

EXPERIMENT 3
ALCOHOLS AND PHENOLS
Report Sheet

Name		Section no:	
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➤ **OBJECTIVES:**

➤ **ALCOHOLS:**

I. Solubility of Alcohols in Water

Alcohol	Structure	Solubility
ethanol		
1-butanol		
2-methyl-2-propanol		
ethylene glycol		

What general conclusions can you draw concerning the solubility of alcohols in water?

II. Oxidation of Alcohols with Chromic Acid

Alcohol	Result (+ or -)	Observations (color, ppt,...)
1-butanol		
2-butanol		
2-methyl-2-propanol		

III. Lucas Test

Alcohol	Result (+ or -)	Observations (color, ppt,...)
1-butanol		
2-butanol		
2-methyl-2-propanol		

Arrange the three alcohols according to their rates of reaction with the Lucas reagent:

IV. Iodoform Test

Alcohol	Result (+ or -)	Observations (color, ppt,..)
1-butanol		
2-butanol		
2-methyl-2-propanol		

➤ PHENOLS

I. Ferric Chloride Test

Alcohol	Result (+ or -)	Observations (color, ppt,..)
Cyclohexanol		
Phenol		

➤ Unknown Alcohol Determination:

Unknown ID:		
Test used	Observation	Result
Chromic Acid Oxidation		
Lucas Test		
Iodoform test		
Ferric Chloride		

- Based on your results, what is your unknown alcohol type?
- Draw the expected alcohol structure of your alcohol showing the main function group:

EXPERIMENT 4
ALDEHYDES AND KETONES
Report Sheet

Name		Section no:	
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➤ **OBJECTIVES:**

➤ **IDENTIFICATION TESTS:**

I. 2,4-Dinitrophenylhydrazine Test

Compound	Function group	Result (+ or -)	Observations (color, ppt,.)
Acetone			
Benzaldehyde			

II. Tollens' Test

Compound	Function group	Result (+ or -)	Observations (color, ppt,.)
Acetone			
Benzaldehyde			

III. Fehling's or Benedict's Tests

Compound	Function group	Result (+ or -)	Observations (color, ppt,.)
Acetone			
Benzaldehyde			

IV. Iodoform test

Compound	Function group	Result (+ or -)	Observations (color, ppt,.)
Acetone			
Benzaldehyde			
2-pentanone			
3-pentanone			

➤ **Unknown Alcohol Determination:**

Unknown ID:		
Test used	Observation	Result

- **Based on your results, what is your unknown?**

- **Draw the expected structure of your unknown showing the main function group:**