Unit 8 NAME

Class Work 3/19/14

8.3 Reading Table F

SPARK (take out 8.2 Half Sheet, Anions- turn in lab!)

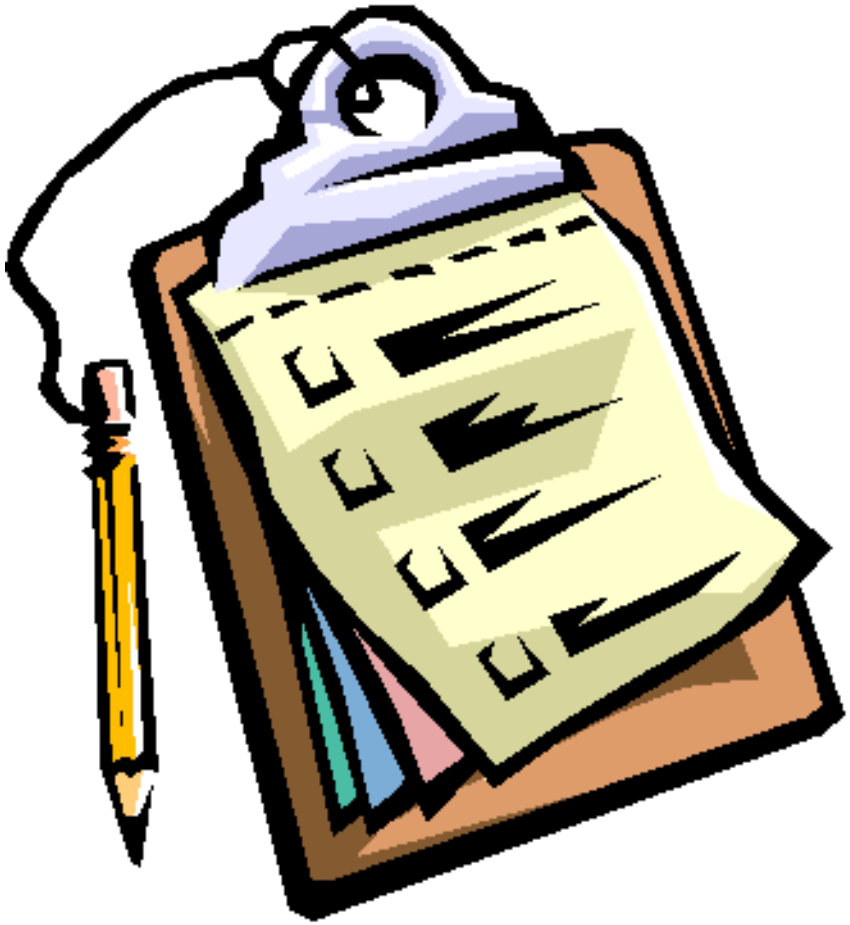
1. Define solubility.
2. What does the average kinetic energy mean?
3. How does temperature affect the solubility of a solid in water?

Objective

SWBAT determine the solubility of a compound using Table F

Agenda:

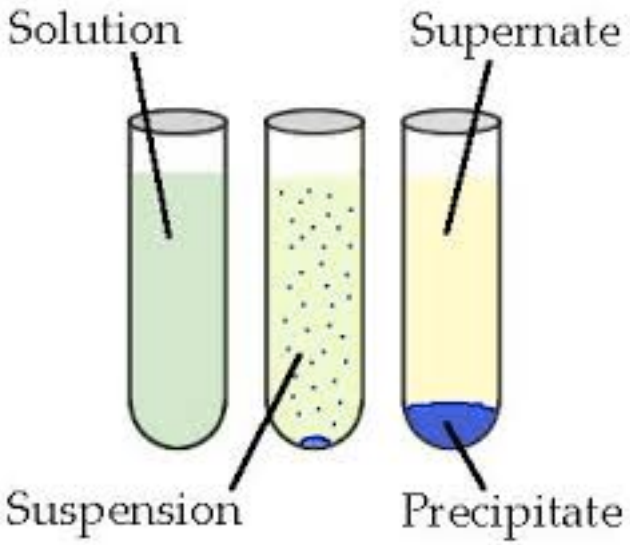
- SPARK/Objective
- Notes
- Practice
- Homework

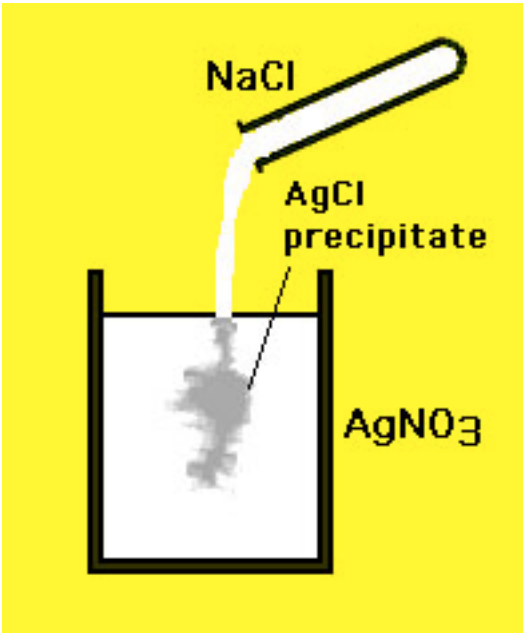


Objective: SWBAT determine the solubility of a compound using Table F

Notes

- Precipitate**: a solid that forms at the bottom of a flask
- Shows that something is insoluble!





Objective: SWBAT determine the solubility of a compound using Table F

Table F

Table F
Solubility Guidelines for Aqueous Solutions

Ions That Form *Soluble* Compounds	Exceptions
Group 1 ions (Li^+, Na^+, etc.)	
ammonium (NH_4^+)	
nitrate (NO_3^-)	
acetate ($C_2H_3O_2^-$ or CH_3COO^-)	
hydrogen carbonate (HCO_3^-)	
chlorate (ClO_3^-)	
perchlorate (ClO_4^-)	
halides (Cl^-, Br^-, I^-)	when combined with Ag^+, Pb^{2+}, and Hg_2^{2+}
sulfates (SO_4^{2-})	when combined with Ag^+, Ca^{2+}, Sr^{2+}, Ba^{2+}, and Pb^{2+}

Ions That Form *Insoluble* Compounds	Exceptions
carbonate (CO_3^{2-})	when combined with Group 1 ions or ammonium (NH_4^+)
chromate (CrO_4^{2-})	when combined with Group 1 ions, Ca^{2+}, Mg^{2+}, or ammonium (NH_4^+)
phosphate (PO_4^{3-})	when combined with Group 1 ions or ammonium (NH_4^+)
sulfide (S^{2-})	when combined with Group 1 ions or ammonium (NH_4^+)
hydroxide (OH^-)	when combined with Group 1 ions, Ca^{2+}, Ba^{2+}, Sr^{2+}, or ammonium (NH_4^+)

Objective: SWBAT determine the solubility of a compound using Table F

Practice

- **Question:** Is NH_4Cl soluble in H_2O?

Objective: SWBAT determine the solubility of a compound using Table F

Practice

- **Question:** Is silver chloride soluble in H_2O?

Objective: SWBAT determine the solubility of a compound using Table F

Name the Steps

TASK: Write a set of steps for determining the solubility. Be detailed.

Your TURN - Practice:

Directions: State whether the ionic compound will be soluble (precipitate does not form) or insoluble (precipitate forms)

1. LiF
2. HNO_3
3. NaOH
4. $Ca(OH)_2$
5. AgBr
6. $Fe_3(PO_4)_2$
7. $PbCl_2$
8. H_2SO_4
9. AgI
10. CaS
11. $(NH_4)_2S$
12. $KClO_4$
13. Cr_2S_3

Classwork

- Complete your 8.3 classwork!

Objective: SWBAT determine the solubility of a compound using Table F

Lab #19 - Cations

- What is the independent variable?

What we are changing/controlling in the experiment

- What is the dependent variable?

What we are recording/observing

- How do we write a hypothesis?

If [IV], then [DV] because [observation]

Objective: SWBAT identify and investigate factors affecting solubility

Lab #19

- How do we write a hypothesis?

If [IV], then [DV] because [observation]

Objective: SWBAT identify and investigate factors affecting solubility

Lab #19

- What should our graph look like?
- What should be included in the conclusion?

Objective: SWBAT identify and investigate factors affecting solubility

HOMEWORK

Finish 8.3 Classwork

Lab #19 (cations)

Objective: SWBAT identify and investigate factors affecting solubility