IR - Sadtler IR Reference Database (Organic and Polymeric)

Product Code - 426200
Spectra - 10,000

Description

This database contains a comprehensive collection of 9,700 IR spectra of pure organics, as well as 300 polymeric compounds found in industrial and academic laboratories. This compilation of spectra was gleaned from Bio-Rad's IR Standard collection which contains over 75,000 pure organic compounds and Bio-Rad's Comprehensive Monomers & Polymers collection. The spectra are representative of a broad range of chemical classifications from commercially available sources.

Technique

A variety of analysis methods were used depending on the nature of the compounds. Liquids were prepared by placing a small amount of sample between two infrared transparent windows. The crystals were pressed together to form a thin layer of the sample. The formulation of the sample determined which window material was used. For non-aqueous samples, the window material was KBr. For aqueous samples, KRS-5 was preferred. Solids presented a variety of challenges. The melting point of the sample pointed to which technique to was attempted first.

- For samples with a melting point less than 72° C, filming on a KBr window from a suitable solvent was initially attempted. If this was not successful due to a poor baseline or insolubility, a melt between two KBr windows was attempted. If this was not successful, the sample was tried as a KBr pellet.
- For samples with a melting point greater than 72° C, the technique of first choice was a KBr pellet. For polymer samples, filming the sample was attempted first, followed by a melt and then KBr pellet techniques.
- For samples with an unknown melting point, an examination of the crystallinity of the sample indicated which technique would be successful. Highly crystalline samples tend to yield good KBr pellets. For samples that exhibit low crystallinity, films and melts tend to give better spectra.

Other analysis methods were used as needed.

Additional Information Listed

Each spectrum is labeled with the chemical name or trade name of the product, a chemical description and physical data furnished by the manufacturer, the source of the sample, and the manner in which the product was examined.

Classifications

Pure Organic Compounds

- Hydrocarbons
  - A. Saturated Hydrocarbons
    1. Normal Alkanes
    2. Branched Alkanes
    3. Cyclic Alkanes
  - B. Unsaturated Hydrocarbons
    1. Acyclic Alkenes
    2. Cyclic Alkenes
    3. Alkynes
  - C. Aromatic Hydrocarbons
    1. Monocyclic (Benzences)
    2. Polycyclic

- Halogenated Hydrocarbons
  - A. Fluorinated Hydrocarbons
    1. Aliphatic
    2. Aromatic
  - B. Chlorinated Hydrocarbons
    1. Aliphatic
    2. Olefinic
    3. Aromatic
  - C. Brominated Hydrocarbons
    1. Aliphatic
    2. Olefinic
    3. Aromatic
  - D. Iodinated Hydrocarbons
    1. Aliphatic And Olefinic
    2. Aromatic

- Nitrogen Containing Compounds
  - A. Amines
    1. Primary
      a. Aliphatic And Olefinic
      b. Aromatic
    2. Secondary
      a. Aliphatic And Olefinic
      b. Aromatic
There are almost 50 classifications presented in the polymeric group of 300 IR reference spectra. The list includes:

<table>
<thead>
<tr>
<th>Classification</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acrylic Copolymers</td>
<td>Modified Polymers, Polyurethane &amp; Urethane Prepolymers</td>
</tr>
<tr>
<td>Acrylonitrile-Butadiene-Styrene Resins</td>
<td>Other Styrene Copolymers, Polyvinyl Alcohol Esters</td>
</tr>
<tr>
<td>Aliphatic Hydrocarbon Copolymers</td>
<td>Phenolic Resins, Poly(vinylpyridines)</td>
</tr>
<tr>
<td>Aminoplasts/Polyamines</td>
<td>Polyacrylic &amp; Polymethacrylic Acids &amp; Salts, Poly(vinylpyrrolidones)</td>
</tr>
<tr>
<td>Anhydrides Polymers</td>
<td>Polyacrylic &amp; Polymethacrylic Esters, Rosin &amp; Rosin Derivatives</td>
</tr>
<tr>
<td>Butadiene-Acrylonitrile Copolymers</td>
<td>Polyamides, Silicone Polymers</td>
</tr>
<tr>
<td>Carboxymethyl Cellulose &amp; Salts</td>
<td>Polybutadienes, Styrene-Acrylonitrile Copolymers</td>
</tr>
<tr>
<td>Cellulose Esters &amp; Mixed Esters</td>
<td>Polymethacrylates, Styrene-Butadiene Copolymers</td>
</tr>
<tr>
<td>Cellulose Esters</td>
<td>Polystyrenes, Sulfonated Polymers</td>
</tr>
<tr>
<td>Chlorinated Hydrocarbon Resins</td>
<td>Polystyrene-Butadiene Copolymers, Synthetic Polysiloxanes &amp; Natural Rubbers</td>
</tr>
<tr>
<td>Coumarone-Indene Resins</td>
<td>Polymethacrylates, Thioplas/Polyisulfides</td>
</tr>
<tr>
<td>Fluorocarbon Resins</td>
<td>Polymaleates, Unmodified Epoxy Resins</td>
</tr>
<tr>
<td>Hydroxyethyl Celluloses</td>
<td>Poly[(methylthio)acrylates], Vinyl Chloride Copolymers</td>
</tr>
<tr>
<td>Ion Exchange Resins</td>
<td>Poly[(methylthio)acrylates], Vinyl Chloride Copolymers</td>
</tr>
<tr>
<td>Miscellaneous Polymers</td>
<td>Poly[(methylthio)acrylates], Vinyl Chloride Copolymers</td>
</tr>
<tr>
<td>Miscellaneous Vinyl Polymers</td>
<td>Poly[(methylthio)acrylates], Vinyl Chloride Copolymers</td>
</tr>
<tr>
<td>Modified Epoxy Resins</td>
<td>Poly[(methylthio)acrylates], Vinyl Chloride Copolymers</td>
</tr>
</tbody>
</table>

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