

IndustryData



Paint and Coatings Resins

Background:

Paint is an important part of everyday life. Look at the objects around you. How many have been painted? The primary functions of paint are decoration and protection. Paint is composed of four major ingredients. First, pigments give color and texture to the film. Second, solvents aid in the application of paint to objects being painted. Third, additives promote specific aspects of film formation and performance. Finally, the resins or binders tie everything together.

The paint & coatings market can be divided into two broad categories, architectural and product finishes. Consumers and contractors who paint homes and commercial structures use architectural coatings. Manufacturers who paint products being made use product finishes. Each segment will use different types of resins to achieve different results in appearance and / or performance. Three major types are available from WC&D, alkyd, polyester and acrylic.

Alkyd Resins:

Alkyd resins are ideal for pigmented coatings because they are excellent pigment wetters and dispersers. They are easily modified to meet specific applications. They have good durability, flexibility, and solvent resistance, gloss and color retention. Alkyds are lower in cost relative to other resins. In architectural coatings, alkyds are used for porch & deck, floor and trim enamels. In product finishes, they are used for automotive chassis enamels, transportation and car refinish primers and top coats, wood furniture finishes, farm & equipment enamels, maintenance primers and top coats and container enamels. Alkyds can be formulated in high solids and waterborne formulations to meet the requirements for the low VOC coatings being mandated by the EPA.

Polyester Resins:

Polyester resins possess premium performance properties such as exterior durability, gloss, flexibility,

hardness, color stability and versatility of cure. Polyesters are used in product finishes for household appliances, food & beverage containers, aircraft & equipment, metal furniture & fixtures and automotive primers & base coats. Polyesters can be formulated in high solids and waterborne formulations to meet the requirements for the low VOC coatings being mandated by the EPA.

Acrylic Resins:

Acrylic resins are the most widely used polymers in the paint & coatings industry. There are two types, thermoplastic and thermoset. Thermoplastic form a film by the evaporation of the solvent present in the coating formulation. Thermosets are cured at ambient or elevated temperatures by reacting them with other polymers.

Thermoplastic Resins:

Thermoplastic acrylics are noted for fast dry, early water resistance, sand-ability, color stability and exterior durability. They find use in house paints for both interior and exterior applications. In product finishes, thermoplastic acrylics are used for automotive topcoats, car refinish lacquers, wood furniture lacquers, aerosol paints and maintenance coatings. Thermoplastic acrylics can be formulated in waterborne formulations to meet the requirements for the low VOC coatings being mandated by the EPA.

Thermosetting Acrylics:

Thermosetting acrylics have major performance advantages for gloss, exterior durability, corrosion resistance, chemical resistance, solvent resistance and hardness. They are used in product finishes for metal furniture coatings, automotive topcoats, maintenance coatings, transportation finishes and car refinish base coats & clear coats. Thermosetting acrylics can be formulated in both high solids and waterborne formulations to meet the requirements for the low VOC coatings being mandated by the EPA.

Information presented herein is believed to be accurate and reliable but is not intended to meet any specification and does not imply any guarantee or warranty by Brenntag Specialties, Inc. (BSI). For more information and assistance, contact Technical Services at 1-800-732-0562.

• Brenntag Specialties, Inc. • 1000 Coolidge St. • South Plainfield, NJ 07080 •

