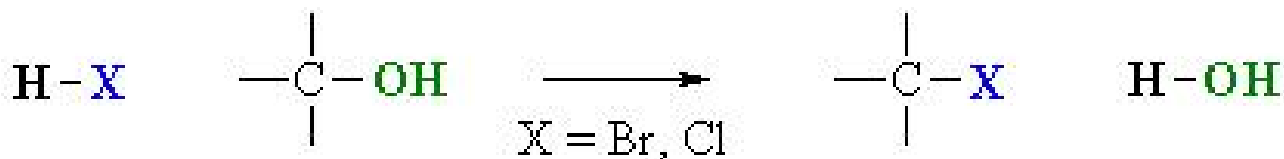


The Reactions of Alcohols

Substitution with HX

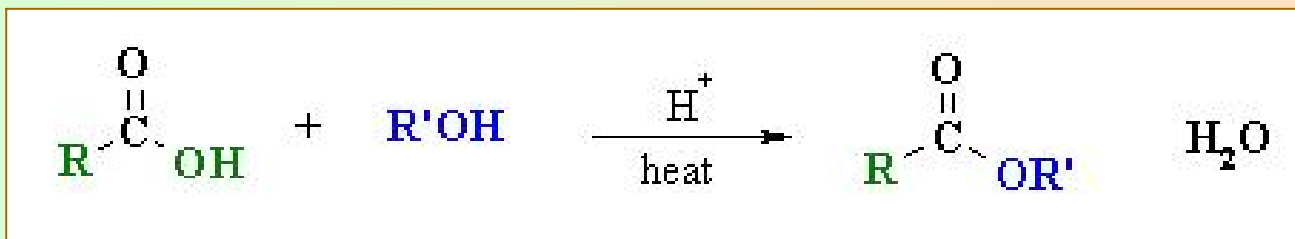
When treated with HBr or HCl alcohols typically undergo a nucleophilic substitution reaction to generate an alkyl halide and water.



The Reactions of Alcohols

Conversion to esters

Esters are obtained by refluxing the parent carboxylic acid with the appropriate alcohol with an acid catalyst.

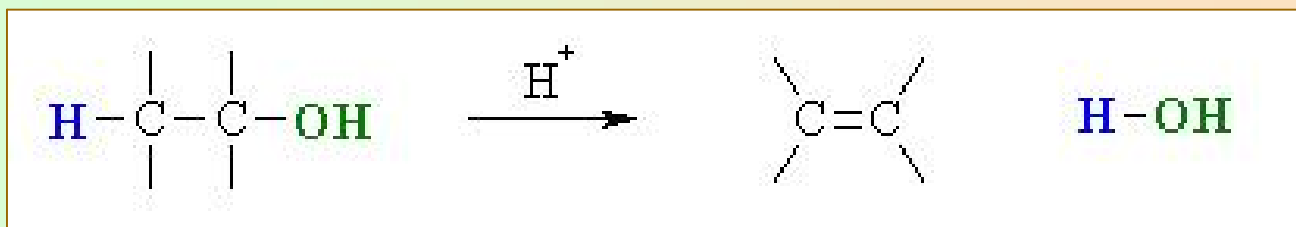


The Reactions of Alcohols

Dehydration (elimination)

When heated with strong acids catalysts (most commonly H_2SO_4 , H_3PO_4), alcohols typically undergo a 1,2-elimination reactions to generate an alkene and water.

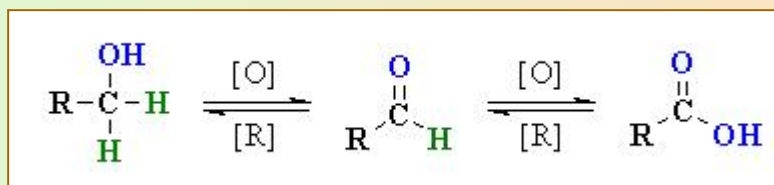
The major product is usually the more highly substituted alkene (Zaitsev's Rule).



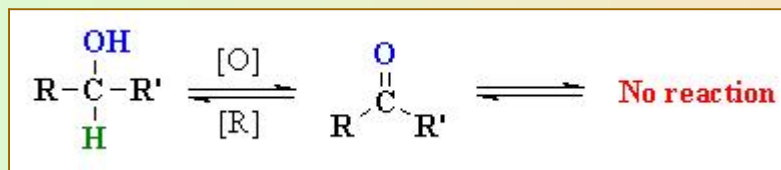
The Reactions of Alcohols

Oxidation

- Primary alcohols can be oxidised to aldehydes or further to carboxylic acids



- Secondary alcohols can be oxidised to ketones *but* no further



- Tertiary alcohols cannot be oxidised

