ISOMERISM

A T A G L A N C E

ISOMERISM

STRUCTURAL ISOMERS

Same molecular formula - different structural formula

STEROISOMERS

Same structural formula, different arrangement of groups in space.

OPTICAL ISOMERS

Groups fixed in different space as a result of the asymmetry of the structure. Non-superimposable mirror images of each other.

STEREOISOMERISM

GEOMETRICAL ISOMERISM

- a form of stereoisomerism
- found in alkenes
- occurs due to the restricted rotation of C=C double bonds
- doesn’t occur with single bonds because they can rotate
- the two forms are known as CIS and TRANS
- doesn’t occur when two similar groups / atoms are on the same end of the double bond

OPTICAL ISOMERISM

- a form of stereoisomerism
- the different forms are known as optical isomers or enantiomers
- occurs when compounds have an asymmetric carbon atom
- occurs when compounds have 4 different groups attached to the same carbon
- TWO isomers which are non-superimposable mirror images of each other
- isomers differ in their reaction to plane-polarised light
- one isomer rotates light to the right - DEXTROROTATORY
- the other rotates light to the left - LAEVOROTATORY
- rotation of light is measured using a polarimeter
- rotation is measured by observing the polarised light coming towards the observer
- an 50-50 mixture of the two enantiomers is a racemic mixture