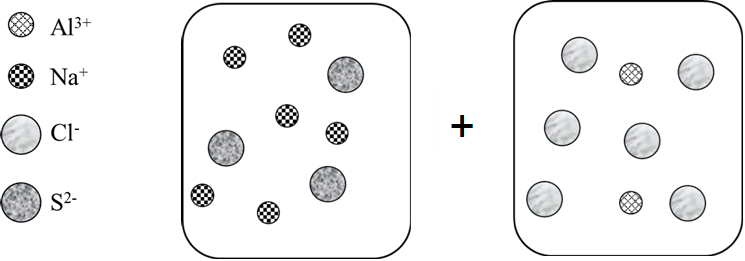
1. Which reaction is a precipitation reaction?
   1. 2 FeO(s) 🡪 2 Fe(s) + O2(g)
   2. 2 NaCl(aq) + Ba(NO3)2(aq) 🡪 2 NaNO3(aq) + BaCl2(aq)
   3. CaBr2(aq) + Li2SO4(aq) 🡪 CaSO4(s) + 2 LiBr (aq)
   4. H2SO4(aq) + 2 KOH(aq) 🡪 2 H2O(l) + K2SO4(aq)
2. What is the precipitate formed by the reaction shown in the picture?
   1. NaCl
   2. Na2S
   3. Al2S3
   4. AlCl3
   5. SCl2
3. When a precipitation reaction occurs, the ions that do not form the precipitate

a. evaporate.

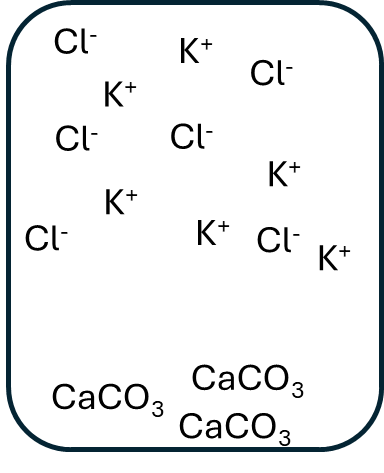
b. are cations only.

c. form a second insoluble compound in the solution.

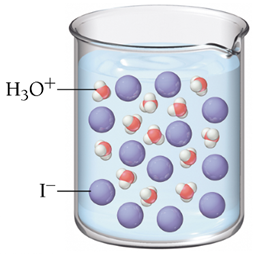
d. are left dissolved in the solution.

e. react with water.

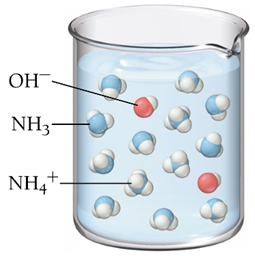
1. An aqueous solution of silver nitrate is mixed with an aqueous solution of sodium chloride. Which species is/are in the net ionic equation? Select any that apply.
   1. Na+(aq)
   2. NO3-(aq)
   3. Cl-(aq)
   4. Ag+(aq)
   5. N3-(aq)



1. The picture to the right shows the products of a precipitation reaction. What reactants were added to the water?
   1. KCl(aq) and CaCO3(aq)
   2. KCl(aq) and CaCO3(s)
   3. Ca2+(aq) and CO32-(aq)
   4. K+(aq), Cl-(aq), Ca2+(aq), and CO32-(aq)
   5. K2CO3(aq) and CaCl2(aq)
2. An aqueous solution of ammonium sulfide is mixed with an aqueous solution of magnesium chloride. What are the spectator ions?
   1. NH4+(aq) and S2-(aq)
   2. Mg2+(aq) and Cl-(aq)
   3. Mg2+(aq) and S2-(aq)
   4. NH4+(aq) and Cl-(aq)
   5. NH4+(aq) and Mg2+(aq)
3. What is the net ionic equation for the reaction of potassium hydroxide and strontium chloride?
   1. K+(aq) + OH-(aq) 🡪 KOH(s)
   2. Sr2+(aq) + 2 OH-(aq) 🡪 Sr(OH)2(s)
   3. K+(aq) + Cl-(aq) 🡪 KCl(s)
   4. Sr2+(aq) + 2 Cl-(aq) 🡪 SrCl2(s)
   5. There is no net ionic equation because there is no reaction.



1. The picture to the right represents a
   1. Strong acid
   2. Strong base
   3. Weak acid
   4. Weak base



1. The picture to the right represents a
   1. Strong acid
   2. Strong base
   3. Weak acid
   4. Weak base

Images from Tro, Introductory Chemistry

1. Which substances are either a weak acid or a weak base? Select any that apply.
   1. HCl
   2. CH3CH2NH3
   3. HC2H3O2
   4. HNO3
   5. Ca(OH)2
2. What is the full, molecular, generic reaction when a strong acid reacts with a strong base?
   1. HX + MOH 🡪 H2O
   2. HX + MOH 🡪 MX + H2O
   3. HX + NH3 🡪 NH4+ + X-
   4. HX + NH3 🡪 NH4X + H2O
3. What is the net ionic equation for the reaction between nitric acid and calcium hydroxide?
   1. H+(aq) + OH-(aq) 🡪 H2O(l)
   2. Ca2+(aq) + OH-(aq) 🡪 Ca(OH)2(s)
   3. Ca2+(aq) + NO3-(aq) 🡪 Ca(NO3)2(s)
   4. H+(aq) + NO3-(aq) 🡪 HNO3(l)

|  |
| --- |
| Solubility Rules |
| 1. All nitrate and acetate salts are soluble. 2. All Group 1 and ammonium (NH4+) salts are soluble. 3. Most Group 17 salts are soluble. Notable exceptions are Group 17 salts containing Ag+, Pb2+, and Hg22+. 4. Most sulfate salts are soluble. Notable exceptions are BaSO4, PbSO4, and CaSO4. 5. Most hydroxide compounds are insoluble. Notable exceptions are NaOH, KOH, Ba(OH)2, and Ca(OH)2. 6. Most sulfide (S2-), carbonate (CO32-), and phosphate (PO43-) salts are insoluble. |