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1a CH_3OCH_3 - Methoxymethane

$CH_3CH_2OCH_2CH_3$ - Ethoxyethane

$(CH_3CH_2CH_2CH_2)_2O$ - Ethoxypropane

$CH_3CH_2OCH_3$ - Ethyl methyl ether / Methoxyethane

$CH_3CH_2CH_3OCH_2CH_3$ - Ethyl propyl ether

properties of esters

The lower members of esters are gases or volatile liquid and their vapours are highly inflammable. Their boiling point is lower than those of the alcohols containing the same number of carbon atoms. Esters are less dense than water and are not very soluble, but their solubility is very much increased in the presense of small amounts of alcohol.

3 Esters can be prepared by addition of alcohols to alkenes in the presence of acid eg

$Me_2C=CH_2 + H^+ \overset{H_2SO_4}{\rightleftharpoons} Me_3C^+ \overset{EtOH}{\rightleftharpoons} Me_3C-O(H)Et \xrightarrow{-H} Me_3COEt$

Esters are produced when sodium or potassium alkoxide is heated with an alkyl halide. Eg

$Na^+[C_2H_5O^-\ CH_3-O-SO_3CH_3 \rightarrow C_2H_5OCH_3 + CH_3OSO_3^-Na^+$

4 Esters are used for the following

- As an organic solvent
- For explosives (Nitrate esters)
- polyesters are used to make plastics
- To manufacture detergents etc.