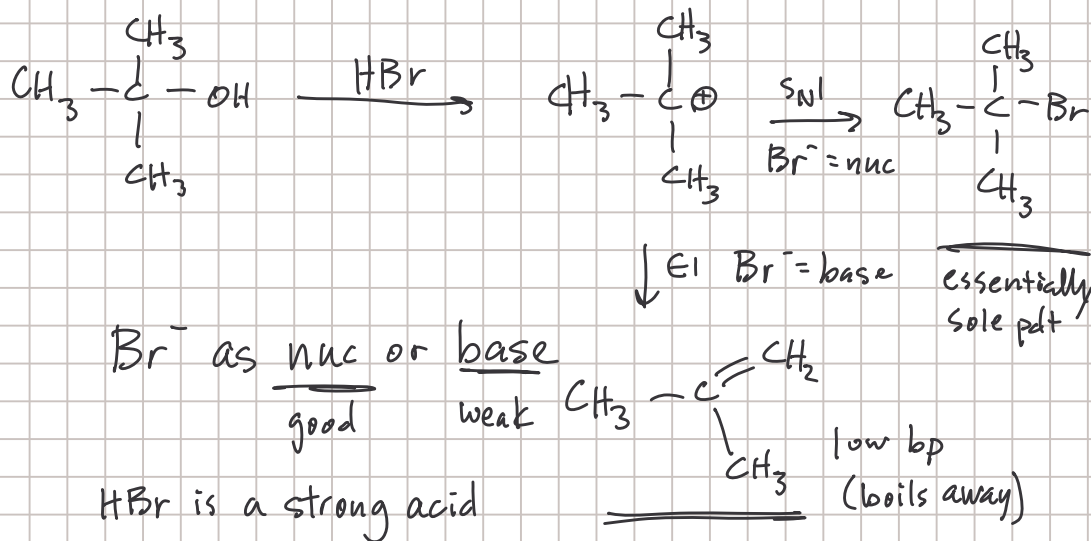


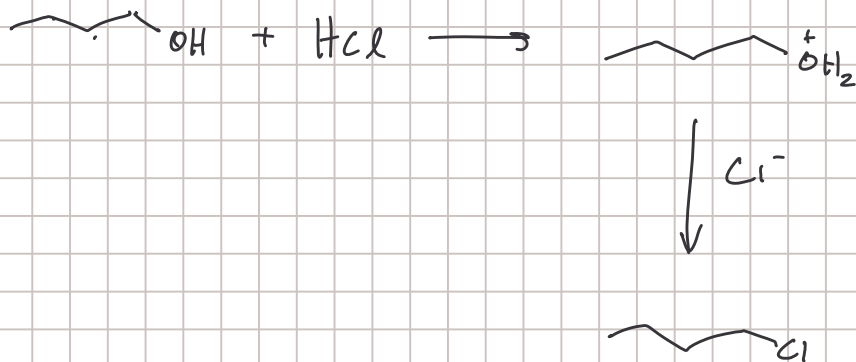
Ch 14 Ethers, epoxides, sulfides

Note Title

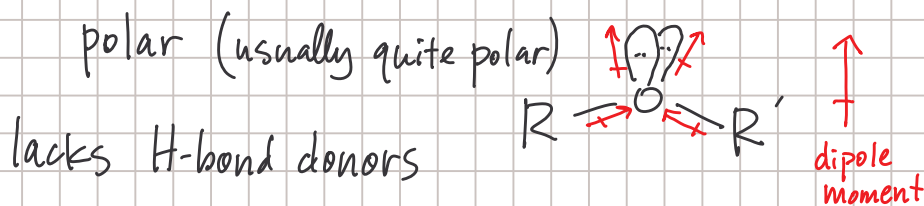
1/18/2006



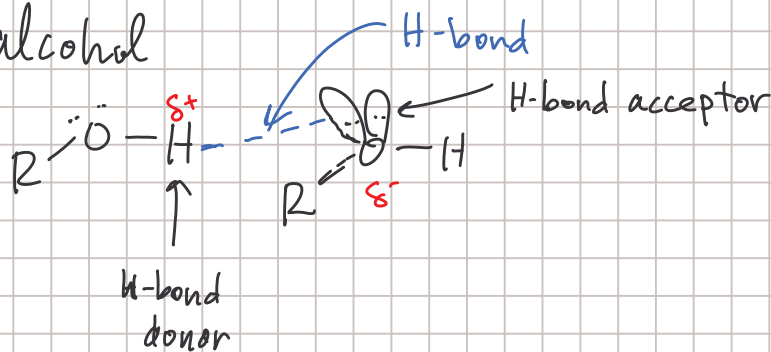
Ch 11.2(a)



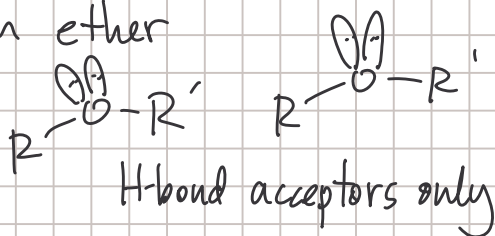
Ether R-O-R'



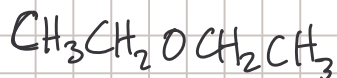
an alcohol



an ether

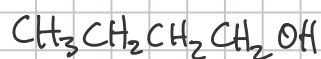


no H-bonds in
pure ether



diethyl ether

bp 35°C

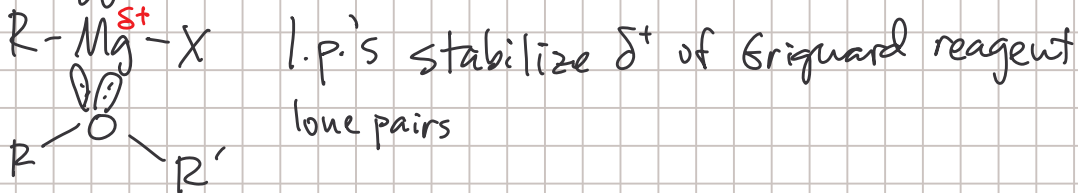
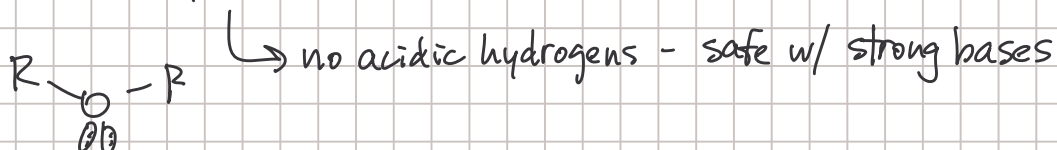


n-butanol

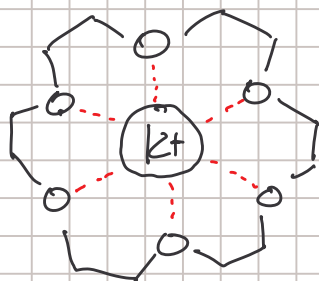
bp 118°C

use as solvents: easy to remove

polar aprotic solvents

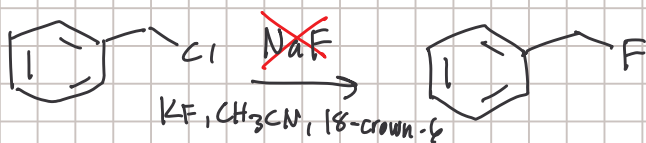


Crown ethers



C+O

↳ 18-crown-6 → 0 solvates K^+ ions



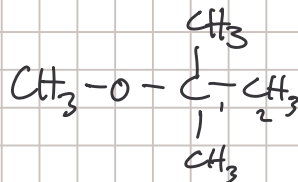
KF
 CH_3CN (acetonitrile) + 18-crown-6
 (KF usu insol in CH_3CN) forces K^+ into solution
 increases F nucleophilicity dramatically

Nomenclature

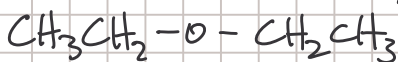
★ alkyl alkyl ether name
(common names)

methyl t-butyl ether

MTBE



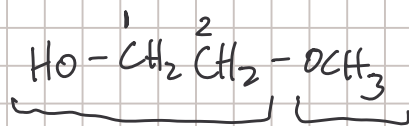
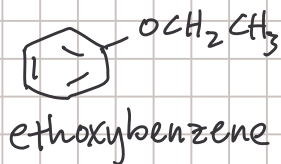
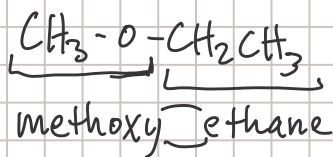
1-methoxy-1,1-dimethylethane



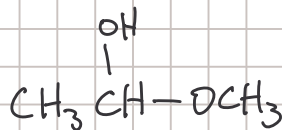
diethyl ether

★ IUPAC Names (alkoxy alkane)

more complex



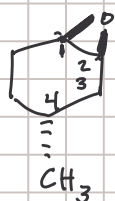
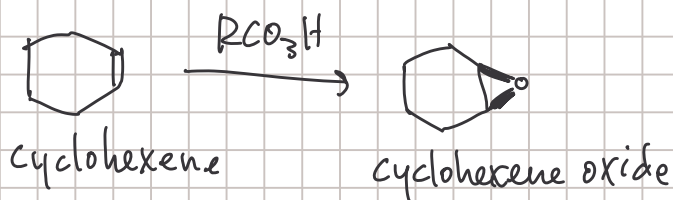
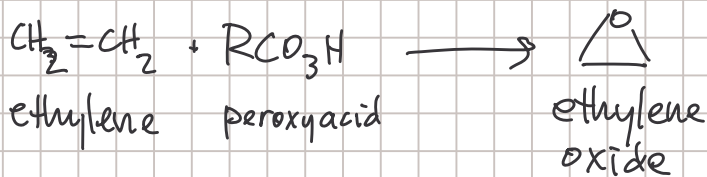
2-methoxyethanol



1-methoxyethanol

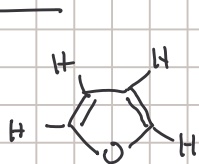
Cyclic ethers

epoxides: 3-membered cyclic ether
(oxirane)

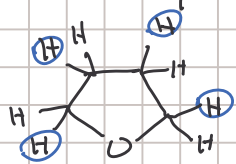


trans-1,2-epoxy-4-methylcyclohexane

Furans 5-membered cyclic ethers



furan

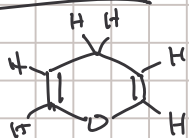


tetrahydrofuran (4 H atoms added to furan)

$\text{BH}_3 \cdot \text{THF}$

very common organic solvent (especially anionic reactions)

Pyrans 6-membered cyclic ethers



pyran



DHP dihydropyran



THP tetrahydropyran