Name:

Solubility Rules

Compounds containing the following ions are generally soluble in water:

1. alkali metal ions and ammonium ions, Li^+, Na^+, K^+, NH_4^+
2. acetate ion, $C_2H_3O_2^-$ (CH_3COO^-)
3. nitrate ion, NO_3^-
4. halide ions (X^-), Cl^-, Br^-, I^- (AgX, Hg_2X_2, PbX_2 are insoluble exceptions)
5. sulfate ions, SO_4^{2-}, ($BaSO_4$, $SrSO_4$, and $PbSO_4$ are insoluble exceptions)

Compounds containing the following ions are generally *insoluble* in water:

6. carbonate ions, CO_3^{2-} (see rule 1 exceptions, which are soluble)
7. chromate ions, CrO_4^{2-} (see rule 1 exceptions, which are soluble)
8. phosphate ions, PO_4^{3-} (see rule 1 exceptions, which are soluble)
9. sulfide ions, S^{2-} (CaS, SrS, BaS, and rule 1 exceptions are soluble)
10. hydroxide ions, OH^- [$Ca(OH)_2$, $Sr(OH)_2$, $Ba(OH)_2$, and rule 1 exceptions are soluble]

Activity Series

Li > K > Ba > Sr > Ca > Na > Mg > Al > Mn > Zn > Fe > Cd > Co > Ni > Sn > Pb > H > Cu > Ag > Hg > Au