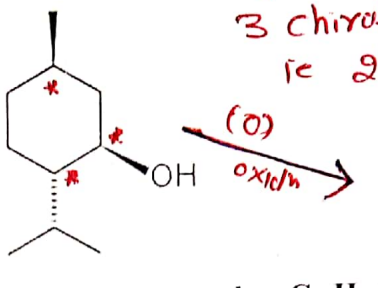
Ashutosh -223

UNIT -4

MENTHOL

3 chiral centres
ie $2^n \Rightarrow 2^3 = 8$ optical Isomers



2 chiral Centres
ie $2^2 = 4$ optical Isomers

2-Isopropyl-5-methylcyclohexanol or $C_{10}H_{20}O$ — Menthone

SOURCES - Ashutosh Kar-224

- The essential oil acquired from various *Mentha* species frequently comprises menthol as chief component (40-85%).
- Menthol is an organic compound made synthetically or obtained from the oils of peppermint (*Mentha piperita*), corn mint, or other mints.
- The *Mentha* species have extraordinary menthol contents are ***Mentha arvensis* named as Japanese mint** (80-85%) and ***Mentha piperata* recognized as American peppermint** (50-55%). These species characterize the supreme economical resource for extraction and crystallization of menthol. Mint plants will be harvest at flowering stage and processed using hydro distillation process to produce essential oil.

PROPERTIES ⇒

- It is a waxy, crystalline substance, clear or white in color, which is solid at room temperature and melts slightly above. The main form of menthol occurring in nature is (−)-menthol.
- Menthol has local anesthetic and counterirritant qualities, and it is widely used to relieve minor throat irritation.
- Menthol also acts as a weak kappa opioid receptor agonist.

ISOLATION

(Ref. M. K. Gupta pg 205)

STRUCTURE ELUCIDATION

(Ref. M. K. Gupta pg 206).

Use. Ref Kokatte

Identification/Analysis ⇒

(1) By TLC method ⇒ menthol ⇒ solute
⇒ Stationary phase = Silica Gel G
⇒ M. Phase ⇒ 100% Chloroform
Detecting Agent ⇒ 1% Vanillin-H$_2$SO$_4$
Rf ⇒ 0.48 – 0.62