

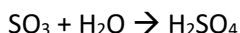
Classes of chemical compounds: oxides/acids/bases/ salts

Oxides are compounds made of two elements one of which is oxygen, e.g., SO₂, SO₃, CO₂, CaO, Fe₂O₃

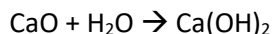
All oxides can be obtained from elements reactions with oxygen, the elements can be recovered from oxides by the oxides' reactions with hydrogen.

There are basic and acidic oxides.

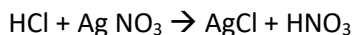
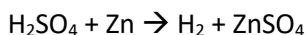
A. When acidic oxides react with water, they form acids. E.g.:



B. When basic oxides react with water, they form bases. E.g.:



Acids can provide H⁺ (proton) for reactions with other compounds.



An acid is composed from atoms of hydrogen and a conjugate base. The conjugate base reacts as an independent particle. (SO₄²⁻, Cl⁻, NO₃⁻ - are conjugate bases of sulfuric, hydrochloric, and nitric acids respectively).

Bases can provide OH⁻ for reactions with other compounds.



Reactions where acids and bases react with each other are called **reactions of neutralization**. In these reactions a salt and water are formed. E.g. below is a neutralization reaction between hydrochloric acid (HCl – acid) and sodium hydroxide (NaOH – base) with formation of salt (sodium chloride, NaCl) and water:

