

## **Chemical or Physical Change Lab**

Use what you've learned about chemical and physical changes to determine if the following stations involve chemical or physical changes. Make sure you give evidence for your determination.

### **Station 1: Heat the unknown in a crucible**

In this station, heat the unknown compound in a crucible until you see a change take place.

Was it a chemical or physical change?

What evidence do you have to back up your guess?

### **Station 2: Combine the two solutions**

In this station, add one dropperful of compound A into a 50 mL beaker followed by one dropperful of compound B. Make sure you use different droppers for each solution.

Was it a chemical or physical change?

What evidence do you have to back up your guess?

### **Station 3: Heat the unknown in a crucible**

In this station, heat two large pieces of the unknown in a crucible until you see a change take place.

Was it a chemical or physical change?

What evidence do you have to back up your guess?

**Station 4: Heat the unknown in a crucible**

In this station, heat one small scoopful of the unknown in a crucible until you see a change take place.

Was it a chemical or physical change?

What evidence do you have to back up your guess?

**Station 5: Combine the two solutions**

In this station, add one dropperful of compound A into a 50 mL beaker followed by one dropperful of compound B. Make sure you use different droppers for each solution.

Was it a chemical or physical change?

What evidence do you have to back up your guess?

**Station 6: Heat the unknown in a crucible**

In this station, add ten drops of the unknown to a crucible and heat over a Bunsen burner.

Was it a chemical or physical change?

What evidence do you have to back up your guess?

## **Teachers:**

When determining what sorts of chemicals should be heated or combined, consider the following suggestions. Use whichever you like, or make up some of your own.

**Chemicals that are interesting to heat:**

- 1) **Magnesium sulfate heptahydrate (Epsom salts: The crystals jump around!)**
- 2) **Copper sulfate hydrates (they go from blue to light blue/white)**
- 3) **Naphthalene (mothballs: They burn with a thick, black smoke. Only burn these in the hood!)**
- 4) **Alcohol (burns)**
- 5) **Sugars (they foam and smell like caramel)**
- 6) **Water (boiling is frequently misinterpreted as a chemical change)**

**Chemicals that are interesting to combine:**

- 1) **Lead nitrate and potassium iodide (yellow lead iodide precipitate)**
- 2) **Silver nitrate and hydrochloric acid (white silver chloride precipitate)**
- 3) **Sodium bicarbonate and acids (fizz when CO<sub>2</sub> is created)**
- 4) **Copper metal and nitric acid (NO<sub>x</sub> is produced, making a brown toxic cloud... only do in the hood!)**