

Reactions of Poly bd[®] Resins...

... At The Oxygen Atom Centers—

The primary, predominantly allylic hydroxyl functionality in Poly bd resin can be utilized in both polymerization and derivatization reactions as indicated below (see Figure 5).

1. Polyurethanes— Poly bd resins are readily chain extended with di- and polyisocyanates to produce polyurethanes with a wide range of mechanical properties. Typical one-shot and prepolymer techniques can be employed. The end products have excellent hydrolytic stability, low temperature flexibility, and can be extended with a wide range of organic and inorganic materials including hydrocarbon oils, asphalt, and inorganic fillers.

2. Ester Derivatives— Ester derivatives can be prepared by reaction of Poly bd resins with the appropriate acids, acid chlorides, anhydrides or by transesterification. Acrylate and methacrylate derivatives, for example, can be homopolymerized or copolymerized with vinyl monomers to yield a spectrum of products.

... At The Carbon Atom Centers—

The carbon to carbon bond unsaturation in Poly bd resins, which is predominantly internal, can be utilized in both polymerization and derivatization reactions.

1. Oxidative Crosslinking— Poly bd resins are reactive under oxidative conditions to yield internally crosslinked and film forming materials. Coatings derived from such processes can range from flexible to brittle compositions.

2. Epoxidation— Oxirane derivatives are prepared by the reaction of Poly bd resins with epoxidation

systems such as peracetic acid. The epoxide content can be varied to yield products containing both oxirane and unsaturated groups. The resulting products can be cured by the reaction of the epoxide groups. These materials can also be used in combination with other epoxy resins to produce a variety of products (see Figure 5).

3. Other reactions common to olefinic unsaturation, in theory, are applicable to Poly bd resins.

Product Information

CAS No. 69102-90-5

For all hydroxyl terminated Poly bd resin homopolymers.

FDA Approvals

Poly bd resins are acceptable under Title 21 (Food and Drugs) of the Code of Federal Regulations, paragraph 175.300, Resinous and Polymeric Coatings.

Shelf Life

1 year minimum if stored in original unopened container at temperatures between 50°F and 95°F and out of direct sunlight.

Recommendations

Due to the unsaturation existing in Poly bd resins, the use of a hindered phenol antioxidant (e.g., Cyanox[®] 2246 by Cytec Industries) and a UV stabilizer (e.g., Tinuvin[®] 328, 327, or P by Ciba-Geigy) is recommended for stability of the final product if exposed to high temperature or sunlight.

