

# FUNDAMENTAL PRINCIPLES OF ORGANIC CHEMISTRY

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## 13.2 Qualitative analysis of organic compounds (detection of N, S, and halogens by Lassaigne's test)

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### Detection of foreign elements

Preparation of Sodium extract or Lassaigne's extract:

1. Detection of Nitrogen
  2. Detection of Sulphur
  3. Detection of halogens
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1. An element least likely to be found in an organic compound is
    - a. Hydrogen
    - b. Carbon
    - c. Nitrogen
    - d. Oxygen
  2. Lassaigne's test is not used for the detection of
    - a. Halogens
    - b. Sulphur
    - c. Nitrogen
    - d. Phosphorus
  3. Detection of nitrogen, sulphur, and halogens in organic compounds is done by
    - (a) Lassaigne's test
    - (b) Lucas test
    - (c) Victor Meyer test
    - (d) Carbylamine test
  4. During the detection of the organic compound, a sodium extract is prepared to
    - a. Dissolve it in water.
    - b. Make it more reactive.
    - c. Convert it into ionic form.
    - d. Make the reaction slow.
  5. Which of the following compounds is possible while fusing sodium with an organic compound having N and S?
    - a.  $\text{Na}_2\text{S}$
    - b.  $\text{NaCN}$
    - c.  $\text{NaCNS}$
    - d. all
  6. In which of the following compounds, nitrogen cannot be detected by the use of Lassaigne's test:
    - a.  $\text{NH}_2\text{NH}_2$
    - b.  $\text{C}_6\text{H}_5\text{NH}_2$
    - c.  $\text{CH}_3\text{NO}_3$
    - d.  $\text{NH}_2\text{CONH}_2$
  7. The metal used in Lassaigne's test for heteroelements is
    - a. Sodium
    - b. Potassium
    - c. Calcium
    - d. Zinc
  8. Lassaigne's test involves
    - a. Oxidation of foreign elements
    - b. Reduction of foreign elements
    - c. Formation of ionic compounds of foreign elements
    - d. Rearrangement of foreign elements

9. In sodium extract solution, the nitrogen of the organic compound is converted into
- Sodalime
  - Sodium nitrite
  - Sodium nitrate
  - Sodium cyanide
10. Which of the following compounds is present in the sodium extract if the organic compound contains both N and S?
- NaCN
  - Na<sub>2</sub>S
  - NaCNS
  - NaCl
11. In the detection of foreign elements, the appearance of blood red colour after adding FeCl<sub>3</sub> solution to Lassaigne's extract acidified with HCl shows the presence of
- Na and S
  - N and Cl
  - S and N
  - S and Cl
12. The formation of violet/purple colour on the addition of sodium nitroprusside in sodium extract shows
- Presence of nitrogen
  - Presence of nitrogen and sulphur
  - Presence of sulphur
  - Presence of halogens
13. A sodium nitroprusside test is carried out for the detection of
- Halogens
  - Nitrogen
  - Sulphur
  - Carbon
14. If sulphur is present in the given organic compound, which colour is obtained by adding lead acetate to its sodium extract acidified with acetic acid?
- Black
  - White
  - Purple
  - Violet
15. Sulphide ion can be tested by using
- Lead acetate
  - Sodium nitroprusside
  - Both
  - none
16. Nature of sodium extract is
- Neutral
  - acidic
  - alkaline
  - none
- Why is sodium extract boiled with HNO<sub>3</sub> before Lassaigne's test?
- To remove CN<sup>-</sup> and S<sup>2-</sup>
  - To make the solution acidic
  - To increase basicity
  - To make solution lighter
17. Which of the following compound does not show Lassaigne's test for nitrogen?
- Urea
  - Hydrazine
  - Azobenzene
  - Phenylhydrazine

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