

# Ethers

## Ethers

- An ether is a hydrocarbon derivative that contains a oxygen that has a **single bonded** to two different carbon atoms.
- Here the functional groups is sandwiched between two carbon chains.
- This is called an **alkoxy group**.

## IUPAC Names

5C- pentoxy-  
4C- butoxy-

9 C- nonoxy-  
10 C- decoxy-

- The general formula for the series is



- Where the longer carbon group is R and the shorter carbon group is the side chain R'

## Naming Ethers

- 1) Identify the base number of carbons.
  - The **longest** carbon chain attached to the **oxygen** is the base chain.
  - Name this as you would any parent alkane. Any side chains off the base chain are named as any alkane would be.
- 2) The shorter side chain attached to the oxygen is named as the alkoxy group.
  - The first part of the prefix is the number of carbons followed by **oxy-**.
  - Identify which carbon on the parent chain the alkoxy group is attached to using a number.
  - This will proceed the name of the parent alkane R.

Example:



Answer: 1-ethoxyethane

## Drawing Ethers

- 1) Start by drawing the base chain, the longest carbon chain attached to the single bonded oxygen. Draw the number of carbons as indicated by the prefix.
- 2) Add any additional side chains to the base chain as indicated.
- 3) Add the R' group to the single bonded oxygen.
- 4) Add any indicated side chains.
- 5) Saturated the remaining carbons

Example: 1-methoxyethane

Answer:

