

**PAINTS & COATINGS** | AMERICAS

# WOOD COATINGS

Water-based polymers for industrial  
and DIY wood coatings



**ZSCHIMMER & SCHWARZ**



# CHEMISTRY TAILOR-MADE

Zschimmer & Schwarz is a global supplier of chemical auxiliaries and specialties headquartered in Lahnstein near Koblenz, Germany. The family business was founded in Chemnitz in 1894 and is positioned across industries with different business divisions.

Our core business is the development, production and supply of tailor-made chemical auxiliaries for the leather, fur, ceramic, textile and chemical fiber industries. Manufacturers of cleaning agents, personal care products, paints and coatings, lubricants and industrial applications all over the world trust in the company's chemical specialties as well.

## A FAMILY BUSINESS WITH A GLOBAL FORMULA FOR SUCCESS

The corporate group Zschimmer & Schwarz comprises 30 companies in 17 countries on five continents, 22 of which have their own production facilities. Our customers can always rely on a uniform quality standard worldwide and equally on the high service orientation of our local experts.

## BRINGING YOUR IDEAS TO THE SURFACE

The portfolio of the Paints & Coatings Division serves a wide range of end-use applications from the industrial coatings and graphic arts sectors. We offer technologies and materials for the treatment and coating of surfaces such as wood, paper, metal, textile and concrete for best results. Innovative polymer technologies, tailored to the application and requirements of our customers, provide the necessary "plus" in the formulation. As specialists in environmentally conscious, water-based polymers, we offer optimized customer solutions with the highest standards of quality and cost-effectiveness, which we are producing at our sites in Europe, North America and Asia.

Whether it's raw materials or tailored and ready-to-use customer solutions – we will help you find the right products. We will happily accompany you on the way to your formulation in order to jointly create added value for your customer.





# WOOD COATINGS

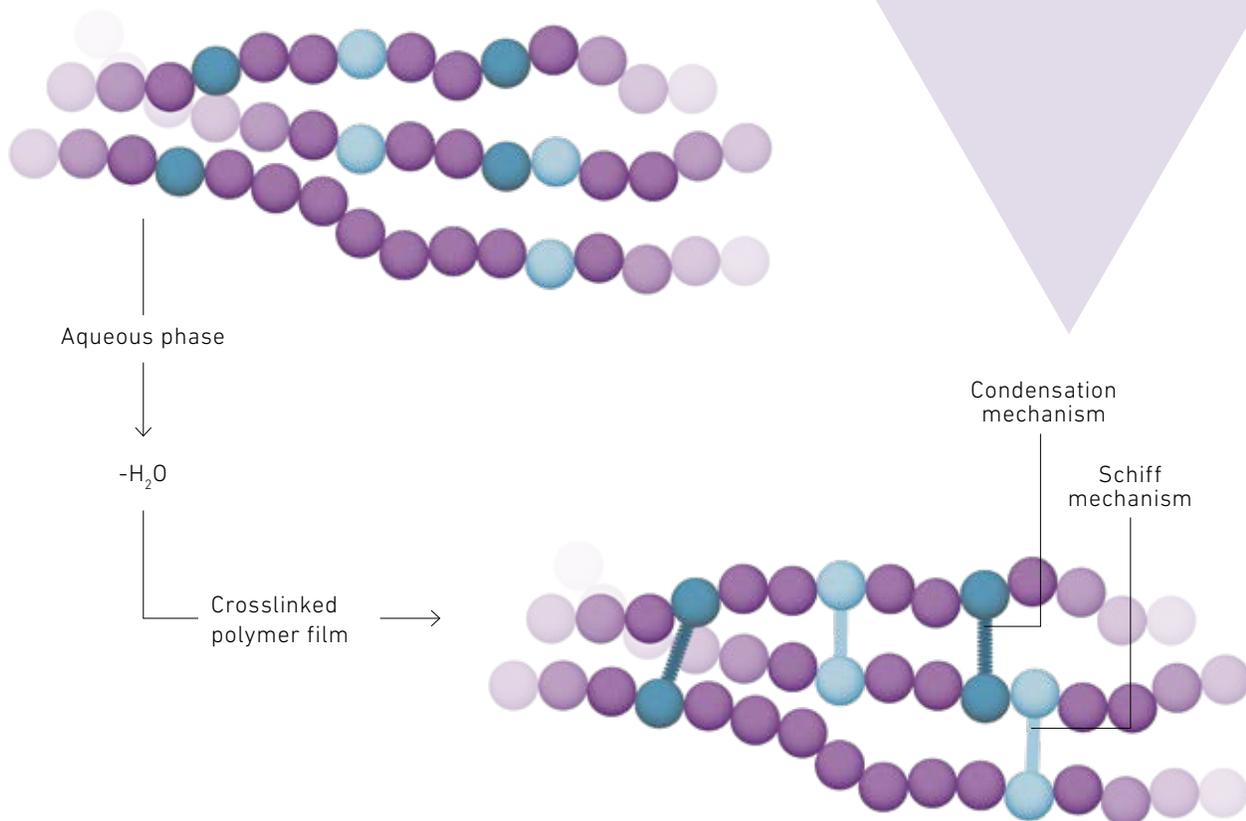
Appearance, haptics, durability: wood products are subject to the highest demands, which can usually only be met by a high-performance coating. For formulations that meet these challenges, Zschimmer & Schwarz offers water-based polymers as universal binders and for special applications.

# SELF-CROSSLINKING TECHNOLOGY

Our portfolio includes polymer dispersions with two different crosslinking mechanisms on the same polymer backbone. The self-crosslinking of the polymers takes place only during film formation by drying at room temperature. In this way, the typical properties of a crosslinked polymer can be achieved without limiting storage stability.

## FEATURES & BENEFITS

- ▶ Increased chemical resistance
- ▶ Stain resistance
- ▶ Water resistance
- ▶ Good adhesion properties
- ▶ Room-temperature curing with long-term shelf stability





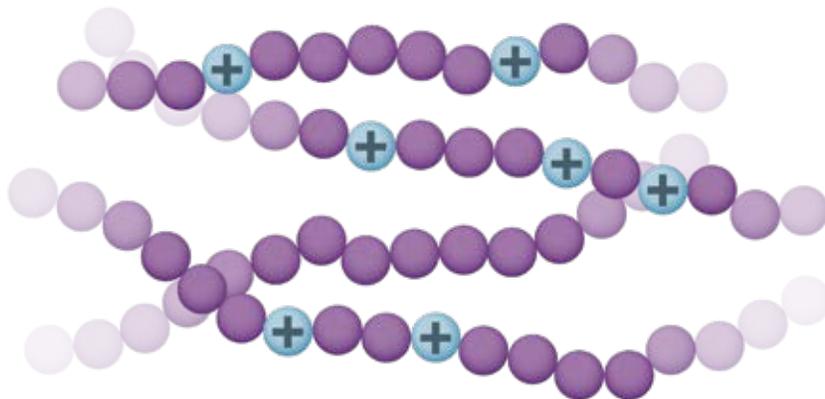
# CATIONIC TECHNOLOGY

Zschimmer & Schwarz offers polycationic systems with an optimal acidic pH range and high charge density. By complexing anionic structures such as wood extractives or water-soluble soils, these products show outstanding stain blocking. Excellent adhesion to various critical anionic surfaces can also be achieved by cationic resins. On porous substrates, the small particle size leads to good penetration into the substrate, which further improves adhesion and protection. These properties make these polymers especially well suited for use in isolation primers on wood.

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## FEATURES & BENEFITS

- ▶ Excellent adhesion to various problematic surfaces
  - ▶ Superior stain blocking
  - ▶ Forms soft to medium-hard films
  - ▶ Colorless and glossy films
  - ▶ Suitable for highly pigmented and low-VOC systems
  - ▶ Protective films with good sanding resistance
  - ▶ Less discoloration of wood due to low pH
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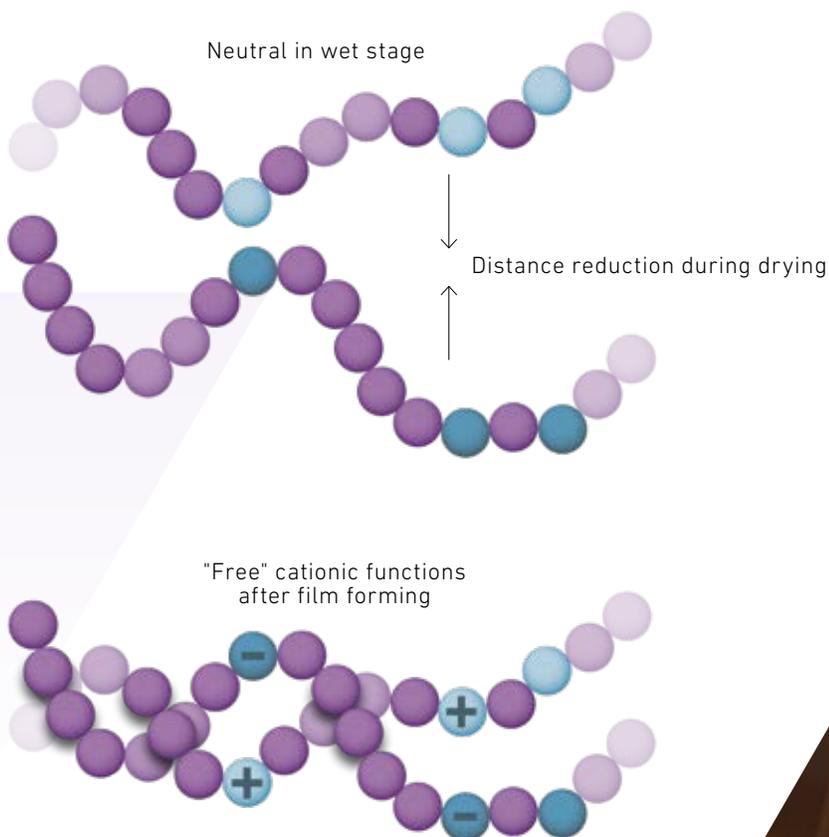


# INTERPENETRATING POLYMER NETWORK (IPN)

The IPN involves two different ionic structures in the same polymer network at a neutral pH value. Overall, the polymer exhibits an anionic behavior and can thus be formulated like an anionic polymer. Cationic functionalities then form during drying, providing excellent tannin, stain and dye blocking without the compatibility problems common to cationic polymers. Adhesion to various substrates such as aluminum, PVC or wood is also improved. At the same time, VOC requirements for the formulation remain low.

## FEATURES & BENEFITS

- ▶ Enables cationic functionalities in anionic formulations
- ▶ Excellent tannin, stain and dye blocking
- ▶ Excellent adhesion to multiple substrates
- ▶ High compatibility with other resins and additives
- ▶ Low VOC requirements to formulate coatings



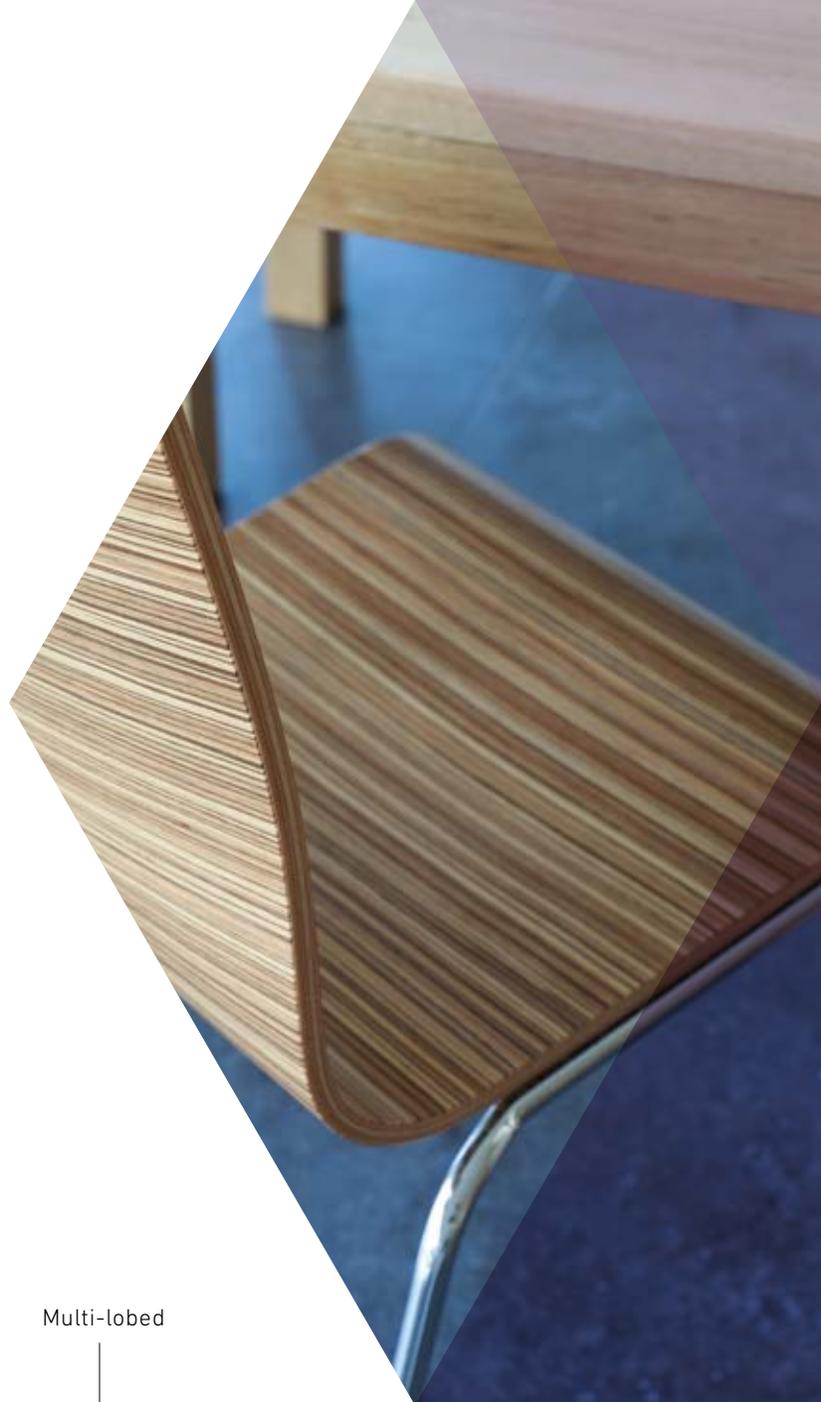
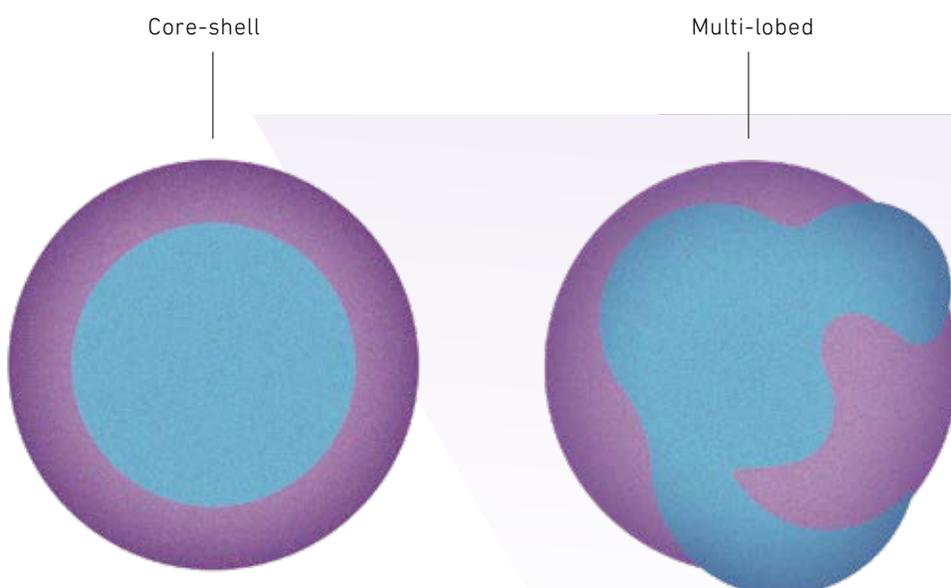
# MULTIPHASE TECHNOLOGY

Using a two-step synthesis process, multiphase technology combines two different types of polymers in the same polymer network. This allows a balanced combination and thereby an overall improvement of the physical properties of the two polymers. A very good hardness and chemical resistance balanced with a moderate film-forming temperature benefits applications in the wood sector in particular. This process also means that no or only a small amount of emulsifiers is required. Thus, some of these products are approved for indirect food contact in compliance with the FDA and Swiss Ordinance.

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## FEATURES & BENEFITS

- ▶ Very low to zero emulsifier content
  - ▶ Good balance between hardness, chemical resistance and film forming
  - ▶ Excellent adhesion to multiple substrates
  - ▶ FDA-approved for indirect food contact
  - ▶ Swiss Ordinance-approved
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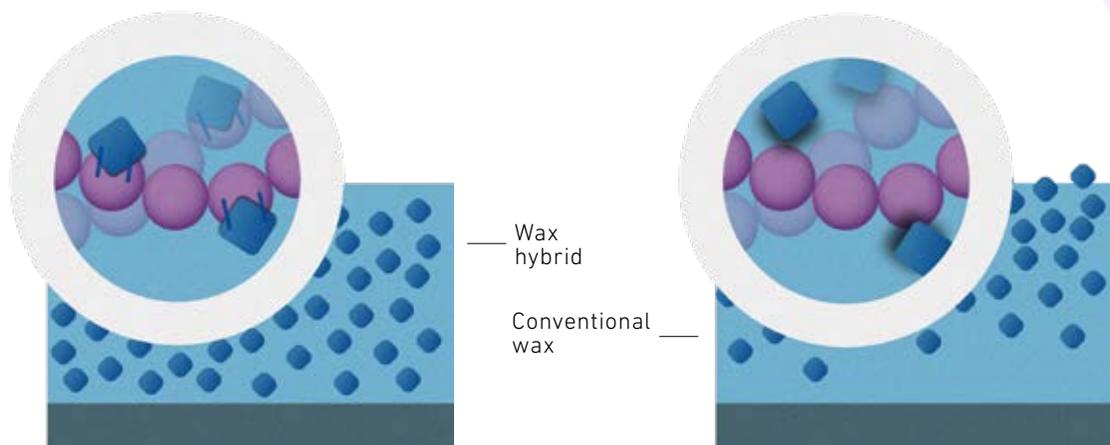


# WAX-HYBRID TECHNOLOGY

Our wax-hybrid technology is a patented process for combining wax and acrylate in a single polymer network. This prevents the wax from migrating to the surface as it dries, resulting in a more uniform film composition that improves the appearance and performance of the coating. The hybrid polymer exhibits anionic behavior and broad compatibility with other water-based polymers. The positive properties of waxes, such as increased slip or abrasion resistance and improved water resistance, can thus be optimally utilized.

## FEATURES & BENEFITS

- ▶ Wax grafted to the polymer network
- ▶ Even distribution in liquid and dried form
- ▶ Enhanced wear resistance
- ▶ Improved water resistance
- ▶ Soft and flexible, good response to buffing for scratch repair and gloss
- ▶ Slip resistance



# ALKALI-SOLUBLE TECHNOLOGY – RESIN SOLUTIONS

Our alkali-soluble polymers are based on polyacrylic and poly-methacrylic acids with high electrostatic repulsion. They are available with different acid numbers, molar weights and glass transition temperatures as a clear solution in water.

The resin solutions offer excellent dispersibility of pigments and high compatibility and stability in various formulation types. This provides improved wetting and increased gloss of formulations. Unlike dispersing additives, these resins form a hard, water-soluble film at room temperature and are thus part of the binder. In addition, adhesion can be positively influenced on some substrates.



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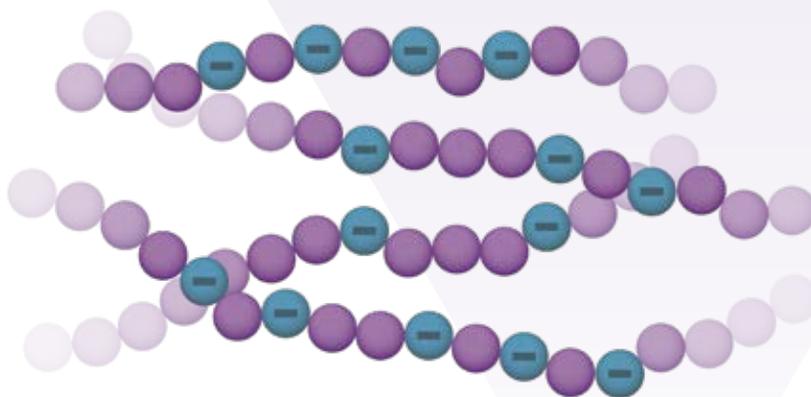
## FEATURES & BENEFITS

### Dispersing

- ▶ Excellent wetting and dispersibility of pigments
- ▶ High compatibility and stability in multiple formulation types
- ▶ Improves the wetting of formulations
- ▶ Improves gloss

### Binding

- ▶ Formation of a hard, water-soluble film at room temperature
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# PRODUCT PORTFOLIO

## WOOD COATINGS

PRODUCT	PRODUCT DESCRIPTION	IONICITY	SOLID APPROX. [%]	PH	MFFT [°C]
SYNTRAN® AC 5115	Multiphase acrylic copolymer	Anionic	43	7.5	20
SYNTRAN® AC 6045	IPN acrylic polymer	Anionic	40	8.0	10
SYNTRAN® AC 6130	IPN acrylic copolymer	Anionic	40	8.8	50
SYNTRAN® AC 9055	Self-crosslinking acrylic polymer	Anionic	40	8.0	75
SYNTRAN® AC 9093	Self-crosslinking acrylic polymer	Anionic	42	7.5	15

## ADDITIVES FOR WOOD COATINGS

PRODUCT	PRODUCT DESCRIPTION	IONICITY	SOLID APPROX. [%]	PH	MFFT [°C]
<b>WAX</b>					
SYNTRAN® WA 1065	Wax-hybrid acrylic	Nonionic / anionic	38	9.2	35
<b>OPAQUE POLYMERS</b>					
SYNTRAN® OP 1133	"Opaque polymer", non-film-forming polymer	Anionic	35	7.0	80
SYNTRAN® OP 1134	"Opaque polymer", non-film-forming polymer	Anionic	40	2.5	80
<b>GRINDING RESINS</b>					
SYNTRAN® DR 7011	Alkali-soluble acrylic polymer	Anionic	25	7.7	20
SYNTRAN® DR 7015	Alkali-soluble acrylic polymer	Anionic	30	7.5	100
SYNTRAN® DR 7055	Alkali-soluble acrylic polymer	Anionic	25	8.0	66
SYNTRAN® DR 7060	Alkali-soluble acrylic polymer	Anionic	25	7.0	70
SYNTRAN® DR 7102	Carboxylated acrylic copolymer	Anionic	35	6.7	100

## FEATURES & BENEFITS

TOPCOATS/MULTILAYER  
PRIMER/BASECOATS  
ISOLATION PRIMER  
JOINERY  
OUTDOOR  
FLOORS  
FURNITURE  
KCMA

Good tannin, stain and dye blocking, excellent adhesion to various substrates, including flexible films and foils, fast drying

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Very good tannin, stain and dye blocking, excellent adhesion to multiple substrates, good water resistance and drying, easy to formulate, for very low-VOC formulations, also suitable for flexible substrates (e.g. textile) and for outdoor resistance primers

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Excellent adhesion, hardness and scratch resistance, very good water and grease resistance, good resistance to coffee and red wine in white coatings, clear when wet, reddish color on wood in clear coatings

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Self-crosslinking, excellent household stain resistance, very high gloss and hardness with improved sandability, furniture coatings (KCMA)

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Self-crosslinking, excellent alkali and water submersion resistance, excellent adhesion to multiple substrates, film has very high gloss, flexibility with good printability, zero VOC requirements to formulate coating

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▲ = Highly recommended ▲ = Recommended

## FEATURES & BENEFITS

Patented acrylic olefin graft technology. This unique incorporation of olefin onto the backbone of the acrylic provides a high coefficient of static friction, slip resistance, burnishing resistance and UV stability (non-yellowing).

This polymer can be used to replace a certain percentage of titanium dioxide in white paints, printing and inkjet inks, maintaining the same coverage with improved brightness and hardness.

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Polymeric surfactant technology designed to improve wetting and incorporation of pigments or additives into water-based pigment concentrates and coatings. Used as a grinding resin in pigment dispersions, it improves color development of organic pigments and carbon black.

Polymeric surfactant technology designed to provide excellent wetting and incorporation of pigments or additives into water-based coatings.

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Polymeric surfactant technology designed to provide excellent wetting and incorporation of pigments or additives into water-based coatings.



Chemistry tailor-made

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