Chem 1141 8-24-11 Lecture 2 Mass + volume Matter variable him Homogoneons Heterogenous - Same composition

Elements
- Building blocks
- 118
- 112/ Sabbreviation.

ex: Hydrogen: H

Helium: He HE

Capital lowerracer

ex: Lead: Pb Plumbum

Gold: An Aurum

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Some Common Elements and Their Symbols				
Symbol	Name	Symbol	Name	Symbol
Al	Fluorine	F	Oxygen	O
As	Gold	Au	Phosphorus	P
Ba	Hydrogen	Н	Platinum	Pt
Br	Iodine	I	Potassium	K
Ca	Iron	Fe	Silicon	Si
C	Lead	Pb	Silver	Ag
Cl	Magnesium	Mg	Sodium	Na
Cr	Mercury	Hg	Sulfur	S
Co	Nickel	Ni	Tin	Sn
Cu	Nitrogen	N	Zinc	Zn
	Al As Ba Br Ca C Cl Cr Co	Symbol Name  Al Fluorine As Gold Ba Hydrogen Br Iodine Ca Iron C Lead Cl Magnesium Cr Mercury Co Nickel	SymbolNameSymbolAlFluorineFAsGoldAuBaHydrogenHBrIodineICaIronFeCLeadPbClMagnesiumMgCrMercuryHgCoNickelNi	SymbolNameSymbolNameAlFluorineFOxygenAsGoldAuPhosphorusBaHydrogenHPlatinumBrIodineIPotassiumCaIronFeSiliconCLeadPbSilverClMagnesiumMgSodiumCrMercuryHgSulfurCoNickelNiTin

Compounds

Made from 2 or more elements in definite/fixed proportions.

ex: Water: 18g water > 16g Oxygen

2g Hydrogen

Hydrogen 34g -> 32g oxygen

Peroxidi: 2g Hydrogen

2g Hydrogen

2g Hydrogen

2g Hydrogen

## Properties of Matter 2 types of properties

PHYSICAL

- can measure without changing identity of substance.

ex: M.p./b.p./density

meltine boiling point

CHEMICAL

- we change the identity of the substance.

ex: flammability/corrosion

Properties

Extensive - depend on size ex: Mass

Intensive - do not depend on size ex: Density Temperature

Measurement

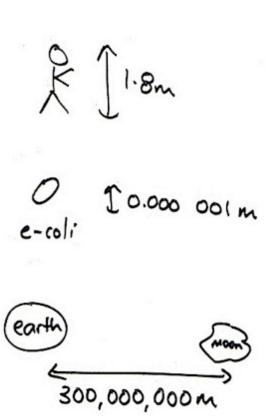
2 parts: #-unit

ex: 32°C, 129, 12.58/L

ex: Distance
m, mile, in, nant. miles
Kin, yards, ft, cubit, parsers,
chains, farkings, rook.

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Table 1.2 SI Base Units		
Base Quantity	Name of Unit	Symbol
Length	meter	m
Mass	kilogram	kg
Time	second	S
Electrical current	ampere	A
Temperature	kelvin	K
Amount of substance	mole	mol
Luminous intensity	candela	cd



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Table 1.3 Prefixes Used with SI Units					
Prefix	Symbol	Meaning	Example		
tera-	T	$1,000,000,000,000$ , or $10^{12}$	1 terameter (Tm) = $1 \times 10^{12}$ m		
giga-	G	1,000,000,000, or 10 <sup>9</sup>	1 gigameter (Gm) = $1 \times 10^9$ m		
mega-	M	$1,000,000, \text{ or } 10^6$	1 megameter (Mm) = $1 \times 10^6$ m		
kilo-	k	$1,000, \text{ or } 10^3$	1 kilometer (km) = $1 \times 10^3$ m		
deci-	d	$1/10$ , or $10^{-1}$	1  decimeter (dm) = 0.1  m		
centi-	c	$1/100$ , or $10^{-2}$	1 centimeter (cm) = $0.01 \text{ m}$		
milli-	m	$1/1,000$ , or $10^{-3}$	1 millimeter (mm) = $0.001 \text{ m}$		
micro-	$\mu$	$1/1,000,000, \text{ or } 10^{-6}$	1 micrometer ( $\mu$ m) = 1 × 10 <sup>-6</sup> m		
nano-	n	$1/1,000,000,000$ , or $10^{-9}$	1 nanometer (nm) = $1 \times 10^{-9}$ m		
pico-	p	$1/1,000,000,000,000$ , or $10^{-12}$	1 picometer (pm) = $1 \times 10^{-12}$ m		

