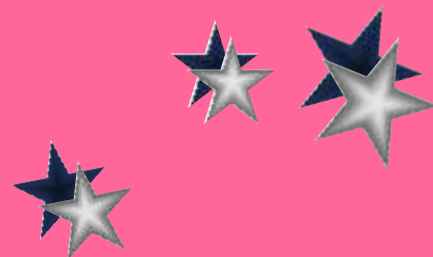


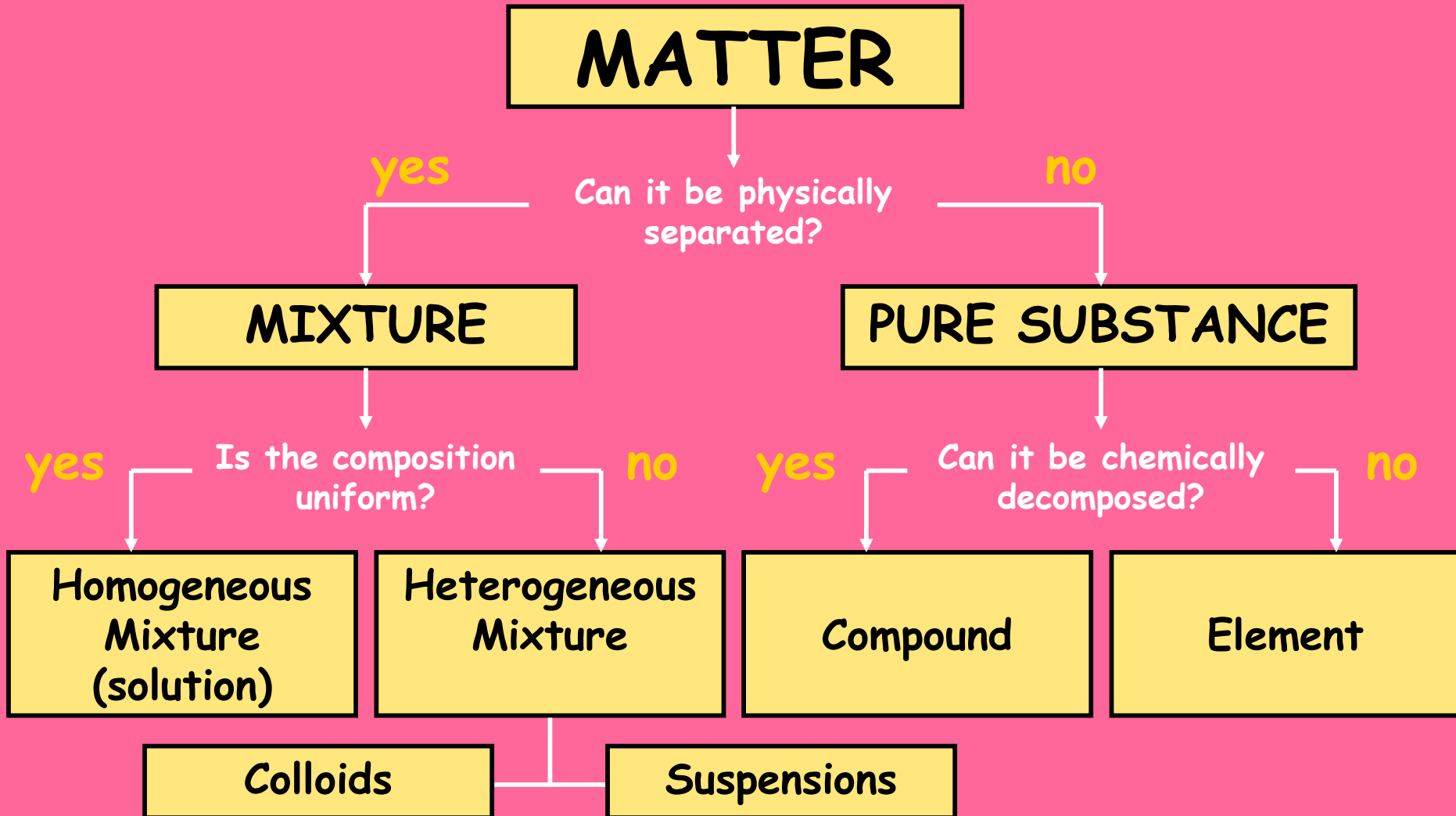
Unit 2- Matter

II. Classification of Matter (p.15-17, Modern Chemistry)

- ◆ Matter Flowchart
- ◆ Pure Substances
- ◆ Mixtures



A. Matter Flowchart



A. Matter Flowchart

✦ Examples:

◆ graphite

element

◆ pepper

hetero. mixture

◆ sugar(sucrose)

compound

◆ paint

hetero. mixture

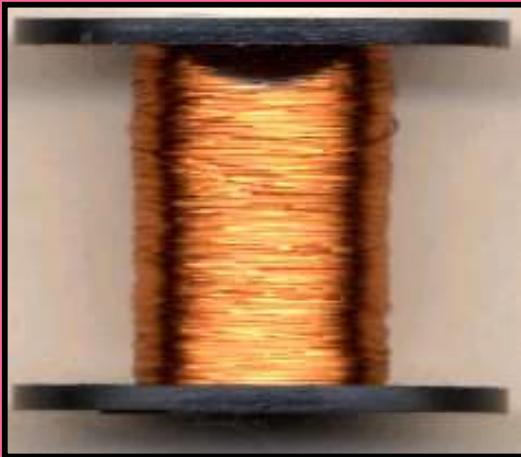
◆ soda

solution

B. Pure Substances

✦ Element

- ✦ composed of one type of atom
- ✦ EX: copper wire, aluminum foil



B. Pure Substances

✦ Compound

- ✦ composed of 2 or more elements in a fixed ratio
- ✦ properties differ from those of individual elements
- ✦ EX: table salt (NaCl)



B. Pure Substances

✦ Law of Definite Composition

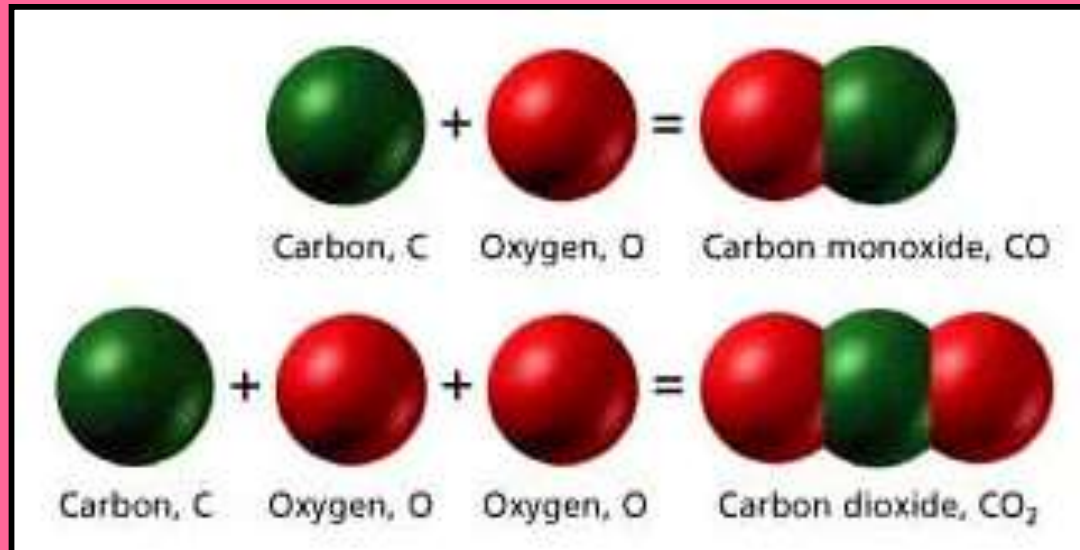
- ✦ A given compound always contains the same, fixed ratio of elements.

✦ Law of Multiple Proportions

- ✦ Elements can combine in different ratios to form different compounds.

B. Pure Substances

✦ For example...



Two different compounds,
each has a definite composition.

C. Mixtures

- ✦ Variable combination of 2 or more pure substances.



Heterogeneous



Homogeneous

C. Mixtures

✦ Solution

- ◆ homogeneous
- ◆ very small particles
- ◆ no Tyndall effect
- ◆ particles don't settle
- ◆ EX: rubbing alcohol



Tyndall Effect



C. Mixtures

✦ Colloid

- ◆ heterogeneous
- ◆ medium-sized particles
- ◆ Tyndall effect
- ◆ particles don't settle
- ◆ EX: milk



C. Mixtures

✦ Suspension

- ◆ heterogeneous
- ◆ large particles
- ◆ Tyndall effect
- ◆ particles settle
- ◆ EX: fresh-squeezed lemonade



C. Mixtures

✦ Examples:

- | | |
|--------------------------|------------|
| ✦ mayonnaise | colloid |
| ✦ muddy water | suspension |
| ✦ fog | colloid |
| ✦ saltwater | solution |
| ✦ Italian salad dressing | suspension |