Simple Organic Nomenclature

Better [thanks]

	homologous series	functional group	prefix / suffix (* = usual use)	example
	alkenes	 	suffix -ene	t t c=c ethene
O DESCRIPTION OF THE PARTY OF T	alcohols	— С— ОН 	suffix* -ol prefix hydroxy-	H H H
	haloalkanes	C halogen	prefix chloro- bromo- iodo-	H-C-C-C-CI /- Chloropropane
	aldehydes -	о сн	suffix -al	H-c-c-H ethanal
	ketonęs	c	suffix* -one prefix oxo-	HOH HC-C-O-H POPANONE
	carboxylic acids	о с он	suffix - oic acid	ностон ethanoic acid
1	amines	— C— NH₂ 	suffix* -amine prefix amino-	H-C-C-C-NH2 -aminopropane
	Cornesters	c	suffix - oate	H-C-C-O-C-H methylethanoate

- The name is based around the name of the longest carbon chain (which contains the functional group): 1 C = meth, 2C = eth, 3C = prop, 4C = but, 5C = pent, 6C = hex, 7C = hept, 8C = oct, etc.
- The functional is indicated by a prefix of suffix. e.g. chloroethane

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- The position of the functional group is given by a number, counting from the end that gives the functional group the lowest number (for aldehydes, carboxylic acids & nitriles, the functional group is position 1). e.g. butanal.
- Where there are two or more of the same groups, di-, tri- or tetra are used.
- If there is more than one functional group, numbers are separated by commas and the groups are listed in alphabetical order (ignoring di, tri, etc.). e.g. 3-bromo-1-chlorobutane, 2,2-dibromo-1-chlorobutane.
- Where there are two functional groups, both with suffixes, the preference for the one to have the suffix is carboxylic acid > aldehyde > ketone > alcohol. e.g. 2-hydroxypropanoic acid, 2-aminopropanoic acid.
- The suffix for alkenes can go in front of other suffixes, e.g. 2-chlorobut-3-enal.
- If a number is not necessary (i.e. the group could only be in one place) then no number should be given.
- Numbers are separated by commas and word and numbers by dashes, e.g. 1-chloro-2,3-dimethylbutane.

Alkanes

Alkenes

These have the ending -ene. If necessary the number of the position of the double bond added between the name stem and the -ene ending:

$$CH_3 - CH_2 - CH = CH_2$$

(CH₃)₂C=CHCH₃

but-1-ene

2-methy/but-2-ene

Haloalkanes

Regard the halogen as a substituent on the C chain and use the suffix -fluoro, -chloro, -bromo, or -iodo, and give the position number if necessary:

CH3CH2CH2CH2CI

1-chlorobutane

2-chloropropare

CH₃CH₂Br

1- bromo othano

CH₃CH₂CH(CH₃)CH₂CHFCH₃

CH3 F CH3CH2CHCH3CHCH3

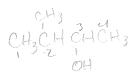
2-fluoro-4-methylhexane

Alcohols

These have the ending -ol in place of the last -e, and if necessary the position number for the OH group is added between the name stem and the -ol (if there are two functional groups, it can begin with hydroxy-):

CH₃CH(OH)CH₂CH₃

CH₃CH(CH₃)CH(OH)CH₃



butan-2-ol

22-methylbutan-3-01

CH₃CH₂OH

pthanol

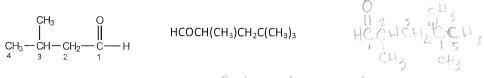
CH₃CH=CHCH₂OH

hut -2-en-1-01

Aldehydes

These have the ending -al in place of the last -e, but no number is necessary for the aldehyde group as it must always be at the end of the chain:

CH3CH(CH3)CH2CHO



3-methylbutanal

2,4,4-trimethylpentanal

CH₃CH₂CHO

propanal

CH₃CH(CH₃)CH(C₂H₅)CH₂CHO

CH3CHCH2

Ketones

These have the ending -one in place of the last -e, with a position number if necessary between the stem and the -one suffix. The functional group can go at the beginning if there is another functional group as oxo-.

CH₃CH₂CH(CH₃)COCH₃

CH3 CCH2CH2CH3

3-methylpentan-2-one

CH3CH(CH3)COCH(CH3)2 CH3CH CCH2H3
24-dimethyl pentan-3-one

Carboxylic acids

These have the ending -oic acid in place of the last -e, but no number is necessary for the acid group as it must always be at the end of the chain:

CH₃CH₂CH(CH₃)CH₂COOH

3-methylpentanoic acic

2,3 dimethy/pertanoic acid

Amines

These end in -amine, but it can go at the beginning if there is another functional group as amino-

CH₃CH₂CH₂NHCH₃

methylbutylamine

dimethyl ethylamine

CH₃CH₂NH₂

ethylamine

CH3CH2COCH2NH2 CH3CH2CH2NH2

-arrivoloutan-2-one

On the back page draw the structure of each of the following organic compounds.

1) 2-methylpentane 8) butanone

2) 2,3-dimethylhexane 9) butanoic acid

3) pent-2-ene 10) 2,2-dimethylbutanoic acid

4) 3-methylbut-1-ene 11) dipropylamine

5) 1-chloro-2,2-dimethylbutane

12) propanenitrile

6) 2-methylpropan-2-ol 13) 3-hydroxybut-1-ene

7) butanal 14) 4-hydroxypentanal

- 2) CH3CH, CH CH2CH2CH3 CH3
 - 3) CH3CH=CHCH2CH3
 - 4) CH2=CHCHCH3
 - 5) CH2 C CH2 CH3
- CH3 CH3
 - T) CH3CH2CH2CH2CH

- 8) CH3CH2CCH3
- 9) CH3CH2CH2COH
- 10) CH3CH2C-COH
 - 11) CH3CH2CH2NHCH2CH2CH3
 - 12) CH3CH2CEN
 - 13) CH3CHCH=CH2
 - 14) CH3CHCH2CH2CH

Name the following organic compounds.

- 16) CH3CHBrC(CH3)2CH2CH2CI
 4-brono-1-chloro-3,3-dinethylpentare
- 17) CH3-CH=CH2
- 18) (CH3)2C=CH2 CH3 6=CH2
 Methyl propene
- 19) (CH₃)₃CCH=CH₂ CH₃ CCH=CH₂

 3,3-dinethylebut-rese
- 20) 1 2 3 4 4 CH3 CH3 CH-CH3 Br
- 21) (CH3)2CHCHCICH(CH3)2 CH3 CL CH3 CH3 CH CH CHCH3 3-chloro-2,4-dinethyl pertone

- 24) CH3COCH2CH(OH)CH3 CH3 CCH2 CH CH3
 4-hydroxy pentan-2-one
- 25) CH3CH2CH2CHO
 pentanal
- 27) ÉH3CH(C2H5)CH2CH2COOH

 4-methylkexanoicacid
- 29) CH3CH2NHCH3
 ethyl nethyl anine
- CH3 CH3

 CH3 CH2 C C CN

 CH3 OH

 2-hydroxy 2,3,3-trine-thyl pertantile