Experiment 19: Analysis of Saltwater

Materials:
- 13 x 100 mm test tubes (6)
- 16 x 150 mm test tube
- Test Tube Rack
- Glass Stirring Rod
- Test Tube Brush
- Wash Bottle Deionized (DI) or Distilled Water
- Mortar and Pestle
- Wire Gauze
- Evaporating Dish
- 250 mL Beaker
- 10 mL Pipet and Bulb
- 100 mL Beaker

K\textsubscript{MnO}_4 (s) Potassium Permanganate, Solid
I\textsubscript{2} (s) Iodine, Solid Crystals
CH\textsubscript{3}OH (l) Methanol, Liquid
C\textsubscript{7}H\textsubscript{16} (l) Heptane, Liquid
NaCl (s) Salt, Rock Salt, Solid Crystals
NaC\textsubscript{2}H\textsubscript{3}O\textsubscript{2} · 3H\textsubscript{2}O (s) Sodium Acetate Trihydrate, Solid Crystals

3.00 – 5.00 % NaCl\textsubscript{(aq)} Unknown Saltwater Solutions

Procedure A: Solutes and Solvent

Drop a small crystal of KMnO\textsubscript{4} into 3 of the test tubes.

Add 10 drops of D.I. Water to the first...

Add 10 drops of Hexane to the second...

... and add 10 drops of Methanol to the third test tube.
Repeating the same procedure with Iodine:

Do not use a metal spatula with I₂!

Add 10 drops D.I. Water to the fourth test tube.

Add 10 drops Hexane to the fifth test tube.

Add a small crystal of Iodine to the other 3 test tubes.

Add 10 drops Methanol to the sixth test tube.
Procedure B: Rate of Dissolving… the apparatus and materials are shown below:

Use the mortar and pestle to grind the salt for Procedure B - 5.
Procedure C: Demonstration of Supersaturation
Procedure D: Concentration of Sodium Chloride in Saltwater

200 mL of D.I. water in the beaker

10.0 mL of saltwater (use a pipet) goes into the evaporating dish