Aldehydes

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- An aldehyde is a hydrocarbon derivative that contains a *carbonyl* functional group at the *end*.

IUPAC Names

3C- pentanal   9 C- nonanal
4C- butanal   10 C- decanal

- The general formula for the series is

$$\begin{array}{c} H \\ | \\ R - C = O \end{array}$$

Naming Aldehydes

1) Identify the base number of carbons.
- The base is the longest continuous chain of carbons that contains the carbonyl group.
- Use the number of carbons as a prefix before the suffix **-al**
2) Since the carbonyl group always appears at the end, the carbon attached to it automatically become carbon 1. The position does not need to be indicated in the name.
3) Name any additional side chains and identify their positions using numbers.

Example:

$$\begin{array}{c} CH_3\ CH_2\ CH_2\ CH_2\ CH \\ || \\ O \end{array}$$
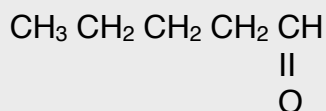
Answer: pentanal

Drawing Aldehydes

1) Start by drawing the base chain. Draw the number of carbons as indicated by the prefix.
2) Add any indicated double or triple bonds.
3) Add any indicated side chains, including the indicated carbonyl group.
4) Saturated the remaining carbons

Example: 3-methylbutanal

Answer:

$$\begin{array}{c} CH_3 \\ | \\ CH\ CH_2\ CH\ CH_3 \\ || \\ O \end{array}$$