

CONCEPT: PHYSICAL & CHEMICAL CHANGES

Physical Changes

- Changes in the physical state of a substance without a change in composition.

Physical Changes

- _____ of solute
- _____, _____, _____, _____ Material
- _____ substances
- _____ a substance

EXAMPLE: Which change is a physical change?

- a) Wood burning b) Iron rusting c) Dynamite exploding d) Dissolving sugar in water

Chemical Changes

- Changes in chemical composition that creates a new chemical bonds and product(s).

Chemical Changes

- _____ of Metals
- _____ of food
- _____ Change
- _____ of material
- _____ Reactions
- _____ Change

EXAMPLE: Which of the following is a chemical change?

- a) Melting wax b) Cooking an egg c) Condensing water vapor d) Carving a piece of wood

PRACTICE: Which of the following is a physical change?

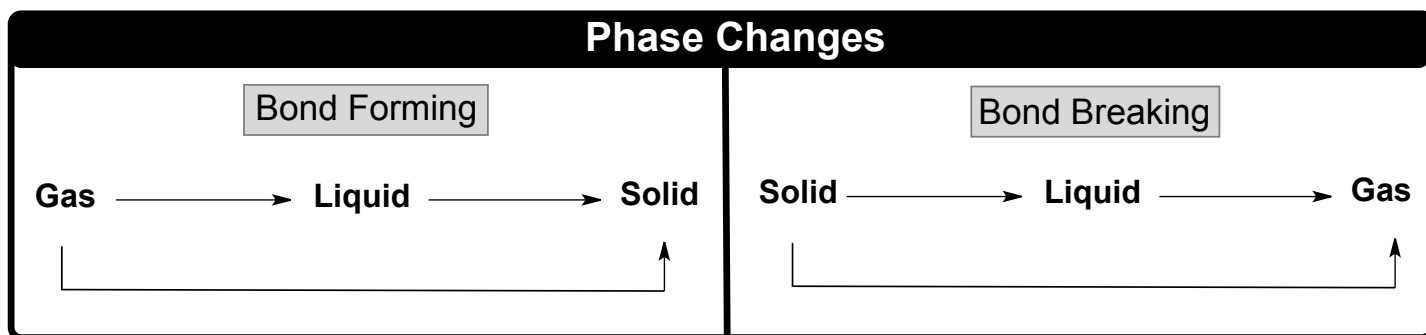
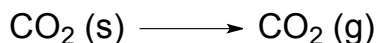
- a) Milk sours when left out of the refrigerator.
- b) Tums (containing CaCO_3) neutralizes stomach acid.
- c) Sugar caramelizing when heated on a skillet.
- d) Tearing a piece of paper.

CONCEPT: PHYSICAL & CHEMICAL CHANGES

Reversible & Irreversible Changes

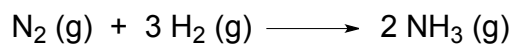
- **Reversible Change:** A change that can be reversed to restore the original structure of a given compound.

□ Phase changes, dissolving of compounds in liquids and _____ changes are the most common example.



- **Irreversible Change:** A change that is permanent and cannot be undone to restore the original structure.

□ _____ changes are the most common example.



EXAMPLE: Are the following processes reversible or irreversible?

- a) Dissolving sugar in water _____
- b) Adding lemon juice to cabbage juice _____
(Causes the color to transition from purple to deep red)
- c) Adding citrus to baking powder _____
- d) Mixing oil and water _____

PRACTICE: Which of the following represents a reversible change?

- a) Melting a chocolate bar then re-solidifying it in the freezer.
- b) Changing water vapor into oxygen and hydrogen gas.
- c) Turning a potato into french fries.
- d) Baking a cake from a recipe.