**ETHERIZATION REACTION**

**General Information**

The general formula of ethers is expressed as R-O-R '. Closed formulas; It is CnH2n + 2O. Therefore, in many sourcebooks, ethers are compared to the structure of the water molecule (H-O-H). Ethers have the structure equivalent to the displacement of two hydrogen atoms in the water molecule with the same or different alkyl (R-) groups.

If the alkyl groups forming the ether molecule are the same, they are called simple (symmetric) ether, and if different, mixed (asymmetric) ether. Ethers can also be considered as alkylated alcohol or twice alkylated water derivatives. From the source textbooks, naming of straight-chain and ringed ethers in accordance with IUPAC rules, physical and chemical properties, general differences between alcohols and ethers, the concept of isomerism should be repeated.

**Synthesis of ethers: Synthesis of ethers can be carried out with acid or base catalysis.**

a) Generally, H2SO4 is used as a catalyst in acid-catalyzed reactions.



b) The base-catalyzed reaction is also known as “Williamson Ether Synthesis”



This method is advantageous in order to obtain asymmetric ether. In order to fully understand this reaction, which is carried out in accordance with the SN2 reaction mechanism, nucleophilic substitution (SN1 and SN2) reaction mechanisms and parameters affecting these mechanisms (substrate type, solvent effect, nucleophile type, leaving group effect, temperature, etc.). should be reviewed from the Organic Chemistry textbooks. In addition, the mechanisms of elimination (separation; E1, E2, Ei and Eicb) that are competitively competing with nucleophilic substitution reactions should also be reviewed. Considering the structure of the final product desired to be obtained, it should be decided which alkyl group and which starting substance will be in the structure. Branching is in favor of elimination reactions.