

VIII.G ETHERS (R-O-R')

Ethers can be named in two ways. Under IUPAC rules, ethers are treated as substituted alkanes, alkenes *etc.* and the 'OR' group is an 'alkoxy' substituent. In traditional nomenclature, which is still used extensively, each hydrocarbon chain is treated separately, and named as separate words. The family ending is 'ether'. In general, traditional nomenclature is used for simple ethers, but heavily substituted compounds are best named using IUPAC nomenclature.

Procedure for Naming Ethers using traditional nomenclature

1. Name an alkyl group attached to oxygen. The carbon bonded to oxygen is C-1.
2. Name the second alkyl group in the same way.
3. Place the alkyls in alphabetical order, and name the compound as an alkyl alkyl ether (three separate words).
4. If the two alkyls are identical, name it as a dialkyl ether (two separate words).

Example

Give the traditional name for $\text{CH}_3\text{-O-CH}_2\text{CH}_2\text{CH}_2\text{CH}(\text{CH}_3)\text{CH}_2\text{CH}_3$.

OBSERVATIONS/STRATEGY

1. Redraw the structure, numbering one chain as 1,2,.. and the other as 1', 2'...

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2. Name each of the alkyl chains attached to oxygen and proceed to the solution

Parent Functional Group(s): Ether \Rightarrow ether

Chains attached to O: CH_3 \Rightarrow methyl

$\text{CH}_3\text{CH}_2\text{CH}(\text{CH}_3)\text{CH}_2\text{CH}_2\text{CH}_2$ \Rightarrow 4-methylhexyl

SOLUTION Compound is methyl 4-methylhexyl ether