

Epoxy Resins Technology Handbook (Manufacturing Process, Synthesis, Epoxy Resin Adhesives and Epoxy Coatings) 2nd Revised Edition

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Epoxy is a term used to denote both the basic components and the cured end products of epoxy resins, as well as a colloquial name for the epoxide functional group. Epoxy resin are a class of thermoset materials used extensively in structural and specialty composite applications because they offer a unique combination of properties that are unattainable with other thermoset resins.

Epoxyes are monomers or prepolymers that further reacts with curing agents to yield high performance thermosetting plastics. They have gained wide acceptance in protecting coatings, electrical and structural applications because of their exceptional combination of properties such as toughness, adhesion, chemical resistance and superior electrical properties. Epoxy resins are characterized by the presence of a three membered cycle ether group commonly referred to as an epoxy group 1,2-epoxide, or oxirane. The most widely used epoxy resins are diglycidyl ethers of bisphenol-A derived from bisphenol-A and epichlorohydrin.

The market of epoxy resins are growing day by day. Today the total business of this product is more than 100 crores. Epoxy resins are used for about 75% of wind blades currently produced worldwide, while polyester resins account for the remaining 25%. A standard 1.5-MW (megawatt) wind turbine has approximately 10 tonnes of epoxy in its blades. Traditionally, the markets for epoxy resins have been driven by demand generated primarily in areas of adhesives, building and civil construction, electrical insulation, printed circuit boards, and protective coatings for consumer durables, amongst others.

The major contents of the book are synthesis and characteristics of epoxy resin, manufacture of epoxy resins, epoxide curing reactions, the dynamic mechanical properties of epoxy resins, physical and chemical properties of epoxy resins, epoxy resin adhesives, epoxy resin coatings, epoxy coating give into water, electrical and electronic applications, analysis of epoxides and epoxy resins and the toxicology of epoxy resins.

It will be a standard reference book for professionals and entrepreneurs. Those who are interested in this field can find the complete information from manufacture to final uses of epoxy resin. This presentation will be very helpful to new entrepreneurs, technocrats, research scholars, libraries and existing units.

Contents

1. Synthesis and Characteristics of Epoxy Resin

Introduction

Structure of Epoxides

Epoxidation of Unsaturated Hydrocarbons

Catalytic Oxidation of Ethylene and Higher Olefins

Epoxidation by Peroxy Acids and Their Esters

Preparation of Peroxy Acids

In Situ Epoxidation

The Epoxidation Mechanism

Unsaturated Materials

Epoxidation by Inorganic Peroxy Acids

Epoxidation with Aliphatic and Aromatic Hydrocarbon Hydroperoxides

Epoxidation with Chromic Acid and Chromyl Compounds

Biological Epoxidation

Dehydrohalogenation of Substituted Hydroxyl Compounds

The Epoxidation Mechanism

Halohydrin Formation

Epoxides from Epichlorohydrin

Glycidyl Ethers

Glycidyl Esters

Nitrogen-Containing Epoxides

Thioglycidyl Epoxides

Silicon-Containing Epoxides

Organophosphorus Epoxides

Halogen-Containing Epoxides

Epoxides from Hydroxy Sulfonates or Halogenated Acetates

Epoxides from Glycols

Epoxidation by Condensation

Darzens Glycidic Ester Condensations

Epoxides from Ylids

Epoxides from Halogenated Ketones and Nickel Carbonyl

Epoxides from the Reaction of Diazomethane with Aldehydes or Ketones

Epoxides Containing Unsaturation

Conclusions

2. Manufacture of Epoxy Resins

Raw Materials

Manufacture

Plant Location

Machinery Needed

Profit

3. Epoxide-Curing Reactions

The Effect of Epoxide Structure on Reactivity with Curing Agents

The Mechanism of the Curing Reaction

Polyaddition Reactions

Polyamines

Polyamides

Polyureas

Polyurethanes

- Polyisocyanates
- Polymercaptans
- Polyhydric Alcohols
- Polyphenols
- Polycarboxylic Acids
- Polybasic Acid Anhydrides
- Silanes and Silanols
- Others
- Polymerization
- Anionic Catalysts
- Cationic Catalysts

4. The Dynamic Mechanical Properties of Epoxy Resins

- Basic Parameters
- The Glassy Transition and Dynamic Mechanical Dispersion
- Temperature and Frequency Interdependence
- Experimental
- Results and Discussion
- Standard Measurements
- Dynamic Measurements
- Comparison of Results
- Treatment by Reduced Variables
- Conclusions

5. Physical and Chemical Properties of Epoxy Resins

- Solubility and Surface Properties
- Network Structure and Physical Properties
- Aging and Chemorheology
- Bisphenol a Epoxy Homopolymers and Copolymers
- Thermal Transition Effects
- Dynamic Mechanical Response
- Relaxation and Fracture Properties
- Properties Compared with Elastomers and Thermoplastics

6. Epoxy Resin Adhesives

- Introduction
- Theories of Adhesion and Adhesive-joint Strength
- Wetting and Spreading Phenomena
- Boundary-Layer Theory
- Surface-Attachment Theory of Adhesive-Joint Strengths
- Stress Distribution in Adhesive Joints
- Rheological Aspects of Adhesives
- Unified Interpretation of Adhesive-Joint Strengths
- Physical and Mechanical Aspects of Epoxy-Resin Adhesives
- Dynamic Mechanical Techniques
- Mechanical Behavior of Epoxy Adhesives During Joint Formation
- Strength of Adhesive Materials
- Chemical Aspects of Epoxy-based Adhesives
- Curing Agents for Bisphenol A Epoxy Adhesives
- Modifiers for Bisphenol A Epoxy Adhesives
- Adhesives Based on Other Epoxy Materials
- Technological Properties of Epoxy-adhesive Systems
- Cure and Thermal Softening Behavior of Epoxy Adhesives

Stress and Environmental Durability of Adhesive Joints
Applications of Epoxy Adhesives
Future Prospects

7. Epoxy Resin Coatings

Classification of Epoxy-Resin Coatings

Epoxy Resins Commonly Used in Coatings

Epoxy-Resin Esters

Esters Produced from Solid Epoxy Resins

General Remarks

Formulation Latitude

Esters Produced from Liquid Epoxy Resins

Precatalyzed Liquid Epoxy Resin for the Production of Solid Epoxy Resins and Epoxy-Resin Esters

Cooking Procedure

“Two-Step” Liquid-Epoxy-Resin Route to Epoxy-Resin Esters

Cooking Procedure

Solid-Epoxy-Resin Solution Coatings

Cold-Cured Epoxy-Resin Systems

Polyamine Curing Agents

Polyamine-Adduct Curing Agents

Polyamide-Resin Curing Agents

Polyamide-Adduct Curing Agents

Tertiary Amine Curing Agents

Industrial Maintenance Coatings Based on Cold-Cured Epoxy-Resin Systems

High-Film-Build Cold-Cured Epoxy-Resin Coatings

Application Instructions

Manufacturing Instructions

Epoxy Baking Finishes

Epoxy-Phenolic Coating Systems

Epoxy-Urea-Formaldehyde Resin Coating Systems

Epoxy-Thermosetting Acrylic Coating Systems

Liquid Epoxy Resins in Solventless and Super-High-Solids Systems

Special Application Equipment and Formulation for Solventless Systems

Manufacturing Instructions

Application

Ketimine Curing Agents

Manufacturing Instructions

Application

Curing Characteristics

Powder Coatings

Application Equipment

Epoxy-Resin Powder-Coating Formulations

Fusion-Produced Epoxy-Resin Powders

Manufacturing Instructions

Applications Instructions

Dry-blended Epoxy-Resin Powders

Manufacturing Instructions

Application Instructions

Properties and Applications

Thermoplastic Epoxy Resins

Zinc-Rich and General Purpose Shop Primers

Manufacturing Instructions

Application Instructions

Manufacturing Instructions
Application Instructions
Thermoplastic-Epoxy-Resin Crosslinked Systems
Water-Reducible Epoxy Resin Coatings
Water-Reducible Epoxy-Ester Baking Finishes
Manufacturing Instructions
Application Instructions
Water-Reducible Polyamide-Cured Epoxy-Resin Coatings
Manufacturing Instructions
Manufacturing Instructions
Water-Reducible Epoxy-Resin Coatings for Electrodeposition
General Remarks
Maleinization Step After Complete Esterification of the Epoxy Resin with Organic Acids
Cooking Procedure
Application Instructions

8. Epoxy Coating Give into Water

9. Electrical and Electronic Applications : Sealants and Foams

Electronic and Electrical Applications
Introduction
Casting
Potting
Encapsulation
Coatings
Sealing
Molding
Formulation of the Resin System
Internal Stresses
Rapid Cures
Flexibilizing Epoxy Resins
Fillers
Reactive Diluents
Cycloaliphatic Epoxides
High-Temperature Epoxy-Resin Systems
Flame-Retardant Epoxy Resins
Colorless Epoxy Resins
Epoxy Formulations
Molding
Molding Compounds
Molding Technology
Liquid-Injection Molding
Pellets and Preforms
Epoxy Sealants
Epoxy Foams
Gas-Blown Foams
Syntactic Foams
One-Package Foams
Epoxy-Foam Applications
Epoxy Strippers
Handling of Epoxy Casting Systems

10. Analysis of Epoxides and Epoxy Resins

Uncured Epoxy Resins

Qualitative Tests

Detection of Free Epoxy Groups

Determination of Epoxy Group—Lithium-Chloride Test

Reagents

Procedure

Determination of Epoxy Group—Periodic Acid Test

Reagents

Procedure

Determination of Epoxy Group—Pyrolysis Test

Reagents

Procedure

Determination of Epoxy Group—Lepidine Test

Reagents

Procedure

Detection of the Bisphenol A Skeleton

Determination of Bisphenol A Epoxy Resins—Mercuric Oxide and Nitric Acid Tests

Reagents

Procedure

Determination of Bisphenol A Epoxy Resins in Coatings—Nitric Acid Test Reagents

Reagent

Procedure

Determination of Bisphenol A Epoxy Resins—Filter-Paper Test

Reagents

Procedure

Determination of Bisphenol A Epoxy Resin—Formaldehyde Test

Reagents

Procedure

Determination of Bisphenol A Epoxy Resins—Phenylenediamine Test

Reagent

Procedure

Detection of Epoxy Resins Based on 4,4'-Diamino-diphenylmethane

Determination of Epoxy Resins Based on 4,4'-Diaminodiphenylmethane

Reagents

Procedure

Detection of Other Epoxy Resins

Quantitative Tests of the Epoxy Group

Hydrohalogenation Methods

Estimation of Epoxy Group—Hydrochloric Acid in Dioxane, Methyl Ethyl Ketone, or Dimethylformamide

Reagents

Procedure

Calculations

Estimation of the Epoxy Group—Pyridinium Chloride in Pyridine

Reagents

Procedure

Hydrohalogenation by Direct Titration

Estimation of Epoxy Group

Reagents

Procedure

Calculations

Other Chemical Methods

Estimation of Other Functional Groups

Hydroxyl Group

- Glycol Group
- Estimation of α -Glycol Group
- Reagents
- Procedure
- Calculation
- Chlorine
- Esterification Equivalent Weight
- Estimation of Esterification Equivalent Weight
- Reagents
- Procedure
- Calculation
- Infrared Spectroscopy
- Technique
- Epoxy Absorption Bands
- Epoxy Resins
- Quantitative Estimation
- Following the Degree of Cure
- Other Physical Methods
- Ultraviolet Spectroscopy
- Electron Spin and Nuclear Magnetic Resonance Methods
- Gas Chromatography
- Paper Chromatography
- Thin-Layer and Gel-Permeation Chromatography
- Handling Properties
- Molecular Weight
- Softening Point
- Viscosity
- Color
- Blends and Compounds
- Hardeners and Accelerators
- Organic Acid Anhydrides
- Determination of Acid and Anhydride Content
- Reagents
- Procedure
- Calculations
- Amines
- Determination of Amine Number
- Reagents
- Procedure
- Calculation
- The Curing Process
- Curing Characteristics of Epoxy Resin-Hardener Systems
- Determining the Degree of Cure
- Analysis of Cured Epoxy Resins

11. The Toxicology of Epoxy Resins

- Introduction
- Experimental Method
- Materials
- Acute Toxicity
- Chronic Toxicity
- Irritation
- Sensitization

Results
Acute Toxicity
Chronic Toxicity
Irritation
Sensitization
Medical Experience with Epoxy Resins
Comment

12. Photographs of Machinery with Suppliers
Contact Details

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