

WELCOME
TO



Pharmacy

Learn and Educate



Bachelor of Pharmacy Pharmaceutical Organic Chemistry II

NOTES

- ✓ Unit 1
 - ✓ Unit 2
 - ✓ Unit 3
 - ✓ Unit 4
 - ✓ Unit 5
- All Unit
in
One PDF**

Visit our Website

WWW.fdp pharmacy.in



Bachelor of Pharmacy Pharmaceutical Microbiology

NOTES

- ✓ Unit 1
 - ✓ Unit 2
 - ✓ Unit 3
 - ✓ Unit 4
 - ✓ Unit 5
- All Unit
in
One PDF**

Visit our Website

WWW.fdp pharmacy.in



Bachelor of Pharmacy Physical Pharmaceutics I

NOTES

- ✓ Unit 1
 - ✓ Unit 2
 - ✓ Unit 3
 - ✓ Unit 4
 - ✓ Unit 5
- All Unit
in
One PDF**

Visit our Website

WWW.fdp pharmacy.in



Bachelor of Pharmacy Pharmaceutical Engineering

NOTES

- ✓ Unit 1
 - ✓ Unit 2
 - ✓ Unit 3
 - ✓ Unit 4
 - ✓ Unit 5
- All Unit
in
One PDF**

Visit our Website

WWW.fdp pharmacy.in





FDPharmacy

.....



D.Pharma B.Pharma

- 👉 PDF Notes
- 👉 Practical Manual
- 👉 Important Questions
- 👉 Assignment etc

 Download Now



www.fdpharmacy.in

PHARMACEUTICAL ORGANIC CHEMISTRY - II

UNIT 1

TOPIC :

- **Benzene and its derivatives**

Analytical, synthetic and other evidences in the derivation of structure

of benzene, Orbital picture, resonance in benzene, aromatic characters, Huckel's rule

- Reactions of benzene- nitration, sulphonation, halogenation reactivity, Friedelcrafts alkylation reactivity, limitations, Friedelcrafts acylation.
- Substituents, effect of substituents on reactivity and orientation of mono substituted benzene compounds towards electrophilic substitution reaction
- Structure and uses of DDT, Saccharin, BHC and Chloramine

Learn and Educate

Benzene Derivatives

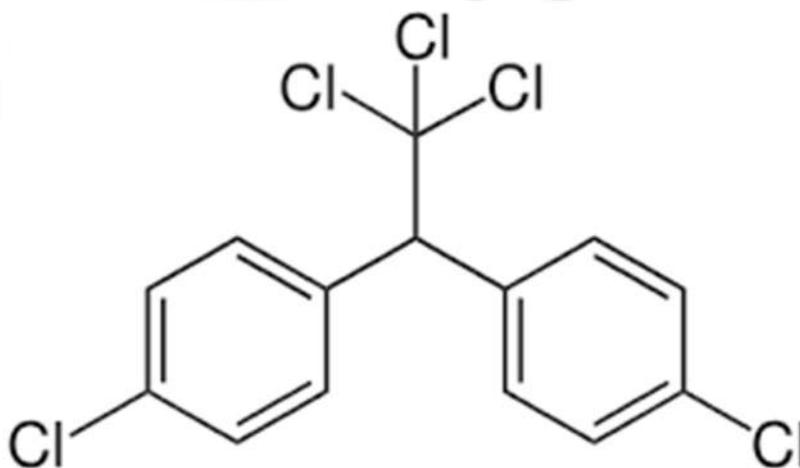
- When one or more hydrogen atoms of benzene are replaced by functional groups, the resulting compounds are called benzene derivatives.
- These derivatives retain the aromatic ring and exhibit distinct chemical and pharmaceutical properties.
- Below are four important benzene derivatives with their structure and uses:

DDT (Dichlorodiphenyltrichloroethane)

Structure:

Chemical formula: $C_{14}H_9Cl_5$

- DDT is a chlorinated aromatic hydrocarbon.
- It consists of two chlorophenyl rings and a central trichloroethane group.



Uses:

- Powerful insecticide: Used against mosquitoes, lice, and crop pests.
- Malaria and typhus control: Widely used in public health.

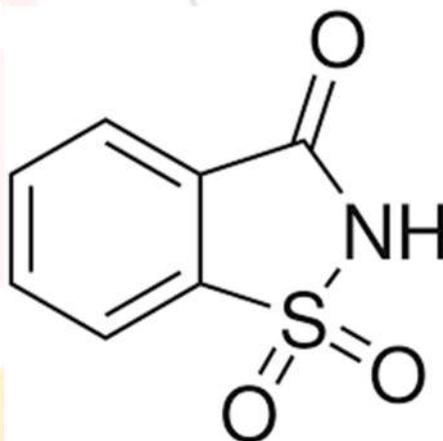
- Banned or restricted in many countries due to environmental persistence and bioaccumulation.
- Still used in some developing countries under WHO guidelines for malaria control.

Saccharin (o-Benzosulfimide)

Structure:

Chemical formula: $C_7H_5NO_3S$

- Saccharin is a benzisothiazole ring with a sulfonyl group and an imide group.
- It is a heterocyclic compound.



Uses:

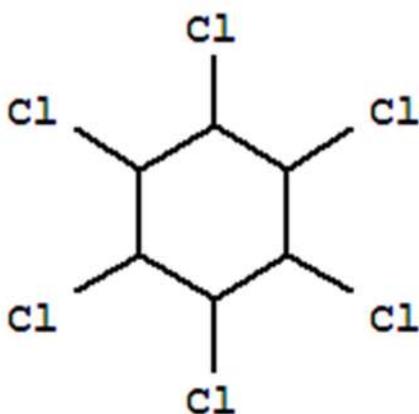
- Artificial sweetener: About 300–500 times sweeter than sucrose.
- Used in sugar-free products like:
 - Diabetic foods
 - Chewing gums
 - Toothpastes
- Non-caloric; not metabolized by the body.
- Often combined with other sweeteners to enhance taste.

BHC (Benzene Hexachloride) or Lindane

Structure:

Chemical formula : $C_6H_6Cl_6$

- BHC is an organochlorine compound, obtained by chlorinating benzene in the presence of sunlight or UV light.
- Consists of a hexachlorinated cyclohexane ring.
- Multiple isomers are formed; the γ -isomer is called Lindane, which is biologically active.



Uses:

- Insecticide: Effective against lice, ticks, fleas, and termites.
- Used in agriculture to treat seeds, soils, and crops.
- Medicinal use: Topical treatment for scabies and head lice (limited due to toxicity concerns).
- Banned or restricted in many countries due to toxicity and environmental impact.

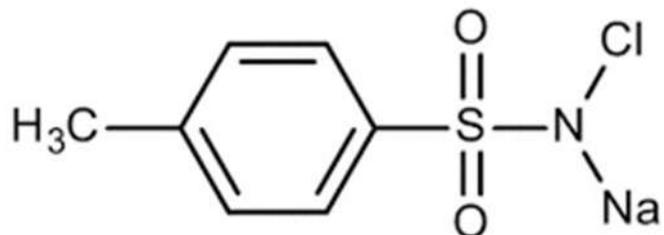
Chloramine (Chloramine-T)

Structure:

Chemical name: Sodium *p*-toluenesulfonchloramide

Chemical formula: C₇H₇ClNO₂SNa

- Contains a benzene ring substituted with:
 - Methyl group (-CH₃)
 - Sulfonyl group (-SO₂Na)
 - Chloramine group (-NCl)



Uses:

- Disinfectant and antiseptic : Used in hospitals and laboratories.
- Used for sterilization of surgical instruments, skin antiseptic.
- Employed in water purification (kills bacteria and viruses).
- Also used in iodination reactions in organic chemistry (oxidizing agent).