

# Los Alamos National Laboratory Chemistry Division

## Periodic Table of the Elements

Los Alamos National Laboratory Chemistry Division																		8A
1A	Periodic Table of the Elements																2	
1 H <small><math>1s^1</math> hydrogen 1.008</small>																	2 He <small><math>1s^2</math> helium 4.003</small>	
3 Li <small>[He]2s<sup>1</sup> lithium 6.941</small>	4 Be <small>[He]2s<sup>2</sup> beryllium 9.012</small>																	
11 Na <small>[Ne]3s<sup>1</sup> sodium 22.99</small>	12 Mg <small>[Ne]3s<sup>2</sup></small>																	
		3B	4B	5B	6B	7B	8B			11B	12B	3A	4A	5A	6A	7A		
19 K <small>[Ar]4s<sup>1</sup> potassium 39.10</small>	20 Ca <small>[Ar]4s<sup>2</sup> calcium 40.08</small>	21 Sc <small>[Ar]4s<sup>2</sup>3d<sup>1</sup> scandium 44.96</small>	22 Ti <small>[Ar]4s<sup>2</sup>3d<sup>2</sup> titanium 47.88</small>	23 V <small>[Ar]4s<sup>2</sup>3d<sup>3</sup> vanadium 50.94</small>	24 Cr <small>[Ar]4s<sup>1</sup>3d<sup>5</sup> chromium 52.00</small>	25 Mn <small>[Ar]4s<sup>2</sup>3d<sup>5</sup> manganese 54.94</small>	26 Fe <small>[Ar]4s<sup>2</sup>3d<sup>6</sup> iron 55.85</small>	27 Co <small>[Ar]4s<sup>2</sup>3d<sup>7</sup> cobalt 58.93</small>	28 Ni <small>[Ar]4s<sup>2</sup>3d<sup>8</sup> nickel 58.69</small>	29 Cu <small>[Ar]4s<sup>1</sup>3d<sup>10</sup> copper 63.55</small>	30 Zn <small>[Ar]4s<sup>2</sup>3d<sup>10</sup> zinc 65.39</small>	31 Ga <small>[Ar]4s<sup>2</sup>3d<sup>10</sup>4p<sup>1</sup> gallium 69.72</small>	32 Ge <small>[Ar]4s<sup>2</sup>3d<sup>10</sup>4p<sup>2</sup> germanium 72.64</small>	33 As <small>[Ar]4s<sup>2</sup>3d<sup>10</sup>4p<sup>3</sup> arsenic 74.92</small>	34 Se <small>[Ar]4s<sup>2</sup>3d<sup>10</sup>4p<sup>4</sup> selenium 78.96</small>	35 Br <small>[Ar]4s<sup>2</sup>3d<sup>10</sup>4p<sup>5</sup> bromine 79.90</small>	36 Kr <small>[Ar]4s<sup>2</sup>3d<sup>10</sup>4p<sup>6</sup> krypton 83.79</small>	
37 Rb <small>[Kr]5s<sup>1</sup> rubidium 85.47</small>	38 Sr <small>[Kr]5s<sup>2</sup> strontium 87.62</small>	39 Y <small>[Kr]5s<sup>2</sup>4d<sup>1</sup> yttrium 88.91</small>	40 Zr <small>[Kr]5s<sup>2</sup>4d<sup>2</sup> zirconium 91.22</small>	41 Nb <small>[Kr]5s<sup>1</sup>4d<sup>4</sup> niobium 92.91</small>	42 Mo <small>[Kr]5s<sup>1</sup>4d<sup>5</sup> molybdenum 95.94</small>	43 Tc <small>[Kr]5s<sup>2</sup>4d<sup>5</sup> technetium (98)</small>	44 Ru <small>[Kr]5s<sup>1</sup>4d<sup>7</sup> ruthenium 101.1</small>	45 Rh <small>[Kr]5s<sup>1</sup>4d<sup>8</sup> rhodium 102.9</small>	46 Pd <small>[Kr]4d<sup>10</sup> palladium 106.4</small>	47 Ag <small>[Kr]5s<sup>1</sup>4d<sup>10</sup> silver 107.9</small>	48 Cd <small>[Kr]5s<sup>2</sup>4d<sup>10</sup> cadmium 112.4</small>	49 In <small>[Kr]5s<sup>2</sup>4d<sup>10</sup>5p<sup>1</sup> indium 114.8</small>	50 Sn <small>[Kr]5s<sup>2</sup>4d<sup>10</sup>5p<sup>2</sup> tin 118.7</small>	51 Sb <small>[Kr]5s<sup>2</sup>4d<sup>10</sup>5p<sup>3</sup> antimony 121.8</small>	52 Te <small>[Kr]5s<sup>2</sup>4d<sup>10</sup>5p<sup>4</sup> tellurium 127.6</small>	53 I <small>[Kr]5s<sup>2</sup>4d<sup>10</sup>5p<sup>5</sup> iodine 126.9</small>	54 Xe <small>[Kr]5s<sup>2</sup>4d<sup>10</sup>5p<sup>6</sup> xenon 131.3</small>	
55 Cs <small>[Xe]6s<sup>1</sup> cesium 132.9</small>	56 Ba <small>[Xe]6s<sup>2</sup> barium 137.3</small>	*	72 Hf <small>[Xe]6s<sup>2</sup>4f<sup>14</sup>5d<sup>2</sup> hafnium 178.5</small>	73 Ta <small>[Xe]6s<sup>2</sup>4f<sup>14</sup>5d<sup>3</sup> tantalum 180.9</small>	74 W <small>[Xe]6s<sup>2</sup>4f<sup>14</sup>5d<sup>4</sup> tungsten 183.9</small>	75 Re <small>[Xe]6s<sup>2</sup>4f<sup>14</sup>5d<sup>5</sup> rhenium 186.2</small>	76 Os <small>[Xe]6s<sup>2</sup>4f<sup>14</sup>5d<sup>6</sup> osmium 190.2</small>	77 Ir <small>[Xe]6s<sup>2</sup>4f<sup>14</sup>5d<sup>7</sup> iridium 192.2</small>	78 Pt <small>[Xe]6s<sup>1</sup>4f<sup>14</sup>5d<sup>9</sup> platinum 195.1</small>	79 Au <small>[Xe]6s<sup>1</sup>4f<sup>14</sup>5d<sup>10</sup> gold 197.0</small>	80 Hg <small>[Xe]6s<sup>2</sup>4f<sup>14</sup>5d<sup>10</sup> mercury 200.5</small>	81 Tl <small>[Xe]6s<sup>2</sup>4f<sup>14</sup>5d<sup>10</sup>6p<sup>1</sup> thallium 204.4</small>	82 Pb <small>[Xe]6s<sup>2</sup>4f<sup>14</sup>5d<sup>10</sup>6p<sup>2</sup> lead 207.2</small>	83 Bi <small>[Xe]6s<sup>2</sup>4f<sup>14</sup>5d<sup>10</sup>6p<sup>3</sup> bismuth 209.0</small>	84 Po <small>[Xe]6s<sup>2</sup>4f<sup>14</sup>5d<sup>10</sup>6p<sup>4</sup> polonium (209)</small>	85 At <small>[Xe]6s<sup>2</sup>4f<sup>14</sup>5d<sup>10</sup>6p<sup>5</sup> astatine (210)</small>	86 Rn <small>[Xe]6s<sup>2</sup>4f<sup>14</sup>5d<sup>10</sup>6p<sup>6</sup> radon (222)</small>	
87 Fr <small>[Rn]7s<sup>1</sup> francium (223)</small>	88 Ra <small>[Rn]7s<sup>2</sup> radium (226)</small>	**	104 Rf <small>[Rn]7s<sup>2</sup>5f<sup>14</sup>6d<sup>2</sup> rutherfordium (261)</small>	105 Db <small>[Rn]7s<sup>2</sup>5f<sup>14</sup>6d<sup>3</sup> dubnium (262)</small>	106 Sg <small>[Rn]7s<sup>2</sup>5f<sup>14</sup>6d<sup>4</sup> seaborgium (266)</small>	107 Bh <small>[Rn]7s<sup>2</sup>5f<sup>14</sup>6d<sup>5</sup> bohrium (264)</small>	108 Hs <small>[Rn]7s<sup>2</sup>5f<sup>14</sup>6d<sup>6</sup> hassium (277)</small>	109 Mt <small>[Rn]7s<sup>2</sup>5f<sup>14</sup>6d<sup>7</sup> meitnerium (268)</small>	110 Ds <small>[Rn]7s<sup>1</sup>5f<sup>14</sup>6d<sup>9</sup> darmstadtium (271)</small>	111 Rg <small>[Rn]7s<sup>2</sup>5f<sup>14</sup>6d<sup>9</sup> roentgenium (272)</small>	112 Cn <small>[Rn]7s<sup>2</sup>5f<sup>14</sup>6d<sup>10</sup> copernicium (285)</small>	113 Uut <small>(286)</small>	114 Uuq <small>(289)</small>	115 Uup <small>(289)</small>	116 Uuh <small>(291)</small>	117 Uus <small>(294)</small>	118 Uuo <small>(294)</small>	
Lanthanide Series*			57 La <small>Xe]6s<sup>2</sup>5d<sup>1</sup> lanthanum 138.9</small>	58 Ce <small>[Xe]6s<sup>2</sup>4f<sup>1</sup>5d<sup>1</sup> cerium 140.1</small>	59 Pr <small>[Xe]6s<sup>2</sup>4f<sup>3</sup> praseodymium 140.9</small>	60 Nd <small>[Xe]6s<sup>2</sup>4f<sup>4</sup> neodymium 144.2</small>	61 Pm <small>[Xe]6s<sup>2</sup>4f<sup>5</sup> promethium (145)</small>	62 Sm <small>[Xe]6s<sup>2</sup>4f<sup>6</sup> samarium 150.4</small>	63 Eu <small>[Xe]6s<sup>2</sup>4f<sup>7</sup> europium 152.0</small>	64 Gd <small>[Xe]6s<sup>2</sup>4f<sup>7</sup>5d<sup>1</sup> gadolinium 157.2</small>	65 Tb <small>[Xe]6s<sup>2</sup>4f<sup>9</sup> terbium 158.9</small>	66 Dy <small>[Xe]6s<sup>2</sup>4f<sup>10</sup> dysprosium 162.5</small>	67 Ho <small>[Xe]6s<sup>2</sup>4f<sup>11</sup> holmium 164.9</small>	68 Er <small>[Xe]6s<sup>2</sup>4f<sup>12</sup> erbium 167.3</small>	69 Tm <small>[Xe]6s<sup>2</sup>4f<sup>13</sup> thulium 168.9</small>	70 Yb <small>[Xe]6s<sup>2</sup>4f<sup>14</sup> ytterbium 173.0</small>	71 Lu <small>[Xe]6s<sup>2</sup>4f<sup>14</sup>5d<sup>1</sup> lutetium 175.0</small>	
Actinide Series**			89 Ac <small>[Rn]7s<sup>2</sup>6d<sup>1</sup> actinium (227)</small>	90 Th <small>[Rn]7s<sup>2</sup>6d<sup>2</sup> thorium 232.0</small>	91 Pa <small>[Rn]7s<sup>2</sup>5f<sup>2</sup>6d<sup>1</sup> protactinium 231</small>	92 U <small>[Rn]7s<sup>2</sup>5f<sup>3</sup>6d<sup>1</sup> uranium 238</small>	93 Np <small>[Rn]7s<sup>2</sup>5f<sup>4</sup>6d<sup>1</sup> neptunium (237)</small>	94 Pu <small>[Rn]7s<sup>2</sup>5f<sup>6</sup> plutonium (244)</small>	95 Am <small>[Rn]7s<sup>2</sup>5f<sup>7</sup> americium (243)</small>	96 Cm <small>[Rn]7s<sup>2</sup>5f<sup>7</sup>6d<sup>1</sup> curium (247)</small>	97 Bk <small>[Rn]7s<sup>2</sup>5f<sup>9</sup> berkelium (247)</small>	98 Cf <small>[Rn]7s<sup>2</sup>5f<sup>10</sup> californium (251)</small>	99 Es <small>[Rn]7s<sup>2</sup>5f<sup>11</sup> einsteinium (252)</small>	100 Fm <small>[Rn]7s<sup>2</sup>5f<sup>12</sup> fermium (257)</small>	101 Md <small>[Rn]7s<sup>2</sup>5f<sup>13</sup> mendelevium (258)</small>	102 No <small>[Rn]7s<sup>2</sup>5f<sup>14</sup> nobelium (259)</small>	103 Lr <small>[Rn]7s<sup>2</sup>5f<sup>14</sup>6d<sup>1</sup> lawrencium (262)</small>	