IR - Polymers, Hummel Defined - Wiley

Spectra - 2,335

Description

The database includes spectra of polymers, copolymers, and polymer additives to help polymer and plastics chemists solve analytical problems quickly and reliably. It can be used for quality control, material characterization, or structure elucidation.

Additional Information

Structures and physical properties are included when available.

Classifications

Polyethylenes
Polypropylenes
Petroleum Hydrocarbon Resins
Synthetic waxes
Polybutenes & Butyl Rubbers
Polybutadienes
Synthetic Polyisoprenes & Natural Rubbers
Aliphatic Hydrocarbon Copolymers
Coumarone-Indene Resins
Polyterpene & Naphthene Resins
Other Cyclic Hydrocarbon Resins
Polystyrenes
Styrene-Butadiene Copolymers
Other Styrene Copolymers (excluding nitriles)
Other Aromatic Vinyl Hydrocarbons
Fluorocarbon Resins
Chlorinated Hydrocarbon Resins
Silicone Polymers
Acrylonitrile-Butadiene-Styrene Resins
Polyurethane & Urethane Prepolymers
Butadiene-Acrylonitrile Copolymers
Styrene-Acrylonitrile Copolymers
Other Nitrile Polymers
Thioplasts/Polysulfides
Polyethers
Anhydride Polymers
Unmodified Epoxy Rresins
Modified Epoxy Resins
Ionomers
Vinyl Chloride Homopolymers
Plasticized Polyvinyl Chlorides
Vinyl Chloride Copolymers
Polyvinyl Alcohols
Polyvinyl Ethers
Polyvinyl Acetals
Polyvinyl Esters
Polyvinyl Acetate Copolymers
Polyvinylidene Polymers (excluding nitriles)
Miscellaneous Vinyl Polymers
Nitrocelluloses
Hydroxyethyl Celluloses
Cellulose Ethers
Carboxymethyl Cellulose & Salts
Cellulose Esters & Mixed Esters
Miscellaneous Carbohydrate Derivatives
Phenolic Resins
Modified Phenolic Resins
Acrylic Copolymers (see also styrene copolymers)
Polyacrylic & Polymethacrylic Esters
Polyacrylic & Polymethacrylic Acids & Salts
Polyesters
Modified Polyesters
Polycarbonates
Alkyds
Styrenated Alkyds
Resin Modified Alkyds
Silicone Modified Alkyds
Rosin & Rosin Derivatives
Aminoplasts/Polyamines
Polyamides
Polyimides
Polyvinylpyrrolidones
Polyvinylpyridines
Polysulfones
Sulfonated Polymers
Ion Exchange Resins
Polymerized Fats
UV Light Absorbers
Miscellaneous Polymers

Technique

Spectra of the most important defined polymers were recorded using FT-IR spectrometers, primarily a Nicolet 7199 and 20 SX. They were intensity normalized, background corrected, and foreign bands eliminated when possible. Liquids were recorded as capillary layers. Soluble noncrystallizable materials with low softening points were applied to the carrier crystal as films from solution or melted between two crystal plates. Solvent was removed at 50°C in the oil pump vacuum for several hours, usually overnight. Low molecular weight or inorganic materials that were crystalline at room temperature were dispersed in KBr and pressed.

The KBr technique was also used for insoluble polymers and fibers. Low melting polymers were melted to uniform films between KBr discs. Higher melting polymers were pressed to films between Al, Ti, or fiber-reinforced PTFE foils using a heated press. Soluble polymers were prepared as films from solution. Thallium bromide iodide (KRS-5) was used for substances which would have dissolved the alkali halides.