CLASS :XI SYSTEMATIC ANALYSIS OF SIMPLE SALT (LEAD NITRATE)

EXP. NO.: 1

S. NO.	EXPERIMENT	OBSERVATION	INFERENCE
	Physical Examination: (a)Colour:		
1	(b)Appearance:	Colourless	Absence of Copper and Iron salts.
	Appearance of the salt is noted.	Crystalline	May be Sulphate, Nitrate or Chloride.
2	Action of Dil. HCI: To a small amount of the salt about 1 ml of dil. HCl is added and heated.	A reddish brown gas evolves and turns a moist ferrous sulphate paper brown.	Presence of Nitrate.
3	Action of Copper Turnings: A small amount of the salt is heated with a few pieces of copper turnings and Con.H ₂ SO ₄ .	A reddish brown gas evolved	Presence of Nitrate.
4	Chromyl Chloride Test: A small amount of the salt is heated with K ₂ Cr ₂ O ₇ and Con.H ₂ SO ₄ .	No characteristic gas evolved.	Absence of Chloride.

IDENTIFICATION OF ACID RADICALS

<u>Preparation of Sodium Carbonate extract:</u> A small amount of the given salt is mixed with thrice the amount of sodium carbonate and 20 ml of water and boiled for 10 minutes. The solution is cooled and filtered. The filtrate is called **Sodium Carbonate extract.**

S. NO.	EXPERIMENT	OBSERVATION	INFERENCE
1	Silver Nitrate test: To a few drops of the extract, dil. HNO ₃ is added until the effervescence ceases and 2ml of AgNO ₃ is added.	No characteristic precipitate is obtained	Absence of Chloride, Bromide and Sulphide.
2	Barium Chloride Test: To a few drops of the extract, dil. HCl is added until the effervescence ceases and 2ml of BaCl ₂ is added.	No white precipitate is obtained.	Absence of Sulphate
3	Ammonium Molybdate test : To a few drops of the extract, dil. HNO ₃ is added until the effervescence ceases and 1ml of Ammonium Molybdate is added.	No canary yellow precipitate is obtained.	Absence of Phosphate.

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IDENTIFICATION OF BASIC RADICALS

Preparation of original solution:

The original solution is prepared by dissolving a small amount of the salt in 10-15 mi of water.

ZERO GROUP

	To 1 ml of the original salt	No reddish brown	Absence of Ammonium
1	solution a few drops of Nessler's	precipitate is obtained.	
-	reagent and excess of NaOH		
	solution are added.		

GROUP SEPARATION

1	To 1 ml of the original salt solution 2 ml of dil. HCl is added.	A white precipitate is obtained and soluble	Presence of I group (Lead)
		when boiled with water.	

CONFIRMATORY TEST FOR BASIC RADICALS

1	To 1 ml of the original salt solution about 1ml of Kl is added.	Yellow precipitate is obtained which is soluble in hot water and reappears as golden yellow spangles on	Presence of lead is confirmed.
		cooling.	

- 1. The Acid radical was found to be Nitrate.
- 2. The Basic radical was found to be Lead.
- 3. The given simple salt is Lead Nitrate.

CLASS :XI <u>SYSTEMATIC ANALYSIS OF SIMPLE SALT (COPPER SULPHATE)</u> EXP. NO.: 2

IDENTIFICATION OF ACID RADICALS

S. NO.	EXPERIMENT	OBSERVATION	INFERENCE
	Physical Examination: (a)Colour:	Dive colour	
1	(b)Appearance:	Blue colour	May be copper salts
	Appearance of the salt is noted.	Crystalline	May be Sulphate <i>,</i> Nitrate or Chloride.
2	Action Dil. HCI: To a small amount of the salt about 1 ml of dil. HCl is added and heated.	No characteristic gas evolved.	Absence of Carbonate, Sulphide & Nitrate.
3	Action of Copper Turnings: A small amount of the salt is heated with a few pieces of copper turnings and Con.H ₂ SO ₄ .	No reddish brown gas evolved	Absence of Nitrate.
4	Chromyl Chloride Test: A small amount of the salt is heated with $K_2Cr_2O_7$ and Con.H ₂ SO ₄ .	No characteristic gas evolved.	Absence of Chloride.

<u>Preparation of Sodium Carbonate extract:</u> A small amount of the given salt is mixed with thrice the amount of sodium carbonate and 20 ml of water and boiled for 10 minutes. The solution is cooled and filtered. The filtrate is called **Sodium Carbonate extract.**

S. NO.	EXPERIMENT	OBSERVATION	INFERENCE
1	Silver Nitrate test: To a few drops of the extract, dil. HNO ₃ is added until the effervescence ceases and 2ml of AgNO ₃ is added.	No characteristic precipitate is obtained	Absence of Chloride, Bromide and Sulphide.
2	Barium Chloride Test: To a few drops of the extract, dil. HCl is added until the effervescence ceases and 2ml of BaCl ₂ is added.	A white precipitate is obtained and insoluble in Con HCI.	Presence of Sulphate
3	Ammonium Molybdate test : To a few drops of the extract, dil. HNO ₃ is added until the effervescence ceases and 1ml of Ammonium Molybdate is added.	No canary yellow precipitate is obtained.	Absence of Phosphate.

Preparation of original solution:

The original solution is prepared by dissolving a small amount of the salt in 10-15 mi of water.

ZERO GROUP

	To 1 ml of the original salt	No reddish brown	Absence of Ammonium
1	solution a few drops of Nessler's	precipitate is obtained.	
-	reagent and excess of NaOH		
	solution are added.		

GROUP SEPARATION

1	To 1ml of the original salt	No white precipitate is	Absence of I group
L	solution 2 ml of dil. HCl is added.	obtained.	(Lead)
	To 1ml of the original salt	A black precipitate is	Presence of II group
2	solution 2 ml of dil. HCl is added	obtained.	(Copper)
	and H_2S gas is passed.		

CONFIRMATORY TEST FOR BASIC RADICALS

	To 1 ml of the original salt	A chocolate brown	
1	solution about 1ml of acetic acid	precipitate is obtained	Presence of Copper is
	and potassium ferrocyanide are		confirmed.
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- 1. The Acid radical was found to be Sulphate.
- 2. The Basic radical was found to be Copper.
- 3. The given simple salt is Copper Sulphate.

SYSTEMATIC ANALYSIS OF SIMPLE SALT (FERRIC CHLORIDE) EXP. NO.: 3

IDENTIFICATION OF ACID RADICALS

S. NO. EXPERIMENT OBSERVATION **INFERENCE Physical Examination:** (a)Colour: Colour of the salt is noted. Brown colour. May be Iron salts. 1 (b)Appearance: Appearance of the salt is noted. Crystalline May be Sulphate, Chloride or Nitrate. Action of Dil. HCI: Absence of Carbonate To a small amount of the salt No characteristic gas 2 about 1 ml of dil. HCl is added evolved. and Sulphide. and heated. Action of Copper Turnings: A small amount of the salt is No reddish brown gas Absence of Nitrate. 3 heated with a few pieces of evolved ٠ copper turnings and Con.H₂SO₄. **Chromyl Chloride Test:** (i)A small amount of the salt is Reddish Orange vapour Presence of Chloride is heated with K₂Cr₂O₇ and evolved. confirmed. 4 $Con.H_2SO_4$. (ii)The vapour is passed into lead Yellow precipitate is obtained acetate solution.

Preparation of Sodium Carbonate extract: A small amount of the given salt is mixed with thrice the amount of sodium carbonate and 20 ml of water and boiled for 10 minutes. The solution is cooled and filtered. The filtrate is called Sodium Carbonate extract.

S. NO.	EXPERIMENT	OBSERVATION	INFERENCE
1	Silver Nitrate test: To a few drops of the extract, dil. HNO ₃ is added until the effervescence ceases and 2ml of AgNO ₃ is added.	A curdy white precipitate is obtained which is soluble in excess of NH4OH.	Presence of Chloride.
2	Barium Chloride Test: To a few drops of the extract, dil. HCl is added until the effervescence ceases and 2ml of BaCl ₂ is added.	No characteristic precipitate is obtained	Absence of Sulphate
3	Ammonium Molybdate test : To a few drops of the extract, dil. HNO ₃ is added until the effervescence ceases and 1ml of Ammonium Molybdate is added.	No canary yellow precipitate is obtained.	Absence of Phosphate.

CLASS :XI

Preparation of original solution:

The original solution is prepared by dissolving a small amount of the salt in 10-15 mi of water.

ZERO GROUP

	To 1 ml of the original salt	No reddish brown	Absence of Ammonium
1	solution a few drops of Nessler's	precipitate is obtained.	
	reagent and excess of NaOH		

GROUP SEPARATION

1	To 1ml of the original salt	No white precipitate is	Absence of I group
L	solution 2 ml of dil. HCl is added.	obtained.	(Lead)
	To 1ml of the original salt	No black precipitate is	Absence of II group
2	solution 2 ml of dil. HCl is added	obtained.	(Copper)
	and H_2S gas is passed.		
	To 1ml of the original salt	A brown precipitate is	Presence of III group Iron
3	solution 1ml of NH₄Cl and 2 ml of	obtained.	(Fe ³⁺)
	NH₄OH is added.		

CONFIRMATORY TEST FOR BASIC RADICALS

	To 1 ml of original salt solution	A blue precipitate is	Presence of Iron is
	about 1 ml of dil.HCl is added and	obtained	confirmed.
1	then 1ml of potassium ferro		
	cyanide is added.		

- 1. The Acid radical was found to be Chloride.
- 2. The Basic radical was found to be Iron (Fe³⁺).
- 3. The given simple salt is Ferric Chloride.

CLASS :XI SYSTEMATIC ANALYSIS OF SIMPLE SALT (ZINC SULPHIDE)

EXP. NO.: 4

IDENTIFICATION OF ACID RADICALS

S. NO.	EXPERIMENT	OBSERVATION	INFERENCE
	Physical Examination: (a)Colour:		
1	Colour of the salt is noted. (b)Appearance:	Colourless	Absence of Copper and Iron salts.
	Appearance of the salt is noted.	Powdery	May be Carbonate or Sulphide. (Except Ammonium Carbonate)
	Action Dil. HCI:		
2	To a small amount of the salt about 1 ml of dil. HCl is added and heated	Rotten egg smelling gas evolved turning lead acetate paper black	Sulphide is confirmed.
	Action of Copper Turnings:		
3	A small amount of the salt is heated with a few pieces of copper turnings and Con.H ₂ SO ₄ .	No reddish brown gas evolved	Absence of Nitrate.
	Chromyl Chloride Test:	<u>\</u> 0	
	A small amount of the salt is	No characteristic gas	Absence of Chloride.
4	heated with K ₂ Cr ₂ O ₇ and Con.H ₂ SO ₄ .	evolved.	
	1		

Preparation of Sodium Carbonate extract: A small amount of the given salt is mixed with thrice the amount of sodium carbonate and 20 ml of water and boiled for 10 minutes. The solution is cooled and filtered. The filtrate is called Sodium Carbonate extract.

S. NO.	EXPERIMENT	OBSERVATION	INFERENCE
1	Silver Nitrate test: To a few drops of the extract, dil. HNO_3 is added until the effervescence ceases and $2ml$ of AgNO ₃ is added.	A black precipitate is obtained	Presence of Sulphide.
2	Barium Chloride Test: To a few drops of the extract, dil. HCl is added until the effervescence ceases and 2ml of BaCl ₂ is added.	No white precipitate is obtained.	Absence of Sulphate
3	Ammonium Molybdate test : To a few drops of the extract, dil. HNO ₃ is added until the effervescence ceases and 1ml of Ammonium Molybdate is added.	No canary yellow precipitate is obtained.	Absence of Phosphate.

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Preparation of original solution:

The original solution is prepared by dissolving a small amount of the salt in 10-15 mi of water.

ZERO GROUP

	To 1 ml of the original salt	No reddish brown	Absence of Ammonium
1	solution a few drops of Nessler's	precipitate is obtained.	
	solution are added		
	solution ale audeu.		

GROUP SEPARATION

1	To 1ml of the original salt solution 2 ml of dil. HCl is added.	No white precipitate is obtained.	Absence of I group (Lead)
2	To 1ml of the original salt solution 2 ml of dil. HCl is added and H ₂ S gas is passed.	No black precipitate is obtained.	Absence of II group (Copper)
3	To 1ml of the original salt solution 1ml of NH₄Cl and 2 ml of NH₄OH is added.	No gelatinous white precipitate is obtained.	Absence of III group (Aluminium)
4	To 1ml of the original salt solution 1ml of NH ₄ Cl and 2 ml of NH ₄ OH is added and H ₂ S gas is passed.	A dirty white precipitate is obtained	Presence of IV group (Zinc)

CONFIRMATORY TEST FOR BASIC RADICALS

1	To 1 ml of the original salt solution 2 ml of potassium ferrocyanide is added.	A white precipitate is obtained and soluble in NaOH.	Presence Zinc is confirmed
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- 1. The Acid radical was found to be **Sulphide**.
- 2. The Basic radical was found to be Zinc.
- 3. The given simple salt is **Zinc Sulphide**.

CLASS :XI SYSTEMATIC ANALYSIS OF SIMPLE SALT (ALUMINIUM NITRATE) EXP. NO.: 5

S. NO.	EXPERIMENT	OBSERVATION	INFERENCE
	<u>Physical Examination:</u> (a)Colour:		
1	Colour of the salt is noted. (b)Appearance:	Colourless	Absence of Copper and Iron salts.
	Appearance of the salt is noted.	Crystalline	May be Sulphate, Nitrate or Chloride.
2	Action of Dil. HCI: To a small amount of the salt about 1 ml of dil. HCl is added and heated.	A reddish brown gas evolves and turns a moist ferrous sulphate paper brown.	Presence of Nitrate.
3	Action of Copper Turnings: A small amount of the salt is heated with a few pieces of copper turnings and Con.H ₂ SO ₄ .	A reddish brown gas evolved	Presence of Nitrate.
4	Chromyl Chloride Test: A small amount of the salt is heated with $K_2Cr_2O_7$ and Con.H ₂ SO ₄ .	No characteristic gas evolved.	Absence of Chloride.

IDENTIFICATION OF ACID RADICALS

<u>Preparation of Sodium Carbonate extract</u>: A small amount of the given salt is mixed with thrice the amount of sodium carbonate and 20 ml of water and boiled for 10 minutes. The solution is cooled and filtered. The filtrate is called **Sodium Carbonate extract**.

S. NO.	EXPERIMENT	OBSERVATION	INFERENCE
1	Silver Nitrate test: To a few drops of the extract, dil. HNO ₃ is added until the effervescence ceases and 2ml of AgNO ₃ is added.	No characteristic precipitate is obtained	Absence of Chloride, Bromide and Sulphide.
2	Barium Chloride Test: To a few drops of the extract, dil. HCl is added until the effervescence ceases and 2ml of BaCl ₂ is added.	No white precipitate is obtained.	Absence of Sulphate
3	Ammonium Molybdate test : To a few drops of the extract, dil. HNO ₃ is added until the effervescence ceases and 1ml of Ammonium Molybdate is added.	No canary yellow precipitate is obtained.	Absence of Phosphate.

Preparation of original solution:

The original solution is prepared by dissolving a small amount of the salt in 10-15 mi of water.

ZERO GROUP

	To 1 ml of the original salt	No reddish brown	Absence of Ammonium
1	solution a few drops of Nessler's	precipitate is obtained.	
	solution are added.		

GROUP SEPARATION

1	To 1ml of the original salt	No white precipitate is	Absence of I group
1	solution 2 ml of dil. HCl is added.	obtained.	(Lead)
	To 1ml of the original salt	No black precipitate is	Absence of II group
2	solution 2 ml of dil. HCl is added	obtained.	(Copper)
	and H_2S gas is passed.		
	To 1ml of the original salt	Gelatinous white	Presence of III group
3	solution 1ml of NH ₄ Cl and 2 ml of	precipitate is obtained.	(Aluminium)
	NH₄OH is added.		

CONFIRMATORY TEST FOR BASIC RADICALS

	To 1 ml of the original salt	A bright red lake is	Presence of Aluminium	
	solution 2 ml of NH ₄ OH and a few	obtained.	is confirmed.	
1	drops of aluminon reagent is			
	added.			

- 1. The Acid radical was found to be nitrate.
- 2. The Basic radical was found to be Aluminium.
- 3. The given simple salt is Aluminium nitrate.

CLASS :XI SYSTEMATIC ANALYSIS OF SIMPLE SALT (CALCIUM CARBONATE) EXP. NO.: 6

S. NO.	EXPERIMENT	OBSERVATION	INFERENCE
	Physical Examination: (a)Colour:		
1	(b)Appearance:	Colourless	Absence of Copper and Iron salts.
	Appearance of the salt is noted.	Powdery	May be Carbonate or Sulphide
2	Action Dil. HCI: To a small amount of the salt about 1 ml of dil. HCl is added and heated.	Colourless, odourless gas evolves with effervescence which turns lime water milky.	Carbonate is confirmed.
3	Action of Copper Turnings: A small amount of the salt is heated with a few pieces of copper turnings and Con.H ₂ SO ₄ .	No reddish brown gas evolved	Absence of Nitrate.
4	Chromyl Chloride Test: A small amount of the salt is heated with $K_2Cr_2O_7$ and Con.H ₂ SO ₄ .	No characteristic gas evolved.	Absence of Chloride.

IDENTIFICATION OF ACID RADICALS

<u>Preparation of Sodium Carbonate extract</u>: A small amount of the given salt is mixed with thrice the amount of sodium carbonate and 20 ml of water and boiled for 10 minutes. The solution is cooled and filtered. The filtrate is called **Sodium Carbonate extract**.

S. NO.	EXPERIMENT	OBSERVATION	INFERENCE
1	Silver Nitrate test: To a few drops of the extract, dil. HNO ₃ is added until the effervescence ceases and 2ml of AgNO ₃ is added.	No characteristic precipitate is obtained	Absence of Chloride, Bromide and Sulphide.
2	Barium Chloride Test: To a few drops of the extract, dil. HCl is added until the effervescence ceases and 2ml of BaCl ₂ is added.	No characteristic precipitate is obtained	Absence of Sulphate
3	Ammonium Molybdate test : To a few drops of the extract, dil. HNO ₃ is added until the effervescence ceases and 1ml of Ammonium Molybdate is added.	No canary yellow precipitate is obtained.	Absence of Phosphate.

Preparation of original solution:

The original solution is prepared by dissolving a small amount of the salt in 10-15 mi of water.

ZERO GROUP

	To 1 ml of the original salt	No reddish brown	Absence of Ammonium
1	solution a few drops of Nessler's reagent and excess of NaOH	precipitate is obtained.	
	solution are added.		

GROUP SEPARATION

1	To 1ml of the original salt	No white precipitate is	Absence of I group
	solution 2 ml of dil. HCl is added.	obtained.	(Lead)
2	To 1ml of the original salt	No black precipitate is	Absence of II group
	solution 2 ml of dil. HCl is added	obtained.	(Copper)
	and H_2S gas is passed.		
3	To 1ml of the original salt	No gelatinous white	Absence of III group
	solution 1ml of NH ₄ Cl and 2 ml of	precipitate is obtained.	(Aluminium)
	NH₄OH is added.		
4	To 1ml of the original salt	No dirty white precipitate	Absence of IV group
	solution 1ml of NH ₄ Cl and 2 ml of	is obtained	(Zinc)
	NH₄OH is added and H₂S gas is		
	passed.		
5	To 1ml of the original salt	A white precipitate is	Presence of V group
	solution 1ml of NH₄Cl and 2 ml of	obtained	metal ions
	NH_4OH and $[NH_4]_2CO_3$ is added		(Ba ²⁺ , Ca ²⁺)
	and shaken well.		

CONFIRMATORY TEST FOR BASIC RADICALS

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 To a few drops of the original salt solution 1 ml of CH₃COOH and 2 1 ml of (NH₄)₂SO₄ solutions are added. 	A white precipitate is obtained.	Presence of Calcium is confirmed.
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<u>Result:</u>

- 1. The Acid radical was found to be Carbonate.
- 2. The Basic radical was found to be **Calcium**.
- 3. The given simple salt is Calcium Carbonate.

CLASS :XI SYSTEMATIC ANALYSIS OF SIMPLE SALT (AMMONIUM BROMIDE) EXP. NO.: 7

S. NO.	EXPERIMENT	OBSERVATION	INFERENCE
1	Physical Examination: (a)Colour: Colour of the salt is noted. (b)Appearance:	Colourless	Absence of Iron and copper salts.
	Appearance of the salt is noted.	Crystalline	May be Sulphate, Chloride or Nitrate.
2	Action of Heat: A small amount of the salt is taken in a dry test tube and heated gently.	A colourless pungent smelling gas evolved.	Presence of Ammonium salts.
3	Action of Dil. HCI: To a small amount of the salt about 1 ml of dil. HCl is added and heated.	No characteristic gas evolved.	Absence of Carbonate and Sulphide.
4	Action of Copper Turnings: A small amount of the salt is heated with a few pieces of copper turnings and Con.H ₂ SO ₄ .	No reddish brown gas evolved	Absence of Nitrate.
5	Action of MnO ₂ and Con.H ₂ SO ₄ : A small amount of the salt is heated with a pinch of MnO ₂ and Con.H ₂ SO ₄ .	A reddish brown gas turned moist fluorescent paper green.	Presence of Bromide.
6	Chromyl Chloride Test: A small amount of the salt is heated with K ₂ Cr ₂ O ₇ and Con.H ₂ SO ₄ .	No Reddish Orange vapour evolved.	Absence of Chloride.

IDENTIFICATION OF ACID RADICALS

Preparation of Sodium Carbonate extract: A small amount of the given salt is mixed with thrice the amount of sodium carbonate and 20 ml of water and boiled for 10 minutes. The solution is cooled and filtered. The filtrate is called Sodium Carbonate extract.

S. NO.	EXPERIMENT	OBSERVATION	INFERENCE
1	Silver Nitrate test: To a few drops of the extract, dil. HNO_3 is added until the effervescence ceases and 2ml of AgNO ₃ is added.	A pale yellow precipitate sparingly soluble in ammonia is obtained.	Presence of Bromide.
2	Barium Chloride Test: To a few drops of the extract, dil. HCl is added until the effervescence ceases and 2ml of BaCl ₂ is added.	No characteristic precipitate is obtained	Absence of Sulphate

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3	Ammonium Molybdate test :	No canary yellow	Absence of Phosphate.
	To a few drops of the extract, dil.	precipitate is obtained.	
	HNO₃ is added until the		
	effervescence ceases and 1ml of		
	Ammonium Molybdate is added.		

IDENTIFICATION OF BASIC RADICALS

Preparation of original solution:

The original solution is prepared by dissolving a small amount of the salt in 10-15 mi of water.

ZERO GROUP

1	To 1 ml of the original salt		
	solution a few drops of Nessler's	A reddish brown	Presence of Ammonium
	reagent and excess of NaOH	precipitate is obtained. 💊	
	solution are added.		

GROUP SEPARATION

1	To 1ml of the original salt	No white precipitate is	Absence of I group
	solution 2 ml of dil. HCl is added.	obtained.	(Lead)
2	To 1ml of the original salt	No black precipitate is	Absence of II group
	solution 2 ml of dil. HCl is added	obtained.	(Copper)
	and H ₂ S gas is passed.	XU	
3	To 1ml of the original salt	No gelatinous white	Absence of III group
	solution 1ml of NH₄Cl and 2 ml of	precipitate is obtained.	(Aluminium)
	NH₄OH is added.		
4	To 1ml of the original salt	No dirty white precipitate	Absence of IV group
	solution 1ml of NH ₄ Cl and 2 ml of	is obtained	(Zinc)
	NH ₄ OH is added and H ₂ S gas is		
	passed.		
5	To 1ml of the original salt	No characteristic	Absence of V group
	solution 1ml of NH ₄ Cl and 2 ml of	precipitate is obtained	metal ions
	NH_4OH and NH_4CO_3 is added and		(Ba ²⁺ , Ca ²⁺)
	shaken well.		
	To 1ml of the original salt	No white precipitate was	
	solution about 1ml of dil NaOH	obtained.	
c	was added in drops with shaking.		Absence of Magnesium
0	To 1ml of the original salt	No blue precipitate was	Absence of Magnesium
	solution about 1ml of Magneson	obtained.	
	reagent was added.		

Result:

- 1. The Acid radical was found to be Bromide.
- 2. The Basic radical was found to be Ammonium.
- 3. The given simple salt is Ammonium Bromide.

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CLASS :XI SYSTEMATIC ANALYSIS OF SIMPLE SALT (MAGNESIUM PHOSPHATE) EXP. NO.: 8

S. NO.	EXPERIMENT	OBSERVATION	INFERENCE
	Physical Examination: (a)Colour:	Colourloss	Absonse of Connor and
1	(b)Appearance:	Colouness	Iron salts.
	Appearance of the salt is noted.	Powdery	May be Carbonate or Sulphide.
	Action of Dil. HCI:		
2	To a small amount of the salt	No characteristic gas	Absence of carbonate,
2	about 1 ml of dil. HCl is added	evolved.	nitrate and sulphide.
	and heated.		
	Action of Copper Turnings:		
3	A small amount of the salt is	No reddish brown gas	Absence of Nitrate.
-	heated with a few pieces of	evolved	
	copper turnings and Con.H ₂ SO ₄ .		
	Chromyl Chloride Test:		Abaanaa af Chlarida
4	A small amount of the salt is	No characteristic gas	Absence of Chloride.
	$Con \parallel SO$	evolved.	
	CON.112504.	60	

IDENTIFICATION OF ACID RADICALS

<u>Preparation of Sodium Carbonate extract</u>: A small amount of the given salt is mixed with thrice the amount of sodium carbonate and 20 ml of water and boiled for 10 minutes. The solution is cooled and filtered. The filtrate is called **Sodium Carbonate extract**.

S. NO.	EXPERIMENT	OBSERVATION	INFERENCE
	Silver Nitrate test:		
1	dil. HNO $_3$ is added until the	No characteristic	Absence of Chloride,
	effervescence ceases and 2ml of	precipitate is obtained	Bromide and Sulphide.
	AgNO ₃ is added.		
	Barium Chloride Test:		
	To a few drops of the extract,	No characteristic	Absence of Sulphate
2	dil. HCl is added until the	precipitate is obtained	
	effervescence ceases and 2ml of		
	BaCl ₂ is added.		
	Ammonium Molybdate test :		
	To a few drops of the extract, dil.	A canary yellow	Presence of Phosphate.
3	HNO₃ is added until the	precipitate is obtained.	
	effervescence ceases and 1ml of		
	Ammonium Molybdate is added.		

Preparation of original solution:

The original solution is prepared by dissolving a small amount of the salt in 10-15 mi of water.

ZERO GROUP

1	To 1 ml of the original salt		
	solution a few drops of Nessler's	No reddish brown	Absence of Ammonium
1	reagent and excess of NaOH	precipitate is obtained.	
	solution are added.		

GROUP SEPARATION

1	To 1ml of the original salt solution 2 ml of dil. HCl is added.	No white precipitate is obtained.	Absence of I group (Lead)
2	To 1ml of the original salt solution 2 ml of dil. HCl is added and H ₂ S gas is passed.	No black precipitate is obtained.	Absence of II group (Copper)
3	To 1ml of the original salt solution 1ml of NH₄Cl and 2 ml of NH₄OH is added.	No gelatinous white precipitate is obtained.	Absence of III group (Aluminium)
4	To 1ml of the original salt solution 1ml of NH ₄ Cl and 2 ml of NH ₄ OH is added and H ₂ S gas is passed.	No dirty white precipitate is obtained	Absence of IV group (Zinc)
5	To 1ml of the original salt solution 1ml of NH ₄ Cl and 2 ml of NH ₄ OH and [NH ₄] ₂ CO ₃ is added and shaken well.	No precipitate is obtained	Absence of V group metal ions (Ba ²⁺ , Ca ²⁺)
6	To 1ml of the original salt solution 1ml each of NH ₄ Cl, NH ₄ OH and NH ₄ H ₂ PO ₄ are added and the sides of the test tube were scratched.	A white precipitate is obtained.	Presence of VI group (Magnesium).

ANALYSIS OF VI GROUP PRECIPITATE

To 1ml of the salt solution aboutA blue precipitate isPresence of Magne11ml of Magneson reagent is added.obtained.is confirmed.	sium
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- 1. The Acid radical was found to be **Phosphate**.
- 2. The Basic radical was found to be Magnesium.
- 3. The given simple salt is Magnesium Phosphate.