EXPERIMENT NO. 14

NAME OF EXPERIMENT: TO IDENTIFY ACIDIC RADICAL PRESENT IN GIVEN SAMPLE OF SALT (Sa)

APPARATUS REQUIRED

1. Test tube
2. Burner
3. Test tube holder

CHEMICAL REQUIRED

1. Salt solution
2. Dil. H_2SO_4
3. Dil. HCl
4. $BaCl_2$
5. Conc. H_2SO_4
6. $AgNO_3$
7. NaCl
8. Copper turning

THEORY

A radical may be defined as an group of atom having positive or negative charge and behave as single until in chemical charge. There are two radical i.e. Acid radical, Basic radical. Acidic radical is electronegative and basic is electropositive.

OBSERVATION

Dry test:

Experiment	Observation	Inference
1. A pinch of salt was taken and few drops of dil. HCl was added.	1. No gas was seen	1. Absence of NO_3^{--}, CO_3^{--}, SO_2^{--}

2. Salt + conc. H_2SO_4	2. No gas was seen.	2. Absence of Cl^- or I^-.
3. Exp. (2) + ~~con~~ Cu turning.	3. Brown fume was formed.	3. May be presence of NO_2^-

Wet test:

Experiment	Observation	Inference
1. 2ml of salt solution was taken in a clean test tube and few drops of $AgNO_3$ was added.	1. No ppt was seen.	1. Absence of Cl^-, Br^-, I^-
2. Salt solution + $BaCl_2$ + dil. HCl	2. No ppt was seen.	2. Absence of SO_4^{--}
3. Salt solution + $FeSO_4$ + conc. H_2SO_4	3. Dark brown ring was seen.	3. Presence of NO_3^-

REACTIONS

$NaNO_3 + H_2SO_4 \longrightarrow NaHSO_4 + HNO_3$

$Cu + 4HNO_3 \longrightarrow Cu(NO_3)_2 + 2NO + H_2O$

$KNO_2 + H_2SO_4 \longrightarrow K_2SO_4 + 2HNO_3$

RESULT

Hence, from the given experiment, NO_3^- was identified as acid radical.

4/08