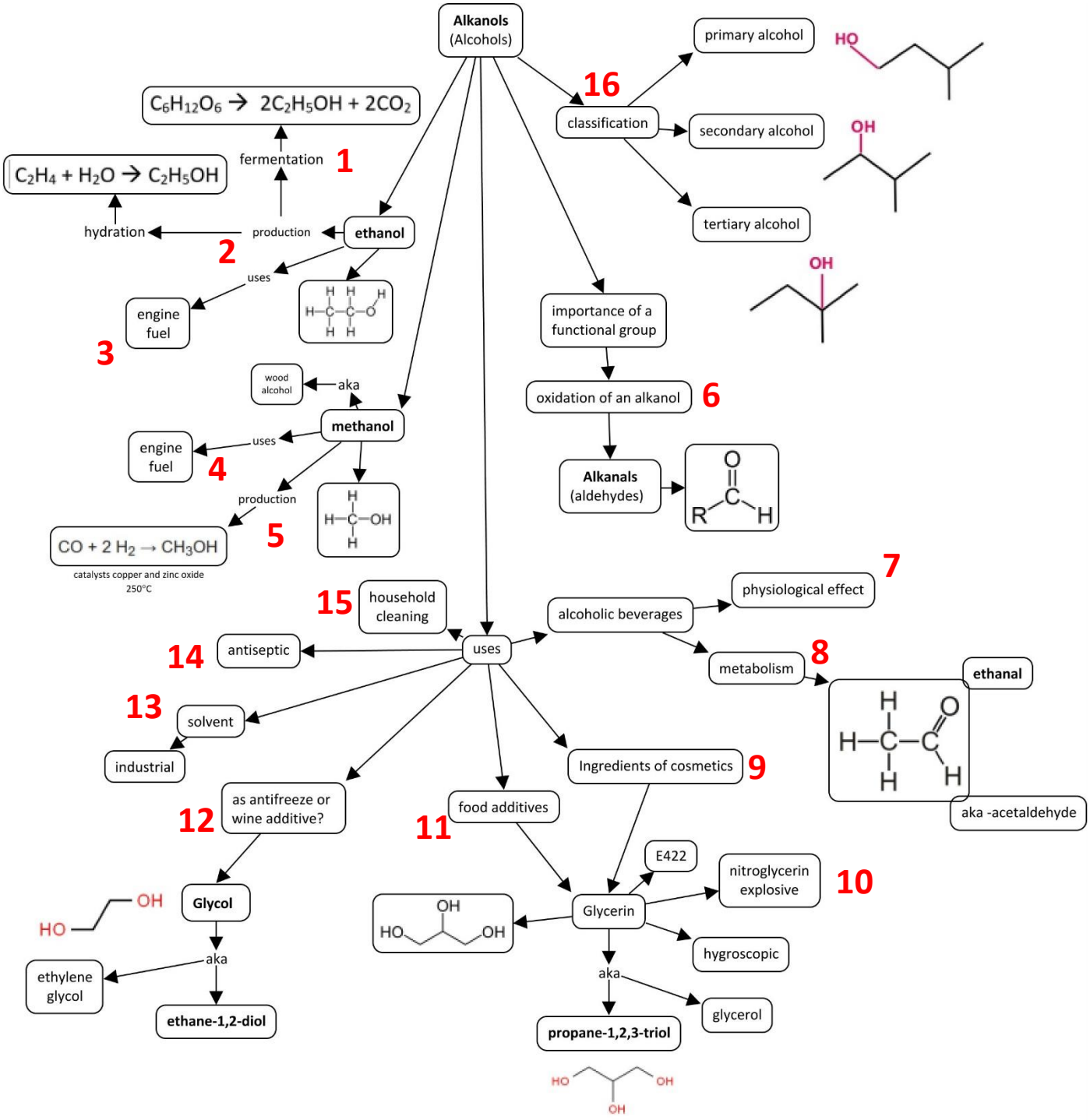
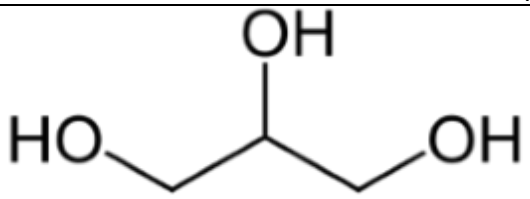
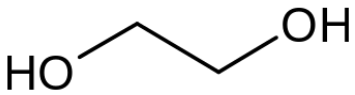
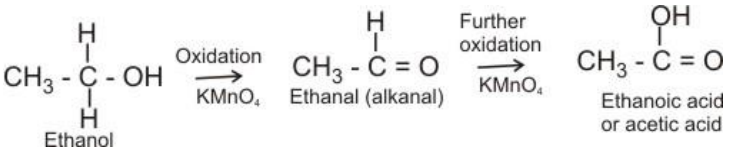
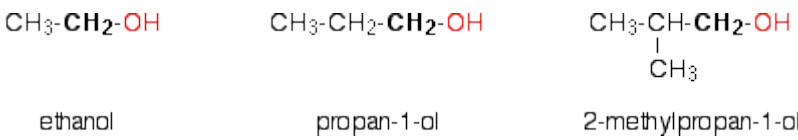
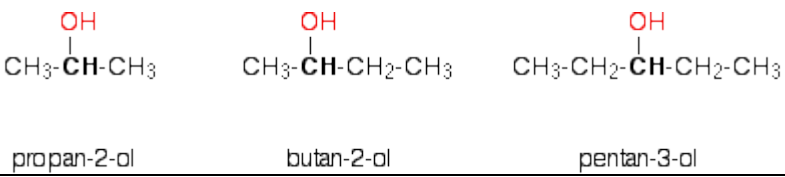
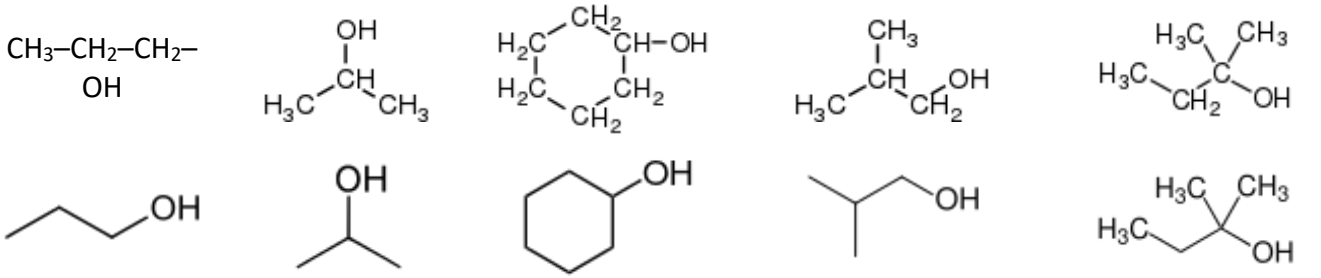

Alkanols
(Alcohols)
16
classification
primary alcohol
secondary alcohol
tertiary alcohol
HO
OH
OH
$C_6H_{12}O_6 \rightarrow 2C_2H_5OH + 2CO_2$
fermentation
1
$C_2H_4 + H_2O \rightarrow C_2H_5OH$
hydration
production
ethanol
2
uses
engine fuel
3
importance of a functional group
oxidation of an alkanol
6
Alkanals
(aldehydes)
wood alcohol
aka
methanol
uses
engine fuel
4
production
$CO + 2\ H_2 \rightarrow CH_3OH$
catalysts copper and zinc oxide
250°C
5
7
physiological effect
alcoholic beverages
metabolism
8
ethanal
aka -acetaldehyde
15
household cleaning
14
antiseptic
uses
13
solvent
industrial
Ingredients of cosmetics
9
12
as antifreeze or wine additive?
11
food additives
Glycol
aka
ethylene glycol
ethane-1,2-diol
E422
Glycerin
nitroglycerin explosive
10
hygroscopic
aka
glycerol
propane-1,2,3-triol

alcohol	any organic compound in which the hydroxyl functional group (–OH) is bound to a carbon
aldehyde group	old name for alkanal
alkanal	an organic compound containing a functional group with the structure −CHO, consisting of a carbonyl (C=O) centre with the carbon atom also bonded to hydrogen and to an R group
alkane	any saturated aliphatic (no rings) hydrocarbon with the general formula C_nH_{2n+2}
alkanol	modern name for alcohol
alkene	Any of a series of unsaturated, open chain hydrocarbons with one or more carbon-carbon double bonds, having the general formula C_nH_{2n} .
diol	2 -OH functional groups
dipole	A pair of electric charges (or magnetic poles), of equal magnitude but of opposite sign or polarity, separated by a small distance.
ethane	a colourless, odourless, flammable gas, C_2H_6 , of the methane series, present in natural gas, illuminating gas, and crude petroleum: used chiefly in organic synthesis and as a fuel gas.
ethene	a colourless, flammable gas, C_2H_4 , having a sweet, unpleasant odour and taste, the first member of the alkene (ethylene) series, usually obtained from petroleum and natural gas: used as an agent to improve the colour of citrus fruits, in the synthesis of polyethylene, ethylene dibromide, ethylene oxide, and other organic compounds, and in medicine chiefly as an inhalation anaesthetic.
fermentation	$C_6H_{12}O_6 \rightarrow 2C_2H_5OH + 2CO_2$ ***glucose***
functional group	the group of atoms in a compound, such as the hydroxyl group in an alcohol, that determines the chemical behaviour of the compound
glycerin	 ethane-1,2,3-triol
glycol	 ethane-1,2-diol
homologous series	a series of organic compounds with a similar general formula, possessing similar chemical properties due to the presence of the same functional group, and shows a gradation in physical properties as a result of increase in molecular size and mass
Hydration	$C_2H_4 + H_2O \rightarrow C_2H_5OH$ ***ethene***
hydrocarbon	any of a class of compounds containing only hydrogen and carbon, as an alkane, methane, CH_4 , an alkene, ethene, C_2H_4 , an alkyne, ethyne (acetylene), C_2H_2 , or an aromatic compound, benzene, C_6H_6 .

hydrogen bond	occurs between molecules in which a hydrogen atom is attached to a strongly electronegative element: fluorine, oxygen or nitrogen
hydrophile	molecule that is attracted to water molecules and tends to be dissolved by water
hydrophobe	tending not to dissolve in, mix with, or be wetted by water
hydroxy group	entity with the formula OH. It contains oxygen bonded to hydrogen. In organic chemistry, alcohol and carboxylic acids contain hydroxy groups. The anion [OH−], called hydroxide, consists of a hydroxy group.
hygroscopic	the phenomenon of attracting and holding water molecules from the surrounding environment, which is usually at normal or room temperature.
isomer	any of two or more compounds, radicals, or ions that contain the same number of atoms of the same elements but differ in structural arrangement and properties
monohydric alcohol	an alcohol containing one hydroxyl group
oxidation	
polyhydric alcohol	any organic compound having three or more hydroxyl functional groups
primary alcohol	an alcohol which has the hydroxyl group connected to a primary carbon atom. It can also be defined as a molecule containing a "–CH_2OH" group. In contrast, a secondary alcohol has a formula "–CHROH"  ethanol propan-1-ol 2-methylpropan-1-ol the carbon atom that carries the -OH group is only attached to one alkyl group.
R	hydrocarbon Alkyl group, such as methyl, ethyl, propyl, butyl
reduction	gain of electrons
saturated	(of an organic compound) containing no double or triple bonds; having each single bond attached to an atom or group.
secondary alcohol	the carbon with the -OH group attached is joined directly to two alkyl groups, which may be the same or different.  propan-2-ol butan-2-ol pentan-3-ol
secondary alcohols	the carbon atom with the -OH group attached is joined directly to two alkyl groups
sugar alcohols	common name for polyhydric alcohol

tertiary alcohols	the carbon atom holding the -OH group is attached directly to three alkyl groups
triol	3 -OH functional groups
unsaturated	(of an organic compound) having a double or triple bond and capable of taking on elements or groups by direct chemical combination without the liberation of other elements or compounds, as ethene (ethylene), CH_2 =CH_2
Van der Waals force	A weak force of attraction between electrically neutral molecules that collide with or pass very close to each other. The van der Waals force is caused by the attraction between electron-rich regions of one molecule and electron-poor regions of another (the attraction between the molecules seen as electric dipoles).

Some examples of simple alcohols and how to name them



n-propyl alcohol, propan-1-ol, or 1-propanol	isopropyl alcohol, propan-2-ol, or 2-propanol	cyclohexanol	isobutyl alcohol, 2-methylpropan-1-ol, or 2-methyl-1-propanol	*tert*-amyl alcohol, 2-methylbutan-2-ol, or 2-methyl-2-butanol
A primary alcohol	A secondary alcohol	A secondary alcohol	A primary alcohol	A tertiary alcohol