



Chem!stry

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Class:	
Date: / /	

Name: ()

Salt Preparation

Information - Reactions:

There are four different reactions which may be used to prepare a salt in the laboratory:

- 1. $acid + metal \rightarrow salt + hydrogen$
- 2. $acid + base (alkali) \rightarrow salt + water$
- 3. $acid + carbonate \rightarrow salt + water + carbon dioxide$
- 4. soluble salt A + soluble salt B \rightarrow insoluble salt C + soluble salt D

Remember – in general, a salt is an ionic compound that is produced when the hydrogen contained within an acid is replaced with a metal.

Information – Solubility of Salts:

- All sodium, potassium and ammonium salts are soluble in water, e.g. NaCl, K₂SO₄, (NH₄)₂CO₃.
- All nitrates are soluble in water, e.g. Cu(NO₃)₂, AgNO₃, Ba(NO₃)₂.
- All chlorides are <u>soluble</u> in water except silver chloride (AgCl), lead(II) chloride (PbCl₂) and mercury(I) chloride (Hg₂Cl₂) which are insoluble in water.
- All sulphates are <u>soluble</u> in water except silver sulphate (Ag₂SO₄), lead(II) sulphate (PbSO₄), barium sulphate (BaSO₄) and calcium sulphate (CaSO₄) which are <u>insoluble</u> in water.
- •All carbonates are <u>insoluble</u> in water except sodium carbonate (Na₂CO₃), potassium carbonate (K₂CO₃) and ammonium carbonate ((NH₄)₂CO₃) which are <u>soluble</u> in water.
- All hydroxides are <u>insoluble</u> in water except sodium hydroxide (NaOH), potassium hydroxide (KOH), ammonium hydroxide (NH₄OH) and barium hydroxide (Ba(OH)₂) which are <u>soluble</u> in water.

Instructions for the Activity:

- Decide whether each of the salts being prepared on pages 2 and 3 is soluble or insoluble in water.
- Decide which reagents could be used to prepare the salt. Are the reagents soluble or insoluble in water?
- Write a word equation to describe the preparation of the salt.
- Write a <u>balanced chemical equation</u> to describe the preparation of the salt.
- Write a balanced ionic equation to describe the preparation of the salt.
- State symbols are now very important so remember to include them!
- State the method that would be used to prepare the salt. Options are:
 - \rightarrow lonic precipitation.
 - → Titration.
 - → Excess insoluble base / carbonate.

Reaction One:	
Word Equation:	
+ → s	sodium nitrate +
Balanced Chemical Equation:	
+ → .	
• Ionic Equation:	
+ → .	
• Method:	
Reaction Two:	
Word Equation:	
+ → 0	copper(II) chloride +
Balanced Chemical Equation:	
+ → .	
Ionic Equation:	
+ → .	
• Method:	
Reaction Three:	
Word Equation:	
+ → <i>I</i>	barium sulphate +
Balanced Chemical Equation:	
+ → .	
• Ionic Equation:	
+ → .	
Method:	
Reaction Four:	
Word Equation:	
+ → <i>j</i>	potassium chloride +
Balanced Chemical Equation:	
+ → .	
• Ionic Equation:	
+ → .	
Method:	

Reaction Five:	
Word Equation:	
+	→ zinc nitrate +
Balanced Chemical Equation:	
·	
	→
Ionic Equation:	
+	→
Method:	
Reaction Six:	
Word Equation:	
+	→ silver chloride +
Balanced Chemical Equation:	
+	→
• Ionic Equation:	
·	→
	············ 7 ·······················
Method:	
Reaction Seven:	
Word Equation:	
+	→ lead(II) carbonate +
Balanced Chemical Equation:	
·	→
	→
Ionic Equation:	
+	→
Method:	
Reaction Eight:	
Word Equation:	
•	
	→ magnesium chloride +
Balanced Chemical Equation:	
+	→
• Ionic Equation:	
·	→
Method:	

• Scan the QR code below for the answers to this assignment.



http://www.chemist.sg/acids/salt_prep_ans.pdf