

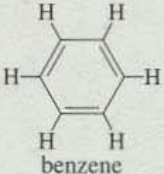
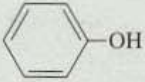


Common Organic Compounds and Functional Groups

Class of compound	General structure	Functional group	Example
alkanes	$R-H$	none	$CH_3CH_2CH_2CH_3$ butane
alkyl halides	$R-X$	$X = F, Cl, Br, \text{ or } I$	$CH_3CH_2CH_2Cl$ 1-chloropropane
alkenes	$R-CH=CH-R'$	carbon-carbon double bond	$CH_3CH_2-CH=CH_2$ 1-butene
alkynes	$R-C\equiv C-R'$	carbon-carbon triple bond	$CH_3-C\equiv C-CH_3$ 2-butyne
aromatic compounds		benzene ring, also drawn 	 benzene
alcohols	$R-OH$	hydroxyl group	CH_3CH_2-OH ethanol
phenols	$Ar-OH$	hydroxyl group on an aromatic ring	 phenol
thiols	$R-SH$	sulfhydryl group	CH_3-SH methanethiol
ethers	$R-O-R'$	oxygen between two alkyl groups	$CH_3CH_2-O-CH_2CH_3$ diethyl ether
ketones	$R-\overset{O}{\parallel}{C}-R'$	carbonyl group	$CH_3-\overset{O}{\parallel}{C}-CH_3$ acetone
aldehydes	$R-\overset{O}{\parallel}{C}-H$	carbonyl group	$CH_3CH_2-\overset{O}{\parallel}{C}-H$ propanal
carboxylic acids	$R-\overset{O}{\parallel}{C}-OH$	carboxyl group	$CH_3-\overset{O}{\parallel}{C}-OH$ acetic acid
esters	$R-\overset{O}{\parallel}{C}-O-R'$	carboalkoxy group	$CH_3-\overset{O}{\parallel}{C}-O-CH_2CH_3$ ethyl acetate
amides	$R-\overset{O}{\parallel}{C}-NH_2$	carboxamide group	$H-\overset{O}{\parallel}{C}-N(CH_3)_2$ <i>N, N</i> -dimethylformamide
amines	$R-NH_2$	amino group	$CH_3CH_2-NH_2$ ethylamine
nitriles	$R-C\equiv N$	cyano group	$CH_3CH_2-C\equiv N$ propionitrile
nitroalkanes	$R-NO_2$	nitro group	$CH_3CH_2-NO_2$ nitroethane