

Chemical Tests for Carbohydrates:

1. Molisch's test:

Aq. solⁿ of Carbohydrates + Alcoholic solⁿ of α -naphthol and then added concⁿ $H_2SO_4 \rightarrow$ violet ring is formed

2. Osazone test: Aldoses, ketoses, maltose & lactose form osazone when heated with excess of phenyl hydrazine

3. Barfoed's test:

7% of cupric acetate in 1% aq. $C_6H_8O_7$ is known as Barfoed's reagent.

Monosaccharides when heated with Barfoed reagent, yield a red precipitate of cuprous oxide. Disaccharides do not give this Test

(4) Seliwanoff's test: A dilute solution of resorcinol in dilute HCl is known as

Seliwanoff's reagent. When solⁿ of ketohexose is heated with Seliwanoff's reagent, a red colour is developed.

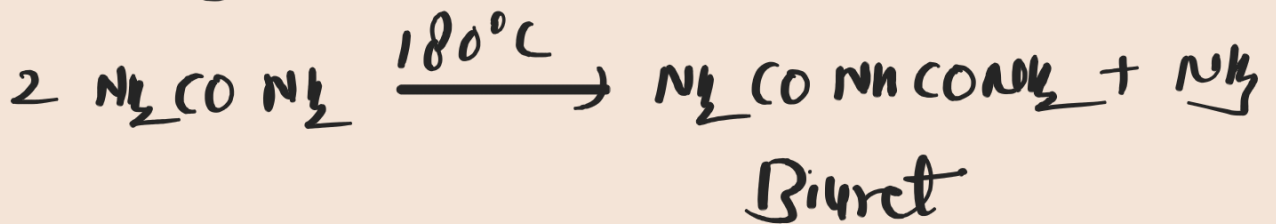
The test is given by ketohexoses and Sucrose only but not by any aldose, lactose and maltose

5. Tollen Test

6. Fehling Test

Test for protein :

1. Biuret Test : Biuret is a compound formed by heating urea



When biuret is heated with dil. CuSO_4 solⁿ in alkaline medium, a purple colour is obtained

This is the basis of biuret test of

Protein and peptides possessing at least two peptide bond.

2. Xanthoproteic test.

When protein is heated with HNO_3 , a yellow colour is produced. The benzene ring is responsible for this test.

The test is positive when protein molecule contain an amino acid having benzene ring such as Phenylalanine, tyrosine and Tryptophan.

3. Millon's test. The Millon reagent

is a solⁿ of Mercuric nitrite and Mercuric nitrate in a mixture of HNO_3 and HNO_2 . When protein is heated with millon reagent, red colour or precipitate is obtained. The response is due to a phenolic group in the protein.

The test is positive only with such protein

that contain a Tyrosine

4. Ninhydrin test: When a protein is boiled with a dilute solⁿ of ninhydrin, a purple colour is produced