Chemical And Physical Changes Worksheet Answer Key PDF

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Part 1: Building a Foundation

Which of the following is an indicator of a chemical change?

undefined. Melting ice

undefined. Breaking glass

undefined. Formation of a precipitate ✓

undefined. Dissolving sugar in water

The formation of a precipitate indicates a chemical change.

Which of the following are examples of physical changes? (Select all that apply)

undefined. Ice melting ✓

undefined. Iron rusting

undefined. Sugar dissolving in water ✓

undefined. Baking a cake

Ice melting and sugar dissolving in water are examples of physical changes.

Define a chemical change and provide two examples.

A chemical change involves the transformation of substances into new substances. Examples include rust formation and combustion.

List two characteristics of physical changes and provide an example for each.

1. Characteristic 1

Reversible

2. Example 1

Melting ice

3. Characteristic 2

No new substances formed

4. Example 2

Boiling water

Physical changes are reversible and do not produce new substances. Examples include melting ice and boiling water.

Part 2: Comprehension and Application

Which statement best describes a physical change?

undefined. It results in the formation of new substances.
undefined. It is always irreversible.
undefined. It involves a change in physical properties without altering chemical identity. ✓
undefined. It always produces a gas.

A physical change involves a change in physical properties without altering chemical identity.

Which of the following statements are true about chemical changes? (Select all that apply)

undefined. They are usually reversible.
undefined. They involve the formation of new substances. ✓
undefined. They often involve energy changes. ✓
undefined. They do not change the chemical identity of a substance.

Chemical changes involve the formation of new substances and often include energy changes.

Describe a real-world scenario where both chemical and physical changes occur simultaneously.

An example is cooking food, where physical changes (like melting) and chemical changes (like browning) occur.

You observe a color change when mixing two clear solutions. What type of change is likely occurring?

undefined. Physical change

undefined. Chemical change ✓
undefined. No change
undefined. Phase change

A color change when mixing solutions typically indicates a chemical change.

Part 3: Analysis, Evaluation, and Creation

Which of the following processes can be classified as both a chemical and physical change?

undefined. Boiling water
undefined. Burninging a candle ✓
undefined. Cutting paper
undefined. Freezing water

Burninging a candle involves both physical changes (melting wax) and chemical changes (combustions).

Analyze the following scenarios and identify which involve chemical changes. (Select all that apply)

undefined. Baking bread ✓
undefined. Melting butter
undefined. Photosynthesis in plants ✓
undefined. Shreddinging paper

Scenarios like baking bread and photosynthesis involve chemical changes.

Analyze the process of digestion in humans and identify where chemical and physical changes occur.

Digestion involves physical changes (chewing) and chemical changes (enzymatic breakdown of food).

Which scenario best illustrates the concept of reversibility in physical changes?

undefined. Burninging wood
undefined. Dissolving salt in water ✓
undefined. Cooking an egg
undefined. Rustinging of iron

Dissolving salt in water is a reversible physical change.

Evaluate the following statements and identify which are correct regarding the energy changes in chemical reactions. (Select all that apply)

undefined. All chemical reactions release energy.

undefined. Some chemical reactions absorb energy. ✓

undefined. Energy changes are not involved in chemical reactions.

undefined. Exothermic reactions release heat. ✓

Some chemical reactions absorb energy, while others release it, such as exothermic reactions.

Propose a simple experiment to demonstrate a chemical change, including the materials needed and the expected observations.

An example experiment could be mixing vinegar and baking soda, which produces bubbles and a temperature change.