CH 223 Spring 2026:
"Identification of an Unknown Cation" *Lab*
Instructions

Step One:

Get a printed copy of this lab! You will need a printed (hard copy) version of pages I-10-2 through I-10-5 to complete this lab. If you do not turn in a printed copy of the lab, there will be a 2-point deduction.

Step Two:

There is no video introduction or PreLab questions for this lab.

Step Three:

Bring the printed copy of the lab with you on Monday, June 8 at 1:10 PM (AC 2507, section L1) *or* **Wednesday, June 10 at 1:10 PM (AC 2507, section L2). Bring the lab procedures from the QA I and QA III labs with you** - you (and one lab partner) can use them during the this lab. Record your data on the printed page below.

Bring your own goggles - you will need them! - **borrowing safety glasses will result in a ten point penalty this week**.... so bring some goggles!!!!!

Step Four:

Complete the lab work, then **turn it in (**page I-7-7 *only* with a flow chart to avoid a point penalty**)** ***at the end of lab*** on **Monday, June 8 (section L1)** *or* **Wednesday, June 10 (section L2).**

If you have any questions regarding this assignment, please email (mike.russell@mhcc.edu) the instructor! Good luck on this assignment!

Identification Of An Unknown Cation ("Final Lab")

In two previous labs, you have analyzed Group I and III cations. In this lab, you will use the techniques outlined in the previous labs to identify the cations present in an unknown sample. The cations could all be from one group or one from each group, etc.

Each student will work in a team of two people total. Bring the lab handouts from the previous labs to follow procedures. There are **seven** possible cations; some or all of them may be used in your unknown (none will be blank.) Students will be graded on correctly identifying the presence or absence of the cations. Because there is a time limit to this lab exercise, do not plan on performing every step from each lab, only the procedures necessary based on your results at each step.

Each ion correctly identified is worth 10 points for a total of 70 points.

In addition to performing the lab, a **flow chart** outlining the procedure utilized to identify the unknown solution should be included. It should include how to identify cations from Groups I **and** III. The flow chart will be turned in when you complete the lab or time has run out. The flow chart is worth 30 points based on completeness, clarity and appearance. This must be an ***original*** flowchart and not merely a photocopy / re-print of a flowchart used in previous lab(s).

Hint: complete the flow chart before the final lab begins to ensure adequate time for chemical analysis.

Note: Point distributions may vary. Your lab instructor will inform you of any changes.

Identification of an Unknown Cation Lab

YOUR NAME: _____ ***LAB PARTNER(s):*** _____

*first **AND** last names*

You may use any CH 223 lab sheets and the flowcharts for this assignment to help you with the analysis of the unknown cations. Good luck!

Circle either yes or no for each metal cation in your unknown. Unclear responses will be marked as incorrect.

Unknown Number: _____

Pb^{2+}: yes no

Hg_2^{2+}: yes no

Ag^{+}: yes no

Fe^{3+}: yes no

Ni^{2+}: yes no

Cr^{3+}: yes no

Al^{3+}: yes no

Be sure to **staple** your flowchart(s) to the back of this page.

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