

Solubility rules

Cations	
Ammonium NH_4^+	All soluble
Sodium Na^+	All soluble
Potassium K^+	All soluble
Anions	
Nitrate NO_3^-	All soluble
Chloride Cl^-	Mostly soluble, except silver chloride AgCl and lead chloride PbCl_2
Iodide I^-	Mostly soluble, except silver iodide AgI and lead iodide PbI_2
Sulfate SO_4^{2-}	Mostly soluble, except barium sulfate BaSO_4 and lead sulfate PbSO_4 (calcium sulfate CaSO_4 and silver sulfate Ag_2SO_4 are slightly soluble)
Hydrogen carbonate HCO_3^-	Mostly insoluble except sodium hydrogen carbonate NaHCO_3 , potassium hydrogen carbonate KHCO_3 , calcium hydrogen carbonate $\text{Ca}(\text{HCO}_3)_2$ and magnesium hydrogen carbonate $\text{Mg}(\text{HCO}_3)_2$
Hydroxide OH^-	Mostly insoluble except sodium hydroxide NaOH , potassium hydroxide KOH and ammonium hydroxide NH_4OH (calcium hydroxide $\text{Ca}(\text{OH})_2$ is slightly soluble)
Carbonate CO_3^{2-}	Mostly insoluble except sodium carbonate Na_2CO_3 , potassium carbonate K_2CO_3 and ammonium carbonate $(\text{NH}_4)_2\text{CO}_3$
Phosphate PO_4^{3-}	Mostly insoluble except sodium phosphate Na_3PO_4 , potassium phosphate K_3PO_4 and ammonium phosphate $(\text{NH}_4)_3\text{PO}_4$
Sulfide S^{2-}	Mostly insoluble except sodium sulfide Na_2S , potassium sulfide K_2S and ammonium sulfide $(\text{NH}_4)_2\text{S}$

In a **precipitation reaction**, (aq) means soluble, and (s) means an insoluble precipitate (solid) is formed.

Example:

