SOLUBILITY OF IONIC COMPOUNDS AT SATP – GENERALIZATIONS

Anion	Cl^-, Br^-, I^-	S^{2-}	OH^-	SO_4^{2-}	CO_3^{2-}, PO_4^{3-}, SO_3^{2-}	CH_3COO^-	NO_3^-
High Solubility (aq) ≥ 0.1 mol/L (at SATP)	most	Group 1, NH_4^+ Group 2	Group 1, NH_4^+ Sr^{2+}, Ba^{2+}, Tl^+	most	Group 1, NH_4^+	most	all
Low Solubility (s) < 0.1 mol/L (at SATP)	Ag^+, Pb^{2+}, Tl^+, Hg_2^{2+} (Hg^+), Cu^+	most	most	Ag^+, Pb^{2+}, Ca^{2+}, Ba^{2+}, Sr^{2+}, Ra^{2+}	most	Ag^+	none

All Group 1 compounds, including acids, and all ammonium compounds, are assumed to have high solubility in water.

ION COLORS

Ion	Flame Color
Li^+	bright red
Na^+	yellow
K^+	violet
Ca^{2+}	yellow-red
Sr^{2+}	bright red
Ba^{2+}	yellow-green
Cu^{2+}	blue (halides) green (others)
Pb^{2+}	light blue-grey
Zn^{2+}	whitish green

Ion	Solution Color
Groups 1, 2, 17	colorless
Cr^{2+}	blue
Cr^{3+}	green
Co^{2+}	pink
Cu^+	green
Cu^{2+}	blue
Fe^{2+}	pale green
Fe^{3+}	yellow-brown
Mn^{2+}	pale pink
Ni^{2+}	green
CrO_4^{2-}	yellow
$Cr_2O_7^{2-}$	orange
MnO_4^-	purple