

Physical and Chemical Changes

Perform the following experiments. Make careful observations at all times. Before starting this lab, construct a data chart to include: Experiment, Observations, Physical or Chemical Change, and Exothermic or Endothermic Change.

1. Use crucible tongs to hold a piece of magnesium in the flame of a Bunsen burner until the magnesium ignites. DO NOT look directly at the flame.
2. Weigh 1.0 g of salt and 1.0 g of sand. Place both in 100 ml water. Stir. Weigh a piece of filter paper. Filter using gravity filtration. Dry the filter paper and reweigh. Place some of the filtrate into an evaporating dish and heat to dryness.
3. Heat a nichrome wire in a Bunsen burner flame. Don't throw the wire away – return it to the proper container.
4. Weigh 1.0 g of sulfur and 1.0 g of iron. Mix thoroughly in a cheap test tube. Test with a magnet (it should work through the glass of the test tube, do not touch the magnet to the chemicals). Remix. Heat the mixture strongly in a Bunsen burner flame. Observe closely. Crack the test tube by placing the ^{hot} tube under water (PICK UP every little piece of broken glass). Test the resulting substance with the magnet.
5. Weigh 1.0 g of NaHCO_3 and place in a test tube. Carefully add 2 ml of 6M HCl.
6. Place 25 ml water in a small beaker. Measure the temperature of the water. Add 10-15 granules of NaOH to the water (NaOH is caustic, do not get it on your skin, eyes, or clothes). Stir and record the temperature.
7. Place 25 ml water in a small beaker. Measure the temperature of the water. Add 2 large squirts of concentrated H_2SO_4 to the water. (Note: always add acid to water, never water to concentrated acid) Do not get the acid on your skin, eyes, or clothes. Stir and record the temperature.
8. Place 25 ml water in a small beaker. Measure the temperature of the water. Add 2.0 g NH_4NO_3 . Stir and record the temperature.
9. Place 1.0 g of sucrose and .5 g KClO_3 in a mortar and use a pestle to grind the mixture together. Place the mixture in a large test tube and secure the test tube to a ring stand. Add one small squirt of concentrated H_2SO_4 to the tube. BE CAREFUL!! DO NOT HAVE YOUR FINGERS, EYES, OR ANY OTHER BODY PARTS OVER THE TEST TUBE WHEN YOU ADD THE ACID.
10. Place 5 ml of AgNO_3 in a test tube. Add 2-3 drops of HCl.