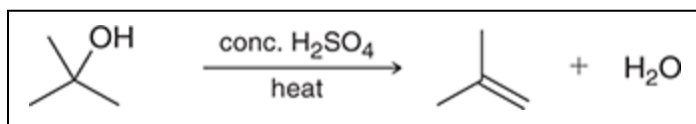


Session 12 Worksheet

Dehydration of Alcohols

Acidic conditions can push alcohols into an _____ rxn

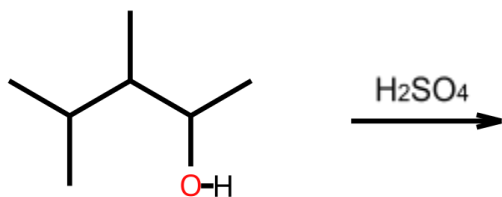
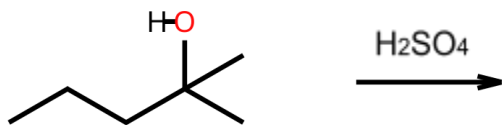


Dehydration:

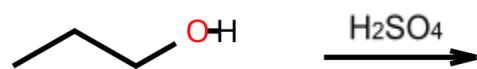
Catalysts Rule:

Regioselectivity:

Dehydrating 3° and 2° alcohols:

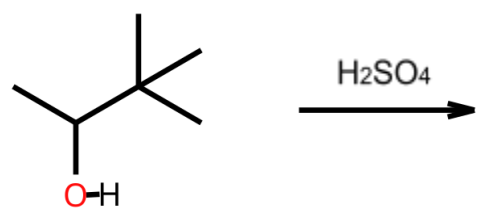


Dehydrating 1° alcohols:

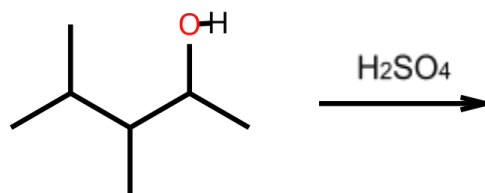


Rearrangement of 2° carbocations

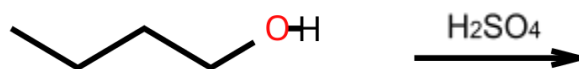
Methyl Shift:



Hydride Shift:



Rearrangement with dehydration of a 1° alcohol:



Determining Nucleophilicity

Charge: more _____ charge, _____ nucleophile

Is cyanide (CN⁻) or water (H₂O) a better nucleophile?

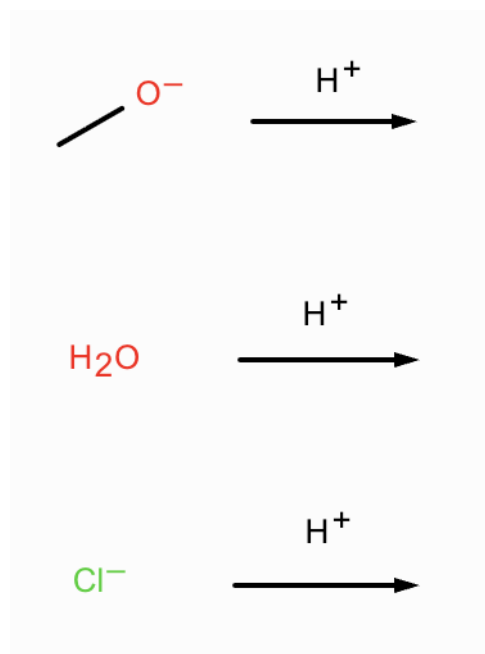
Electronegativity: _____ electronegative atoms are good nucleophiles

What is the relationship of electronegativity and nucleophilicity?

Sterics: smaller the nucleophile the _____ it is

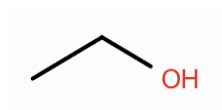
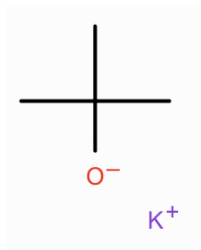
Determining Basicity

Acid-base principle: Look at the _____

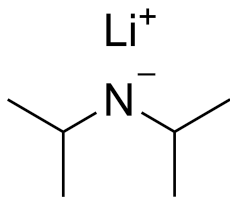


Connecting these ideas

Explain the nucleophilicity and basicity of the following compounds and explain your reasoning. Additionally, what reaction(s) are they most likely going to be able to perform?



-OH

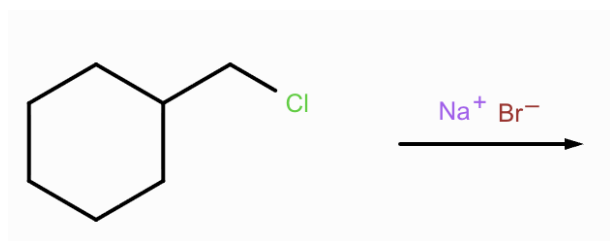


Reaction Senarios

Sam wants to make a special drug what will help him pass his chem final. He wishes to accomplish this by creating a terminal alkene using 2-iodo-2methylbutane. What kind of reaction is he going to do? What would be some good reagents to accomplish this?

George has $\text{CH}_3\text{CH}_2\text{Br}$ and is mixing it with water, will he have a proper reaction occur? If so, what kind of reaction is he doing?

Abigail is doing a reaction (see below). She is undecided on what kind of solvent she needs to use, what would be a good solvent for her reaction? What kind of reaction is she doing?



Sandy wants to make a potion that will get rid of her acne (god I wish). She is wants to make an alkene using 1-chloro-1-methylcyclohexane and methanol. Will her reaction occur? If it does, what kind of reaction is she doing? What are the conditions she will use to make sure she gets her desired product?