

Unit 7 – Ch 12 – Stoichiometry

REVIEW OF MOLE CONVERSIONS:

- 1) 1 mole = _____
 - _____ → *Elements*
 - _____ → *Covalent Compounds*
 - _____ → *Ionic Compounds*
 - _____ → *Charged particles of formula units (F.U.)*
- 2) 1 mole = _____
 - Unit: _____

STOICHIOMETRY:

➤ DEFINITION –

➤ NEW RATIO: _____

- Mole **coefficient** of _____ substance = Mole **coefficient** of _____
 - Requires a _____ chemical **equation**.

➤ MOLE RATIO: APPLICATION

- _____ Mg (s) + _____ O₂ (g) → _____ MgO (s)
 - Mole Ratios: _____ mol Mg = _____ mol O₂
_____ mol Mg = _____ mol MgO
_____ mol O₂ = _____ mol MgO

- NEEDED: Balanced _____ indicate _____ of
_____ AND _____.

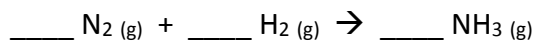
Unit 6 – MOLE CONVERSIONS

- Starting substance is _____ as wanted substance.
- _____ balanced chemical equation.
- _____ diagram (*simplified*)

Unit 7 - STOICHIOMETRY

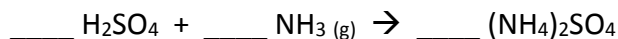
- Starting substance is _____ from wanted substance.
- Balanced chemical equation _____.
- _____ diagram (*Expanded*)

Ex #1) *Mole <--> Mole Stoich (2-step)*



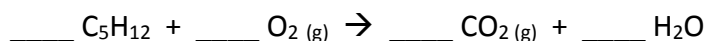
How many moles of nitrogen gas are needed to react with hydrogen gas to produce 1.50 moles of ammonia gas (NH₃)?

Ex #2) *Mole <--> Mass Stoich (3-step)*



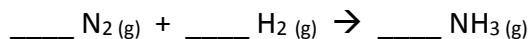
How many grams of ammonium sulfate are produced from a reaction of 3.75 moles of sulfuric acid and ammonia gas?

Ex #3) *Mole <--> Particle Stoich (3-step)*



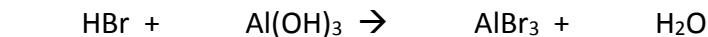
In the combustion of pentane, C₅H₁₂, how many molecules of carbon dioxide are produced from 5.35 x 10²⁴ moles of pentane?

Ex #4) *Mass <--> Mass Stoich (4-step)*



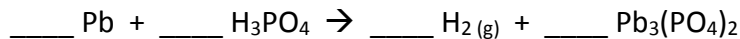
How many grams of nitrogen gas are needed to react with hydrogen gas to produce 5.35 grams of ammonia gas?

Ex #5) *Mass <--> Particle Stoich (4-step)*



How many formula units of aluminum bromide are produced by the neutralization of 3.50 grams of hydrobromic acid and aluminum hydroxide?

Ex #6) *Particle <--> Particle Stoich (4-step)*



How many formula units of lead (II) phosphate are produced by a single replacement reaction of 3.50 atoms of lead metal and phosphoric acid?