

CAIE Chemistry A-level

19: Nitrogen Compounds Definitions

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Definitions and Concepts for CAIE Chemistry A-level Nitrogen Compounds

Aldehyde: A compound containing the -CHO functional group at the end of an alkyl chain. Aldehydes can be oxidised to carboxylic acids by heating them under reflux with $\text{Cr}_2\text{O}_7^{2-}/\text{H}^+$.

Amines: Compounds that contain the NR_3 functional group (where R could be hydrogen atoms or alkyl chains). Amines are basic as the nitrogen atom has a lone pair of electrons that can accept a proton. In a reaction between amines and dilute acids, salts are formed.

Carboxylic acid: An organic compound containing the -COOH functional group.

Catalysts: Increase the rate of reaction by providing an alternative reaction route with a lower activation energy. A catalyst does not affect the equilibrium constant since it increases the rate of the forward and backward reaction equally.

Halogenoalkane: A saturated molecule where one or more of the hydrogen atoms in an alkane have been substituted for a halogen.

Hydroxynitrile: A molecule which has a carbon bonded to both a nitrile (-CN) and hydroxy (-OH) functional group.

Ketone: A compound containing the C=O functional group within an alkyl chain. Ketones cannot be oxidised further.

Nitrile: A molecule containing the functional group -CN .

Primary amine: An organic compound that contains the functional group RNH_2 (where R is an alkyl chain).

Secondary amine: An organic compound that contains the functional group R_2NH (where R is an alkyl chain).

Tertiary amine: An organic compound that contains the functional group R_3N (where R is an alkyl chain).

