Signs of a Chemical Change

You may not be able to see that any new substances have formed during a change. Below are some signs that a chemical change may have occurred. If you observe two or more of these signs during a change, you most likely are observing a chemical change.

Production of an Odor Some chemical changes produce new smells. The chemical change that occurs when an egg is rotting produces the smell of sulfur. If you go outdoors after a thunderstorm, you may detect an unusual odor in the air. The odor is an indication that lightning has caused a chemical change in the air.

Change in Temperature Chemical changes often are accompanied by a change in temperature. You may have noticed that the temperature is higher near logs burning in a campfire.

Change in Color A change in color is often an indication of a chemical change. For example, fruit may change color when it ripens.

Formation of Bubbles When an antacid tablet makes contact with water, it begins to bubble. The formation of gas bubbles is another indicator that a chemical change may have occurred.

Formation of a Solid When two liquids are combined, a solid called a precipitate can form. The shells of animals such as clams and mussels are precipitates. They are the result of a chemical change involving substances in seawater combining with substances from the creatures.

Check Your Reading Give three signs of chemical changes. Describe one that you have seen recently.

5.3 Review

1. What effect does observing a substance’s physical properties have on the substance? (8.5.d)

2. Describe how a physical property such as mass or texture can change without causing a change in the substance. (8.5.d)

3. Explain why burning is a chemical change in wood. (8.5.a)

4. Synthesize Why does the density of a substance remain the same for different amounts of the substance?

5. Apply Describe how you would determine if a physical or chemical change had occurred.

6. Infer Iron can rust when it is exposed to oxygen. What method could be used to prevent iron from rusting?