)	-	-	-
Phosphorus							

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					Stable Nuclide		
^{24}P	^{23}Si	15	9	24.035 77(54#)	-	p	-
	^{24}Si					β^+	
^{25}P	^{24}Si	15	10	25.021 19(43#)	29.999 999 999 98 ns	p	-
^{26}P	^{26}Si	15	11	26.011 78(21#)	43.7(6) ms	β^+ (98.0%)	-
	^{24}Mg					β^+, 2p (1.0%)	
	^{25}Al					β^+, p (0.9%)	
^{27}P	^{27}Si	15	12	26.999 224(28)	260(80) ms	β^+ (99.93%)	-
	^{26}Al					β^+, p (0.07%)	
^{28}P	**^{28}Si**	15	13	27.992 326 6(12)	270.3(5) ms	β^+ (99.99%)	-
	^{27}Al					β^+, p (0.001 3%)	
	^{24}Mg					β^+, α (0.000 86%)	
^{29}P	**^{29}Si**	15	14	28.981 800 79(60)	4.142(15) s	β^+	-
^{30}P	**^{30}Si**	15	15	29.978 313 75(34)	2.498 333 333 333 min	β^+	-
^{31}P	-	15	16	30.973 761 998 42(70)	**Stable**		1.000 000(00)
^{32}P	**^{32}S**	15	17	31.973 907 643(42)	14.268(5) d	β^-	Trace
^{33}P	**^{33}S**	15	18	32.971 725 7(12)	25.335 648 148 15 d	β^-	-
^{34}P	**^{34}S**	15	19	33.973 645 89(87)	12.43(10) s	β^-	-
^{35}P	^{35}S	15	20	34.973 314 1(20)	47.3(8) s	β^-	-
^{36}P	**^{36}S**	15	21	35.978 260(14)	5.6(3) s	β^-	-
^{37}P	^{37}S	15	22	36.979 607(41)	2.31(13) s	β^-	-
^{38}P	^{38}S	15	23	37.984 252(93)	640(14) ms	β^- (87.5%)	-
	^{37}S					β^-, n (12.5%)	
^{39}P	^{39}S	15	24	38.986 227(98)	282(24) ms	β^- (73.2%)	-
	^{38}S					β−, n (26.8%)	
^{40}P	^{40}S	15	25	39.991 33(12)	150(8) ms	β^- (84.2%)	-
	^{39}S					β^-, n (15.8%)	
^{41}P	^{41}S	15	26	40.994 654(86)	101(5) ms	β^- (70.0%)	-
	^{40}S					β^-, n (30.0%)	
^{42}P	^{42}S	15	27	42.001 08(23)	48.5(15) ms	β^- (50.0%)	-
	^{41}S					β^-, n (50.0%)	
^{43}P	^{42}S	15	28	43.005 02(40)	35.8(13) ms	β^-, n	-
	^{43}S					β^-	
^{44}P	^{44}S	15	29	44.011 21(54#)	18.5(25) ms	β^-	-

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					Stable Nuclide		
45P	^{45}S	15	30	45.016 45(64#)	200 ns	β^-	-
46P	^{46}S	15	31	46.024 46(75#)	200 ns	β^-	-
47P	^{47}S	15	32	47.031 39(86#)	2(#) ms	β^-	-
Sulfur							
26S	^{24}Si	16	10	26.029 07(64#)	10 ms	2p	-
27S	^{27}P	16	11	27.018 28(43#)	15.5(15) ms	β^+ (96.6%)	-
	^{26}Si					β^+, p (2.3%)	
	^{25}Al					β^+, 2p (1.1%)	
28S	^{28}P	16	12	28.004 37(17)	125(10) ms	β^+ (79.3%)	-
	^{27}Si					β^+, p (20.7%)	
29S	^{29}P	16	13	28.996 611(54)	188(4) ms	β^+ (53.6%)	-
	^{28}Si					β^+, p (46.4%)	
30S	^{30}P	16	14	29.984 907 03(40)	1.175 9(17) s	β^+	-
31S	**^{31}P**	16	15	30.979 557 01(25)	2.553 4(18) s	β^+	-
32S	-	16	16	31.972 071 174 4(14)	**Stable**		0.949 9(26)
33S	-	16	17	32.971 458 909 8(15)	**Stable**		0.007 5(2)
34S	-	16	18	33.967 867 004(47)	**Stable**		0.042 5(24)
35S	^{35}Cl	16	19	34.969 032 310(43)	87.511 574 074 07 d	β^-	Trace
36S	-	16	20	35.967 080 71(20)	**Stable**		0.000 1(1)
37S	^{37}Cl	16	21	36.971 125 51(21)	5.05(2) min	β^-	-
38S	^{38}Cl	16	22	37.971 163 3(77)	2.838 888 888 889 h	β^-	-
39S	^{39}Cl	16	23	38.975 134(54)	11.5(5) s	β^-	-
40S	^{40}Cl	16	24	39.975 482 6(43)	8.8(22) s	β^-	-
41S	^{41}Cl	16	25	40.979 593 5(44)	1.99(5) s	β^- (> 99.9%)	-
	^{40}Cl					β^-, n (< 0.1%)	
42S	^{42}Cl	16	26	41.981 065 1(30)	1.016(15) s	β^- (> 96.0%)	-
	^{41}Cl					β^-, n (< 4.0%)	
43S	^{43}Cl	16	27	42.986 907 6(53)	265(13) ms	β^- (60.0%)	-
	^{42}Cl					β^-, n (40.0%)	

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					Stable Nuclide		
44S	^{44}Cl	16	28	43.990 118 8(56)	100(1) ms	β^- (81.7%)	-
	^{43}Cl					β^-, n (18.2%)	
45S	^{44}Cl	16	29	44.995 72(74)	68(2) ms	β^-, n (54.0%)	-
	^{45}Cl					β^- (46.0%)	
46S	^{46}Cl	16	30	46.000 04(54#)	50(8) ms	β^-	-
47S	^{47}Cl	16	31	47.007 95(54#)	20.197 730 572 45 ms	β^-	-
48S	^{48}Cl	16	32	48.013 70(64#)	200 ns	β^-	-
49S	^{49}Cl	16	33	49.022 76(72#)	200 ns	β^-	-
	^{48}S					n	
Chlorine							
28Cl	^{27}S	17	11	28.029 54(64#)	-	p	-
29Cl	^{28}S	17	12	29.014 78(43#)	< 10 ps	p	-
30Cl	^{29}S	17	13	30.004 77(21#)	29.999 999 999 98 ns	p	-
31Cl	^{31}S	17	14	30.992 414(54)	190(1) ms	β^+ (97.6%)	-
	^{30}P					β^+, p (2.4%)	
32Cl	**^{32}S**	17	15	31.985 684 64(60)	298(1) ms	β^+ (99.92%)	-
	^{28}Si					β^+, α (0.054%)	
	^{31}P					β^+, p (0.026%)	
33Cl	**^{33}S**	17	16	32.977 451 99(42)	2.503 8(22) s	β^+	-
34Cl	**^{34}S**	17	17	33.973 762 485(52)	1.526 6(4) s	β^+	-
35Cl	-	17	18	34.968 852 682(37)	**Stable**		0.757 6(10)
36Cl	**^{36}Ar**	17	19	35.968 306 809(38)	301 243.023 845 8 a	β^- (98.1%)	Trace
	^{36}S					β^+ (1.9%)	
37Cl	-	17	20	36.965 902 602(55)	**Stable**		0.242 4(10)
38Cl	**^{38}Ar**	17	21	37.968 010 44(11)	37.233 333 333 33 min	β^-	-
39Cl	^{39}Ar	17	22	38.968 008 2(19)	56.2(6) min	β^-	-
40Cl	**^{40}Ar**	17	23	39.970 415(34)	1.35(2) min	β^-	-
41Cl	^{41}Ar	17	24	40.970 685(74)	38.4(8) s	β^-	-
42Cl	^{42}Ar	17	25	41.973 25(15)	6.8(3) s	β^-	-
43Cl	^{43}Ar	17	26	42.973 89(10)	3.13(9) s	β^- (> 99.9%)	-
	^{42}Ar					β−, n (< 0.1%)	

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					Stable Nuclide		
44Cl	^{44}Ar	17	27	43.977 87(20)	560(11) ms	β^- (92.0%)	-
	^{43}Ar					β^-, n (8.0%)	
45Cl	^{45}Ar	17	28	44.980 29(11)	413(25) ms	β^- (76.0 %)	-
	^{44}Ar					β^-, n (24.0%)	
46Cl	^{46}Ar	17	29	45.985 17(17)	232(2) ms	β^-, n (60.0%)	-
	^{45}Ar					β^- (40.0%)	
47Cl	^{47}Ar	17	30	46.989 16(43#)	101(6) ms	β^- (97.0%)	-
	^{46}Ar					β^-, n (3.0%)	
48Cl	^{48}Ar	17	31	47.995 64(54#)	200 ns	β^-	-
49Cl	^{49}Ar	17	32	49.001 23(64#)	170 ns	β^-	-
50Cl	^{50}Ar	17	33	50.009 05(64#)	20.197 730 572 45 ms	β^-	-
51Cl	^{51}Ar	17	34	51.015 54(75#)	200 ns	β^-	-
52Cl	^{52}Ar	17	35	-	-	β^-	-
Argon							
29Ar	^{27}S	18	11	-	40 zs	2p	-
30Ar	^{28}S	18	12	30.023 07(54#)	< 10 ps	2p	-
31Ar	^{30}S	18	13	31.012 12(22#)	15.1(3) ms	β^+, p (63.0%)	-
	^{31}Cl					β^+ (28.0%)	
	^{29}P					β^+, 2p (7.2%)	
	^{28}Si					β^+, 3p (1.4%)	
	^{26}Si					β^+, p, α (0.38%)	
	^{27}P					β^+, α (0.03%)	
32Ar	^{32}Cl	18	14	31.997 637 8(19)	98.103 262 780 45 ms	β^+ (64.42%)	-
	^{31}S					β^+, p (35.58%)	
33Ar	^{33}Cl	18	15	32.989 925 55(43)	173.0(20) ms	β^+ (61.3%)	-
	^{32}S					β^+, p (38.7%)	
34Ar	^{34}Cl	18	16	33.980 270 090(83)	843.8(4) ms	β^+	-
35Ar	**^{35}Cl**	18	17	34.975 257 59(80)	1.7756(10) s	β^+	-
36Ar	**^{36}S**	18	18	35.967 545 105(28)	**Observationally Stable**	εε	0.003 336(21)
37Ar	**^{37}Cl**	18	19	36.966 776 33(22)	35.011(19) d	ε	-
38Ar	**-**	18	20	37.962 732 11(21)	**Stable**		0.000 629(7)
39Ar	**^{39}K**	18	21	38.964 313 0(54)	269.216 133 942 2 a	β^-	Trace

Nuclide	Daughter Nuclide/ Decay Product	Atomic Number *Z*	Neutron Number *N*	Isotopic Mass (Uncertainty) [u or Da]	Half-Life (Uncertainty)	Decay Mode (Probability)	Natural Abundance (Uncertainty) [mole fraction]
					Stable Nuclide		
^{40}Ar	-	18	22	39.962 383 123 7(24)	**Stable**		0.996 035(25)
^{41}Ar	^{41}K	18	23	40.964 500 57(37)	1.826 833 333 333 h	β^-	-
^{42}Ar	^{42}K	18	24	41.963 045 7(62)	32.978 183 663 12 a	β^-	Trace
^{43}Ar	^{43}K	18	25	42.965 636 1(57)	5.366 666 666 667 min	β^-	-
^{44}Ar	^{44}K	18	26	43.964 923 8(17)	11.87(5) min	β^-	-
^{45}Ar	^{45}K	18	27	44.968 039 73(55)	21.48(15) s	β^-	-
^{46}Ar	^{46}K	18	28	45.968 083(44)	8.4(6) s	β^-	-
^{47}Ar	^{47}K	18	29	46.972 935(96)	1.23(3) s	β^- (99.8%)	-
	^{46}K					β^-, n (0.2%)	
^{48}Ar	^{48}K	18	30	47.975 91(32#)	415(15) ms	β^-	-
^{49}Ar	^{48}K	18	31	48.981 90(43#)	236(8) ms	β^-, n (65.0%)	-
	^{49}K					β^- (35.0%)	
^{50}Ar	^{50}K	18	32	49.986 13(54#)	106(6) ms	β^- (65.0%)	-
	^{49}K					β^-, n (35.0%)	
^{51}Ar	^{51}K	18	33	50.993 70(64#)	200 ns	β^-	-
^{52}Ar	^{52}K	18	34	51.998 96(64#)	10 ms	β^-	-
^{53}Ar	^{53}K	18	35	53.007 29(75#)	3 ms	β^-	-
	^{52}K					β^-, n	
^{54}Ar	^{54}K	18	36	-	-	β^-	-
Potassium							
^{31}K	^{28}S	19	12		< 10 ps	3p	-
^{32}K	^{31}Ar	19	13	32.022 65(54#)	-	p	-
^{33}K	^{32}Ar	19	14	33.007 56(21#)	25 ns	p	-
^{34}K	^{33}Ar	19	15	33.998 69(32#)	25 ns	p	-
^{35}K	^{35}Ar	19	16	34.988 005 41(55)	178(8) ms	β^+ (99.63%)	-
	^{34}Cl					β^+, p (0.37%)	
^{36}K	**^{36}Ar**	19	17	35.981 302 01(37)	341(3) ms	β^+ (99.95%)	-
	^{35}Cl					β^+, p (0.048%)	
	^{32}S					β^+, α (0.003 4%)	
^{37}K	^{37}Ar	19	18	36.973 375 89(10)	1.236 5(9) s	β^+	-

Nuclide	Daughter Nuclide/ Decay Product	Atomic Number *Z*	Neutron Number *N*	Isotopic Mass (Uncertainty) [u or Da]	Half-Life (Uncertainty)	Decay Mode (Probability)	Natural Abundance (Uncertainty) [mole fraction]
					Stable Nuclide		
^{38}K	^{38}Ar	19	19	37.969 081 12(21)	7.636 666 666 667 min	β^+	-
^{39}K	-	19	20	38.963 706 486 4(49)	**Stable**		0.932 581(44)
^{40}K	^{40}Ca	19	21	39.963 998 166(60)	1.248(3) Ga	β^- (89.28%)	0.000 117(1)
	^{40}Ar					ε (10.72%)	
						β^+ (0.001%)	
^{41}K	-	19	22	40.961 825 257 9(41)	**Stable**		0.067 302(44)
^{42}K	^{42}Ca	19	23	41.962 402 31(11)	12.355(7) h	β^-	-
^{43}K	^{43}Ca	19	24	42.960 734 70(44)	22.305 555 555 56 h	β^-	-
^{44}K	^{44}Ca	19	25	43.961 586 99(45)	22.133 333 333 33 min	β^-	-
^{45}K	^{45}Ca	19	26	44.960 691 49(56)	17.8(6) min	β^-	-
^{46}K	^{46}Ca	19	27	45.961 981 59(78)	105(10) s	β^-	-
^{47}K	^{47}Ca	19	28	46.961 661 6(15)	17.50(24) s	β^-	-
^{48}K	^{48}Ca	19	29	47.965 341 19(83)	6.8(2) s	β^- (98.86%)	-
	^{47}Ca					β^-, n (1.14%)	
^{49}K	^{48}Ca	19	30	48.968 210 75(86)	1.26(5) s	β^-, n (86.0%)	-
	^{49}Ca					β^- (14.0%)	
^{50}K	^{50}Ca	19	31	49.972 380 0(83)	472(4) ms	β^- (71.0%)	-
	^{49}Ca					β^-, n (29.0%)	
^{51}K	^{50}Ca	19	32	50.975 828(14)	365(5) ms	β^-, n (65.0%)	-
	^{51}Ca					β^- (35.0%)	
^{52}K	^{51}Ca	19	33	51.982 24(43#)	110(4) ms	β^-, n (74.0%)	-
	^{52}Ca					β^- (23.7%)	
	^{50}Ca					β^-, 2n (2.3%)	
^{53}K	^{52}Ca	19	34	52.987 46(54#)	30(5) ms	β^-, n (64.0%)	-
	^{53}Ca					β^- (26.0%)	
	^{51}Ca					β^-, 2n (10.0%)	
^{54}K	^{54}Ca	19	35	53.994 63(64#)	10(5) ms	β^- (> 99.9%)	-
	^{53}Ca					β^-, n (< 0.1%)	
^{55}K	^{55}Ca	19	36	55.000 76(75#)	3(#) ms	β^-	-
	^{54}Ca					β^-, n	
^{56}K	^{56}Ca	19	37	56.008 51(86#)	1(#) ms	β^-	-
	^{55}Ca					β^-, n	
^{57}K	^{57}Ca	19	38	-	-	β^-	-
^{58}K *[Unconfirmed]*	^{59}Ca	19	40	-	-	β^-	-

Nuclide	Daughter Nuclide/ Decay Product	Atomic Number *Z*	Neutron Number *N*	Isotopic Mass (Uncertainty) [u or Da]	Half-Life (Uncertainty)	Decay Mode (Probability)	Natural Abundance (Uncertainty) [mole fraction]
					Stable Nuclide		
Calcium							
34Ca	^{32}Ar	20	14	34.014 87(32#)	35.000 000 000 01 ns	2p	-
35Ca	^{34}Ar ^{33}Cl	20	15	35.005 14(21#)	25.7(2) ms	β^+, p (95.9%) β^+, 2p (4.1%)	-
36Ca	^{35}Ar ^{36}K	20	16	35.993 074(43)	101.2(15) ms	β^+, p (51.2%) β^+ (48.8%)	-
37Ca	**^{36}Ar** ^{37}K	20	17	36.985 897 85(68)	181.1(10) ms	β^+, p (82.1%) β^+ (17.9%)	-
38Ca	^{38}K	20	18	37.976 319 22(21)	443.70(25) ms	β^+	-
39Ca	**^{39}K**	20	19	38.970 710 81(64)	860.3(8) ms	β^+	-
40Ca	^{40}Ar	20	20	39.962 590 863(22)	**< 5 900 Ea** (Observationally Stable)	εε [Unconfirmed]	0.969 41(156)
41Ca	**^{41}K**	20	21	40.962 277 92(15)	102.105 530 187 7 ka	ε	Trace
42Ca	-	20	22	41.958 617 83(16)	**Stable**		0.006 47(23)
43Ca	-	20	23	42.958 766 44(24)	**Stable**		0.001 35(10)
44Ca	-	20	24	43.955 481 56(35)	**Stable**		0.020 86(110)
45Ca	**^{45}Sc**	20	25	44.956 186 35(39)	162.61(9) d	β^-	-
46Ca	**^{46}Ti**	20	26	45.953 689 0(24)	**2.8 Pa** (Observationally Stable)	$\beta^-\beta^-$ [Unconfirmed]	0.000 04(3)
47Ca	^{47}Sc	20	27	46.954 542 4(24)	4.535 879 629 63 d	β^-	-
48Ca	**^{48}Ti** **^{48}Sc**	20	28	47.952 522 76(13)	**19 Ea** (Observationally Stable)	$\beta^-\beta^-$ β^- [Unconfirmed]	0.001 87(21)
49Ca	^{49}Sc	20	29	48.955 662 74(23)	8.718 333 333 333 min	β^-	-
50Ca	^{50}Sc	20	30	49.957 499 2(17)	13.9(6) s	β^-	-
51Ca	^{51}Sc ^{50}Sc	20	31	50.960 989(24)	10.0(8) s	β^- β^-, n	-
52Ca	^{52}Sc ^{51}Sc	20	32	51.963 217(64)	4.6(3) s	β^- (98.0%) β^-, n (2.0%)	-
53Ca	^{53}Sc ^{52}Sc	20	33	52.969 45(43#)	461(90) ms	β^- (60.0%) β^-, n (40.0%)	-
54Ca	^{54}Sc ^{53}Sc	20	34	53.973 40(54#)	90(6) ms	β^- (93.0%) β^-, n (7.0%)	-

Nuclide	Daughter Nuclide/ Decay Product	Atomic Number *Z*	Neutron Number *N*	Isotopic Mass (Uncertainty) [u or Da]	Half-Life (Uncertainty)	Decay Mode (Probability)	Natural Abundance (Uncertainty) [mole fraction]
					Stable Nuclide		
^{55}Ca	^{55}Sc	20	35	54.980 30(54#)	22(2) ms	β^-	-
^{56}Ca	^{56}Sc	20	36	55.985 08(64#)	11(2) ms	β^-	-
^{57}Ca	^{57}Sc	20	37	56.992 62(64#)	5(#) ms	β^-	-
	^{56}Sc					β^-, n	
^{58}Ca	^{58}Sc	20	38	57.997 94(75#)	3(#) ms	β^-	-
	^{57}Sc					β^-, n	
^{59}Ca	^{59}Sc	20	39	-	-	β^-	-
^{60}Ca	^{60}Sc	20	40	-	-	β^-	-
Scandium							
^{36}Sc	^{35}Ca	21	15	36.016 48(32#)	-	p	-
^{37}Sc	^{36}Ca	21	16	37.003 74(32#)	-	p	-
^{38}Sc	^{37}Ca	21	17	37.995 12(21#)	300 ns	p	-
^{39}Sc	^{38}Ca	21	18	38.984 785(26)	300 ns	p	-
^{40}Sc	**^{40}Ca**	21	19	39.977 967 3(30)	182.3(7) ms	β^+ (99.54%)	-
	^{39}K					β^+, p (0.44%)	
	^{36}Ar					β^+, α (0.017%)	
^{41}Sc	^{41}Ca	21	20	40.969 251 105(88)	596.3(17) ms	β^+	-
^{42}Sc	**^{42}Ca**	21	21	41.965 516 53(18)	681.3(7) ms	β^+	-
^{43}Sc	**^{43}Ca**	21	22	42.961 150 5(20)	3.891 666 666 667 h	β^+	-
^{44}Sc	**^{44}Ca**	21	23	43.959 402 9(19)	3.972 222 222 222 h	β^+	-
^{45}Sc	-	21	24	44.955 908 28(77)	**Stable**		1.000 000(00)
^{46}Sc	**^{46}Ti**	21	25	45.955 168 26(78)	83.784 722 222 22 d	β^-	-
^{47}Sc	**^{47}Ti**	21	26	46.952 403 7(21)	3.349 189 814 815 d	β^-	-
^{48}Sc	**^{48}Ti**	21	27	47.952 223 6(53)	1.819 444 444 444 d	β^-	-
^{49}Sc	**^{49}Ti**	21	28	48.950 014 6(29)	57.166 666 666 67 min	β^-	-
^{50}Sc	**^{50}Ti**	21	29	49.952 176(16)	1.708 333 333 333 min	β^-	-
^{51}Sc	^{51}Ti	21	30	50.953 592(21)	12.4(1) s	β^-	-

Nuclide	Daughter Nuclide/ Decay Product	Atomic Number *Z*	Neutron Number *N*	Isotopic Mass (Uncertainty) [u or Da]	Half-Life (Uncertainty)	Decay Mode (Probability)	Natural Abundance (Uncertainty) [mole fraction]
					Stable Nuclide		
^{52}Sc	^{52}Ti	21	31	51.956 88(15)	8.2(2) s	β^-	-
^{53}Sc	^{53}Ti	21	32	52.959 09(29)	2.4(0.6) s	β^- (>99.9%)	-
	^{52}Ti					β^-, n (<0.1%)	
^{54}Sc	^{54}Ti	21	33	53.963 93(39)	260(30) ms	β^- (>99.9%)	-
	^{53}Ti					β^-, n (<0.1%)	
^{55}Sc	^{55}Ti	21	34	54.967 82(50)	0.115(15) s	β^- (>99.9%)	-
	^{54}Ti					β^-, n (<0.1%)	
^{56}Sc	^{56}Ti	21	35	55.973 45(43#)	35(5) ms	β^-	-
^{57}Sc	^{57}Ti	21	36	56.977 77(54#)	13(4) ms	β^- (67.0%)	-
	^{56}Ti					β^-, n (33.0%)	
^{58}Sc	^{58}Ti	21	37	57.984 03(64#)	12(5) ms	β^-	-
^{59}Sc	^{58}Ti	21	38	58.988 94(64#)	10# ms	β^-, n	-
	^{59}Ti					β^-	
^{60}Sc	^{60}Ti	21	39	59.995 65(75#)	3# ms (>620 ns)	β^-	-
	^{59}Ti					β^-, n	
	^{58}Ti					β^-, 2n	
^{61}Sc	^{61}Ti	21	40	61.001 00(86#)	2# ms (>620 ns)	β^-	-
	^{60}Ti					β^-, n	
	^{59}Ti					β^-, 2n	
Titanium							
^{38}Ti	^{36}Ca	22	16	38.011 45(32#)	<120 ns	2p	-
^{39}Ti	^{38}Ca	22	17	39.002 36(22#)	31($^{+6}_{-4}$) ms	β^+, p (85.0%)	-
	^{39}Sc					β^+ (15.0%)	
	^{37}K					β^+, 2p (<0.1%)	
^{40}Ti	^{40}Sc	22	18	39.990 50(17)	53.3(15) ms	β^+ (56.99%)	-
	^{39}Ca					β^+, p (43.01%)	
^{41}Ti	**^{40}Ca**	22	19	40.983 148(30)	80.4(9) ms	β^+, p (>99.9%)	-
	^{41}Sc					β^+ (<0.1%)	
^{42}Ti	^{42}Sc	22	20	41.973 049 03(30)	199(6) ms	β^+	-
^{43}Ti	^{43}Sc	22	21	42.968 5225(78)	509(5) ms	β^+	-
^{44}Ti	^{44}Sc	22	22	43.959 689 95(75)	60.248 604 769 15 a	ε	-
^{45}Ti	**^{45}Sc**	22	23	44.958 121 98(95)	3.080 555 555 556 h	β^+	-
^{46}Ti	-	22	24	45.952 627 72(35)	**Stable**		0.082 5(3)
^{47}Ti	-	22	25	46.951 758 79(38)	**Stable**		0.074 4(2)

Nuclide	Daughter Nuclide/ Decay Product	Atomic Number *Z*	Neutron Number *N*	Isotopic Mass (Uncertainty) [u or Da]	Half-Life (Uncertainty)	Decay Mode (Probability)	Natural Abundance (Uncertainty) [mole fraction]
					Stable Nuclide		
^{48}Ti	-	22	26	47.947 941 98(38)	**Stable**		0.737 2(3)
^{49}Ti	-	22	27	48.947 865 68(39)	**Stable**		0.054 1(2)
^{50}Ti	-	22	28	49.944 786 89(39)	**Stable**		0.051 8(2)
^{51}Ti	^{51}V	22	29	50.946 610 65(65)	5.766 666 666 667 min	β^-	-
^{52}Ti	^{52}V	22	30	51.946 893 0(76)	1.7(1) min	β^-	-
^{53}Ti	^{53}V	22	31	52.949 73(11)	32.7(9) s	β^-	-
^{54}Ti	^{54}V	22	32	53.951 05(13)	1.5(4) s	β^-	-
^{55}Ti	^{55}V	22	33	54.955 27(17)	490(90) ms	β^-	-
^{56}Ti	^{56}V ^{55}V	22	34	55.957 91(15)	164(24) ms	β^- (>99.9%) β^-, n (<0.1%)	-
^{57}Ti	^{57}V ^{56}V	22	35	56.963 64(27)	60(16) ms	β^- (>99.9%) β^-, n (<0.1%)	-
^{58}Ti	^{58}V	22	36	57.966 60(43#)	54(7) ms	β^-	-
^{59}Ti	^{59}V	22	37	58.972 47(43#)	30(3) ms	β^-	-
^{60}Ti	^{60}V	22	38	59.976 03(54#)	22(2) ms	β^-	-
^{61}Ti	^{61}V ^{60}V	22	39	60.982 45(64#)	10# ms (>300 ns)	β^- β^-, n	-
^{62}Ti	^{62}V	22	40	61.986 51(75#)	10# ms	β^-	-
^{63}Ti	^{63}V ^{62}V	22	41	62.993 75(75#)	3# ms	β^- β^-, n	-
Vanadium							
^{40}V	^{39}Ti	23	17	40.012 76(43#)	-	p	-
^{41}V	^{40}Ti	23	18	41.000 21(32#)	-	p	-
^{42}V	^{41}Ti	23	19	41.991 82(32#)	<55 ns	p	-
^{43}V	^{43}Ti	23	20	42.980 766(46)	80# ms	β^+	-
^{44}V	^{44}Ti **^{40}Ca**	23	21	43.974 11(20)	111(7) ms	β^+ (>99.9%) β^+, α (<0.1%)	-
^{45}V	^{45}Ti	23	22	44.965 774 8(86)	547(6) ms	β^+	-

Nuclide	Daughter Nuclide/ Decay Product	Atomic Number *Z*	Neutron Number *N*	Isotopic Mass (Uncertainty) [u or Da]	Half-Life (Uncertainty)	Decay Mode (Probability)	Natural Abundance (Uncertainty) [mole fraction]
					Stable Nuclide		
^{46}V	^{46}Ti	23	23	45.960 198 78(36)	422.50(11) ms	β^+	-
^{47}V	^{47}Ti	23	24	46.954 904 91(36)	32.666 666 666 67 min	β^+	-
^{48}V	^{48}Ti	23	25	47.952 252 2(11)	15.973 495 370 37 d	β^+	-
^{49}V	^{49}Ti	23	26	48.948 511 80(96)	329.861 111 111 1 d	ε	-
^{50}V	^{50}Ti	23	27	49.947 156 01(95)	**0.14 Ea** (Observationally Stable)	ε (83.0%)	0.002 50(4)
	^{50}Cr					β^- (17.0%)	
^{51}V	-	23	28	50.943 957 04(94)	**Stable**		0.997 50(4)
^{52}V	^{52}Cr	23	29	51.944 773 01(95)	3.743 333 333 333 min	β^-	-
^{53}V	^{53}Cr	23	30	52.944 336 7(34)	1.60(4) min	β^-	-
^{54}V	^{54}Cr	23	31	53.946 439(16)	49.8(5) s	β^-	-
^{55}V	^{55}Cr	23	32	54.947 24(10)	6.54(15) s	β^-	-
^{56}V	^{56}Cr	23	33	55.950 48(19)	216(4) ms	β- (>99.9%)	-
	^{55}Cr					β-, n	
^{57}V	^{57}Cr	23	34	56.952 52(24)	0.35(1) s	β^- (>99.9%)	-
	^{56}Cr					β^-, n (<0.1%)	
^{58}V	^{58}Cr	23	35	57.956 72(14)	191(8) ms	β^- (>99.9%)	-
	^{57}Cr					β^-, n (<0.1%)	
^{59}V	^{59}Cr	23	36	58.959 39(17)	75(7) ms	β^- (>99.9%)	-
	^{58}Cr					β^-, n (<0.1%)	
^{60}V	^{60}Cr	23	37	59.964 31(24)	122(18) ms	β^- (>99.9%)	-
	^{59}Cr					β^-, n (<0.1%)	
^{61}V	^{61}Cr	23	38	60.967 25(96)	47.0(12) ms	β^- (94.0%)	-
	^{60}Cr					β^-, n (6.0%)	
^{62}V	^{62}Cr	23	39	61.972 65(32#)	33.5(20) ms	β^-	-
^{63}V	^{63}Cr	23	40	62.976 39(43#)	17(3) ms	β^- (65.0%)	-
	^{62}Cr					β^-, n (35.0%)	
^{64}V	^{64}Cr	23	41	63.982 64(43#)	10# ms (>300 ns)	β^-	-
^{65}V	^{65}Cr	23	42	64.987 50(54#)	10# ms	β^-	-
	^{64}Cr					β^-, n	
^{66}V	-	23	43	65.993 98(64#)	-	-	-
Chromium							

Abbreviations and Notes:

- **^{A}X** (Daughter Nuclide/Decay Product): Daughter Nuclide/Decay Product is Stable
- Uncertainty: Provided in Concise Form (1σ)
- # (Isotopic Mass): Value Partially Derived from Trends from the Mass Surface (TMS)
- # (Half-Life): Value Partially Derived from Trends of Neighbouring Nuclides (TNN)
- Stable Nuclide: No Radioactive Decay Observed
- Decay Modes: See D8

Units:

- u or Da: Unified Atomic Mass Unit
- a: Year
- d: Day
- min: Minute
- s: Second

Sources:

- Nuclide [2] [4] [5] [6]
- Daughter Nuclide/Decay Product [2] [3] [5] [6]
- Atomic Number, Z [2] [4] [5] [6]
- Neutron Number, N [2] [3] [4] [5] [6]
- Isotopic Mass [1] [3] [4] [5]
- Half-Life [2] [3] [5] [6]
- Decay Mode [2] [3] [5] [6]
- Natural Abundance [4] [5]