

Chemistry in a Ziploc[®] Bag

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Materials needed

Baking soda, sodium bicarbonate, NaHCO_3
Calcium chloride, anhydrous, CaCl_2
phenol red solution
2 plastic teaspoons
2 10-mL containers (vials)
6 Zip-Loc bags, quart size

Safety Precautions

Goggles must be worn at all times in the laboratory.

Calcium chloride is hygroscopic and will pick up water from the air. Keep the container closed when not in use.

Disposal

All solutions used in this activity can be diluted with water and flushed down the drain.

Procedure

Measure 10 mL of water into one of the vials. Make a mark at the 10 mL level with a grease pencil or a permanent marker. Repeat for each of the vials to be used. These vials will be used to measure 10 mL of solution.

Put 1 spoonful of baking soda, sodium bicarbonate (NaHCO_3) in the quart-size Ziploc[®] bag.

Put 2 spoonfuls of calcium chloride (CaCl_2) in the same bag. Record any observations.

Measure 10 mL of the phenol red solution into the marked plastic vial.

Place the vial UPRIGHT inside the Ziploc[®] bag, carefully squeeze most of the air out of the Ziploc[®] bag, and seal it.

Spill the phenol red solution out of vial by tilting the sealed Ziploc[®] bag. Mix the contents. Record the observations.

Determine which component was responsible for each of the observations. You may do additional experiments with the materials.