

Aldehydes, ketones and saccharides essay sample

[Food & Diet](#), [Alcohol](#)



Aldehydes - contains a carbonyl group at the end of the carbon chain.

- RCOH

Ketones - contains a carbonyl group in the middle of the carbon chain.

- RCOR

* 2, 4-dinitrophenylhydrazine Test - Test for Carbonyl group

* Sodium Bisulfate Test- Test for Aldehydes and Methy Ketones

* White precipitate

* Ketones with more than 2 carbon - non-reactive

* Ketones with 2 carbons - slightly reactive

* Schiff's Test - Test for aldehydes

* Purple solution

* Formalin - positive

* Acetone (ketone)

* Benzaldehyde - positive

* Acetophenone (aromatic ketone)

* Tollen's Test - Test for aliphatic and aromatic aldehydes

* Silver mirror

* Formalin - positive

* Glucose - positive

* Benzaldehyde - positive

* Acetone

* Fehling's Test - Test for Aliphatic aldehydes

* Brick red precipitate (cuprous oxide)

- * Formalin - positive
- * Glucose - positive
- * Benzaldehyde
- * Acetone

- * Sodium Nitroprusside Test - Test for presence of acetone
- * -Wine red solution

- * Iodoform Test - Test for Methyl Ketones
- * Acetone - positive
- * Ethyl methyl ketone - positive
- * Ethyl acetate

- * Special test for Benzaldehyde
- * Formation of crystals

- * Molisch Test - General test for Carbohydrates
- * Violet ring (2nd layer)
- * Glucose - positive
- * Starch - positive
- * Benzaldehyde

- * Bial's Orcinol Test - Test for Carbohydrates
- * 5 carbon - blue to green
- * Ribose - green
- * 6 carbon - brown
- * Glucose - brown

- * Phenylhydrazine Test - Test for reducing sugars
- * Osazone crystals
- * Glucose - positive

- * Optical rotation - property of a substance that could rotate the plane of polarization of a beam of polarized light.

Carboxylic acid - RCOOH

- React with strong bases (NaOH, KOH) to form water soluble salts.

- * Test for carboxylic acid
- * Acetic acid - soluble in water and NaOH
- * Stearic acid - insoluble in water and NaOH

- * Reaction with sodium carbonate
- * Effervescence - release of carbon dioxide

- * Esterification
- * Acetic acid + n-propyl alcohol → propyl acetate
- * Benzoic acid + n-propyl alcohol → propyl benzoate

- * Reaction with Neutral FeCl₃
- * Acetic acid - red-orange precipitate
- * Tartaric acid - effluence of red-orange precipitate

- * Special Test for tartaric and citric acid
- * Citric acid - green solution → colorless solution
- * Tartaric acid - brown solution → colorless solution

- * Hydroxamic test for esters
- * Magenta or burgundy solution

- * Hydrolysis reactions
- * Acetic anhydride - blue litmus paper → red litmus paper
- * Acetamide - red litmus paper → blue litmus paper