Chemical & Physical Changes Lab

name_____
80/1200

OBJECTIVE: In this lab, you will perform seven experiments, and you will determine if a chemical reaction or physical change has occurred.

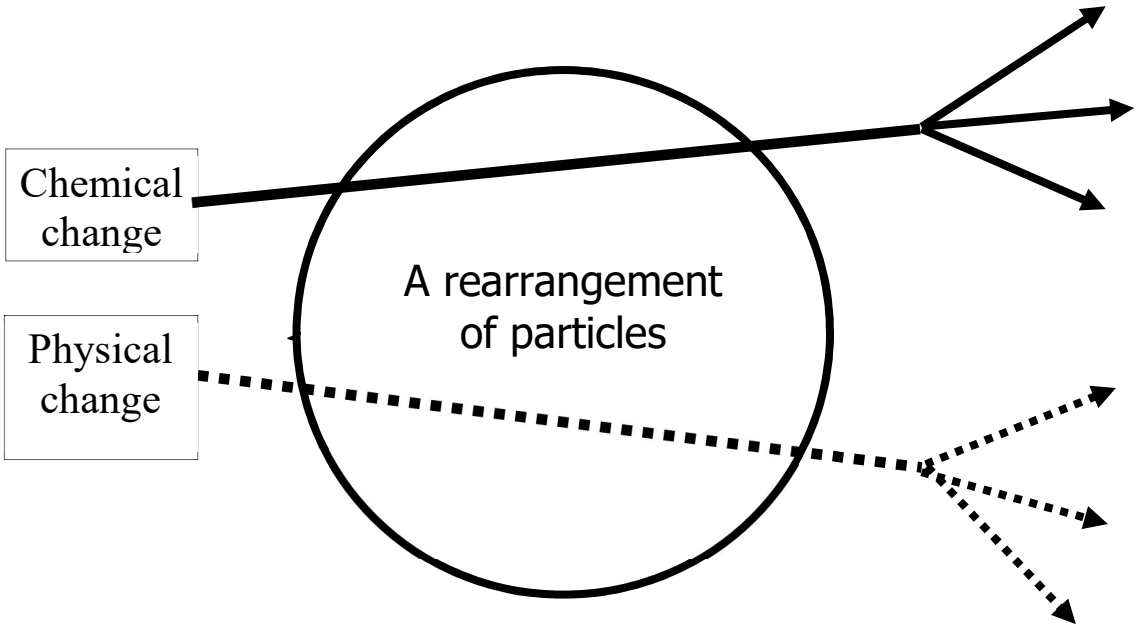
SAFETY ISSUES: Goggles on at all times, pay attention to Bunsen burners, be careful and do NOT watch the magnesium burning which is on the dangerous side.

Background: what do the letters "TOPIC-B" stand for
(they are the indicators that a chemical reaction has PROBABLY occurred.

T	
O	
P	
I	
C	
B	

What are the phase symbols (and their English names) common to chemistry?

This diagram represents chemical + physical changes. Label the right side



PART	This lab report includes...	Points
cover	Title, introduction sentence	1
2	Fill in the chart and the blanks on the first page of the handout	14
3	Observations, on white paper	1
4	Conclusion - for this lab report LIST the indicators of chemical reactions. Explain the difference between a chemical reaction and a physical change in reference to particles changing places, formulas, and properties. What are reactants and products. Explain what a balanced chemical equation represents. Tell which reaction was your favorite, and why you choose that one.	4
this lab is due on:		25

There are 7 parts to this lab experience, do them in ANY order, just keep track of your observations on WHITE PAPER. Do not write on this page today (or tonight).

1	Put 4 cubes of ice into a 100 mL beaker. Let it sit for 20 minutes. Light up your Bunsen burner (capital B for Mr. Bunsen please) and boil this water away. Take the temperature of the boiling water. (let beaker cool off before you wash it with soap).
2	Put one full eyedropper full of lithium carbonate solution into a small clean beaker. Put another full eyedropper full of cobalt (II) chloride solution into the same beaker. Observe and record anything noticeable. Then, let this sit for 20 minutes at least, and observe again. Pour down drain with water.
3	Place a scoop of sodium hydrogen carbonate ($NaHCO_3$) into a small beaker. Pour in 30 mL of acetic acid ($HC_2H_3O_{2(AQ)}$) Observe carefully. Move your papers away from beaker before pouring in the acid.
4	Obtain some copper wire. Set up your Bunsen burner. Using tongs, put wire into the hottest part of the flame. Turn as if it were a hot dog at a campfire. Put the wire onto the table (it's still hot!). Observe what forms on the wire. Which of the 2 kinds of copper oxide formed on your wire? Put wire in trash.
5	Put a large scoop of the sodium hydrogen carbonate into a DRY, large test tube. Attach the tube to the ring stand. Heat with the Bunsen burner flame. While heating, SOFTLY tap the tube with the metal tongs. Watch closely. What's in the top of the test tube now? Where did that come from? When cooled off you may dump this down the drain with plenty of soap and water.
6	Obtain a piece of magnesium metal. Spiral the metal around your pen making a "spring". Hold it on one end with crucible tongs. Put the metal into the Bunsen burner flame. When metal ignites, take out of the flame. DO NOT LOOK DIRECTLY AT THE BURNING METAL! Do not let the burning metal go onto you or the floor! When it cools down, rub some of the residue on your finger and observe the ash. Wipe up with damp paper towels, put into trash cans.
7	Obtain approximately 40 mL deionized water in a small, clean beaker. Measure the temperature of this water to the nearest 10th degree. Measure 7.50 grams of $KNO_{3(S)}$ (potassium nitrate), then pour this into your water. Carefully stir it using the thermometer. Measure the temperature again. Wash down the drain with lots of water. Do not get this stuff in your mouth!

	For each experiment write the WORD EQUATION, and then a BALANCED CHEMICAL EQUATION with PHASE SYMBOLS.
1	
2	
3	

4	
5	
6	
7	