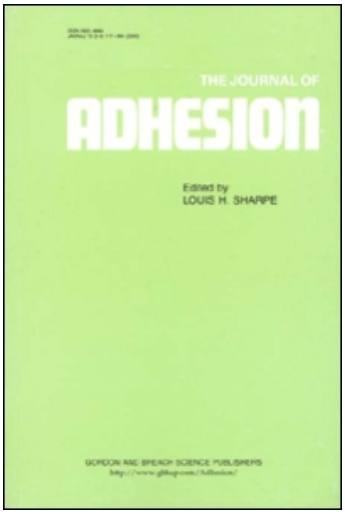

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Contents

Studies on Curing Reaction of Epoxy Resin II. Curing Kinetics in the Presence of Silica Filler

Da YOUXIAN, HUWEIHUA and Sun MUJIN

(Institute of Chemistry, Academia Sinica, Beijing 10080, China)

Abstract

The curing kinetics of epoxy resin filled with silica by different surface treatment was investigated by appearance of shrink of volume during the curing process. The results showed that the whole curing course was divided into three stages: four, zero and one-order reaction step. The filler and its different surface treatment were effective on the reaction velocity and activation energy but were not effective on reaction course. Comparing pure resin system with filled system, it was found that the shrinkage of the system was little.

KEY WORDS Epoxy resin, curing reaction, shrinkage of volume filler, surface treatment.

Study on Property of Copolymer Emulsion With Epoxy Group

Xu ZUSHUN, Li JIANZONG, Cheng SHIYUAN, Zhang HONGTAO and Lu GUOHONG

(Department of Chemistry, Hubei University, Wuhan 430062, China)

Abstract

In this paper, the crosslinking copolymer emulsion of (meth)acrylates and glycidyl methacrylate was prepared and characterized. The effect of epihydrin methacrylate and its content on the properties of emulsion was studied. The stability and viscosity of the emulsion were increased as introduced the epoxy group.

KEY WORDS Acrylates, polymer emulsion, emulsion polymerization.

The Rheology of Anionic Polyacrylamide in the Porous Media

Mei YOUQIAN

(Scientific Research Institute of Petroleum Exploration and Development CNPC, Beijing 100080, China)

Abstract

The rheology of anionic polyacrylamide solution when flowed through porous media and the relation between polymer retained in pores and injection rate of water studied. The behaviour of rheology of polymer solution through porous media is similar to that of injection of water through media with remained polymer. But the mechanism is different. The character of the rheology in different flowing rate was reasoned according to the change of action forces between moleculars and the relation of stress and anti-deformation of molecular.

KEY WORDS Rheology, polyamide solution, porous media, action forces of molecular.

A New Adhesive Based on the Polyvinyl Alcohol Urethane

Xia CHIDAN and Luo XUEJUN

(Jianghan University, Wuhan 430010, China)

Abstract

The adhesive was prepared with polyvinyl alcohol which was reacted with the toluene diisocyanate (TDI) in water solution. The reaction principle, synthetic methods, shear strength and water resistivity were discussed in the paper.

KEY WORDS Adhesive, polyvinyl alcohol, toluene diisocyanate.

The Surface Modification of LDPE Sheets by Four Methods and Their Adhesion

Li CHAOSHUN, Zang ZIHUI and Rao ZHOGONG *et al.*

(Beijing Radiation Application Research Centre, Beijing 100012, China)

Abstract

Four methods were used to modify the surface of the LDPE sheets. The modification results were discussed by comparing the bond strengh of the bonded sheets. The application of the different modification methods is also reviewed in this paper.

KEY WORDS Blend modification, oxidation modification, chemical graft, radiation graft, bond strength.

The Thermal Analysis of the Heat-Resistant Phenolic Resins Based on TGA and DTA

Wang YUMING, Zhang HANBI and Yan RONG

(Chemistry Deparment, Huazhong University of Sciences and Technology, Wuhan 430074, China)

Yan RONG

(National Laboratory on Coal Combustion, HUST, Wuhan, China)

Abstract

Several heat-resistance resins of phenolic resin were synthesized and the TGA and DTA curves were studied in this paper. The relation of the heat resistance to structure of the resins are obtained.

KEYWORDS Phenol formaldehyde resins, TGA, DTA.

Synthesis of Polyfunctional Acrylate Monomer (PETA) and its Application in Dentistry

Jiang JIYING, Tang LIHUI and Xie HEMING

(Laboratory of Dental Material, Stomatological College, Fourth Military Medical University, 710032 Xian, China)

Abstract

PETA was prepared by the esterification of acrylic acid and pentaerythritol. It is a mixture of polyfunctional acrylate. The composite resins based on PETA and Si_3N_4 is of good mechanical properties and abrasion resistance. This is due to the highly cross linked structure of the composite resin.

KEY WORDS Polyfunctional monomer, pentaerythritol, acrylic.

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Contents

Property and Morphology of SBS Pressure-Sensitive Adhesive

Zhang BIN, Cheng DAOYI and WANGZHILU

(Institute of Petrochemistry, Heilongjiang Academy of Sciences, Harbin 150040, China)

Abstract

The effect of the amount of polyterpene resin and process oil on the property of SBS pressure-sensitive adhesive was studied in this paper. The microstructure of SBS blends was also included. The paper considered that the compatibility of polyterpene resin and process oil with the polybutadiene phase in SBS is good.

KEYWORDS Adhesive, pressure-sensitive adhesive, SBS, polyterpene.

A Study of Phenolic Resins-Polyvinyl Acetals-Diisocyanate Low-Temperature Curing Adhesive

Jiang DUXIAO
(Jinan University, Guangzhou 510632, China)

Song LINGYING
(Guangzhou Normal College, Guangzhou, China)

Abstract

The title adhesive comprises phenolic resins and polyvinyl acetals as basic components, the diisocyanate as crosslinker, and N-ethylmorphline as promoter. This adhesive can be cured at $-15^{\circ}C$ with good strength for bonding metals, plastics and ceramics.

KEY WORDS Low-temperature-curing, phenolic resins, diisocyanate, adhesive.

An Adhesive for Laminated Material of Polyolefin

Liao BAOYUN

(Human Plastics Research Institute, Changsha 410001, China)

Abstract

A two-part liquid adhesive used in the laminating of polyolefin was developed. One part is the solution of saponified EVA, the other was the precopolymer of polyurethane. The laminating strength of polyolefin to the base film is above 5 N/15 mm. Sealing strength is above 50 N/15 mm. The adhesive has many advantages, such as: no poison; no abnormal odour, resistance to radiation of γ-ray with excellent processing performance.

KEY WORDS Polyolefin laminated materials, adhesive, EVA, grafting.

Preparation of β-Hydroxyl Ethyl Acrylate

Cao DABIN

(Department of Chemical Engineering, Dalian University, Dalian 116012, China)

Abstract

β-Hydroxyl ethyl acrylate was prepared from chloroethanol and acrylic acid in the presence of sodium hydroxide. High yield of product could be obtained by this rapid and simple procedure without problem of explosion. The method was especially suitable for batch process on a small scale.

KEY WORDS Acrylic acid, β-hydroxyl ethyl acrylate, preparation, polymer.

Photocurable Materials and Their Utility

Zhang XINGHUA and Mo QING

(Guangzhou Institute of Chemistry, Academia sinica, Guangzhou 510650, China)

Abstract

In this paper, the particularity, the classification, photoinitiator and utility of photocurable materials were introduced. It mainly involved the status and newest developed of UV-curable materials. The future development and effect of environmental factors on the photocurable materials were also discussed. Several applied formulate were example at the end.

KEY WORDS Photocurable material, photoinitiator, formula.

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