Solubility Rules for Ionic Compounds

1. An ionic compound is soluble in water if it contains one of the following ions: Li^+, Na^+, K^+, NH_4^+, $C_2H_3O_2^-$, or NO_3^-.

2. Most chloride, bromide, and iodide (Cl^-, Br^-, and I^-) compounds are soluble. However, compounds of chloride, bromide, or iodide combined with silver, mercury (I), or lead (II) are not soluble.

3. Most sulfate (SO_4^{2-}) compounds are soluble. However, $BaSO_4$, $PbSO_4$, and $CaSO_4$ are not soluble.

4. Most other compounds, including hydroxides (OH^-), carbonates (CO_3^{2-}), sulfides (S^{2-}), and phosphates (PO_4^{3-}) are insoluble. (Unless the compound also contains Na^+, K^+, Li^+, or NH_4^+.)

Solubility Rules for Ionic Compounds (no formulas)

(Note that this is the version you will be provided for quizzes and exams.)

1. An ionic compound is soluble in water if it contains one of the following ions: lithium ion, sodium ion, potassium ion, ammonium ion, nitrate, or acetate ion.

2. Most chloride, bromide, and iodide compounds are soluble. However, compounds of these ions with silver, mercury (I), and lead (II) are not soluble.

3. Most sulfate compounds are soluble. However, barium sulfate, lead (II) sulfate, and calcium sulfate are not soluble.

4. Most other compounds, including hydroxides, carbonates, sulfides, and phosphates are insoluble. (Unless the compound also contains sodium, potassium, lithium, or ammonium.)