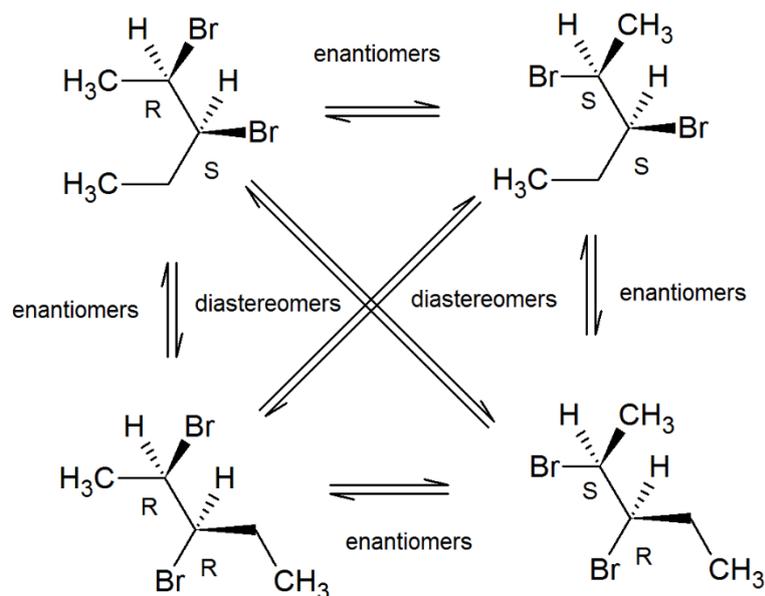


## Answer on Question #57404 – Chemistry – General Chemistry

### Question:

a) Draw the enantiomers for 2, 3-dibromopentane. Identify at least one pair of diastereomers among these structures. Can it form mesoform? State the reason for your answer.

### Answer:



(R,S)-2,3-dibromopentane, (S,S)-2,3-dibromopentane, (S,R)-2,3-dibromopentane, and (R,R)-2,3-dibromopentane are enantiomers. Two pairs of diastereomers can be identified among these structures: (S,S)-2,3-dibromopentane with (R,R)-2,3-dibromopentane, and (R,S)-2,3-dibromopentane with (S,R)-2,3-dibromopentane. There are also two mesoforms: (R,S)-2,3-dibromopentane with (S,R)-2,3-dibromopentane.

### Question:

b) Explain one application each for the study of paramagnetic and diamagnetic substances using magnetic susceptibility measurements. Comment on their dependence of these values of temperature.

### Answer:

Paramagnetic materials have a small, positive susceptibility to magnetic fields. On the contrary, diamagnetic materials have negative magnetic susceptibility. Magnetic susceptibility decays hyperbolical with the increase of temperature for paramagnetic materials; magnetic susceptibility for the diamagnetic materials remains constant with the change of temperature.