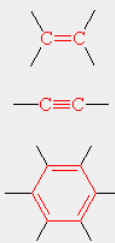


3.2: An Overview of Functional Groups

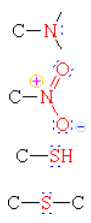
Functional groups

Functional Group Tables

Exclusively Carbon Functional Groups

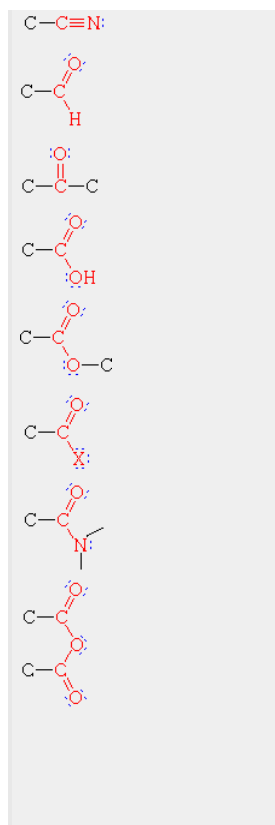
Group Formula	Class Name	Specific Example	IUPAC Name	Common Name
	Alkene	$\text{H}_2\text{C}=\text{CH}_2$	Ethene	Ethylene
	Alkyne	$\text{HC}\equiv\text{CH}$	Ethyne	Acetylene
	Arene	C_6H_6	Benzene	Benzene

Functional Groups with Single Bonds to Heteroatoms

Group Formula	Class Name	Specific Example	IUPAC Name	Common Name
$\text{C}-\ddot{\text{X}}:$	Halide	$\text{H}_3\text{C}-\text{I}$	Iodomethane	Methyl iodide
$\text{C}-\ddot{\text{O}}\text{H}$	Alcohol	$\text{CH}_3\text{CH}_2\text{OH}$	Ethanol	Ethyl alcohol
$\text{C}-\ddot{\text{O}}-\text{C}$	Ether	$\text{CH}_3\text{CH}_2\text{OCH}_2\text{CH}_3$	Diethyl ether	Ether
	Amine	$\text{H}_3\text{C}-\text{NH}_2$	Aminomethane	Methylamine
	Nitro Compound	$\text{H}_3\text{C}-\text{NO}_2$	Nitromethane	
	Thiol	$\text{H}_3\text{C}-\text{SH}$	Methanethiol	Methyl mercaptan
	Sulfide	$\text{H}_3\text{C}-\text{S}-\text{CH}_3$	Dimethyl sulfid	

Functional Groups with Multiple Bonds to Heteroatoms

Group Formula	Class Name	Specific Example	IUPAC Name	Common Name
	Nitrile	$\text{H}_3\text{C}-\text{CN}$	Ethanenitrile	Acetonitrile
	Aldehyde	H_3CCHO	Ethanal	Acetaldehyde
	Ketone	H_3CCOCH_3	Propanone	Acetone

	Carboxylic Acid	$\text{H}_3\text{CCO}_2\text{H}$	Ethanoic Acid	Acetic acid
	Ester	$\text{H}_3\text{CCO}_2\text{CH}_2\text{CH}_3$	Ethyl ethanoate	Ethyl acetate
	Acid Halide	H_3CCOCl	Ethanoyl chloride	Acetyl chloride
	Amide	$\text{H}_3\text{CCON}(\text{CH}_3)_2$	N,N-Dimethylethanamide	N,N-Dimethylacetamide
	Acid Anhydride	$(\text{H}_3\text{CCO})_2\text{O}$	Ethanoic anhydride	Acetic anhydride

Organic Chemistry With a Biological Emphasis by Tim Soderberg (University of Minnesota, Morris)

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