

## Outcome 2 - Hydrocarbon Derivatives and Organic Reactions

### Part 1 - Organic Halides, Alcohols and Carboxylic Acids

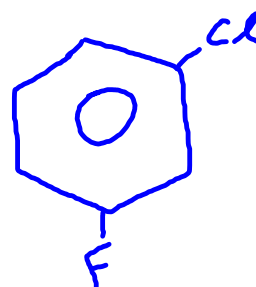
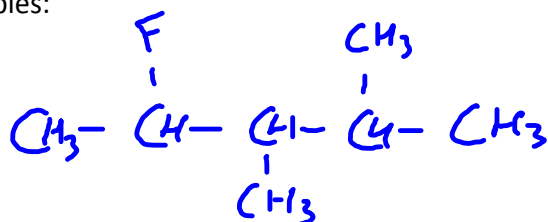
#### Organic Halides (pg 417-418)

- An organic halide is an organic compound which has had a hydrogen replaced by a halogen atom
- The halogen atom serves as the functional group
- A functional group is an atom or group of atoms that determines the main characteristics of a compound
- Organic halides are also known as alkyl halides or halogenated hydrocarbons
- Organic halides include many common products
  - Freons (chloroflourocarbons – CFC's) found in air conditioners and refrigerators
  - Teflon used in cookware
- Many are also toxic and carcinogenic
  - DDT (dichlorodiphenyltrichloroethane)

#### Naming Organic Halides

- Follows the same format as branched chain hydrocarbons
- Branch names are shortened from the atom name to fluoro-, chloro-, bromo- or iodo-  
*fluoro*
- Numbers are still used to indicate where the branch is located on the parent chain

Examples:



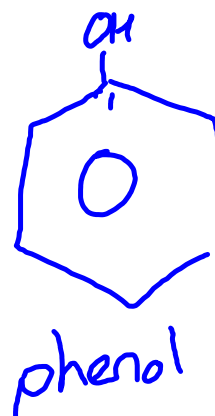
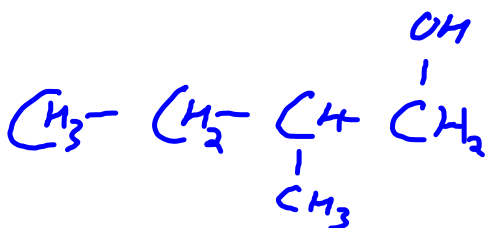
## Alcohols (pg 425-427)

- Alcohols are organic compounds that contain a hydroxyl (-OH) group
- The hydroxyl group is the functional group for alcohols
- Alcohols have
  - high solubility in water compared to hydrocarbons (why?)
  - higher boiling points than hydrocarbons with the same number of carbons (why?)

### Naming Simple Alcohols

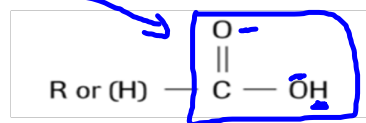
- Find the longest chain including the functional group
- Name branches the same way as with alkanes
- Use the correct prefix for number of carbons in the chain
- Change the ending to *-ol* instead of *-e*
- Place the number of the carbon that the hydroxyl is attached to between the an and ol of the name

Examples:



## Carboxylic Acids (pg 436-438)

- Carboxylic acids contain the carboxyl functional group
- The carboxyl group is always at the end of a carbon chain
- Have acidic properties and occur naturally in many foods that are sour
- Are very soluble and have high boiling points



## Naming Carboxylic Acids

- Count the number of carbons in the carboxylic acid
- Name it as an alkane, then drop the *-e* ending and add *-oic acid*
- If there are branches, name them as you normally would

Examples:

