

Some examples of Physical and Chemical Changes

Physical Changes

- Change of state (such as from solid to liquid or from gas to liquid)
 - Specific examples of state change include water freezing, alcohol evaporating and dry ice (solid carbon dioxide) subliming
- Absorption of water into a towel
- Crumpling a piece of paper
- Pulling copper into a thin wire - a change of shape, but not a change of composition
- Cutting a material such as wood
- Tearing a piece of tin foil
- Breaking glass
- Deflating a basketball
- Mixing different solids (such as solid sulfur and iron filings)
- Inflating a volleyball
- Cloud forming in the sky

Chemical changes

- Burning a log of wood
- Mixing an acid with a base, producing water and a salt.
- Photosynthesis - a process in which carbon dioxide and water are changed into sugars by plants.
- Cracking heavy hydrocarbons to create lighter hydrocarbons (part of the process of refining oil).
- Cooking examples: popcorn, cake, pancakes, and eggs
- Oxidation examples: rust or tarnishing
- Combustion
- Mixing chemicals
- Rotting of fruit
- Cooking rice
- Explosion of fireworks
- Tarnishing silver
- Lighting a match
- Chewing/digesting food
- Rusting nail
- Burning gas in a stove
- Oxidizing food for energy
- Roasting a marshmallow
- Adding food coloring to icing
- Frying an egg
- Burning a magnesium strip

Indicators of Chemical Changes

The following can indicate that a chemical change took place, although this evidence is not conclusive:

- Change of color (for example, silver to reddish-brown when iron rusts)
- Change in temperature or energy, such as the production (exothermic) or loss (endothermic) of heat
- Change of form (for example, burning paper)
- Light, heat, or sound is given off
- Formation of gases, often appearing as bubbles
- Formation of precipitate (insoluble particles)
- The decomposition of organic matter (for example, rotting food)