

Make Your Own Acid-Base Indicator

(Contributed by Dr. Jim Hebden, Chemistry Teacher)

1. Place 1/2 teaspoon of turmeric (from your grocery spice section) in a small sealable plastic bag, and add 5 mL of methyl hydrate. (You might use gasoline antifreeze from the hardware store).

Caution! A parent should supervise this experiment, since methyl hydrate is poisonous if consumed, and also flammable. If someone does drink the methyl hydrate, make them throw up immediately, and get them to a hospital.)

2. Let the mixture sit overnight.

3. Cut a coffee filter into strips about 1 cm by 5 cm, and thoroughly soak the strips in the turmeric solution.

The turmeric solution may stain your clothes and skin yellow. You may wish to wear disposable plastic gloves when working with the solution.

4. Dry the strips on a paper towel. The dry strips can be used as acid-base indicator paper.

Turmeric is yellow in acids and red-brown in bases.

5. Use the indicator paper to test household materials to see if they are noticeably acidic or basic. Here are some examples of materials you might test with the turmeric paper: vinegar, milk of magnesia, ammonia-based window cleaner, lemon juice, apple cider, table salt, Ivory soap, any dish detergent, Vitamin C tablet (ascorbic acid), any soft drink, tomato juice, milk, borax, washing soda, baking soda, dill pickles, and tap water.

Methyl hydrate dissolves a special type of coloured dye from the turmeric. The dye can exist in two forms: in acids, the dye is turned into its yellow form, and in bases the dye is turned into its red-brown form.