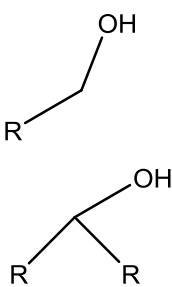
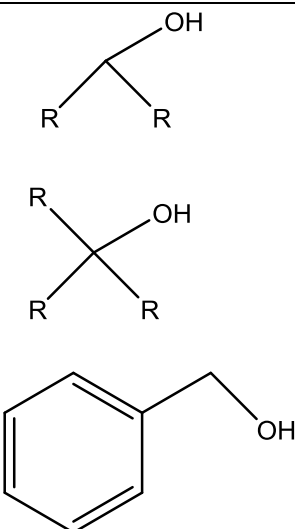


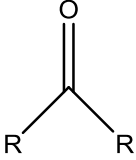
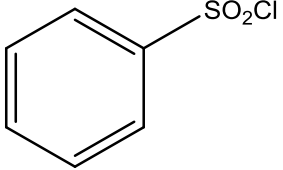
Organic Chemistry Laboratory Tests

Functional Groups

Test	Reagent	Functional Group Tested	Example	Positive Result
Tollens' Test	$\text{Ag}_2\text{O} / \text{NH}_3$ or $\text{Ag}(\text{NH}_3)_2^+$	Aldehydes or Alpha Hydroxy Ketones	$\begin{array}{c} \text{O} \\ \\ \text{R}-\text{C}-\text{H} \end{array}$ $\begin{array}{c} \text{O} \\ \\ \text{R}-\text{C}-\text{C}-\text{R} \\ \\ \text{OH} \end{array}$	Sides of flask are coated with a silver mirror
Iodoform Test	I_2 / OH^-	Methyl Ketones or 2° Alcohols	$\begin{array}{c} \text{O} \\ \\ \text{R}-\text{C}-\text{CH}_3 \end{array}$ $\begin{array}{c} \text{OH} \\ \\ \text{R}-\text{C}-\text{CH}_3 \end{array}$	Yellow precipitate forms (CHI_3)
Silver Nitrate in Alcohol	AgNO_3 in Alcohol	Alkyl Halides	$\begin{array}{c} \text{R} \\ \\ \text{R}-\text{C}-\text{X} \\ \\ \text{R} \end{array}$	Precipitate of Ag compound formed

Test	Reagent	Functional Group Tested	Example	Positive Result
Bromine Test	$\text{Br}_2 / \text{CCl}_4$	Alkenes and Alkynes	Note: For these two Test's, Aromatics will not show as a positive result, because aromatics do not contain "True Double Bonds".	Brown color of Bromine disappears
Baeyer Test	Dilute KMnO_4	Alkenes and Alkynes		Purple solution turns to brown precipitate
Jones Test	$\text{CrO}_3 / \text{H}_2\text{SO}_4$	1° and 2° alcohols		Orange reagent turns blue-green
Lucas Test	$\text{ZnCl}_2 / \text{HCl}$	2°, 3°, and benzylic Alcohols		Cloudy solution initially, then separate layer forms

For this next group, you only need to know what is shown :

Test	Reagent	Functional Group Tested	Example	
2,4 - DNP		Carbonyl group		
Hinsberg Test		Helps us differentiate between 1°, 2° & 3° Amines		