

# CHEMISTRY DAILY PLAN

**Class:**

**Date:**

**Subject:** Salts

**Time:**

**Salts** are the products of neutralization reactions of acids with bases.

Combination of anion of an acid with the cation of a base forms salt. Since the properties of the salts are different, it is possible to classify them according to some of their properties like boiling point, melting point, solubility, hardness, and the crystal structure. Solubility is the most important characteristic property for salts. Some of them are soluble or slightly soluble in certain solvents but some of them are not. They are ionic compounds and exist in solid state at room temperature. They have crystalline structures with different geometric shapes. Here, salts will be studied in terms of their acidity, basicity, and neutrality.

The salts are classified into 4 groups in this respect;

1. Neutral salts, 2. Acid salts, 3. Basic salts, 4. Other salts

## 1. Neutral Salts

They do not have acidic or basic properties. Because they are formed from the reaction of a strong acid with a strong base. NaCl, KNO<sub>3</sub>, LiBr are examples of neutral salts.

## 2. Acidic Salts

Acid salts are formed from the reaction of strong acids with weak bases. They have acidic properties. CaCl<sub>2</sub>, AgNO<sub>3</sub>, NH<sub>4</sub>Cl and FeBr<sub>3</sub> are examples of acid salts.

Compounds that produce H<sup>+</sup> in water like NaHCO<sub>3</sub> and NaHSO<sub>4</sub> are also acid salts.

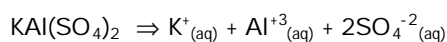
## 3. Basic Salts

Basic salts are produced from the reaction of weak acids with strong bases. They have basic properties. NaCN, CH<sub>3</sub>COONa, Na<sub>2</sub>CO<sub>3</sub> are examples of the basic salts.

## 4. Other Salts

### a) Double salts

Double salts are the ionic crystals that are formed from two salts that have the same acid radical. Some of them contain water in their structure. This water is called crystallized water. MgCl<sub>2</sub> · 6 H<sub>2</sub>O, KAl(SO<sub>4</sub>)<sub>2</sub> · 12 H<sub>2</sub>O are examples of double salts. When double salts ionize, they produce cations and an anion. The ionization of KAl(SO<sub>4</sub>)<sub>2</sub> in water is;



### b) Complex salts

Complex salts are produced from metals that have same acid radical. In such salts, one of the metal cation forms a complex ion with the acid radical, anion. K<sub>4</sub>Fe(CN)<sub>6</sub>, Fe<sub>3</sub>[Fe(CN)<sub>6</sub>]<sub>2</sub>, Na<sub>3</sub>(NO<sub>2</sub>)<sub>6</sub> are the examples of complex salts.

When the complex salts are dissolved in water, a metal cation, a complex ion that contain acid radical and the other metal cation are produced. That is, the complex structure remains the same. The ionization equation of K<sub>4</sub>Fe(CN)<sub>6</sub> in water is;

