

Experiment no. 1

Aim: To identify extra elements present in given known organic compounds.

S.No.	Experiment	Observation	Inference
1	Preliminary Examination		
a	Physical state	Solid	
b	Color		
c	Odour		
2	Flame test	Sooty or Non-Sooty	Aromatic or aliphatic compound
3	Solubility test		
	Soluble in cold/hot water		
	Soluble in cold dil. NaHCO ₃		
	Soluble in cold dil. NaOH		
	Soluble in hot dil. NaOH		
	Soluble in cold Conc. H ₂ SO ₄		
	Soluble in hot Conc. H ₂ SO ₄		
	Soluble in dil, HCl		
3	Test for unsaturation		
a	Baeyer's test		
b	Bromine water test		
4	Detection of Elements		
	Preparation of Lassaigne's extract (L.E.)		

a	Test for Nitrogen		
b	Test for Sulphur		
c	Test for both N and S		
d	Test for Halogens		
i	Silver Nitrate Test		
ii	Layer test		
4	Test for Functional groups		
a	Test for carboxylic acids		
	Sodium bicarbonate test		
b	Test for carbonyl group		
	2,4-DNP Test		
c	Test for alcohol		
	Ceric ammonium nitrate test		
d	Test for phenols		

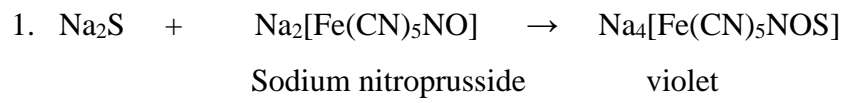
Reactions involved in Lassaigne's extract

- $\text{Na} + \text{C} + \text{N} \rightarrow \text{NaCN}$
- $2\text{Na} + \text{S} \rightarrow \text{Na}_2\text{S}$
- $\text{Na} + \text{X} \rightarrow \text{NaX}$ (X= Cl, Br, or I)
- $\text{Na} + \text{C} + \text{N} + \text{S} \rightarrow \text{NaSCN}$

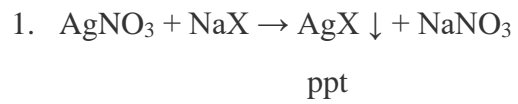
Test for Nitrogen

1. $2\text{NaOH} + \text{FeSO}_4 \rightarrow \text{Fe}(\text{OH})_2 + \text{Na}_2\text{SO}_4$
2. $6\text{NaCN} + \text{Fe}(\text{OH})_2 \rightarrow \text{Na}_4[\text{Fe}(\text{CN})_6] + \text{NaOH}$
Sodium ferrocyanide
3. $\text{Na}_4[\text{Fe}(\text{CN})_6] + \text{Fe}^{3+} \rightarrow \text{Fe}_4[\text{Fe}(\text{CN})_6]_3$
Ferri-ferrocyanide

Test for Sulphur



Test for Halogens



Result: