

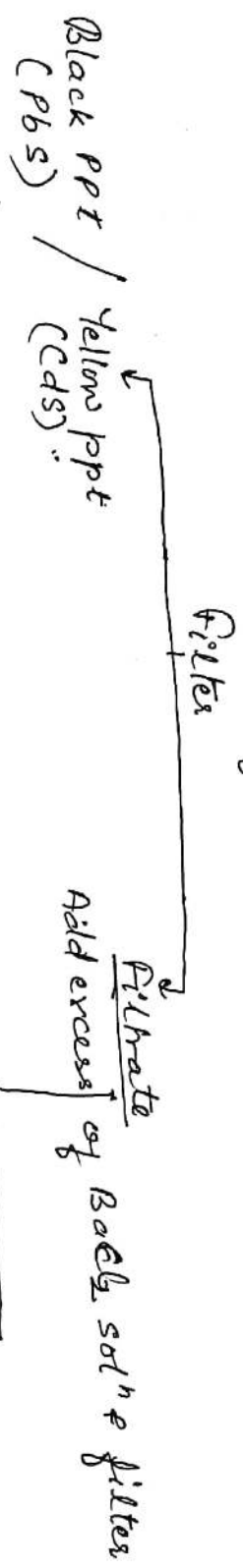
# Test of Special Combination of Arsenic Constituents

(A) Sulphide, Sulphite, Sulphate & Thio sulphate

a) Sodium carbonate extract + freshly prepared nitroprusside sol<sup>n</sup> → Purple colour (Sulphide is present)

b) 2) sulphide is present, remove it then by adding cadmium acetate / lead carbonate

-to sodium carbonate extract. Shake it & filter it



White ppt.

(BaSO<sub>3</sub>, BaCO<sub>3</sub>, BaSO<sub>4</sub>)  
Add excess of dil HCl & then filter

White ppt (BaSO<sub>4</sub>)

Insoluble in con HCl & cone HNO<sub>3</sub>. sulphate confirmed

Filtrate  
Add excess of BaCl<sub>2</sub> sol<sup>n</sup> & filter

Filtrate.  
Add AgNO<sub>3</sub> sol<sup>n</sup>, white ppt changing to yellow, orange, brown & finally black, thio sulphate confirmed

Filtrate

Add Br<sub>2</sub> water till colour persists, boil.  
White ppt. confirms sulphite  
BaSO<sub>3</sub> + O → BaSO<sub>4</sub> ↓

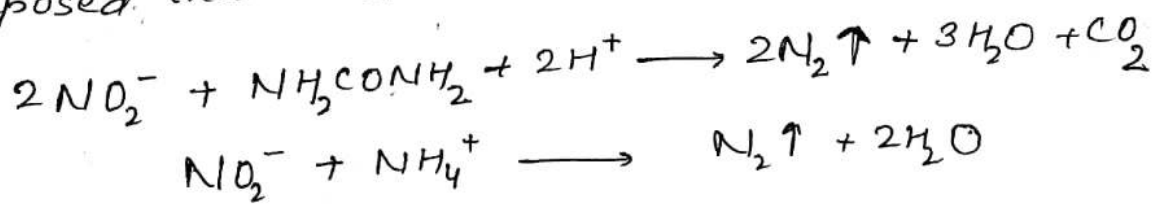
$$-S(P_{11} - P_{22}) \sin \theta_{12} - S(P_{13} + P_{31}) \sin \frac{\theta_{23}}{2} + S(P_{12} + P_{21}) (\cos \theta_{12} + (\cos \frac{\theta_{23}}{2} - 1))$$

$$-S(P_{22} - P_{33}) \sin \theta_{23} - S(P_{13} + P_{31}) \sin \frac{\theta_{23}}{2} + S(P_{23} + P_{32}) (\cos \theta_{23} + (\cos \theta_{12} - 1))$$

(b) Nitrate in presence of nitrite,

Nitrite interferes in the detection of nitrate. Hence nitrite must be removed completely before testing for nitrate

⇒ Acidify about 2cc of  $\text{Na}_2\text{CO}_3$  extract with dil  $\text{H}_2\text{SO}_4$  & then heat with excess of solid urea or  $\text{NH}_4\text{Cl}$ . Nitrite will be decomposed into  $\text{N}_2$ .



Now perform ring test for testing nitrate.