

**Solutions to HWS-2
Home Worksheet-3**



Reactions Name

Oxygen Containing Organic Compounds

Preparation of Alcohols:-

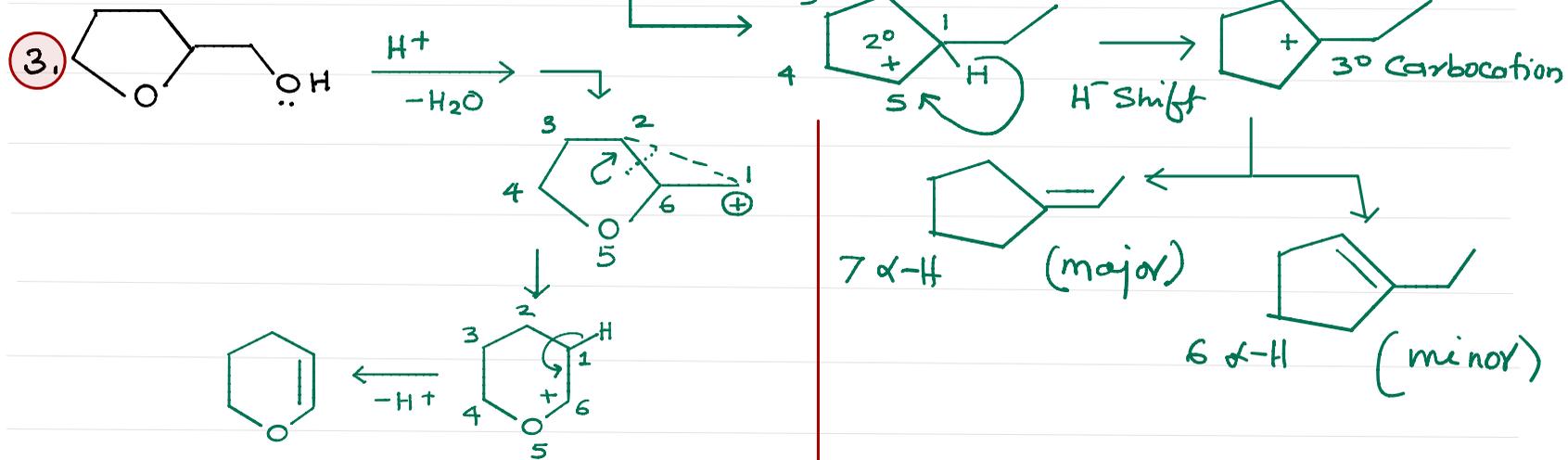
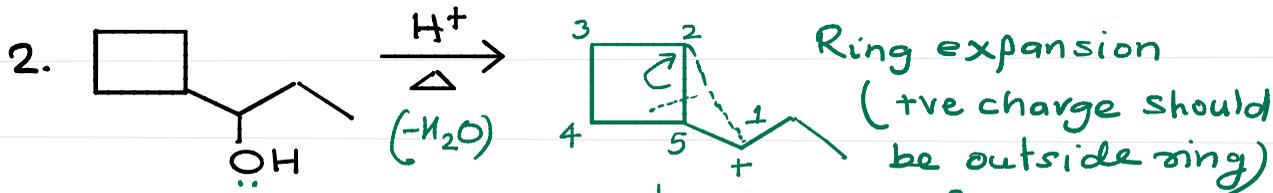
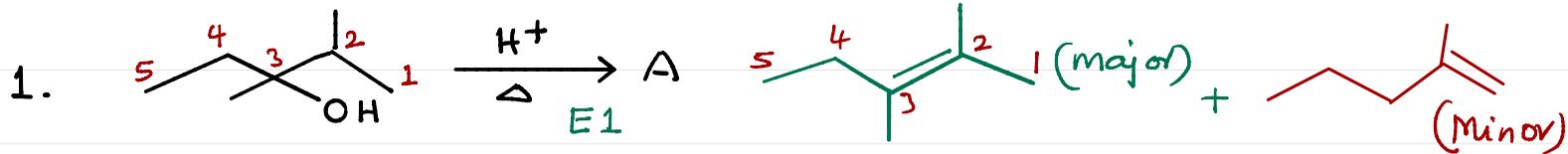
- Hydrolysis of Alkyl Halides
- From Alkenes
 - By Acid Catalysed Hydration
 - Hydroboration - Deboronation
 - Oxymercuration - Demercuration
- Reduction
 - Of Aldehydes & Ketones
 - Acids & Derivatives
- Hydrolysis (A) Of Esters (B) Of Ethers
- Action of Nitrous Acid on Primary Amines
- From Grignard Reagent
- Industrial Methods
- Oxo Process

Chemical Properties (Reactions):-

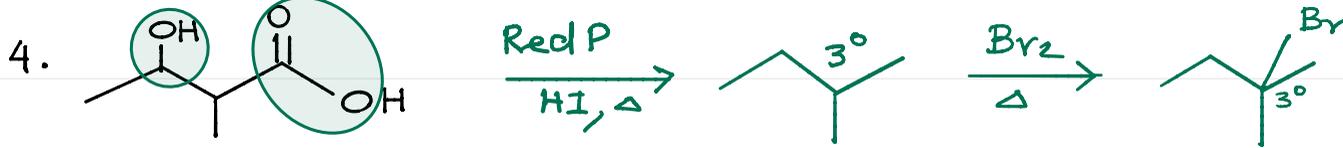
- Alcohols as Acids (reaction with active metals)
- Alcohols as Nucleophile (Esterification)
 - With Organic Acids
 - With Sulphonic Acid
 - With other Inorganic acids
- Dehydration
- Reaction with Ammonia
- Reaction with Grignard Reagent
- Reduction
- Substitution Reaction in Alcohols
 - With Halogen Acids
 - With Phosphorus Halides
 - With Thionyl Chloride

Chemical Tests to distinguish among Alcohols

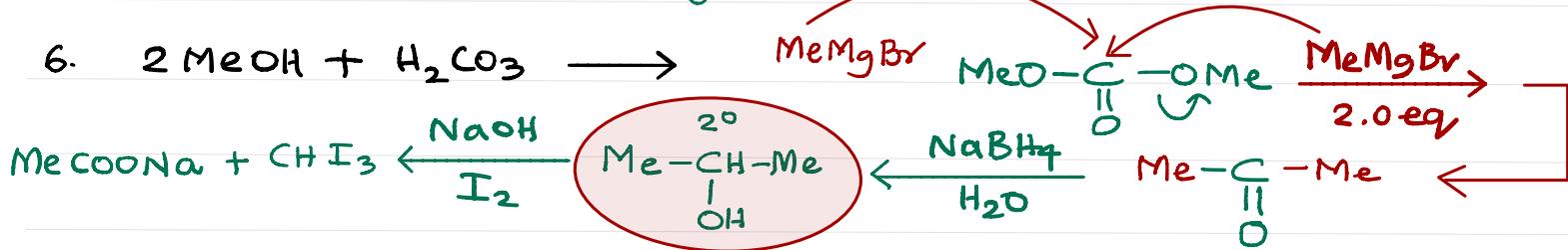
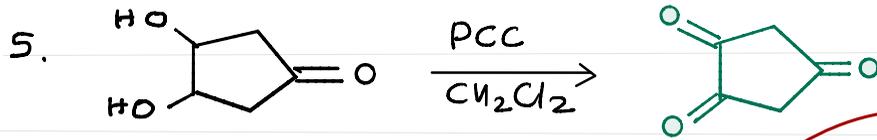
8. Oxidation
9. Dehydrogenation
10. Other Tests
11. Lucas Test
12. Victor Meyer Test



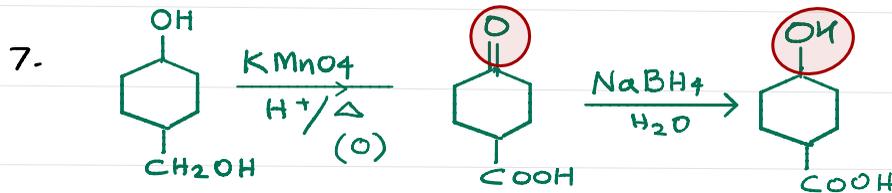
Alcohol(s), Phenol(s), Ether(s) and Glycol(s)



- Red P/HI reduces alcohols/acids to alkanes
- Bromine is highly selective so 3° halide is formed.

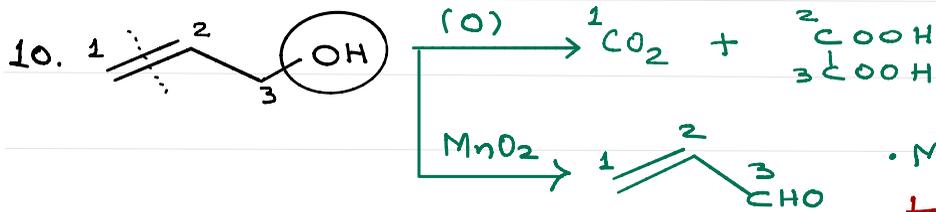
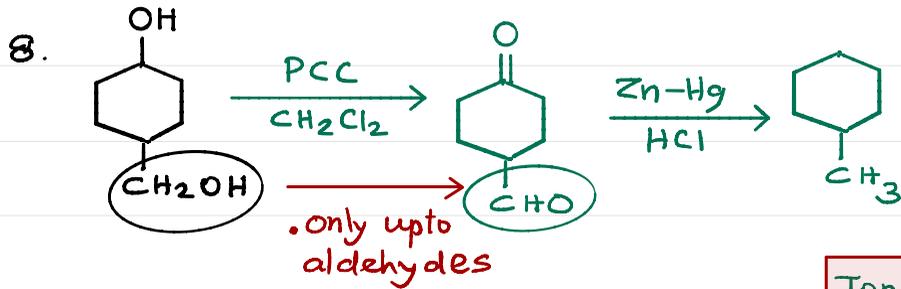


- 2° Methylated alcohols give +ve Iodoform Test/Rxn



• NaBH₄ does not reduce Acids

Alcohol(s), Phenol(s), Ether(s) and Glycol(s)

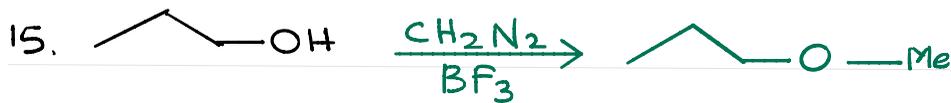
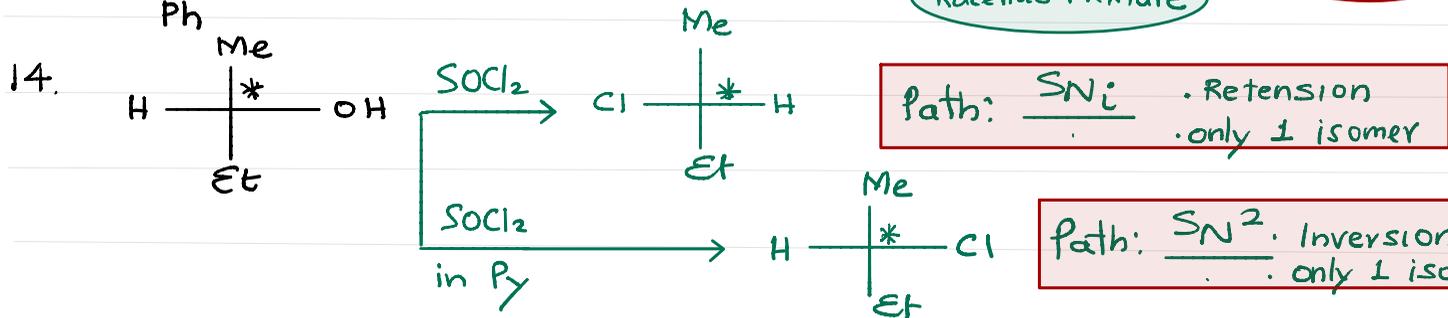
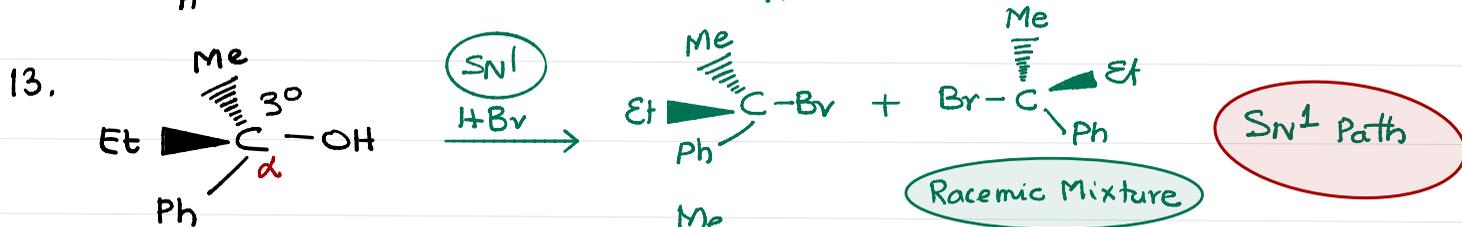
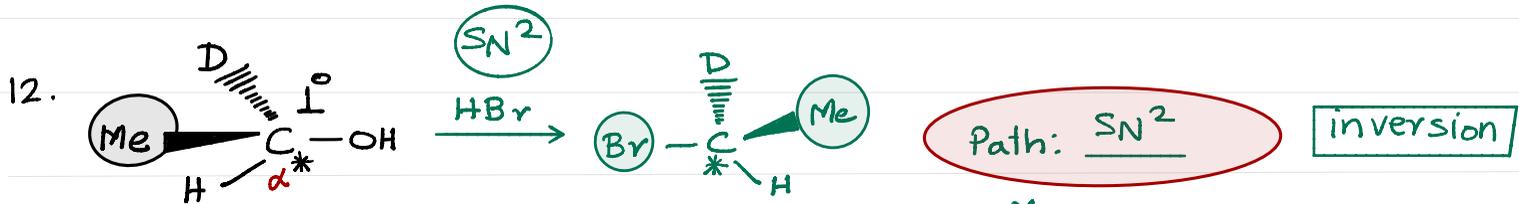
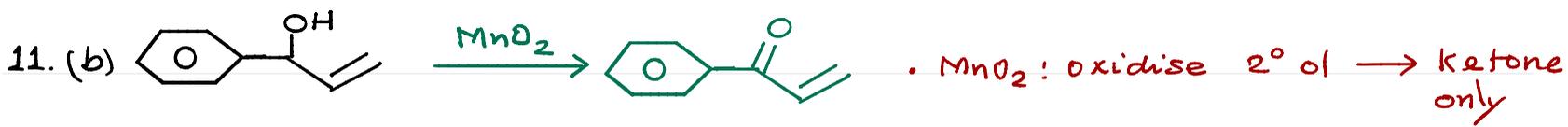


MnO₂ oxidises allylic alcohols only to aldehydes or ketones but it does not oxidise $>C=C<$ bond.



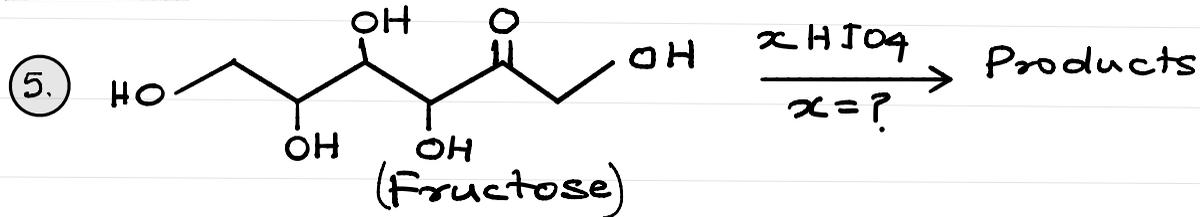
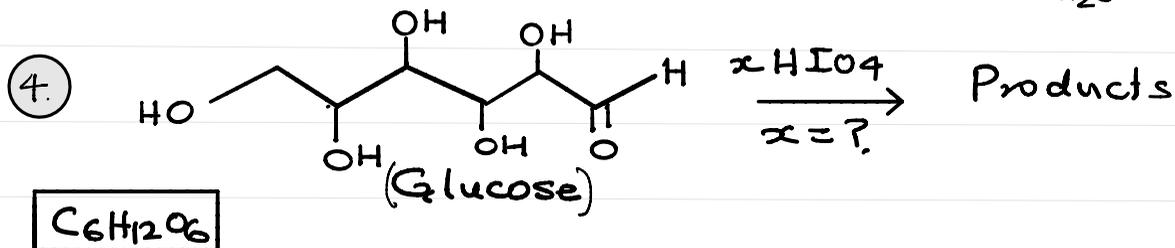
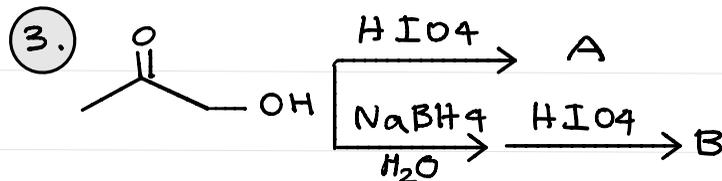
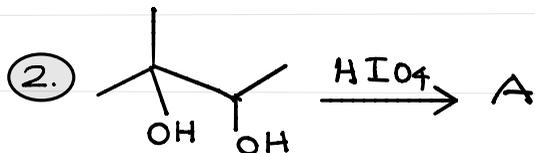
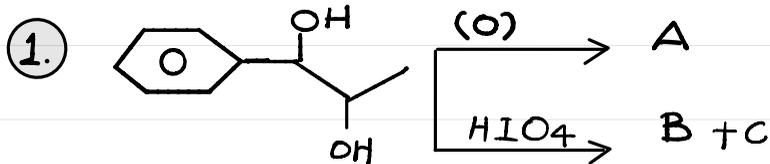
oxidisable H-atom: If benzene ring has (an oxidisable) α -H atom attached to it, the product is Benzoic acid.

Alcohol(s), Phenol(s), Ether(s) and Glycol(s)

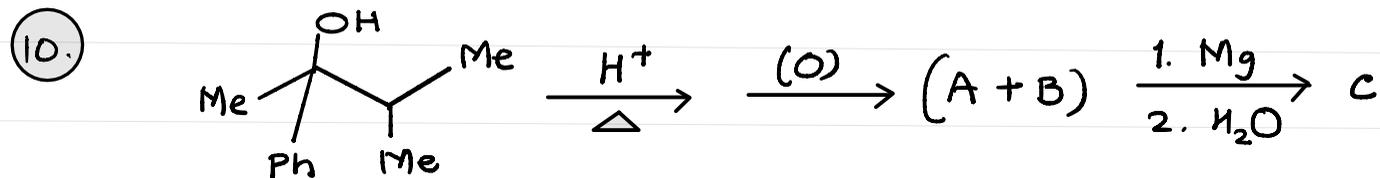
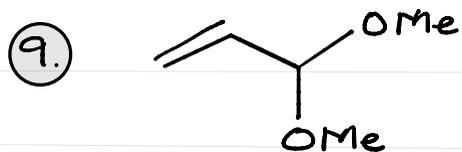
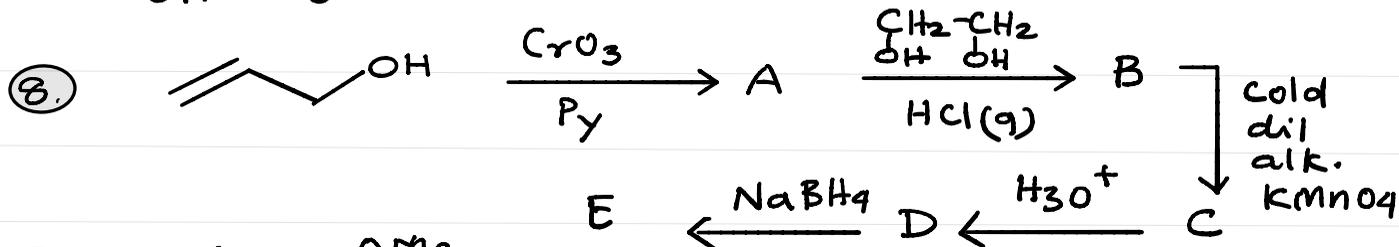
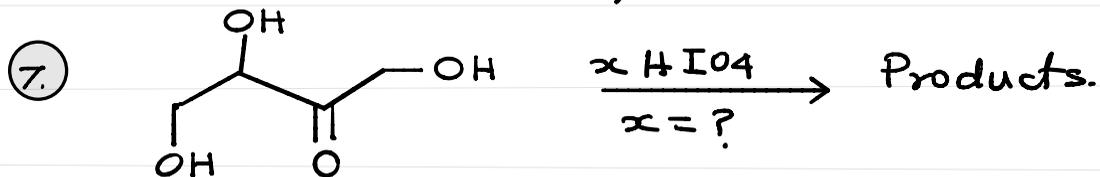
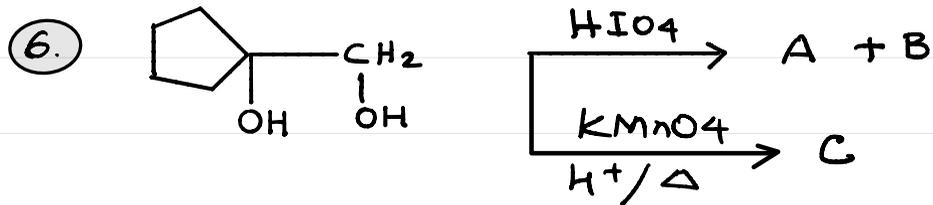


Alcohol(s), Phenol(s), Ether(s) and Glycol(s)

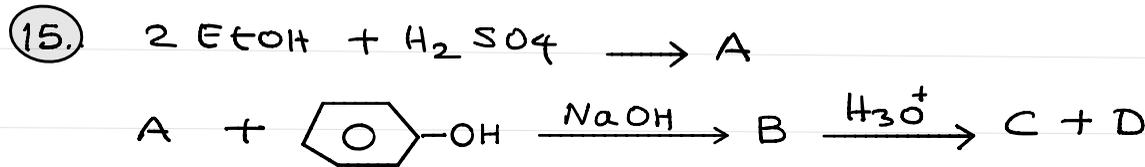
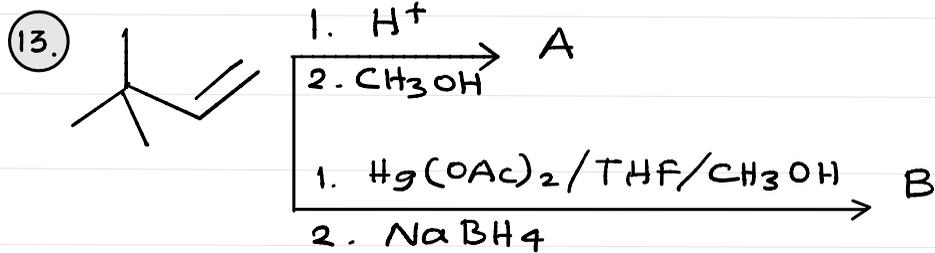
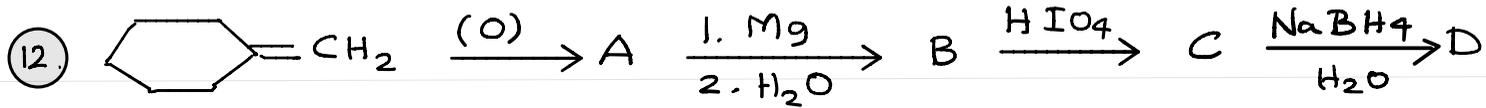
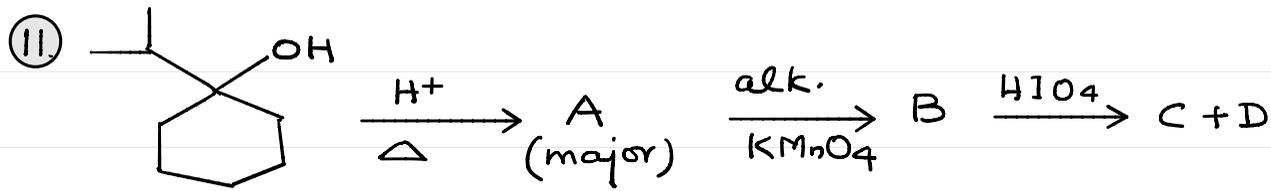
. Identify A, B, C, D



Alcohol(s), Phenol(s), Ether(s) and Glycol(s)



Alcohol(s), Phenol(s), Ether(s) and Glycol(s)



Alcohol(s), Phenol(s), Ether(s) and Glycol(s)

Thank
you!

