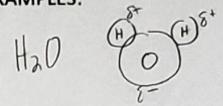


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Chemistry (Math Notes)

Module #5

EXAMPLES:



In general, Polar Covalent Compounds will mix with other Polar Covalent OR ionic compounds.
Purely Covalent Compounds will mix only with other Purely Covalent Compounds.

Like dissolves like

Molecular Geometry

Molecules are not flat, but 3-D. Lewis Structures represent a flat picture. A molecule's shape is defined by its electrons, which want to repel each other because they are the same charge. We use a dash (-) to represent the electrons.

Polar Covalent Compounds share electrons unequally.
Purely Covalent Compounds share electrons equally.

Ionic Compounds

A more accurate definition of an ionic compound is a compound that carries ions, which are bound together because of their charges, like magnets.

Ionic Compounds can be formed in 4 ways.

1. metal + nonmetal
2. Poly atomic + nonmetal
3. metal + polyatomic
4. Polyatomic + polyatomic

EXAMPLES:

- MgO = magnesium oxide
- NH₄F = ammonium fluoride
- Mg(ClO₃)₂ = magnesium chlorate
- (NH₄)₂SO₄ = ammonium sulfate

Covalent Compounds

There are two types.

A polar covalent compound has fractional (partial) charges on some or all of its atoms because the electrons are shared unevenly between the atoms involved.

A purely covalent compound has no fractional (partial) charges on any of its atoms because the electrons are shared evenly between the atoms involved.

In order to be polar, a compound must have polar bonds AND these bonds cannot be of equal polarity and equal distribution in space.

The polarity of the bonds is determined by the difference in electronegativity of the atoms involved.