

We have seen that water is made up of different elements, hydrogen and oxygen, and that they are chemically bound to each other through their formula,  $\text{H}_2\text{O}$ . In this case we see that there are two atoms of hydrogen and one atom of oxygen in one molecule of water. No matter where you go in the world, water will always have the same chemical formula.

Another example is hydrogen peroxide, the chemical that you needed to produce oxygen gas. Now, hydrogen peroxide has a formula of  $\text{H}_2\text{O}_2$ . It is very similar looking to water,  $\text{H}_2\text{O}$ , but the formula also gives us some insights into the actual structure. Hydrogen peroxide's structure is H-O-O-H. The formula doesn't always give this insight but when it does, it provides some valuable information about the way the substance behaves and reacts with other substances. A chemical formula is a way of representing the combinations of atoms that go in to a molecule.

Complete the following table:

Formula	Name	Number of Elements	Names of The Elements	Number of Atoms of Each Element	Total Number of Atoms in Each Substance
MgO	Magnesium Oxide				
SO <sub>2</sub>	Sulfur dioxide				
NH <sub>3</sub>	Ammonia				
H <sub>2</sub> CO <sub>3</sub>	Carbonic acid				
C <sub>12</sub> H <sub>22</sub> O <sub>11</sub>	Sugar				
MgSO <sub>4</sub>	Epsom Salts				
NaOH	Sodium hydroxide				
H <sub>2</sub> O <sub>2</sub>	Hydrogen peroxide				
Fe <sub>2</sub> O <sub>3</sub>	Iron III oxide (rust)				
NaHCO <sub>3</sub>	Sodium bicarbonate (baking soda)				