

39.2: Introduction

Atoms are attracted together because they share or exchange electrons in a manner that establishes a chemical bond. In a covalent bond, atoms share 1-3 pairs of electrons. There are specific ways atoms bond within a particular molecule; some molecules have a straight-line structure while others have a more 3-dimensional structure. The structure of the molecule is responsible for some physical and chemical properties of the molecule, and the structure may result in an uneven distribution of electrons (polarity). If electron pairs spend more time around one nucleus than the other, a molecule may have slightly negative and slightly positive ends, the molecule may be polar. If the distribution of atoms is not symmetric, then the molecule may exhibit polarity. In general, if the molecule is symmetric with the same types of atoms in the outer structure, then the molecule will be non-polar.

Molecular Models Kit

- Spheres represent the nucleus of an atom
- Different colors represent different atoms
- Each spring connector represents a pair of shared electrons
- Holes in the spheres represent missing electrons needed by the atom

Table 39.2.1

Element	Symbol	Color of Sphere
Bromine	Br	Orange
Hydrogen	H	Yellow
Carbon	C	Black
Nitrogen	N	Light Blue
Oxygen	O	Red
Chlorine	Cl	Green
Iodine/Fluorine	I or F	Purple

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