Solubility Rules – Abbreviated Chart

Soluble Ionic Compounds	**Important Exceptions**
Compounds containing	
NO_3^-	None
$C_2H_3O_2^-$	None
Cl^-	Compounds of Ag^+, Hg_2^{+2}, and Pb^{+2}
Br^-	Compounds of Ag^+, Hg_2^{+2} and Pb^{2+}
I^-	Compounds of Ag^+, Hg_2^{+2} and Pb^{2+}
SO_4^{2-}	Compounds of Sr^{2+}, Ba^{t+}, Hg_2^{2+}, and Pb^{2+}

Insoluble Ionic Compounds	**Important Exceptions**
Compounds containing:	
S^{-2}	Compounds of NH_4^+, the alkali metal cations, and Ca^{+2} Sr^{+2}, and Ba^{+2}
CO_3^{-2}	Compounds of NH_4^+ and the alkali metal cations
PO_4^{-3}	Compounds of NH_4^+ and the alkali metal cations
OH^-	Compounds of the alkali metal cations, and Ca^{2+}, Sr^{2+}, and Ba^{2+}

TABLE 4.5 ■ Activity Series of Metals in Aqueous Solution

Metal	Oxidation Reaction
Lithium	$Li(s) \longrightarrow Li^+(aq) + e^-$
Potassium	$K(s) \longrightarrow K^+(aq) + e^-$
Barium	$Ba(s) \longrightarrow Ba^{2+}(aq) + 2e^-$
Calcium	$Ca(s) \longrightarrow Ca^{2+}(aq) + 2e^-$
Sodium	$Na(s) \longrightarrow Na^+(aq) + e^-$
Magnesium	$Mg(s) \longrightarrow Mg^{2+}(aq) + 2e^-$
Aluminum	$Al(s) \longrightarrow Al^{3+}(aq) + 3e^-$
Manganese	$Mn(s) \longrightarrow Mn^{2+}(aq) + 2e^-$
Zinc	$Zn(s) \longrightarrow Zn^{2+}(aq) + 2e^-$
Chromium	$Cr(s) \longrightarrow Cr^{3+}(aq) + 3e^-$
Iron	$Fe(s) \longrightarrow Fe^{2+}(aq) + 2e^-$
Cobalt	$Co(s) \longrightarrow Co^{2+}(aq) + 2e^-$
Nickel	$Ni(s) \longrightarrow Ni^{2+}(aq) + 2e^-$
Tin	$Sn(s) \longrightarrow Sn^{2+}(aq) + 2e^-$
Lead	$Pb(s) \longrightarrow Pb^{2+}(aq) + 2e^-$
Hydrogen	$H_2(g) \longrightarrow 2\,H^+(aq) + 2e^-$
Copper	$Cu(s) \longrightarrow Cu^{2+}(aq) + 2e^-$
Silver	$Ag(s) \longrightarrow Ag^+(aq) + e^-$
Mercury	$Hg(l) \longrightarrow Hg^{2+}(aq) + 2e^-$
Platinum	$Pt(s) \longrightarrow Pt^{2+}(aq) + 2e^-$
Gold	$Au(s) \longrightarrow Au^{3+}(aq) + 3e^-$