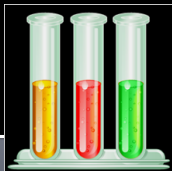


Chemistry : Chemical Processes



Sep 8-9:59 AM

- What is Chemistry and Matter?

① Chemistry is the study of matter, its properties and its changes or transformations. *explain.*

Matter is anything that has mass and takes up space.

Sep 8-9:59 AM

WHMIS

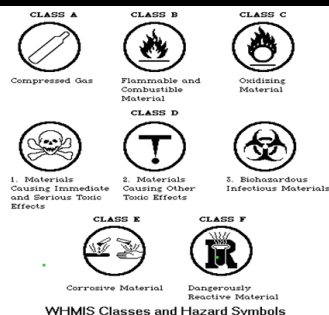
- Workplace Hazardous Materials Information System

- Why is it important?

what are the 3 parts.
 ① Reactive.
 ② Information
 ③ Prevention
 or respond to an accident

Sep 8-9:59 AM

WHMIS Symbols



WHMIS Classes and Hazard Symbols

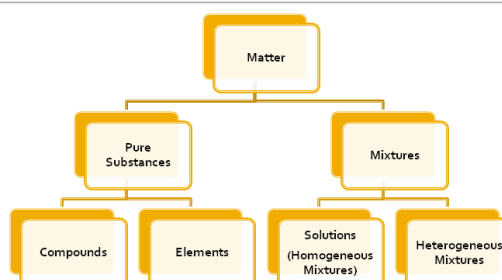
Sep 8-9:59 AM

Hazardous Household Product Symbols (HHPS)

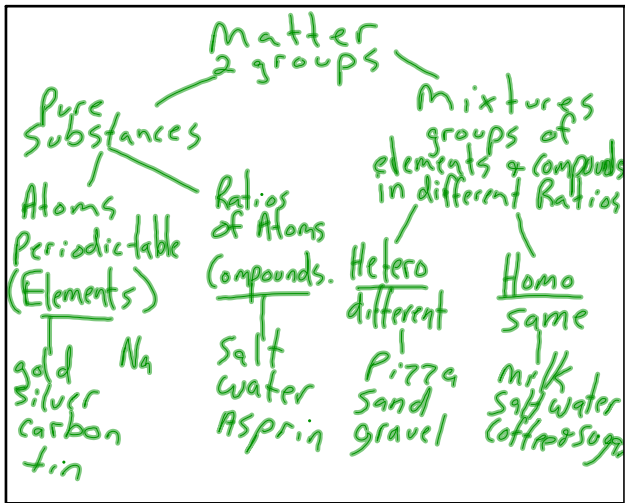
- HHPS is used for products at home. *WHMIS*
- WHMIS is used in the workplace. *HHPS*
- MSDS – Materials Safety Data Sheet
- describes the hazards that are associated with the chemical (protective clothing, how to handle the chemical, how to clean up a spill).

Sep 8-9:59 AM

Classification of Matter



Sep 8-9:59 AM



Feb 4-12:28 PM

Pure Substances

- How do we know that a sample of matter is a pure substance?
- A **pure substance** is made up of all the same particles.
- A pure substance also has constant properties.
Example: pure water, aluminum foil.
- Pure substances can be either elements or compounds.

Sep 8-9:59 AM

Atoms:

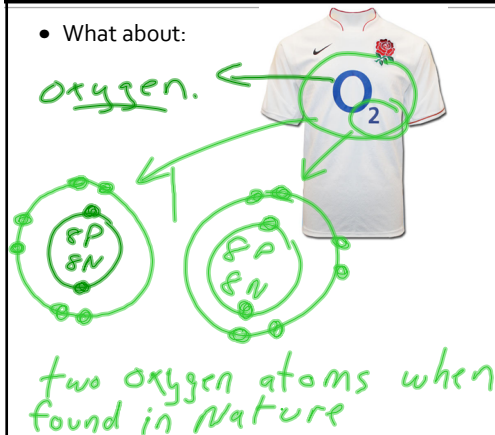
Elements

- Elements are pure substances that cannot be broken down into simpler substances.
- Elements contain only one kind of atom.
- Example: Oxygen, hydrogen, iron, etc.
(anything on the periodic table)

Sep 8-9:59 AM

What do you notice?

- What about:



Sep 8-9:59 AM

Compounds

- Compounds are pure substances that contain two or more different elements in a fixed proportion.

Ratio

- Example: Water H_2O = 2 parts hydrogen to 1 part oxygen.
Salt $NaCl$ = 1 sodium to 1 chlorine

Sep 8-9:59 AM

Mixtures

- A mixture is a substance made by combining two or more different materials in such a way that no chemical reaction occurs.

No Change in Matter

Sep 8-9:59 AM

Homogenous Mixture (Solution)

Same

- Mixture where the two different substances that are combined together are mixed very well.
- Any portion of the sample has the same properties and composition.

- Example: Salt Water
Milk



Sep 8-9:59 AM

Heterogeneous Mixture

different

- Mixture where the different parts or each substance can be separated physically.
- Different parts are visible.

- Example: Toppings on a Pizza
Chocolate chip cookies
Salad



Sep 8-9:59 AM

Classify the following as:

a) pure or mixture

b) element, compound, heterogeneous or homogeneous mixture

- | | |
|-----------|---------------|
| • Salt | • Apple Juice |
| • Sugar | • Syrup |
| • Wood | • Gold |
| • Rock | • Air |
| • Water | • Oxygen |
| • Milk | • Silver |
| • Plastic | • Cookies |
| • Glass | • Cake |
| • Mercury | • Sand |

Salt - Pure
- compound

Sep 8-9:59 AM

Sugar - Pure - compound
wood - Pure - compound
Rock - Pure - compound
water - Pure - compound ✓
milk - mix - homog.
Plastic - Pure - compound
glass - Pure - compound
mercury - Pure - element
Apple Juice - Mix - Homog.
Syrup - Pure - compound
gold - pure - element
air - mix - Homog.

Feb 4-12:51 PM

O₂ - pure - element
Silver - pure - element
cookies - mix - heter or homog.
cake - mix - " "
sand - mix - heter

Feb 4-1:02 PM

Properties of Matter: Physical and Chemical

- A **Physical Property** is a characteristic of a substance.
- Changing the size or amount of the substance does not change the physical properties.

Sep 8-9:59 AM

Physical Properties

- 1 • **Color** – red, green, white, etc.
- 2 • **Texture** – smooth, fine, coarse.
- 3 • **Taste** – sour, sweet, salty.
- 4 • **Odour** – what smell does the substance have?
- 5 • **States of matter** at room temperature:
- solid, liquid, gas.

Sep 8-9:59 AM

- 6 • **Malleable** is the ability of a solid to be hammered or bent into different shapes. Aluminum foil is malleable. Gold is malleable since it can be hammered into thin sheets.
- 7 • **Hardness** – the measure of the resistance of a solid to being scratched or dented
- 8 • **Luster** – How shiny is the substance?

Sep 8-9:59 AM

List the Physical Properties

Baking soda is:

- solid at room temperature
- white in color
- crystal form
- dissolves easily in water.



Sep 8-9:59 AM