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EXPERIMENT NO. 9

NAME OF EXPERIMENT: TO IDENTIFY BASIC RADICAL PRESENT IN THE GIVEN SALT SAMPLE

APPARATUS REQUIRED

1. Test tube
2. Test tube holder

CHEMICALS REQUIRED

1. dil. HCl
2. conc. HCl
3. NH_2OH
4. NH_4Cl

THEORY

The electropositive radical which comes from base is called basic radical. In other words, the radical of the base other than the OH^- ions is called basic radical.

OBSERVATION

(i) Dry Test

Experiment	Observation	Inference
In a dry test tube a pinch of salt was taken and heated.	Presence of cracking sound.	May be presence of Na^+ , K^+

Flame Test

This test is based on the principle that certain salt mostly chlorides are volatile in the oxidizing (non-luminous) flame and impart characteristic colour to the flame. Given salt was first treated with conc. HCl to convert into chloride salt. Platinum wire was taken and small circular loop was made at the tip of wire. Conc. HCl was taken in watch glass. The wire was cleaned and the loop was dipped in conc. HCl and heated. The process was repeated till wire imparts colour to flame.

Then, the loop was dipped in the paste of conc. HCl and salt and introduced into oxidizing flame. The colour was noted by blue glass and naked eye.

Experiment	Observation		Inference
	Colour flame with naked eye	Colour flame with blue glass	
Flame test was performed	Brilliant golden yellow.	Colourless	Na salt

Wet Test

Experiment	Observation	Inference
1. 1ml of salt solution was taken in test tube and dil. HCl was added.	1. White ppt was seen.	1. Absence of Group - I
2. Warmed exp. (1) and	2. No white ppt.	2. Absence of

Experiment	Observation	Inference
H ₂ S gas was passed for 20 sec.	was seen.	Group - II
3. Salt solution was taken in test tube and few drop of NH ₄ OH and NH ₄ Cl was added.	3. No white ppt was seen.	3. Absence of Group IIIA
4. Above exp(3) sol ⁿ was warmed and H ₂ S gas was passed.	4. No white ppt was seen.	4. Absence of group IIIB
5. Salt solution was taken and added NH ₄ OH, NH ₄ Cl and (NH ₄) ₂ CO ₃	5. No white ppt was seen.	5. Absence of group IV
6. Salt solution was taken and added NH ₄ OH, NH ₄ Cl and Na ₂ PO ₄	6. No white ppt was seen.	6. Absence of group V

Since ppt was not obtained from above reaction so basic radical must be group VI

Confirm test

Experiment	Observation	Inference
1. Flame test was performed.	1. Golden yellow flame through	1. Presence of Na ⁺

	naked eye.	
2. Salt solution was taken and Nessler's reagent was added.	2. No brown ppt was seen.	2. Absence of NH_4^+
3. Flame test was performed.	3. Violet flame was not seen.	3. Absence of K^+

RESULT

Hence, the basic radical in the given salt sample was presence of Na^+ .

PRECAUTIONS

1. All the glasswares should be handled with care.
2. The process of drying test tube should be done carefully.

[Signature]
 9/12/25