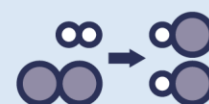




## Chemical Formulae

- Write the correct chemical formula for the following substances:
  - Water **H<sub>2</sub>O**
  - Carbon dioxide **CO<sub>2</sub>**
  - Oxygen gas **O<sub>2</sub>**
  - Hydrogen gas **H<sub>2</sub>**
  - Hydrochloric acid **HCl**
- Determine how many atoms of each element are present in the following formulae and name each compound. The first has been done for you:
  - NaCl (sodium chloride) contains 1 atom of sodium and 1 atom of chlorine
  - MgO (**magnesium oxide**) contains **1 atom of magnesium and 1 atom of oxygen**
  - SO<sub>2</sub> (**sulfur dioxide**) contains **1 atom of sulfur and 2 atoms of oxygen**
  - Na<sub>2</sub>S (**sodium sulfide**) contains **2 atoms of sodium and 1 atom of sulfur**
  - Fe<sub>2</sub>O<sub>3</sub> (**iron oxide**) contains **2 atoms of iron and 3 atoms of oxygen**
  - AgNO<sub>3</sub> (**silver nitrate**) contains **1 atom of silver, 1 atom of nitrogen and 3 atoms of oxygen**
- Determine how many atoms of each element are present in the following compounds:
  - Sulfuric acid (H<sub>2</sub>SO<sub>4</sub>) contains **2 atoms of hydrogen, 1 atom of sulfur and 4 atoms of oxygen**
  - Barium hydroxide (Ba(OH)<sub>2</sub>) contains **1 atom of barium, 2 atoms of oxygen and 2 atoms of hydrogen**
  - Glucose (C<sub>6</sub>H<sub>12</sub>O<sub>6</sub>) contains **6 atoms of carbon, 12 atoms of hydrogen and 6 atoms of oxygen**
  - Ethanol (C<sub>2</sub>H<sub>5</sub>OH) contains **2 atoms of carbon, 6 atoms of hydrogen and 1 atom of oxygen**
  - Nitric acid (HNO<sub>3</sub>) contains **1 atom of hydrogen, 1 atom of nitrogen and 3 atoms of oxygen**
  - Potassium hydroxide (KOH) contains **1 atom of potassium, 1 atom of oxygen and 1 atom of hydrogen**





4. The formula for methane is **CH<sub>4</sub>**.

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

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

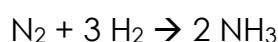
b. Look at the formula. What is the **ratio** of carbon atoms to hydrogen atoms?

**There are 4 hydrogen atoms for every carbon atom.**

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

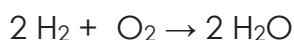
**A molecule of methane contains a carbon atom chemically bonded to 4 hydrogen atoms.**

5. Describe the following equation in words (NH<sub>3</sub> 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**

