

- Name the typical reactions that take place with amines.
- Describe heterocyclic amines.

$$\text{R}-\ddot{\text{N}}-\text{R} + \text{H}_2\text{O} \rightleftharpoons \left[\begin{array}{c} \text{H} \\ | \\ \text{R}-\text{N}-\text{R} \\ | \\ \text{R} \end{array} \right]^+ + \text{OH}^-$$
$$\text{CH}_3\text{NH}_2(\text{aq}) + \text{H}_2\text{O} \rightleftharpoons \text{CH}_3\text{NH}_3^+(\text{aq}) + \text{OH}^-(\text{aq})$$

Methylamine Methylammonium
ion

$$\text{CH}_3(\text{CH}_2)_6\text{NH}_2(l) + \text{HNO}_3(aq) \longrightarrow \text{CH}_3(\text{CH}_2)_6\text{NH}_3^+\text{NO}_3^-(aq)$$

Octylamine Octylammonium nitrate
(insoluble) (soluble)

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