## Consortium for Educational Communication

## Summary

Alcohols are the organic compounds characterized by one or more hydroxyl (–OH) groups attached to a carbon atom of an alkyl group (hydrocarbon chain). Alcohols may be considered as organic derivatives of water (H<sub>2</sub>O) in which one of the hydrogen atoms has been replaced by an alkyl group, typically represented by R in organic structures. For example, in ethanol (or ethyl alcohol) the alkyl group is the ethyl group, –CH<sub>2</sub>CH<sub>3</sub>.

Alcohols are among the most common organic compounds. They are used as sweeteners and in making perfumes, are valuable intermediates in the synthesis of other compounds, and are among the most abundantly produced organic chemicals in industry. Perhaps the two bestknown alcohols are ethanol and methanol (or methyl alcohol). Ethanol is used in toiletries, pharmaceuticals, and fuels, and it is used to sterilize hospital instruments. It is, moreover, the alcohol in alcoholic beverages. The anesthetic ether is also made from ethanol. Methanol is used as a solvent, as a raw material for the manufacture of formaldehyde and special resins, in special fuels, in antifreeze, and for cleaning metals.

Alcohols may be classified as primary, secondary, or tertiary, according to which carbon of the alkyl group is bonded to the hydroxyl group. Most alcohols are colourless liquids or solids at room temperature. Alcohols of low molecular weight are highly soluble in water; with increasing molecular weight, they become less soluble in water, and their boiling points, vapour pressures, densities, and viscosities increase.