

Physical vs. Chemical Change

Physical Properties

- Properties that can be observed without changing the identity of the substance
 - > Examples: shape, color, texture, smell, taste

Physical Change

- A change in which the form or energy of a substance changes.
- It stays the same
 - > Phase Change
 - melts
 - freezes
 - evaporates
 - condenses
 - sublimates
 - > Shape change
 - > Change in size
 - > Ripping
 - > Crushing
 - > Dissolving

*A physical change by itself will NOT produce any new substances.

- Ice can melt to form liquid water (physical change). It is still water no matter how you look at it.

Chemical Properties

- Properties that describe the ability of a substance to be changed into a new substance
 - > Does it burn?
 - > Will it react with vinegar or other substances?

Chemical Changes

- Alters the identity of the substance
- New substances are produced
 - > burning
 - > cooking
 - > digesting
 - > corroding (rusting)
 - > mixing chemicals

Evidence of Chemical Change

1. A change of color takes place.



2. A gas is produced (this includes bubbling).



3. Light is produced.



4. A temperature change is produced by the reaction.

- endothermic reaction- absorbs heat
- exothermic reaction - releases heat

5. A solid precipitate forms.



Law of Conservation of Matter

- Matter can NOT be created or destroyed in any process
- The total amount of matter in any change is constant
- The change can be physical or chemical