

RAMAN Band Correlation Table

Approximate Wavenumber Range (cm ⁻¹)	Group	Intensity
100–210	Lattice vibrations	Strong
150–430	Xmetal-O	Strong
250–400	C-C aliphatic chain	Strong
295–340	Se-Se	Strong
425–550	S-S	Strong
460–550	Si-O-Si	Strong
490–660	C-I	Strong
505–700	C-Br	Strong
550–790	C-Cl	Strong
580–680	C=S	Strong
630–1250	C-C aliphatic chains	Moderate
670–780	C-S	Strong
720–800	C-F	Strong
800–950	C-O-C	Weak
910–960	Carboxylic acid dimer	Weak
990–1100	Aromatic rings	Strong
1010–1095	Si-O-C	Weak
1010–1095	Si-O-Si	Weak
1020–1225	C=S	Strong
1025–1060	Sulfonic acid	Very weak
1050–1210	Sulfonamide	Moderate
1050–1210	Sulfone	Moderate
1120–1190	Si-O-C	Weak
1145–1240	Sulfonic acid	Very weak
1315–1435	Carboxylate salt	Moderate
1320–1350	Nitro	Very strong
1355–1385	C-CH ₃	Weak
1365–1450	Aromatic azo	Very strong
1405–1455	CH ₂	Weak
1405–1455	CH ₃	Weak
1450–1505	Aromatic ring	Moderate
1535–1600	Nitro	Moderate
1540–1590	Aliphatic azo	Moderate

Approximate Wavenumber Range (cm ⁻¹)	Group	Intensity
1550–1610	Aromatic/hetero ring	Strong
1550–1700	Amide	Strong
1600–1710	Ketone	Moderate
1610–1740	Carboxylic acid	Moderate
1625–1680	C=C	Very strong
1630–1665	C=N	Very strong
1690–1720	Urethane	Moderate
1710–1725	Aldehyde	Moderate
1710–1745	Ester	Moderate
1730–1750	Aliphatic ester	Moderate
1735–1790	Lactone	Moderate
1740–1830	Anhydride	Moderate
1745–1780	Acid chloride	Moderate
2020–2100	Isothiocyanate	Moderate
2070–2250	Alkyne	Strong
2080–2150	Si-H	Moderate
2090–2170	Isonitrile	Moderate
2100–2170	Thiocyanate	Very weak
2110–2160	Azide	Moderate
2200–2230	Aromatic nitrile	Moderate
2200–2280	Diazonium salt	Moderate
2220–2260	Nitrile	Moderate
2230–2270	Isocyanate	Very weak
2290–2420	P-H	Very weak
2530–2610	Thiol	Strong
2680–2740	Aldehyde	Weak
2750–2800	N-CH ₃	Weak
2770–2830	CH ₂	Strong
2780–2830	Aldehyde	Weak
2790–2850	O-CH ₃	Weak
2810–2960	C-CH ₃	Strong
2870–3100	Aromatic C-H	Strong
2880–3530	OH	Weak
2900–2940	CH ₂	Strong
2980–3020	CH=CH	Strong

Approximate Wavenumber Range (cm ⁻¹)	Group	Intensity
3010–3080	=CH ₂	Strong
3150–3480	Amide	Moderate
3150–3480	Amine	Moderate
3200–3400	Phenol	Weak
3210–3250	Alcohol	Weak
3250–3300	Alkyne	Very weak

