

4.2 Precipitation Rxns

- Rxn that forms a precipitate (solid)
- Double-Replacement Reactions.
 - Cations + Anions both swap partners.

Mike - Fiona + Marshall - Franny

↓

Mike - Franny Marshall - Fiona



use solubility rules to determine (s) vs. (aq).
PPT

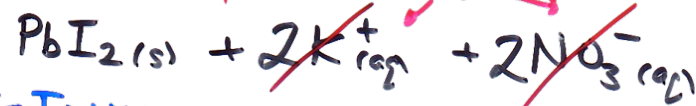
MOLECULAR



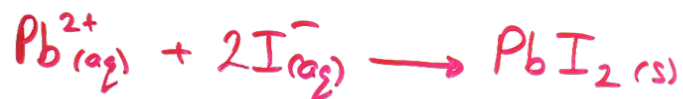
FULL-IONIC

- write out the individual ions for all of the SOLUBLE ionic compounds.
- for the insoluble compounds ~ we do not alter!

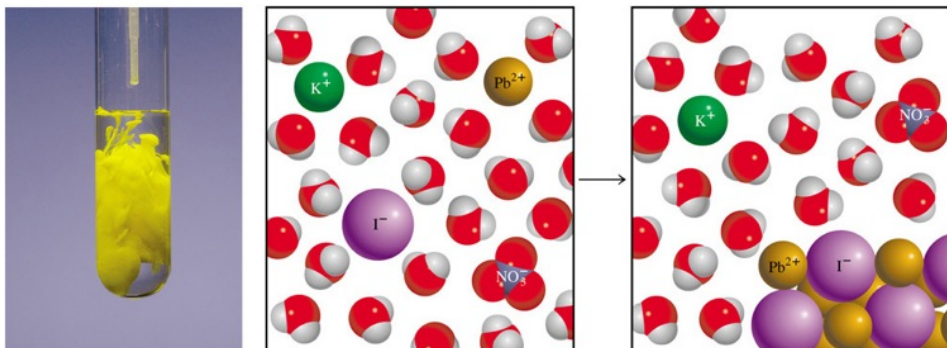
ex:



NET-IONIC



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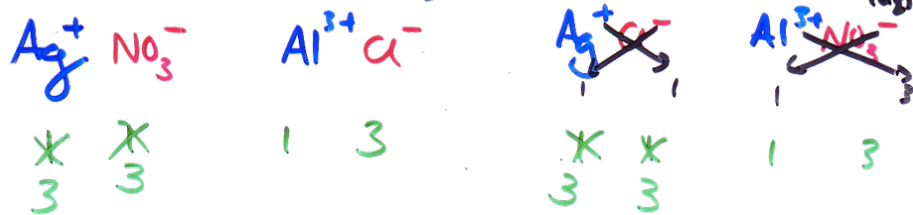
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Table 4.2 Solubility Rules for Common Ionic Compounds in Water at 25°C

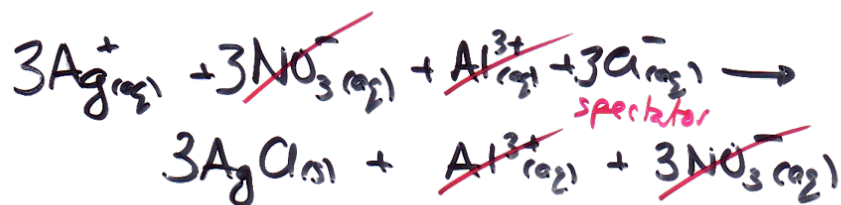
Soluble Compounds	Insoluble Exceptions
Compounds containing alkali metal ions (Li^+ , Na^+ , K^+ , Rb^+ , Cs^+) and the ammonium ion (NH_4^+)	
Nitrates (NO_3^-), bicarbonates (HCO_3^-), and chlorates (ClO_3^-)	
Halides (Cl^- , Br^- , I^-)	Halides of Ag^+ , Hg_2^{2+} , and Pb^{2+}
Sulfates (SO_4^{2-})	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-}), and sulfides (S^{2-})	Compounds containing alkali metal ions and the ammonium ion
Hydroxides (OH^-)	Compounds containing alkali metal ions and the Ba^{2+} ion

Predict prods + balance...

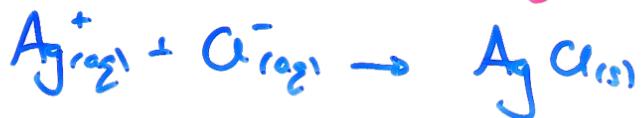
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FULL-IONIC



NET-IONIC



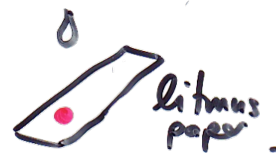
Acid-Base Reactions

Acids: • taste sour

• turn litmus RED.

• form H^+ ion

when dissolved in H_2O (Arrhenius)



Bases: • taste bitter, feels slippery

• turns litmus BLUE

• forms OH^- ion

when dissolved in H_2O (Arrhenius)

