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: