# Esters – Unit 1 Chemistry

Esters are compounds formed by reactions between a carboxylic acid and an alcohol. The type of reaction is a condensation reaction, due to the elimination of a $H_2O$ molecule from the reactants. This reaction is also known as an esterification reaction.

Eg: $CH_3COOH_{(aq)}$ + $CH_3OH_{(aq)}$ → $CH_3COOCH_{3(aq)}$ + $H_2O_{(l)}$

Ethanoic Acid + Methanol → Methylethanoate + Water

An ester has an ester linkage where the two reactants bond.

"Structural Reaction"

## Naming of Esters

When naming esters the name is back to front when compared with the structure. The first part of the name is derived from the alcohol used in the reaction, and the second part is derived from the carboxylic acid. The "oate" at the end of the name means ester!

The structure though is drawn with the carboxylic group first and the alcohol group 2nd.

http://www.youtube.com/watch?v=MQYEP2v2Or0

http://www.youtube.com/watch?v=NKSd2RJolNA

Fill in the following table:

| Carboxylic Acid<br><br>Structure + Name | Alcohol<br><br>Structure + Name | Ester<br><br>Structure + Name |
|---|---|---|
| Methanoic Acid | Methanol | |
| Ethanoic Acid | Ethanol | |
| Propanoic Acid | Methanol | |
| Butanoic Acid | 1-Propanol | |
| Pentanoic Acid | 1-Butanol | |

| | | |
|---|---|---|
| Ethanoic Acid | 1-Propanol | |

When doing reactions that form esters do not forget to include the $H_2SO_4$ as a catalyst. As well do not forget the water molecule as a product.

Complete the following:
Practice problem 10
Read 7.5 Sources and uses of Organic chemicals, page 295-298
Complete
7.5 Quick quiz and 7.5 Exercise Q1-6