

Additives range for coatings, adhesives and sealants



Arkema is the manufacturer and supplier of the **Crayvallac® range of additives**, used in the coating industry since the 1960's. We are very proud of the reputation and trust that we have developed with our **customers around the world** — as a leading and serious provider of rheological, flow and levelling, matting, dispersing, texturing, slip and rub solutions.

Our strategic direction to bring continuous new product development and innovation is led from our central **R&D facility in France**, which is supported by our **regional application laboratories** around the world, including Brazil, China, France, Malaysia, Spain and the USA.

Our **Regulatory Affairs team** ensures our products comply with the ever demanding and growing regulations around the world. **Sustainability**, and being a socially responsible partner with our customers, employees and the communities where we operate, continues to be a focus of our business. Our product range is stocked and sold in over 100 countries, and locally supported by our dedicated team of experts.

For more information please visit our website at www.arkemacoatingresins.com

TABLE OF CONTENTS

➔ PERFORMANCE AND BENEFITS	1
➔ HOW TO USE	1
➔ ADHESIVES AND SEALANTS	2-3
➔ PROTECTIVE AND MARINE COATINGS	4-6
➔ GENERAL INDUSTRY	4-6
➔ WATERBORNE COATINGS	7
➔ WOOD COATINGS	8-9
➔ AUTOMOTIVE COATINGS	10-11
➔ CAN AND COIL	12-13
➔ ARCHITECTURAL COATINGS	14
➔ POWDER COATINGS	15
➔ SUMMARY	16-19
➔ ARKEMA'S PRODUCTS PORTFOLIO	20

CRAYVALLAC®
BY ARKEMA

Additives for Coatings, Adhesives and Sealants

RHEOLOGICAL PERFORMANCE AND BENEFITS

RHEOLOGY MODIFIERS

- Various range of supply forms :
Powders, pastes and liquids
- With shear-thinning rheology



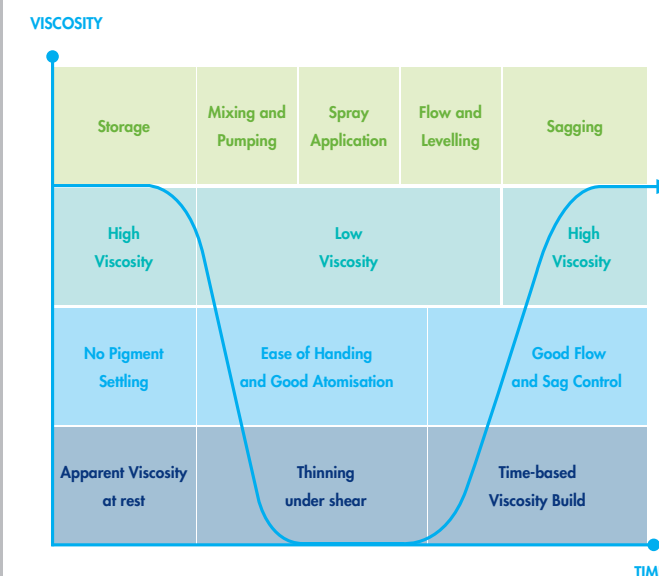
SURFACE MODIFIERS

- Polymeric waxes
- Matting agents
- Surface properties



FLOW AND LEVELLING AGENTS

- Liquid additives for aspect improvement
- Surface wetting enhancement
- Air-release properties

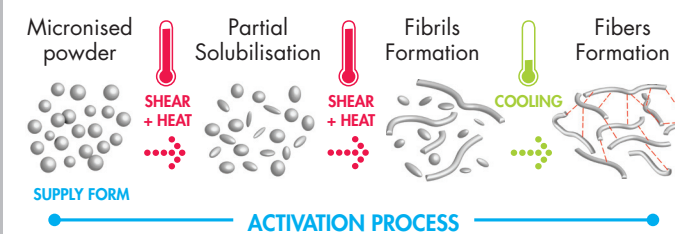


CRAYVALLAC® rheology modifiers provide coatings with a high viscosity under low shear conditions which is typically required for storage stability. It results in excellent anti-sedimentation characteristics in pigmented systems thus maintaining a good dispersion and preventing hard settling.

In addition, the excellent shear thinning behaviour of the **CRAYVALLAC®** rheological additives ensures that coatings are easily applied under the high shear conditions (brush, roller or spray). The thixotropic nature of the **CRAYVALLAC®** rheology modifiers, or time dependent viscosity recovery, provides sufficient time for good flow and levelling, yet enables sufficient viscosity build up to prevent sag.

HOW TO USE CRAYVALLAC RHEOLOGICAL MODIFIERS

POWDER ACTIVATION



CRAYVALLAC® powders require to be activated by heat and high shear into a rheological fibrous network. It is possible to benefit from the grinding stage to perform this activation.

For manufacturing processes without such a grinding stage then **CRAYVALLAC® Pastes** are a great alternative since the polyamide has already been pre-activated. This means that the paste can be directly incorporated into the paint system under medium shear without requiring either heat or high shear.

CRAYVALLAC® Liquid additives are activation-free and can be simply stirred into the formulation.

PASTE INCORPORATION





« CRAYVALLAC® Polyamide technology ensures robustness and versatility toward processing conditions for a wide range of adhesives & sealants technologies »

Combine :

Rheological performance

+

Storage stability

+

Workability

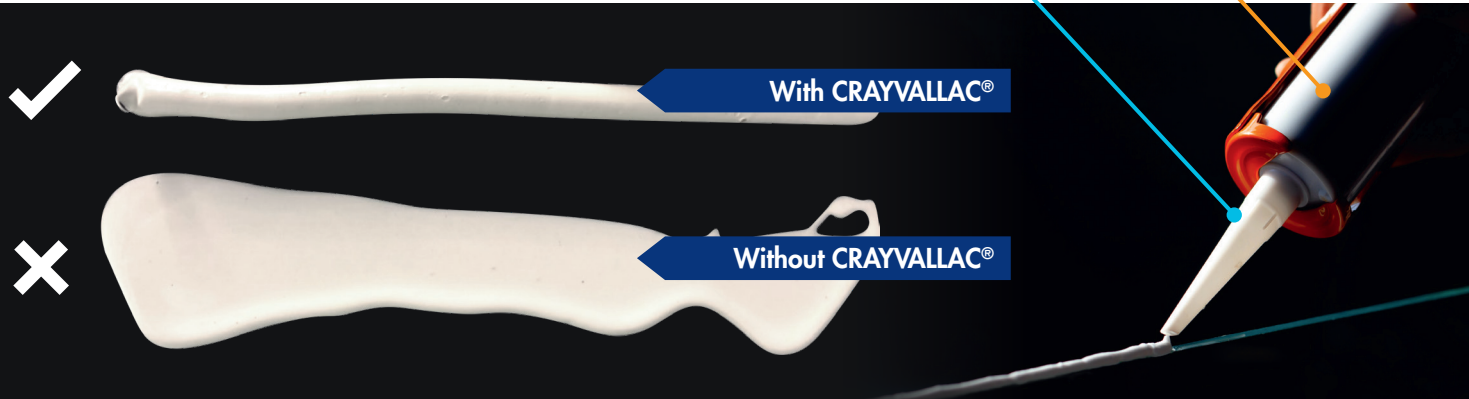
...with our range of rheology modifiers



Looking to replace screws & bolts ?
Need an extra boost of strength with workability for your system ?
CRAYVALLAC® SLW is an additive specifically designed for highly filled systems providing extra efficiency & performance with ease of extrusion. Ideal for demanding applications.

- Anti-settling
- Long term stability
- Viscosity stability

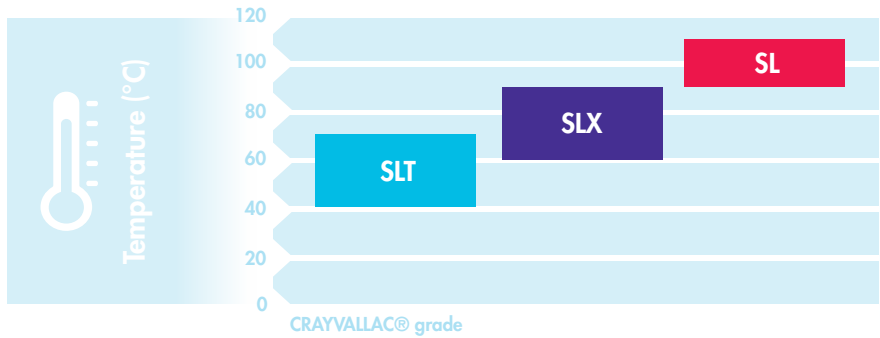
- Easy application
- Extrusion control
- Non-slumping
- Curing & adhesion integrity ensured
- Weatherability



RHEOLOGY MODIFIERS

CRAYVALLAC®		Chemistry	Technical data			Adhesives & Sealants Technologies								
			Supply form	Dosage (weight %)	Incorporation	STP	2K PU	2K Epoxy	Silicones	Acrylates	Butyl Rubber	Polysulphides	Poly-chloroprenes	WB systems
Antisettle CVP		Castor derivative	100% active powder	1 - 8%		●			●			●	●	
MT		Castor derivative				●	●	●	●	●		●	●	
SL		Polyamide	100% active powder	1 - 8%	Activation through heat & high shear	●	●	●			●			
SLX		Polyamide				●	●	●		●	●	●		
SLT		Polyamide				●	●	●	●	●	●			
NEW	SLW	Polyamide	100% active powder	1 - 5%		●	●	●		●	●			
LA-350		Modified urea	Liquid	0,1 - 2%	Activation free									●

● ● ● = Recommendation levels



RHEOLOGY MODIFIERS

CRAYVALLAC®	Technical data			SB regular		SB High solid		Special			Remarks
	Supply form	Dosage (weight %)	Incorporation	Primer	Top Coat / Direct-To-Metal	Primer	Top Coat / Direct-To-Metal	Solvent Free Systems	Antifouling	Intumescent	
MT	100 % active powder	0,2 2,0	Activation through heat & high shear	●	●	●	●	●			Amide-modified castor oil derivative: cost effective and easy to activate
Super		0,5 1,5			●		●			●	Pure polyamide recommended for top coat and DTM coatings
Ultra		0,5 1,5		●	●	●			●		Pure polyamide especially recommended in 2K epoxy primers for its robustness Allows excellent recoatability and sag control
Extra		0,5 1,5		●		●		●	●	●	Pure polyamide especially recommended in 2K epoxy primers for its high temperature tolerance
NEW Optima		0,5 1,5		●	●	●	●	●	●	●	Pure polyamide recommended for very high solid and solvent free for its ease of activation and smooth viscosity recovery (good levelling)
NEW LV		0,5 2,0			●	●	●	●	●	●	Pure polyamide recommended for solvent free systems for its efficiency
60X	Paste	0,5 5,0	Medium shear	●		●			●	●	Polyethylene paste recommended to prevent irreversible hard settling
PA3 XAF 20		0,5 5,0		●	●	●	●		●	●	Alcohol free version of pre-activated polyamide paste
PA3 X 20 / PA3 BA 20		0,5 5,0		●	●	●	●				Pre-activated polyamide paste with highest efficiency (optimum sag resistance and viscosity)
PA4 X 20 / PA4 BA 20		0,5 5,0		●	●	●	●				Pre-activated polyamide with enhanced transparency, excellent anti-sagging, anti-settling properties
LA-150	Liquid	0,1 2,0	Post addition	●	●	●	●		●	●	Modified urea thixotropic agent especially recommended for anti-settling and viscosity adjustment. Simple stir-in incorporation, suitable for post addition

SURFACE MODIFIERS

CRAYVALLAC®	Chemistry	Properties				Characteristics				
		Matting	Slip	Abrasion resistance	Scratch resistance	D50 (µm)	D100 (µm)	Dropping point (°C)	Solid content (%)	Remarks
WN-1135	Modified PP	●	●	●	●	5,5	26	151	100%	Stronger matting effect
WN-1535	Modified PP	●	●	●	●	6	26	151	100%	Easy to disperse in WB system
WN-1495	Polyethylene	●	●	●	●	4,5	20	112	100%	Fine particle size distribution
WF-3200	Modified PTFE	●	●	●	●	5	25	112	100%	High performance wax

FLOW AND LEVELLING AGENTS

CRAYVALLAC®	Systems			Properties			Characteristics		
	Solvent Based	UV Cure	Water Based	Film aspect enhancement	Air-release	Substrate wetting	Active content (%)	Solvent	Remarks
FLOW-200	●	●		●	●	●	100%	None	Polyester with balanced compatibility
A-620-A2	●	●		●	●	●	60%	Xylene	Polyacrylate with medium molecular weight
A-2201-M	●	●		●	●	●	70%	Xylene Butanol	Polyacrylate with synergistic effect when blended with other flow additive

CRAYVALLAC® TECHNOLOGIES IN PCM TYPICAL FORMULATIONS

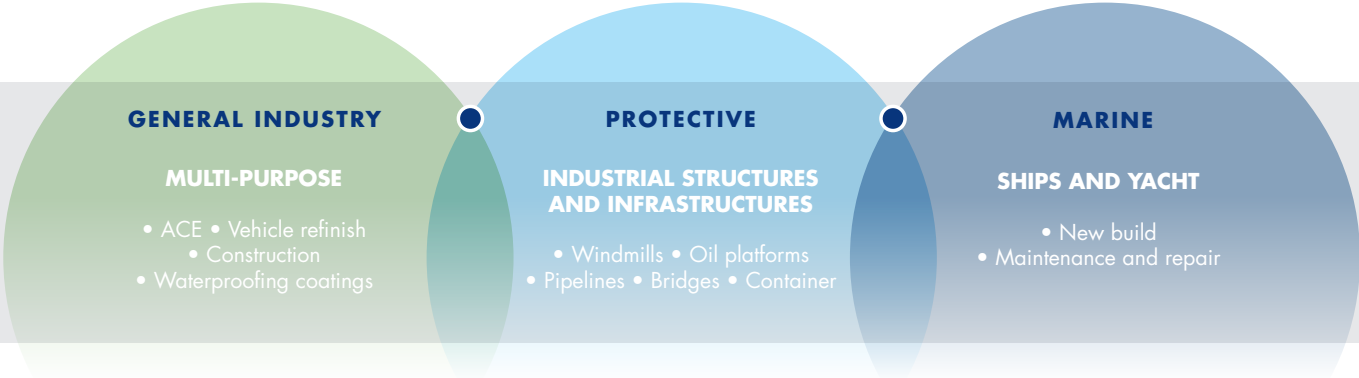
REGULAR SOLVENT BASED

HIGH SOLID SOLVENT BASED

VERY HIGH SOLID & SOLVENT FREE



PCM / GI SUB-APPLICATIONS

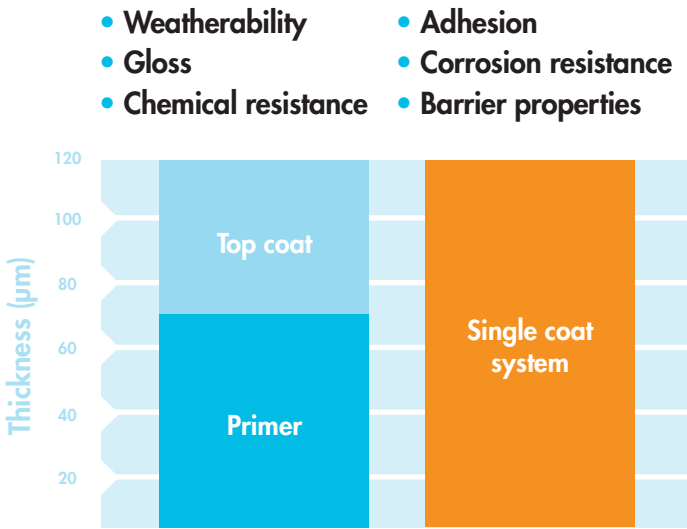


DIRECT TO METAL

The development of Direct To Metal (DTM) solutions helps to :

- REDUCE THE NUMBER OF LAYERS,
- PROVIDE THE BEST BALANCE BETWEEN PRIMER AND TOPCOAT PROPERTIES: good adhesion, corrosion resistance and exterior durability.

CRAYVALLAC® rheology modifiers, with their strong shear thinning characteristics allow you to apply a higher film thickness without sagging. CRAYVALLAC® flow agents will improve the surface aspect by removing defects and by improving the gloss.



CRAYVALLAC®	Systems	Description			Characteristics		
	Direct To Metal	Functionality	Chemistry	Supply form	Active content	Solvent	Remarks
PA3 X 20	●	Rheology modifier	Polyamide	Paste	20%	Xylene	Post-addition for viscosity adjustment (no activation required) Ease of formulation by simple mixing Enhanced thixotropy to get high sag resistance with gloss retention
SUPER	●	Rheology modifier	Polyamide	Powder	100%	-	Controlled flow behavior, with ease of application and excellent sag resistance High film thickness while achieving good levelling
FLOW-200	●	Levelling agent	Polyester	Liquid	100%	-	Polyester with balanced compatibility for an enhanced film aspect without defects

Our duty is to protect the environment and to help our customers manufacture coatings with reduced VOC's. We see strong growth in powder coatings and also waterborne coatings are being developed for most challenging conditions. In addition, we see conventional solvented systems becoming increasingly higher in solids and also solvent free.

POWDER	WB	VERY HIGH SOLID	SOLVENT FREE
0 g/L VOC	120 g/L VOC	150 g/L VOC	60 g/L VOC
Suitable for some applications	Cost vs performance	Cost vs performance	Specific equipment required

Liquid additives are the most suitable alternative for waterborne coatings as waterborne resins are very often sensitive to temperature and shear preventing the required activation for polyamide powder. As a non associative rheology modifier, CRAYVALLAC® LA-350 provides good sag resistance and antisetling properties in a wide range of waterborne systems. When the aspect of the film is essential, CRAYVALLAC® A-2678-M helps to prevent surface defect and can also prevent air bubbles. CRAYVALLAC® WN-1535 can be easily dispersed in WB coatings and results in good scratch resistance. Depending on the dosage it is possible to use the matting effect to obtain a semi gloss finish.

CRAYVALLAC®	Systems	Description			Characteristics		
	Waterborne	Functionality	Chemistry	Supply form	Active content	Solvent	Remarks
LA-350	●	Rheology modifier	Modified urea	Liquid	50%	DMSO	Post addition No activation required
WN-1535	●	Surface modifier	Modified PP	Powder	100%	None	Possibility to use with stronger matting agent for enhanced mechanical properties
A-2678-M	●	Levelling agent	Polyacrylate	Liquid	50%	Water glycol	Grind aid for water-based coatings



Arkema's CRAYVALLAC® range of surface modifiers are mainly based on polyethylene, polypropylene and PTFE. These products are available as micronised powders or dispersions of micronised powders in water or solvent. These high performance products enable the formulator to control both the lubricity and appearance of coatings.
The following performance enhancements are to be obtained by using these products :

- Gloss and matt control
- Slip and scratch
- Mar, rub and abrasion
- Sanding aids
- Blocking resistance
- Solvent resistance and water repellency
- Texturing
- Stain resistance.

SURFACE MODIFIERS

CRAYVALLAC®	Chemistry	Properties				Characteristics					
		Matting	Slip	Abrasion resistance	Scratch resistance	D50 (µm)	D100 (µm)	Dropping point (°C)	Dry content (%)	Remarks	
WN-1135	Modified PP	●	●	●	●	5,5	26	151	100%	Matting and anti-scratch	
WN-1265	Modified polyamide	●	●	●	●	5,5	30	146	100%	Slip and satin effect	
WN-1495	Polyethylene	●	●	●	●	4,5	20	112	100%	Slip and anti-scratch (fine particule size distribution)	
WN-1442	Polyethylene	●	●	●	●	6	30	112	100%	Slip and anti-scratch	
WN-1535	Modified PP	●	●	●	●	5,5	26	151	100%	Possible combination with fumed silica for deep mat finishes Easy to disperse in WB system	
WN-1875	Crosslinked polymer	●	●	●	●	5,5	30	>200	100%	Strong matting effect and anti-scratch	
WF-3200	Modified PTFE	●	●	●	●	5	25	112	100%	Slip and high anti-scratch Good gloss retention	
WF-6010	Modified PTFE	●	●	●	●	5	25	112	100%	Slip and high anti-scratch without gloss decrease	
WF-9200	Modified PTFE	●	●	●	●	6	30	130	100%	Slip, high anti-scratch and chemical resistance without gloss decrease	
WW-1001	Polyolefin	●	●	●	●	4,5	20	112	40%	Improved surface properties	
WW-1077	Modified PTFE	●	●	●	●	5	25	112	50%	Improved surface properties	
WW-9500	Modified PP	●	●	●	●	5,5	25	151	35%	Matting and anti-scratch	

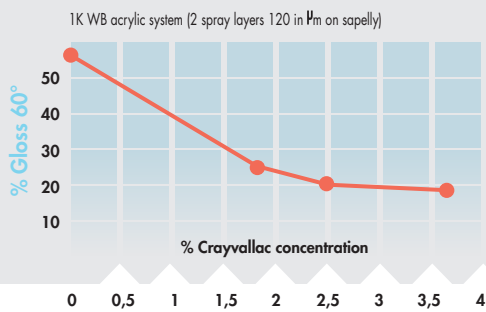
RHEOLOGY MODIFIERS

CRAYVALLAC®	Technical data			SB					Special coatings	Remarks
	Supply form	Dosage (weight %)	Incorporation	Regular solid	High solid	UV	Polyester	Waterborne		
LV	Powder	0,2 1,5	Activation through heat & high shear	●	●	●	●			Pure polyamide recommended for solvent free for its efficiency
PA3 X 20 / PA3 BA 20	Paste	0,5 5,0	Medium shear	●	●	●	●			Pre-activated paste with highest efficiency (optimum sag resistance and viscosity)
PA3 S 12	Paste	0,5 5,0	Medium shear	●	●	●	●	●		Pre-activated paste with highest efficiency (optimum sag resistance and viscosity)
PA4 X 20 / PA4 BA 20	Paste	0,5 5,0	Medium shear	●	●	●	●	●		Pre-activated paste with enhanced transparency, excellent anti-sagging, anti-settling properties
LA-150	Liquid	0,1 2,0	Post addition	●	●	●	●			Urea-urethane thixotropic agent especially recommended for anti-settling and viscosity adjustments
LA-350	Liquid	0,1 2,0	Post addition					●		Simple stir-in incorporation Suitable for post addition

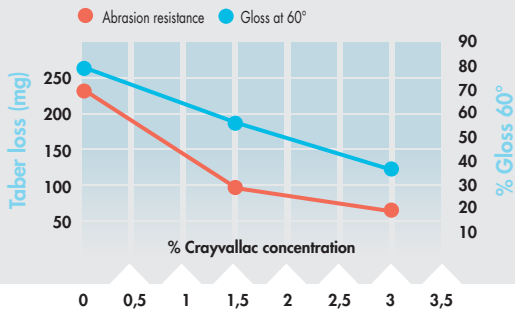
FLOW AND LEVELLING AGENTS

CRAYVALLAC®	Systems			Properties			Characteristics		
	Solvent Based	UV Cure	Water Based	Film aspect enhancement	Air-release	Substrate wetting	Active content	Solvent	Remarks
FLOW-200	●	●		●	●	●	100%	None	Polyester with balanced compatibility
FLOW-100	●	●		●	●	●	100%	None	Polyacrylate with high molecular weight
A-2678-M			●	●	●	●	50%	Water Glycol	Polyacrylate providing defoaming improved properties substrate and pigment wetting

MATTING CRAYVALLAC WN 1535 IN WB FORMULATION



MATTING AND ABRASION RESISTANCE IN SB FORMULATION



RHEOLOGY MODIFIERS

CRAYVALLAC®	Technical data			Solventborne				Remarks
	Supply form	Dosage (weight %)	Incorporation	Top Coat	Base Coat	Primer	Waterborne	
Super	100 % active powder	0,5 1,5	Activation with heat and high shear	●	●	●		Pure polyamide featuring excellent sag resistance and edge covering with low thickening
Optima	100 % active powder	0,5 1,5	Activation with heat and high shear	●	●	●		Pure polyamide recommended for its ease of activation and smooth viscosity recovery (good levelling)
NEW LV	100 % active powder	0,5 1,5	Activation with heat and high shear	●	●	●		Pure polyamide recommended for its high efficiency
PA3 X 20 / PA3 BA 20	Paste	0,5 5,0	Medium shear	●	●	●		Pre-activated paste with highest efficiency (optimum sag resistance and viscosity)
PA4 X 20 / PA4 BA 20	Paste	0,5 5,0	Medium shear	●	●	●		Pre-activated polyamide with enhanced transparency, excellent anti-sagging, anti-settling properties
LA-150	Liquid	0,1 2,0	Post addition	●	●	●		Modified urea thixotropic agent especially recommended for anti-settling and viscosity adjustment
LA-350	Liquid	0,1 2,0	Post addition				●	Modified urea thixotropic agent especially recommended for anti-settling and viscosity adjustment

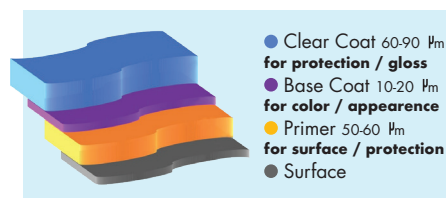
FLOW AND LEVELLING AGENTS

CRAYVALLAC®	Systems			Properties			Characteristics		
	Solvent Based	UV Cure	Water Based	Film aspect enhancement	Air-release	Substrate wetting	Active content	Solvent	Remarks
FLOW-200	●	●		●	●	●	100%	None	Polyester with high efficiency and balanced compatibility. Especially recommended in OEM
FLOW-100	●	●		●	●	●	100%	None	Polyacrylate with balanced compatibility
A-620-A2	●	●		●	●	●	60%	Xylene	Polyacrylate with medium molecular weight
A-2201-M	●	●		●	●	●	70%	Xylene Butanol	Polyacrylate with enhanced efficiency when blended with other flow additive
A-72-A2-60	●	●		●	●	●	60%	Xylene	Higher molecular weight version of CRAYVALLAC® A-620-A2
A-2678-M			●	●	●	●	50%	Water glycol	Polyacrylate with enhanced efficiency when blended with other flow additive. Grinding aid for waterborne coating

SURFACE MODIFIERS

CRAYVALLAC®	Chemistry	Properties				Characteristics				
		Matting	Slip	Abrasion resistance	Scratch resistance	D50 (µm)	D100 (µm)	Dropping point (°C)	Solid content (%)	Remarks
WN-1875	Polymeric	●	●	●	●	5,5	30	>200	100%	Stronger matting effect
WN-1535	Modified PP	●	●	●	●	5,5	26	151	100%	Possible combination with fumed silica for deep mat finishes. Easy to disperse in WB system
WN-1495	Polyethylene	●	●	●	●	4,5	20	112	100%	Fine particle size distribution
WF-3200	Modified PTFE	●	●	●	●	5	25	112	100%	High performance wax. Good gloss retention

RHEOLOGY MODIFIERS - POLYESTER PUTTIES FOR VEHICLE REFINISH



USEFUL FOR CAR REPAIR - SPECIFIC RHEOLOGICAL NEED

CRAYVALLAC® key benefits for Polyester Putties:

- VERY GOOD IN-CAN STABILITY
- SMOOTH STRUCTURE, EASY TO BREAK
- PRODUCT STAYS ON THE KNIFE, NO SAG
- NO FOAM

CRAYVALLAC®	Technical data			Remarks
	Supply form	Dosage (weight %)	Incorporation	
Antisettle CVP	100 % active powder	0,2 2,0	Activation through heat & high shear	Castor oil derivative. cost effective and easy to activate (40 - 45 °C)
NEW PF	100 % active powder	0,2 2,0	Activation through heat & high shear	Finest particle size distribution for easier activation conditions and free-flow powder
MT	100 % active powder	0,2 2,0	Activation through heat & high shear	Amide-modified castor oil derivative with improved stability for butter-like putties
SF	100 % active powder	0,2 2,0	Activation through heat & high shear	Amide-modified castor oil derivative with improved stability for harder putties and better in-can stability



RHEOLOGY MODIFIERS

CRAYVALLAC®	Technical data			Solventborne				Remarks
	Supply form	Dosage (weight %)	Incorporation	Top Coat	Base Coat	Primer	Waterborne	
PA3 X 20 / PA3 BA 20	Paste	0,5 5,0	Medium shear	●	●	●		Pre-activated paste with highest efficiency (optimum sag resistance and viscosity)
PA4 X 20 / PA4 BA 20	Paste	0,5 5,0		●	●	●		Pre-activated polyamide with enhanced transparency excellent anti-sagging, anti-settling properties
LA-150	Liquid	0,1 2,0	Post addition	●	●	●		Urea-urethane thixotropic agent especially recommended for antisetling and viscosity adjustments

CRAYVALLAC® levelling additives are high performance agents for the control of coating surface properties. Based on polyester and acrylic chemistries, they have been developed to provide the following benefits:

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

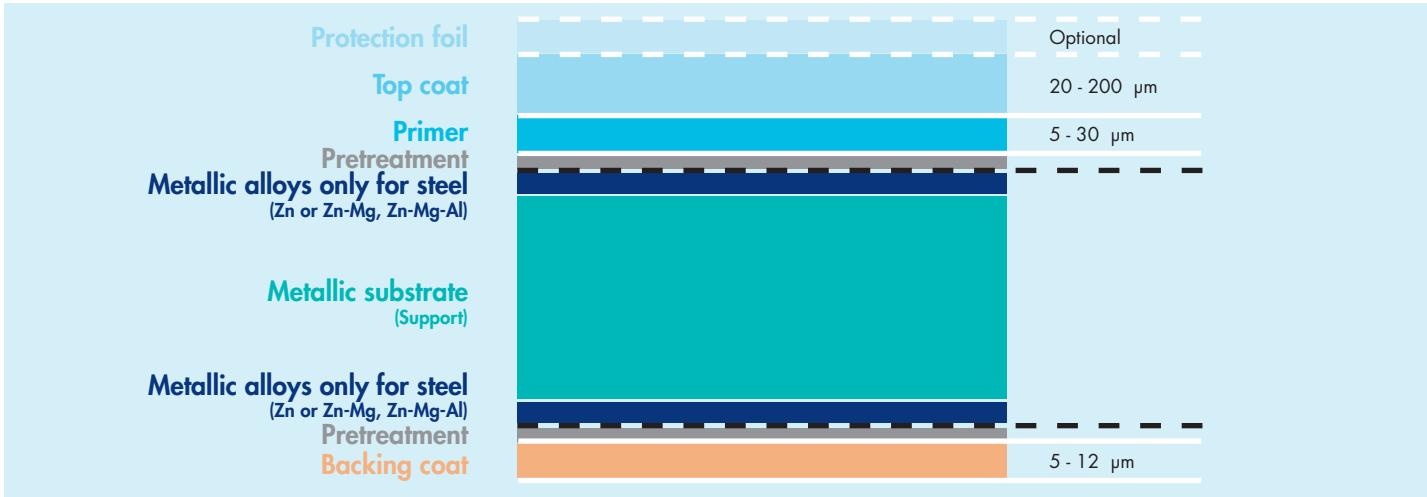
SURFACE MODIFIERS

CRAYVALLAC®	Chemistry	Properties				Characteristics				
		Matting	Slip	Abrasion resistance	Scratch resistance	D50 (µm)	D100 (µm)	Dropping point (°C)	Solid content (%)	Remarks
WN-1135	Modified PP	●	●	●	●	5.5	26	151	100%	Matting agent with excellent hardness and slip resistance reduction
WN-1495	Polyethylene	●	●	●	●	4,5	20	112	100%	Shows good hardness, abrasion, heat and solvent resistance. Ideal for general purposes
WN-1265	Modified polyamide	●	●	●	●	5,5	30	146	100%	Matting and texturing ('Orange-peel' effect) and slip resistance reduction
WF-3200	Modified PTFE	●	●	●	●	5	25	112	100%	Improves anti-blocking, abrasion resistance, surface hardness and slip resistance reduction
WN-1875	Polymeric	●	●	●	●	5,5	30	>200	100%	High performance wax

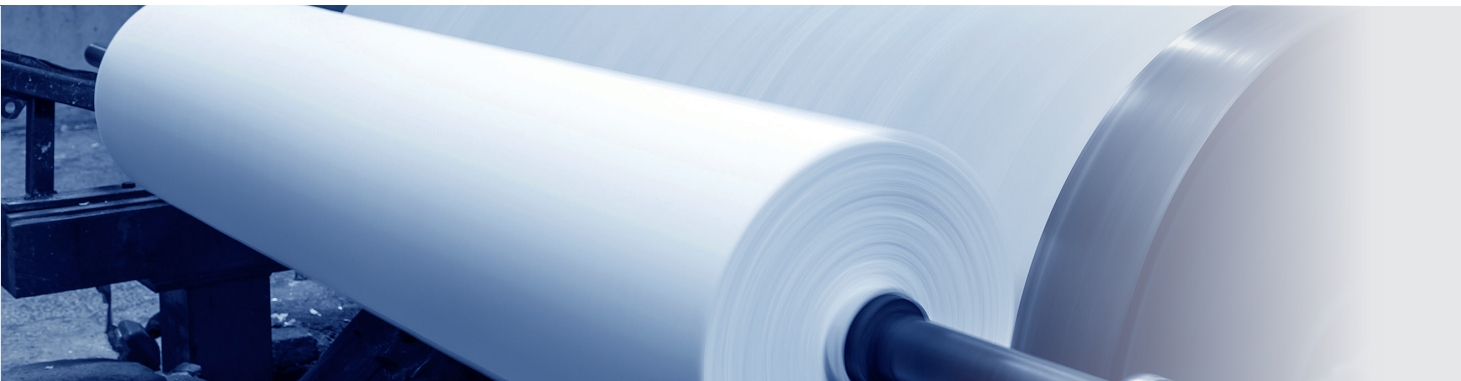
FLOW AND LEVELLING AGENTS

CRAYVALLAC®	Systems			Properties			Characteristics		
	Solvent Based	UV Cure	Water Based	Film aspect enhancement	Air-release	Substrate wetting	Active content	Solvent	Remarks
FLOW-200	●	●		●	●	●	100%	None	Polyester with high efficiency and balanced compatibility Especially recommended in OEM
FLOW-100	●	●		●	●	●	100%	None	Polyacrylate with balanced compatibility
A-620-A2	●	●		●	●	●	60%	Xylene	Polyacrylate with medium molecular weight
A-2201-M	●	●		●	●	●	70%	Xylene Butanol	Polyacrylate with enhanced efficiency when blended with other flow additive
A-72-A2-60	●	●		●	●	●	60%	Xylene	Higher molecular weigh version of CRAYVALLAC® A-620-A2

TYPICAL COIL COATING LAYERS



EXAMPLE OF COIL COATING WITH AND WITHOUT CRAYVALLAC® FLOW-200



RHEOLOGY MODIFIERS

CRAYVALLAC®	Technical information			Application		Remarks
	Supply form	Dosage (weight %)	Incorporation	Solventborne	Waterborne	
MT	100 % active powder	0,2 2,0	Activation with heat and high shear	●		General purpose thixotrope for solventborne coatings
SUPER				●		Excellent sag control with low thickening and good levelling balance. Suitable for premium quality, architectural solventborne paints
PA3 WDA 20	Paste	0,5 5,0	Medium shear	●		Paste in mineral oil to provide excellent anti-settling and sag control properties with good levelling properties
PA4 WDA 12				●		Softer version of PA3 WDA 20, with much easier incorporation. Suitable for aerosols, wood stains and decorative paints
LA-250	Liquid	0,1 2,0	Suitable for post addition	●		Anti-settling and sag control additive, with excellent levelling properties Also used for viscosity adjustment
LA-350					●	Provides anti-settling properties to water-based coating, with excellent levelling properties

SURFACE MODIFIERS

CRAYVALLAC®	Technology	Properties				Characteristics				
		Matting	Slip	Abrasion resistance	Scratch resistance	D50 (µm)	D100 (µm)	Dropping point (°C)	Solid content (%)	Remarks
WN-1135	Modified PP	●	●	●	●	5,5	26	151	100%	For satin finish. Excellent dispersability, hydrophobicity, slip and mar resistance
WN-1535	Modified PP	●	●	●	●	5,5	26	151	100%	Easy to disperse in WB system
WN-1495	Polyethylene	●	●	●	●	4,5	20	112	100%	Fine particle size distribution
WF-3200	Modified PTFE	●	●	●	●	5	25	112	100%	Improves anti-blocking, abrasion, mar resistance and surface hardness
WW-1001	WB Dispersion	●	●	●	●	4,5	20	112	40%	Good compatibility and rapid dispersion
WW-1077	WB Dispersion	●	●	●	●	5	25	112	50%	Wide compatibility and excellent stability in water-based systems

FLOW AND LEVELLING AGENTS

CRAYVALLAC®	Technical information		Melting point (°C)	Molecular weight (g/mol)	Remarks	Characteristics
	Supply form	Chemistry				
PC	Powder	Modified Castor Derivative	83 88	-		High efficient flow, levelling and degassing additive without gloss reduction. Adhesion of sealants is preserved
MT	Powder	Modified Castor Derivative	130 140	-		High efficient flow, levelling and degassing additive without gloss reduction, with improved storage stability
WN-1265	Powder	Amide	146	-		Improved degassing, flow and levelling Also provides some slip and matt
REAFREE F3300-A15	Masterbatch	Acrylic	-	High (>50.000)		Masterbatch with 15% active content in hydroxylated polyester. Recommended to improve levelling of pigmented powder coatings
REAFREE F8585-R10	Masterbatch	Acrylic	-	Low (<15.000)		Masterbatch with 10% active content in carboxylated polyester. Recommended to improve levelling of pigmented powder coatings
REAFREE F3300-R10	Masterbatch	Acrylic	-	Low (<15.000)		Masterbatch with 10% active content in hydroxylated polyester. Recommended to improve levelling of pigmented powder coatings

MATTING & TEXTURING & SURFACE PROTECTION

CRAYVALLAC®	Chemistry	Properties							Characteristics		
		Levelling	Degassing	Matting	Texturing	Slip	Abrasion resistance	Scratch resistance	D50 (µm)	Dropping point (°C)	Remarks
WN-1150	Modified PE		●	●		●			6,5	113	Matting agent for TGIC, Hybrid and PRIMID® based powder coatings Ultra low gloss can be achieved in dry blend systems. Does not affect weatherability or mechanical properties
WN-1442	PE	●	●	●		●			5,5	112	Matting agent with improved surface properties. Provides degassing and improves flow and throughput during extrusion
EF-30P	Polymeric			●					-	125 (Tg)	Strong reactive matting agent specifically for pure epoxy and polyester-epoxy systems. Smooth surface appearance with very good color stability and nonyellowing. Ultra low gloss can be achieved in one shot
WF-1039	PTFE/PE			●	●		●	●	5	112	Fine textured finish effect with good temperature, solvent and abrasion resistance. Addition level: 0.5 - 3%
WN-1135	Modified PP	●	●				●	●	5,5	151	Matting agent with excellent hardness and slip resistance reduction
WF-3200	PTFE/PE			●		●	●	●	6	112	Versatile max providing high slip and anti-blocking. Improves abrasion, mar resistance and surface hardness
WF-6010	PTFE/PE			●		●	●	●	6	112	Versatile max providing high slip and anti-blocking. Improves abrasion, mar resistance and surface hardness
WN-1875	Polymeric						●	●	5,5	>200	Increases surface hardness and scratch resistance. Advised for UV powder coatings. Reduces pill flow

RHEOLOGY MODIFIERS

CRAYVALLAC®	Systems					Applications								Processing Conditions			Properties			
	Aliphatic	Aromatic	Aromatic / polar	Solvent-Free	Water-Based	PCM	GI	Architectural	IWF	Automotive	UPR	Adhesives & Sealants	Powder coatings	Activation (High shear)	High temperature	Low temperature	Shear-thinning	Sag control	Anti-setting	Levelling
Antisettle CVP	●			●			●	●	●		●	●		●	●	●	●	●	●	●
PC				●									●	●	●	●	●	●	●	●
PF	●			●							●	●		●	●	●	●	●	●	●
MT	●	●	●			●	●	●	●		●	●	●	●	●	●	●	●	●	●
SF	●	●	●			●	●				●			●	●	●	●	●	●	●
Super	●	●	●			●	●	●	●	●		●		●	●	●	●	●	●	●
Ultra		●	●			●	●							●	●	●	●	●	●	●
Extra		●	●	●		●	●							●	●	●	●	●	●	●
Optima	●	●	●	●		●	●		●	●				●	●	●	●	●	●	●
LV				●		●	●		●					●	●	●	●	●	●	●
SLW				●								●		●	●	●	●	●	●	●
SLT				●								●		●	●	●	●	●	●	●
SLX				●								●		●	●	●	●	●	●	●
SL				●								●		●	●	●	●	●	●	●

CRAYVALLAC®	Systems					Applications							Processing Conditions			Properties			
	Aliphatic	Aromatic	Aromatic / polar	Solvent-Free	Water-Based	PCM	GI	Architectural	IWF	Automotive	UPR	Adhesives & Sealants	Activation	Medium shear	Post-addition	Shear-thinning	Sag control	Anti-settling	Levelling
60X	●	●	●			●	●		●					●		●	●	●	●
PA3 XAF 20	●	●	●			●	●							●		●	●	●	●
PA3 X 20		●	●			●	●		●	●		●		●		●	●	●	●
PA4 X 20		●	●			●	●		●	●				●		●	●	●	●
PA3 BA 20		●	●			●	●		●	●				●		●	●	●	●
PA4 BA 20		●	●			●	●		●	●				●		●	●	●	●
PA3 S 12								●		●				●		●	●	●	●
PA3 WDA 20	●					●	●	●	●					●		●	●	●	●
PA4 WDA 12	●													●		●	●	●	●
LA-150		●	●			●	●		●	●		●		●	●	●	●	●	●
LA-250	●	●	●			●	●	●	●	●				●	●	●	●	●	●
LA-350					●	●	●	●	●	●		●		●	●	●	●	●	●



SURFACE MODIFIERS

CRAYVALLAC®	Chemistry	Applications						Properties				Characteristics			
		PCM	GI	Architectural	IWF	Automotive	Powder coatings	Matting	Slip	Abrasion resistance	Scratch resistance	D50 (µm)	D100 (µm)	Dropping point (°C)	Solid content (%)
EF-30P	Polymer													125	100%
WN-1875	Polymer											5,5	30	200	100%
WN-1135	Polypropylene											5,5	26	151	100%
WN-1535	Polypropylene											5,5	26	151	100%
WN-1265	Polyamide											5,5	30	146	100%
WN-1150	Modified Polyethylene											6,5	30	113	100%
WN-1442	Polyethylene											6	20	112	100%
WN-1495	Polyethylene											4,5	20	112	100%
WN-2950	Polyethylene											6	30	130	100%
WF-3200	Modified PTFE											5	25	112	100%
WF-6010	Modified PTFE											5	25	112	100%
WF-9200	Modified PTFE											6	30	130	100%
WF-1039	Modified PTFE											5	80	112	100%
WF-1000	Modified PTFE											7,5	30	325	100%
WW-1001	PE in WB											4,5	20	112	40%
WW-9500	PP in WB											5,5	26	151	35%
WW-1077	PE-PTFE in WB											5	25	112	50%
WS-4700	PE in SB											4,5	20	112	40%

FLOW AND LEVELLING AGENTS

CRAYVALLAC®	Systems			Applications				Properties		
	Solvent Based	UV Cure	Water Based	GI / PCM	IWF	Automotive	Coil & can	Film aspect enhancement	Air release	Substrate wetting
FLOW-200										
FLOW-100										
A-620-A2										
A-2201-M										
A-72-A2-60										
A-2678-M										



ARKEMA'S PRODUCTS PORTFOLIO FOR COATINGS APPLICATIONS INCLUDES:

- Waterborne, solventborne and powder coating resins from Arkema Coating Resins.
- Rheology additives for coatings, adhesives and sealants from Arkema Coating Resins.
- Rheology additives for waterborne coatings from Coatex.
- High added value photocure resins for fiber optics, graphic arts, electronics, etc. from Sartomer.
- Enhanced waterborne polymer emulsions using KYNAR® and KYNAR® Aquatic fluoropolymers.
- High performance texturing additives, namely ORGASOL® and RILSAN® fine powders.
- Amines, oxygenated solvents and DMSO polar aprotic solvent for special formulations.
- Nanostructured materials.- Acrylic monomers.

Disclaimer
Please consult Arkema's disclaimer regarding the use of Arkema's products on
<http://www.arkema.com/en/products/product-safety/disclaimer/index.html>

GOOD THINGS HAPPEN WHEN CHEMISTRY GETS PERSONAL

INNOVATION
SUSTAINABILITY
OPPORTUNITY
GROWTH

At Arkema we support you with a wide range of solutions to help you optimize performance and add value for your application. Customers centricity, global support committed to R&D, sustainability and quality are our key drivers for the industry.

COATING RESINS GLOBAL RESOURCES



FOR FULL CONTACT INFORMATION, PLEASE VISIT OUR WEBSITE.

OUR COMMITMENTS



A partner operating worldwide with local agility



Strong corporate social responsibility



Environmental stewardship



Boost your performance



Innovative solutions

**GOOD THINGS
HAPPEN WHEN
CHEMISTRY GETS
PERSONAL**

coatingresins-arkema.com

ARKEMA
INNOVATIVE CHEMISTRY

Headquarter Coating Resins
410 Gregson Dr.
Cary, NC 27511 - USA
Tel. : +1 919 469 6700

Arkema France
420, rue d'Estienne d'Orves
92705 Colombes Cedex - France
Tél. : +33 (0)1 49 00 80 80
Fax. : +33 (0)1 49 00 83 96
arkema.com