

Functional Group	Frequency (cm ⁻¹)	Intensity and Comments
Alkanes C–H C–C	2980-2850 1480-1420	medium to strong medium
Alkenes =C–H stretch =C–H bend C=C	3150-3000 980-960 (trans) 730-665 (cis) 1680-1600	medium; very weak for trans strong strong weak to medium
Alkynes ≡C–H C≡C	3350-3300 2260-2100	strong weak to medium
Alkyl halides C–Cl C–Br C–I	800-600 600-500 500	strong strong strong
Alcohols O–H C–O	3650-3300 1350-1050	strong and broad strong
Amines N–H C–N	3500-3100 ~1200	medium and strong; 1° amines-2 bands; 2° amines-1 band medium
Aromatics C–H stretch C–H bend C=C	3080-3020 900-730 1650-1580	weak to medium strong weak to medium
Carbonyls (C=O) Ketones/aldehydes Esters Acids Acid Chlorides	1730-1700 1750-1735 1730-1700 1820-1770	strong strong; also has C–O stretch strong; also has O–H stretch strong