Name _____ Period _____ Date _____

Classification of Matter – Ch. 9

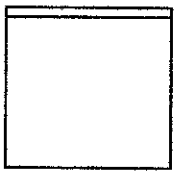
Part A – Composition of Matter 9.1

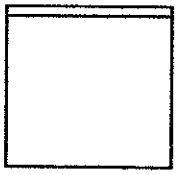
1. Classify the following as *element*, *compound*, *heterogeneous mixture*, or *solution* (homogeneous mixture).
   a. hydrogen gas _____
   b. orange juice _____
   c. air _____
   d. carbon dioxide (CO_2) _____

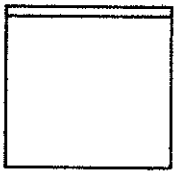
2. Compare and contrast a *mixture* and a *compound*. How are they alike? How are they different? Use complete sentences.

Part B – Solutions, Colloids, and Suspensions 9.1

3. For each type of mixture draw a picture representing the size and distribution of particles in a liquid.


SOLUTION


COLLOID


SUSPENSION

Part C – Properties & Changes of Matter 9.3

4. Classify the following properties of matter as chemical (C) or physical (P).
   a. flexible _____
   b. combustible _____
   c. boils at 20°C _____
   d. low reactivity _____

5. Classify the following as chemical (C) or physical (P) changes.
   a. grapes fermenting _____
   b. copper melting _____
   c. recycling aluminum _____
   d. gasoline exploding _____

Identifying Physical and Chemical Changes

Identifying physical and chemical changes is an important science skill. Table A provides several examples of situations in which a substance undergoes a change. Decide if the description indicates a physical or a chemical change. Write your answer in the appropriate box. Also, briefly state why you made your choice. Table B provides several substances that can undergo both physical and chemical changes. In the appropriate box, describe what could be done to the substances to bring about these changes.

Table A

	Type of Change	Reason for Choice
1. While you are filling the gas tank on your minibike, a small amount of gasoline spills but soon disappears.		
2. As the minibike runs, less gasoline remains in the gas tank as carbon dioxide leaves the exhaust.		
3. After swimming in the ocean and resting on the beach, you are no longer wet, but your skin has a salty film on it.		
4. After stirring the sugar you added to some iced tea, the sugar disappears but the tea tastes sweet.		

Table B

	Description of a Physical Change that Could Happen	Description of a Chemical Change that Could Happen
1. A raw egg		
2. A pencil		
3. An antacid tablet		
4. A green plant		
5. A bicycle frame		