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Amines Learning Objectives

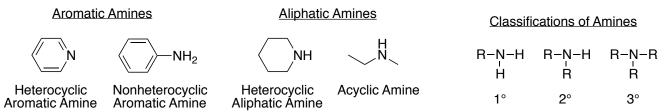
As we study this chapter, you should...

1) Know that an sp³ hybridized nitrogen can be a stereocenter. However, rapid inversion usually results in racemization when the nitrogen is the only stereocenter in the molecule.

2) Understand that amines are weak bases, but more basic than most *neutral* organic functional groups.

$$R^{(1)}$$
 $R^{(2)}$ $R^{(3)}$ $R^{(4)}$ $R^{($

3) Understand that amines come in various forms, such as:



4) Understand that an amine with four bonds is known as a quaternary ammonium ion. The nitrogen of a quaternary ammonium ion can be a stereocenter and cannot undergo inversion.

$$\begin{array}{c|c} H & H \\ \downarrow & \downarrow \\ R_1 & R_2 & R_2 \\ \end{array}$$
enantiomers

5) Know that amines can form hydrogen bonds, but these H-bonds are weaker than the H-bonds in alcohols.

6) Understand that the greater the alkyl substitution on an amine nitrogen, the greater is its basicity.

