Naming/Writing Chemical Formulas
A. Ionic Substances

* Given a name ⟶ write a formula

e.g. 1. Sodium chloride
"compound"

Na^+ Cl^- balanced charges

* $NaCl$

2. Magnesium chloride

Mg^{2+} Cl^-

$MgCl_2$ charges balance

3. Aluminum Oxide

Al^{3+} O^{2-}

Al_2O_3

Al^{3+} O^{2-}
Al^{3+} O^{2-}
O^{2-}
+6 −6

* Given formula ⟶ write chemical name.

e.g. 1. K_2O (2(+1) −2)

potassium oxide

K^+ O^{2-} ✓ balance
K^+

2. Complex ion - $Ca(NO_3)_2$ (2+ 2(−))

charges balance

Calcium nitrate

Ca^{2+} NO_3^-
NO_3^-

Questions - p.26 #13-16, 17, 19 (choose)

Covalent Bonding

Consider H_2 (gas)

H H ? bonding ~~ionic~~ ?

chart - H^+ H^+ no bond - same charges

Transfer e^- - H H → H^+ H^- ???

What if the atoms shared electrons?

Atoms "try" to become more stable.

they get same #e^- as noble gas.

H : H is stable

⊕ ⊖ ⊕

* opposite charges attract

simultaneously

H atoms are held together

Covalent Bonding – between two or more non-metal atoms.

Naming Molecular Compounds (Covalent)

Examples -

1. CO_2 carbon dioxide ← prefix

2. CO Carbon monoxide

see p.23 - table

-3 -2 ← no balance of + and - charges

3. N_2O_5 dinitrogen pentaoxide

4. Write the formula for sulfur trioxide

SO_3

Questions p.24 #9-11

Chemical Reactions and Equations

Text reference p. 29, 30

Matter (mass) is conserved

↓

not created or destroyed

* Given an unbalanced chemical equation, balance using coefficients

examples-

1. $CH_{4(g)} + 2O_{2(g)} \longrightarrow CO_{2(g)} + 2H_2O_{(g)}$

reactants

C - 1
H - 4
O - 4

products

C - 1
H - 4
O - 4

2. $Cu(NO_3)_2 + 2NaOH \longrightarrow Cu(OH)_2 + 2NaNO_3$

Cu - 1
NO_3 - 2
Na - 2
OH - 2

Cu - 1
NO_3 - 2
Na - 2
OH - 2

Quest. p. 31 # 21-23

↑ balance only

Sep 26-11:11 AM