| **Dougherty Valley AP Chemistry** | **Name:** |
| --- | --- |
| **Molar Volume of a Gas** | **Date:** |
| **Group Name / Data Set #:** | **Seat #: N/A** |  |

| **Quantitative Data Table** [fill in title]: |
| --- |
|  | **Trial 1** | **Trial 2** |
| Length of Mg ribbon |  |  |
| Conversion Factor |  |  |
| Calculated Mass of Mg (show calculation for each trial in your calculations section) |  |  |
| Evidence of Chemical Reaction |  |  |
| Volume of H2 Gas |  |  |
| “Corrected” Volume of H2 Gas at STP |  |  |
| Temperature of the Water Bath |  |  |
| Barometric Pressure |  |  |

All calculations are **HANDWRITTEN**. Insert picture of your POST-LAB calculations #1-6 from the bottom of page 91 and the top of page 92 on the lab protocol. All pics **MUST** have your **FULL NAME** in the image in **INK** or your calculations will not receive any credit. Insert into box below:

| [Insert POST-LAB calculation pics here] |
| --- |

Construct your own Results Table to summarize the results of calculations #1-6 from above for which you have shown work.

| **Results Table** [fill in title]: |
| --- |
|  |

\*To be completed after the experiment in this google doc (Questions #7-8 are the same as on page 92 on the lab protocol plus a few more questions).

| **Discussion Questions** | **Your answers** [change font color to GREEN] |
| --- | --- |
| 7. In setting up this experiment, a student noticed a bubble of air leaked into the eudiometer tube when it was inverted in the water bath. What effect would this have on the measured volume of hydrogen gas? Would the calculated molar volume of hydrogen be too high or too low as a result of this error? Explain. | [Answer here] |
| 8. A student noticed that the magnesium ribbon appeared to be oxidized - the metal surface was black and dull, rather than silver and shiny. What effect would this error have on the measured volume of gas? Would the calculated molar volume of hydrogen be too high or too low as a result of this error? | [Answer here] |
| 9. The reaction in this experiment is an oxidation-reduction reaction. What is being oxidized and what is being reduced? Explain. | [Answer here] |
| 10. In order for this experiment to work properly to give the correct molar volume of an ideal gas, which must be the limiting reactant in the reaction? Explain. | [Answer here] |
| 11. If you had used 0.025 g of magnesium in the first trial and 0.035 g in the second, would you expect the molar volume at STP to be larger or smaller in the second trial? Explain your answer. Do not merely explain by saying molar volume is an intensive property. Explain WHY its molar volume is not dependent on the sample size. | [Answer here] |