General Rules for Water Solubility
of
Simple Ionic Compounds[1]

Soluble Compounds

1. All nitrates and acetates.

2. All compounds with alkali-metal (Li^+, Na^+, K^+, etc.) and ammonium (NH_4^+) cations.

3. The halides Cl^-, Br^-, and I^-, *except* those of Pb^{2+}, Ag^+, Hg_2^{2+}, which are insoluble.

4. Sulfates, *except* those of Sr^{2+}, Ba^{2+}, Pb^{2+}, and Hg_2^{2+}, which are insoluble. ($CaSO_4$ is slightly soluble.)

Insoluble Compounds

1. Carbonates and phosphates, *except* those with alkali-metal and ammonium cations, which are soluble.

2. Hydroxides, *except* those with alkali-metal cations, which are soluble, and $Ca(OH)_2$, $Sr(OH)_2$, and $Ba(OH)_2$, which are sparingly soluble.

3. Sulfides, *except* those with alkali-metal, calcium, and ammonium cations, which are soluble.

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[1]The following cations are considered in these general rules: group 1A (1), group 2A (2), NH_4^+, Ag^+, Al^{3+}, Cd^{2+}, Co^{2+}, Cr^{3+}, Cu^{2+}, Fe^{2+}, Fe^{3+}, Hg_2^{2+}, Hg^{2+}, Mn^{2+}, Ni^{2+}, Pb^{2+}, Sn^{2+}, Zn^{2+}.