

Solubility

Solubility is the maximum amount of solute that will dissolve in a given quantity of solvent at a specific temperature.

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Table 4.2 Solubility Rules for Common Ionic Compounds in Water at 25°C

Soluble Compounds	Insoluble Exceptions
Compounds containing alkali metal ions (Li^+ , Na^+ , K^+ , Rb^+ , Cs^+) and the ammonium ion (NH_4^+) Nitrates (NO_3^-), acetates (CH_3COO^-), bicarbonates (HCO_3^-), chlorates (ClO_3^-), and perchlorates (ClO_4^-) Halides (Cl^- , Br^- , I^-) Sulfates (SO_4^{2-})	Halides of Ag^+ , Hg_2^{2+} , and Pb^{2+} Sulfates of Ag^+ , Ca^{2+} , Sr^{2+} , Ba^{2+} , Hg_2^{2+} , and Pb^{2+}
Insoluble Compounds	Soluble Exceptions
Carbonates (CO_3^{2-}), phosphates (PO_4^{3-}), chromates (CrO_4^{2-}), sulfides (S^{2-}) Hydroxides (OH^-)	Compounds containing alkali metal ions and the ammonium ion Compounds containing alkali metal ions and the Ba^{2+} ion