

basic organic functional group reference chart

NAME	POSITIONS OF INFRARED BANDS		
Aliphatic	C-H		
Methyl	2960		
Methylene	2930		
Unsaturated	C=C		
Alkenes	3050	1640	
Vinyl	910	1640	
Vinylidene	890	1640	
Cis	700	1640	
Trans	965	1670	
Alkynes	3200		C≡C 2200
Aromatics			Ring
Mono	750		700
Ortho	750		---
Meta	782		700
Para	817		---
Oxygen Groups		C-O	O-H
Ether		1100	
Alcohol		1100	3350
Carbonyl Groups			C=O
Aldehyde	2700		1730
Ketone			1700
Ester		1200	1740
Carboxylic Acid		3100	1720
Nitrogen Groups			N-H
Amide		1640	3200
Amine			3300
Nitrile			C≡N 2250

FUNCTIONAL GROUP REPRESENTATION			
Methyl			
CH_3-	Methylene	Alkene	Alkyne
Vinyl	$-\text{CH}_2-$	$\text{C}=\text{C}$	$\text{C}\equiv\text{C}$
	Vinylidene	Cis	Trans
Mono	Ortho	Meta	Para
	Aldehyde	Ketone	Ester
	$\text{O}=\text{C}-\text{H}$	$\text{O}=\text{C}-\text{C}$	$\text{O}=\text{C}-\text{O}-\text{C}$
	Ether	CarbAcid	Alcohol
	$\text{C}-\text{O}-\text{C}$	$\text{O}=\text{C}-\text{OH}$	$\text{C}-\text{O}-\text{H}$
	Amide	Amine	Nitrile
	$\text{O}=\text{C}-\text{N}$	$\text{C}-\text{N}$	$\text{C}\equiv\text{N}$

