ARKEMA

RHEOLOGY & SPECIALTY ADDITIVES

CRAYVALLAC® ADDITIVES
Coatings, Inks, Adhesives & Sealants

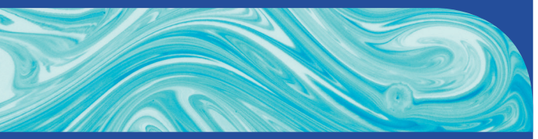
Arkema, a world leader in Specialty Materials

Building on unique set of expertise in materials science, Arkema designs specialty products that address ever-growing demand for innovation and sustainability. We are continually looking for new ways to empower customers and industry leaders to address key challenges such as new energies, advanced technologies, dwindling natural resources, mobility innovation and urbanization trends.

Coatings solutions

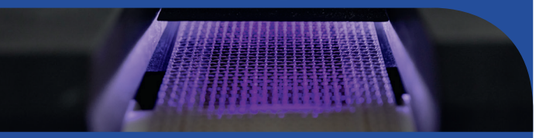
Arkema is a trusted partner, offering a wide range of specialty resins and additives for virtually every sector of the coatings industry. With decades of formulation expertise, Arkema helps customers produce performance-driven, sustainable coatings, adhesives, and inks that can meet the most stringent industry regulations.

WATERBORNE systems



HIGH SOLIDS systems

POWDER coatings



UV/LED/EB systems

Make your formulations more sustainable!

For the world to change, we must change the materials we use. Thus, with our partners, we are continuously innovating to offer to our customers a wide variety of options to advance sustainability and performances. To move toward a more circular and lower carbon economy we look at both how the product is designed and how it enables the downstream performances.
Hence, in addition of improving our product safety, our experts are committed to developing solutions using more renewable resources and lowering energy consumption across the value chain, while ensuring sustainable performances such as longer durability.

- ELIMINATION OF SUBSTANCES OF CONCERN & HAZARDOUS AIR POLLUTANTS
- LOWER ENERGY INTENSITY / LOW CARBON FOOTPRINT
- ALTERNATIVE FEEDSTOCKS
- DOWNSTREAM BENEFITS
- DURABILITY

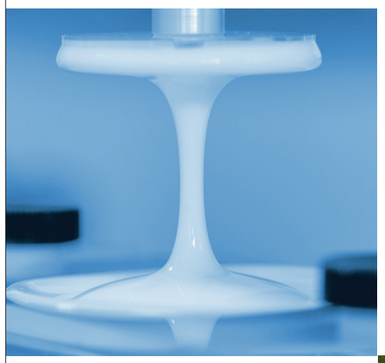
RHEOLOGY & SPECIALTY ADDITIVES

World leading designer and producer of additives for Coatings, Paints, Inks, Adhesives & Sealants

Customer intimacy, simplicity and reactivity as competitive edges. Our expertise is based on the rheology, the dispersion and the texture of complex formulations. Our solutions will optimize processing, stability and application properties of formulated systems. Discover our full range of rheology and specialty additives.

Performance

Design to offer sustainable & performing solutions



- Additives with high active content up to 100%
- Higher efficiency, use less
- Designed for low and zero VOC systems
- High value pigments optimization
- Solutions for fine-tuned rheology

Sustainability

Manage our activities as a responsible specialties manufacturer

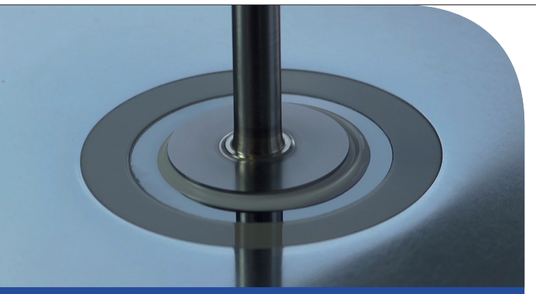
- Clean processes based on water
- Low carbon footprint
- Sustainability portfolio assessment
- Proactive elimination of hazardous components
- Bio-sourced and biorenewable solutions

Innovation

Cultivate open dialogue and close relations with our customers

- Strong partnerships with major players of the Industry
- More than 5 new additives every year
- Global RD&I and regional application labs to provide fast reactivity to specific needs

FUNCTIONALITIES



RHEOLOGY MODIFIERS

DISPERSING AGENTS

SURFACE MODIFIERS

FLOW & LEVELING

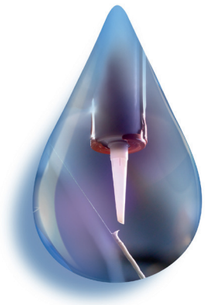
Crayvallac® additives have been developed to help formulators enhance the performance of Coatings, Adhesives & Sealants.

Our solutions include state-of-the-art organic rheology modifiers, surface modifiers, flow and leveling agents and dispersants.

With tailor-made additives for challenging markets, our products are designed to confer unique performance for demanding applications.

Coatings & Inks

Your needs are as unique as your formulations. Our specialty additives are key to meet your requirements, offer additional benefits whatever the type of application, e.g. brush, roller, curtain, spray gun.



Adhesives & Sealants

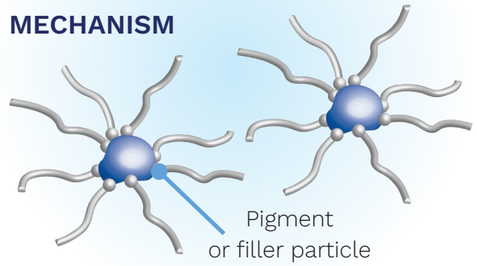
Rheology modifiers will enable to fine-tune the body, the structure, the gunnability and ease of application while keeping an excellent slump resistance without impacting ageing, mechanical properties and weatherability.

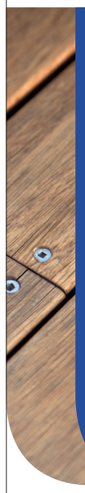
DISPERSING AGENTS

Dispersing additives maximize the properties of pigments or fillers, by **wetting, dispersing and stabilizing** solid particles. They help in **reducing the energy needs** during the coating formulation, in **preventing flocculation** during storage and in optimizing **gloss and color development** when coatings are applied.

CHEMICAL STRUCTURE

MECHANISM

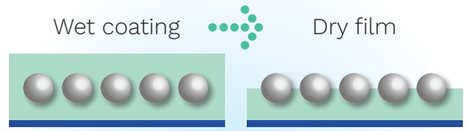




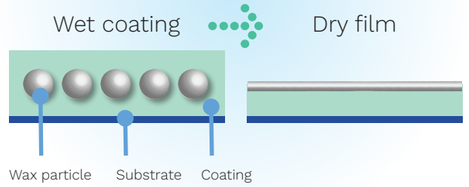
SURFACE MODIFIERS

Surface modifiers, also called **waxes,** stand for additives enhancing key properties of coatings, such as **anti-scratch, anti-abrasion, anti-blocking, slip performances or optical properties.** They can also play a role in improving the application of the coating by favoring **defoaming and lubricating** for instance.

AMBIANT AIR CURING

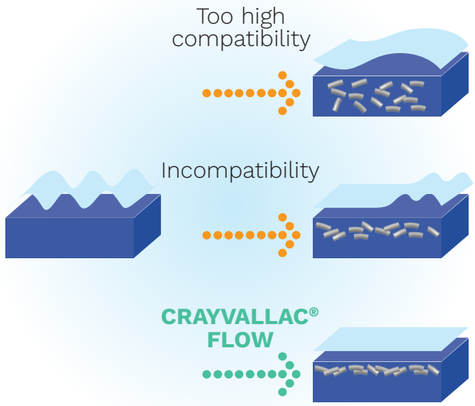


THERMAL CURING



FLOW & LEVELING

Flow and leveling additives are designed to **control the coating surface properties.**
Notably, they can **eliminate film surface defects** (pinholes, fish eyes, orange peel) that may occur during the film formation, which results in **smoother films** with a **superior overall appearance.**



RHEOLOGY MODIFIERS

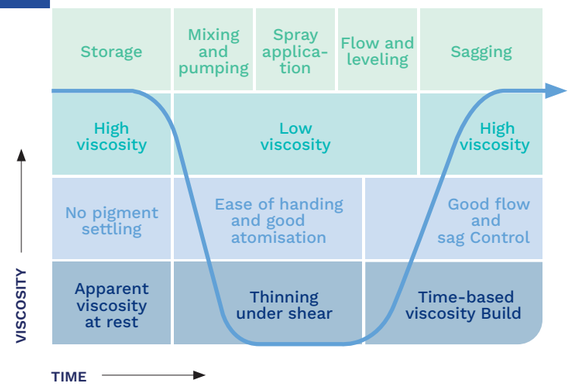
Crayvallac® rheology modifiers provide coatings with a specific rheological behavior implying:

- High viscosity at low shear rate for improved **storage stability**
- Shear-thinning for **ease of application**
- Thixotropic viscosity recovery for **sag resistance.**

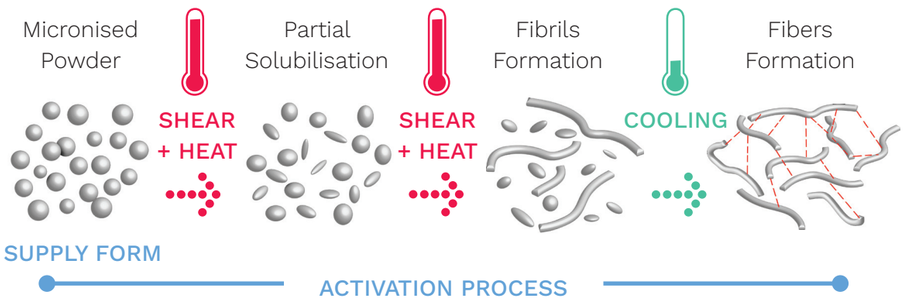
Our solutions are supplied in three different forms:

- **Powders** requiring activation through heat, shear and time
- **Pre-activated** pastes allowing activation free process and ease of incorporation
- **Liquids** enabling viscosity adjustment by post addition

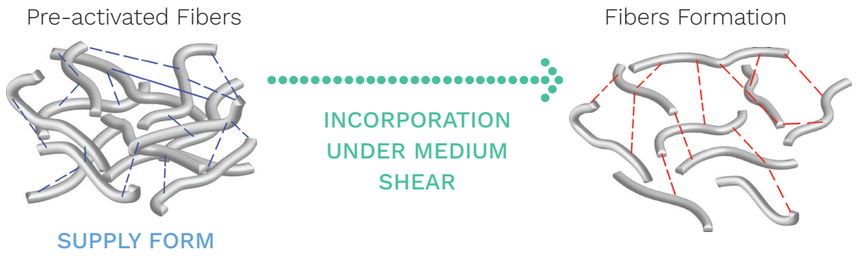
RHEOLOGY PERFORMANCE AND BENEFITS



POWDER ACTIVATION



PASTE INCORPORATION



SUSTAINABILITY

Crayvallac® combine performance & sustainability with their castor derivatives and bio-based polyamide additives. With a bio-content from 60 up to 100%, these rheology modifiers contribute to improve circularity and promote the use of non fossil feedstocks.

Castor derivatives
- Bio-sourced
- High thickening
- Good sag resistance
- Low activation temperature
- Require good process control

Polyamide waxes
- High bio-content
- Process robustness, stability & performance
- Excellent sag resistance

Sustainable Castor Association

Arkema is part of “Pragati”, the World’s first sustainable Castor Bean Program.

As part of our commitment to a more sustainable world, Arkema is supporting the sustainable Castor Program in India.

A supply chain certification standard called SuCCESS has been developed and launched in that purpose.

For more information on the Pragati project, visit **www.castorsuccess.org**

With strong innovation to meet high technical expectations, adhesives & sealants can be found in multiple demanding end-uses such as: **construction, consumer, transportation.**

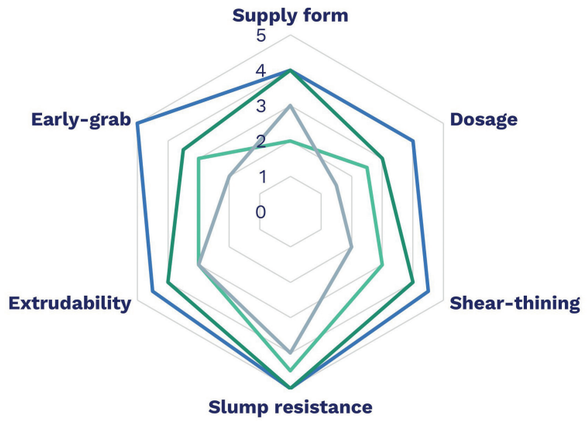
Rheology modifiers are used to fine-tune the **body, structure, gunnability** and ease of application while keeping an **excellent slump resistance** without impacting ageing, mechanical properties and **weatherability.**

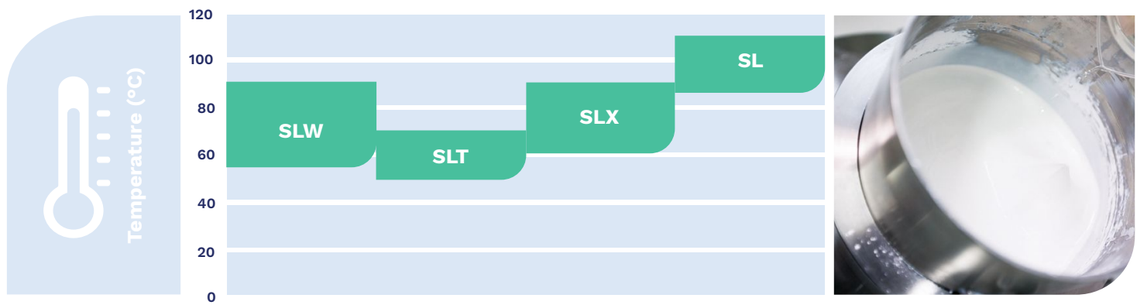
KEY BENEFITS

- **Anti-settling**
- **Body & texture**
- **Easy application**
- **Extrusion control**
- **Slump resistance**
- **Viscosity stability**
- **Weatherability**

Slump resistance

High tack





CRAYVALLAC® grades

Rheology modifiers

	Products	Bio content	Chemistry	Technical data		Adhesives & Sealants Technologies							Sustainable attributes
				Dosage (weight)	Incorpo-ration	Hybrid	PU	Epoxy	Silicone	Acrylate	Rubber	Others	
100% ACTIVE POWDER	ANTISETTLE CVP	100%*	Castor derivative	1-8%	Activation through heat & high shear	●●	●	●●	●			●	
	MT	98%*	Castor derivative	1-8%	Activation through heat & high shear	●●●	●	●●	●●	●		●	
	SL	92%*	Polyamide	1-8%	Activation through heat & high shear	●●●	●●●				●		
	SLX	91%*	Polyamide	1-8%	Activation through heat & high shear	●●●	●●●	●●●		●●		●●	
	SLT	98%*	Polyamide	1-8%	Activation through heat & high shear	●●●	●●●	●●●	●●	●●●			
	SLW	69%*	Polyamide	1-5%	Activation through heat & high shear	●●●	●●	●●		●			
LIQUID	LA-150	NA	Urea-urethane	0.1-2.0%	Activation free		●			●		●	NA
	LA-377	NA	Urea-urethane	0.1-2.0%	Activation free		●			●			LiCl free**

Alternative feedstocks - Lower energy intensity - Elimination of substances of concern & hazardous air pollutants

● Possible - ●● Suitable - ●●● Recommended

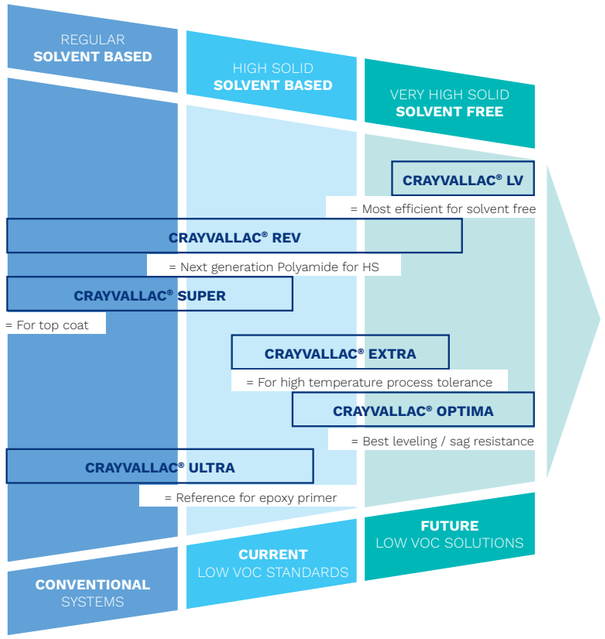
*Ratio of carbon bio-sourced / Total carbon NF EN 16640
**Not intentionally added but not specifically measured (not part of product specification)

CRAYVALLAC®

Current developments in **green energy field**, in **global trading** (ships, containers, tanks) and in **construction** (bridges, buildings) boost the demand for **Protective and Marine Coatings.** Meanwhile new legislations become more and more stringent and imply formulation adaptations.

KEY BENEFITS

- **Sag resistance**
- **Antisettling**
- **Sprayability**
- **Gloss & matt control**
- **Mechanical properties**
- **Surface defects elimination**
- **Pigment dispersion**



Dispersing agents

Products	Chemistry	Systems	Properties		Characteristics		Remarks
		Solvent based	Pigment dispersion	Pigment stabilization	Active content	Solvent	
D-801	Polyurethane	●●●	●●●	●●●	45%	Xylene, BA, MPA	Pigment versatility • High compatibility
D-804	Polyurethane	●●●	●●●	●●●	60%	Butyl Acetate	Aromatics-free**

Surface modifiers

Products	Chemistry	Properties				Characteristics				Remarks
		Matting	Slip	Abrasion resistance	Scratch resistance	D50	D100	Dropping Point	Solid Content	
WN-1135	Modified PP	●●●	●	●●	●●	5.5µm	26µm	151°C	100%	High versatility
WN-1535	Modified PP	●●●	●	●●	●●	6µm	26µm	151°C	100%	Ease of dispersion in water
WN-1495	Polyethylene	●	●●	●●	●●	4.5µm	20µm	112°C	100%	Gloss retention

Flow & leveling

Products	Systems		Properties			Characteristics		Remarks
	Solvent based	UV cure	Film aspect	Air release	Substrate wetting	Active content	Solvents	
FLOW-100	●●	●	●●	●	●●	100%	None	Good compatibility
FLOW-200	●●	●	●●	●	●●	100%	None	Balanced compatibility
FLOW-465	●●	●	●●	●	●●	65%	Xylene	Polyacrylate • High molecular weight
A-620-A2	●●	●	●●	●	●	60%	Xylene	Medium molecular weight polyacrylate
A-2201-M	●●	●	●	●●	●	70%	Xylene, Butanol	Versatile

Rheology modifiers

	Products	Bio content	Technical data		SB regular		SB high solids		Special			Remarks	Sustainable attributes
			Dosage (weight)	Incorpo-ration	Primer	Top Coat / DTM	Primer	Top Coat / DTM	Solvent free	Anti-fouling	Intu-mescent		
100% ACTIVE POWDER	MT	99%*	0.2-2.0%	Heat & shear	●	●●	●	●●	●		●	Ease of activation	
	EP	99%*	0.2-2.0%	Heat & shear	●	●●	●	●●	●		●	Ease of activation • High solids	
	SUPER	93%*	0.5-1.5%	Heat & shear		●●●		●●			●	High efficiency	
	ULTRA	86%*	0.5-1.5%	Heat & shear	●●●	●	●●	●		●		Robustness • Recoatability	
	EXTRA	90%*	0.5-1.5%	Heat & shear	●		●●	●	●	●	●	High temperature tolerance	
	OPTIMA	92%*	0.5-1.5%	Heat & shear	●	●	●●	●●●	●●	●	●	Ease of activation • Good leveling	
	LV	93%*	0.5-2.0%	Heat & shear		●	●	●	●●●	●●	●●	High efficiency	
	REV	83%*	0.5-2.0%	Heat & shear	●●	●	●●●	●●●	●●	●●	●●	Robustness • Efficiency • Versatility	
PASTE	60X	NA	0.5-5.0%	Heat & shear	●●		●●			●●	●●	Polyethylene • Prevents hard settling	NA
	PA3 XAF 20	17%*	0.5-5.0%	Medium shear	●	●	●	●		●●●	●●●	Alcohol free**	
	PA5 XSR 25	22%*	0.5-5.0%	Medium shear	●	●	●	●		●●●	●●●	Alcohol free** • Shear robustness	
	PA3 X 20 PA3 BA 20	17%*	0.5-5.0%	Medium shear	●●	●	●●	●				High sag resistance • Antisettling	
	PA4 X 20 PA4 BA 20	17%*	0.5-5.0%	Medium shear	●	●●●	●	●●●				Enhanced transparency	
LIQUID	LA-150	NA	1-2%	Post addition	●	●	●	●		●	●	Antisettling • Viscosity adjustment	NA

Alternative feedstocks

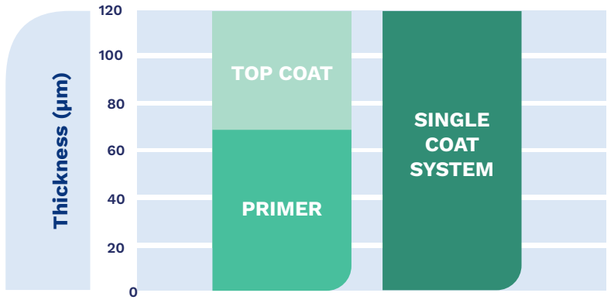
● Possible - ●● Suitable - ●●● Recommended

*Ratio of carbon bio-sourced / Total carbon NF EN 16640
**Not intentionally added but not specifically measured (not part of product specification)

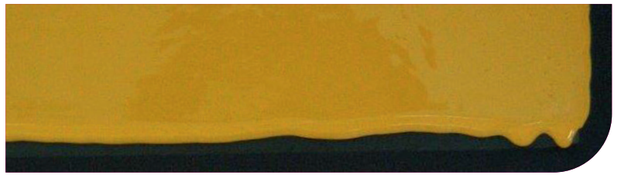
From electrical equipments, to recreation equipments, appliances or furniture, industrially-applied coatings play a key role in the protection and aesthetic appearance of these materials.
Crayvallac® rheology modifiers, with their strong **shear thinning** characteristics allow to apply a higher film thickness **without sagging.**
Crayvallac® flow agents and surface modifiers will **improve the surface aspect.**

KEY BENEFITS

- **Sag resistance**
- **Antisettling**
- **Sprayability**
- **Gloss & matt control**
- **Mechanical properties**
- **Surface defects elimination**
- **Pigment dispersion**



Sag resistance



Without CRAYVALLAC®

With CRAYVALLAC®

Dispersing agents

Products	Chemistry	Systems		Properties		Characteristics		Remarks
		Solvent based	UV cure	Pigment dispersion	Pigment stabilization	Active content	Solvent	
D-801	Polyurethane	●●●	●	●●●	●●●	45%	Xylene, BA, MPA	Pigment versatility • High compatibility
D-804	Polyurethane	●●●	●	●●●	●●●	60%	Butyl Acetate	Aromatics-free**

Flow & leveling

Products	Systems			Properties			Characteristics		Remarks
	Solvent based	UV cure	Water based	Film aspect	Air release	Substrate wetting	Active content	Solvents	
FLOW-100	●●	●		●●	●	●●	100%	None	Good compatibility
FLOW-200	●●	●		●●	●	●●	100%	None	Balanced compatibility
FLOW-465	●●	●		●●	●	●●	65%	Xylene	Polyacrylate • High molecular weight
A-620-A2	●●	●		●●	●	●	60%	Xylene	Medium molecular weight polyacrylate
A-2201-M	●●	●		●	●●	●	70%	Xylene, Butanol	Versatile
A-2678-M			●●	●●	●●	●●	50%	Water glycol	Polyacrylate • Defoaming properties

Rheology modifiers

	Products	Bio content	Technical data		SB		WB	Remarks	Sustainable attributes
			Dosage (weight)	Incorporation	Primer	Top Coat / DTM			
100% ACTIVE POWDER	MT	99%*	0.2-2.0%	Heat & shear	●●	●●		Ease of activation	
	SUPER	93%*	0.5-1.5%	Heat & shear	●●	●●●		High efficiency	
	ULTRA	86%*	0.5-1.5%	Heat & shear	●●●	●●		Robustness • Recoatability	
	OPTIMA	92%*	0.5-1.5%	Heat & shear	●●	●●●		Good leveling	
	REV	83%*	0.5-1.5%	Heat & shear	●●●	●●●		Robustness • Efficiency • Versatility	
PASTE	PA3 X 20 PA3 BA 20	17%*	0.5-5.0%	Medium shear	●●●	●●		High sag resistance • Antisetting	
	PA4 X 20 PA4 BA 20	17%*	0.5-5.0%	Medium shear	●●	●●●		Enhanced transparency	
LIQUID	LA-150	NA	0.1-2.0%	Post addition	●●	●●		Antisetting • Viscosity adjustment	NA
	LA-250	NA	0.1-2.0%	Post addition	●●	●●		Antisetting • Viscosity adjustment	NA
	LA-377	NA	0.1-2.0%	Post addition	●		●●	Antisetting • Viscosity adjustment	LiCl free**

Surface modifiers

Products	Chemistry	Properties				Characteristics				Remarks
		Matting	Slip	Abrasion resistance	Scratch resistance	D50	D100	Dropping Point	Solid Content	
WN-1135	Modified PP	●●●	●	●●	●●	5.5µm	26µm	151°C	100%	High versatility
WN-1535	Modified PP	●●●	●	●●	●●	6µm	26µm	151°C	100%	Ease of dispersion in water
WN-1495	Polyethylene	●	●●	●	●●	4.5µm	20µm	112°C	100%	Gloss retention

Alternative feedstocks - Elimination of substances of concern & hazardous air pollutants

● Possible - ●● Suitable - ●●● Recommended

*Ratio of carbon bio-sourced / Total carbon NF EN 16640
**Not intentionally added but not specifically measured (not part of product specification)

CRAYVALLAC®

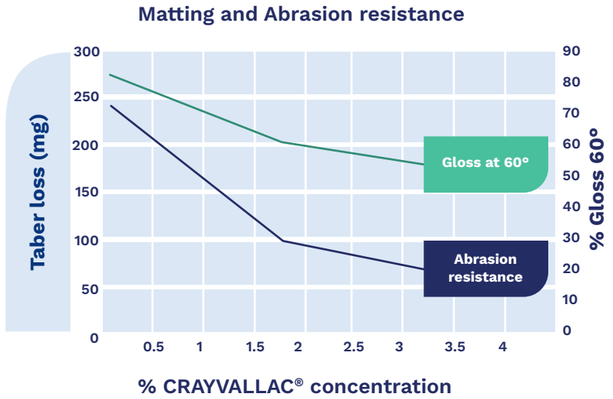
INDUSTRIAL WOOD FINISHES

Wood coatings **protect** wood substrates, improving **durability, aesthetic appearance, mechanical** and **chemical properties.**

Additionally, **environmental concerns** and key growing trends are at the heart of new product developments.

KEY BENEFITS

- **Sag resistance**
- **Antisettling**
- **Sprayability & brushability**
- **Gloss & matt control**
- **Mechanical & chemical resistance**
- **Slip**
- **Blocking resistance**
- **Surface defects elimination**



Matting

Without CRAYVALLAC® With CRAYVALLAC®

Rheology modifiers

	Products	Bio content	Technical data		Solvent borne		UV	Water borne	Remarks	Sustainable attributes
			Dosage (weight)	Incor-poration	Regular solids	High solids				
POWDER	LV	93%*	0.5-1.5%	Heat & shear	●	●●	●●		Polyamide with high efficiency	
PASTE	PA3 X 20 PA3 BA 20	17%*	0.5-5.0%	Medium shear	●●	●●	●●		High sag resistance • Antisettling	
PASTE	PA4 X 20 PA4 BA 20	17%*	0.5-5.0%	Medium shear	●●●	●●●	●●●		Enhanced transparency	
LIQUID	LA-150	NA	0.1-2.0%	Post addition	●●	●●	●●		Antisettling • Viscosity adjustment	NA
LIQUID	LA-377	NA	0.1-2.0%	Post addition				●●●	Antisettling • Viscosity adjustment	LiCl free**

Surface modifiers

	Products	Chemistry	Properties			Characteristics				Remarks
			Matting	Slip	Abrasion & Scratch Resistance	D50	D100	Dropping point	Dry content	
WAX POWDER	WN-1135	Modified PP	●●	●	●●	5.5µm	26µm	151	100%	High versatility
WAX POWDER	WN-1265	Modified polyamide	●●	●●	●	5.5µm	30µm	146	100%	Sanding aid
WAX POWDER	WN-1495	Polyethylene	●●	●	●●	4.5µm	20µm	112	100%	Gloss retention
WAX POWDER	WN-1442	Polyethylene	●●	●	●●	6µm	30µm	112	100%	Balanced properties
WAX POWDER	WN-1535	Modified PP	●●	●	●●	5.5µm	26µm	151	100%	Dispersion ease in water
WAX POWDER	WN-1875	Crosslinked polymer	●●●	●	●●	5.5µm	30µm	>200	100%	High temperature resistance
AQUEOUS DISPERSION	WW-1001	Polyethylene	●	●	●●	4.5µm	20µm	112	40%	Balanced properties • Ease of dispersion in water

Flow & leveling

Products	Systems			Characteristics			Properties		Remarks
	Solvent based	UV cure	Water based	Film aspect	Air release	Substrate wetting	Active content	Solvent	
FLOW-200	●●	●		●●	●	●●	100%	None	Polyester • Balanced compatibility
FLOW-100	●●	●		●●	●	●	100%	None	Polyacrylate • High molecular weight
FLOW-450	●●	●		●●	●	●	52%	Butyl acetate	Polyacrylate • High molecular weight • Ease of use
A-2678-M			●●	●●	●●	●●	50%	Water Glycol	Polyacrylate • Defoaming properties

Alternative feedstocks - Elimination of substances of concern & hazardous air pollutants

● Possible - ●● Suitable - ●●● Recommended

*Ratio of carbon bio-sourced / Total carbon NF EN 16640
**Not intentionally added but not specifically measured (not part of product specification)

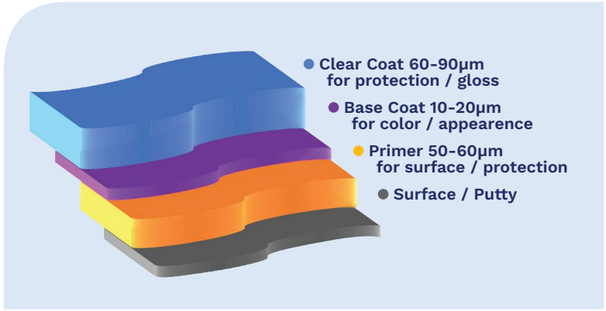
AUTOMOTIVE COATINGS

In automotive coatings, whether it is **OEM** or **vehicle refinishes**, high technical requirements and challenges are usually best achieved when using additives to improve **film properties, rheology and flow.**

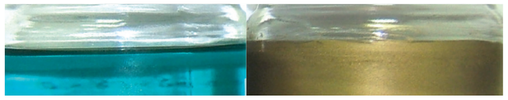
Our solutions are used in putties, primers, basecoats and topcoats.

KEY BENEFITS

- **Sag resistance**
- **Antisettling**
- **Sprayability**
- **Mechanical & chemical resistance**
- **Surface defects elimination**
- **Pigment orientation**
- **Workability (putties)**

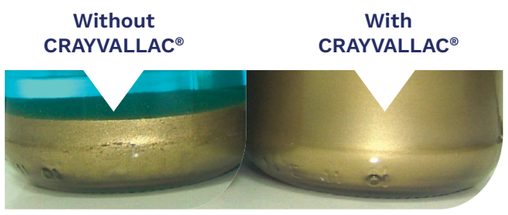


Antisettling



Without CRAYVALLAC®

With CRAYVALLAC®



Surface modifiers

Products	Chemistry	Properties			Characteristics				Remarks
		Matting	Slip	Abrasion & Scratch Resistance	D50	D100	Dropping Point	Solid Content	
WN-1875	Polymeric	●●●	●	●●	5.5µm	30µm	>200°C	100%	High temperature resistance
WN-1535	Modified PP	●●●	●	●●	5.5µm	26µm	151°C	100%	Dispersion ease in water
WN-1495	Polyethylene	●	●	●●	4.5µm	20µm	112°C	100%	Gloss retention

Flow & leveling

Products	Systems			Properties			Characteristics		Remarks
	Solvent based	UV cure	Water based	Film aspect	Air release	Substrate wetting	Active content	Solvents	
FLOW-200	●●	●●		●●	●●	●●	100%	None	Polyester • High efficiency • Balanced compatibility • Suitable for OEM
FLOW-100	●●	●●		●●	●	●●	100%	None	Polyacrylate • Balanced compatibility
A-620-A2	●●	●		●●	●	●●	60%	Xylene	Polyacrylate • Medium molecular weight
A-2201-M	●●	●		●	●●	●	70%	Xylene, Butanol	Polyacrylate • Air-release
A-72-A2-60	●●	●		●●	●	●●	60%	Xylene	Polyacrylate • High molecular weight
A-2678-M		●	●●	●	●●	●●	50%	Water glycol	Polyacrylate • Air-release • Grinding aid

Rheology modifiers

	Products	Bio content	Technical data		Systems					Remarks	Sustainable attributes
			Dosage (weight)	Incorpo-ration	Putties	SB Primer	SB Base Coat	SB Top Coat	WB systems		
100% ACTIVE POWDER	ANTISETTLE CVP	100%*	0.2-2.0%	Heat & shear	●●●					Cost-effective	
	PF	100%*	0.2-2.0%	Heat & shear	●●●					Free-flow powder • Enhanced incorporation	
	MT	99%*	0.2-2.0%	Heat & shear	●●●					Improved stability	
	SF	94%*	0.2-2.0%	Heat & shear	●●●					Improved stability for harder putties	
	SUPER	93%*	0.5-1.5%	Heat & shear		●	●	●●		Edge-covering	
	OPTIMA	92%*	0.5-1.5%	Heat & shear		●●	●	●		Good leveling	
	LV	93%*	0.5-1.5%	Heat & shear		●	●	●●		High efficiency	
PASTE	PA3 X 20 PA3 BA 20	17%*	0.5-5.0%	Medium shear		●	●●	●●		High sag resistance • Antisettling	
	PA4 X 20 PA4 BA 20	17%*	0.5-5.0%	Medium shear		●	●●	●●		Enhanced transparency	
LIQUID	LA-150	NA	0.1-2.0%	Post addition	●	●	●●	●		Antisettling • Viscosity adjustment	NA
	LA-377	NA	0.1-2.0%	Post addition					●●	Antisettling • Viscosity adjustment	NA

Dispersing agents

Products	Chemistry	Systems		Properties		Characteristics		Remarks
		Solvent Based	UV cure	Pigment dispersion	Pigment stabilization	Active content	Solvents	
D-801	Polyurethane	●●●	●	●●●	●●●	45%	Xylene, BA, MPA	Pigment versatility • High compatibility
D-804	Polyurethane	●●●	●	●●●	●●●	60%	Butyl Acetate	Aromatics-free**

Alternative feedstocks

● Possible - ●● Suitable - ●●● Recommended

*Ratio of carbon bio-sourced / Total carbon NF EN 16640
**Not intentionally added but not specifically measured (not part of product specification)

CRAYVALLAC®

CAN & COIL COATINGS

Can & coil coatings involve specific **processing conditions** with high constraints where additives play a key role to control **rheology**, improve **film** aspect, wetting and **mechanical properties.**

KEY BENEFITS

- **No film surface defects**
- **Improved substrate wetting**
- **Air release properties**
- **Defoaming properties**

Example of coil coating

WITHOUT ADDITIVE

WITH CRAYVALLAC® FLOW-200

Dispersing agents

Products	Chemistry	Systems		Properties		Characteristics		Remarks
		Solvent based	UV cure	Pigment dispersion	Pigment stabilization	Active content	Solvents	
D-801	Polyurethane	●●●	●	●●●	●●●	45%	Xylene, BA, MPA	Pigment versatility High compatibility
D-804	Polyurethane	●●●	●	●●●	●●●	60%	Butyl Acetate	Aromatics-free**

Surface modifiers

Products	Chemistry	Properties			Characteristics				Remarks
		Matting	Slip	Abrasion & Scratch Resistance	D50	D100	Dropping Point	Solid Content	
WN-1135	Modified PP	●●●	●	●●	5.5µm	26µm	151°C	100%	High hardness
WN-1265	Modified polyamide	●●●	●	●●	5.5µm	30µm	146°C	100%	Texturing aspect
WN-1495	Polyethylene	●	●●	●●	4.5µm	20µm	112°C	100%	Hardness • Solvent resistance
WN-1875	Polymeric	●●●	●	●●●	4.5µm	30µm	>200°C	100%	High performance wax

Rheology modifiers

	Products	Bio content	Technical data		Solventborne		Remarks	Sustainable attributes
			Dosage (weight)	Incorpo-ration	Top coat	Primer		
PASTE	PA3 X 20 PA3 BA 20	17%*	0.5-5.0%	Medium shear	●	●●●	High efficiency • Antisettling	
PASTE	PA4 X 20 PA4 BA 20	17%*	0.5-5.0%	Medium shear	●●●	●●	Enhanced transparency	
LIQUID	LA-150	NA	0.1-2.0%	Post addition	●●●	●●	Antisettling • Viscosity adjustment	NA

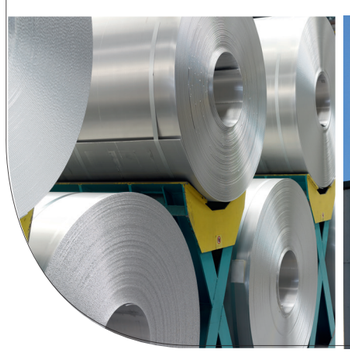
Flow & leveling

Products	Systems		Properties			Characteristics		Remarks
	Solvent based	UV cure	Film aspect	Air release	Substrate wetting	Active content	Solvents	
FLOW-200	●●	●●	●●	●●	●●	100%	None	Polyester • High efficiency • Balanced compatibility
FLOW-100	●●	●●	●●	●	●●	100%	None	Polyacrylate • Balanced compatibility
FLOW-465	●●	●	●●	●	●●	65%	Xylene	Polyacrylate • Medium molecular weight
A-620-A2	●●	●	●●	●	●●	60%	Xylene	Polyacrylate • Medium molecular weight
A-2201-M	●●	●	●	●●	●	70%	Xylene Butanol	Polyacrylate • Air-release
A-72-A2-60	●●	●	●●	●	●●	60%	Xylene	Polyacrylate • High molecular weight

Alternative feedstocks

● Possible - ●● Suitable - ●●● Recommended

*Ratio of carbon bio-sourced / Total carbon NF EN 16640
**Not intentionally added but not specifically measured (not part of product specification)



CRAYVALLAC®

POWDER COATINGS

Powder coatings implies unique formulation and application processes where additives can **enhance final appearance,** provide **special effects** matt & textured and **improve processing conditions.**

KEY BENEFITS
- **No film surface defects**
- **Defoaming properties**
- **Mechanical properties**
- **Slip**
- **Gloss and matt control**

Flow & leveling

	Products	Chemistry	Characteristics	Remarks
			Melting point	
POWDER	PC	Modified castor derivative	83-88°C	Flow and leveling • Degassing • Gloss retention
POWDER	MT	Modified castor derivative	130-140°C	Flow and leveling • Degassing • Gloss retention • Improved storage stability
POWDER	WN-1265	Modified amide	146°C	Flow and leveling • Degassing • Slip enhancement • Matting

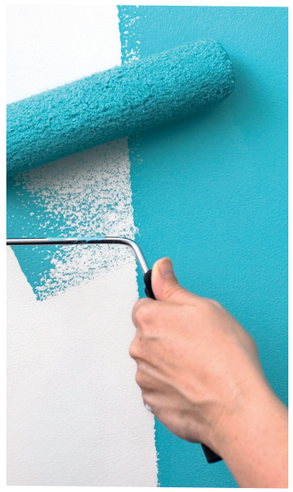
Surface modifiers

	Products	Chemistry	Properties					Characteristics		Remarks
			Leveling	Degassing	Matting	Slip	Abrasion & scratch resistance	D50	Dropping point	
WAX POWDER	WN-1135	Modified PP	●	●●	●		●●	5.5µm	151°C	Slip reduction • Hardness
WAX POWDER	WN-1150	Modified PE		●	●●●	●		6.5µm	113°C	Recommended for TGIC, Hybrid, Primid
WAX POWDER	WN-1442	Polyethylene	●	●	●	●		5.5µm	112°C	Versatility
WAX POWDER	EF-30P	Polymeric			●●●				125°C (Tg)	Recommended for epoxy and polyester-epoxy
WAX POWDER	WN-1875	Polymeric			●		●●●	5.5µm	>200°C	Enhanced hardness

ARCHITECTURAL COATINGS

Architectural coatings require high performance in terms application ease and aesthetical.
Rheology and surface modifers enable to reach a high expectation level.

KEY BENEFITS
- **Sag resistance**
- **Antisettling**
- **Sprayability, rollability, brushability**
- **Gloss & matt control**
- **Mechanical & chemical resistance**
- **Blocking resistance**



Rheology modifiers

	Products	Technical data		Application		Remarks
		Dosage (weight)	Incorpo-ration	Solvent borne	Water borne	
100% ACTIVE POWDER	MT	0.2-2.0%	Heat & shear	●●●		General purpose
100% ACTIVE POWDER	SUPER	0.2-2.0%	Heat & shear	●●●		High sag control • Suitable for premium quality
100% ACTIVE POWDER	PA3 WDA 20	0.5-5.0%	Medium Shear	●●●		Antisettling • Sag control • Good leveling
100% ACTIVE POWDER	PA4 WDA 12	0.5-5.0%	Medium Shear	●●●		Ease of incorporation • Suitable for aerosols and wood stains
100% ACTIVE POWDER	LA-250	0.1-2.0%	Post addition	●●●		Antisettling • Viscosity adjustment
100% ACTIVE POWDER	LA-377	0.1-2.0%	Post addition		●●●	Antisettling • Viscosity adjustment

Surface modifiers

	Products	Chemistry	Properties			Characteristics				Remarks
			Matting	Slip	Abrasion & scratch resistance	D50	D100	Dropping point	Dry content	
WAX POWDER	WN-1135	Modified PP	●●●	●	●●	5.5µm	26µm	151°C	100%	High versatility
WAX POWDER	WN-1535	Modified PP	●●●	●	●●	5.5µm	26µm	151°C	100%	Dispersion ease in water
WAX POWDER	WN-1495	Polyethylene	●	●	●●	4.5µm	20µm	112°C	100%	Gloss retention
AQUEOUS DISPERSION	WW-1001	Polyethylene	●	●	●●	4.5µm	20µm	112°C	40%	Balanced properties • Ease of dispersion in water

Rheology modifiers

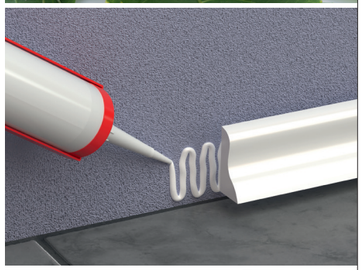
	Products	Systems					Applications							Process conditions			Properties			
		SB Apliphatic	SB Aromatic	SB - Aromatic / polar	Solvent-free	Water-based	PCM	GI	Architectural	IWF	Automotive	Adhesives Sealants	Powder Coatings	Heat & shear	Medium shear	Post-addition	Shear-thinning	Sag control	Anti-settling	Leveling
MICRONIZED POWDER	ANTISETTLE CVP	●●●	●●		●●			●●	●●	●	●●●	●		●●●			●●	●●	●	●
	PC				●●●								●●●	●●●						●●●
	PF	●●●	●●		●●			●●	●●	●	●●●	●		●●●			●●	●●	●●	●
	MT	●●	●●●	●●			●●	●●	●●		●●●	●●	●●	●●●			●●●	●●	●●●	●
	EP	●●	●●●	●●			●●	●●	●●		●●●	●●	●●	●●●			●●●	●●	●●●	●
	SF	●●	●●●	●●			●●	●●	●●		●●●	●●	●●	●●●			●●●	●●	●●●	●
	SUPER	●	●●●	●●●			●●●	●●			●●			●●●			●●●	●●●	●●●	●
	ULTRA		●●	●●●	●		●●●	●●						●●●			●●●	●●●	●●●	●
	EXTRA		●●	●●●	●		●●●	●●						●●●			●●●	●●●	●●●	●
	REV		●●	●●	●		●●●	●●						●●●			●●●	●●●	●●●	●
	OPTIMA			●●●	●●●		●●●	●●			●●			●●●			●●●	●●●	●●●	●●
	LV			●●	●●●		●●●	●●		●●	●●			●●●			●●●	●●●	●●●	●
	SLW											●●●		●●●			●●●	●●●	●●●	●
	SLT											●●●		●●●			●●●	●●●	●●●	●
	SLX											●●●		●●●			●●●	●●●	●●●	●
	SL											●●●		●●●			●●●	●●●	●●●	●
PASTE	60X		●●	●●			●●								●●●				●●	
	PA3 XAF 20		●●●	●●●			●●●	●●							●●●		●●●	●●●	●●●	●
	PA5 XSR 25		●●●	●●●			●●●	●●							●●●		●●●	●●●	●●●	●
	PA3 X 20		●●●	●●●			●●●	●●●							●●●		●●●	●●●	●●●	●
	PA4 X 20		●●●	●●●			●●●	●●●		●●●	●●●				●●●		●●●	●●●	●●●	●
	PA3 BA 20		●●●	●●●			●●●	●●●		●●●	●●●				●●●		●●●	●●●	●●●	●
	PA3 WDA 20		●●●	●●●			●●●	●●●	●●●	●●●	●●●				●●●		●●●	●●●	●●●	●
	PA4 WDA 12		●●●	●●●			●●●	●●●	●●●						●●●		●●●	●●●	●●●	●
LIQUID	LA-150		●●●	●●●			●●	●●		●●	●●	●●				●●●	●●●	●●●	●●●	●●
	LA-250	●●●	●●●				●	●	●●●	●●	●					●●●	●●●	●●●	●●●	●●
	LA-377					●●●	●	●●	●●●	●●	●	●●				●●●	●●●	●●●	●●●	●●

Dispersing agents

Products	Systems		Applications					Properties	
	Solvent-based	UV cure	PCM	GI	IWF	Automotive	Can & Coil	Pigment dispersion	Pigment stabilization
D-801	●●●	●	●●●	●●●	●	●●●	●●●	●●●	●●●
D-804	●●●	●	●●●	●●●	●●	●●●	●●●	●●●	●●●

● Possible - ●● Suitable - ●●● Recommended

MARKET SOLUTIONS



MARKET SOLUTIONS

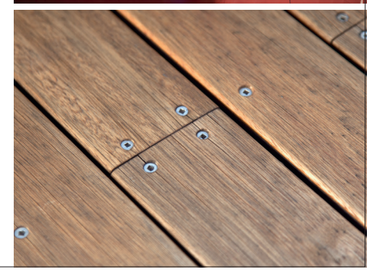
Flow & leveling

Products	Systems			Applications				Properties		
	Solvent-based	UV cure	Water based	GI / PCM	IWF	Automo-tive	Can & Coil	Film aspect	Air-release	Substrate wetting
FLOW-200	●●●	●●		●●●	●●	●●●	●●●	●●●	●●	●●
FLOW-100	●●●	●●		●●●	●●	●●●	●●●	●●●	●	●●
FLOW-450	●●●	●		●●	●●	●●●	●	●●●	●	●●
FLOW-465	●●●	●		●●●	●	●●	●●●	●●●	●	●●
A-620-A2	●●●	●		●●●	●	●●	●●	●●●	●	●●
A-2201-M	●●●	●		●●	●	●●	●●	●●●	●●	●
A-72-A2-60	●●●	●		●●	●	●●	●●	●●●	●	●●
A-2678-M			●●●	●	●●	●●		●●●	●●	●●

Surface modifiers

	Products	Chemistry	Applications						Properties			Characteristics			
			PCM	GI	Architec-tural	IWF	Automo-tive	Powder coatings	Matting	Slip	Abrasion & scratch resistance	D50	D100	Dropping point	Dry content
WAX POWDER	WN-1135	Modified PP	●●●	●●●	●●●	●●●	●●●	●●●	●●●	●	●●	5.5µm	26µm	151°C	100%
	WN-1535	Modified PP	●●●	●●●	●●●	●●●	●●●	●●	●●●	●	●●	5.5µm	26µm	151°C	100%
	WN-1265	Modified polyamide				●●●		●●●	●●	●●	●	5.5µm	30µm	146°C	100%
	WN-1495	Polyethylene	●●●	●●●	●●●	●●●	●●●	●●	●	●	●●	4.5µm	20µm	112°C	100%
	WN-1442	Polyethylene			●●	●●●	●●	●●●	●	●	●●	6µm	30µm	112°C	100%
	WN-2950	Polyethylene		●●●		●●				●	●●●	6µm	30µm	130°C	100%
	WN-1150	Polyethylene						●●●	●●●			6µm	30µm	112°C	100%
	WN-1875	Crosslinked polymer		●●		●●●		●●●	●●●	●	●●	5.5µm	30µm	>200°C	100%
	EP-30P	Polymeric						●●●	●●●		●●	NA	NA	125°C	100%
AQUEOUS DISPERSION	WW-1001	Polyethylene		●●	●●●	●●●			●	●	●●	4.5µm	20µm	112°C	40%

● Possible - ●● Suitable - ●●● Recommended



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SCAN ME

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