

Halide Ions Lab

Name _____

Purpose: To identify the halogen ions (halides): F⁻, Cl⁻, Br⁻, I⁻

Procedure: Goggles and aprons must be worn!

1. Begin with 4 clean test tubes. Place 5 mL (2 squirts) KF, NaCl, KBr, and NaI in each. Add 1 mL (1 squirt) of Ca(NO₃)₂ to each of the test tubes and record your observations in the data table.
2. Clean out the test tubes and place 5 mL of KF, NaCl, KBr, and NaI in each. Add 1 mL of AgNO₃ to each of the test tubes and record your observations. **Do not empty your test tubes!**
3. Pour half of your precipitates into 4 more clean test tubes. Into one set of test tubes, add 5 mL of NH₃ and record the results. Into the other set of test tubes, add 5 mL of Na₂S₂O₃ and record the results.
4. Clean out all of your test tubes. Keep only 4 out and add 1 mL KF, NaCl, KBr, and NaI in each. Add 5 mL of 3% starch solution to each test tube and record your results, then add **just a drop** of bleach (NaClO) to each and record your results. **Note: you will have two observations in your data table for this step.**

Data Table:

Halide Ion	Ca(NO ₃) ₂	AgNO ₃	NH ₃	Na ₂ S ₂ O ₃	Starch + NaClO
F ⁻					
Cl ⁻					
Br ⁻					
I ⁻					

Analysis:

1. From the results of the data table, how can each of the halogen ions be identified?

F⁻ _____

Cl⁻ _____

Br⁻ _____

I⁻ _____

Identity of Unknowns:

_____ → _____ # _____ → _____ # _____ → _____ # _____ → _____

_____ → _____ # _____ → _____ # _____ → _____