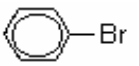
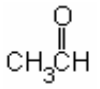
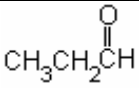
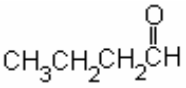
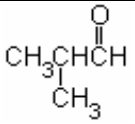
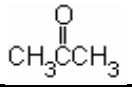
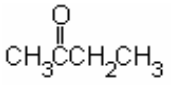
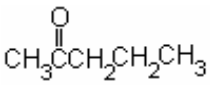
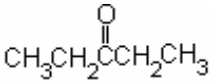
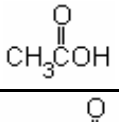
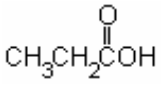
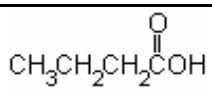
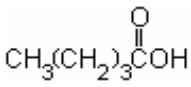
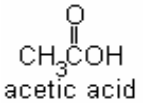
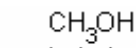
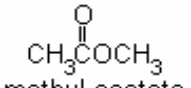
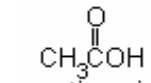
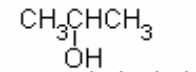
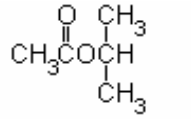
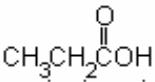
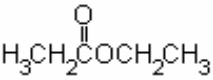
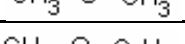
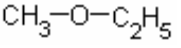
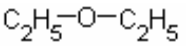
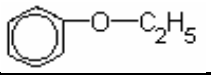
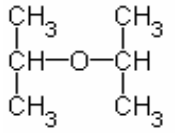
Organic Chemistry Nomenclature

Hydrocarbon	Alkyl Group	Alkyl Name
CH_4	$-CH_3$	methyl
CH_3CH_3	$-CH_2CH_3$	ethyl
$CH_3CH_2CH_3$	$-CH_2CH_2CH_3$	normal-propyl *n*-propyl
	CH_3CHCH_3 (CH$_3$ branch)	isopropyl *i*-propyl
$CH_3CH_2CH_2CH_3$	$-CH_2CH_2CH_2CH_3$	*n*-butyl
	$CH_3CH_2CHCH_3$ (CH$_3$ branch)	Secondary-butyl *sec*-butyl
	$CH_3CH(CH_3)CH_2-$	isobutyl
	$CH_3C(CH_3)_2-$	tertiary-butyl *t*-butyl

Structure	Common Name	IUPAC Name
CH_3CH_2Cl	ethyl chloride	chloroethane
CH_3CHICH_3	*iso*-propyl iodide	2-iodopropane
$CH_3C(CH_3)_2Br$	*t*-butyl bromide	2-bromo-2-methyl propane
	phenyl bromide	bromobenzene
CH_3CH_2OH	ethyl alcohol	ethanol
$CH_3CH(OH)CH_3$	isopropyl alcohol	2-propanol
$CH_3C(CH_3)_2OH$	*t*-butyl alcohol	2-methyl-2-propanol

Structural Formula	Common Name	IUPAC Name
	formaldehyde	methanal
	acetaldehyde	ethanal
	propionaldehyde	propanal
	butyraldehyde	butanal
	isobutyraldehyde	2-methylpropanal
	dimethyl ketone or acetone	propanone
	methyl ethyl ketone	butanone
	methyl *n*-propyl ketone	2-pentanone
	diethyl ketone	3-pentanone
	formic acid	methanoic acid
	acetic acid	ethanoic acid
	propionic acid	propanoic acid
	butyric acid	butanoic acid
	valeric acid	pentanoic acid

Acid	Alcohol	Ester
 acetic acid	 methyl alcohol	 methyl acetate
 acetic acid	 isopropyl alcohol	 isopropyl acetate
 propionic acid	ethyl alcohol	 ethyl propionate

Structure	Common Name
	dimethyl ether
	methyl ethyl ether
	diethyl ether
	phenoyl ethyl ether
	diisopropyl ether

NAME	NUMBER OF CARBON ATOMS	STRUCTURE	NAME	NUMBER OF CARBON ATOMS	STRUCTURE
Methane	1	CH_4	Heptadecane	17	$CH_3(CH_2)_{15}CH_3$
Ethane	2	CH_3CH_3	Octadecane	18	$CH_3(CH_2)_{16}CH_3$
Propane	3	$CH_3CH_2CH_3$	Nonadecane	19	$CH_3(CH_2)_{17}CH_3$
Butane	4	$CH_3(CH_2)_2CH_3$	Eicosane	20	$CH_3(CH_2)_{18}CH_3$
Pentane	5	$CH_3(CH_2)_3CH_3$	Heneicosane	21	$CH_3(CH_2)_{19}CH_3$
Hexane	6	$CH_3(CH_2)_4CH_3$	Docosane	22	$CH_3(CH_2)_{20}CH_3$
Heptane	7	$CH_3(CH_2)_5CH_3$	Tricosane	23	$CH_3(CH_2)_{21}CH_3$
Octane	8	$CH_3(CH_2)_6CH_3$	Triacontane	30	$CH_3(CH_2)_{28}CH_3$
Nonane	9	$CH_3(CH_2)_7CH_3$	Hentriacontane	31	$CH_3(CH_2)_{29}CH_3$
Decane	10	$CH_3(CH_2)_8CH_3$	Tetracontane	40	$CH_3(CH_2)_{38}CH_3$
Undecane	11	$CH_3(CH_2)_9CH_3$	Pentacontane	50	$CH_3(CH_2)_{48}CH_3$
Dodecane	12	$CH_3(CH_2)_{10}CH_3$	Hexacontane	60	$CH_3(CH_2)_{58}CH_3$
Tridecane	13	$CH_3(CH_2)_{11}CH_3$	Heptacontane	70	$CH_3(CH_2)_{68}CH_3$
Tetradecane	14	$CH_3(CH_2)_{12}CH_3$	Octacontane	80	$CH_3(CH_2)_{78}CH_3$
Pentadecane	15	$CH_3(CH_2)_{13}CH_3$	Nonacontane	90	$CH_3(CH_2)_{88}CH_3$
Hexadecane	16	$CH_3(CH_2)_{14}CH_3$	Hectane	100	$CH_3(CH_2)_{98}CH_3$

Families of Organic Compounds

Alkane	Alkene	Alkyne	Arene	Haloalkane	Alcohol	Ether	Amine	Aldehyde	Ketone	Carboxylic Acid	Ester	Amide
CH_3CH_3	$CH_2=CH_2$	HC≡CH		CH_3CH_2Cl	CH_3CH_2OH	CH_3OCH_3	CH_3NH_2	$CH_3\overset{O}{\overset{\|}{C}}H$	$CH_3\overset{O}{\overset{\|}{C}}CH_3$	$CH_3\overset{O}{\overset{\|}{C}}OH$	$CH_3\overset{O}{\overset{\|}{C}}OCH_3$	$CH_3\overset{O}{\overset{\|}{C}}NH$
Ethane	Ethene or Ethylene	Ethyne or Acetylene	Benzene	Chloroethane	Ethanol	Methoxy–methane	Methan-amine	Ethanal	Propanone	Ethanoic Acid	Methyl ethanoate	Ethanamid
Ethane	Ethylene	Acetylene	Benzene	Ethyl chloride	Ethyl alcohol	Dimethyl ether	Methyl-amine	Acetaldehyde	Acetone	Acetic acid	Methyl acetate	Acetamide
RH	$RCH=CH_2$ $RCH=CHR$ $R_2C=CHR$ $R_2C=CR_2$	RC≡CH RC≡CR	ArH	RX	ROH	ROR	RNH_2 R_2NH R_3N	$R\overset{O}{\overset{\|}{C}}H$	$R\overset{O}{\overset{\|}{C}}R$	$R\overset{O}{\overset{\|}{C}}OH$	$R\overset{O}{\overset{\|}{C}}OR$	$R\overset{O}{\overset{\|}{C}}NH_2$ $R\overset{O}{\overset{\|}{C}}NHR$ $R\overset{O}{\overset{\|}{C}}NR_2$
C–H and C–C bonds		–C≡C–	Aromatic Ring