

7.P.2A.3

Analyze and interpret data to describe and classify matter as pure substances (elements or compounds) or mixtures (heterogeneous or homogeneous) based on composition.

Matter

solid liquid gas

Mixtures

variable
composition

Heterogeneous
Mixtures

Homogeneous
Mixtures

physical methods

←
preparing
mixtures

→
separating individual
components

Pure Substances

constant
composition

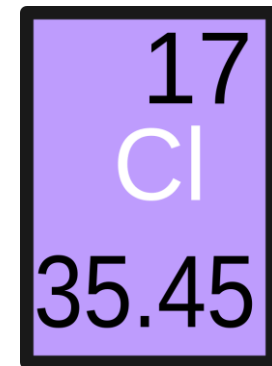
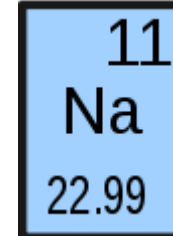
Elements

Compounds

Elements

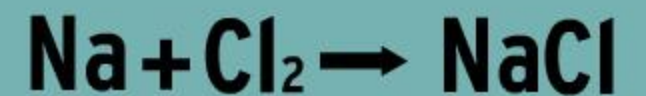
- Elements are pure substances that cannot be changed into simpler substances
- Elements are composed of one kind of atom

- Examples:
 - Hydrogen
 - Oxygen
 - Carbon



Compounds

- Compounds are pure substances that are composed of two or more atoms that are chemically combined
- Compounds can only be changed into simpler substances called elements by chemical changes



Mixtures

- Mixtures are composed of two or more different substances that retain their own individual properties and are combined physically (mixed together)
- Mixtures can be separated by physical means (filtration, sifting, or evaporation)
- There are two types of mixtures

Heterogeneous Mixtures



- Not uniform throughout
- Component substances can be visibly distinguished
- Examples:
 - Italian salad dressing
 - Chocolate chip cookies
 - Salad



Homogenous Mixtures

- Uniform throughout
- Substances are evenly mixed
- Cannot be visibly distinguished
- Particles of the substance are so small they cannot be easily seen
- Another name for a homogenous mixture is a solution
- Examples:
 - Air
 - Blood
 - Ocean water

