ANALYSIS OF ACID RADICAL

EXPERIMENTS								
Colour	Blue/Green – Copper salts; Brown – Ferric salt							
Action of heat	Salt + Heat => Reddish brown gas- Nitrate; Pungent Smelling gas- Ammonium Salts; Yellow when hot, white when cooled – Zinc salts							
Flame test	Reagents: Salt + Con.HCl made a paste & burnt in Bunsen flame with glass rod Result: Brick Red flame – Calcium; Apple green flame- Barium; Bluish green- Copper salts							
	REAGENTS	**NITRATE**	**CHLORIDE**	**BROMIDE**	**SULPHATE**	**SULPHIDE**	**CARBONATE**	**PHOSPHATE**
Action of dil. HCl	Salt + dil. HCl + Heat	Reddish brown gas	-	-	-	Rotten egg smell	Brisk effervescence	-
Action of Con.H_2SO_4	Salt + Con.H_2SO_4 + Heat	Reddish brown gas	Colorless gas gives dense fume with liq.NH_3	Reddish brown gas	-	-	-	
MnO_2 Test	Salt + MnO_2 + Con.H_2SO_4 + Heat	-	Greenish yellow gas	Reddish brown gas	-	-	-	-
Copper turning test	Salt + Copper turnings + Con.H_2SO_4 + Heat	Reddish brown gas	-	-	-	-	-	-
Chromyl chloride test	Salt +$K_2Cr_2O_7$ Con.H_2SO_4 + Heat	-	Red orange vapours	-	-	-	-	-
NaOH test	Salt + dil. NaOH + Heat	Pungent smelling gas- Ammonium salts						
TEST WITH SODIUM CARBONATE EXTRACT								
Silver nitrate test	Extract + dil.HNO_3 + $AgNO_3$	-	Curdy white ppt	Pale yellow ppt	-	Black ppt	-	-
Barium chloride test	Extract + dil. HCl + $BaCl_2$	-	-	-	White ppt	-	-	-
Lead Acetate test	Extract + CH_3COOH + Lead acetate	-	-	-	White ppt	-	-	-
Brown ring test	Extract + dil.H_2SO_4 + $FeSO_4$ + Con.H_2SO_4	Brown ring is formed	-	-	-	-	-	-
Ammonium molybdate test	Extract + dil.HNO_3 + Ammonium molybdate+Con.HNO_3	-	-	-	-	-	-	Canary yellow ppt
Sodium nitroprusside test	Extract + dil.NH_3 + Sodium nitroprusside	-	-	-	-	Purple/violet colour	-	-

ANALYSIS OF BASIC RADICAL

GROUP	ZERO	I	II	III		IV	V		VI
RADICALS	AMMONIUM	LEAD	COPPER	ALUMINUM	IRON	ZINC	BARIUM	CALCIUM	MAGNESIUM
REAGENTS	Original solution + NaOH + Nessler's reagent	Original solution + dil.HCl	Original solution + dil.HCl + H_2S gas	Original solution + NH_4Cl + NH_4OH		Original solution + NH_4Cl + NH_4OH + H_2S gas	Original solution + NH_4Cl + NH_4OH + $(NH_4)_2CO_3$		Original solution + NH_4Cl + NH_4OH + $(NH_4H_2PO_4)$
REACTION TAKES PLACE	*Chocolate brown ppt*	*White ppt*	*Black ppt*	*Gelatinous white ppt*	*Brown ppt*	*Dirty white ppt*	*White ppt*		*White ppt*

CONFIRMATORY TESTS OF BASIC RADICAL

REAGENTS	Original solution + NaOH + Nessler's reagent	Original solution + KI solution	Original solution + Acetic acid + Potassium ferrocyanide	Original solution + Sodium peroxide+ dil.HCl	Original solution + Sodium peroxide+ dil.HCl+ Potassium ferrocyanide	Original solution + Potassium ferrocyanide	Original solution + Potassium chromate	Original solution + NH_4OH + Ammonium oxalate	Original solution + NaOH + Magneson reagent
REACTION TAKES PLACE	*Chocolate brown ppt*	*Yellow ppt*	*Red brown ppt*	*Gelatinous white ppt*	*Blue ppt*	*White ppt*	*Yellow ppt*	*White ppt*	*Blue ppt*

Report: The given salt contains: **Acid Radical:** _____ **Basic Radical:** _____

The given simple salt is _____

PREPARED BY

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