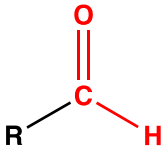


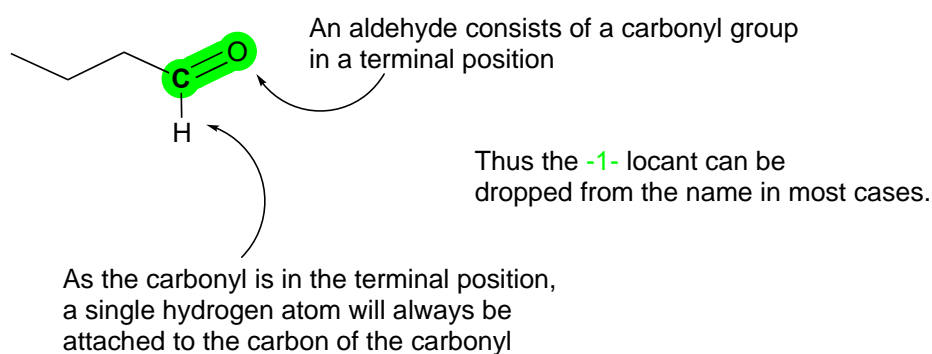
Aldehydes

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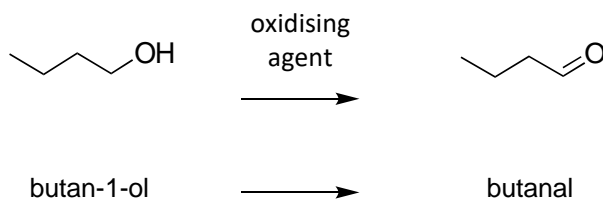
Summary

Functional group	General formula	Structure/example	Prefix	Suffix
Aldehyde	-CHO		oxo-	-al

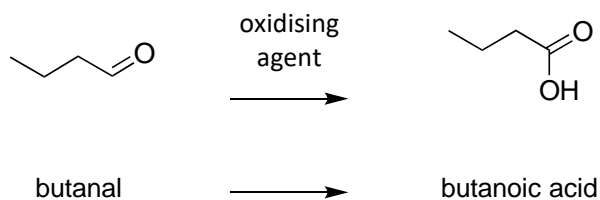


Selected Reactions

Aldehydes are formed by oxidation of primary alcohols:

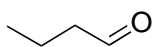


Aldehydes can be further oxidised to form carboxylic acids:



Worked Examples

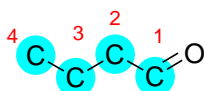
Butanal



STEP 1: Identify the parent hydrocarbon chain

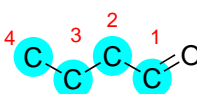
1.1 It should have the functional group with the highest priority

1.2 It should have the maximum length



- Functional group ✓
- Longest chain ✓

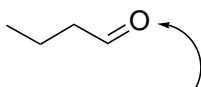
STEP 2: Count the number of carbons in the parent hydrocarbon chain and identify the appropriate prefix. If the parent chain is an alkane, add the -an suffix.



4 C = BUT

ALKANE = -AN-

STEP 3: Identify the functional group with the highest priority and its suffix



ALDEHYDE = -AL

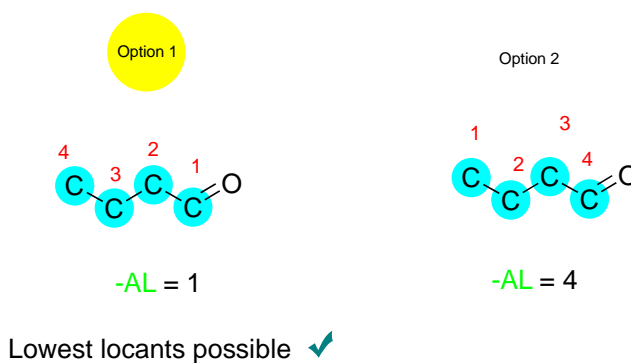
STEP 4: Identify side chains. Count the number of carbons and identify their prefix and suffix

None

STEP 5: Identify any remaining functional groups (including double and triple bonds) and their suffixes

None

STEP 6: Number the parent hydrocarbon chain from the end that produces the lowest set of locants for, in order of precedence, functional groups, double and triple bonds and side chains

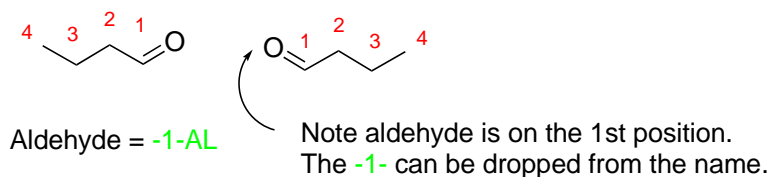


STEP 7: Numbers indicating the locant of the functional group are placed directly before the functional group portion of the name.

7.1 Names are listed alphabetically

7.2 If there is more than one of the same functional group, the prefix di- (2), tri- (3), tetra- (4) are used. These are not considered for alphabetical listing

7.3 If the functional group is in a position where no alternative position is possible, no number is required (e.g. ethan-1-ol should be written as ethanol)

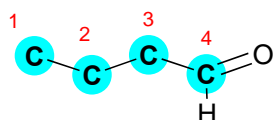


STEP 8: Write the complete name

8.1 Commas are written between numbers

8.2 Hyphens are written between numbers and letters

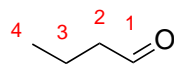
8.3 Successive words are combined into one word



4 C = **BUT**

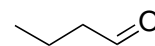
ALKANE = **-AN-**

Steps 1,2



Aldehyde = **-1-AL**

Steps 3,6,7



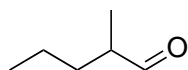
butan-1-al

or

butanal

Step 8

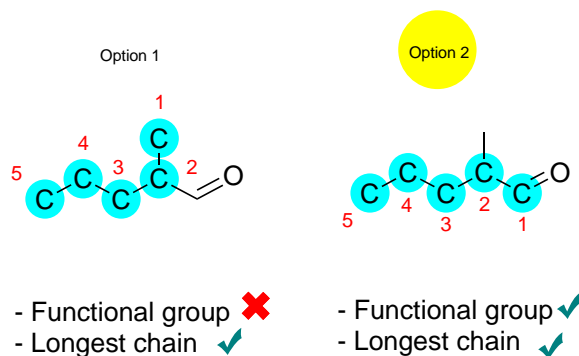
2-methylpentanal



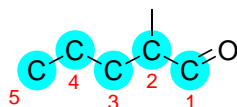
STEP 1: Identify the parent hydrocarbon chain

1.1 It should have the functional group with the highest priority

1.2 It should have the maximum length



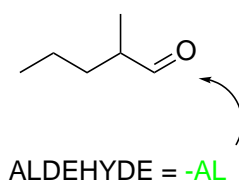
STEP 2: Count the number of carbons in the parent hydrocarbon chain and identify the appropriate prefix. If the parent chain is an alkane, add the -an suffix.



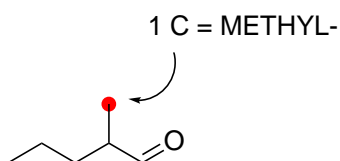
5 C = PENT-

ALKANE = -AN-

STEP 3: Identify the functional group with the highest priority and its suffix



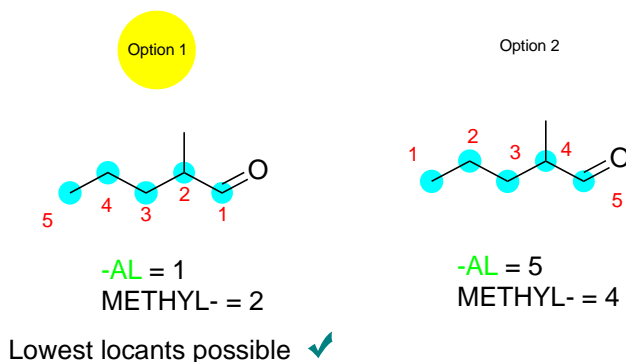
STEP 4: Identify side chains. Count the number of carbons and identify their prefix and suffix



STEP 5: Identify any remaining functional groups (including double and triple bonds) and their suffixes

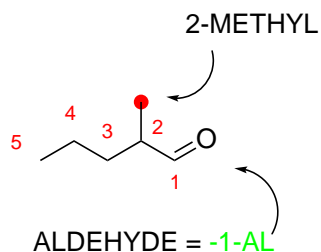
None

STEP 6: Number the parent hydrocarbon chain from the end that produces the lowest set of locants for, in order of precedence, functional groups, double and triple bonds and side chains



STEP 7: Numbers indicating the locant of the functional group are placed directly before the functional group portion of the name.

7.1 Names are listed alphabetically

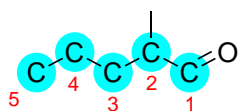


STEP 8: Write the complete name

8.1 Commas are written between numbers

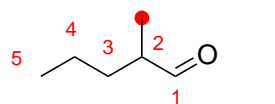
8.2 Hyphens are written between numbers and letters

8.3 Successive words are combined into one word



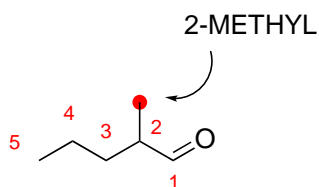
5 C = PENT-
ALKANE = -AN-

Steps 1,2

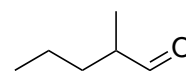


ALDEHYDE = -1-AL

Steps 3,6,7



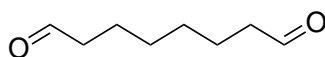
Steps 4,6,7



2-methylpentanal

Step 8

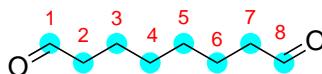
octan-1,8-dial



STEP 1: Identify the parent hydrocarbon chain

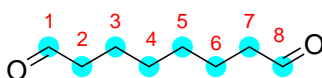
1.1 It should have the functional group with the highest priority

1.2 It should have the maximum length



- Functional group ✓
- Longest chain ✓

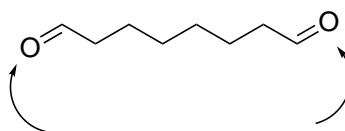
STEP 2: Count the number of carbons in the parent hydrocarbon chain and identify the appropriate prefix. If the parent chain is an alkane, add the -an suffix.



8 C = **OCT**

ALKANE = **-AN-**

STEP 3: Identify the functional group with the highest priority and its suffix



ALDEHYDE = **-AL**

2 ALDEHYDE = **-DIAL**

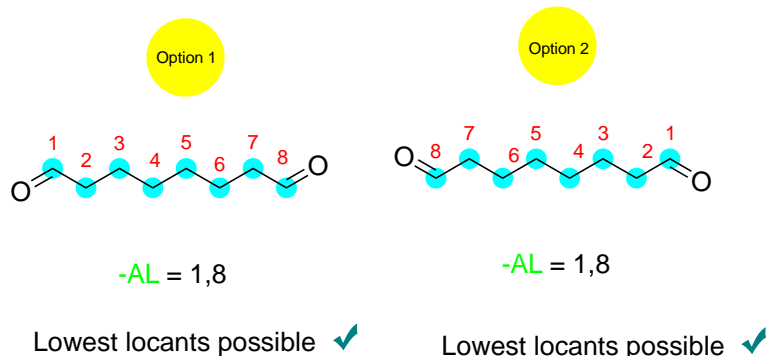
STEP 4: Identify side chains. Count the number of carbons and identify their prefix and suffix

None

STEP 5: Identify any remaining functional groups (including double and triple bonds) and their suffixes

None

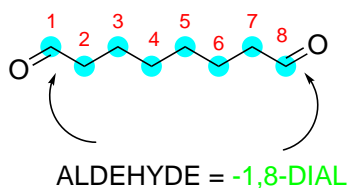
STEP 6: Number the parent hydrocarbon chain from the end that produces the lowest set of locants for, in order of precedence, functional groups, double and triple bonds and side chains



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