

sections 2.10-2.12

August 30<sup>th</sup>

Tuesday: Expt 2 → QUIZ (6pts. Expt. 1 + 4pts. Expt. 2)

↳ Dress for a mess, safety glasses

Wednesday, Sept. 4<sup>th</sup>, finish ch. 2

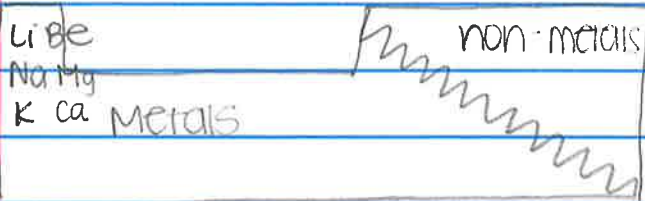
Friday, Sept. 6<sup>th</sup>, nomenclature quiz, review for CK1

Monday, Sept. 9<sup>th</sup>, CK1

cat	$\frac{\text{body}}{\text{leg}} = \frac{1}{4}$	} $\frac{2}{1}$	Spider	$\frac{\text{leg}}{\text{body}} = \frac{8}{1}$	} $\frac{2}{1}$
Spider	$\frac{\text{body}}{\text{leg}} = \frac{1}{8}$		cat	$\frac{\text{leg}}{\text{body}} = \frac{4}{1}$	

2.82

benzene	$\frac{m_c}{m_H} = 4.61$	$\frac{m_H}{m_c} = 0.39$	$\frac{m_c}{m_H} = 11.82$	} $\frac{3}{1}$
ethane	$\frac{m_c}{m_H} = 4.00$	$\frac{m_H}{m_c} = 1.00$	$\frac{m_c}{m_H} = 4.00$	
ethylene	$\frac{m_c}{m_H} = 4.29$	$\frac{m_H}{m_c} = 0.71$	$\frac{m_c}{m_H} = 6.04$	



- \* alkali metals: +1 cations
- \* alkali earth metals: +2 cations
- \* halogens: -1 anions
  - ↳ F<sup>-</sup>, Cl<sup>-</sup>, Br<sup>-</sup>, I<sup>-</sup>
- \* group 6: O, S, Se, Te
  - ↳ like to form -2 anions
- \* group 5: N, P, As, Bi
  - ↳ form -3 anions sometimes

Metals form cations

- ↳ Li forms Li<sup>+</sup>
- ↳ Na forms Na<sup>+</sup>
- ↳ K forms K<sup>+</sup>

F → F <sup>-</sup> fluoride	Sulfide S <sup>2-</sup>
Cl → Cl <sup>-</sup> chloride	Oxide O <sup>2-</sup>
Br → Br <sup>-</sup> Bromide	Selenide Se <sup>2-</sup>
I → I <sup>-</sup> iodide	Telluride Te <sup>2-</sup>

# Ionics

August 30<sup>th</sup>

\* Binary Ionics

uses simply the element name

↳ simple metal cation & simple non-metal anion (-ide)

↳ use -ide ending

NaCl → sodium chloride

Na<sup>+</sup> Cl<sup>-</sup> cation anion

\* always write the cation before the anion!

CaS → calcium sulfide

Ca<sup>2+</sup> S<sup>2-</sup>

K<sub>3</sub>N → potassium nitride

K<sup>+</sup> N<sup>3-</sup>

Ca<sub>3</sub>P<sub>2</sub> → calcium phosphide

Ca<sup>2+</sup> P<sup>3-</sup>

\* metal cation & polyatomic anion (flashcards)

\* ammonium cation & anion

CO<sub>3</sub><sup>2-</sup> anion Covalents (covalent molecular)

CO<sub>2</sub> covalent \* non-metal & non-metal (& neutral)

N<sub>2</sub>O<sub>4</sub> covalent

NO<sub>2</sub><sup>-</sup> ionic

## Nomenclature presentation:

SO<sub>2</sub> covalent NO<sub>3</sub> covalent

CO<sub>2</sub> covalent PCl<sub>5</sub> covalent

NOCl<sub>3</sub> covalent

NO covalent

SOCl<sub>4</sub> covalent

K<sub>2</sub>S ionic

NH<sub>4</sub>NO<sub>3</sub> ionic

N<sub>2</sub>O<sub>5</sub> covalent



## Naming covalent - moleculars:

August 30<sup>th</sup>

- ① name 1<sup>st</sup> atom using its elemental name
- ② name the other atoms next, using -ide endings
- ③ use prefixes:

-mono, -di, -tri, -tetra, penta-, hexa-, hepta-

\* do not use mono for first atom!!!

ex:

$\text{SO}_2 \rightarrow$  sulfur dioxide

$\text{Cl}_2\text{O}_7 \rightarrow$  dichlorine heptoxide

$\text{NO} \rightarrow$  nitrogen monoxide

$\text{P}_4\text{S}_{10} \rightarrow$  tetraphosphorus hexasulfide

$\text{SCl}_4 \rightarrow$  sulfur tetrachloride

\* metalloids... for naming purposes are covalent moleculars... aka act as non-metals

## Naming ionics

① cations made from metals carry the name of the metallic element

↳ \* transition elements give the charge as part of their name as a roman numeral in parentheses

↳ ex:  $\text{V}^{+5} \rightarrow$  vanadium (V) ion

$\text{Mg}^{+2} \rightarrow$  magnesium ion → \* DON'T need roman numerals because always +2!

$\text{Co}^{+3} \rightarrow$  cobalt (III) ion

② polyatomic cations have names to be memorized

↳ ex:  $\text{NH}_4^+$  is ammonium

↳ anions of a single type of atom, use -ide

→ halogens form a series of 5 anions!

\* DO NOT use capital letters when naming compounds!!!

→ name cation first, then anion

↳ transition metals need ( ) with charge!

↳ ex: iron (II) nitrate

↳  $\text{Fe}(\text{NO}_3)_2$