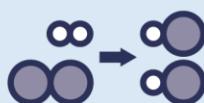


Chemical Formulae

1. Write the correct chemical formula for the following substances:
 - a. Water **H₂O**
 - b. Carbon dioxide **CO₂**
 - c. Oxygen gas **O₂**
 - d. Hydrogen gas **H₂**
 - e. Hydrochloric acid **HCl**

2. Determine how many atoms of each element are present in the following formulae and name each compound. The first has been done for you:
 - a. NaCl (**sodium chloride**) contains **1 atom of sodium and 1 atom of chlorine**
 - b. MgO (**magnesium oxide**) contains **1 atom of magnesium and 1 atom of oxygen**
 - c. SO₂ (**sulfur dioxide**) contains **1 atom of sulfur and 2 atoms of oxygen**
 - d. Na₂S (**sodium sulfide**) contains **2 atoms of sodium and 1 atom of sulfur**
 - e. Fe₂O₃ (**iron oxide**) contains **2 atoms of iron and 3 atoms of oxygen**
 - f. AgNO₃ (**silver nitrate**) contains **1 atom of silver, 1 atom of nitrogen and 3 atoms of oxygen**

3. Determine how many atoms of each element are present in the following compounds:
 - a. Sulfuric acid (H₂SO₄) contains **2 atoms of hydrogen, 1 atom of sulfur and 4 atoms of oxygen**
 - b. Barium hydroxide (Ba(OH)₂) contains **1 atom of barium, 2 atoms of oxygen and 2 atoms of hydrogen**
 - c. Glucose (C₆H₁₂O₆) contains **6 atoms of carbon, 12 atoms of hydrogen and 6 atoms of oxygen**
 - d. Ethanol (C₂H₅OH) contains **2 atoms of carbon, 6 atoms of hydrogen and 1 atom of oxygen**
 - e. Nitric acid (HNO₃) contains **1 atom of hydrogen, 1 atom of nitrogen and 3 atoms of oxygen**
 - f. Potassium hydroxide (KOH) contains **1 atom of potassium, 1 atom of oxygen and 1 atom of hydrogen**



4. The formula for methane is **CH₄**.

a. Is methane an element or a compound? Explain your answer.

A compound. It contains two different types of atom chemically bonded together.

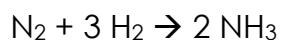
b. Look at the formula. What is the **ratio** of carbon atoms to hydrogen atoms?

There are 4 hydrogen atoms for every carbon atom.

c. Describe the **molecule** in words.

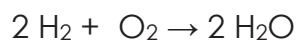
A molecule of methane contains a carbon atom chemically bonded to 4 hydrogen atoms.

5. Describe the following equation in words (NH₃ is ammonia).



A molecule of nitrogen reacts with 3 molecules of hydrogen to form 2 molecules of ammonia.

6. Describe the following equation in words.



2 molecules of hydrogen react with 1 molecule of oxygen to form two molecules of water.

Stretch: Circle all the compounds from Q2 and Q3 that would form molecules.

All compounds that are made up of only non-metals:

Q2: sulfur dioxide

Q3: glucose, ethanol, sulfuric acid and nitric acid

