

Name: _____

Band: _____

Lab 5.1

Testing for Ions.

In this laboratory, you will be testing for the presence of certain ions, by "traveling" to laboratory stations in the room, and performing the test specified at that station. Your objective is to determine the ion present in your solution. The discovery of the ion also identifies the unknown compound that you have, since none of the compounds we are testing have the same ions.

Unknown Letter:	Order of Tests Performed:	Ion Discovered:	Name of Compound Discovered: <i>Use formula and written name</i>
EXAMPLE (you choose)	1,3,5,7 (you choose order of the tests)	Sulfate	Magnesium Sulfate, MgSO ₄ .

What to do, and what you have found if the test is "positive".

Test #	Test	Chemical Used	Procedure	Result
1	Acetate: C ₂ H ₃ O ₂ ⁻	Sodium Acetate NaC ₂ H ₃ O ₂	Add Sulfuric Acid, Heat gently .	Vinegar Odor
2	Ammonium NH ₄ ⁺	Ammonium Sulfate NH ₄ SO ₄	Add Sodium Hydroxide, heat gently . Test vapors with Red Litmus.	Ammonia Odor. Red Litmus changes to Blue.
3	Carbonate CO ₃ ²⁻	Calcium Carbonate	Add dilute hydro- chloric acid. Suspend a drop of Limewater.	Rapid Bubbling. Limewater drop changes milky.
4	Chloride Cl ⁻	Sodium Chloride NaCl	Add silver nitrate solution, then nitric acid, then ammonium hydroxide.	White precipitate forms after silver nitrate is added. Precip- itate is insol- uble in nitric acid, but dis- solves in sodium hydroxide.
5	Ferrous Fe ²⁺	Ferrous Sulfate FeSO ₄	Add a solution of potassium ferrocyanide	Deep blue color
6	Nitrate NO ₃ ⁻	Potassium Nitrate KNO ₃	Add ferrous sulfate solution, then sulfuric acid (2N).	Brown ring forms between the layers.
7	Sulfate SO ₄ ²⁻	Magnesium Sulfate MgSO ₄	Add a solution of Barium Chloride, then hydrochloric acid.	White Precipitate

****ANSWER the QUESTIONS present ON THE BACK or the next page.**

A.) Please Show the formula names for some of the reagents that you used in today's lab: (Just like HW 5.1)

- 1) Barium Chloride _____
- 2) Ferrous Sulfate _____
- 3) Sodium Hydroxide _____
- 4) Ferrous Sulfate _____
- 5) Silver Nitrate _____
- 6) Ammonium Hydroxide _____

B.) What is the difference between a polyatomic ion and a monoatomic ion? Make sure to discuss how many atoms are in a polyatomic ion, compared to monoatomic ions.

C.) Do you think you have made mistakes in your experimentation? If so, please explain why you believe this happened.
