

Put the first three letters of your LAST NAME in the boxes:

S

U

Full Name: Michelle SU

UTEID: mns 2848

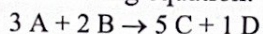
(Prof Caudill
M/W/F 12-1pm) ★

Unit 1: Gases Discussion Worksheet #1, Stoichiometry and Pressure

Show all work for credit. Your work and answers must fit in the boxes or diagrams provided for each question.

Part I:

1. 40.0 grams of A (60.0 g/mol) react with 35.0 grams of B (40.0 g/mol) to form C (37.0 g/mol) and D (75.0 g/mol) according to the following equation:



Which reactant is the limiting reactant? (Show the work used to make this determination in the box and then circle your answer.)

$$0.67 \text{ mols A} \times \frac{1 \text{ mol D}}{3 \text{ mols A}} \times \frac{75 \text{ g D}}{1 \text{ mol D}} = 16.75 \text{ g D}$$

$$0.88 \text{ mols B} \times \frac{5 \text{ mol C}}{2 \text{ mol B}} \times \frac{37 \text{ g C}}{1 \text{ mol C}} = 81.4 \text{ g C}$$

$$0.67 \text{ mols A} \times \frac{5 \text{ mol C}}{3 \text{ mols A}} \times \frac{37 \text{ g C}}{1 \text{ mol C}} = 41.32 \text{ g C}$$

$$0.88 \text{ mols B} \times \frac{1 \text{ mol D}}{2 \text{ mol B}} \times \frac{75 \text{ g D}}{1 \text{ mol D}} = 33 \text{ g D}$$

The limiting reactant is (circle one): A B C D

2. For the reaction in #1, what is the maximum number of grams of D that can be produced? Again, show your work and put your final answer in the spaces in the lower right corner.

we know limiting B A so there will be excess of B

$$0.67 \text{ mols A} \times \frac{1 \text{ mol D}}{3 \text{ mol A}} \times \frac{75 \text{ g D}}{1 \text{ mol D}} = 16.75 \text{ g D}$$

Answer: 16.75 g D

3. For the reaction in #1, how many grams of excess reactant are left over at the completion of the reaction? Again, show your work and put your final answer in the spaces in the lower corner.

$$40 \text{ g A} \times \frac{1 \text{ mol A}}{60 \text{ g A}} \times \frac{2 \text{ mols B}}{3 \text{ mols A}} \times \frac{40 \text{ g B}}{1 \text{ mol B}} = 17.78 \text{ B USED}$$

$$35 - 17.78$$

Answer: 17.2 g of B

Have - used = gns w 41

Christian Garcia (C), Amar Saini (B), Sebastian Alatorre (C),
Christopher Pena (C), Giniy Gautam (S)

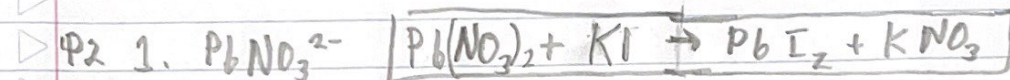
$$40 \text{ g A} \cdot \frac{1 \text{ mol A}}{60 \text{ g}} \cdot \frac{5 \text{ mol C}}{3 \text{ mol A}} \cdot \frac{37 \text{ g C}}{1 \text{ mol C}} = 41.1 \text{ g C}$$

$$35 \text{ g B} \cdot \frac{1 \text{ mol B}}{40 \text{ g B}} \cdot \frac{5 \text{ mol C}}{2 \text{ mol B}} \cdot \frac{37 \text{ g}}{1 \text{ mol C}} = 80.9375 \text{ g C}$$

1. limiting Reactant A

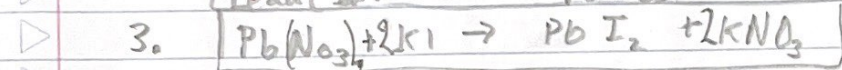
$$2.40 \text{ g A} \cdot \frac{1 \text{ mol A}}{60 \text{ g A}} \cdot \frac{1 \text{ mol D}}{3 \text{ mol A}} \cdot \frac{75 \text{ g D}}{1 \text{ mol}} = 16.67 \text{ g D} \quad 16.7 \text{ g D}$$

$$3. 40 \text{ g A} \cdot \frac{1 \text{ mol A}}{60 \text{ g}} \cdot \frac{2 \text{ mol B}}{3 \text{ mol A}} \cdot \frac{40 \text{ g B}}{1 \text{ mol B}} = 17.8 \text{ g of B}$$



2. Lead Iodine Potassium Nitrite

Lead(II) Iodine Potassium Nitrite



$$4. 9.22 \text{ g PbI}_2 \cdot \frac{1 \text{ mol}}{461 \text{ g}} = 0.02 \text{ mol PbI}_2$$

$$5. \frac{0.22 \text{ mol}}{\text{L}} \cdot \frac{\text{L}}{1 \text{ mol}}$$

Par II

$$1. 735 \text{ torr} \cdot \frac{1 \text{ atm}}{760 \text{ torr}} \cdot \frac{1.013 \text{ barr}}{1 \text{ atm}} = 0.981 \text{ barr}$$

2. Increase so the volume then pressure would increase

3. The moles remain the same the only things change

Samantha Banda (C.)

Violet Privitera (B)

Roman Garza (B)

Keven Reyna (A)

Jacob Stengel (C)

B

A

N

Put the first three letters of your LAST NAME in the boxes:

Full Name: Samantha Banda

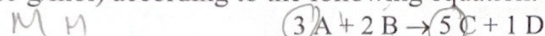
UTEID: Sdb 3559

Unit 1: Gases Discussion Worksheet #1, Stoichiometry and Pressure

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Which reactant is the limiting reactant? (Show the work used to make this determination in the box and then circle your answer.)

$$40gA \times \frac{1molA}{60gA} \times \frac{5molC}{3molA} \times \frac{37g}{1molC} = 41.1gC$$

$$35gB \times \frac{1molB}{40gB} \times \frac{5molC}{2molB} \times \frac{37g}{1molC} = 80gC$$

$$35gB \times \frac{1molB}{40g} \times \frac{5molC}{2molB} \times \frac{37g}{1molC} = 80gC$$

The limiting reactant is (circle one): A B C D

2. For the reaction in #1, what is the maximum number of grams of D that can be produced? Again, show your work and put your final answer in the spaces in the lower right corner.

$$40gA \times \frac{1molA}{60gA} \times \frac{1molD}{3molA} \times \frac{75g}{1molD} = 4.16g$$

Answer: 4.16 g D

3. For the reaction in #1, how many grams of excess reactant are left over at the completion of the reaction? Again, show your work and put your final answer in the spaces in the lower corner.

$$40gA \times \frac{1molA}{60gA} \times \frac{2molB}{3molA} \times \frac{40gB}{1molB} = 17.77g$$

$$35 - 17.77 = 17.2g$$

Answer: 17.2 g of B