

GOVT.DEGREE COLLEGE FOR MEN, SRIKAKULAM

DEPARTMENT OF CHEMICAL SCIENCES

**ACTIVITY: EXPERIENTIAL INVESTIGATION OF SALT ANALYSIS (SEMI-MICRO
INORGANIC QUALITATIVE SALT ANALYSIS)**

Objectives: To Identify cations and anions present in Inorganic salt/salt Mixture

Principle:

Two basic principles are involved in Salt Analysis

1. Solubility product 2. Common ion effect.

When ionic product of a salt exceeds its solubility product, precipitation takes place.

Methodology:

Systematic analysis of an Inorganic salt involves the following steps

1)Preliminary examination of a solid salt and its solution: These tests can be performed within 10 to 15 minutes. These involve noting the general appearance and physical properties such as colour smell, solubility etc. of the salt which are named as dry tests. Solubility of a salt in water and the P^H of the aqueous solutions give important information about the nature of ions present in the salt.

2)Identification of anions by reactions carried out in solution (wet tests) and confirmatory tests.

Preliminary tests were carried by testing the salt with various reagents and getting the result and confirmatory tests were done with sodium carbonate extract which is prepared by taking 1: 3 ratio of sodium carbonate and distilled water, stir and boil the content for about 10 minutes. Cool and filter and the resultant filtrate is known as sodium carbonate extract.

3)Identification of cations by reactions carried out in solution (wet tests) and confirmatory tests.

The cations that are indicated by the preliminary tests are confirmed by systematic analysis. The first essential step is to prepare a clear and transparent solution of the salt. This is called original solution. Confirmatory tests were carried group wise with group reagents.

COURSE OUTCOMES: By the end of the course the students are expected to be able to

- Understand the basic concepts of qualitative analysis of inorganic mixture
- Use of glassware, equipment and chemicals
- Carry out qualitative analysis of inorganic salt & mixture
- Apply chemical tests to identify unknown chemical species
- Apply the concepts of common ion effect, solubility product and concepts related to qualitative analysis.
- Develop analytical skills in inorganic qualitative analysis.

REPORT ON SALT/MIXTURE ANALYSIS

List of anions and cations for salt/mixture analysis

Anions: Carbonate, Acetate, Chloride, Bromide, nitrate, borate, Phosphate, Sulphate.

Cations: Lead, Copper, Aluminium, Iron, Zinc, Manganese, Nickel, Calcium, Barium, Strontium, Ammonium, Magnesium.

ABSTRACT

S.No	Academic Year	No of Salts/Mixtures Analysed	No of Students involved
1	2018-19	06	178
2	2019-20	05	155
3	2020-21	06	230
4	2021-22	05	259
5	2022-23	05	155

PHOTOS







FEEDBACK ANALYSIS ON EXPERIENTIAL INVESTIGATION – SALT ANALYSIS

https://drive.google.com/file/d/1lKMstLtch_mBnK12CNaogRf0YIU9b7D9/view?usp=drivesdk