Mixtures & Separations

Bromfield Honors Chemistry

Mixture

- A sample of matter containing 2 or more different pure substances, physically blended together

Mixture

- The components may be separated

(a) (b) (c)

2 categories of mixtures

- Homogeneous
  - Components are uniformly distributed

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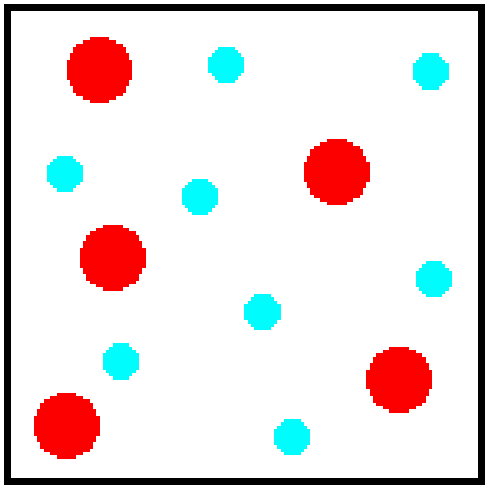
  - Components are uniformly distributed
  - Also referred to as “solution”



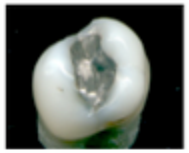
2 categories of mixtures

- Homogeneous
  - Components are uniformly distributed
  - Also called “solution”
    - May be in solid, liquid, or gas phase

Alloys

- Homogeneous mixtures of metals
- Video

Alloys you've definitely heard of

Amalgam 
Mercury (Hg) and Silver (Ag)
(or another metal like Gold)

Brass 
Copper (Cu) and Zinc (Zn)

Bronze 
Copper (Cu) and Tin (Sn)

Electrum 
Gold (Au) and Silver (Ag)

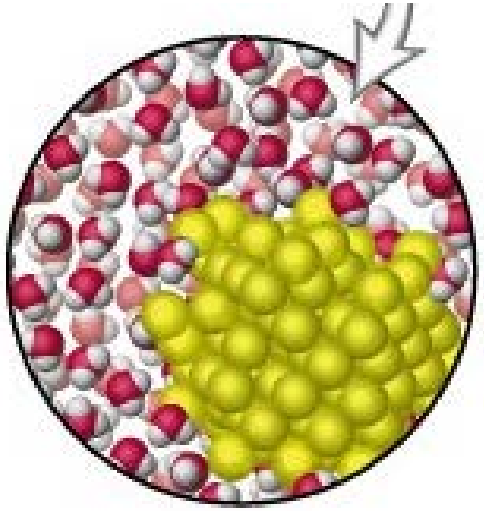
Pewter 
Tin (Sn) and another metal

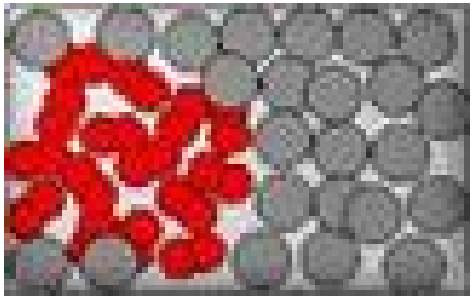
Sterling 
Silver (Ag) and
Copper (Cu)

Steel 
Iron (Fe) and Carbon (C)

2 categories of mixtures

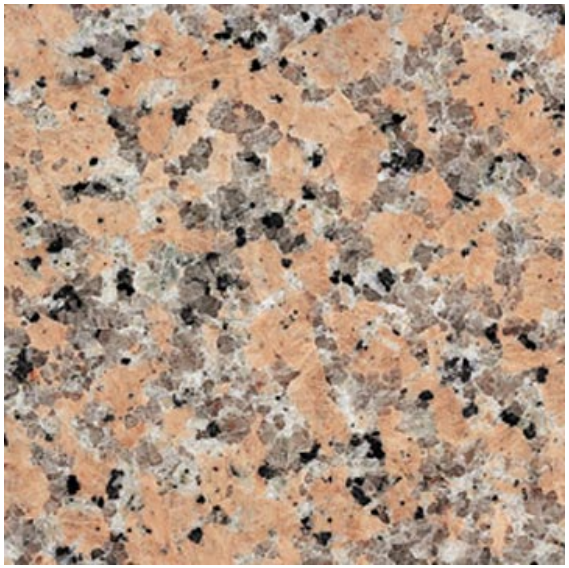
- Heterogeneous
  - Components are non-uniformly distributed





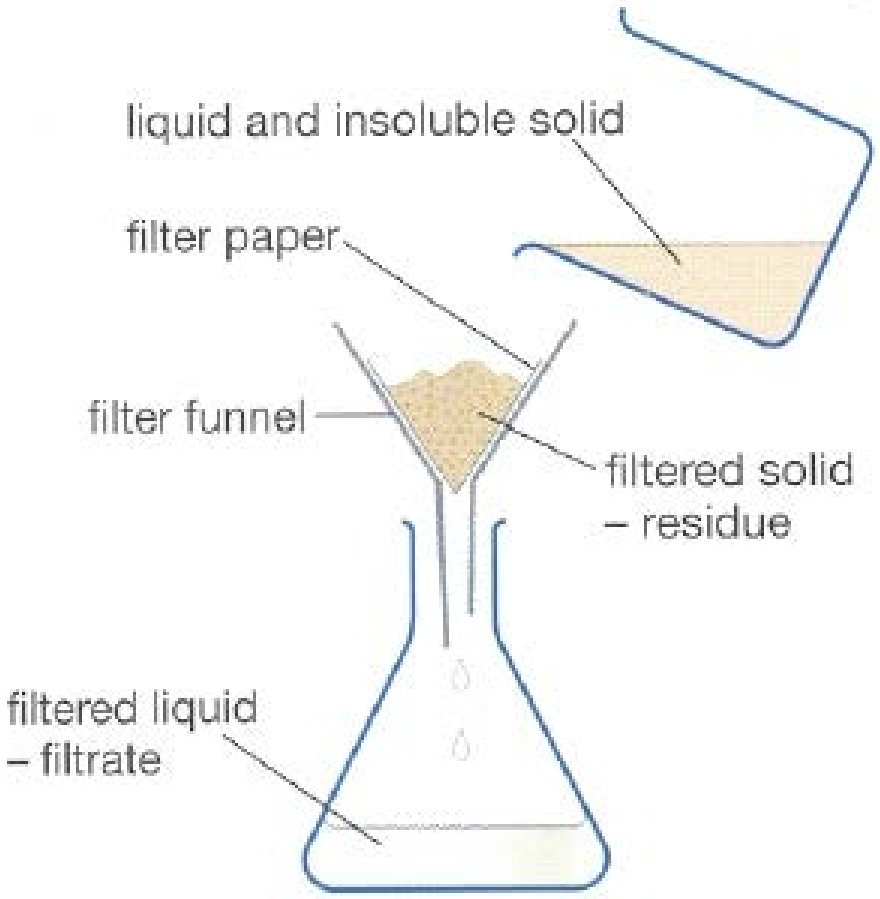
2 categories of mixtures

- Heterogeneous
  - Ratios of components may vary throughout
  - May observe distinct phases or an interface



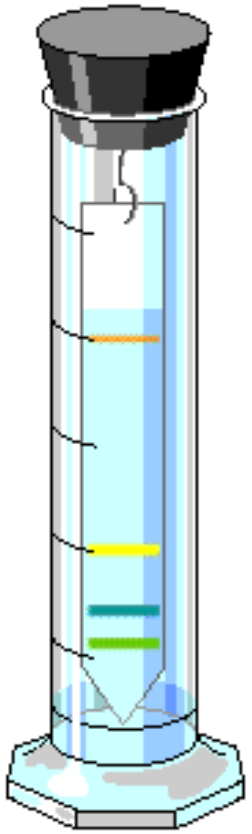
Filtration

- Separating solids from fluids (liquids or gases)



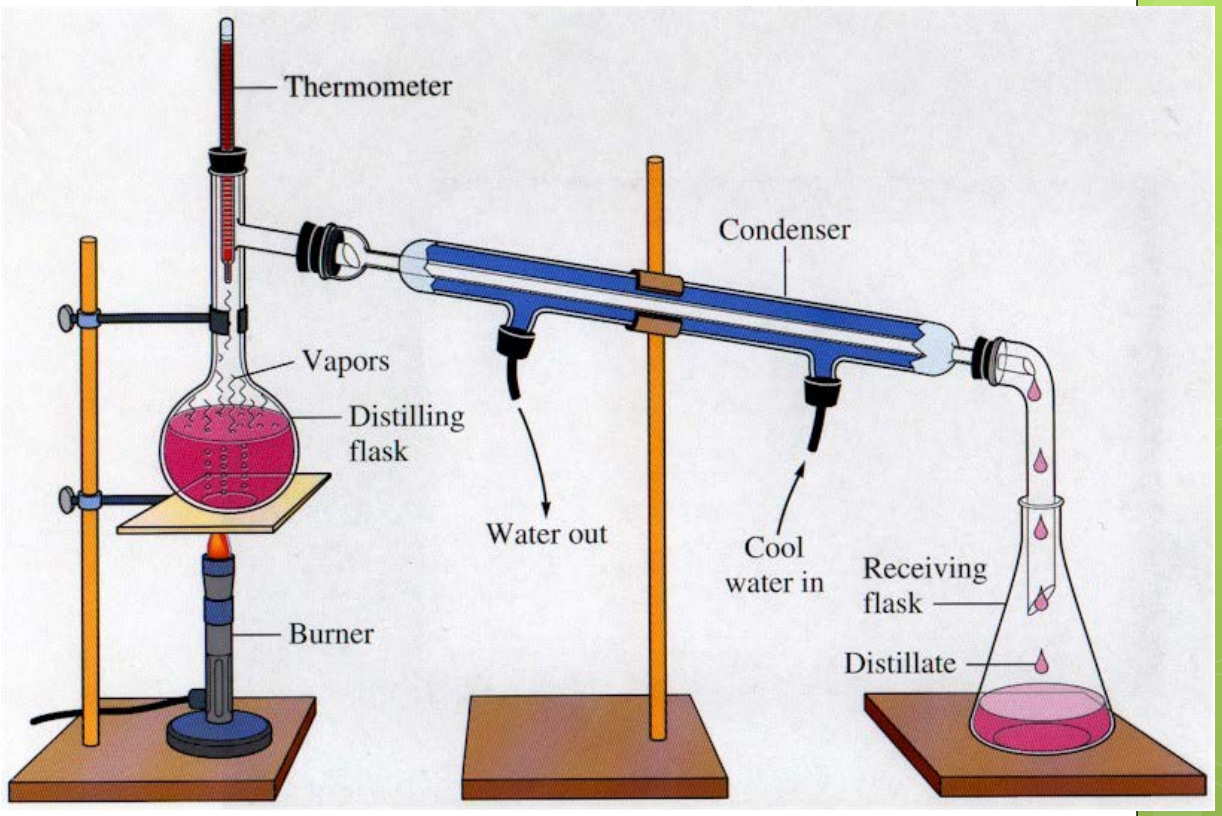
Chromatography

- Separates components of a mixture based on differences in solubility



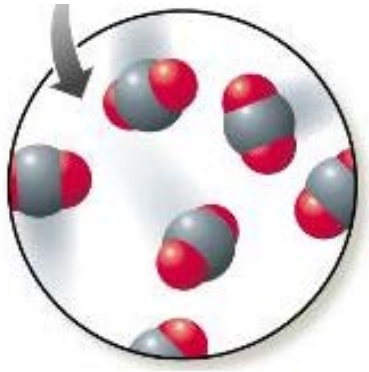
Distillation

- Separation of components in a mixture based on differences in boiling points

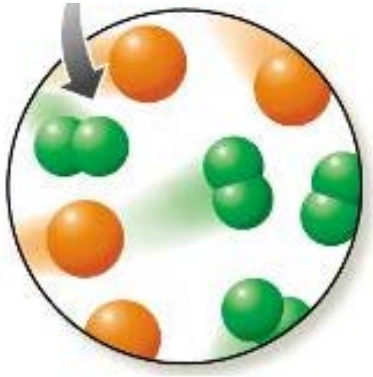


What types of matter are shown?

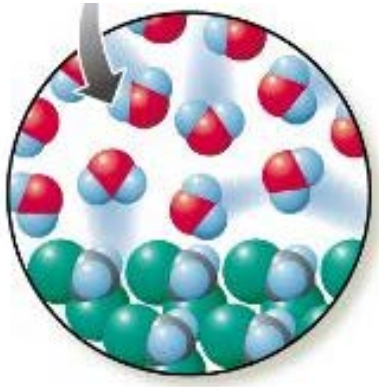
A



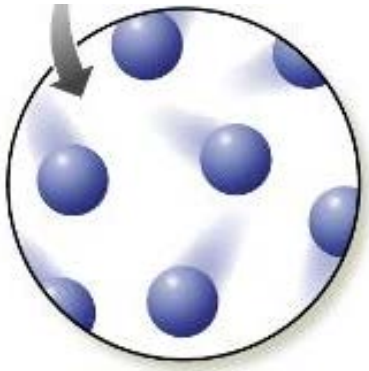
B



C

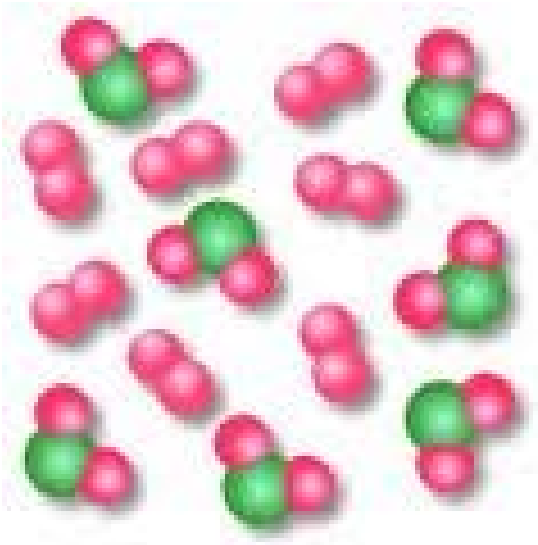


D



The picture shows a mixture of two compounds.

- A. True
- B. False

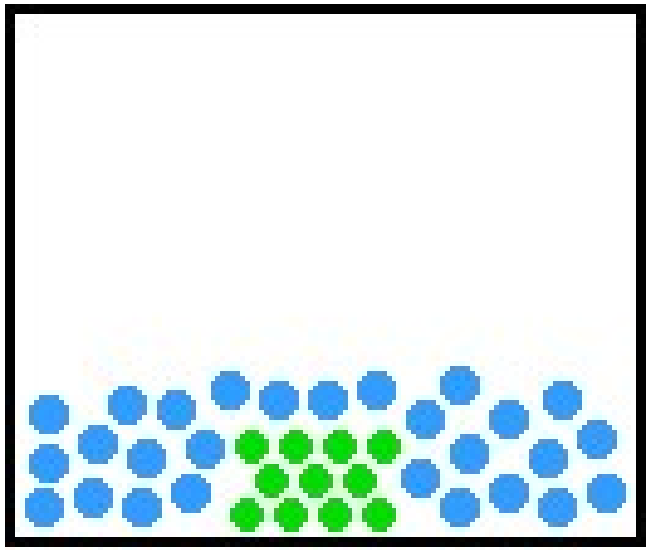


The picture shows a mixture of two compounds.

- A. True
- B. False

The picture illustrates a heterogeneous mixture in the solid phase.

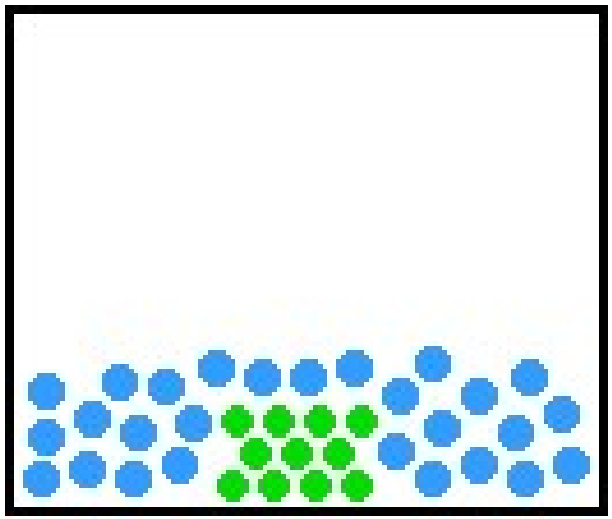
- A. True
- B. False



Container B

The picture illustrates a heterogeneous mixture in the solid phase.

- A. True
- B. False



Container B