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Student Exploration: Mystery Powder Analysis

Vocabulary: Biuret solution, iodine solution, litmus paper, vinegar

Prior Knowledge Questions (Do these BEFORE using the Gizmo.)

A white powder is found spilled on the kitchen floor of a crime scene. A similar powder is found on the shoes of a suspect in the crime.

1. What are some powders that you might find on the kitchen floor? Spices, baking ingredients, dry herbs, coffee grounds, salt, and sugar.
2. How could you tell if the powder was salt, sugar, flour, or baking soda? Call a professional to help tell whether the powder is lethal to a human or not.

Gizmo Warm-up

The *Mystery Powder Analysis* Gizmo allows you to use a variety of tests to identify unknown substances. To start, drag the

Baking soda test tube into the "Place tube here" area.

1. Under **Appearance**, click **Test**. Is baking soda a fine powder (no visible grains), or is it coarse (visible grains)?

Baking soda is a fine grain with no visible grains.



2. **Litmus paper** is an indicator of acids and bases. Under **Litmus test**, click **Test**. Which of the following results occurred? (Circle the answer.)

A. Both strips red (acid)

C. One red, one blue strip (neutral)

B. Both strips blue (base)

3. Some substances react with **vinegar** to produce carbon dioxide, visible as bubbles.

Under **Vinegar test**, click **Test**. Does the vinegar bubble? Yes it does.

4. The blue **Biuret solution** turns bright purple in the presence of proteins. **Iodine solution** turns dark purple in the presence of starch. Try each of these tests.

Does baking soda contain protein? _No_ Does baking soda contain starch? __No__

Mystery Powder Analysis Gizmo Answers

Marcel A. Müller



Mystery Powder Analysis Gizmo Answers:

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