

Fine Chemicals

Fine Chemicals are central to innovation, enabling the development of unique products that meet strict regulatory and market demands.



Curia is now working with the expert fine chemical company, AlwaysBrong®, to bring Curia's VPA to the next level. Curia's expertise in the manufacture of the monomer VPA combined with AlwaysBrong's long year expertise in polymerization lead to unique VPA-copolymer solutions for the various application fields.

Functional VPA Copolymer

Innovative materials for light metal surface treatment and more

Polyadvance® PE-96 series products are aqueous functional phosphate copolymers based on vinyl-phosphonic acid (VPA). The incorporation of VPA provides phosphonate groups that bond effectively with metallic substrates, while carboxyl and hydroxyl groups further enhance adhesion to paints, adhesives and laminates.

Applications

Polyadvance® PE-96 series products are highly recommended for light metal surface treatments, including aluminum, zinc, AZ alloys, AZM-coated steel and other coated steels. They are typically applied during conversion or passivation treatments to improve overall performance.

Advantages

- Enhances interlayer adhesion
- Improves corrosion resistance and salt spray performance
- Enhances system stability
- Simplifies formulations and processes
- Effective at low dosages
- Environmentally friendly

Specifications

Product	Appearance (25°C)	Solid content(%)	Molecular weight	VPA content BOTM	PH (5% aq. Solution)	Viscosity (cps)
Polyadvance® PE-9640	Colorless to yellow liquid	38-42%	40000-80000	20-22%	< 3.0	< 1500
Polyadvance® PE-9620	Colorless to yellow liquid	19-21%	40000-80000	30-32%	< 3.0	< 1000
Polyadvance® PE-9620S	Colorless to yellow liquid	18-22%	30000-100000	40-42%	< 3.0	< 1000
Polyadvance® PE-9621	Colorless to yellow liquid	19-21%	< 10000	30-32%	< 3.0	< 500
Polyadvance® PE-9627	Colorless to yellow liquid	19-21%	200000-300000	30-32%	< 3.0	< 1500

Waterborne Acrylic Resin

Innovative materials as main resin for light metal surface treatment

Polyadvance® PE 93 series products are specialized waterborne acrylic polymers containing multiple functional groups, with vinyl-phosphonic acid (VPA) as one of the key components. The phosphonate groups derived from VPA enhance adhesion and corrosion resistance by forming strong bonds with metallic substrates. Crosslinking reactions between carboxylic and hydroxyl groups further improve chemical and water resistance, while tertiary carbonate groups help improve humidity and heat resistance.

Applications

Polyadvance® PE-93 series products are particularly recommended as the main resin in chromium-free passivation solution formulations for metal surface treatment. These products are suitable for use on a variety of metal surfaces, including galvanized sheets, cold-rolled steel sheets, aluminum foil and AZ alloy plates. They offer excellent adhesion, as well as resistance to alkalis and alcohols, and outstanding anti-corrosion properties. They can also be trialed for application on ZAM plates.

Advantages

- Outstanding corrosion resistance and excellent salt spray performance
- Good resistance to chemicals, water and fingerprints
- Enhances system stability
- Excellent adhesion to inorganic materials and a wide variety of metal substrates
- Enhanced impact strength during molding and bending
- Strong compatibility with pigments in aqueous formulations for metal substrates

Specifications

Product	Appearance (25°C)	Solid content(%)	PH	VPA content BOTM	MFFT (°C)	Viscosity (cps)
Polyadvance® PE-9301	Milky white liquid	41-43%	7.0-8.0	1.0%	12	< 50
Polyadvance® PE-9303	Milky white liquid	42-44%	7.5-8.5	3.0%	16	< 100
Polyadvance® PE-9305	Milky white liquid	42-44%	7.5-8.5	5.0%	18	< 100
Polyadvance® PE-9320	Milky white liquid	34-36%	4.0-5.0	1.0%	20	< 500
Polyadvance® PE-9326	Milky white liquid	44-46%	4.0-5.0	5.0%	24	< 500
Polyadvance® PE-9341*	Milky white liquid	42-44%	7.5-8.5	1.0%	31	< 500
Polyadvance® PE-9343*	Milky white liquid	42-44%	7.5-8.5	3.0%	36	< 500

(*) Products without Nitrogen