

# BLP

Name: \_\_\_\_\_

Partner's Name(s): \_\_\_\_\_

Lab Date: \_\_\_\_\_ Lab Instructor Name: \_\_\_\_\_

## LAB PRACTICAL LAB NOTEBOOK PAGES

All purpose, procedure(s), and data/observations must be recorded in the lab notebook in pen with permanent, waterproof ink (black or blue). Pencils, markers, highlighters, and correction fluid (white-out) are not permitted. No information can be recorded elsewhere and transferred after leaving the lab. Lab notebooks can be digital or paper; you may write directly on the lab notebook pages in your lab manual or download a digital copy onto your electronic device and then write in it. Refer to the Guide for Success in the General Chemistry Laboratory section in the front of this lab manual for more detailed instructions.

- ⦿ **Before Lab:** Make sure to complete the Purpose and Procedure sections as well as any required data tables in the Data and Observations section in your lab notebook pages.
- ⦿ **After Lab:** Upload your notebook pages to the appropriate Carmen assignment within 48 hours after the start time of your in-person lab session. If you used the notebook pages in your paper copy of your lab manual, you should scan or take photos of the pages. Do not remove them from your lab manual. Refer to the BLP Notebook upload assignment in Carmen for more detailed instructions.

## PURPOSE \_\_\_\_\_

Describe the what, why, and how of the experiment in bullet points or a few sentences. Consult the Expected Learning Outcomes and the procedure for the experiment to develop the purpose.

## PROCEDURE CITATION \_\_\_\_\_

*Chemistry 1220: General Chemistry Laboratory Manual*, Fall 2025–Summer 2026.; Weaver, T. A., Opoku-Agyeman, B., Fontes N. Da Silva, C., Welch, A. N., Stern, J. E., Wroblewski, R. A., Walter, C., van Helmond, A. Eds.; Van-Griner Learning: Cincinnati, OH; pp. 177–183.

## PROCEDURE

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### PART A. READING AND RECORDING VOLUMES FROM SCIENTIFIC GLASSWARE

**Before Lab:** Review [Appendix B](#).

**During Lab:** Record the volumes into the Data and Observations section.

## PART B. EXPERIMENTALLY DETERMINING THE DENSITY OF DISTILLED WATER

**Before Lab:** Write a *step-by-step* procedure you plan to use. Be as detailed as possible.

**During Lab:** Note any adjustments you made to your procedure before you leave the lab.

## PART C. GLASSWARE TECHNIQUE EVALUATION AND FEEDBACK

**Before Lab:** Review the steps provided in [Appendix B](#) for proper technique for performing a dilution and the Part C rubric (page 197).

**During Lab:** Follow the steps provided using proper technique.

## PART D. DETERMINING THE SOLUBILITY OF UNKNOWN R

**Before Lab:** Write a *step-by-step* procedure you plan to use. Be as detailed as possible.

**During Lab:** Note any adjustments you made to your procedure before you leave the lab.

## PART E. DETERMINING THE ACID-BASE PROPERTIES OF UNKNOWN R

**Before Lab:** Write a *step-by-step* procedure you plan to use. Be as detailed as possible.

**During Lab:** Note any adjustments you made to your procedure before you leave the lab.

## PART F. CHARACTERIZING A SOLUTION OF UNKNOWN S

**Before Lab:** Write a *step-by-step* procedure you plan to use. Be as detailed as possible.

**During Lab:** Note any adjustments you made to your procedure before you leave the lab.

## CLEAN UP AND WASTE DISPOSAL

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Excess solids should be emptied from their tubes and collected in your personal waste beaker with all excess liquids. Emptied plastic tubes should be rinsed into your waste beaker. Transfer your waste into the class Chemical Waste beaker in Hood B. Discard rinsed plastic tubes in the Blue Solid Waste bucket under the reagent cart once shown to your Lab Instructor. Used weigh boats may be discarded in the trash. Used disposable glassware such as 25-mL test tubes and Pasteur pipets should be discarded in the Orange Glass Waste bucket. Return the cleaned volumetric flask (with cap) to its storage location. After cleaning up, wipe down your work area with 70% ethanol spray and a paper towel. Wash your hands thoroughly after completing this experiment.

## DATA AND OBSERVATIONS

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### ACTIVITY 1

#### PART A. READING AND RECORDING VOLUMES FROM SCIENTIFIC GLASSWARE

Buret 1 reading \_\_\_\_\_

Buret 2 reading \_\_\_\_\_

Volume of distilled water in 100-mL graduated cylinder \_\_\_\_\_

Volume of distilled water in 10-mL graduated cylinder \_\_\_\_\_

#### PART B. EXPERIMENTALLY DETERMINING THE DENSITY OF DISTILLED WATER

Volume of distilled water tested for density (mL) \_\_\_\_\_

Mass of empty container (g) \_\_\_\_\_

Mass of container with aliquot of distilled water (g) \_\_\_\_\_

Mass of water tested for density (g) \_\_\_\_\_

Temperature of distilled water (°C) \_\_\_\_\_

#### PART C. GLASSWARE TECHNIQUE EVALUATION AND FEEDBACK

## ACTIVITY 2

### PART D. DETERMINING THE SOLUBILITY OF UNKNOWN R

Unknown # BLP R - \_\_\_\_\_

**Before Lab:** Create your own Data and Observations section. Be sure to include appropriate units and significant figures for all numerical data collected. Don't forget to record your unknown number, all observations, and initial conclusions.

**During Lab:** Make any necessary updates or adjustments to reflect the procedure you actually used.

## PART E. DETERMINING THE ACID-BASE PROPERTIES OF UNKNOWN R

Unknown # BLP R - \_\_\_\_\_

**Before Lab:** Create your own *Data and Observations* section. Be sure to include appropriate units and significant figures for all numerical data collected. Don't forget to record your unknown number, all observations, and initial conclusions.

**During Lab:** Make any necessary updates or adjustments to reflect the procedure you actually used.

## ACTIVITY 3

### PART F. CHARACTERIZING A SOLUTION OF UNKNOWN S

Unknown # BLP S - \_\_\_\_\_

**Before Lab:** Create your own *Data and Observations* section. Be sure to include appropriate units and significant figures for all numerical data collected. Don't forget to record your unknown number, all observations, and initial conclusions.

**During Lab:** Make any necessary updates or adjustments to reflect the procedure you actually used.



## PART C. RUBRIC

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Student Name: \_\_\_\_\_ Date: \_\_\_\_\_

Evaluator Name: \_\_\_\_\_ Final Score: \_\_\_\_\_

During the Experiment BLP lab session you will remove this sheet from your lab manual and provide it to your Lab Instructor before you begin Part C. Your Lab Instructor will use it to assess your lab technique while using a volumetric pipet and volumetric flask. Points are awarded for each task completed correctly. While your instructor may provide feedback on additional errors not listed on the scoring sheet, points will not be deducted for those items. You will receive this score sheet back by next lab.

### Key skills in demonstrating the use of the volumetric pipet:

- Volumetric pipet is inserted gently into the pipet pump without force.
- The pipet tip remains completely submerged in the liquid while liquid is being drawn up into the pipet.
- The bottom of the meniscus is in alignment with the calibration mark when viewed at eye level prior to dispensing.
- Liquid is delivered properly into the receiving container without blowing out any residual liquid in the pipet tip.
- The tip of the pipet is touched to the inside wall of the receiving container.
- Pipet and pump are disassembled after use.

Evaluator comments:

### Key skills in demonstrating the use of the volumetric flask:

- The volume of unknown Q solution added to flask is less than the capacity of the flask.
- After filling, the bottom of the meniscus is in alignment with the calibration mark when viewed at eye level.
- Solution has been capped, mixed, inverted, and homogenized after adding all distilled water.

Evaluator comments:

