



AL-Mustaqbal University College
Radiology Techniques Department
First Class
Theoretical General Chemistry
Fifth lecture(Aromatic Hydrocarbons
& Aldehydes and ketones)

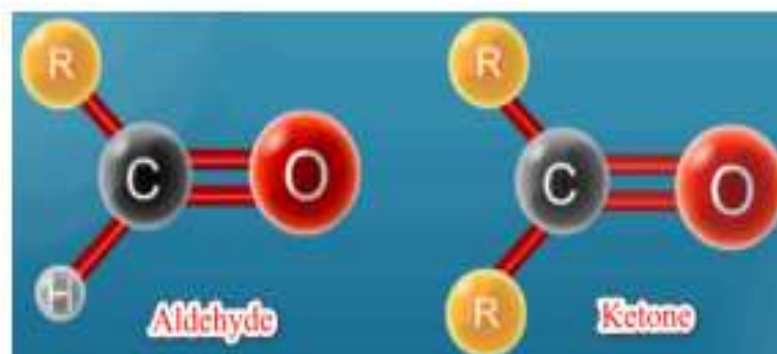
Aromatic Hydrocarbons

The aromatic hydrocarbons are unsaturated hydrocarbons which have one or more planar six-carbon rings called benzene rings, to which hydrogen atoms are attached". Many aromatic hydrocarbons contain a benzene ring (also referred to as an aromatic ring). The benzene ring is stabilized by resonance.

Aldehydes and ketones

Aldehydes: in which the carbonyl group is attached to one hydrogen atom Less is called the formyl group
-CHO

Ketones: in which the carbonyl group is attached to two carbon atoms and is known With the ketone group
-C = O

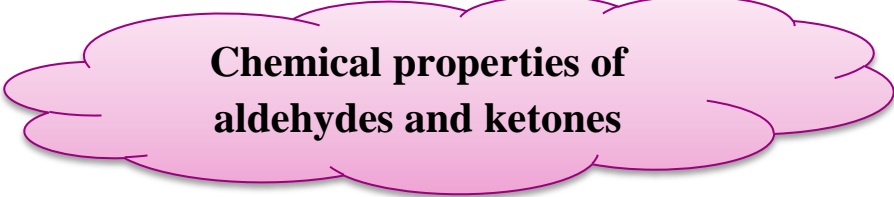



General methods for preparing aldehydes and ketones:

- 1- Oxidation of alcohols: It is one of the most important reactions in organic chemistry. The primary alcohols can be oxidized to aldehyde or carboxylic acids, while the secondary alcohols can be oxidized to ketones. Tertiary alcohols do not have oxidative stress.
- 2- The splitting of alkenes by oxidation: through their reaction with ozone or with potassium permanganate
- 3- Friedel Crafts (acetylation) reaction
- 4- Grenard reaction

Physical state

- 1- All aldehydes and ketones are liquids at a temperature The room, except for formaldehyde, is a colorless gas.
- 2- Boiling point: The polarity of the carbonyl group makes aldehydes and ketones High polar compounds Because of this polarity it has degrees Boiling points higher than those of hydrocarbons and ethers
- 3- Solubility: Low-weight aldehydes and ketones are mixed Molecular grade in water is high



Chemical properties of aldehydes and ketones

First: oxidation

Second: Redaction

Third: Addition reactions

Fourth: (Condensation reactions) Exit of the H₂O water molecule.