

# FT-IR ASSIGNMENTS OF BIOMASS PYROLYSIS OIL

Wave number (cm <sup>-1</sup> )	Assignments
3429	O-H stretching vibration, H <sub>2</sub> O
3000-3040	Aromatic ring C-H stretching
2930-2980	Asymmetrical C-H stretching, vibration of aliphatic CH <sub>3</sub> and CH <sub>2</sub>
2850-2870	Symmetrical C-H stretching, vibration of aliphatic CH <sub>3</sub> and CH <sub>2</sub>
1701-1734	C=O stretch in unconjugated ketones, carbonyl and ester groups
1652-1666	C=O stretch in conjugated aryl ketones
1593-1609	Aromatic ring vibrations and C=O stretch
1504-1515	Aromatic ring vibrations
1462-1464	Asymmetric C-H bending (in CH <sub>3</sub> and -CH <sub>2</sub> -)
1420-1424	Aromatic ring vibrations
1365	Symmetric deformation of C-H in methyl groups

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Wave number (cm <sup>-1</sup> )	Assignments
1360	Phenolic hydroxyl vibrations
1270	Vibrations of guaiacyl rings and stretching vibrations of C-O bonds
1214-1233	C-C, C-O and C=O stretching
1190	Vibrations of methoxyl group
1160	Deformation vibrations of C-H bonds in benzene rings
1140	Deformation vibration of C-H bonds in guaiacyl rings
1115	Vibrations of ester linkage
1114-1125	Aromatic in-plane C-H bending
1075-1090	Deformation vibrations of C-O bonds in secondary alcohols and aliphatic ethers
1030-1033	Deformation vibrations of C-H bonds in aromatic rings
914-919	Aromatic out-of-plane C-H bending
852-859	Aromatic out-of-plane C-H bending in positions 2, 5 and 6 of guaiacyl units
833	Vibrations of C-H bonds in syringyl units
720-740	Bending out of the plane C-H
730-675	Bending out of the plane =CH