

Hydrocarbon

Aliphatic Hydrocarbon

compound is a hydrocarbon compound containing carbon and hydrogen joined together in **straight chains, branched trains**

Aromatic hydrocarbons

compound is a hydrocarbon compound containing carbon and hydrogen joined together in aromatic rings (one or more benzene rings)

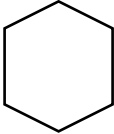
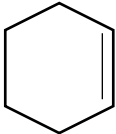
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alkanes


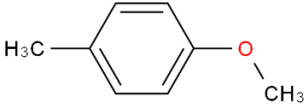
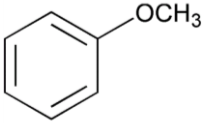
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alkenes, alkynes

Aliphatic Hydrocarbon

Names	cyclohexane	cyclohexene
Mol. Formula	C_6H_{12}	C_6H_{10}
Mol. Structure		
Physical state	Liquid	Liquid
Solubility <ul style="list-style-type: none">H_2ONaOHHCl	Insoluble (immiscible) in water and HCl, NaOH and nature	Insoluble (immiscible) in water and HCl, NaOH and nature
<u>Addition of Bromine</u> 3 drops of Br_2/CCl_4	+ Ve result presence of light from the sun or a UV lamp	+ Ve result Direct
<u>Oxidation</u> 1ml of $KMnO_4$	- Ve result The purple color of $KMnO_4$ does not disappear	+ Ve result disappearance of the purple color of $KMnO_4$ appearance of a brown precipitate

Aromatic hydrocarbons

Names	Benzene	p-Methoxytoluene	Anisole (Methoxybenzene)
Mol. Formula	C_6H_6	$C_8H_{10}O$	C_7H_8O
Mol. Structure			
Physical state	Liquid	Liquid	Liquid
Solubility • H_2O • $NaOH$ • HCl	Insoluble(immiscible) in water and HCl , $NaOH$ and nature	Insoluble(immiscible) in water and HCl , $NaOH$ and nature	Insoluble(immiscible) in water and HCl , $NaOH$ and nature
<u>Bromine</u> 5 drops of Br_2/CCl_4 + iron powder	+ Ve result disappearance of the red color of Br_2 after adding iron powder	-	-
<u>Oxidation</u> 1ml of $KMnO_4$	- Ve result The purple color of $KMnO_4$ does not disappear	+ Ve result disappearance of the purple color of $KMnO_4$ appearance of a brown precipitate	- Ve result
<u>Nitration</u> 1 mL of nitrating mixture (conc. H_2SO_4 + conc. HNO_3).	+ Ve result The oily drops appear to be yellow	-	-