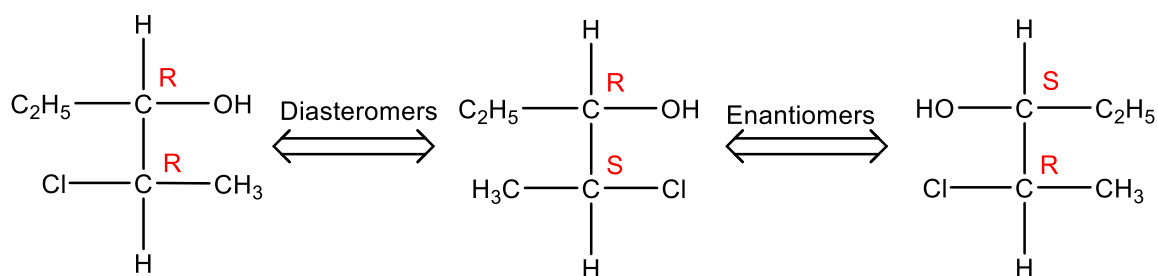


## What is the difference between enantiomers and diastereomers?

Enantiomers and diastereomers are both types of stereoisomers, which are isomers that have the same molecular formula but different spatial arrangements of atoms in three-dimensional space.

The main difference between enantiomers and diastereomers is that enantiomers are mirror images of each other, while diastereomers are stereoisomers that are not mirror images.



Enantiomers have the same physical and chemical properties, with the exception of their ability to rotate plane-polarized light. Enantiomers rotate plane-polarized light in opposite directions; one is dextrorotatory, the other is levorotatory. They also differ in their interactions with chiral environments.

Diastereomers, on the other hand, have different physical and chemical properties and don't rotate plane-polarized light. They can differ in chemical reactivity, melting and boiling points, and solubility. They also do not interact differently with chiral environments like enantiomers do.

Enantiomers are a special type of diastereomers where all stereogenic centers in the molecule have the same configuration. Diastereomers have different configurations at least at one of the stereogenic centers.

A compound with multiple chiral centers can have multiple enantiomers and diastereomers depending on the configuration of each center.