

HALOALKANES AND HALOARENES

CHEMISTRY, CLASS-XII, UNIT-10

Topic :- Optical Isomerism Continued..

Lecture-10 , 03-07-2020

Diastereomers :- The stereoisomers which are non-superimposable and do not bear mirror-image relationship are called diastereomers.

Characteristics of Diastereomers

- i) The diastereomers have different physical properties such as melting points, boiling points, densities, solubilities and values of specific rotation.
- ii) They can be separated from one another by physical means like fractional distillation, fractional crystallization, chromatography etc.
- iii) They exhibit similar but not identical chemical behaviour.

* A mixture containing two enantiomers in equal proportions will have zero optical rotation, as the rotation due to one isomer will be cancelled by the rotation due to the other isomer.

Such a mixture is known as Racemic mixture or Racemic modification.

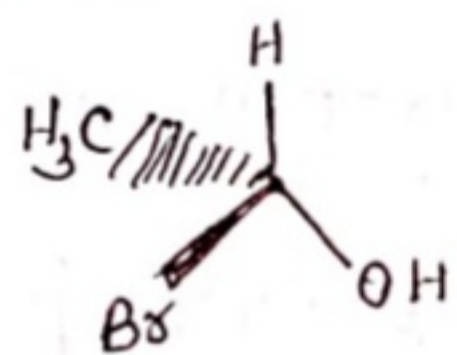
* A racemic mixture is represented by prefixing dl or (\pm) before the name.

For example, (\pm) butan-2-ol.

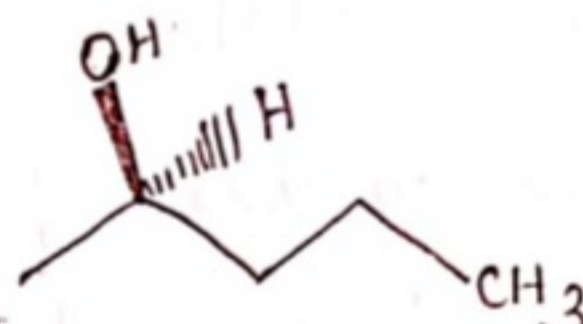
* The process of conversion of enantiomers into a racemic mixture is known as racemisation.

* The process of separation of enantiomers from a racemic mixture is called resolution.

example 10.8

(i)  is chiral due to presence of one chiral carbon.

ii) Other is achiral molecule.

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iii) $\text{H}_3\text{C} - \underset{\text{Br}}{\text{CH}} - \text{CH}_2 - \text{CH}_3$

chiral molecule.

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To be continued in next lecture..