Matter

Matter –

Substance –

* Example –
* Not substances –

States of Matter

Solid –



Liquid –



Gas –



Gas vs. Vapor

Gas –

Vapor –

Properties –

Physical Property – characteristic that can be observed or measured \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

changing the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

* Extensive property - \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ on the amount of substance
* Examples:
* Intensive property - \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ on the amount of substance
* Examples:

Chemical Properties – a substance’s ability to \_\_\_\_\_\_\_\_\_\_\_\_\_ with or \_\_\_\_\_\_\_\_\_\_\_\_\_\_ into

something \_\_\_\_\_\_\_\_\_\_\_

* Example:

External Conditions – changing states of matter can \_\_\_\_\_\_\_\_\_\_\_\_\_ physical and chemical

properties

* Example:

Changes in Matter

Physical Change –

Examples:

Change of State – change from one \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

* To change state, you must \_\_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ energy

Adding Energy

Melting – change from a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

* Melting point –

Water :

Vaporization – change from a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

* Evaporation – when vaporization occurs only at the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of a liquid
* Boiling point –

Water:

Sublimation – change from a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

* Examples:

Removing Energy

Freezing – change from a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

* Freezing point –

Water :

Condensation – change from a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

* Condensation point –

Water:

Deposition – change from a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

* Examples:

Chemical Change –

Examples:

Starting substances –

New substance –

Evidence of a Chemical Change –

Color –

Odor –

Produce heat/light –

Exothermic reaction –

Endothermic reaction –

Produce gas –

Produce solid –

Physical Change vs. Chemical Change –

Can reverse –

Can’t reverse –

Law of conservation of mass – Mass is neither \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ nor \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ during a chemical reaction – it is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Mass of reactants =

Examples: 22.99 g + 35.45 g = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Sodium Chlorine Sodium Chloride

12.2 g + \_\_\_\_\_\_\_\_\_\_\_\_ = 78.9 g

X Y XY

Mixtures

Mixture – a combination of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ substances that \_\_\_\_\_\_\_\_\_\_\_\_\_ chemically combine

* Each substance keeps its \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Types of mixtures

Heterogeneous mixtures –

Examples:

Homogeneous mixtures –

Examples:

Solutions –

* Solute –
* Solvent –

Gas-gas –

Gas-liquid –

Liquid-gas –

Liquid-liquid –

Solid-liquid –

Solid-solid –

Alloys –

Example:

Separating Mixtures

Mixtures are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ combined – processes to separate them are \_\_\_\_\_\_\_\_\_\_\_\_\_ processes

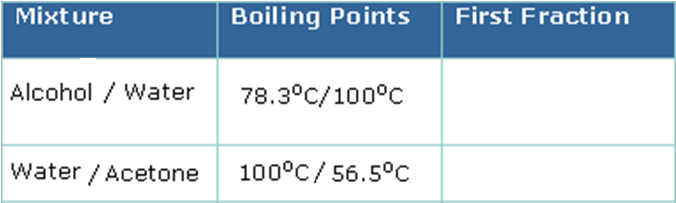
Common Separation Methods

Filtration –

* Examples:

Distillation –

* Substance with the \_\_\_\_\_\_\_\_\_\_\_\_\_\_ boiling point will \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ first



Crystallization –

Chromatography –

* Examples: