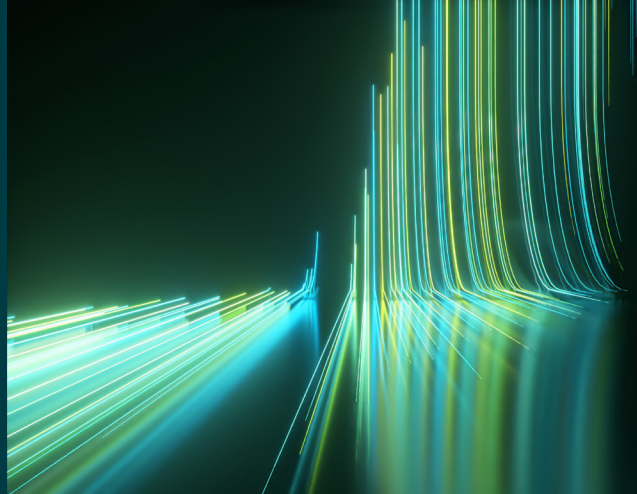


WILEY

Spectral Databases

From the leader in spectral data



IR - Polymers - Wiley

Spectra – 19

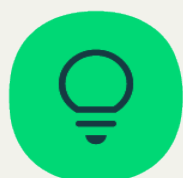
This database is only available as part of the KnowItAll IR Spectral Library subscription.



Description

Infrared spectroscopy is essential for polymer analysis because it provides rapid, non-destructive identification and characterization at the molecular level. Each polymer produces a unique IR spectrum that serves as a molecular fingerprint, enabling scientists to identify unknown materials, verify compositions, and ensure manufacturing quality control.

Beyond initial characterization, IR spectroscopy is critical for understanding polymer degradation and long-term performance. By tracking changes in absorption bands, researchers can monitor oxidative damage, thermal stability, and UV degradation that affect service life. The technique also enables real-time monitoring of curing reactions in thermosets, detection of additives or contaminants, and assessment of crosslinking density. This combination of speed, minimal sample preparation, and versatility makes IR spectroscopy indispensable throughout the polymer lifecycle—from R&D and quality control to failure analysis and recycling.



Applications

- Rapid prototyping
- Polymer recycling
- Forensic science
- Automotive and aerospace
- Pharmaceuticals
- Electronics



Additional information

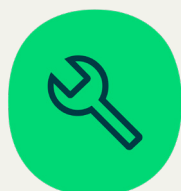
When it comes to spectral analysis, the more data you have the better. Wiley spectral databases provide much more information than simply the spectrum. Database records include the following valuable details when available:

- Chemical structure
- Chemical name
- Formula
- InChI/InChIKey
- Molecular weight
- Instrument name



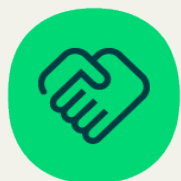
Compound coverage

- Polymers
- Thermoplastics such as PLA, ABS, and PETG
- Carbon fiber-reinforced nylon
- Conductive polymers



Technique

The spectra were generated using Nicolet iS20 w/ Smart iTR instrument. The data was collected in the region of 400-4000 cm^{-1} .



Trusted data from a trusted source

Wiley is the authoritative source for spectral data. Our renowned databases are processed according to rigorous protocols to ensure they are of the highest quality. Qualification procedures start at data acquisition and continue throughout the database development process. Any data acquired from trusted partners is thoroughly vetted before inclusion in our collections.