

Exp. No. 3	Experiment/Subject Qualitative Analysis of cations	Date 9/25/2023	Course & Chem 213
Name Emmeen Keulash Ramesh	Lab Partner	Locker/Desk No.	Section No. 203

Qualitative Analysis of Cations

Reference: "An Experiments in Thinking Scientifically," D.J. Sardella J Chem Ed. 69 933 (1992)

Purpose: Analyze unknown solution that may contains ~~one~~ number ions in solution.

Purpose: analyze known and unknown solution may react differently experiment so we can be precaution such reaction.

Material: Fe^{3+} , Ni^{2+} , Mg^{2+} , Cu^{2+}

Procedure: In each experiment, average four test according to ~~the~~ lab manual picture.

First row of tubes will corresponds to rows on table.

First column of test tube is corresponding to column A on the data tables

Signature	Date	Witness/TA	Date
-----------	------	------------	------

Exp. No.	Experiment/Subject	Date
Name	Lab Partner	Locker/ Desk No.
		Course & Section No.

Produce

Known solution

1. Put 20 drops of the $(Fe(NO_3)_3)$ in the first four tubes.

2. do the same for another test tubes (5-16)

With solution.

3. put 4 drops of (NaI) in the first test tube

of caution solution repeat the same for another test tubes (5-16) with solution.

4. Write down the observe of reaction in the table record the color and amount of an precipitates.

Unknown solution -

1. Try find the cations in the unknown solution in the vial.

2. Repeat same step as the known solution. for 2 to 3.

3. Clean up - carefully pour all solution in the ~~sink~~ waste container, then dry and clean test tube and use of soap or acetone to remove residue.

Signature	Date	Witness/TA	Date
-----------	------	------------	------

Exp. No.	Experiment/Subject	Date
Name	Lab Partner	Locker/ Desk No.
		Course & Section No.

	A	B	D	E
	7.5% NaI	0.25 M Na Fe(CN) ₂	0.25 M Dimethylglyoxime	1 M NaOH
1. 0.25 M Fe(NO ₃) ₃	mix little yellow and orange. clear.	mix little yellow and orange but blue and little particle	dark yellow bubbles with mid amount of particles	little dark orange. clear.
2. 0.1 M Ni(NO ₃) ₂	Clear/no color	very little green with some particles.	pink but little amount of particles	clear but more particle that stucked in the tube
3. 0.1 M Mg(NO ₃) ₂	Clear/no color	yellow like color but no particles	clear, non particles	blue with lot particles no color
4. 0.1 M Cu(NO ₃) ₂	brown clear/ bubbles of particles stick with tube.	dark brown with high particles.	clear brown but some particles	little blue little particles
5. Unknown	mad brown with more particles	dark brown with higher particles	clear non particles	mid blue and higher particles amount

Signature	Date	Witness/TA	Date
		NO	