

# CYTEC



## PRODUCT GUIDE – Liquid Coating Resins and Additives

Europe, Middle East and Africa

From defining more efficient processes for mining customers to developing new additives for polymer-based alternatives to wood and metals, the product lines of Cytec Specialty Chemicals are unified in their dedication to customer-driven innovation.

Working closely with our customers, we develop revolutionary technologies that enable them to improve performance and productivity, enter new markets, and refine new applications. How to improve mine profitability or coatings efficiency in the face of important environmental concerns? How to develop polymers that really stand up to UV light? How to use phosphines to create better, safer biocides and fumigants for agriculture? Our technology and sales teams work on-site with customers every day to address today's business challenges and troubleshoot tomorrow's.

The applications are diverse, but the commitment is uniform: finding better solutions for customers through continual research, ongoing collaboration and a passion for innovation.

## **An Expansive Portfolio**

Cytec Specialty Chemicals is a complete solution provider for customers requiring high-value surface technologies in industries that include industrial coatings, automotive, architectural, wood and paper, graphics, adhesives and opto-electronics.

We offer our customers advanced and diverse products and technologies for surfaces with an emphasis on environmentally friendly products such as UV/EB curable resins and additives, powder coating resins and additives, as well as waterborne and solventborne liquid coatings resins and additives. We are committed to working with our customers to develop environmentally advanced solutions and we are dedicated to open communication concerning the safe handling, distribution, use and disposal of the products we make.

## **A Focus on Customer Satisfaction**

Cytec Specialty Chemicals operates a globally integrated set of order fulfillment IT systems and processes. All Spec Chem personnel in the order

fulfillment processes are dedicated to delivering customer satisfaction through reliable and cost-effective supply of product to our customers. Cytec Spec Chem has specialized personnel in Customer Service, Procurement, Manufacturing, Planning and Logistics to achieve this goal. In addition to timely and accurate order fulfillment, there is an equally important focus on maintaining safety and protecting the environment at all steps in the process, from the procurement of raw materials to the delivery of finished goods to the customer's door.

## **Dedication to Operational Excellence**

Cytec's Spec Chem Manufacturing Organization operates globally to provide superior service to our customers in all regions. Our vision of operational excellence brings value to our customers through ongoing, continuous improvement initiatives, including Lean Manufacturing, Six Sigma Principles, and Best Practice Engineering. Our value proposition is driven by excellence in our Safety, Environmental, Quality Systems and Employee Development Programs. We are structured by business technology, which enables our sites to work transparently with R&D, Customer Service and the Businesses, to share best practices across common processes. We also are able to gain leverage from overall global manufacturing synergies to most efficiently meet customer needs.

## **Key Product Lines**

- Liquid Coating Resins and Additives
- Mining Chemicals
- Phosphine and Phosphorus Specialties
- Polymer Additives
- Powder Coating Resins and Additives
- RADCURE® UV/EB
- Pressure Sensitive Adhesives
- Specialty Additives
- Specialty Urethanes

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## Resins and Crosslinkers

Cytec's comprehensive range of liquid coating resins covers all major technology platforms, e. g. Alkyds, Acrylics, Epoxies, Phenolics, Polyesters, Polyurethanes and complements our other advanced products – additives and crosslinkers – used world-wide to formulate high-performance coating systems for all applications.

Our broad portfolio of water based and high solid resins allows formulation to design eco-friendly systems, in compliance to the most restrictive regulations around the world.

## Additives

Cytec provides a wide selection of specialty resins and additives for the coatings market. Our portfolio includes top-quality additives for solvent-free, solventborne, high solids and waterborne coating systems for automotive, architectural, industrial and specialty coating applications.

Extensive information on ADDITOL®, MODAFLOW® and CYCAT® are available in the attached CD-Rom.

## Crosslinkers and Catalysts

Cytec offers a broad range of amino crosslinkers and catalysts for liquid coatings. Our crosslinkers are used around the world for improving the durability and resistance properties of coatings.

Trade Names	Nomenclature	Descriptions
ADDITOL®	XW/VXW/XL/VXL	Dispersing, leveling, defoaming, drying additives
BECKOCOAT®	PU/VPU	Moisture curing 1K polyurethanes
BECKOPOX®	VEH/EH VEP/EP VEM/EM	Waterborne and solventborne hardeners for epoxy resins Waterborne and solventborne epoxy resins Solventborne modified epoxy resins
CYCAT®	XK/VXK	Catalysts
CYMEL®	–	Amino crosslinkers
DAOTAN®	TW/VTW	Waterborne polyurethane dispersions
DUOFTAL®	VPI PE/VPE	Solventborne hydroxylated polyesters for isocyanate crosslinking Solventborne hydroxylated polyesters for amino resin crosslinking
DUROXYN®	EF/VEF/VAX	Waterborne and solventborne epoxy ester resins
MACRYNAL®	SM/VSM	Waterborne and solventborne acrylic polyols for isocyanate crosslinking
MODAFLOW®	AQ	Flow and leveling additives
PHENODUR®	PR/VPM/VPR/VPW	Waterborne and solventborne phenolic resins
RESYDROL®	AF/VAF AS/VAS AL/VAL AX/VAX AY/VAY AZ/VAZ AM	Waterborne fatty acid modified alkyd resins Waterborne soya oil modified alkyd resins Waterborne linseed oil modified alkyd resins Waterborne epoxy modified alkyd resins Waterborne acrylic modified alkyd resins Waterborne urethane modified alkyd resins Waterborne modified alkyd resins
UCECRYL®	B/BH/BMR	Waterborne acrylic emulsions
VIACRYL®	SC/VSC	Waterborne and solventborne physically drying/ self-crosslinking and baking acrylic resins
VIALKYD®	AC/AF/AM/AN/AR/AS/ AT/AV/AY/SAF/TO/TS/ VAF/VAS/VAN	Solventborne alkyd resins

Key words	Abbreviations
ABS	Acrylonitrile butadiene styrene
ABU	Butylacrylate
A/F	Bisphenol A/Bisphenol F
APEO	Alkylphenol ethoxylate
AV	Acid value
B	Butanol
BAC	Butylacetate
BDG	Dibutoxyethanol
BG	Butyl glycol
BP	Butoxy propanol
CED	Cathodic electrodeposition
Co	Cobalt
D60	Shellsol D60
DMEA	Dimethylethanol amine
DTM	Direct to metal
ED	Electro deposition
EP	Ethoxy-propanol
FDA	Food and Drug Administration
f.o.d	form of delivery
HS	High solids
IB	Isobutanol
IRH	Isopar H
1K	One component
2K	Two component
KOH	Potassium hydroxyde
LG	Solvent blend
Li	Lithium
MAM	Methylmethacrylate
MB	Methoxy butanol
MFFT	Minimum film formation temperature
MP	Methoxy propanol
N.A.	not applicable
NC	Nitrocellulose

Key words	Abbreviations
NCO	Polyisocyanate Crosslinker
NEP	n-ethyl-pyrrolidone
NH <sub>3</sub>	Ammonia
NMP	n-methyl-pyrrolidone
OEM	Original equipment manufacturer
OH	Hydroxyl number
PA6	Polyamide 6
PBD	Polybutadiene
PC	Polycarbonate
PE	Polyethylene
PP flamed	Polypropylene flamed treated
PS	Polystyrene
p-TSA	Para-toluene sulfonic acid
PUD	Polyurethane dispersion
PVB	Polyvinylbutyrol
PVC	Polyvinyl chloride
s/b	Solventborne
SB	Secondary butanol
SCA	Sag control agent
SNA	Solvent naphta A
SNB	Solvent naphta B
TEA	Triethylamine
TMPFA	Trimethylolpropane formalacrylate
TPGDA	Tripropylene glycol diacrylate
UP/FRP	Unsaturated Polyester/ Fiberglass Reinforced Polyester
VOC	Volatile organic compounds content
WA	Water
w/b	Waterborne
WS	White spirit
WSW	White spirit <1% aromatics
X	Xylene
Zr	Zirconium

Waterborne and Solventborne Acrylic Resins for Polyisocyanate Crosslinkable 2K Systems

Waterborne Polyisocyanate Crosslinkable Acrylic Resins

Products	Resin data					Features								
	Non-volatile %	Solvent	Viscosity at 23°C mPa.s	Hydroxyl content on solid resin (%)	Neutralisation agent	Shear stability	Flow and leveling	Drying	For blending	Yellowing resistance	Airless/Airmix application	Exterior durability	Chemical resistance	Humidity resistance
MACRYNAL®* SM 6810W/42WA	42		200–1200	4,1	DMEA	Yes	●●●	●		●●●	●	●●●	●●	●●●
MACRYNAL SM 6817W/44WA	44		300–3000	3,0	DMEA	Yes	●●	●●●		●●●		●●●	●	●●
MACRYNAL VSM 2521W/42WAB	42	7,4 % B	1000–4000	4,2	DMEA	Yes	●	●●●	●	●●●		●●●	●●●	●●●
MACRYNAL VSM 6285W/43WABDG	43	4,8 % BDG	400–2000	3,3	DMEA	Yes	●●●	●	●	●●●	●	●●●	●●●	●●●
MACRYNAL VSM 6299W/42WA	42		800–4000	4,1	DMEA	Yes	●●	●●		●●●	●	●●●	●●●	●●●

Solventborne Acrylic Resins for Polyisocyanate Crosslinkable 2K Systems

Products	Resin data				Features								
	Non-volatile %	Solvent	Viscosity at 23°C mPa.s	OH content (on solids) %	Low solids	Medium solids	High solids	Outdoor resistance	Chemical resistance	Gloss	Adhesion to steel	Adhesion to non-ferrous metals	Drying
MACRYNAL SM 2703/80BACX	80	BAC/X	7000–9000	2,2			●	●●	●	●●●	●●	●●	●●
MACRYNAL SM 2704/75BACX	75	BAC/X	5000–7000	1,9			●	●●	●	●●●	●●●	●●	●●
MACRYNAL SM 2708/75BAC	75	BAC	2500–4500	3,2			●	●●●	●●	●●●	●●	●●	●
MACRYNAL SM 2711/70BAC	70	BAC	1500–2500	2,7			●	●●	●●	●●●	●●	●●	●●
MACRYNAL SM 2810/75BAC	75	BAC	4500–6000	4,2			●	●●●	●●●	●●●	●●	●	●●
MACRYNAL SM 2816/70BAC	70	BAC	7000–11000	4,5		●		●●●	●●●	●●●	●	●	●●
MACRYNAL SM 2930/70BAC	70	BAC	2000–4200	4,5			●	●●●	●●●	●●●	●	●	●
MACRYNAL SM 500/60X	60	X	2000–3800	2,7	●			●●	●●	●●●	●●●	●●	●●

\* MACRYNAL acrylic resins

● low  
●● medium  
●●● high

Waterborne and Solventborne Acrylic Resins for Polyisocyanate Crosslinkable 2K Systems

Applications							
Metal primer / Surfacer	Pigmented topcoat	Clearcoat	Transportation	Wood paint	Refinishing	Plastics	High film build
	✓	✓	✓		✓	✓	✓
✓	✓	✓	✓		✓	✓	
✓	✓	✓	✓	✓	✓	✓	
	✓	✓	✓		✓	✓	
	✓	✓	✓		✓	✓	

Applications							
For general industry topcoat	For general industry primer	For general industry monocoat	For car refinishing topcoat	For car refinishing primer surfacer	For car refinishing clearcoat	For OEM 2K clearcoat	For plastic coatings
✓	✓			✓			✓
✓	✓			✓			✓
✓	✓			✓			✓
✓	✓			✓			✓
✓		✓	✓		✓		
✓			✓		✓		✓
						✓	
✓	✓	✓		✓			✓

Solventborne Acrylic Resins for Polyisocyanate Crosslinkable 2K Systems

Solventborne Acrylic Resins for Polyisocyanate Crosslinkable 2K Systems

Products	Resin data				Features									
	Non-volatile %	Solvent	Viscosity at 23 °C mPa.s	OH content (on solids) %	Low solids	Medium solids	High solids	Outdoor resistance	Chemical resistance	Gloss	Adhesion to steel	Adhesion to non-ferrous metals	Drying	Modifier resin to improve flexibility
MACRYNAL®* SM 510N/60LG	60	X/SNA/BAC	2400–3600	4,5	●			●●●	●●●	●●●	●●	●	●●	
MACRYNAL SM 513/60LG	60	X/SNA/BAC	2400–4000	3,6	●			●●	●●	●●●	●●	●	●●●	
MACRYNAL SM 515/70BAC	70	BAC	3600–6000	4,5		●		●●●	●●●	●●●	●	●	●●	
MACRYNAL SM 516/70BAC	70	BAC	7000–11000	4,5		●		●●●	●●●	●●●	●	●	●●	
MACRYNAL SM 540/60X	60	X	430–590 (50% in X)	1,4	●			●●	●●	●●●	●●●	●●●	●●	●
MACRYNAL SM 548/50X	50	X	600–1200	2,0	●			●	●●	●●●	●●	●	●●●	
MACRYNAL SM 565/70BAC	70	BAC	2000–4200	4,5			●	●●●	●●●	●●●	●	●	●	
MACRYNAL VSM 2155/60EPAC	60	EPAC	3900–4800	5,8	●			●●●	●●●	●●●	●	●	●●●	
MACRYNAL VSM 2570/70BAC	70	BAC	2200–3800	2,4		●		●●●	●●	●●●	●●●	●●	●●	
MACRYNAL VSM 2701/65SNA	65	SNA	3500–7000	2,6	●			●●	●●	●●●	●●●	●●	●●	
MACRYNAL VSM 2705/70LG	70	SNA/BAC	3000–6800	4,4		●		●●	●●	●●●	●	●	●●	
MACRYNAL VSM 2800/70BAC	70	BAC	2000–5000	4,4			●	●●●	●●●	●●●	●●	●●	●●	
MACRYNAL VSM 2805/80BAC	80	BAC	4000–8500	4,5			●	●●	●●●	●●●	●	●	●	
MACRYNAL VSM 2806/75BAC	75	BAC	4000–7000	4,1			●	●●●	●●●	●●●	●	●	●	
MACRYNAL VSM 2868/70BAC	70	BAC	2700–5000	4,4			●	●●●	●●●	●●●	●	●	●●	
MACRYNAL VSM 2872/70BAC	70	BAC	1500–3700	4,4			●	●●●	●●●	●●●	●●	●●	●●	

● low  
●● medium  
●●● high

\* MACRYNAL acrylic resins

## Solventborne Acrylic Resins for Polyisocyanate crosslinkable 2K Systems

Applications						
For general industry topcoat	For general industry primer	For general industry monocoat	For car refinish topcoat	For car refinish primer surfacer	For car refinish clearcoat	For plastic coatings
✓		✓	✓		✓	
✓	✓			✓	✓	
✓			✓		✓	✓
✓			✓		✓	✓
✓	✓	✓		✓		✓
✓						
✓			✓		✓	✓
✓						
✓	✓	✓				✓
✓	✓	✓		✓		
✓						
✓	✓		✓	✓	✓	✓
✓						
✓			✓		✓	✓
✓			✓		✓	✓
✓			✓		✓	

Waterborne Acrylic Resins, Physically Drying/Self-crosslinking and Hydroxylated Acrylic Dispersions

Products	Resin data						Features											
	Non-volatile %	Solvent	Viscosity at 23 °C mP.s	pH at 10 % in water	MFFT in °C	OH number on solid resin	Physically drying	Self-crosslink	Fast dry	Sandability	Hardness	Flow and leveling	Flexibility	Shear stability	Yellowing resistance	Exterior	Corrosion resistance	Humidity resistance

Waterborne Acrylic Resins for 1K baking systems or 2K with Isocyanates

VIACRYL®* SC 323W/70SBB	70	SBB	10000–20000													•		•	•
VIACRYL SC 6807W/43WA	43	Water	400–2500	8.0–9.0		75				•	•	•	•	•	•	•		•	•
VIACRYL SC 6814W/44WA	44	Water	300–2500	8.0–9.0		80				•	•	•	•	•	•	•		•	•
VIACRYL VSC 6250W/65MP	65	MP	18000–35000													•	•	•	•
VIACRYL VSC 6254W/40WA	40	water	150–700	8.0–9.0	45	60	•		•	•									
VIACRYL VSC 6265W/40WA	40	Water	200–1300	8.0–9.0	26		•		•					•	•	•			
VIACRYL VSC 6273W/44WA	44	Water	200–2400	8.0–9.1		85				•	•	•	•	•	•	•		•	•
VIACRYL VSC 6276W/44WA	44	Water	200–2400	8.0–9.1		86				•	•	•	•	•	•	•		•	•
VIACRYL VSC 6279W/45WA	45	Water	280–1600	7.7–8.5	25		•		•					•	•	•			
VIACRYL VSC 6288W/35WA	35	Water	20–90	7.4–8.1		66	•		•	•								•	
VIACRYL VSC 6292W/38WA	38	Water	450–4500						•							•	•	•	•
VIACRYL VSC 6800W/47WA	47	Water	300–2000	8.0–9.0		100				•	•	•	•	•	•	•		•	•
VIACRYL VSC 6295w/45WA	45	Water	50–250	6.5–7.8	30	N.A.			•	•	•	•		•	•			•	•

N.A. = not applicable

\* VIACRYL acrylic resins

Waterborne Acrylic Resins, Physically Drying/Self-crosslinking and Hydroxylated Acrylic Dispersions

Applications											
Metal primer	Metal topcoat	DTM	Hard plastic	Anti-corrosion	AED	CED	Architectural paint	Wood furniture	Wood flooring	OEM topcoat	Concrete topcoat
✓	✓	✓			✓						
	✓									✓	
	✓									✓	
✓	✓	✓		✓		✓					
							✓	✓			
✓	✓	✓									
	✓									✓	
	✓									✓	
✓	✓	✓									
			✓								
✓	✓	✓		✓		✓					
	✓									✓	
								✓	✓		✓

Solventborne Acrylic Resins, Physically Drying/  
Self-crosslinking and Amino Crosslinking

Thermosetting Acrylic

Products	Resin data				Features					Applications					
	Non-volatile %	Solvent	Viscosity at 23 °C mPa.s	OH number on solid resin [mgKOH/g]	Crosslinkable with amino resin	Yellowing resistance	Outdoor resistance	Chemical resistance	Gloss	For general industry topcoat	For OEM topcoat	For OEM clearcoat	For basecoat	Can & coil for topcoat	Can & coil for basecoat
VIACRYL®* SC 303/60XB	60	X/B	4500–6500	80	●	●●●	●●●	●●●	●●●	✓		✓	✓		
VIACRYL SC 341/60SNABAC	60	SNA/BAC	1000–2000	86	●	●●●	●●●	●●●	●●●	✓		✓			
VIACRYL SC 370/75SNA	75	SNA/BAC	4200–7000	120	●	●●●	●●●	●●●	●●●	✓	✓	✓			
VIACRYL SC 444/50BSNB	50	B/SNB	1600–2400	N.A.	N.A.	●●●		●●●	●●●	✓				✓	✓
VIACRYL SC 444N/53BSNBV2	53	B/SNB	500–900	N.A.	N.A.	●●●		●●●	●●●	✓				✓	✓
VIACRYL SC 461/50XBV	50	X/B	600–1100	N.A.	N.A.	●●●		●●●	●●●	✓					
VIACRYL SC 2956/65SNA	65	SNA	6000–10000	120	●	●●●	●●●	●●●	●●●			✓			
VIACRYL SC 2960/75SNA	75	SNA	4000–7000	145	●	●●●	●●●	●●●	●●●			✓			
VIACRYL SC 9425/50BSNB	50	B/SNB	1300–1700	N.A.	N.A.			●●●	●●●					✓	✓
VIACRYL VSC 5754/60SNABAC	60	SNA/BAC	700–1100	N.A.	●	●●●	●●●	●●●	●●●	✓	✓				

N.A. = not applicable

● low  
●● medium  
●●● high

\* VIACRYL acrylic resins

VIACRYL®

Solventborne Acrylic Resins, Physically Drying/  
Self-crosslinking and Amino Crosslinking

Solventborne Acrylic Resins, Physically Drying/  
Self-crosslinking and Amino Crosslinking (continued)

Cold Plastic for Roadmarking

Products	Resin data				Features								Applications	
	Non-volatile %	Reactive monomers	Viscosity at 23 °C mPa.s	AV on solids	Gel time (min) with benzoyl peroxyde	Acrylic polymer	Polyester polymer	Internally plastified	Internally catalysed	Hard resin	Initial whiteness	Curing at high ambient temperature	Hand application	Machine application
VIACRYL®* VSC 5745	100	MAM-ABU	60-115	<25	13-25		•						✓	✓
VIACRYL SC 732	100	MAM-ABU	40-85	<25			•			•	•		✓	
VIACRYL VSC 2990	100	MAM-ABU	40-140	<18		•		•			•		✓	
VIACRYL VSC 9481	100	MAM-ABU	50-150	<20		•			•	•	•			✓

Thermoplastic Acrylic Resins

Products	Resin data				Features				Applications	
	Non-volatile %	Solvent	Viscosity at 23 °C mPa.s	AV on solids	Physically drying	Fast dry	Yellowing resistance	Exterior	Metal topcoat	Architectural paint
VIACRYL SC 121/60X	60	X	5000-9000	15-25	•	•	•	•	✓	
VIACRYL SC 124/50WS	50	WS	3500-8000	<5	•	•	•	•	✓	✓
VIACRYL SC 166/45BAC	45	BAC	350-700	<3	•	•	•	•	✓	
VIACRYL SC 200/40X	40	X	1000-2500	25-35	•	•	•	•	✓	

\* VIACRYL acrylic resins

# VIACRYL<sup>®</sup>

Solventborne Acrylic Resins, Physically Drying/  
Self-crosslinking and Amino Crosslinking (continued)

Products	Resin data							Features			
	Non-volatile %	Viscosity at 25 °C mPa.s	pH-value	MFFT in °C	Polymer type	Ammonia-free	APEO-free	Water whitening resistance	Hydrophobic coatings	Low PVC paints	High PVC paints
Dispersion 2/61	44	50	6	N.A.	Acrylic		•				
UCECRYL®* B 746	50	1000	8	3	Styrene acrylic						•
UCECRYL B 983	48	600	8.5	17	Acrylic			•	•	•	
UCECRYL B 1009	48	600	8.5	42	Acrylic			•	•	•	
UCECRYL B 1181	48	700	7.5	2	Acrylic		•	•	•		•
UCECRYL B 1190	49	450	8	3	Acrylic	•					•
UCECRYL B 1451	37	500	8.5	30	Acrylic		•			•	
UCECRYL B 1466	48	300	9	20	Acrylic		•			•	
UCECRYL B 1470	49	200	8	20	Acrylic	•	•			•	
UCECRYL B 3004	49	100	8.5	3	Acrylic		•				•
UCECRYL B 3005	48	200	8	0	Styrene acrylic	•	•				•
UCECRYL B 3009	48	100	8	46	Acrylic	•	•			•	
UCECRYL B 3014	47	500	8	30	Acrylic		•	•	•	•	
UCECRYL B 3016	42	150	8.5	17	Acrylic		•	•	•	•	
UCECRYL B 3018	50	150	8	35	Acrylic	•	•			•	
UCECRYL B 3021	48	750	9	3	Acrylic			•	•		•
UCECRYL B 3022	44,5	1000	9	12	Acrylic		•	•	•	•	
UCECRYL BH	40	50	9	N.A.	Acrylic					•	
UCECRYL BMR 47	55	250	8.5	0	Acrylic		•				•

N.A. = not applicable

\* UCECRYL acrylic emulsions

Applications							
Concrete tiles	Fibre cement sheets	Metal roofing	Architectural paints	Anti-blocking agent	Cement-mortar strengthening	Clearcoat	Pigmented
✓			✓		✓		✓
✓						✓	✓
	✓						✓
✓						✓	✓
✓			✓				✓
	✓		✓				✓
✓			✓				✓
✓			✓				✓
✓			✓				✓
	✓						✓
		✓	✓			✓	✓
	✓					✓	✓
✓			✓			✓	✓
			✓			✓	✓
				✓			✓
		✓					✓

Waterborne Alkyd Resins for Air-Drying Decorative Coatings

Products	Resin data									Features												
	Non-volatile %	Solvent	Viscosity at 23 °C mPa.s	Amine neutralization	Appearance	pH at 10 % in water	Type of modification	Oil length	VOC < 1%	Fast initial drying	Rapid through drying	Fast development of hardness	Fast sandability	Early water resistance	High hardness coating	Flexibility	Pigment wetting	Yellowing resistance	Compatible with acrylic dispersion	Sag resistance	Increase the open time	Wood penetration
RESYDROL® AF 6120W/62WA	62	Water	500–1500	none	White opaque	5.5–9.5	No	35	Yes		•					•		•	•		•	
RESYDROL AY 430W/42WA	42	Water/BG	6000–11000	NH3	Light brown	7.5–9.0	Acrylic	44	No	•	•	•	•					•	•			
RESYDROL AY 548WTIX/37WA	37	Water/MP	Thixotropic	NH3	Light brown	7.5–9.0	Acrylic and polyamid	54	No										•	•	•	•
RESYDROL AY 586W/45WA	45	Water	5000–10000	NH3	Light brown	7.5–8.5	Acrylic	58	Yes							•	•		•		•	•
RESYDROL AY 588W/42WA	42	Water	1000–4000	NH3	Light brown	7.0–9.0	Acrylic	58	Yes							•	•		•		•	•
RESYDROL AZ 6185W/40WA	40	Water	200–1200	NH3	Light brown	8.0–9.2	Acrylic and urethane	32	Yes	•	•	•	•	•	•		•	•	•			•
RESYDROL AZ 6190W/43WA	43	Water	3000–8000	NH3	Light brown	7.5–9.0	Acrylic and urethane	40	Yes	•	•	•	•	•	•	•		•	•			•
RESYDROL VAF 6111W/60WA	60	Water	200–800	none	White opaque	5.5–9.0	No	40	Yes							•		•	•		•	•
RESYDROL VAL 5547W	98	none	800–1500	DMEA	Transparent	5.5–7.5	No	62	Yes							•	•		•		•	•
RESYDROL VAS 6110W/68WA	68	Water	500–2000	none	White opaque	5.5–8.5	No	61	Yes							•			•		•	•
RESYDROL VAY 6278W/45WA	45	Water	70–500	NH3	White opaque	7.8–8.6	Acrylic	15	Yes	•	•	•	•					•	•			

\* RESYDROL waterborne alkyd resins

## Waterborne Alkyd Resins for Air-Drying Decorative Coatings

Features							Applications							
Excellent re-coatability	Brushability	Shear stable	Abrasion resistance	High gloss	Weathering resistance	Gloss retention	Primer	DTM	Industrial topcoat	Semi transparent stain	Solid color stain	Wood primer	Architectural paints	High film build
•	•			•	•	•	✓		✓		✓		✓	✓
•		•			•	•	✓			✓	✓	✓	✓	
	•	•		•	•		✓	✓		✓	✓	✓	✓	
•	•	•		•	•	•	✓	✓	✓	✓	✓	✓	✓	
•	•	•		•	•	•	✓	✓	✓	✓	✓	✓	✓	
•	•	•	•		•		✓	✓	✓			✓	✓	
•	•	•	•	•	•	•	✓			✓	✓	✓	✓	
•	•			•	•	•	✓				✓	✓	✓	
•	•	•										✓		
•	•									✓	✓	✓		✓
•					•	•	✓			✓	✓	✓	✓	

Waterborne Alkyd Resins for Air-Drying and Forced Dry Industrial Systems

Products	Resin data									Features													
	Non-volatile %	Solvent	Viscosity at 23°C mPa.s	Amine neutralization	Appearance	pH at 10% in water	Type of modification	Oil length	VOC < 1%	Fast initial drying	Rapid through drying	Fast development of hardness	Fast sandability	Early water resistance	High hardness coating	Adhesion on non-ferrous metal	Water resistance	Corrosion resistance	Flexibility	Pigment wetting	Yellowing resistance	Compatible with acrylic dispersion	Sag resistance
RESYDROL®* AX 237W/70BG	70	BG	8000–14000	N. A.	Transparent	N. A.	Epoxy Ester	36	No								•	•	•	•		•	
RESYDROL AY 241W/40WA	40	Water/BG	3000–15000	NH3	White opaque	8.0–9.5	Acrylic	24	No	•	•		•	•	•	•	•					•	
RESYDROL AY 334W/40WA	40	Water/BG	3000–21000	TEA/DMEA	White opaque	8.5–10.0	Acrylic	33	No						•		•		•	•		•	
RESYDROL AY 396W/37WA	37	Water	2000–11000	NH3	White opaque	8.0–9.5	Acrylic	43	Yes	•	•				•		•		•	•	•	•	
RESYDROL AY 466W/38WA	38	Water/BG	3000–11000	NH3	Brown opaque	7.5–9.0	Acrylic	46	No						•		•		•	•		•	
RESYDROL AY 6150W/45WA	45	Water/nBP	300–2000	NH3	Light Brown opaque	8.0–9.2	Acrylic	35	No	•	•	•		•	•		•	•	•	•	•	•	
RESYDROL AY 6173W/45WA	45	Water/nBP	300–1500	NH3	Light Brown opaque	8.0–9.2	Acrylic	33	No	•	•	•	•	•	•		•	•	•	•		•	
RESYDROL AZ 248W/60SNAMP	60	Naphta/MP	260–530 (50MP)	TEA/DMEA	Transparent	9.0–10.0	Urethane	51	No	•	•	•		•	•		•	•	•	•		•	
RESYDROL AZ 436W/45WA	45	Water/BG	4000–12000	NH3/DMEA	Milky	8.5–9.5	Acrylic/Urethane	43	No	•			•		•		•	•	•	•		•	
RESYDROL AZ 509W/45WA	45	Water/BG	4000–12000	TEA/DMEA	Whitish	8.5–9.5	Acrylic/Urethane	50	No				•		•		•	•	•	•		•	•
RESYDROL VAX 6050W/40WA	40	Water/BG	2000–6500	NH3/DMEA	White opaque	8.2–9.2	Acrylic/Epoxy	32	No	•	•				•		•	•	•	•	•	•	
RESYDROL VAX 6267W/40WA	40	Water	45–200	NH3/DMEA	Whitish	8.0–9.0	Acrylic/Epoxy	7	Yes	•	•	•	•	•		•	•	•	•		•	•	
RESYDROL VAY 6096W/39WA	39	Water/BG	2000–8000	NH3	Brown opaque	7.0–9.0	Acrylic	32	No	•	•	•		•	•		•			•		•	

N. A. = not applicable

\* RESYDROL waterborne alkyd resins

## Waterborne Alkyd Resins for Air-Drying and Forced Dry Industrial Systems

Features							Applications							
Excellent re-coatability	Humidity protection	Brushability	Shear stable	High gloss	Weathering resistance	Gloss retention	Primer	Anti-corrosion primer	DTM	Industrial topcoat	Dip enamel	Wood primer	High film build	Plastic coatings
•		•	•				✓	✓	✓			✓		✓
•	•		•		•	•	✓		✓	✓	✓	✓		✓
		•	•		•	•		✓	✓	✓	✓			
		•	•		•	•	✓		✓	✓	✓	✓		
	•	•	•	•	•	•			✓	✓				
	•	•	•	•	•	•	✓	✓	✓	✓	✓		✓	
•	•	•	•	•		•	✓	✓	✓		✓		✓	
•	•		•				✓	✓	✓		✓			
•	•	•	•				✓	✓	✓	✓	✓			
•	•	•	•				✓	✓	✓	✓	✓		✓	
•			•				✓	✓	✓					
•		•	•				✓	✓	✓			✓	✓	
•			•	•					✓	✓				

Waterborne Alkyd Resins for OEM  
Primer Surfacer Baking Systems

Products	Resin data							Features								
	Non-volatile %	Solvent	Viscosity at 23 °C mPa.s	Amine neutralization	pH-value	Type of modification	Curing temperature °C	Stone chip resistance	Hardness	Leveling	Adhesion	Corrosion resistance	Sag resistance	For use in blend to improve stone chip resistance	For use in blend to improve adhesion and corrosion resistance	For use in blend to improve leveling
RESYDROL®* AM 224W/40WA	40	4 % MPP	100–700 (22 % MPP)	DMEA	7.5–9.0	Fatty acid	150–180	●●	●●	●●	●●	●	●●			
RESYDROL AX 906W/35WA	35	3 % MPP	160–560 (28 % BG)	DMEA	7.0–8.5	Epoxy	130–190	●●	●●●	●●●	●●●	●●	●●		●	
RESYDROL AZ 541W/42WA	42		50–3000	DMEA	7.5–8.5	Urethane	150–190	●●●	●●	●●	●●	●	●●●			
RESYDROL AZ 6608W/43WA	43	3.6 % NMP/1.4 % MP	100–1500	DMEA	7.5–8.5	Urethane	130–200	●●●	●	●●	●●	●	●●	●		
RESYDROL AZ 6615W/42WA	42		50 - 2000	DMEA	7.8 - 8.8	Urethane	140 - 190	●●●	●●	●●	●●	●	●●●			
RESYDROL VAF 5540W/70MP	70	30 % MP	300–550 (54 % BG)		N.A.		130–190	●●	●●●	●●●	●●	●	●			●
RESYDROL VAX 5227W/55LG	55	5.5 % BG/8 % B/ 4.9 % MPP	90–500 (44 % BG)	DMEA	7.0–9.0	Epoxy	120–190	●●	●	●●	●●●	●●●	●●		●	
RESYDROL VAX 5533W/40LG	40	11.4 % MPP	50–760 (22 % BG)	DMEA	7.5–9.5	Epoxy	130–190	●●●	●●●	●●	●●●	●●●	●●		●	
RESYDROL VAX 5538W/50WA	50		1000–8000	DMEA	6.8–7.6	Epoxy	120–190	●	●●●	●●	●●●	●●●	●		●	
RESYDROL VAZ 5550W/47WA	47	3.5 % TPG	50–3000	DMEA	7.5–8.5	Urethane	140–190	●●●	●	●●	●●	●	●●●			
RESYDROL VAZ 6605W/40WA	40		100–1000	DMEA	7.5–8.5	Urethane	110–190	●●●	●●●	●●●	●●●	●●	●●			●
RESYDROL VAZ 6620W/36WA	36	2 % MPP	100–800	DMEA	6.5–7.5	Urethane	130–190	●●●	●●●	●●●	●●●	●●	●●			
RESYDROL VAZ 6625W/31WANMP	31	9.2 % NMP	200–2000	DMEA	8.0–9.0	Urethane	130–190	●●●	●●●	●●●	●●	●	●●	●		

N.A. = not applicable

● low  
●● medium  
●●● high

● Yes

\* RESYDROL waterborne alkyd resins

# RESYDROL®

Waterborne Alkyd Resins for OEM  
Primer Surfacer Baking Systems

Products	Resin data									Features										
	Non-volatile %	Solvent	Viscosity at 23 °C mPa.s	Amine neutralization	Appearance	pH-value	VOC < 1%	Type of modification	Oil length	Hardness	Impact	Yellowing resistance	Metal	Non-ferrous resistance	Corrosion protection / resistance	Water resistance	Shear stable	Pigment wetting	High gloss	Weathering
RESYDROL® AF 502W/35WA	35	Water	225–710 (29BG)	DMEA	Light Brown	7.5–8.8	Yes	Fatty acid	N.A.		•		•				•	•	•	
RESYDROL AM 410W/67WABG	67	Water/BG	550–800 (50WA)	–	Transparent	7.5–8.5	No	Phenolic	37	•			•	•	•		•			
RESYDROL AM 410W/68WABG	68	Water/BG	550–1000 (45WA)	–	Transparent	7.0–8.5	No	Phenolic	37	•			•	•	•		•			
RESYDROL AN 6618W/42WA	42	Water	50–1500	DMEA	Opaque	7.0–8.5	Yes		N.A.	•	•		•	•	•	•	•	•	•	•
RESYDROL AX 246W/70BG	70	BG/MP	340–690 (50MP)	DMEA	Brown	Partially neutralized	No	Epoxy	22				•		•		•	•		
RESYDROL AX 247W/70BGMP	70	BG/MP	9000–17000	–	Brown	–	No	Epoxy	22				•		•		•	•		
RESYDROL AX 250W/75EP	75	EP/BG	300–700 (50MP)	–	Brown clear	–	No	Epoxy ester	20				•		•		•	•		
RESYDROL AX 906W/35WA	35	Water/MP	160–560 (28BG)	DMEA	Clear opaque	7.0–8.5	No	Epoxy polyester	N.A.	•	•		•	•	•	•	•	•		•
RESYDROL AY 467W/38WA	38	Water/BDG	500–2500	–	Brown opaque	7.5–9.0	No	Acrylic	46			•	•			•	•	•		•
RESYDROL VAY 5536W/35WA	35	Water/NMP	500–8000	DMEA	Opaque	7.5–9.2	No	Acrylic polyester	N.A.		•	•	•	•		•	•	•	•	•

N.A. = not applicable

\* RESYDROL waterborne alkyd resins

Waterborne Alkyd Resins  
for Baking Systems

Features			Applications								
High reactivity	Heat resistance	For use in blend to increase reactivity	Primer	Anti-corrosion primer	DTM	Dip enamel	Industrial topcoat	Drums coating	Low temperature	Single coat	High filled topcoat
			✓	✓	✓			✓	✓	✓	✓
			✓	✓	✓	✓					
			✓	✓	✓	✓					
•			✓		✓	✓	✓		✓	✓	
•	•		✓	✓	✓	✓					
•	•		✓	✓	✓	✓					
•	•		✓	✓	✓	✓					
•		•	✓	✓	✓	✓	✓		✓		
•							✓		✓		
	•				✓	✓	✓			✓	

Solventborne Hydroxylated Polyesters

Products	Resin data						Features										
	Non-volatile %	Solvent	Viscosity at 23 °C mPa.s	OH number on solid resin	AV on solid resin	Structure	FDA 175.300	High solids	Flexibility	Hardness	Interior	Exterior	Yellowing resistance	Wedgebend	Impact resistance	Flow and leveling	Chemical resistance
DUROFTAL® PE 6160	50	MPAC	1000–2000 (40 % MPAC)	30	<=8	linear	●		●		●	●		●	●	●	●
DUROFTAL VPE 6104	60	MPAC	4000–8000	90	<=5	slightly branched	●		●	●	●	●					●
DUROFTAL VPE 6128	70	SNABG	1500–3000	60	<=12	linear		●					●				
DUROFTAL PE 6163	66	SNABG	500–700 (50BG)	55	<=6	slightly branched			●				●				

Solventborne Isocyanate-crosslinkable Polyesters

Products	Resin data				Features								
	Non volatile %	Solvent	Viscosity at 23 °C mPa.s	OH content (on solids) %	High solids	Crosslinkable with amino resins	Outdoor resistance	Chemical resistance	Gloss	Adhesion to steel	Adhesion to non-ferrous metals	Drying	
DUROFTAL VPI 2803/78BAC	78	BAC	7000–19000	5.4	●	●	●●●	●●●	●●●	●●	●	●	
DUROFTAL VPI 2801/78BAC	78	BAC	4000–17000	6.6	●	●	●●●	●●●	●●●	●●	●	●	

● low  
 ●● medium  
 ●●● high  
 ● Yes

\* DUROFTAL solventborne polyesters

Hydroxylated and Isocyanate-crosslinkable Polyesters

Applications							
Topcoat / Clearcoat	Primer	Industrial	Outdoor architectural coil	Indoor architectural coil	Backcoat coil	Interior – Can	Exterior – Can
						✓	✓
						✓	✓
✓		✓	✓	✓	✓		
✓	✓	✓	✓	✓	✓		

Applications				
General industry topcoat	Car refinish topcoat	Car refinish primer surfacer	Car refinish clearcoat	OEM 2K clearcoat
✓	✓	✓	✓	✓
✓	✓	✓	✓	✓

Products	Resin data							Features								
	Non-volatile %	Solvent	Viscosity at 23 °C mPa.s	AV on solid resin	Oil length	Oil type or modification	Iodine color at 50 % sol	High solids	Exterior	Fast drying	Air dry/forced air	Polyamid thixotropic resin	Pumpable resin	Urethan modified	Urethane thixotropic resin	Gloss
VIALKYD®* AS 533tix/50SD60	50	D60	thix	<15	53	Soya	<20		•	•		•				
VIALKYD AS 6140sca/49SD60	49	D60	160–320; 10000 1/s	<15	60	Soya	<8		•	•	•		•		•	
VIALKYD AS 6172/55SD60	55	D60	2700–4000; 25 1/s	<15	57	Soya	<10		•	•	•					semi-gloss
VIALKYD AT 830	100		2000–4500; 25 1/s	<10	83	Tall	<12		•		•					
VIALKYD AS 754/80SD60	80	D60	3000–5000; 25 1/s	<12	75	Soya	<8		•		•					
VIALKYD SAF 724/78SD60	78	D60	5000–8000; 25 1/s	<12	72	Fatty acids; linoleic rich	<12		•		•					
VIALKYD TO 167/60IRH	60	IRH	2500–4500; 25 1/s	<4	68	Soya	<10			•	•			•		
VIALKYD TO 608/55SD60	55	D60	280–560; (45 % SD60 100 1/s)	<5	62	Soya	<8			•	•			•		
VIALKYD TO 750/65IRH	65	IRH	800–1600; 25 1/s	<10	71	Urethane	<=10	•							••	Excellent
VIALKYD VAF 6091	100		450–800; 25 1/s	<10	89	Fatty acids; linoleic rich	<6	•	•		•					
VIALKYD TS 354/70WS	70	WS	65–190; (50 % WS 100 1/s)	<15	47	Silicone	<10		•	•	•					

\* VIALKYD alkyd resins

Solventborne Alkyd Resins  
for Decorative Coatings

Applications					
Stains & Varnishes	Chemical resistance	Flexibility	Glossy paint	Yellowing resistance	Outdoor durability
✓				✓	✓
✓				✓	✓
				✓	✓
✓		✓	✓		✓
✓		✓	✓	✓	✓
✓		✓	✓	✓	✓
✓	✓		✓	✓	
✓	✓		✓	✓	
		✓		✓	
✓		✓			✓
	✓	✓		✓	✓

Products	Resin data								Features											
	Non-volatile %	Solvent	Viscosity at 23 °C mPa.s	AV on solid resin	Oil length	Oil type or modification	Iodine color at 50 % sol	OH number on solids	High solids	Exterior	Air dry/forced air	Compatible with acrylic resins	2K with isocyanates	Bake enamels	Hardness	Chemical resistance	Pigment wetting	Grinding resin	Flexibility	Sanding
VIALKYD AF 403/60X	60	X	3000–4500	<6	40	Fatty acids	<=8	90	No	•	•				•		•			
VIALKYD AF 464/55WSX	55	WS/X	610–860 (45WS)	<12	46	Fatty acids	<= 10		No	•	•				•		•			
VIALKYD AF 474/55WS	55	WS	500–900 (45K30)	<15	48	Fatty acids	<=7 (45WS)		No	•	•						•			
VIALKYD AM 342/50X	50	X	240–360 (40X)	<30	35	Rosin mod. linseed/tung	<=30		No	•	•				•					•
VIALKYD AM 415/60X	60	X	3400–4000	8–12	40	Rosin/Phenolic mod. linseed/tung	<=30		No	•	•				•					
VIALKYD AV 303/60X	60	X	460–630 (50X)	<10	30	Styrene	< 10		No	•	•									
VIALKYD AV 384/70X	70	X	135–310 (50X)	<12	38	Styrene	<= 10		No	•	•									
VIALKYD AY 402/50X	50	X	530–910 (40X)	<20	30	Acrylic, Vinyl, Urethane	<=20		No	•	•									•
VIALKYD AY 472/50WS	50	WS	870–1250	<15	41	Acrylic, Vinyl	<=8		No	•	•									•
VIALKYD TS 314/50MPWSW	50	MP/Softsol W	100–500	10–16	35	Silicone	< 5		No	•	•				•					
VIALKYD AC 451n/70SNB	70	Solvesso 150/X	4400–5200	<6	46	Non drying	<=3		No	•				•	•		•		•	
VIALKYD AN 950/70X	70	X	2300–3100	<12	–	Polyester	<=5		No	•				•			•		•	
VIALKYD AR 308/50LG	50	X/EG/Butanol	500–850	18–32	30	Deshydrated castor oil	<= 12		No	•				•	•					
VIALKYD AC 290	70	MPAC	50% 65– 210	<15	29	Synthetic	<=5	N.A.	No	•		•	•	•	OK	OK	Excellent	Yes	High	Good
VIALKYD VAN 6130/75 MPAC	75	MPAC	900–1300	<=4	No	No	<=5	210	Yes	•			•		OK	Excellent	Good	OK	Excellent	OK
VIALKYD VAN 9460/80BAC	80	BAC	1500–3500	<= 2	No	No	<= 2	4,3	Yes		•		•						Excellent	

N.A. = not applicable

\* VIALKYD alkyd resins

Solventborne Alkyd Resins  
for Industrial Coatings

					Applications									
Yellowing resistance	Outdoor resistance	Adhesion to steel	Adhesion to non-ferrous metals	Gloss	Primer	Topcoat	Baking topcoat for metal	Anti-corrosion primer	Air dry topcoat	For general industry monocoat	For plastic coatings	Pigment paste	Metallic basecoat	
•				•		✓			✓					
•				•		✓			✓					
				•		✓			✓					
					✓			✓	✓					
				•	✓	✓		✓	✓					
					✓			✓						
					✓	✓		✓	✓					
				•	✓	✓		✓	✓					
•				•	✓	✓		✓	✓					
•				•		✓			✓					
•				•		✓	✓							
•				•	✓	✓	✓						✓	
•				•	✓	✓	✓							
Good				Yes	✓	✓	✓	✓				✓	✓	
OK				Excellent	✓	✓								
	Good	Good	Good	Excellent	✓	✓			✓	✓	✓			

Waterborne Epoxy Dispersions and Solventborne Epoxy Resins

Waterborne Epoxy Dispersions

Products	Resin data					Features							
	Non-volatile %	Solvent	Type	Viscosity at 23°C mPa.s	Epoxy equivalent weight g/mol	Chemical resistance	Corrosion resistance	Adhesion to concrete	Shear stable	Adhesion to metal	Solvent-free	Flexibility	Abrasion resistance
BECKOPOX® EP 384W	53	WAMP	Waterborne solid resin type 1 dispersion	400–750	920–1040		•	•	•*	•			•
BECKOPOX EP 385W	56	WA	Waterborne solid resin type 1 dispersion, flexibilized	450–1100	850–930		•	•		•		•	•
BECKOPOX EP 386W	52	WA	Waterborne solid resin type 1 dispersion, flexibilized	300–1500	900–1100		•	•	•*	•		•	•
BECKOPOX VEP 2381W	55	WA	Waterborne solid resin type 1 dispersion	3500–12000	850–960		•	•	•*	•			•
BECKOPOX VEP 2382W	55	WA	Waterborne solid resin type 1 dispersion	3500–12000	850 - 960		•	•	•*	•			•
BECKOPOX VEP 2390W	75	MP	Water-emulsifiable solid resin, diluted in organic solvent	3000–6000	620–690		•		•*	•			
BECKOPOX EP 122W	100		Water-emulsifiable liquid resin	700–900	190–200	•		•			•		•
BECKOPOX EP 147W	100		Water-emulsifiable liquid resin	9000–13000	188–200	•	•	•			•		•
BECKOPOX EP 2340W	56	WA	Liquid epoxy resin emulsion	300–600	380–480	•	•	•			•		•
BECKOPOX EP 2350W	60	WA	Waterborne solid resin type 1 dispersion	1000–9000	520–640	•	•	•		•			•

Solventborne Epoxy Resins

Products	Resin data					Features							
	Non-volatile %	Solvent	Type	Viscosity at 23°C mPa.s	Epoxy equivalent weight g/mol	Chemical resistance	Corrosion resistance	Adhesion to concrete	Shear stable	Adhesion to metal	Solvent-free	Flexibility	Abrasion resistance
BECKOPOX EP 301	75	X	Solventborne solid type 1 resin	7800–13000	600–700		•	•	•	•			•
BECKOPOX EP 116	100		Solvent-free A/F liquid resin	7800–11000	175–185	•	•	•	•	•	•		•
BECKOPOX EP 151	100		Solvent-free, internally plasticized A-liquid resin	25000–38000	400–500				•		•	•	

\* Mill base temperature shall not exceed 40°C

\* BECKOPOX epoxy resins

Waterborne Epoxy Dispersions and Solventborne Epoxy Resins

Applications				
Concrete primer	Concrete topcoat	Metal primer	Single coat, metal	Zinc rich primer
✓	✓	✓	✓	
✓		✓	✓	
✓		✓	✓	
✓	✓	✓	✓	
✓	✓	✓	✓	
				✓
✓	✓			
✓	✓	✓	✓	
✓	✓	✓	✓	
✓	✓	✓	✓	

Applications				
Concrete primer	Concrete topcoat	Metal primer	Single coat, metal	Compounding resin
✓	✓	✓	✓	
✓	✓	✓	✓	
				✓

### Waterborne

Products	Resin data							Features						
	Type	Non-volatile %	Solvent	Viscosity at 23 °C mPa.s	H-equivalent weight (f.o.d.) g/mol	Amine value mg KOH/g	Iodine color number	High reactivity	Low reactivity	Pigment wetting	Flexibility	Shear stable	Adhesion	Corrosion resistance
BECKOPOX®* EH 613W	Polyamine adduct, waterborne	80	WA	23000–31000	145	220–240	<= 10	•		•	•	•*	•	•
BECKOPOX EH 623W	Polyamine adduct, waterborne	80	WA	12000–21000	200	195–220	<=10	•		•		•*	•	•
BECKOPOX EH 659W	Polyamidoamine, waterborne	50	WA	17000–27000	210–220	150–180	<=70		•	•		•*	•	•
BECKOPOX VEH 2106W	Polyamine adduct, waterborne	80	WA	14000–25000	142	220–240	<=20	•		•	•	•*	•	•
BECKOPOX EH 2142W	Polyamine adduct, modified, waterborne	63	WA	5000–17000	192	200–240	<=20	•		•		•*	•	
BECKOPOX EH 2189W	Polyamine adduct, waterborne	50	WA	10–100	138	200–230	<= 10	•					•	•
BECKOPOX VEH 2188W	Polyamine adduct, waterborne	55	WA	6000–14000	380	130–140	<=25	•			•		•	•

### Solventborne

Products	Resin data							Features					
	Type	Non-volatile %	Solvent	Viscosity at 23 °C mPa.s	H-equivalent weight (f.o.d.) g/mol	Amine value mg KOH/g	Iodine color number	High reactivity	Low reactivity	Pigment wetting	Shear stable	Adhesion	Corrosion resistance
BECKOPOX EH 631	Polyamine adduct, solventborne	55	XIB	3600–6000	345	140–170	<= 3		•	•	•	•	•
BECKOPOX EH 651	Polyamidoamine, solventborne	70	X	550–1700	255	155–185	<=20		•	•	•	•	•
BECKOPOX EH 637	Cycloaliphatic polyamine adduct, solvent free	100		90–120	100	300–350	<=2	•		•	•	•	
BECKOPOX EH 661	Polyamidoamine, modified, solvent free	100		230–360	39	850–950	<=15	•		•	•		

\* Mill base temperature shall not exceed 40 °C

\*\* Room temperature drying

\* BECKOPOX amine hardeners

Amine Hardeners for Epoxy Resins and Dispersions

Applications				
Concrete primer	Concrete topcoat	Wb thicklayer coating on concrete	Metal primer	Single coat
✓	✓		✓	✓
✓	✓		✓**	✓**
✓	✓		✓	✓
✓	✓		✓	✓
		✓		
✓	✓		✓	✓
			✓	✓

Applications						
Concrete primer	Concrete topcoat	Trowelling compounds	Epoxy resin mortars	Tile adhesives / grouting compounds	Metal primer	Single coat
✓	✓				✓	✓
✓	✓				✓	✓
✓	✓	✓	✓			
		✓	✓	✓		

Products	Resin data							Features											
	Non-volatile %	Solvent	Viscosity at 23 °C mPa.s	Iodine color	AV on solid resin	pH at 10 % in water	Oil length %	Oxidative drying	Adhesion to metal	Adhesion on melamine substrat	Flexibility	Corrosion resistance	Good dilutability with water	Fast drying time	Re-coatability	Hardness	High pigment loading	Temperature resistance	Water resistance
<b>Waterborne</b>																			
DUROXYN®* VAX 6127W/42WA	42	Water/MB	200–3000	N.A.	N.A.	8.5–10.0	38	•	•		•	•	•	•	•	•	•	•	•
DUROXYN VEF 4380W/35WA	35	Water/BG	2500–12000	N.A.	N.A.	8.0–9.5	43	•	•		•	•	•		•	•	•		•
<b>Solventborne</b>																			
DUROXYN EF 900/60X	60	X	3000–4500	<=8 (50X)	<=3	N.A.	42	•	•		•	•			•	•	•	•	•
DUROXYN EF 935/60X	60	X	350–510 (40X)	<=10 (50X)	<6	N.A.	35	•	•		•	•		•	•	•	•	•	•
<b>Cationic Resins</b>																			
DUROXYN EF 2107W/45WA	45	Water	25–1000	N.A.	N.A.	4.0–6.0	N.A.		•		•		•	•	•	•		•	
DUROXYN VEF 2406W/45WA	45	Water	50–1000	N.A.	N.A.	4.0–6.0	N.A.		•	•		•	•	•	•	•		•	

N.A. = not applicable

\* DUROXYN epoxy ester resins

Applications				
Primer	Industrial paint	Zinc dust paint	Wood primer/ interior – exterior	Stain & tannin blocking
✓	✓			
✓	✓			
✓	✓	✓		
✓	✓	✓		
✓			✓	✓
✓			✓	✓

Products	Resin data							Features						
	Non-Volatile %	Solvent	Dynamic viscosity (Ubbelohde at 23°C DIN 53177)	Compatible with epoxy resins	Compatible with PVB	Usual ratio Epoxy: Phenolic / Phenolic: PVB	Colour	Typical baking conditions	Temperature °C	CYCAT® XK 406N (ex. ADDITOL®)	Wedge bend	Erichsen cup No. 2	2 % lactic acid / 1h/129°C	Cysteine test / 90 min at 121°C

**Waterborne**

PHENODUR® VPW 1942	52	WA	100–1000	N.A.	N.A.	N.A.	N.A.	10–12'	200–230	Yes (blocked)	●●●	●●	●●●	●●
PHENODUR VPW 1946	46	WA	500–2500	N.A.	N.A.	N.A.	N.A.	10–12'	170–200	Yes (blocked)	●●●	●●	●●●●	●●
PHENODUR PW 165	40	WA/MP	100–1000	N.A.	N.A.	N.A.	N.A.	N.A.	air drying or/and forced drying one-pack wash primer					

**Solventborne**

PHENODUR PR 411	75	B	250–1500	Yes	No	80:20 to 1:1	very light	10–12'	200	Yes	●●	●●●	●●●	●●●
PHENODUR PR 516	60	B	150–500	Yes	Yes	80:20 to 1:1	very light	10–12'	200	Yes	●●●	●●●	●●●	●●●
PHENODUR PR 517	60	B	2000–5000	Yes	Yes	80:20 to 1:1	medium	10–12'	200	Yes	●●●●	●●●●	●●●	●●●●●
PHENODUR PR 898	52	BG/B	400–1400	Yes	Yes	80:20 to 1:1	light	10–12'	200	Yes	●●●	●●●●●	●●●●	●●
PHENODUR PR 899	60	MPAC	200–1500	Yes	Yes	80:20 to 1:1	medium	10–12'	200	Yes	●●●	●●●●	●●●	●●
PHENODUR VPM 1150	50	EPAC	1500–4000 <sup>(1)</sup>	Yes	N.A.	co-curing resin	clear	10–12'	200	No	●●●●	●●●●	●●●	●●
PHENODUR VPR 1785	50	MP	50–700	Yes	Yes	80:20 to 1:1	medium	10–12'	200	Yes	●●●●	●●●●	●●●●	●●

(1) DIN EN ISO 3219; 25 1/s; 23°C  
N.A. = not applicable

- low
- medium
- high
- very high
- outstanding

Applications							
Silver lacquer	Coil for can	Can	Tubes	Drums	Metal foils	Waterborne	(Wash) primer
	✓	✓		✓	✓	✓	✓
	✓	✓		✓	✓	✓	✓
						✓	✓
✓	✓	✓		✓	✓		
✓	✓	✓	✓	✓	✓		
	✓		✓				
		✓	✓				
	✓	✓	✓				
✓	✓	co-curing resin for high molecular weight epoxy resins or PE resins					
	✓	✓	✓		✓		

Products	Resin data								Features																		
	PUD (NCO) = urethane type	Basic polymer	Non-volatile %	Solvent content %/ Co-solvent	Neutralizing agent %/ Type	Dyn. viscosity at 23°C mPa.s (DIN EN ISO 3219)	pH-value (DIN ISO 976)	OH-value on solid resin mg KOH/g (DIN EN ISO 4629)	Ambient temp./40-70rH	80°C/30min	Drying time at ambient temp. h	Oxydative drying	Solvent-free	Physically drying	Self-crosslinking	NCO-crosslinking	Aziridine-crosslinking	Abrasion resistance	Shear stability	Humidity resistance	Hardness	Scratch resistance	Transparent	Amber color	Compatibility with acrylics	Flexibility	Chemical resistance (Ethanol DR)
DAOTAN® TW 6431/45WA	Aliphatic	PBD	45		1,2/TEA	50-1500	7.0-8.0		•	•	<1			•		•			•	•••	•	•••				•••••	<500
DAOTAN TW 6472/45WA	Aliphatic	PC/PBD	45		0,6/TEA-0,5/DMEA	200-2000	6.7-7.7	12	•	•	<1					•			•	••••	•	••••				••••	>1000
DAOTAN VTW 1225/40WA	Aliphatic	PE	40	6,4/NMP	2,1/DMEA	100-800	6.7-7.7	47	•	•	<8					•			•	••••	•••	•••				••••	>1000
DAOTAN TW 1225/40WANEP	Aliphatic	PE	40	6,4/NEP	2,1/DMEA	100-800	6.6-7.7	47	•	•	>8					•			•	••••	•••	•••				••••	>1000
DAOTAN TW 1227/40WA	Aliphatic	PE	40		1,9/DMEA	50-850	7.2-7.6	50	•	•	<8					•			•	••••	•••	•••				••••	>1000
DAOTAN VTW 1233/36WANMP	Aliphatic	PE	36	8,0/NMP	1,0/TEA	40-500	7.2-8.0		•	•	<8			•		•			•	••	•					••••	<10
DAOTAN VTW 1235/36WANMP	Mixed	PE	36	13,6/NMP	0,9/TEA	10-400	7.0-8.5		•	•	<5			•		•			•	••	••					••••	<10
DAOTAN VTW 1236/40WANMP	Aliphatic	PC	40	14,7/NMP	1,1/TEA	1000-2000	7.0-9.0		•	•	>8			•		•			•	••	•					••••	<10
DAOTAN TW 1236/40WANEP	Aliphatic	PC	40	14,9/NEP	1,1/TEA	500-1500	7.0-9.0		•	•	>8			•		•			•	••	•					••••	<10
DAOTAN VTW 1237/32WANMP	Aliphatic	PE	32	12/NMP	0,75/TEA	5-60	7.5-8.4		•	•	<8			•		•			•	••	•					••••	<10
DAOTAN TW 1237/32WANEP	Aliphatic	PE	32	6,3/NEP	0,75/TEA	5-60	7.5-8.4		•	•	>8			•		•			•	••	•					••••	<10
DAOTAN VTW 1250/40WA	Aromatic	Fatty acid	40	4,6/NMP	0,2/NH3	800-3200	6.9-8.0	35	•	•	<1	•							•	••	•••					•••	<10
DAOTAN VTW 1252/42WA	Aliphatic	Fatty acid	42	3,0/NMP	0,4/NH3	500-1500	7.0-9.5	45	•	•	<1	•							•	••	•••					•••	<10
DAOTAN TW 6440/43WA	Mix	Oil	43	3,0/DP-DGME	0,2/NH3	300-3000	7.0-8.0							•		•	••			•••	•		•	••			
DAOTAN TW 6493/35WA	Aliphatic	PE	35	None	1,1/TEA	5-200	8.0-10.0					•	•			•	•	•••		••	•	•			•••		

Remark: all NMP containing grades are available as Lab products with NEP instead of NMP!

- low
- medium
- high
- very high
- outstanding

\* DAOTAN polyurethane dispersions



Waterborne Polyurethane Dispersions  
(continued)

Products	Resin data								Features											
	PUD (NCO) = urethane type	Basic polymer	Non-volatile %	Solvent content % / Co-solvent	Neutralizing agent % / Type	Dyn. viscosity at 23°C mPa.s (DIN EN ISO 3219)	pH-value (DIN ISO 976)	OH-value on solid resin mg KOH/g (DIN EN ISO 4629)	Ambient temp./40-70rH	80°C/30min	Drying time at ambient temp. h	Physically drying	Self-crosslinking	NCO-crosslinking	Shear stability	Humidity resistance	Hardness	Scratch resistance	Flexibility	Chemical resistance (Ethanol DR)
DAOTAN® VTW 1210/40WANMP	Aliphatic	PE	40	13,2 / NMP	1,2 / TEA	50-800	7.0 - 8.0		•	•	>8	•		•	•	••	••••	•••	•••	<10
DAOTAN VTW 1262/35WA	Aliphatic	PC	35		0,5/DMEA	5-50	7.5-8.4	35	•	•	>8	•		•	•	••	•		••••	<10
DAOTAN VTW 1265/36WA	Aliphatic	PE	36		0,9/DMEA	10-90	7.0-8.0	24	•	•	<1	•	•	•	•	••••	••••	•••	•••	<100
DAOTAN VTW 1267/36WA	Aliphatic	PE	36		0,7/DMEA	20-400	7.0-8.0	23	•	•	<1	•	•	•	•	••	•••		•••	<10
DAOTAN VTW 1270/40WANMP	Aliphatic	PE	40	9,0/NMP	2,5/DMEA	1000-3000	6.5-7.0	66	•	•	<5	•		•	•	••••	••••	••••	•••	<100
DAOTAN VTW 2229/40WANMP	Aromatic	PE	40	8,2/NMP	2,1/DMEA	500-1200	7.0-7.6	43	•	•	<5			•	•	••••	•••		•••	<500
DAOTAN VTW 2275/32WA	Aliphatic	PE	32	6,7/NMP	0,88/TEA	2-50	6.8-9.5		•	•	<5	•		•	•	••••	••		••••	>1000
DAOTAN VTW 6434/40WANMP	Aliphatic	PE	40	13,1/NMP	0,70/DMEA	100-2200	7.0-8.0		•	•	<5	•		•	•	••	•		••••	<10
DAOTAN VTW 6460/35WA	Aliphatic	PE	35		0,80/DMEA	20-400	7.0-8.5	29	•	•	<5	•		•	•	••	•		••••	<10
DAOTAN VTW 6462/36WA	Aliphatic	PE	36		0,8/DMEA	15-250	7.4-8.4	36	•	•	<1	•	•	•	•	••••	•••		•••	<500
DAOTAN VTW 6463/36WA	Aliphatic	PE	36		0,8/DMEA	50-500	7.4-8.5	36	•	•	<1	•		•	•	••••	•••		•••	<500
DAOTAN VTW 6470/39WA	N.A.	PE	39	4,7/NMP	1,9/DMEA	100-1500	6.5-8.0	77	•	•	<8			•	•	••••	•••	•••	•••	>1000
DAOTAN TW 6464/36WA	Aliphatic	PE	36		0,8/DMEA	15-250	7.4-8.4	36	•	•	<1	•	•	•	•	••••	•••		•••	<500

Remark: all NMP containing grades are available as Lab products with NEP instead of NMP!  
N.A. = not applicable

• low  
•• medium  
••• high  
•••• very high  
••••• outstanding

\* DAOTAN polyurethane dispersions

Substrates / direct adhesions								Applications			
Metal	ABS	PA 6	PC	PMMA	PP pre-treated	PVC	UP / FRP	Primer	Basecoat	Topcoat	Clearcoat
	•	•	•			•				✓	✓
	•		•	•				✓	✓		
	•	•	•	•	•	•		✓		✓	✓
	•		•			•		✓	✓		
	•	•			•	•		✓		✓	✓
	•	•			•	•	•	✓			
			•		•	•		✓	✓		
	•		•		•	•		✓	✓		
	•	•	•	(•)	•	•	•	✓	✓		
	•	•	•	•	•	•	•	✓	✓		
•	•	•	•		•	•	•	✓		✓	
	•	•	•	•	•	•	•	✓	✓		

Products	Resin data					Features				Applications	
	Non-volatile %	Solvent	Viscosity at 23 °C mPa.s	Iodine color at 50 % sol	NCO-content %	Glossy system	Mat system	2007 VOC compliant	Abrasion resistance	Concrete coating	1K for wood flooring
BECKOCOAT®* PU 9500	42	LG	20-200	<= 2	2,0-4,0	•		•	•	✓	✓
BECKOCOAT PU 428	51	XMPAC	290-590	<= 2	3,0-5,0	•		•	•	✓	✓
BECKOCOAT VPU 4204	40	LG	160-370	<= 5	2,0-4,0		•	•	•	✓	✓

\* BECKOCOAT moisture curing resin

Products	Resin data					Features						
	% Solids (Foil) 45/45 °C	Pan solids	Solvent	Viscosity at 23 °C mPa.s	Typical free formaldehyde levels	Catalyst required	Catalyst type	Sensitivity for self condensation	Important characteristics	High solids	Medium solids	Waterborne
CYMEL®* 303 LF	≥98			3000–6000	<0.25	Yes	Strong Acid Catalyst	Low	Highly methylated melamine resin providing films with excellent film hardness and flexibility properties.	•		•
CYMEL 3745	≥98			2500–7500	<0.7	Yes	Strong Acid Catalyst	Low	Highly methylated melamine resin with slightly better water solubility compared to CYMEL 303 LF.	•		•
CYMEL MM-100	≥98			10000–25000	<0.5	Yes	Strong Acid Catalyst	Low	Highly methylated melamine resin, which is higher oligomeric and higher in NH functionality compared to CYMEL 303 LF.	•		•
CYMEL 370	86–90		i-Butanol	5100–10200	<3.5	Optional	Weak Acid Catalyst	High	Partly methylated melamine resin designed for fast curing medium solids coating formulations.		•	•
CYMEL 323	78–82		i-Butanol	2500–7500	<1.0	Optional	Weak Acid Catalyst	High	High NH methylated melamine resin designed for very fast curing medium solids formulations, with low formaldehyde release.		•	•
CYMEL 325	78–82		i-Butanol	2500–4500	<1.3	Optional	Weak Acid Catalyst	High	High NH methylated melamine resin designed for fast curing medium solids formulations with improved formulation stability properties.		•	•
CYMEL 327	88–92		i-Butanol	5100–16000	<1.3	Optional	Weak Acid Catalyst	Medium	High NH methylated melamine resin designed for fast curing medium to high solids formulations with improved film flexibility properties.	•	•	•
CYMEL 328	83–87		Water	1000–3000	<0.7	Optional	Weak Acid Catalyst	Medium	High NH melamine resin designed for waterborne coating formulations with very good formulation stability properties.		•	•
CYMEL 1130	≥96			3000–6000	<0.15	Yes	Strong Acid Catalyst	Low	Highly alkylated mixed ether melamine resin designed for HS and ED formulations providing improved film appearance properties.	•		
CYMEL 1133	≥98			750–1950	<0.15	Yes	Strong Acid Catalyst	Low	Highly alkylated mixed ether melamine resin designed for HS and ED formulations providing improved adhesion and throwing power properties.	•		
CYMEL 202	80–84		n-Butanol	2500–7500	<1.0	Optional	Weak Acid Catalyst	Medium	High NH mixed ether melamine resin designed for fast curing medium solids formulations providing improved film appearance and adhesion properties.		•	•
CYMEL MB-98	≥95			1700–4500	<0.1	Yes	Strong Acid Catalyst	Low	Highly butylated melamine resin designed for acid curing wood formulations with improved resistance properties.		•	
CYMEL 1158	78–82		n-Butanol	3000–7000	<0.7	Optional	Weak Acid Catalyst	Medium	Butylated high NH melamine resin designed for automotive clear coat formulations providing excellent gloss and film appearance properties.		•	
CYMEL 688		68–72	n-Butanol	2850–5850	<1.7	Optional	Weak Acid Catalyst	High	Partly butylated melamine resin designed for general industrial stoving applications providing films with high gloss and excellent adhesion properties.		•	
CYMEL MI-12-I		58–62	i-Butanol	1050–1950	<1.0	Optional	Weak Acid Catalyst	High	Partly iso-butylated melamine resin designed for fast curing general industrial applications.		•	

\* CYMEL amino crosslinkers

Applications								
Automotive coatings	Coil coatings	Can coatings	Acid curing wood coatings	Foil coatings	Electro deposition	General industrial formulations	Primer formulations	Mirror backing
✓	✓	✓		✓		✓	✓	
	✓	✓		✓		✓		
		✓				✓		
		✓				✓		
						✓		✓
✓		✓				✓	✓	✓
✓	✓	✓		✓		✓	✓	✓
✓	✓	✓		✓		✓	✓	
✓	✓	✓			✓	✓		
✓	✓	✓			✓	✓	✓	
✓		✓				✓	✓	✓
			✓					
✓						✓		
✓						✓		
✓						✓	✓	✓

Products	Resin data					Features						
	% Solids (Foil) 45/45°C	Pan solids	Solvent	Viscosity at 23°C mPa.s	Typical free formaldehyde levels	Catalyst required	Catalyst type	Sensitivity for self condensation	Important characteristics	High solids	Medium solids	Waterborne
<b>Urea resins</b>												
CYMEL®* UM-15	>96			6800–17000	<0.7	Yes	Strong Acid Catalyst	Low	Highly methylated urea resin designed for very fast curing waterborne systems.			•
CYMEL U-80	>96		n-Butanol	1700–4500	<0.2	Yes	Strong Acid Catalyst	Low	Highly butylated urea resin designed for high solids primer formulations with excellent adhesion properties.	•		
CYMEL UB-30-B		63–67	n-Butanol	13000–25000	<0.6	Optional	Strong Acid Catalyst	High	Partly butylated urea resin, especially recommended for electrostatic spray applications.		•	
CYMEL UI-19-IE		58–62	i-Butanol/Ethanol	1700–3500	<1.2	Optional	Strong Acid Catalyst	High	Partly iso-butylated urea resin designed for acid curing wood formulations providing films with good stackability properties.		•	
CYMEL UI-20-E		76–80	Ethanol	1700–3500	<0.3	Optional	Strong Acid Catalyst	High	Partly iso-butylated urea resin designed for acid curing wood formulations providing films with high build and low formaldehyde split off.		•	
<b>Benzoguanamine resins</b>												
CYMEL 659		70–74	n-Butanol/Xylene	575–1075, 25°C	<2.0	Optional	Weak Acid Catalyst	High	Partly butylated benzoguanamine resin, provides films with very good corrosion and chemical resistance properties.		•	
CYMEL 1123	>98			3800–10200	<0.1	Yes	Strong Acid Catalyst	Low	Highly alkylated benzoguanamine resin provides films with excellent film flexibility, corrosion and chemical resistance properties.	•		

\* CYMEL amino crosslinkers

Applications				
Can coatings	Acid curing wood coatings	Electro deposition	General industrial formulations	Primer formulations
			✓	
✓			✓	✓
			✓	✓
	✓			
	✓			
✓			✓	✓
✓		✓	✓	✓

Products	Resin data						Features					
	Solvent	Non-volatile (%)	Acid number	Density (kg/m <sup>3</sup> )	Water solubility	Xylene solubility	Recommended amino resin	Description	High solids	Medium solids	Waterborne	
CYCAT®* 296-9	i-Butanol	50	360-385	1050	complete	complete	Partially alkylated/ High imino	Weak phosphoric acid catalyst to accelerate the cure reactions of high imino and partially alkylated resins.		•	•	
CYCAT 500	i-Butanol	40	80-90	927	insoluble	complete	Highly alkylated	Strong naphthalene sulfonic acid catalyst, especially recommended for electrocoating and electrostatic spray systems with improved water resistance.	•		•	
CYCAT 600	i-Propanol	70	125-135	960	complete	complete	Highly alkylated	Strong dodecyl benzene sulfonic acid catalyst, especially recommended for high solids formulations with hydrocarbon solubility.	•		•	
CYCAT 4040	i-Propanol	40	130-140	960	complete	complete	Highly alkylated	Strong alkyl benzene sulfonic acid for general purpose strong acid catalyst for highly alkylated melamine, benzoguanamine, glycoluril and urea resins.	•		•	
CYCAT 4045	Ethylene glycol	35	60-70	1160	complete	complete	Highly alkylated	Amine blocked alkyl benzene sulfonic acid catalyst for highly alkylated melamine, benzoguanamine, glycoluril and urea resins. It provides excellent stability in waterborne and high solids systems.	•		•	
CYCAT XK 350	Butyl acetate	62	180-220	1000	insoluble	complete	Partially alkylated/ High imino	Weak catalyst, based on organic acid, recommended for melamine curing systems to improve anti corrosion performance.	•	•	•	
CYCAT VXX 6357	Methoxy propoxy propanol	90	104-112	1020	insoluble	complete	Highly alkylated	Covalently blocked catalyst, based on p-TSA, to accelerate curing reaction in waterborne and solventborne amino stoving resins.	•		•	
CYCAT VXX 6378	Butyl acetate/ iso-Butanol	32	140-160	920	insoluble	complete	Partially alkylated/ High imino	Catalyst based on a mixture of alkyl phenyl phosphates, recommended for 1K alkyd-amino systems as well as in acid curing wood applications.	•	•	•	
CYCAT VXX 6395	i-Propanol	35	70-80	950	complete	complete	Highly alkylated	Blocked p-TSA catalyst, especially for low temperature curing of urea and melamine crosslinking systems. Typical application areas are Industrial Coating and Automotive OEM.	•		•	
CYCAT XK 406N	Xylene/n-butanol	18	100	900	insoluble	complete	Epoxy-phenol systems	Increases the crosslinking speed of thermal curing phenolic-epoxy resins. It can improve adhesion properties and allows better sulfur staining resistance for interior can coatings.	•		(•)	

\* CYCAT catalysts

Applications								
Automotive coatings	Coil coatings	Can coatings	Acid curing wood coatings	Foil coatings	Electro deposition	General industrial formulations	Primer formulations	Mirror backing
✓		✓	✓			✓	✓	
					✓	✓	✓	
✓	✓	✓ FDA yes	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓	✓	✓	✓
✓	✓	✓		✓		✓	✓	
✓		✓				✓	✓	
✓	✓	✓				✓	✓	
✓		✓	✓			✓	✓	
✓	✓	✓		✓		✓	✓	
	✓	✓ FDA yes					(●) Primer	

Additive grades																					Characteristics	% Active matter							
	w/b s/b	Acrylics, thermopl.	Acrylics, stoving	Acrylics, thermopl. w/b	Acrylics, stoving, w/b	Alkyds air-drying	Alkyd/amino systems	Alkyds air-drying, w/b	Alkyd/Amino systems, w/b	Dispersion paints	Dispersion lacquers	2K-Epoxy systems	Epoxy esters, stoving	Epoxy esters air-drying	2K-Epoxy systems, w/b	PE/Amino systems, oil-free	NC combi systems	Phenolic systems	Polyurethane systems	Powder coatings			Acid curing systems	Hybrid systems	UV s/b and 100%	UV w/b	2K-Polyurethanes, w/b		
<b>Dispersing additives, grinding media</b>																													
ADDITOL®* VXW 6394	w			•						•	•															•	High molecular weight polymer; nonionic	40 %	
ADDITOL VXW 6208	w			•	•			•	•	•	•				•											•	Nonionically stabilized polymer; diluted in water	50 %	
ADDITOL XW 6528	w			•	•					•																	•	Polyester modified acrylic resin; co-crosslinkable	35 %
ADDITOL XL 6535	s w	•	•	•	•	•	•	•	•	•	•		•	•					•							•	Special modified polyester with strong pigment wetting capacity; auto emulsifying in sb systems	45 %	
ADDITOL XL 6521	s	•	•			•	•									•	•		•									Modified block copolymer; high molecular; cationic	60 %
<b>Leveling additives, silicone-free</b>																													
MODAFLOW®* 9200	s		•				•					•	•			•		•	•						•	Modified acrylic copolymer; low molecular weight; crosslinkable	100 %		
MODAFLOW EPSILON	s	•	•			•	•					•	•	•		•	•	•	•	•	•					•	Acrylic polymer, high molecular weight	80 %	
MODAFLOW RESIN	s	•	•			•	•					•	•	•		•	•	•	•	•	•					•	Acrylic copolymer; high molecular weight; FDA-approved	100 %	
MODAFLOW 2100	s	•	•			•	•					•	•	•		•	•	•	•	•	•					•	Acrylic copolymer; low molecular weight; FDA-approved	100 %	
ADDITOL VXW 6396	w			•	•		•	•	•	•					•											•	Highly fluoro-modified acrylic copolymer; neutralized by amine; low molecular weight	55 %	
MODAFLOW AQ 3025	w			•	•		•	•	•	•																•	Acrylic copolymer; neutralized by amine; silicone-free	25 %	
ADDITOL XW 6508	w			•			•																			•	Acrylic copolymer; neutralized by amine	44 %	
<b>Leveling additives, silicone containing</b>																													
ADDITOL XL 123 N	s w	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	Modified silicone	50 %
ADDITOL VXL 4930	s w	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	Polyether-modified silicone	40 %
ADDITOL VXW 6503	s w			•	•		•	•	•	•					•											•	Silicone tenside	50 %	
<b>Defoamer, silicone-free</b>																													
ADDITOL VXW 6211	w						•			•					•											•	Hydrocarbons; hydrophobic solid particles	100 %	
ADDITOL VXW 6393	w				•		•		•	•					•												Special mineral oil, waxes; low odour	100 %	
ADDITOL VXW 6500	w			•	•		•	•	•	•					•											•	Degassing polymers; hydrocarbons; silicone-free	100 %	
<b>Defoamer, silicone containing</b>																													
ADDITOL VXW 6210	w			•			•		•	•					•											•	Modified silicone; blend of hydrocarbons	100 %	
<b>Combination driers</b>																													
ADDITOL VXW 4940 N	w						•																			•	Combination drier; 3 % Co / 3 % Ba / 5 % Zr in form of emulsion	–	
ADDITOL VXW 6206	w						•																			•	Combination drier; 5 % Co / 0,22 % Li / 7,5 % Zr; free of nonylphenol ethoxylates	–	
ADDITOL XW 6533	w						•																			•	Co-free combination drier based; contains Zr and Mn; free of nonylphenol ethoxylate	60 %	

\* ADDITOL additives  
\* MODAFLOW flow modifiers

## Descriptions

Especially for preparation of stable pigment concentrates; prevents flocculation

For inorg./org. pigments and pigment concentrates/pastes

Co-crosslinkable; high pigment loading capacity; improves gloss; improves chemical and corrosion resistance

Universal grinding medium for decorative and industrial pigment pastes; recommended for tinting machines

High effective for difficult wettable pigments; high gloss; excellent colour properties

Reduces surface defects; excellent compatibility; for high-end applications with excellent gloss

Highly efficient flow promotor with excellent degassing properties

Highly effective leveling agent; good wetting behaviour; degassing properties

Highly effective; good compatibility; short incorporation time and fast mode of action

Excellent leveling and wetting properties; no foam stabilization; good recoatability

Optimizes flow and gloss; enhances degassing; facilitates pigment wetting

Enhances flow and leveling; prevents surface defects; crosslinkable

Excellent slip and scratch resistance; degassing; thermostable up to 400 °C

Highly effective; good spray mist absorption; prevents orange peel; no foam stabilization

Excellent substrate wetting; no foam stabilization; good recoatability

Defoamer for high quality pigmented systems

Highly effective in wall paints; no settling tendency

Very good deaerating in forced drying and stoving systems; easy to incorporate; for clear coats

Heavy duty defoamer; recommended for preparation of pigment concentrates

Contains APEO's; easy to incorporate; enhances surface and through drying

Free of APEO's; enhances surface and through drying

Co-free drier; allows good set- and through drying; very good hardness development

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