

4.1: INTRODUCTION

OBJECTIVES

After completing this section, you should be able to use the terms “ether,” “diethyl ether ” and “ethyl ether ” appropriately in context.

KEY TERMS

Make certain that you can define, and use in context, the key terms below.

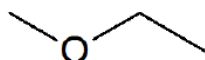
- ether ($R-O-R'$)
- sulfide ($R-S-R'$)
- thiol ($R-S-H$)

STUDY NOTES

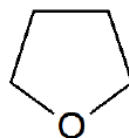
As defined in the textbook, an “ether” is a substance with the general formula ($R-O-R'$) where R and R' are alkyl, aryl, vinyl or allyl groups. However, the word “ether” is also commonly used to refer to the specific compound, $CH_3-CH_2-O-CH_2-CH_3$, which is correctly called “diethyl ether.” Further confusion can arise because some chemists refer to “diethyl ether ” as “ethyl ether.” In this course, “ether ” will be used to refer to the class of compounds with the structure ($R-O-R'$); diethyl ether will refer to the compound, $CH_3-CH_2-O-CH_2-CH_3$; and “ethyl ether ” will not be used.

ETHERS AND EPOXIDES

While the general formula for [ethers](#) is $R-O-R'$, keep in mind that there also [cyclic ethers](#) like tetrahydrofuran (a common organic solvent) or even [epoxides](#) which you first encounter in Section 8.7 in synthesizing diols from alkenes.



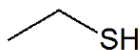
ethyl methyl ether



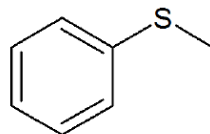
tetrahydrofuran

THIOLS AND SULFIDES

[Thiols](#) (thio alcohols or mercaptans) and [sulfides](#) (thioethers) are the sulfur analogues of alcohols and ethers and have the general formulas of $R-S-H$ and $R-S-R'$, respectively.



ethanethiol



methyl phenyl sulfide

CONTRIBUTORS AND ATTRIBUTIONS

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