

Solids Qualitative Analysis Groupwork

Multiple Choice

1. If the pH of a substance is 11.5, how would you identify it?
 - a. Acidic
 - b. Basic
 - c. Neutral
2. Which of the following powders bubbles when dissolved in HCl?
 - a. Sugar
 - b. ascorbic acid
 - c. sodium acetate
 - d. calcium carbonate
3. What gaseous chemical compound is released when baking soda is reacted with HCl?
 - a. O₂
 - b. CO₂
 - c. CO₃
 - d. NH₃
4. What are the results of an iodine test with starch?
 - a. Starch forms a helix and surrounds the water molecules producing a yellow color
 - b. Starch oxidizes triiodide, forming a dark purple/black byproduct
 - c. Starch forms a helix and surrounds the water molecules producing a dark purple/black color
 - d. Starch oxidizes triiodide, forming a yellow byproduct
5. Which of the following fizzes violently when reacted with HCl?
 - a. Sodium Acetate
 - b. Salt
 - c. Cornstarch
 - d. Baking Soda
6. Which of the following reacts with iodine, forming a result that is black and clumpy?
 - a. Cornstarch
 - b. Flour
 - c. Vitamin C
 - d. Alka-Seltzer
7. Which of the following has the greatest boiling point?
 - a. Sodium acetate
 - b. Sand
 - c. Yeast
 - d. Baking soda

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Short Answer Questions

1. Gelatin is generally set when dissolved in hot water and allowed to cool. Describe the process of gelatin setting on a molecular scale (From Harvard Undergraduate Science Olympiad Invitational 2020)
2. Yeast is commonly used in the baking process in order to cause bread to rise. What product of yeast leavening causes bread to rise? What material(s) is/are missing from yeast in order to produce this final product? (From Harvard Undergraduate Science Olympiad Invitational 2020)
3. What are flour and cornstarch mainly made out of? How are the two different? What makes flour clumpy in water but not cornstarch?
4. Give a difference between the salt and sugar grains.