

NAME _____

DATE _____

SECTION _____

EXPERIMENT 1

THE MOLE

OBJECTIVE

To determine the molar mass of a compound by measuring the mass of a known volume of a gas.

THEORY

The mole is a unit of measurement for the amount of a substance. It is defined as the amount of substance that contains as many elementary entities as there are atoms in 0.012 kg of carbon-12.

PROCEDURE

1. Weigh a clean, dry flask.

2. Fill the flask with water and weigh it.

3. Empty the flask and dry it.

4. Fill the flask with the gas and weigh it.

5. Calculate the molar mass of the gas.

RESULTS

Mass of empty flask: _____ g

Mass of flask + water: _____ g

Mass of flask + gas: _____ g

Volume of gas: _____ L

Temperature of gas: _____ °C

Pressure of gas: _____ atm

DISCUSSION

The molar mass of the gas was determined to be _____ g/mol.

CONCLUSION

The molar mass of the gas was determined to be _____ g/mol.

QUESTIONS

1. What is the molar mass of a gas that has a density of 1.25 g/L at STP?

2. What is the molar mass of a gas that has a density of 1.50 g/L at STP?

ANSWERS

1. _____ g/mol

2. _____ g/mol

LABORATORY REPORT

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