

Chemical tests of some ions in salts.

1. **Flame test**

- It used to identify the presence of Li^+, Na^+, K^+, Ca^{+2}, Sr^{+2}, Ba^{+2} ... by using **nichrome wire**

Metal ion in salt	Color of flame produced
Li^+	Crimson
Na^+	Yellow
K^+	Violet
Ca^{+2}	Orange – red
Sr^{+2} (strontium ion)	Crimson
Ba^{+2}	Green
CU^{+2}	Blue
Fe^{+2}	Pale – green precipitate
Fe^{+3}	Pale – brown

2. Test of holidays with reagent $AgNO_3$ solution

* Mixing sodium halide with $AgNO_3$

Halides	Color
Cl^-	White precipitate
Br^-	Yellow precipitate
I^-	Yellowish – green precipitate

3. Test for sulphate salts (with reagent $BaCl_2$ or $Ba(NO_3)_2$

* When soluble salts of Ba & Na sulphates are mixed white precipitate **$BaSO_4$** is formed. This shows the presence of sulphate (SO_4^{-2}) ion.

4. Test for nitrates (NO_3^-)

* Identified by **Brown – ring test.**

I. <u>Choose the correct answer from the given alternatives and write your answer on the given space.</u>

_____ 1. Which of the following group of slat gives a white precipitate when a solution of barium chloride is added to them?

A/ Sulphates B/ Florides C/ Permanaganets D/ Iodedes

_____ 2. The brown ring is used to identify _____

A/ Sulphate ions B/ Nitrate ions C/ Sulphite ions D/ Nitrite ion

II. <u>Write short answer for the following questions.</u>

1. Name the acid and base pairs required to prepare the following salts.

a. $NaSO_4$

b. $Ca(NO_3)_2$

c. $MgBr_2$

2. List at least three methods of preparations of salts.

3. Classify the following salts as soluble or insoluble in water.

a. $FeCo_3$

b. NH_4Cl

c. $AgNO_3$

4. What reagent do you use to identify the presence of the following ions in salts (you can see your experiments on page 146 – 150)

a) Halide ions

b) Fe^{+2} and Fe^{+3} ions

c) Sulphate ion.

Prepared by: <u>Sir Getasew</u>