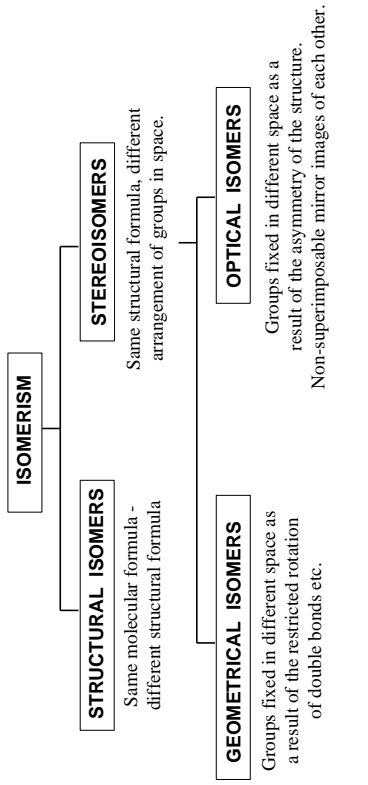


# ISOMERISM

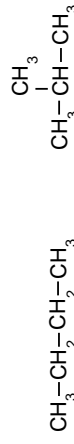
## AT A GLANCE



**STRUCTURAL ISOMERISM** can occur due to variations in ...

• the carbon skeleton

*butane and 2-methylpropane*

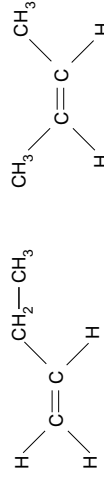


• positions of a functional group on a chain

*1-chloropropane and 2-chloropropane*

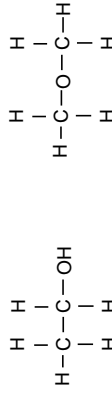


*but-1-ene and but-2-ene*



• functional group

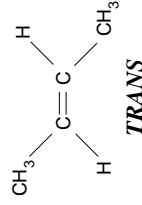
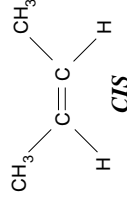
*acids and esters  
alcohols and ethers*



## STEREISOISMERISM

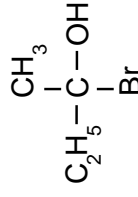
### GEOMETRICAL ISOMERISM

- 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

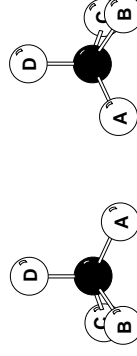


### OPTICAL ISOMERISM

- 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