VIII.C ALDEHYDES (RCHO)

Aldehydes have the family ending ‘al’ and are named in a similar way to carboxylic acids. Just like the acids, the aldehyde group must be the end of a chain. Thus, the position of the aldehyde group in is not listed in the name, if it is the parent group.

EXCEPTIONS
1. If the aldehyde is NOT the parent group then its position must be numbered.
2. If a molecule contains two aldehydes, then the position of both groups are listed. If the aldehyde is a substituent, *i.e.*, if the molecule is a carboxylic acid or a carboxylic acid derivative, the prefix for the aldehyde group is ‘oxo’. Finally, if the aldehyde is a substituent on the longest chain, it is called a formyl group.

Example
2. Give the IUPAC name for \( \text{CH}_3\text{CH}_2\text{CHCH}_3\text{CH}=\text{CHCHICH}_2\text{CHO} \)

**OBSERVATIONS**

Redraw the structure

\[
\text{CH}_3\text{CH}_2\text{CHCH}_3\text{CH}=\text{CHICH}_2\text{CHO} \quad \Rightarrow \quad \text{C} \quad \text{C} \quad \text{C} \quad \text{C} \quad \text{C} \quad \text{C} \quad \text{C} \quad \text{CHO}
\]

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<thead>
<tr>
<th><strong>OBSERVATION</strong></th>
<th><strong>IMPLICATION</strong></th>
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<tbody>
<tr>
<td>Parent Group and Site</td>
<td>Aldehyde -al</td>
</tr>
<tr>
<td>Longest Carbon Chain/Ring</td>
<td>8 Carbons oct...</td>
</tr>
<tr>
<td># C=C or C≡C bonds and Site</td>
<td>1 C=C at C-4 4-octen</td>
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<tr>
<td>Final Word</td>
<td>4-octenal</td>
</tr>
<tr>
<td>Substituents and Sites</td>
<td>Iodine at C-3 3-iodo</td>
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<td></td>
<td>CH(_3) at C=6 6-methyl</td>
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<tr>
<td>Alphabetizing substituents</td>
<td>3-iodo-6-methyl</td>
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**SOLUTION** Compound is: 3-iodo-6-methyl-4-octenal