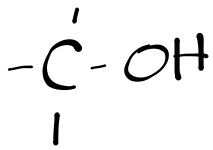
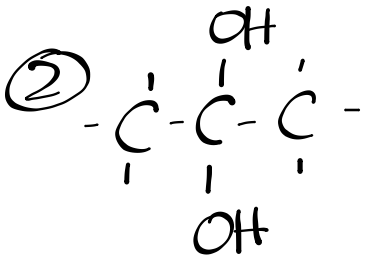
Warm Up

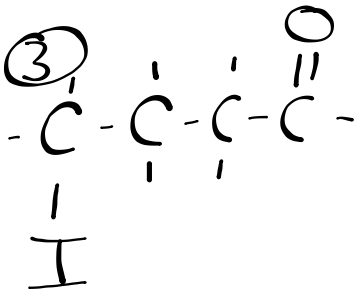
Name the following compounds:

1. 

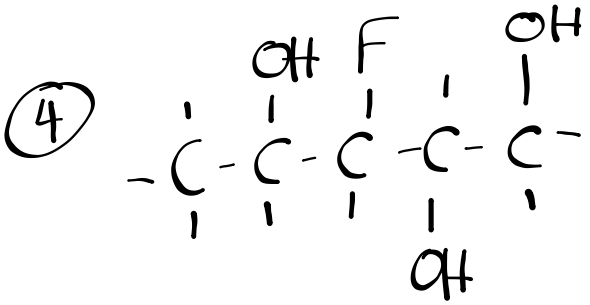
methanol

2. 

2,2-propanediol

3. 

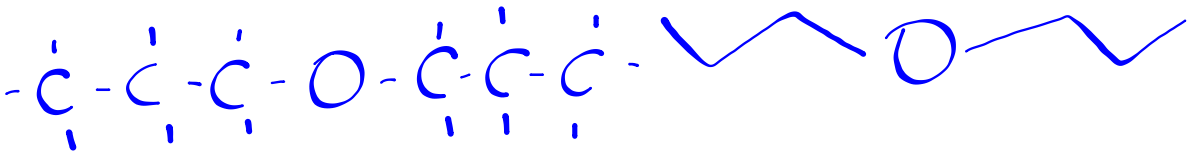
4-iodobutanal

4. 

3-fluoro-1,2,4-pentanetriol

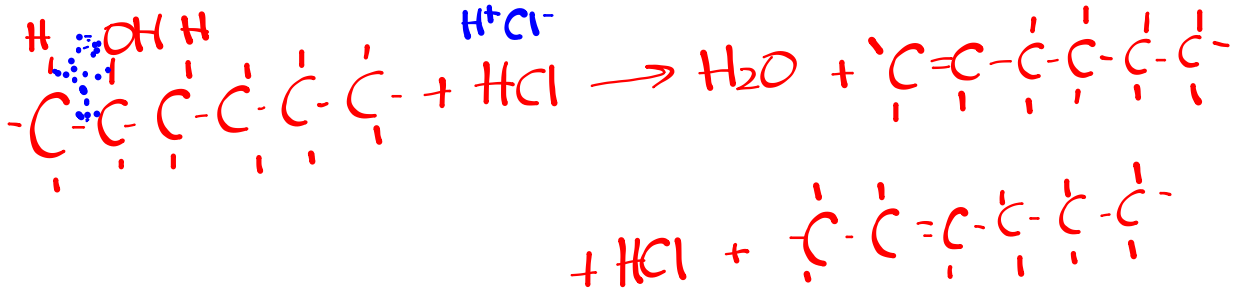
Alcohols and Ethers Worksheet

1.f) dipropyl ether (R-O-R')



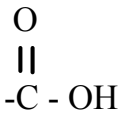
ELIMINATION

c) 2-hexanol + HCl → water + 1-hexene + hydrogen chloride + 2-hexene



Carboxylic Acids

Carboxylic Acid - contain a carbonyl and a hydroxyl functional group together (**carboxyl group**)

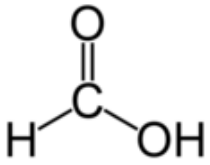


or - COOH ← **this is how it is often written**

- small carboxylic acids mix with water but large carboxylic acids do
- give a positive litmus test (blue to red).

Naming
- carboxylic acids are named by replacing the "e" in the alkane name by oic and adding acid.
- compounds with more than one carboxyl group are usually identified with a common name.

Ex.



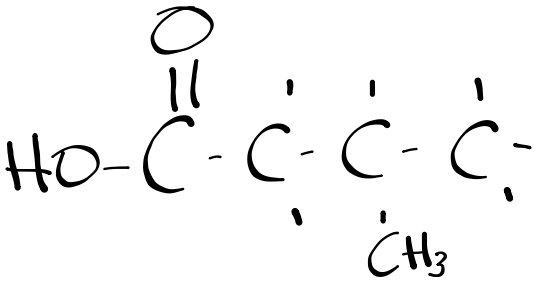
methanoic acid

SAMPLE PROBLEM - Name the following:

(a) $CH_3 - C - OH$ (O)

(b) $CH_3CH_2CH_2 - C - OH$ (O)

(c) propanoic acid (d) pentanoic acid



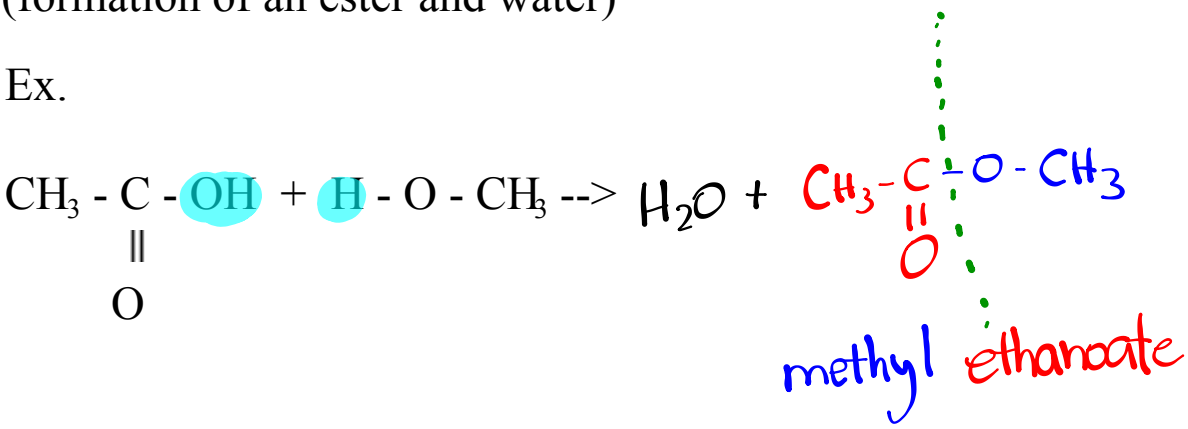
butanoic acid

Reactions

Condensation Reaction:
a carboxylic acid combines with another compound to produce an organic compound and a second product (such as water)

A condensation reaction between a carboxylic acid and an alcohol is called esterification.
(formation of an ester and water)

Ex.



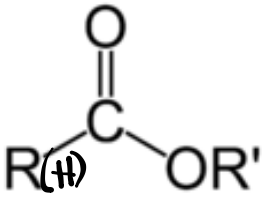
water **replaces hydroxyl group**

Uses of Carboxylic Acids

Carboxylic acids are found in foods (vinegar), sting/poison treatment, and are used in the preparation of many other chemicals.

Esters

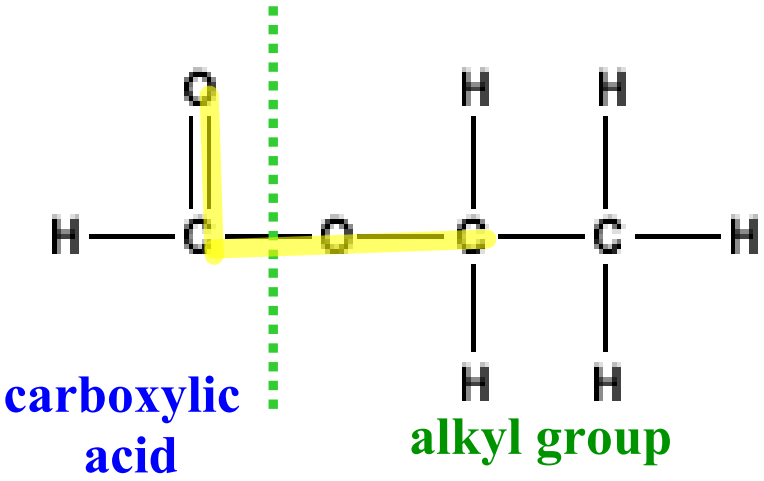
General Formula for ester:



-the functional group is similar to the carboxylic acid functional group but with the H of the carboxyl group replaced with a hydrocarbon branch (R)

Naming esters - two parts

I. name the alkyl group in the alcohol used in the esterification.
II. name of the acid but change the " oic acid " to oate.



ethyl methanoate

Uses of Esters

Esters are often used as adhesives, perfumes, flavourings and painkillers.

Worksheet