Properties of Matter

Bromfield Honors Chemistry

Physical Property

- A characteristic that can be measured or observed without changing the composition or identity of the sample

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  - color
  - solubility
  - odor
  - hardness
  - mass
  - refractive index (Video)

State of Matter

- Also a physical property!

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solid liquid gas plasma

Bose-Einstein condensates

Extensive properties

Depend on amount of material in sample

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- Mass
- Volume
- Heat content

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- Properties that DO NOT depend on the amount of material
  - Depend on nature of specific material
- Useful for identifying substances!
  - Melting point
  - Boiling point
  - Density

Physical Change

- Altering a sample without changing its composition

Chemical Property

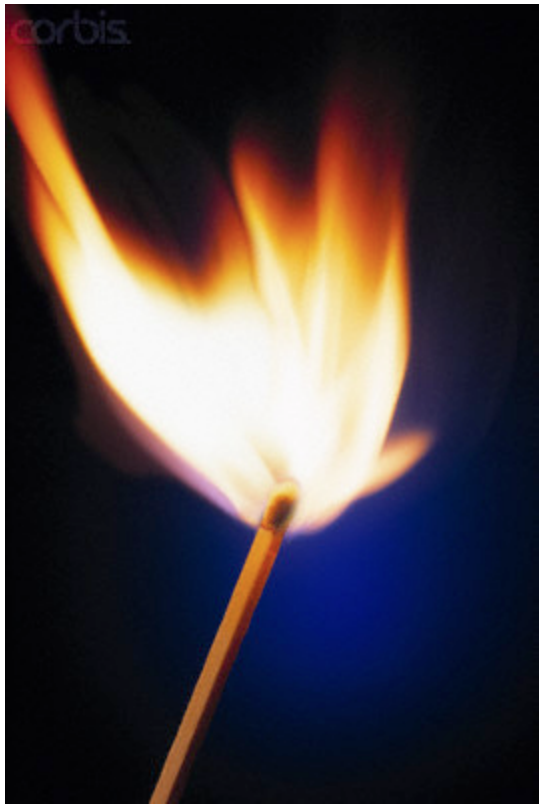
- How a substance behaves in the presence of other materials
- Chemical change results in a change in composition

Chemical Property

- How a substance behaves in the presence of other materials

Observing chemical properties

- P_4 –on striking surface
- $KClO_3$—on match head



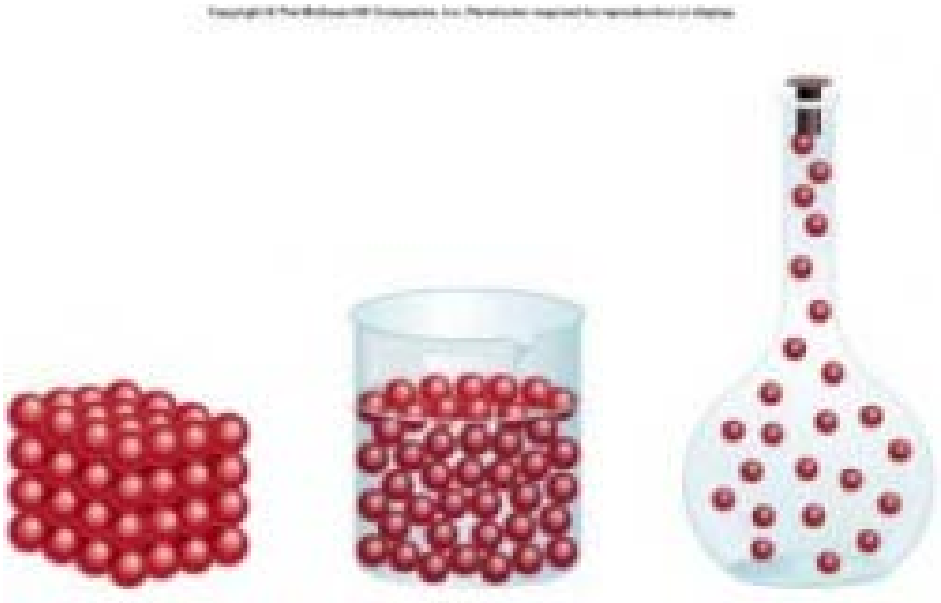
Chemical reaction

- $P_4 + KClO_3 \rightarrow KCl + P_2O_5 + heat$

reactants products

A sample of elemental matter can be broken down into simpler substances.

- A. True
- B. False



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