**Prelab for Determination of the Molar Mass of Gases and Volatile Liquids**

A determination of the molar mass of methyl alcohol (CH3OH) yielded the following data.

Temperature of boiling water bath 99.5˚C

Barometric pressure 738 mm Hg

Temperature of room temp. water bath 24˚C

Density of water at room temp. .9973 g/ml

|  |  |
| --- | --- |
|  | Trial 1 |
| Mass of empty pipet | 1.557 g |
| Mass of pipet and condensed methyl alcohol | 1.571 g |
| Mass of pipet and water | 16.001g |
| Mass of consdensed methyl alcohol |  |
| Mass of water in filled pipet |  |
| Volume of pipet |  |
| Molar mass of methyl alcohol (experimental) |  |
| Molar mass of methyl alcohol (theoretical) |  |

Using the data, fill in the rest of the table. Calculate the molar mass of methyl alcohol using Equation 3 and compare this value to the actual molar mass of methyl alcohol. The volume of the pipet is equal to the volume of water in the pipet. Use the relationship of mass and density to determine this volume. Once the volume of the pipet is determined, Equation 3 in the Background Section can be used to calculate the molar mass of the methyl alcohol.

Work: