

Infrared Spectroscopy

Chemistry

The key absorption bands, and how to use them.

Wavenumbers in cm^{-1} .

Bond	Wavenumber	Appearance
O-H (carboxylic acid)	2500–3300	Very broad
O-H (alcohol)	3230–3550	Broad
N-H (amine)	3300–3500	Medium, often two peaks
C-H	2850–3100	Sharp, always present
C≡N	2220–2260	Sharp, distinctive
C=O	1680–1750	Strong and sharp
C=C	1620–1680	Weak

The fingerprint region below 1500 cm^{-1} is unique to each compound and is used for identification by matching, not interpretation.