CHEMICAL FORMULA #1

Chemical formulae

A chemical formula is a useful shorthand method for describing the atoms in a chemical. So, the chemical formula of a substance is a notation that uses atomic symbols with numerical subscripts to convey the relative proportions of atoms of the different elements in the substance.

Consider the formula of Aluminum Oxide, Al_2O_3. This means that the compound is composed of aluminum atoms and oxygen atoms in the ratio 2 : 3.

Consider the formula for Sodium Chloride, NaCl. When no subscript is written for a symbol, it is assumed to be 1. Therefore, the formula NaCl means that the compound is composed of sodium atoms and chlorine atoms in the ratio 1 : 1.

The chemical formula of an element or compound tells us:

a) Which elements it contains. For example, $FeSO_4$ contains Iron, Sulfur and Oxygen

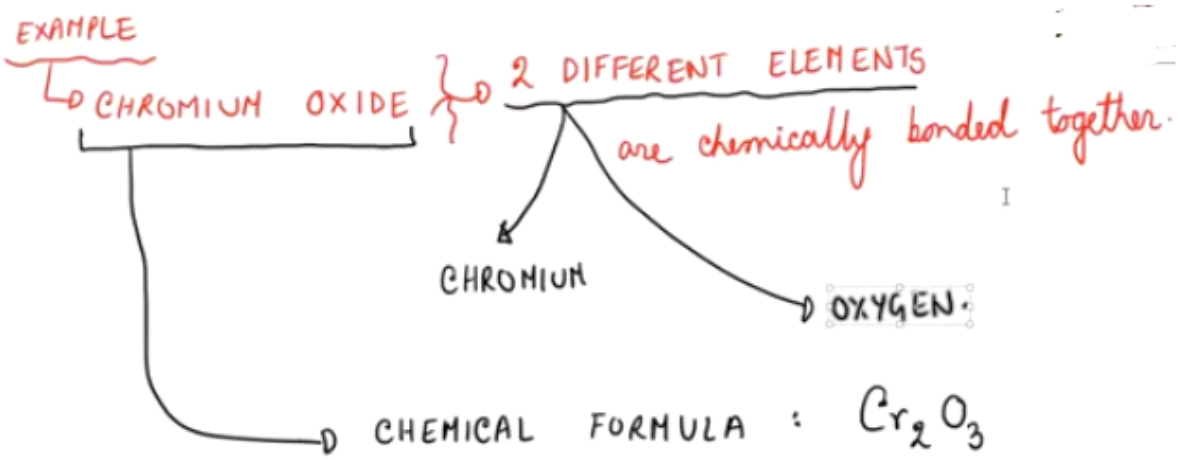
b) How many atoms of each kind are in each molecule? For instance, H_2SO_4 contains two atoms of Hydrogen, one atom of Sulfur and four atoms of Oxygen in each molecule of the compound.

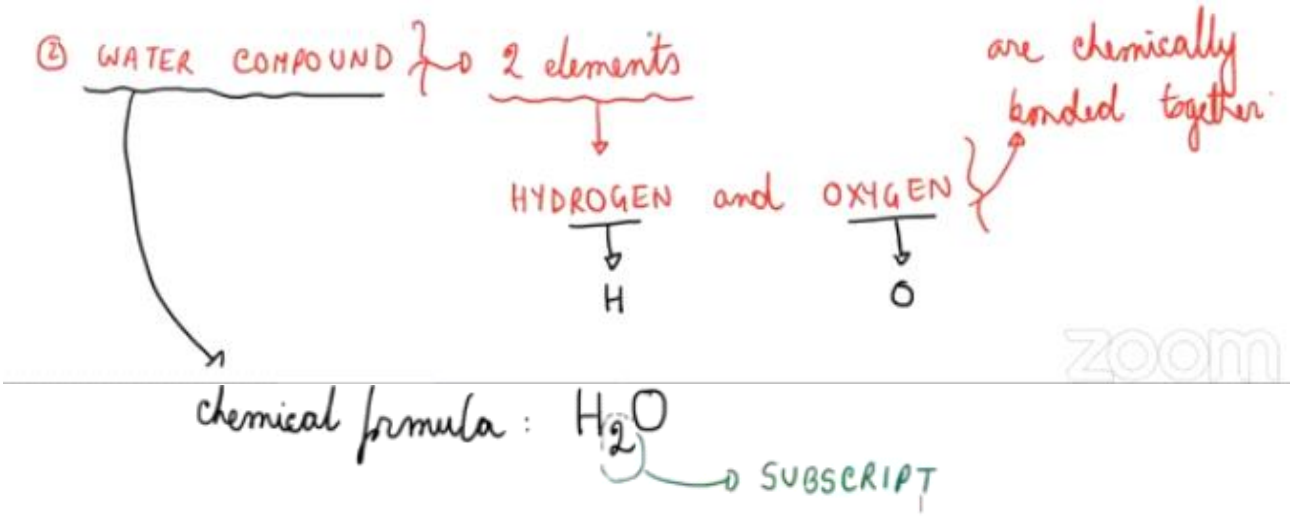
c) The masses of the various elements in a compound. For example, 18 g of water, H_2O, contains 2 g of Hydrogen atoms and 16 g of Oxygen since the relative atomic mass of hydrogen is 1 (x 2 because there two Hydrogen atoms) and that of Oxygen is 16.

* COMPOUND
  - a substance which contains TWO/MORE DIFFERENT ELEMENTS chemically COMBINED/BONDED together.

* CHEMICAL FORMULA
  - a REPRESENTATION/NOTATION using ATOMIC SYMBOLS of a compound
    - it tells the RELATIVE PROPORTIONS of ATOMS of the DIFFERENT ELEMENTS present in a compound.

EXAMPLE
- CHROMIUM OXIDE } 2 DIFFERENT ELEMENTS


EXAMPLE
CHROMIUM OXIDE
2 DIFFERENT ELEMENTS
are chemically bonded together.
CHROMIUM
OXYGEN.
CHEMICAL FORMULA : Cr_2O_3


② WATER COMPOUND
2 elements
are chemically bonded together
HYDROGEN and OXYGEN
H
O
chemical formula : H_2O
SUBSCRIPT

EXAMPLE

→ GLUCOSE has a chemical formula of

$C_6H_{12}O_6$.

→ this formula tells us:

1. which elements are present in the compound.
2. how many atoms of each element are present and chemically bonded.
3. the relative mass of various elements in the compound.