

Table F Practice

Directions: Use Table F to determine if the following compounds are soluble or insoluble.

Substance	Soluble or Insoluble	Substance	Soluble or Insoluble	Substance	Soluble or Insoluble
NaCl		K ₃ PO ₄		Calcium hydroxide	
PbBr ₂		MgCO ₃		Copper (II) hydroxide	
CaSO ₄		NH ₄ NO ₃		Lead (II) sulfate	
Potassium chromate		Sodium hydrogen carbonate		Ammonium sulfide	

Directions: Use Table F to determine if the following compounds are soluble (S) or insoluble (I).

Key I = Insoluble S = Soluble	Acetate	Bromide	Carbonate	Chlorate	Chloride	Hydroxide	Hydrogen carbonate	Iodide	Nitrate	Phosphate	Sulfate	Sulfide
Aluminum												
Ammonium												
Barium												
Calcium												
Copper II												
Iron												

Directions: Double replacement reactions require the cations to switch with the anions.

Using Table F, determine which product is the precipitate, then fill in the states of matter of the products formed (s) or (aq).

- $(\text{NH}_4)_3\text{PO}_4 (\text{aq}) + \text{AlCl}_3 (\text{aq}) \rightarrow \text{AlPO}_4 (\text{___}) + \text{NH}_4\text{Cl} (\text{___})$
- $\text{NaCl} (\text{aq}) + \text{AgNO}_3 (\text{aq}) \rightarrow \text{AgCl} (\text{___}) + \text{NaNO}_3 (\text{___})$
- $\text{K}_2\text{SO}_4 (\text{aq}) + \text{BaI}_2 (\text{aq}) \rightarrow \text{BaSO}_4 (\text{___}) + 2\text{KI} (\text{___})$
- $\text{CaCl}_2 (\text{aq}) + \text{LiCO}_3 (\text{aq}) \rightarrow 2\text{LiCl} (\text{___}) + \text{CaCO}_3 (\text{___})$

Table G Practice

Directions: State whether each of the following solutions is *saturated*, *unsaturated*, or *supersaturated*.

- 80 g NaNO₃ in 100 g H₂O at 10 °C _____
- 75 g NaNO₃ in 100 g H₂O at 10 °C _____
- 90 g NaNO₃ in 100 g H₂O at 10 °C _____
- 90 g KNO₃ in 100 g H₂O at 50 °C _____
- 40 g KCl in 50 g H₂O at 60 °C _____
- 35 g NaNO₃ in 50 g H₂O at 10 °C _____
- 5 g KClO₃ in 200 g H₂O at 5 °C _____
- 30 g NH₄Cl in 200 g H₂O at 10 °C _____

Directions: Determine how many grams of each solute will crystallize/precipitate/settle. Assume all solutions are saturated and in 100 grams of H₂O.

Amount Cooled	Amount Precipitated
KNO ₃ (aq) is cooled from 70 °C to 40 °C	
NH ₄ Cl (aq) is cooled from 90 °C to 20 °C	
KCl (aq) is cooled from 55 °C to 30 °C	
KI (aq) is cooled from 20 °C to 5 °C	

Directions: Determine how many MORE grams of each solute must be added to 100 g of water to form a saturated solution at that temperature.

Grams Solute per 100 g H ₂ O	Solute Added to make Saturated	Grams Solute per 100 g H ₂ O	Solute Added to make Saturated	**Grams Solute per 200 g H ₂ O	Solute Added to make Saturated
35 g KNO ₃ at 40 °C		35 g NaCl at 90 °C		25 g NH ₃ at 5 °C	
50 g NH ₃ at 10 °C		5 g NH ₃ at 90 °C		30 g NaNO ₃ at 50 °C	
15 g KCl at 75 °C		10 g KClO ₃ at 40 °C		15 g KClO ₃ at 75 °C	
95 g KI at 15 °C		15 g KCl at 60 °C		5 g KCl at 75 °C	