Periodensystem der Elemente

Schlüssel

II	← Hauptgruppen-Nummer
2	← Nummer der Gruppe nach IUPAC
4 Be	← Atomsymbol mit Ordnungszahl
Beryllium	← Deutscher Name nach IUPAC
9.01 u	← Gerundete mittlere Atommasse
1.57	← Elektronegativität nach Pauling
140 pm	← Atomradius
90 pm	← Kovalenzradius
2	← Ausgewählte Oxidationszahlen (wichtigste fett)
$1s^2 2s^2$	← Elektronenkonfiguration im Grundzustand
1'560 K	← Schmelztemperatur
2'745 K	← Siedetemperatur
1.85 g/cm³	← Dichte bei Raumtemperatur

Daten für die Atomsorte

Daten für den Elementarstoff

Metalle	Hauptgruppen-Elemente
Nichtmetalle	Nebengruppen-Elemente
Halbmetalle	Lanthanoide und Actinoide

I	II	III	IV	V	VI	VII	VIII
1	2	13	14	15	16	17	18
1 H Wasserstoff 1.01 u 2.20 79 pm 32 pm 1 $1s^1$ 14.025 K 20.268 K 0.0899 g/L							2 He Helium 4.00 u - 49 pm 93 pm - $1s^2$ 1 K (26 atm) 4.215 K 0.1787 g/L
3 Li Lithium 6.94 u 0.98 205 pm 123 pm 1 $1s^2 2s^1$ 453.7 K 1'615 K 0.53 g/cm³	4 Be Beryllium 9.01 u 1.57 140 pm 90 pm 2 $1s^2 2s^2$ 1'560 K 2'745 K 1.85 g/cm³	5 B Bor 10.81 u 2.04 117 pm 82 pm 3 $1s^2 2s^2 p^1$ 2'300 K 4'275 K 2.34 g/cm³	6 C Kohlenstoff 12.01 u 2.55 91 pm 77 pm -4, ... , 4 $1s^2 2s^2 p^2$ 4'100 K 4'470 K 2.62 g/cm³	7 N Stickstoff 14.01 u 3.04 75 pm 75 pm -3, ... , 5 $1s^2 2s^2 p^3$ 63.14 K 77.35 K 1.251 g/L	8 O Sauerstoff 16.00 u 3.44 65 pm 73 pm -2, -1 $1s^2 2s^2 p^4$ 50.35 K 90.18 K 1.429 g/L	9 F Fluor 19.00 u 3.98 57 pm 72 pm -1 $1s^2 2s^2 p^5$ 53.48 K 84.95 K 1.696 g/L	10 Ne Neon 20.18 u - 51 pm 71 pm - $1s^2 2s^2 p^6$ 24.553 K 27.096 K 0.901 g/L
11 Na Natrium 22.99 u 0.93 223 pm 154 pm 1 [Ne]$3s^1$ 371.0 K 1'156 K 0.97 g/cm³	12 Mg Magnesium 24.31 u 1.31 172 pm 136 pm 2 [Ne]$3s^2$ 922 K 1'363 K 1.74 g/cm³	13 Al Aluminium 26.98 u 1.61 182 pm 118 pm 3 [Ne]$3s^2 p^1$ 933.25 K 2'793 K 2.70 g/cm³	14 Si Silicium 28.09 u 1.90 146 pm 111 pm 4 [Ne]$3s^2 p^2$ 1'685 K 3'540 K 2.33 g/cm³	15 P Phosphor 30.97 u 2.19 123 pm 106 pm ±3, 5, 4 [Ne]$3s^2 p^3$ 317.30 K 550 K 1.82 g/cm³	16 S Schwefel 32.07 u 2.58 109 pm 102 pm ±2, 4, 6 [Ne]$3s^2 p^4$ 388.36 K 717.75 K 2.07 g/cm³	17 Cl Chlor 35.45 u 3.16 97 pm 99 pm ±1, 3, 5, 7 [Ne]$3s^2 p^5$ 172.16 K 239.1 K 3.17 g/L	18 Ar Argon 39.95 u - 88 pm 98 pm - [Ne]$3s^2 p^6$ 83.81 K 87.30 K 1.784 g/L
19 K Kalium 39.10 u 0.82 277 pm 203 pm 1 [Ar]$4s^1$ 336.35 K 1'032 K 0.86 g/cm³	20 Ca Calcium 40.08 u 1.00 223 pm 174 pm 2 [Ar]$4s^2$ 1'112 K 1'757 K 1.55 g/cm³	21 Sc Scandium 44.96 u 1.36 209 pm 144 pm 3 [Ar]$3d^1 4s^2$ 1'812 K 3'104 K 3.0 g/cm³	22 Ti Titan 47.87 u 1.54 200 pm 132 pm 4, 3 [Ar]$3d^2 4s^2$ 1'943 K 3'562 K 4.50 g/cm³	23 V Vanadium 50.94 u 1.63 192 pm 122 pm 5, 4, 3, 2 [Ar]$3d^3 4s^2$ 2'175 K 3'682 K 5.8 g/cm³	24 Cr Chrom 52.00 u 1.66 185 pm 118 pm 6, 3, 2 [Ar]$3d^5 4s^1$ 2'130 K 2'945 K 7.19 g/cm³	25 Mn Mangan 54.94 u 1.55 179 pm 117 pm 7, 6, 4, 2, 3 [Ar]$3d^5 4s^2$ 1'517 K 2'335 K 7.43 g/cm³	26 Fe Eisen 55.85 u 1.83 172 pm 117 pm 2, 3 [Ar]$3d^6 4s^2$ 1'809 K 3'135 K 7.86 g/cm³	27 Co Cobalt 58.93 u 1.88 167 pm 116 pm 2, 3 [Ar]$3d^7 4s^2$ 1'768 K 3'201 K 8.90 g/cm³	28 Ni Nickel 58.69 u 1.91 162 pm 115 pm 2, 3 [Ar]$3d^8 4s^2$ 1'726 K 3'187 K 8.90 g/cm³	29 Cu Kupfer 63.55 u 1.90 157 pm 117 pm 2, 1 [Ar]$3d^{10} 4s^1$ 1'357.6 K 2'836 K 8.96 g/cm³	30 Zn Zink 65.41 u 1.65 153 pm 125 pm 2 [Ar]$3d^{10} 4s^2$ 692.73 K 1'180 K 7.14 g/cm³	31 Ga Gallium 69.72 u 1.81 181 pm 126 pm 3 [Ar]$3d^{10} 4s^2 p^1$ 302.90 K 2'478 K 5.91 g/cm³	32 Ge Germanium 72.64 u 2.01 152 pm 122 pm 4 [Ar]$3d^{10} 4s^2 p^2$ 1'210.4 K 3'107 K 5.32 g/cm³	33 As Arsen 74.92 u 2.18 133 pm 120 pm ±3, 5 [Ar]$3d^{10} 4s^2 p^3$ 1'081 K (28 atm) 876 K (subl) 5.72 g/cm³	34 Se Selen 78.96 u 2.55 122 pm 116 pm -2, 4, 6 [Ar]$3d^{10} 4s^2 p^4$ 494 K 958 K 4.80 g/cm³	35 Br Brom 79.90 u 2.96 112 pm 114 pm ±1, 5 [Ar]$3d^{10} 4s^2 p^5$ 265.90 K 332.25 K 3.12 g/cm³	36 Kr Krypton 83.80 u - 103 pm 112 pm - [Ar]$3d^{10} 4s^2 p^6$ 115.78 K 119.80 K 3.74 g/L
37 Rb Rubidium 85.47 u 0.82 298 pm 216 pm 1 [Kr]$5s^1$ 312.64 K 961 K 1.53 g/cm³	38 Sr Strontium 87.62 u 0.95 245 pm 191 pm 2 [Kr]$5s^2$ 1'041 K 1'650 K 2.6 g/cm³	39 Y Yttrium 88.91 u 1.22 227 pm 162 pm 3 [Kr]$4d^1 5s^2$ 1'799 K 3'611 K 4.5 g/cm³	40 Zr Zirconium 91.22 u 1.33 216 pm 145 pm 4 [Kr]$4d^2 5s^2$ 2'125 K 4'682 K 6.49 g/cm³	41 Nb Niob 92.91 u 1.6 208 pm 134 pm 5, 3 [Kr]$4d^4 5s^1$ 2'740 K 5'017 K 8.55 g/cm³	42 Mo Molybdän 95.94 u 2.16 201 pm 130 pm 6, 5, 4, 3, 2 [Kr]$4d^5 5s^1$ 2'890 K 4'912 K 10.2 g/cm³	43 Tc Technetium (98 u) 1.9 195 pm 127 pm 7 [Kr]$4d^5 5s^2$ 2'473 K 4'538 K 11.5 g/cm³	44 Ru Ruthenium 101.07 u 2.2 189 pm 125 pm 2, 3, 4, 6, 8 [Kr]$4d^7 5s^1$ 2'523 K 4'423 K 12.2 g/cm³	45 Rh Rhodium 102.91 u 2.28 183 pm 125 pm 2, 3, 4 [Kr]$4d^8 5s^1$ 2'236 K 3'970 K 12.4 g/cm³	46 Pd Palladium 106.42 u 2.2 179 pm 128 pm 2, 4 [Kr]$4d^{10}$ 1'825 K 3'237 K 12.0 g/cm³	47 Ag Silber 107.87 u 1.93 175 pm 134 pm 1 [Kr]$4d^{10} 5s^1$ 1'234 K 2'436 K 10.5 g/cm³	48 Cd Cadmium 112.41 u 1.69 171 pm 148 pm 2 [Kr]$4d^{10} 5s^2$ 594.18 K 1'040 K 8.65 g/cm³	49 In Indium 114.82 u 1.78 200 pm 144 pm 3 [Kr]$4d^{10} 5s^2 p^1$ 429.76 K 2'346 K 7.31 g/cm³	50 Sn Zinn 118.71 u 1.96 172 pm 141 pm 4, 2 [Kr]$4d^{10} 5s^2 p^2$ 505.06 K 2'876 K 7.30 g/cm³	51 Sb Antimon 121.76 u 2.05 153 pm 140 pm ±3, 5 [Kr]$4d^{10} 5s^2 p^3$ 904 K 1'860 K 6.68 g/cm³	52 Te Tellur 127.60 u 2.1 142 pm 136 pm -2, 4, 6 [Kr]$4d^{10} 5s^2 p^4$ 722.65 K 1'261 K 6.24 g/cm³	53 I Iod 126.90 u 2.66 132 pm 133 pm ±1, 5, 7 [Kr]$4d^{10} 5s^2 p^5$ 386.7 K 458.4 K 4.92 g/cm³	54 Xe Xenon 131.29 u - 124 pm 131 pm - [Kr]$4d^{10} 5s^2 p^6$ 161.36 K 165.03 K 5.89 g/L
55 Cs Cäsium 132.91 u 0.79 334 pm 235 pm 1 [Xe]$6s^1$ 301.55 K 944 K 1.87 g/cm³	56 Ba Barium 137.33 u 0.89 278 pm 198 pm 2 [Xe]$6s^2$ 1'002 K 2'171 K 3.5 g/cm³	57 La Lanthan 138.91 u 1.1 274 pm 169 pm 3 [Xe]$5d^1 6s^2$ 1'193 K 3'730 K 6.7 g/cm³	58 Ce Cer 140.12 u 1.12 270 pm 165 pm 3, 4 [Xe]$4f^1 5d^1 6s^2$ 1'071 K 3'699 K 6.78 g/cm³	59 Pr Praseodym 140.91 u 1.13 267 pm 165 pm 3, 4 [Xe]$4f^3 6s^2$ 1'204 K 3'785 K 6.77 g/cm³	60 Nd Neodym 144.24 u 1.14 264 pm 164 pm 3 [Xe]$4f^4 6s^2$ 1'289 K 3'341 K 7.00 g/cm³	61 Pm Promethium (145 u) 1.13 262 pm 163 pm 3 [Xe]$4f^5 6s^2$ 1'204 K 3'785 K 6.745 g/cm³	62 Sm Samarium 150.36 u 1.17 259 pm 162 pm 3, 2 [Xe]$4f^6 6s^2$ 1'345 K 2'064 K 7.54 g/cm³	63 Eu Europium 151.96 u 1.2 256 pm 185 pm 3, 2 [Xe]$4f^7 6s^2$ 1'090 K 1'870 K 5.26 g/cm³	64 Gd Gadolinium 157.25 u 1.2 254 pm 161 pm 3 [Xe]$4f^7 5d^1 6s^2$ 1'585 K 3'539 K 7.89 g/cm³	65 Tb Terbium 158.93 u 1.2 251 pm 159 pm 3, 4 [Xe]$4f^9 6s^2$ 1'630 K 3'496 K 8.27 g/cm³	66 Dy Dysprosium 162.50 u 1.22 249 pm 159 pm 3 [Xe]$4f^{10} 6s^2$ 1'682 K 2'835 K 8.54 g/cm³	67 Ho Holmium 164.93 u 1.23 247 pm 158 pm 3 [Xe]$4f^{11} 6s^2$ 1'743 K 2'968 K 8.80 g/cm³	68 Er Erbium 167.26 u 1.24 245 pm 157 pm 3 [Xe]$4f^{12} 6s^2$ 1'795 K 3'136 K 9.05 g/cm³	69 Tm Thulium 168.93 u 1.25 242 pm 156 pm 3, 2 [Xe]$4f^{13} 6s^2$ 1'818 K 2'220 K 9.33 g/cm³	70 Yb Ytterbium 173.04 u 1.1 240 pm 174 pm 3, 2 [Xe]$4f^{14} 6s^2$ 1'097 K 1'467 K 6.98 g/cm³	71 Lu Lutetium 174.97 u 1.27 225 pm 156 pm 3 [Xe]$4f^{14} 5d^1 6s^2$ 1'936 K 3'668 K 9.84 g/cm³	72 Hf Hafnium 178.49 u 1.3 216 pm 144 pm 4 [Xe]$4f^{14} 5d^2 6s^2$ 2'500 K 4'876 K 13.1 g/cm³	73 Ta Tantal 180.95 u 1.5 209 pm 134 pm 5 [Xe]$4f^{14} 5d^3 6s^2$ 3'287 K 5'731 K 16.6 g/cm³	74 W Wolfram 183.84 u 2.36 202 pm 130 pm 6, 5, 4, 3, 2 [Xe]$4f^{14} 5d^4 6s^2$ 3'680 K 5'828 K 19.3 g/cm³	75 Re Rhenium 186.21 u 1.9 197 pm 128 pm 7, 6, 4, 2, -1 [Xe]$4f^{14} 5d^5 6s^2$ 3'453 K 5'869 K 21.0 g/cm³	76 Os Osmium 190.23 u 2.2 192 pm 126 pm 2, 3, 4, 6, 8 [Xe]$4f^{14} 5d^6 6s^2$ 3'300 K 5'285 K 22.4 g/cm³	77 Ir Iridium 192.22 u 2.2 187 pm 127 pm 2, 3, 4, 6 [Xe]$4f^{14} 5d^7 6s^2$ 2'716 K 4'701 K 22.5 g/cm³	78 Pt Platin 195.08 u 2.28 183 pm 130 pm 2, 4 [Xe]$4f^{14} 5d^9 6s^1$ 2'045 K 4'100 K 21.4 g/cm³	79 Au Gold 196.97 u 2.54 179 pm 134 pm 3, 1 [Xe]$4f^{14} 5d^{10} 6s^1$ 1'337.58 K 3'130 K 19.3 g/cm³	80 Hg Quecksilber 200.59 u 2 176 pm 149 pm 2, 1 [Xe]$4f^{14} 5d^{10} 6s^2$ 234.28 K 630 K 13.53 g/cm³	81 Tl Thallium 204.38 u 2.04 208 pm 148 pm 3, 1 [Xe]$4f^{14} 5d^{10} 6s^2 p^1$ 577 K 1'746 K 11.85 g/cm³	82 Pb Blei 207.21 u 2.33 181 pm 147 pm 4, 2 [Xe]$4f^{14} 5d^{10} 6s^2 p^2$ 600.6 K 2'023 K 11.4 g/cm³	83 Bi Bismut 208.98 u 2.02 163 pm 146 pm 3, 5 [Xe]$4f^{14} 5d^{10} 6s^2 p^3$ 544.52 K 1'837 K 9.8 g/cm³	84 Po Polonium (209 u) 2 181 pm 146 pm 4, 2 [Xe]$4f^{14} 5d^{10} 6s^2 p^4$ 527 K 1'235 K 9.4 g/cm³	85 At Astat (210 u) 2.2 143 pm (145 pm) ±1, 3, 5, 7 [Xe]$4f^{14} 5d^{10} 6s^2 p^5$ 575 K 610 K	86 Rn Radon (222 u) - 134 pm - - [Xe]$4f^{14} 5d^{10} 6s^2 p^6$ 202 K 211 K 9.91 g/L
87 Fr Francium (223 u) 0.7 - - 1 [Rn]$7s^1$ 300 K 950 K -	88 Ra Radium (226 u) 0.9 - - 2 [Rn]$7s^2$ 973 K 1'809 K 5 g/cm³	89 Ac Actinium (227 u) 1.1 - - 3 [Rn]$6d^1 7s^2$ 1'323 K 3'473 K 10.07 g/cm³	90 Th Thorium 232.04 u 1.3 - 165 pm 4 [Rn]$6d^2 7s^2$ 2'028 K 5'061 K 11.7 g/cm³	91 Pa Protactinium 231.04 u 1.5 - - 5, 4 [Rn]$5f^2 6d^1 7s^2$ - - 15.4 g/cm³	92 U Uran 238.03 u 1.38 - - 6, 5, 4, 3 [Rn]$5f^3 6d^1 7s^2$ 1'405 K 4'407 K 18.90 g/cm³	93 Np Neptunium (237 u) 1.36 - - 6, 5, 4, 3 [Rn]$5f^4 6d^1 7s^2$ 910 K - 20.4 g/cm³	94 Pu Plutonium (244 u) 1.28 - - 6, 5, 4, 3 [Rn]$5f^6 7s^2$ 913 K 3'503 K 19.8 g/cm³	95 Am Americium (243 u) 1.3 - - 6, 5, 4, 3 [Rn]$5f^7 7s^2$ 1'268 K 2'880 K 13.6 g/cm³	96 Cm Curium (247 u) 1.3 - - 3 [Rn]$5f^7 6d^1 7s^2$ 1'340 K - 13.511 g/cm³	97 Bk Berkelium (247 u) 1.3 - - 4, 3 [Rn]$5f^9 7s^2$ - - -	98 Cf Californium (251 u) 1.3 - - 3 [Rn]$5f^{10} 7s^2$ 900 K - -	99 Es Einsteinium (252 u) 1.3 - - - [Rn]$5f^{11} 7s^2$ - - -	100 Fm Fermium (257 u) 1.3 - - - [Rn]$5f^{12} 7s^2$ - - -	101 Md Mendelevium (258 u) 1.3 - - - [Rn]$5f^{13} 7s^2$ - - -	102 No Nobelium (259 u) 1.3 - - - [Rn]$5f^{14} 7s^2$ - - -	103 Lr Lawrencium (262 u) - - - - [Rn]$5f^{14} 6d^1 7s^2$ - - -	104 Rf Rutherfordium (267 u) - - - - [Rn]$5f^{14} 6d^2 7s^2$ - - -	105 Db Dubnium (268 u) - - - - [Rn]$5f^{14} 6d^3 7s^2$ - - -	106 Sg Seaborgium (271 u) - - - - [Rn]$5f^{14} 6d^4 7s^2$ - - -	107 Bh Bohrium (272 u) - - - - [Rn]$5f^{14} 6d^5 7s^2$ - - -	108 Hs Hassium (270 u) - - - - [Rn]$5f^{14} 6d^6 7s^2$ - - -	109 Mt Meitnerium (276 u) - - - - [Rn]$5f^{14} 6d^7 7s^2$ - - -	110 Ds Darmstadtium (281 u) - - - - [Rn]$5f^{14} 6d^8 7s^1$ - - -	111 Rg Roentgenium (280 u) - - - - [Rn]$5f^{14} 6d^{10} 7s^1$ - - -	112 Uub Ununbium (285 u) - - - - [Rn]$5f^{14} 6d^{10} 7s^2$ - - -	113 Uut Ununtrium (284 u) - - - - [Rn]$5f^{14} 6d^{10} 7s^2 p^1$ - - -	114 Uuq Ununquadium (289 u) - - - - [Rn]$5f^{14} 6d^{10} 7s^2 p^2$ - - -	115 Uup Ununpentium (288 u) - - - - [Rn]$5f^{14} 6d^{10} 7s^2 p^3$ - - -	116 Uuh Ununhexium (293 u) - - - - [Rn]$5f^{14} 6d^{10} 7s^2 p^4$ - - -	117 Uus Ununseptium - - - - [Rn]$5f^{14} 6d^{10} 7s^2 p^5$ - - -	118 Uuo Ununoctium (294 u) - - - - [Rn]$5f^{14} 6d^{10} 7s^2 p^6$ - - -

© 2007 Graf / Schilliger / Wuthier