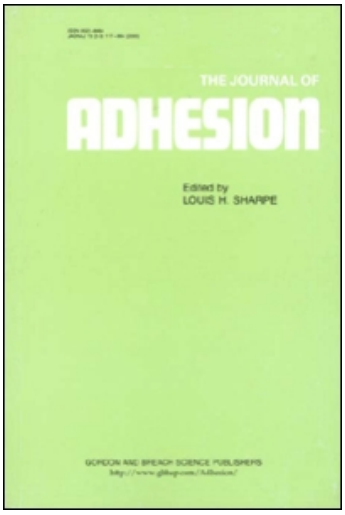

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Contents Lists and Abstracts from the China Journal "Technology of Adhesion & Sealing"

Vol. 14 No. 1 Feb. 10, 1993

Contents

Polyacrylate Core-Shell Particles—Toughened Epoxy Adhesives ..... Li Yiming, Wang Xiaomin, Bai Gongjian and Yu Yunzhao .... [1]
Investigation on the Adhesive Property for LWY-II High Speed Adhesion Filter Cigarette Holder ..... Ye Chuping, Li Wenyu, Chen Fuhe and He Tiansheng .... [5]
The Sheath Interlink Strength of Copper Phosphate Adhesive ..... Tao Daoxian, Li Zhuang, Xu Jili, Guo Xianzhong, Shen Jing, Li Wenjun and Jin Yi .... [9]
Studies on Toxicity of New PU Adhesive for Foods Packaging ..... Yin Ming .... [13]
Study of No. 919 Phenolic-Impregnation Resin and its Application in Highly-Wear-Resisting Cement Plate ..... Xu Yaoyou .... [18]
Study of Rubber-Based Pressure-Sensitive Adhesive ..... Li Jin and Chen Zhenping .... [20]
Bonding the Connectors of Transmission Belts with Chloroprene Rubber .... Shi Qigui .... [22]
Repair of Big-Power Well Drilling Pump by Means of Bonding Technology ..... Guo Gongxi .... [24]
Substitute JNQ-1 Urea-Formaldehyde Impregnation Resin for Non-Saturated Polyester in Manufacturing Glass Fibre Steel ..... Xi Wenda .... [26]
Application of Bonding Technology in Leveling of the Body of Cylinder ..... Zhou Yinpo and Zhang Qixian .... [28]
Application of Inorganic Adhesive in the Making Process of the Compressor ..... Jiang Chunfang .... [29]
Application of Bonding Technology in Textile Printing and Dyeing Works ..... Dong Fengling .... [31]
Repair of the 1250t Pressure and Press Machinery of Aluminium-Based Materials ..... Yu Zhengtao and Zhao Xiyin .... [32]
Application Example of Bonding Technology in the Maintenance of Mechanical and Electrical Equipment ..... Zhang Dequan .... [34]
Several Typical Examples of the Successful Application of Bonding Technology in our Plant ..... Zhou Sili .... [36]
Selection of Solvents of Several Rubber and Rubber Adhesives ..... Huang Yongyian .... [37]
Substitute Pressure Sensitive Adhesive of Acrylate Emulsion Polymers in Manufacturing Adhesive Tape ..... Qiu Lixin .... [38]
Applied Examples ..... Ji Laixiu .... [39]
Contents Lists and Abstracts from English Journal of Adhesion Vol. 33 No. 1~4 (1990–1991) ..... [43]
Advertisements ..... [45, 46, inside front, inside back and back covers]

Polyacrylate Core-Shell Particles—Toughened Epoxy Adhesives

Li Yiming, Wang Xiaomin, Bai Gongjian and Yu Yunzhao

(Institute of chemistry, Academia Sinica)

Abstract

Polybutylacrylate (PBA)/polymethylmethacrylate (PMMA) core-shell particles were studied and used as a toughener for epoxy adhesives in this work.

The morphology, glass transation temperature and mechanical properties of the toughened epoxy adhesives were investigated by means of SEM, DSC, DMA and mechanical testing. It is found that the core-shell particle modified epoxy adhesives have great improvements in toughness and other mechanical properties without remarkable loss in thermal resistance. They are effective tougheners for epoxy adhesives.

KEY WORDS Epoxy Adhesives, Core-Shell Particle, Toughener.

Studies on Toxicity of New PU Adhesive for Foods Packaging

Yin Ming

(No. 59 Institute China Ordnance Industry)

Abstract

This paper points out the importance of studies on the material toxicity for foods packaging, introduces the technical plan of the studies on the toxicity of double component PU adhesive. It also introduces the object, the material, the method and the results of the toxicology tests, as well as total evaluation in detail. Finally, it is concluded that the PU adhesive is not toxic and can not cause cancer or distortion.

KEY WORDS Adhesive, Polyurethane, Foods Packaging, Toxicity, Toxicology.

Investigation on the Adhesive Property for LWY-II High Speed Adhesive Filter Cigarette Holder

Ye Chuping, Li Wenyu, Chen Fuhe and He Tiansheng

(Hebei University) (Lian Yun Gang City Sanitation and Antiepidemic Station)

Abstract

It was shown by modern analytical methods (TEM-100SX, DSC) that the adhesive for LWY-II high speed adhesion filter cigarette holder has a good freeze resistance. The experimental results proved that this adhesive has a high stability, good adhesion, resistance to water, and is non-poisonous to humans.

KEY WORDS Adhesive, Resistance Freeze, Non-Poisonous, stability.

The Sheath Interlink Strength Research for Copper Phosphate Adhesive

Tao Daoxian, Li Zhuang, Xu Jili, Guo Xianzhong, Shen Jing, Li Wenjun and Jin Yi

(Beijing University of Science and Technology)

Abstract

The linear expansion coefficient of two kinds of inorganic adhesives, copper phosphate adhesive and the same adhesive with 10% added Al_2O_3, Cr_2O_3 as filler has been measured with a thermo-expansion device. It has been found that the main tendency of inorganic adhesives from ambient temperature to 720°C was volume contraction, compared with DTA-TG curve, it was found that the high sheath interlink strength of copper phosphate resulted from the force of chemical bond, interacting molecule and mechanical interlink formed in adhering processing. Some information can be found in this thesis for higher adhesive strength of copper phosphate adhesive.

KEY WORDS Copper Phosphate, Thermo-Contraction, Adhesive Strength.

Vol. 14 No. 2 Apr. 10, 1993

Contents

Studies on Graft Copolymerization of MMA, BA with SBS and Its Adhesive Properties .....Wang Liya, Rong Rubin, Chen Lianxi, Wan Huijie and Yu Zongyuan .... [1]
NBR-Toughened Bismaleimide Structural Adhesive .....Guan Changshen and Zhang Bin .... [5]
Study of High Furfural Alcohol Modified UF Resin .....Ren Zengmao and Ye Runxi .... [9]
Studies and Application of the Adhesive of the Metal Structure With Fluctuating Loads .....Zhou Yunlin and Hao Sulan .... [11]
A Survey of the Adhesive of Optical Instruments.....Hou Ruixiang .... [15]
Study of the TS-2 Plastics Adhesive of Polyolefin ....Chen Anqiang and Zhuo Xiaming .... [19]
Application of 328 Moderate and Low Temperature Latent Curing Agent for Epoxy Resin on Generator Manufacturing Industry at My Factory .....Liu You and Chen Yuliang .... [21]
Application of Metal Filling Adhesive..... Chen Zunyu .... [23]
The Technological Methods and Measures of Improving the Quality of Pouring Adhesive into Electric Conductive Slide Ring .....Feng Yongxiang .... [25]
Determination of Residual Monomer Content in Polyvinyl Acetate Emulsion .....Yu Lixiu .... [27]
The Application of GPC to the Analysis of Grafted Chloroprene Rubber .....Chen Guohua and Yan Wenli .... [29]
Repairing the Precise Fixture Bonding Frame with Combined Bonding Technique .....Sun Kang .... [31]
Using Bonding-Coating Technique to Repair the Large Area Scratch of Large-Size Hydraulic Cylinder ..... Zhai Haichao, Bai Deyin, Li Yinbo, Zhang Jiaying and Lu Shiren .... [34]
Repair High-Pressure Reinforced Plastics Wind Pipe with Adhesive ... Chen Hongrang .... [36]
Using Bonding Technique Actively to Increase the Economic Benefit of Repairing Equipment .....He Tingxun and Xie Xouli .... [37]

The Factors Affecting the Quality of Rapidly Cold Bonding Travelling Belts and Modification Method ..... Zhu Jiangang .... [39]
Application of Anaerobic Adhesive Loctite in Repairing Equipment ..... Xing Lixin .... [41]
Sealing of Television Photograph Cable Detector Head under the Oil Well ..... Fan Jianjun .... [42]
Advertisements ..... [45, 46, inside front, inside back and back covers]

NBR-Toughened Bismaleimide Structural Adhesive

Guan Changshen and Zhang Bin

(the Institute of Petrochemistry, Heilongjian Academy of Sciences)

Abstract

This paper introduces a new heat-resistance structural adhesive: NBR-toughened bismaleimide (BMI) adhesive.

The adhesive exhibits excellent bonding strength. It is easy to apply, its cost is lower than polyimide adhesives, and its curing temperature is also lower.

The adhesive can be used at −55~300°C.

KEY WORDS Heat-Resistant Structural Adhesive, Bismaleimide, NBR-Rubber.

Studies and Application of the Adhesive of the Metal Structure with Fluctuating Loads

Zhou Yunlin and Hao Sulan

(The Repair and Construction Company, Anshan Iron and Steel Complex)

Abstract

The use of adhesives for bonding the same and different kinds of metal materials has become more and more widespread, and as a complement to the techniques of riveting and welding, as well as for mechanical installation. From the adhesive mechanism of the modified epoxy resin, in this paper we expound the screening of the main agent and modified agent, the properties of the physical and mechanical properties for the structural adhesive, its application and so forth.

A series of tests have shown that the use of CTBN and DMP30 is the most important condition for the modification of the epoxy structure adhesive.

Studies on Graft Copolymerization of MMA, BA with SBS and Its Adhesive Properties

Wang Liya, Rong Rubin, Chen Lianxi, Wan Huijie and Yu Zongyuan

(Hubei Research Institute of Chemistry)

Abstract

In this paper, the graft copolymerization of Methyl methacrylate (MMA) and Butyl methacrylate (BA) with SBS and its adhesive properties were investigated. The influence on graft copolymerization of monomer concentrations, initiator concentrations, reaction temperature and time were discussed. The structural analysis of purified graft copolymers (PBA-g-SBS-g-PMMA) was determined by GPC and IR. These polymers possessed such advantages as high initial adhesion, high final adhesive strength, low toxicity and low melting temperature. There is no need for a low molecular weight viscosity increaser in using this adhesive.

KEY WORDS Tribasic Graft Copolymerization, GPC, IR, Adhesion Properties, Adhesive.

Study of High Furfural Alcohol Modified UF Resin

Ren Zengmao and Ye Runxi

(Gan Su Friction & Sealing Material Factory)

Abstract

This paper mainly introduces the reaction principle, the technological process of high furfural alcohol modified UF resin, and the properties of modified resin and sand strength. In addition, the analysis of the properties and applications of the resin are also given.

KEY WORDS Furfural Alcohol, Modified, Urea Resin.

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