

⇒ Confirmatory Test :-

1. Pass the evolved gas into lime water $[\text{Ca}(\text{OH})_2]$. it turns milky

CO_3^{2-} confirmed

Group 1 - Test with dilute H_2SO_4 Preliminary Test :

Experiment
Take a small amount of mixture in a dry test tube and add 2ml of dilute H_2SO_4

Observation
Smell of Vinegar

Inference
 CH_3COO^-
(Acetate)
may be present

⇒ Confirmatory Test:

1. Add few drops of neutral FeCl_3 solution into the aqueous extract of mixture. Blood red colour is obtained

CH_3COO^-
confirmed

Teacher's Signature _____

2. Rub a small amount of the mixture with oxalic acid and few drops of water on your palm. Smell of vinegar

CH_3COO^-
confirmed

- Result :- The given inorganic mixture contains CO_3^{2-} and CH_3COO^- radicals

⇒ Confirmatory Test :-

1. Bring a paper moist with acidified potassium dichromate to the mouth of the test tube paper turns green

SO_3^{2-}
(confirmed)

Group II - Test with concentrated H_2SO_4

Experiment	Observation	Inference
⇒ Preliminary Test		
1. Place a mixture in a dry test tube and add conc. H_2SO_4 (add 12 ml)	Colourless gas is evolved with pungent smell	Chloride $[\text{Cl}^-]$ may be present
⇒ Confirmatory Test		
1. Bring the glass rod dipped into NH_4OH solution to the mouth of test tube		Cl^- confirmed

2. Chromyl chloride test

To the mixture add 3 times of its weight of $K_2Cr_2O_7$ then add conc. H_2SO_4 and Heat. Orange yellow vapours are evolved into NaOH solution. Yellow solution is obtained acidify it

Chloride (Cl^-) confirmed

- Result:- The given inorganic mixture contains CH_3COO^- and Cl^- radicals

⇒ Confirmatory Test:

1. Add few drops of neutral FeCl_3 solution into the aqueous extract of mixture. Blood red colour is obtained

 CH_3COO^- confirmed

2. Rub a small amount of mixture with oxalic acid and few drops of water on your palm. Smell of vinegar

 CH_3COO^- confirmedGroup II : Test with conc. H_2SO_4

⇒ Preliminary Test

1. Place a small amount of mixture and add 2 ml conc. H_2SO_4

Dark violet fumes are evolved

 I^- may be present

Teacher's Signature _____

→ Confirmatory Test

1. Bringing a paper dipped in starch solution to the mouth of the test tube the paper turns blue.

Iodine (I^-)
confirmed

- Result :- The given inorganic mixture contains CH_3COO^- and I^- radicals

Experiment - 4

- Objective:- Analysis of given inorganic mixture for the acidic & basic radicals identification
- Requirement:- Inorganic mixture, concentrated H_2SO_4 , diluted H_2SO_4 and other reagent
- Apparatus:- Test tube, test tube holder, burner, graduated pipette, measuring flask, test tube stand etc.
- Procedure:-
Group I - Test with dilute H_2SO_4

⇒ Preliminary Test:

Experiment	Observation	Inference
1. Place a small amount of mixture in a test tube and add 2ml of dil H_2SO_4	Reddish brown vapours will pungent smell in cold	May be NO_2^- present
⇒ Confirmatory Test:		
1. Put a paper soaked in freshly prepared starch and KI sol. to mouth of test tube the paper turns blue		NO_2^- (Nitrite) confirmed

• Identification of Basic Radicals

⇒ Preliminary Test:

Experiment	Observation	Inference
1. Mix salt + NaOH sol ⁿ + heat	Smell of NH_3	zero group (NH_4^+) may be present
2. Place a red litmus on the mouth of test tube	Red litmus turns blue	

⇒ Confirmatory Test:

1. NaOH Test:- Salt sol ⁿ + NaOH heat. Then bring a glass rod dipped in conc. HCl	Dense white fumes of NH_4Cl are formed	NH_4^+ confirmed
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• Result:- The given inorganic mixture contains NO_2^- , Br^- and NH_4^+ (zero group).