

Hauptgruppen
1

Periodensystem der Elemente

Hauptgruppen
18

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1 1,008 H Wasserstoff 1s ¹	2 2,016 He Helium 1s ²	3 6,941 Li Lithium [He]2s ¹	4 9,012 Be Beryllium [He]2s ²	5 10,81 B Bor [He]2s ² 2p ¹	6 12,011 C Kohlenstoff [He]2s ² 2p ²	7 14,007 N Stickstoff [He]2s ² 2p ³	8 15,999 O Sauerstoff [He]2s ² 2p ⁴	9 18,998 F Fluor [He]2s ² 2p ⁵	10 20,180 Ne Neon [He]2s ² 2p ⁶	11 22,990 Na Natrium [Ne]3s ¹	12 24,305 Mg Magnesium [Ne]3s ²	13 26,982 Al Aluminium [Ne]3s ² 3p ¹	14 28,086 Si Silicium [Ne]3s ² 3p ²	15 30,974 P Phosphor [Ne]3s ² 3p ³	16 32,07 S Schwefel [Ne]3s ² 3p ⁴	17 35,453 Cl Chlor [Ne]3s ² 3p ⁵	18 39,948 Ar Argon [Ne]3s ² 3p ⁶
19 39,10 K Kalium [Ar]4s ¹	20 40,08 Ca Calcium [Ar]4s ²	21 44,96 Sc Scandium [Ar]3d ¹ 4s ²	22 47,88 Ti Titan [Ar]3d ² 4s ²	23 50,94 V Vanadium [Ar]3d ³ 4s ²	24 52,00 Cr Chrom [Ar]3d ⁵ 4s ¹	25 54,94 Mn Mangan [Ar]3d ⁵ 4s ²	26 55,85 Fe Eisen [Ar]3d ⁶ 4s ²	27 58,93 Co Cobalt [Ar]3d ⁷ 4s ²	28 58,70 Ni Nickel [Ar]3d ⁸ 4s ²	29 63,55 Cu Kupfer [Ar]3d ¹⁰ 4s ¹	30 65,38 Zn <th>31 69,72 Ga Gallium [Ar]3d¹⁰4s²4p¹</th> <th>32 72,61 Ge Germanium [Ar]3d¹⁰4s²4p²</th> <th>33 74,92 As Arsen [Ar]3d¹⁰4s²4p³</th> <th>34 78,96 Se Selen [Ar]3d¹⁰4s²4p⁴</th> <th>35 79,90 Br Brom [Ar]3d¹⁰4s²4p⁵</th> <th>36 83,80 Kr Krypton [Ar]3d¹⁰4s²4p⁶</th>	31 69,72 Ga Gallium [Ar]3d ¹⁰ 4s ² 4p ¹	32 72,61 Ge Germanium [Ar]3d ¹⁰ 4s ² 4p ²	33 74,92 As Arsen [Ar]3d ¹⁰ 4s ² 4p ³	34 78,96 Se Selen [Ar]3d ¹⁰ 4s ² 4p ⁴	35 79,90 Br Brom [Ar]3d ¹⁰ 4s ² 4p ⁵	36 83,80 Kr Krypton [Ar]3d ¹⁰ 4s ² 4p ⁶
37 85,47 Rb Rubidium [Kr]5s ¹	38 87,62 Sr Strontium [Kr]5s ²	39 88,91 Y Yttrium [Kr]4d ¹ 5s ²	40 91,22 Zr Zirkonium [Kr]4d ² 5s ²	41 92,91 Nb Niob [Kr]4d ⁴ 5s ¹	42 95,94 Mo Molybdän [Kr]4d ⁵ 5s ¹	43 (98) Tc Technetium [Kr]4d ⁵ 5s ²	44 101,07 Ru Ruthenium [Kr]4d ⁷ 5s ¹	45 102,91 Rh Rhodium [Kr]4d ⁸ 5s ¹	46 106,4 Pd Palladium [Kr]4d ¹⁰ 5s ⁰	47 107,87 Ag Silber [Kr]4d ¹⁰ 5s ¹	48 112,41 Cd Cadmium [Kr]4d ¹⁰ 5s ²	49 114,82 In Indium [Kr]4d ¹⁰ 5s ² 5p ¹	50 118,71 Sn Zinn [Kr]4d ¹⁰ 5s ² 5p ²	51 121,76 Sb Antimon [Kr]4d ¹⁰ 5s ² 5p ³	52 127,60 Te Tellur [Kr]4d ¹⁰ 5s ² 5p ⁴	53 126,90 I Iod [Kr]4d ¹⁰ 5s ² 5p ⁵	54 131,29 Xe Xenon [Kr]4d ¹⁰ 5s ² 5p ⁶
55 132,91 Cs Cäsium [Xe]6s ¹	56 137,33 Ba Barium [Xe]6s ²	57 138,91 La Lanthanum [Xe]5d ¹ 6s ²	72 178,49 Hf Hafnium [Xe]4f ¹⁴ 5d ² 6s ²	73 180,95 Ta Tantal [Xe]4f ¹⁴ 5d ³ 6s ²	74 183,84 W Wolfram [Xe]4f ¹⁴ 5d ⁴ 6s ²	75 186,2 Re Rhenium [Xe]4f ¹⁴ 5d ⁵ 6s ²	76 190,2 Os Osmium [Xe]4f ¹⁴ 5d ⁶ 6s ²	77 192,2 Ir Iridium [Xe]4f ¹⁴ 5d ⁷ 6s ²	78 195,1 Pt Platin [Xe]4f ¹⁴ 5d ⁹ 6s ¹	79 196,97 Au Gold [Xe]4f ¹⁴ 5d ¹⁰ 6s ¹	80 200,59 Hg Quecksilber [Xe]4f ¹⁴ 5d ¹⁰ 6s ²	81 204,38 Tl Thallium [Xe]4f ¹⁴ 5d ¹⁰ 6s ² 6p ¹	82 207,2 Pb Blei [Xe]4f ¹⁴ 5d ¹⁰ 6s ² 6p ²	83 208,98 Bi Bismut [Xe]4f ¹⁴ 5d ¹⁰ 6s ² 6p ³	84 (209) Po Polonium [Xe]4f ¹⁴ 5d ¹⁰ 6s ² 6p ⁴	85 (210) At Astat [Xe]4f ¹⁴ 5d ¹⁰ 6s ² 6p ⁵	86 (222) Rn Radon [Xe]4f ¹⁴ 5d ¹⁰ 6s ² 6p ⁶
87 223 Fr Francium [Rn]7s ¹	88 (226) Ra Radium [Rn]7s ²	89 (227) Ac Actinium [Rn]6d ¹ 7s ²	104 (261) Rf Rutherfordium [Rn]5f ¹⁴ 6d ² 7s ²	105 (262) Db Dubnium [Rn]5f ¹⁴ 6d ³ 7s ²	106 (263) Sg Seaborgium [Rn]5f ¹⁴ 6d ⁴ 7s ²	107 (262) Bh Bohrium [Rn]5f ¹⁴ 6d ⁵ 7s ²	108 (265) Hs Hassium [Rn]5f ¹⁴ 6d ⁶ 7s ²	109 (266) Mt Meitnerium [Rn]5f ¹⁴ 6d ⁷ 7s ²	110 (271) Ds Darmstadtium [Rn]5f ¹⁴ 6d ⁹ 7s ²	111 (272) 111	112 (277) 112	113 (284) 113	114 (289) 114	115 (290) 115	116 (293) 116	117 (294) 117	118 (294) 118
101 232,038 Ce Cer [Xe]4f ¹ 5d ¹ 6s ²	102 232,038 Pr Praseodym [Xe]4f ³ 6s ²	103 232,038 Nd Neodym [Xe]4f ⁴ 6s ²	104 232,038 Pm Promethium [Xe]4f ⁵ 6s ²	105 232,038 Sm Samarium [Xe]4f ⁶ 6s ²	106 232,038 Eu Europium [Xe]4f ⁷ 6s ²	107 232,038 Gd Gadolinium [Xe]4f ⁷ 5d ¹ 6s ²	108 232,038 Tb Terbium [Xe]4f ⁹ 6s ²	109 232,038 Dy Dysprosium [Xe]4f ¹⁰ 6s ²	110 232,038 Ho Holmium [Xe]4f ¹¹ 6s ²	111 232,038 Er Erbium [Xe]4f ¹² 6s ²	112 232,038 Tm Thulium [Xe]4f ¹³ 6s ²	113 232,038 Yb Ytterbium [Xe]4f ¹⁴ 6s ²	114 232,038 Lu Lutetium [Xe]4f ¹⁴ 5d ¹ 6s ²	115 232,038 115	116 232,038 116	117 232,038 117	118 232,038 118
119 286 Fr Francium [Rn]7s ¹	120 286 Ra Radium [Rn]7s ²	121 286 Ac Actinium [Rn]6d ¹ 7s ²	138 286 La Lanthanum [Xe]5d ¹ 6s ²	139 286 Ce Cer [Xe]4f ¹ 5d ¹ 6s ²	140 286 Pr Praseodym [Xe]4f ³ 6s ²	141 286 Nd Neodym [Xe]4f ⁴ 6s ²	142 286 Pm Promethium [Xe]4f ⁵ 6s ²	143 286 Sm Samarium [Xe]4f ⁶ 6s ²	144 286 Eu Europium [Xe]4f ⁷ 6s ²	145 286 Gd Gadolinium [Xe]4f ⁷ 5d ¹ 6s ²	146 286 Tb Terbium [Xe]4f ⁹ 6s ²	147 286 Dy Dysprosium [Xe]4f ¹⁰ 6s ²	148 286 Ho Holmium [Xe]4f ¹¹ 6s ²	149 286 Er Erbium [Xe]4f ¹² 6s ²	150 286 Tm Thulium [Xe]4f ¹³ 6s ²	151 286 Yb Ytterbium [Xe]4f ¹⁴ 6s ²	152 286 Lu Lutetium [Xe]4f ¹⁴ 5d ¹ 6s ²
157 286 Fr Francium [Rn]7s ¹	158 286 Ra Radium [Rn]7s ²	159 286 Ac Actinium [Rn]6d ¹ 7s ²	174 286 La Lanthanum [Xe]5d ¹ 6s ²	175 286 Ce Cer [Xe]4f ¹ 5d ¹ 6s ²	176 286 Pr Praseodym [Xe]4f ³ 6s ²	177 286 Nd Neodym [Xe]4f ⁴ 6s ²	178 286 Pm Promethium [Xe]4f ⁵ 6s ²	179 286 Sm Samarium [Xe]4f ⁶ 6s ²	180 286 Eu Europium [Xe]4f ⁷ 6s ²	181 286 Gd Gadolinium [Xe]4f ⁷ 5d ¹ 6s ²	182 286 Tb Terbium [Xe]4f ⁹ 6s ²	183 286 Dy Dysprosium [Xe]4f ¹⁰ 6s ²	184 286 Ho Holmium [Xe]4f ¹¹ 6s ²	185 286 Er Erbium [Xe]4f ¹² 6s ²	186 286 Tm Thulium [Xe]4f ¹³ 6s ²	187 286 Yb Ytterbium [Xe]4f ¹⁴ 6s ²	188 286 Lu Lutetium [Xe]4f ¹⁴ 5d ¹ 6s ²
189 286 Fr Francium [Rn]7s ¹	190 286 Ra Radium [Rn]7s ²	191 286 Ac Actinium [Rn]6d ¹ 7s ²	206 286 La Lanthanum [Xe]5d ¹ 6s ²	207 286 Ce Cer [Xe]4f ¹ 5d ¹ 6s ²	208 286 Pr Praseodym [Xe]4f ³ 6s ²	209 286 Nd Neodym [Xe]4f ⁴ 6s ²	210 286 Pm Promethium [Xe]4f ⁵ 6s ²	211 286 Sm Samarium [Xe]4f ⁶ 6s ²	212 286 Eu Europium [Xe]4f ⁷ 6s ²	213 286 Gd Gadolinium [Xe]4f ⁷ 5d ¹ 6s ²	214 286 Tb Terbium [Xe]4f ⁹ 6s ²	215 286 Dy Dysprosium [Xe]4f ¹⁰ 6s ²	216 286 Ho Holmium [Xe]4f ¹¹ 6s ²	217 286 Er Erbium [Xe]4f ¹² 6s ²	218 286 Tm Thulium [Xe]4f ¹³ 6s ²	219 286 Yb Ytterbium [Xe]4f ¹⁴ 6s ²	220 286 Lu Lutetium [Xe]4f ¹⁴ 5d ¹ 6s ²
221 286 Fr Francium [Rn]7s ¹	222 286 Ra Radium [Rn]7s ²	223 286 Ac Actinium [Rn]6d ¹ 7s ²	238 286 La Lanthanum [Xe]5d ¹ 6s ²	239 286 Ce Cer [Xe]4f ¹ 5d ¹ 6s ²	240 286 Pr Praseodym [Xe]4f ³ 6s ²	241 286 Nd Neodym [Xe]4f ⁴ 6s ²	242 286 Pm Promethium [Xe]4f ⁵ 6s ²	243 286 Sm Samarium [Xe]4f ⁶ 6s ²	244 286 Eu Europium [Xe]4f ⁷ 6s ²	245 286 Gd Gadolinium [Xe]4f ⁷ 5d ¹ 6s ²	246 286 Tb Terbium [Xe]4f ⁹ 6s ²	247 286 Dy Dysprosium [Xe]4f ¹⁰ 6s ²	248 286 Ho Holmium [Xe]4f ¹¹ 6s ²	249 286 Er Erbium [Xe]4f ¹² 6s ²	250 286 Tm Thulium [Xe]4f ¹³ 6s ²	251 286 Yb Ytterbium [Xe]4f ¹⁴ 6s ²	252 286 Lu Lutetium [Xe]4f ¹⁴ 5d ¹ 6s ²
253 286 Fr Francium [Rn]7s ¹	254 286 Ra Radium [Rn]7s ²	255 286 Ac Actinium [Rn]6d ¹ 7s ²	270 286 La Lanthanum [Xe]5d ¹ 6s ²	271 286 Ce Cer [Xe]4f ¹ 5d ¹ 6s ²	272 286 Pr Praseodym [Xe]4f ³ 6s ²	273 286 Nd Neodym [Xe]4f ⁴ 6s ²	274 286 Pm Promethium [Xe]4f ⁵ 6s ²	275 286 Sm Samarium [Xe]4f ⁶ 6s ²	276 286 Eu Europium [Xe]4f ⁷ 6s ²	277 286 Gd Gadolinium [Xe]4f ⁷ 5d ¹ 6s ²	278 286 Tb Terbium [Xe]4f ⁹ 6s ²	279 286 Dy Dysprosium [Xe]4f ¹⁰ 6s ²	280 286 Ho Holmium [Xe]4f ¹¹ 6s ²	281 286 Er Erbium [Xe]4f ¹² 6s ²	282 286 Tm Thulium [Xe]4f ¹³ 6s ²	283 286 Yb Ytterbium [Xe]4f ¹⁴ 6s ²	284 286 Lu Lutetium [Xe]4f ¹⁴ 5d ¹ 6s ²
285 286 Fr Francium [Rn]7s ¹	286 286 Ra Radium [Rn]7s ²	287 286 Ac Actinium [Rn]6d ¹ 7s ²	300 286 La Lanthanum [Xe]5d ¹ 6s ²	301 286 Ce Cer [Xe]4f ¹ 5d ¹ 6s ²	302 286 Pr Praseodym [Xe]4f ³ 6s ²	303 286 Nd Neodym [Xe]4f ⁴ 6s ²	304 286 Pm Promethium [Xe]4f ⁵ 6s ²	305 286 Sm Samarium [Xe]4f ⁶ 6s ²	306 286 Eu Europium [Xe]4f ⁷ 6s ²	307 286 Gd Gadolinium [Xe]4f ⁷ 5d ¹ 6s ²	308 286 Tb Terbium [Xe]4f ⁹ 6s ²	309 286 Dy Dysprosium [Xe]4f ¹⁰ 6s ²	310 286 Ho Holmium [Xe]4f ¹¹ 6s ²	311 286 Er Erbium [Xe]4f ¹² 6s ²	312 286 Tm Thulium [Xe]4f ¹³ 6s ²	313 286 Yb Ytterbium [Xe]4f ¹⁴ 6s ²	314 286 Lu Lutetium [Xe]4f ¹⁴ 5d ¹ 6s ²
315 286 Fr Francium [Rn]7s ¹	316 286 Ra Radium [Rn]7s ²	317 286 Ac Actinium [Rn]6d ¹ 7s ²	330 286 La Lanthanum [Xe]5d ¹ 6s ²	331 286 Ce Cer [Xe]4f ¹ 5d ¹ 6s ²	332 286 Pr Praseodym [Xe]4f ³ 6s ²	333 286 Nd Neodym [Xe]4f ⁴ 6s ²	334 286 Pm Promethium [Xe]4f ⁵ 6s ²	335 286 Sm Samarium [Xe]4f ⁶ 6s ²	336 286 Eu Europium [Xe]4f ⁷ 6s ²	337 286 Gd Gadolinium [Xe]4f ⁷ 5d ¹ 6s ²	338 286 Tb Terbium [Xe]4f ⁹ 6s ²	339 286 Dy Dysprosium [Xe]4f ¹⁰ 6s ²	340 286 Ho Holmium [Xe]4f ¹¹ 6s ²	341 286 Er Erbium [Xe]4f ¹² 6s ²	342 286 Tm Thulium [Xe]4f ¹³ 6s ²	343 286 Yb Ytterbium [Xe]4f ¹⁴ 6s ²	344 286 Lu Lutetium [Xe]4f ¹⁴ 5d ¹ 6s ²
347 286 Fr Francium [Rn]7s ¹	348 286 Ra Radium [Rn]7s ²	349 286 Ac Actinium [Rn]6d ¹ 7s ²	362 286 La Lanthanum [Xe]5d ¹ 6s ²	363 286 Ce Cer [Xe]4f ¹ 5d ¹ 6s ²	364 286 Pr Praseodym [Xe]4f ³ 6s ²	365 286 Nd Neodym [Xe]4f ⁴ 6s ²	366 286 Pm Promethium [Xe]4f ⁵ 6s ²	367 286 Sm Samarium [Xe]4f ⁶ 6s ²	368 286 Eu Europium [Xe]4f ⁷ 6s ²	369 286 Gd Gadolinium [Xe]4f ⁷ 5d ¹ 6s ²	370 286 Tb Terbium [Xe]4f ⁹ 6s ²						