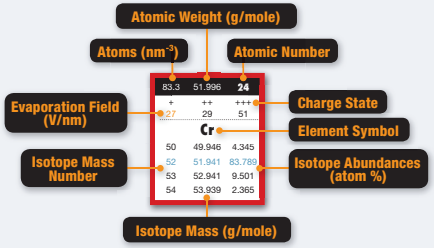
Periodic Table of the Isotopes for Atom Probe Tomography



COLOR KEY:
Most probable charge state
Most abundant isotope
Most stable isotope
Half life (years)

GAS	IONIZATION ENERGY (eV)	BEST IMAGE FIELD (V nm^{-1})	CONDENSATION TEMPERATURE (K)
Xenon	12.1	12	161
Krypton	14.0	15	116
Nitrogen	15.6	17	53
Argon	15.8	22	83
Hydrogen	15.4	22	14
Neon	21.6	35	25
Helium	24.6	44	4

Molar volumes and atomic weights from C.N. Singman, Journal of Chemical Education, 61 (1984) 137.

Evaporation fields from T. T. Tsong, Surface Science, 70 (1978) 211-233.

Isotope Masses and abundances from J. R. de Laeter, J. K. Böhlke, P. De Bièvre, H. Hidaka, H. S. Peiser, K. J. R. Rosman, and P. D. P. Taylor, "Atomic weights of the elements: Review 2000," Pure Applied Chemistry (2003) 75, 683-800.

Ia	IIa	IIIb	IVb	Vb	VIb	VIIb	VIII	VIII	VIII	Ib	IIb	IIIa	IVa	Va	VIa	VIIa	Inert Gases
1 H 1.0078 99.985 2 2.0141 0.0115																	3 He 3.0160 0.00013 4 4.0026 99.9999
3 Li 6.0151 7.6 7 7.0160 92.4	9 Be 9.0122 100.0											5 B 10 10.013 19.9 11 11.009 80.1	6 C 12 12.000 98.89 13 13.003 1.07	7 N 14 14.003 99.636 15 15.000 0.364	8 O 16 15.995 99.757 17 16.999 0.038 18 17.999 0.205	9 F 19 18.998 100.0	10 Ne 20 19.992 90.48 21 20.994 0.27 22 21.991 9.25
11 Na 23 22.990 100.0	12 Mg 24 23.985 78.99 25 24.986 10.00 26 25.983 11.01											13 Al 27 26.982 100.0	14 Si 28 27.977 92.22 29 28.976 4.69 30 29.974 3.09	15 P 31 30.974 100.0	16 S 32 31.972 94.99 33 32.971 0.75 34 33.968 4.25 36 35.967 0.01	17 Cl 35 34.969 75.76 37 36.966 24.24	18 Ar 36 35.968 0.3365 38 37.963 0.0632 40 39.962 99.6003
19 K 39 38.964 93.258 40 39.964 0.0117 41 40.962 6.730	20 Ca 40 39.963 96.941 42 41.959 0.647 43 42.959 0.135 44 43.955 2.086 46 45.954 0.004 48 47.953 0.187	21 Sc 45 44.956 100.0	22 Ti 46 45.953 8.25 47 46.952 7.44 48 47.948 73.72 49 48.948 5.41 50 49.945 5.18	23 V 50 49.947 0.25 51 50.944 99.75	24 Cr 50 49.946 4.345 52 51.941 83.789 53 52.941 9.501 54 53.939 2.365	25 Mn 55 54.938 100.0	26 Fe 54 53.940 5.845 56 55.935 91.754 57 56.935 2.119 58 57.933 0.282	27 Co 59 58.933 100.0	28 Ni 58 57.935 68.077 60 59.931 26.223 61 60.931 1.140 62 61.928 3.635 64 63.928 0.926	29 Cu 63 62.930 69.15 65 64.928 30.85	30 Zn 64 63.929 48.268 66 65.926 27.975 67 66.927 4.102 68 67.925 19.024 70 69.925 0.631	31 Ga 69 68.926 60.108 71 70.925 39.892	32 Ge 70 69.924 20.38 72 71.922 27.31 73 72.923 7.76 74 73.921 36.72 76 75.921 7.83	33 As 75 74.922 100.0	34 Se 74 73.922 0.89 76 75.919 9.37 77 76.920 7.64 78 77.917 23.77 80 79.917 49.61 82 81.917 8.73	35 Br 79 78.918 50.69 81 80.916 49.31	36 Kr 78 77.920 0.355 80 79.916 2.29 82 81.913 11.6 83 82.914 11.5 84 83.912 57.0 86 85.911 17.3
37 Rb 85 84.912 72.165 87 86.909 27.835	38 Sr 84 83.913 0.56 86 85.909 9.86 87 86.909 7.00 88 87.906 82.58	39 Y 89 88.906 100.0	40 Zr 90 89.905 51.45 91 90.906 11.22 92 91.905 17.15 94 93.906 17.38 96 95.908 2.80	41 Nb 93 92.906 100.0	42 Mo 92 91.907 14.77 94 93.905 9.22 95 94.906 15.90 96 95.905 16.68 97 96.906 9.56 98 97.905 24.20 100 99.907 9.67	43 Tc 98 97.907 4.2E6 99 98.906 2.11E5	44 Ru 96 95.908 5.54 98 97.905 1.87 99 98.906 12.8 100 99.904 12.6 101 100.91 17.1 102 101.90 31.6 104 103.91 18.6	45 Rh 103 102.91 100.0	46 Pd 102 101.91 1.02 104 103.90 11.14 105 104.91 22.33 106 105.90 27.33 108 107.90 26.46 110 109.91 11.72	47 Ag 107 106.91 51.839 109 108.90 48.161	48 Cd 106 105.91 1.25 108 107.90 0.89 110 109.90 12.49 111 110.90 12.80 112 111.90 24.13 113 112.90 12.22 114 113.90 28.73 116 115.90 7.49	49 In 113 112.90 4.29 115 114.90 95.71	50 Sn 112 111.90 0.97 113 112.90 0.66 114 113.90 0.34 115 114.90 14.54 116 115.90 7.68 117 116.90 24.22 118 117.90 8.59 119 118.90 32.58 120 119.90 4.63 122 121.90 4.63 124 123.91 5.79	51 Sb 121 120.90 57.21 123 122.90 42.79	52 Te 120 119.90 0.09 122 121.90 2.55 123 122.90 .89 124 123.90 4.74 125 124.90 7.07 126 125.90 18.84 128 127.90 31.74 130 129.91 34.08	53 I 127 126.90 100	54 Xe 124 123.91 .095 126 125.90 .089 128 127.90 1.91 129 128.90 26.40 130 129.90 4.071 131 130.91 21.232 132 131.90 26.909 134 133.91 10.436 136 135.91 8.857
55 Cs 133 132.91 100.0	56 Ba 130 129.91 0.106 132 131.91 0.101 134 133.90 2.417 135 134.91 6.592 136 135.90 7.854 137 136.91 11.23 138 137.91 71.70		72 Hf 174 173.94 0.16 176 175.94 5.26 177 176.94 18.60 178 177.94 27.28 179 178.95 13.62 180 179.95 35.08	73 Ta 180 179.95 0.012 181 180.95 99.988	74 W 180 179.95 0.12 182 181.95 26.50 183 182.95 14.34 184 183.95 30.64 186 185.95 28.43	75 Re 185 184.95 37.40 187 186.96 62.60	76 Os 184 183.95 0.020 186 185.95 1.59 187 186.96 1.96 188 187.96 13.24 189 188.96 16.15 190 189.96 26.26 192 191.96 40.78	77 Ir 191 190.96 37.3 193 192.96 62.7	78 Pt 190 189.96 .014 192 191.96 .782 194 193.96 32.967 195 194.96 33.832 196 195.96 25.242 198 197.97 7.163	79 Au 197 196.97 100.0	80 Hg 196 195.97 0.15 198 197.97 9.97 199 198.97 16.87 200 199.97 23.10 201 200.97 13.18 202 201.97 29.86 204 203.97 6.87	81 Tl 203 202.97 29.52 205 204.97 70.47	82 Pb 204 203.97 1.4 206 205.97 24.1 207 206.98 22.1 208 207.98 52.4	83 Bi 209 208.98 100.0	84 Po 209 208.98 102	85 At 210 209.99 0.0009	86 Rn 222 222.02 0.010
no data [223] 87 Fr 223 223.02 0.00004	no data [226] 88 Ra 226 226.03 1600																

			57 La 138 137.91 0.090 139 138.91 99.91	58 Ce 136 135.91 0.185 138 137.91 .251 140 139.91 88.45 142 141.91 11.11	59 Pr 141 140.91 100	60 Nd 142 141.91 27.2 143 142.91 12.2 144 143.91 13.8 145 144.91 8.30 146 145.91 17.2 148 147.92 5.7 150 149.92 5.6	61 Pm 145 144.91 17.7	62 Sm 144 143.91 3.07 147 146.91 14.99 148 147.91 11.24 149 148.92 13.82 150 149.92 7.38 152 151.92 26.75 154 153.92 22.75	63 Eu 151 150.92 47.8 153 152.92 52.2	64 Gd 152 151.92 0.20 154 153.92 2.18 155 154.92 14.80 156 155.92 20.47 157 156.92 15.65 158 157.92 24.84 160 159.93 21.86	65 Tb 159 158.93 100.0	66 Dy 156 155.92 0.06 158 157.92 0.10 160 159.93 2.33 161 160.93 18.89 162 161.93 25.48 163 162.93 24.90 164 163.93 28.26	67 Ho 165 164.93 100	68 Er 162 161.93 0.139 164 163.93 1.601 166 165.93 33.503 167 166.93 22.869 168 167.93 26.978 170 169.94 14.910	69 Tm 169 168.93 100.0	70 Yb 168 167.93 0.13 170 169.93 3.04 171 170.94 14.28 172 171.94 21.83 173 172.94 16.13 174 173.94 31.83 176 175.94 12.76	71 Lu 175 174.94 97.41 176 175.94 2.59
			89 Ac 227 227.03 21.773	90 Th 232 232.04 100	91 Pa 231 231.04 32760	92 U 234 234.04 0.0054 235 235.04 0.720 238 238.05 99.2745	93 Np 237 237.05 2.144E6	94 Pu 244 244.06 8E7	95 Am 243 243.06 7370	96 Cm 247 247.07 15.6E6	97 Bk 247 247.07 1380	98 Cf 251 251.08 898	99 Es 252 252.08 0.755	100 Fm 257 257.10 0.275	101 Md 258 258.10 0.00011	102 No 259 259.10 0.00011	103 Lw 262 262.11 4.1E-4

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