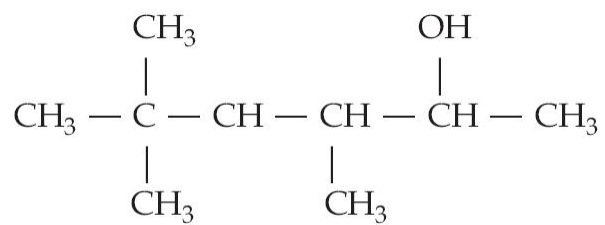
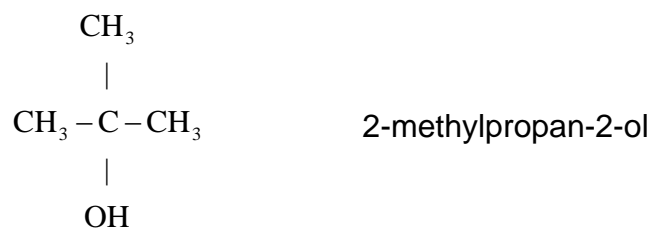
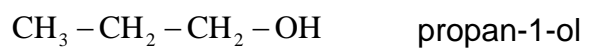


Alcohols and Acids

Alcohols

- General formula: R-OH
- The position of the –OH (hydroxyl) group is given in the name (except methanol and ethanol)
 - Methanol: CH₃-OH
 - Ethanol: CH₃-CH₂-OH
- The name ends with “ol”

Examples



3,5,5-trimethylhexan-2-ol

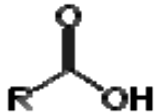
Uses of Various Alcohols

- Methanol (methyl alcohol, wood alcohol)
 - Used as an antifreeze, solvent, and at one point mixed with gasoline
 - Cannot be used as a normal fuel for cars because it corrodes aluminum and steel very quickly
 - Formula one race cars that burn pure methanol have engine parts made of Teflon®

- Ethanol (ethyl alcohol, grain alcohol)
 - Alcohol in alcoholic beverages
 - Used in modern thermometers
 - Is used as a fuel additive (up to 10% in Manitoba)
 - Ethanol has a lower fuel density than gasoline does, meaning you need more of it to travel the same distance
 - Used as a solvent in many consumer products
 - Mouthwash, cosmetics

- 2-propanol (isopropyl alcohol, rubbing alcohol)
 - Antiseptic
 - Cleaning fluid
 - Electronics, LCD screens, eye glasses, whiteboards, most fabrics...
 - Preserving biological specimens

Acids

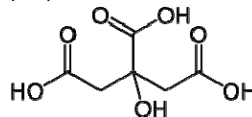
- General formula: 
 - May be simplified to R-COOH
- The suffix “oic” is used
- The carbon in the group is counted in the chain, so...
 - HCOOH is methanoic acid
 - CH₃COOH is ethanoic acid

Some Common Organic Acids

- Methanoic acid, formic acid (CHOOH)
 - Found in the venom of bee and ant stings
 - Used as a preservative and antibacterial agent in livestock feed
 - Used to process organic latex (sap) into raw rubber.
 - It is of minor importance in the textile industry and for the tanning of leather.
 - It is the active ingredient in some brands of household limescale remover

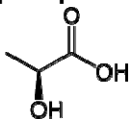
- Ethanoic acid, acetic acid (CH_3COOH)
 - The major use of acetic acid is for the production of vinyl acetate monomer (VAM)
 - Vinegar (acetic acid solutions of typically 5% to 18% acetic acid by mass)
 - Solvent
 - Used in a stop bath during the development of photographic films
 - Descaling agents to remove limescale from taps and kettles
 - Treating the sting of the box jellyfish

- 2-hydroxypropane-1,2,3-tricarboxylic acid, Citric acid ($C_6H_8O_7$)



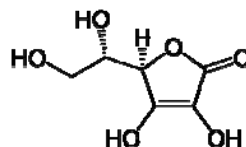
- Naturally found in citrus fruits
- Flavoring and preservative in food and beverages
- Useful in soaps and laundry detergents
 - Allows the soap to foam and work better without water softener
- Shampoo
 - When applied to hair, citric acid opens up the cuticle
 - While the cuticle is open, it allows for deeper penetration of the cleaning agents

- 2-hydroxypropanoic acid, lactic acid ($C_3H_6O_3$)



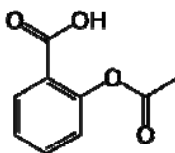
- primarily found in sour milk products
 - yogurt, some cottage cheeses
- found in various processed foods
 - usually either as a pH-adjusting ingredient, or as a preservative
- widely used for reducing the number of pathogenic bacteria like E.coli, Salmonella, Campylobacter, and Listeria on animal carcasses like beef, pork, and poultry during the slaughtering process

- (5R)-[(1S)-1,2-dihydroxyethyl]-3,4-dihydroxyfuran-2(5H)-one, Ascorbic acid ($C_6H_8O_6$)



- Used as a reductant in photographic developer solutions (among others)
- Preservative
- Vitamin C

- 2-acetoxybenzoic acid, Acetylsalicylic acid ($C_9H_8O_4$)



- Aspirin®
- Non-steroidal anti-inflammatory drug (NSAID)
 - Pain killer
 - Reduces fever and pain without impairing consciousness
 - Reduces inflammation