Solubility Rules

Predict aqueous solubility, precipitates and net ionic equations

Generally Soluble

All Group 1 salts (Li^+, Na^+, K^+, Rb^+, Cs^+)

No common exceptions

All ammonium salts (NH_4^+)

No common exceptions

All nitrates (NO_3^-)

No common exceptions

All acetates (CH_3COO^-)

Ag^+ is slightly soluble

All chlorates (ClO_3^-) and perchlorates (ClO_4^-)

No common exceptions

Chlorides, bromides and iodides (Cl^-, Br^-, I^-)

Except Ag^+, Pb^{2+} and Hg_2^{2+}

Sulfates (SO_4^{2-})

Except Ba^{2+}, Pb^{2+}, Sr^{2+} and Hg_2^{2+}; Ca^{2+} and Ag^+ are slightly soluble

Generally Insoluble

Carbonates (CO_3^{2-})

Except Group 1 and NH_4^+

Phosphates (PO_4^{3-})

Except Group 1 and NH_4^+

Chromates (CrO_4^{2-})

Except Group 1, NH_4^+, Ca^{2+} and Mg^{2+}

Sulfides (S^{2-})

Except Group 1, Group 2 and NH_4^+

Hydroxides (OH^-)

Except Group 1, NH_4^+ and Ba^{2+}; Ca^{2+} and Sr^{2+} are slightly soluble

Oxides (O^{2-})

Except Group 1; Group 2 oxides react with water

Common Precipitate Colours

$AgCl$ white	$AgBr$ cream	AgI pale yellow
$BaSO_4$ white	PbI_2 bright yellow	$Cu(OH)_2$ pale blue
$Fe(OH)_2$ green	$Fe(OH)_3$ red-brown	$CaCO_3$ white