

Chemistry: Writing and Naming Covalent Compounds

A covalent compound is composed of two or more non-metal atoms that bond by sharing valence electrons. All **non-metals** are found to the right of the “staircase,” with the exception of Hydrogen (H). Additionally, Silicon (Si) is a metalloid, but can form covalent bonds with nonmetals.

The periodic table is color-coded to show regions: Metals are in blue, Metalloids are in green, and Nonmetals are in yellow. The staircase line separates metals from nonmetals, with metalloids in between. Hydrogen (H) is an exception as a non-metal located to the left of the staircase.

1																	18		
1	H																	2	He
3	Li	Be											B	C	N	O	F	Ne	
11	Na	Mg											Al	Si	P	S	Cl	Ar	
19	K	Ca	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr	
37	Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe	
55	Cs	Ba	57-71	Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn	
87	Fr	Ra	89-103	Rf	Db	Sg	Bh	Hs	Mt	Ds	Rg	Cn	Nh	Fl	Mc	Lv	Ts	Og	
57	La	Ce	Pr	Nd	Pm	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu				
89	Ac	Th	Pa	U	Np	Pu	Am	Cm	Bk	Cf	Es	Fm	Md	No	Lr				

Unlike ionic compounds, covalent compounds do not involve the loss/gain of electrons, and thus the charge of the nonmetal is not used in writing and naming covalent compounds. **To write and name covalent compounds**, simply:

- Write the least negative non-metal first. Write the most negative non-metal last.
 - This is generally in the same left-to-right order that they are in the periodic table, except squeeze H between N and O.
- Change the suffix of the last non-metal to “-ide” (hydride, carbide, nitride, oxide...)
- Use prefixes to indicate how many atoms of each element are in the formula.
 - * “mono-” is not used if there is just one of the first element.
 - The “o” and “a” endings are dropped when attached to “oxide”

*1	*mono-
2	di-
3	tri-
4	tetra-
5	penta-
6	hexa-
7	hepta-
8	octa-
9	nona-
10	deca-