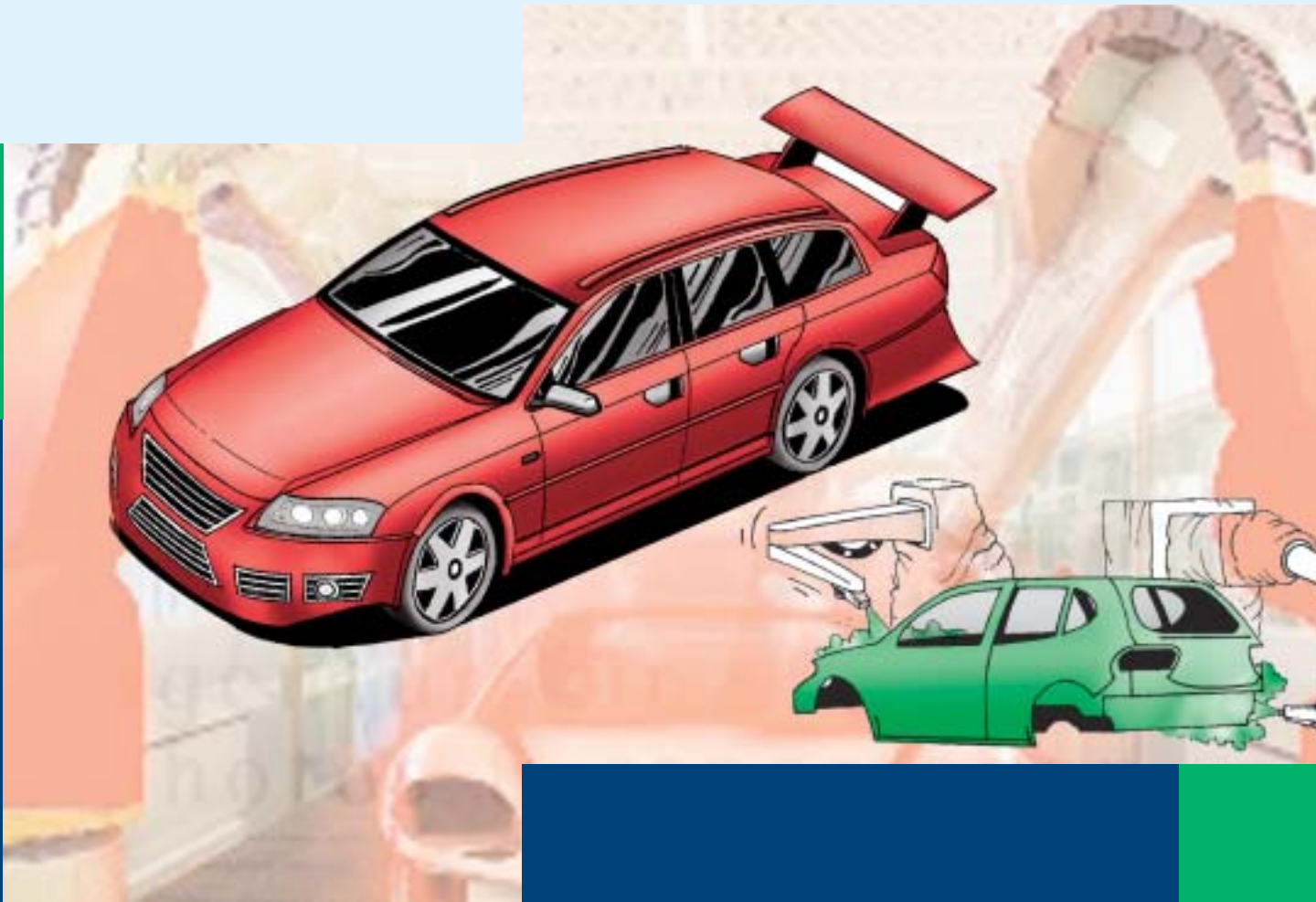


# CYTEC



## Automotive Car Body Coatings

Europe, Middle East and Africa

# About Us

## Total Solutions Provider

Cytec Industries is one of the world's leading specialty chemicals and materials technology companies. Our focus is on creating advanced technological solutions in global markets, including aerospace, coatings, mining and plastics.

We are a total solutions provider with a broad range of products, including eco-friendly technologies. We support our customers worldwide with excellent technical service and applications research.

## Innovative Technology

Cytec's products are innovative and diverse, and can help manufacturers realize the competitive advantages of environmental compliance, while also meeting their needs for:

- Improved performance (scratch/stain/corrosion resistance, and adhesion)
- Greater ease of application (required cure response)
- Better finishes (gloss/matte, texture, and specialty)

## Broad Product Portfolio

We offer an extensive selection of performance-driven products, including low volatile organic compounds (VOC) and hazardous air pollutant substance-free (HAPS) technologies, for existing and emerging markets:

- Industrial
- Architectural/Construction
- Automotive/Transportation
- Wood/Paper
- Plastic

- Opto-electronics
- Graphic Arts
- Packaging/Adhesives

Our product portfolio is inclusive:

- UV/EB energy curable resins
- Liquid coating resins
  - Waterborne
  - High solids
  - Solvent-borne
- Amino crosslinkers
- Powder coating resins
- Coating additives

## Global Technical Support

Through our manufacturing facilities, technology and distribution centers, we are able to provide responsive service on a consistent global basis, and to help our customers identify and profit from emerging opportunities.



<b>Introduction – Automotive Industry</b>	4
<b>OEM Primer Surfacer</b>	
Liquid Resins	6
Amino Resin Crosslinkers	8
Powder Resins	10
Additives	12
<b>OEM Base Coat</b>	
Liquid Resins	14
Amino Resin Crosslinkers	16
Additives	18
<b>OEM Clear and Top Coat</b>	
Liquid Resins	20
Additives	24
<b>OEM Top Coat</b>	
Amino Resin Crosslinkers	26
<b>Product Range</b>	28

## 4 Introduction – Automotive Industry

### **Provider of Innovative and Environmentally friendly Solutions to the Automotive Industry**

Regulations restricting the solvent emission of automotive plants are being implemented in Europe and US and are expected to become stricter. The best available technology will be taken as a reference in order to fulfill the new requirements.

Even though Western Europe, NAFTA and Japan are mature markets for car builds, they will face a major technology switch in the next 5 years, moving away from conventional technologies and in-line with the legislation implementation.

Cytec has taken up the challenge and is leading the environmental friendly technical alternatives offered to the automotive industry, while consolidating and offering cost effective solutions in the conventional segments.

Cytec offers a full range of products: liquid, powder and additives that address all the stringent needs of the automotive industry, while meeting the VOC requirements.

To fulfill our objective of delivering superior value to our customers, we have a dedicated technical service team investigating OEM paints for car body layers and plastic coatings parts.

We are committed to deliver added value to our customers through innovative market-driven solutions based on technological and operational excellence.

With numerous plants, research and technological service centers around the world, we are in a strong position to satisfy the multi-dimensional requirements of our customers with the required automotive world-class level of service.

This brochure is divided into two parts. The first lets formulators select resins and additives to match the desired automotive performance needs based on the coating layer, while the second lists all the available products by chemical family.

## Provider of a modular Approach towards a high Formulation Flexibility

The primer surfacer layer succeeds to the electrocoat, providing to the coating the stone chip resistance and the smooth surface needed before applying the base and clear coats. Primers can be colored and are used as a final coating in less critical areas of the car body.

Cytec has developed a modular approach proposing to the formulator varieties of proprietary and innovative chemistries to be blended together.

Urethane modified alkyds or polyesters, self crosslinking or crosslinked with amino resins or blocked polyisocyanates, are the main resin to be used in a primer surfacer formulations ensuring basic properties like chip resistance, appearance and applicability.

Modifier resins are used to adjust to the desired properties:

- Polyurethane dispersions provide the high stone chip resistance requirements
- Polyesters improve leveling and hardness
- Epoxy modified alkyds/polyesters improve adhesion and corrosion resistance
- Additives bring the right level of leveling, anti-cratering, anti-sagging and grinding performance
- The portfolio contains an extensive choice of waterborne and powder resins, responding to the most strict and VOC compliant automotive car body plant.

# 6 OEM Primer Surfacer

## Liquid Resins

Products	Product description	Form of delivery	Dynamic viscosity [mPa.s]	pH-value
----------	---------------------	------------------	---------------------------	----------

### Waterborne

<i>DAOTAN</i> <sup>®*</sup> <i>VTW 1225</i>	Polyurethane dispersion.	40 % in water	100–800	6,7–7,7
<i>DAOTAN VTW 1233</i>	Polyurethane dispersion.	36 % in water/N-methylpyrrolidone	40–500	7,2–8,0
<i>DAOTAN VTW 2229</i>	Aromatic polyurethane dispersion.	40 % in water/N-methylpyrrolidone	500–1200	7,0–7,6
<i>DAOTAN VTW 6434</i>	Polyurethane dispersion.	40 % in water/N-methylpyrrolidone	500–2200	7,0–8,0
<i>RESYDROL</i> <sup>®*</sup> <i>AM 224 w</i>	Modified alkyd resin.	40 % in water	100–700 (22 % MPP)	7,5–9,0
<i>RESYDROL AX 906 w</i>	Epoxy modified alkyd resin.	35 % in water	160–560 (28 % BG)	7,0–8,5
<i>RESYDROL AZ 6608 w</i>	Urethane modified polyester.	43 % in water	100–1500	7,5–8,5
<i>RESYDROL AZ 6612 w</i>	Urethane modified polyester, self-crosslinking.	45 % in water	50–1500	7,0–8,0
<i>RESYDROL VAF 5540 w</i>	Modified polyester.	70 % in Methoxypropanol	300–550 (54 % BG)	n. a.
<i>RESYDROL VAZ 5550 w</i>	Urethane mod. alkyd resin, self-crosslinking.	47 % in water	50–3000	7,5–8,5
<i>RESYDROL VAZ 5555 w</i>	Urethane mod. alkyd resin, self-crosslinking.	42 % in water	100–1000	7,5–8,5
<i>RESYDROL VAZ 6600 w</i>	Urethane modified alkyd resin.	36 % in water	100–800	7,0–8,0
<i>RESYDROL VAZ 6605 w</i>	Urethane modified alkyd resin.	40 % in water	100–1000	7,5–8,5
<i>RESYDROL VAZ 6625 w</i>	Urethane modified anionic resin.	31 % in water/N-methylpyrrolidone	50–800	8,0–9,0
<i>RESYDROL VAX 5227 w</i>	Epoxy modified polyester.	55 % in solvent mixture	90–500 (44 % BG)	7,0–9,0
<i>RESYDROL VAX 5533 w</i>	Epoxy modified alkyd resin, self-crosslinking.	40 % in solvent mixture	50–760 (22 % BG)	7,5–9,5
<i>RESYDROL VAX 5538 w</i>	Epoxy modified phosphoric acid ester.	50 % in water	1000–8000	6,8–7,6

### Solvent-borne

<i>ADDITOL</i> <sup>®*</sup> <i>XL 433</i>	Blocked polyisocyanate adduct.	60 % in methoxypropylacetate	9000–13000	n. a.
<i>BECKOPOX</i> <sup>®*</sup> <i>EP 301</i>	Epoxy resin.	75 % in xylene	7800–13000	n. a.
<i>VIALKYD</i> <sup>®*</sup> <i>AN 903</i>	Modified polyester.	70 % in ethoxypropylacetate	2100–3500	n. a.
<i>VIALKYD AN 927</i>	Modified polyester.	70 % in xylene	1800–3500	n. a.
<i>VIALKYD AN 950</i>	Modified polyester.	70 % in xylene	2300–3100	n. a.
<i>VIALKYD VAN 4392</i>	Modified polyester.	65 % in solvent naphtha 150/180	120–320 (55 % SNAIB)	n. a.

#### Key to the table

Dynamic viscosity	DIN EN ISO 3219, 23 °C
Form of delivery	non-volatile matter DIN EN ISO 3251
pH-value	DIN ISO 976

#### Abbreviations

n. a.	not applicable
OEM	original equipment manufacturer
1K	one component

\**ADDITOL* additives

\**BECKOPOX* epoxy resins

\**DAOTAN* polyurethane resins

\**RESYDROL* alkyd resins

\**VIALKYD* alkyd resins

Key features	Curing temperature	Stone chip resistance	Hardness	Leveling	Adhesion	Corrosion resistance	Chemistry
Modifier resin to improve stone chip resistance.	130–190 °C	●●●	●	●●●	●●	●	1K, amino crosslinking
Modifier resin to improve stone chip resistance.	130–190 °C	●●●	●	●●	●●	●	1K, amino crosslinking
Modifier resin to improve stone chip resistance.	130–190 °C	●●●	●	●●●	●●	●	1K, amino crosslinking
Modifier resin to improve stone chip resistance.	130–190 °C	●●●	●	●●	●●	●	1K, amino crosslinking
Basic resin, excellent balance of hardness and flexibility.	150–180 °C	●●	●●	●●	●●	●	1K, amino crosslinking
Modifier resin to improve hardness, corrosion resistance and adhesion.	130–190 °C	●●	●●●	●●●	●●●	●●	1K, amino crosslinking
Modifier resin to improve flexibility and stone chip resistance.	130–200 °C	●●●	●	●●	●●	●	1K, amino crosslinking
Basic resin with excellent allround properties and outstanding yellowing stability.	140–200 °C	●●●	●●	●●●	●●	●	1K, self-crosslinking
Modifier resin to improve hardness and leveling.	130–190 °C	●●	●●●	●●●	●●	●	1K, amino crosslinking
Basic resin for low bake applications.	140–190 °C	●●●	●	●●	●●	●	1K, self-crosslinking
Basic resin with excellent allround properties.	150–190 °C	●●●	●●	●●	●●	●	1K, self-crosslinking
Basic resin with excellent allround properties for low bake applications.	130–190 °C	●●●	●●●	●●●	●●●	●●	1K, amino crosslinking
Basic resin with excellent allround properties for low bake applications.	110–190 °C	●●●	●●●	●●●	●●●	●●	1K, amino crosslinking
Modifier resin to improve hardness and stone chip resistance.	130–190 °C	●●●	●●●	●●●	●●	●	1K
Modifier resin to improve corrosion resistance and adhesion.	120–190 °C	●●	●	●●	●●●	●●●	1K, amino crosslinking
Modifier resin to improve hardness, corrosion resistance and adhesion.	130–190 °C	●●●	●●●	●●	●●●	●●●	1K, self-crosslinking
Modifier resin to improve adhesion and corrosion resistance.	120–190 °C	●	●●●	●●	●●●	●●●	1K, amino crosslinking
Crosslinker to improve stone chip resistance.	140–190 °C	●●●	n. a.	n. a.	n. a.	n. a.	crosslinker
Modifier resin to improve adhesion and corrosion resistance.	140–190 °C	●	●●●	●●	●●●	●●●	1K, amino crosslinking
Basic resin with excellent allround properties.	140–190 °C	●●●	●●	●●●	●●	●	1K, amino crosslinking
Basic resin, excellent balance of hardness and flexibility.	140–190 °C	●●	●●●	●●●	●	●	1K, amino crosslinking
Basic resin with excellent allround properties.	140–190 °C	●●●	●●●	●●●	●●●	●	1K, amino crosslinking
Basic resin, excellent balance of hardness and flexibility.	140–190 °C	●●●	●●	●●●	●●	●	1K, amino crosslinking

● low  
●● medium  
●●● high



# 8 OEM Primer Surfacer (continued)

## Amino Resin Crosslinkers

Products	Product description	Form of delivery	Dynamic viscosity mPa.s 23 °C	Key features
----------	---------------------	------------------	-------------------------------	--------------

### Waterborne

<b>CYMEL®* 303 LF</b>	Highly methylated melamine resin.	≥ 98	3000–6000	For high solids formulations very good film flexibility, formulation stability and resistance properties.
<b>CYMEL 1130</b>	Mixed ether highly alkylated melamine resin.	≥ 96	3000–6000	For high solids formulations with improved hydrophobicity characteristics to balance VOC and film appearance properties.
<b>CYMEL 202</b>	High NH mixed ether melamine resin.	82 % in nBuOH	2500–7500	For fast curing medium to high solids formulations with improved hydrophobicity characteristics.
<b>CYMEL 328</b>	Methylated high NH melamine resin.	85 % in water	1000–3000	For fast curing waterborne formulations with good formulation stability.
<b>CYMEL 1123</b>	Mixed ether highly alkylated benzoguanamine resin.	≥ 96	3800–10200	For primer formulations to improve adhesion and chemical resistance properties.
<b>CYMEL 1171</b>	Highly alkylated glycoluril resin.	90 % in nBuOH	3800–7500	For high solids and waterborne high quality formulations.

### Solvent-borne conventional and medium solids

<b>CYMEL MI-12-I</b>	Partially iso-butylated melamine resin.	60 % in iBuOH	1050–1950	For fast cure primer formulations.
<b>CYMEL U-640</b>	Partially butylated urea resin.	62 % in nBu/X	1000–1600	For primer formulations with very good adhesion properties.
<b>CYMEL UI-27-IX</b>	Partially iso-butylated urea resin.	66 % in iBu/X	3200–4000	For fast cure primer formulations with excellent adhesion properties.
<b>CYMEL 659</b>	Partially butylated benzoguanamine resin.	72 % in nBuOH	650–1200	For primer formulations with good adhesion and corrosion resistance properties.
<b>CYMEL 327</b>	Methylated high NH melamine resin.	90 % in iBuOH	5100–16000	For fast curing medium to high solids formulations with improved film flexibility properties.
<b>CYMEL 202</b>	High NH mixed ether melamine resin.	82 % in nBuOH	2500–7500	For fast curing medium to high solids formulations with improved hydrophobicity characteristics.

\*CYMEL amino crosslinking resins

Water solubility	Formulation stability	Flow and wetting	Weight retention	Reaction speed	Film hardness	Film flexibility	Adhesion properties	Stone chip resistance	Corrosion resistance	Water resistance
------------------	-----------------------	------------------	------------------	----------------	---------------	------------------	---------------------	-----------------------	----------------------	------------------

●●	●●●●●	●●		●●●	●●●●	●●●●●	●●●	●●●	●●●	●●●●
●	●●●●●	●●●●		●●	●●●	●●●●●	●●●●	●●●●	●●●●	●●●●●
●	●●●	●●●●		●●●●	●●●●●	●●●●	●●●●	●●●●	●●●●	●●●●
●●●●●	●●●	●●●		●●●●	●●●●●	●●●●	●●●	●●●	●●●	●●●
●	●●●●●	●●●●		●●●	●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●
●	●●●●●	●●●●		●●	●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●

	●●	●●●●●	●●	●●●●	●●●●	●●	●●●●	●●●	●●●●	●●●●
	●●	●●●●●	●●	●●●●●	●●●●●	●●	●●●●●	●●●●	●●●	●●
	●●	●●●●●	●●	●●●●●	●●●●●	●●	●●●●●	●●●●	●●●	●●
	●●	●●●●●	●●	●●●●	●●●●	●●	●●●●●	●●●●	●●●●●	●●●●●
	●●●	●●●	●●●●	●●●●	●●●●	●●●●	●●●	●●●	●●●	●●●
	●●●	●●●●	●●●	●●●●	●●●●	●●●●	●●●●	●●●	●●●●	●●●●

● low  
 ●● moderate  
 ●●● good  
 ●●●● very good  
 ●●●●● excellent

## Amino Resin Crosslinkers

Products	Product description	Form of delivery	Dynamic viscosity mPa.s 23 °C	Key features
----------	---------------------	------------------	----------------------------------	--------------

### Solvent-borne high solids

<b>CYMEL®* 303 LF</b>	Highly methylated melamine resin.	≥ 98	3000–6000	For high solids formulations very good film flexibility, formulation stability and resistance properties.
<b>CYMEL 1168</b>	Mixed ether highly alkylated melamine resin.	≥ 98	2000–4500	For high solids formulations with improved hydrophobicity characteristics to balance VOC, adhesion and resistance properties.
<b>CYMEL U-80</b>	Highly butylated urea resin.	≥ 96	1700–4500	For high solids primer formulations with excellent compatibility and adhesion properties.
<b>CYMEL 1123</b>	Mixed ether highly alkylated benzoguanamine resin.	≥ 96	3800–10200	For primer formulations to improve adhesion and chemical resistance properties.
<b>CYMEL 1170</b>	Highly butylated glycoluril resin.	≥ 96	3000–6000	For high solids high quality formulations.

## Powder Resins

Products	Product description	Form of delivery	Viscosity [mPa.s]	Tg. °C
----------	---------------------	------------------	----------------------	--------

### UV

<b>UVECOAT®* 2300</b>	Blend of unsaturated polyester resin and epoxy resin.	Flakes	2700	53
-----------------------	---	--------	------	----

### Thermal

<b>CRYLCOAT®* 1622-0</b>	Polyester resin for polyester/epoxy blend (Hybrid).	Flakes	2600	55
<b>CRYLCOAT 1783-0</b>	Polyester resin for polyester/epoxy blend (Hybrid).	Flakes	5000	58

#### Key to the table

Acid value	DIN EN ISO 2114
Dynamic viscosity	DIN EN ISO 3219, 200 °C

#### Abbreviations

<b>BMC</b>	blow moulded components
<b>OEM</b>	original equipment manufacturer
<b>SMC</b>	sheet moulded components
<b>UV</b>	ultra-violet curing

\*CRYLCOAT powder polyester resins

\*CYMEL amino crosslinking resins

\*UVECOAT UV powder resins

Formulation stability	Flow and wetting	Reaction speed	Film hardness	Film flexibility	Adhesion properties	Stone chip resistance	Corrosion resistance	Water resistance
●●●●●	●●	●●●●	●●●●●	●●●●	●●●	●●●	●●●	●●●
●●●●●	●●●●	●●●	●●●	●●●●●	●●●●	●●●●	●●●●	●●●●
●●●●●	●●●●	●●	●●	●●●●	●●●●	●●●●	●●●●	●●●
●●●●●	●●●●	●●●	●●●	●●●●	●●●●●	●●●●●	●●●●●	●●●●●
●●●●●	●●●●	●●	●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●

Key features	Curing temperature, 10 min	Acid value, mg KOH/g	Chemistry
For application on metal or SMC/BMC for internal use. Good adhesion on metal up to 75 µm key features.	min 120°C		UV powder
Very good properties and excellent flow. Suitable for use for automotive primer.	200	60	Thermal powder
Excellent flow, high gloss and elasticity.	200	34	Thermal powder

● low  
 ●● moderate  
 ●●● good  
 ●●●● very good  
 ●●●●● excellent



## Additives

Products	Product description
<b>Solvent-borne</b>	
<i>ADDITOL</i> <sup>®*</sup> <i>VXL 4920</i>	Quaternary ammonium compound.
<i>ADDITOL VXL 6212 N</i>	Urethane modified acrylic copolymer; high molecular; cationic.
<i>ADDITOL VXL 6237 N</i>	Wetting/dispersing agent; high molecular; cationic.
<i>ADDITOL VXW 6387</i>	Special fatty acids; amine neutralized; silicone-free.
<i>ADDITOL VXK 6395</i>	Amine blocked sulfonic acid.
<i>ADDITOL XL 180</i>	Phosphoric acid compound.
<i>ADDITOL XL 204</i>	Silicone containing phosphoric acid ester; anionic.
<i>ADDITOL XL 250</i>	Phosphoric acid ester; neutralized by amine; anionic; low molecular.
<i>ADDITOL XL 260 N</i>	Urethane modified acrylic copolymer; high molecular; non ionic.
<i>ADDITOL XL 270</i>	Modified silicone; amine neutralized.
<i>ADDITOL XL 480</i>	Modified acrylic copolymer; low molecular; FDA approved.
<i>ADDITOL XL 6505</i>	Quaternary ammonium compound.
<i>MODAFLOW</i> <sup>®*</sup> <i>Resin</i>	Acrylic copolymer; high molecular; FDA approved.
<i>MODAFLOW 2100</i>	Acrylic copolymer; low molecular; FDA approved.
<i>MODAFLOW 9200</i>	Modified acrylic copolymer; low molecular; crosslinkable.
<i>SANTOSOL</i> <sup>®*</sup> <i>DME-1</i>	Dimethylester mixture.
<b>Waterborne</b>	
<i>ADDITOL VXK 6395</i>	Amine blocked sulfonic acid.
<i>ADDITOL VXW 4926</i>	Special fatty acid esters.
<i>ADDITOL VXW 6208</i>	Nonionically stabilised polymer; diluted in water.
<i>ADDITOL VXW 6386</i>	Hydrocarbons, waxes.
<i>ADDITOL VXW 6387</i>	Special fatty acids; amine neutralized; silicone-free.
<i>ADDITOL VXW 6396</i>	Highly fluoro-modified acrylic copolymer; neutralized by amine; low molecular weight.
<i>ADDITOL VXW 6502</i>	Neutralized acrylic copolymer.
<i>ADDITOL VXW 6503</i>	Silicone tenside.
<i>ADDITOL VXW 6508</i>	Acrylic copolymer; neutralized by amine.
<i>ADDITOL XL 204</i>	Silicone containing phosphoric acid ester; anionic.
<i>ADDITOL XL 250</i>	Phosphoric acid ester, neutralized by amine; anionic; low molecular.
<i>ADDITOL XW 390</i>	Fluoro-modified acrylic copolymer; neutralized by amine.
<i>ADDITOL XW 395</i>	Acrylic copolymer; neutralized by amine; silicone-free; FDA approved.
<i>ADDITOL XW 6528</i>	Grinding resin for wb 1K and 2K systems; based on a polyester modified acrylic resin.
<i>MODAFLOW AQ 3025</i>	Acrylic copolymer; amine neutralised; silicone-free.

\**ADDITOL* additives\**MODAFLOW* resin flow modifier\**SANTOSOL* dimethyl ester**Abbreviations**

FDA food and drug administration

OEM original equipment manufacturer

## Key features

Increases conductivity for electrostatic applied lacquers.  
 Highly effective for difficult wettable inorg. and org. pigments; improved effectiveness in acrylic systems.  
 For difficult wettable pigments as well as for pigment concentrates/pastes.  
 Prevents pigment sedimentation; reduces sagging; improves storage stability.  
 Especially for low temperature stoving/baking applications.  
 Enhances intercoat adhesion.  
 Prevents floating and Bénard cells; reduces dispersing time.  
 Reduces dispersing time; enhances flow, gloss and color strength.  
 Highly effective for difficult wettable inorg. and org. pigments.  
 Suitable for high gloss systems; prevents floating and sedimentation.  
 Reduces surface defects; good compatibility; for car-refinish applications.  
 Increases conductivity for electrostatically applied lacquers.  
 Highly effective leveling agent; good wetting behaviour; degassing properties.  
 Highly effective; good compatibility; short incorporation time and fast mode of action.  
 Reduces surface defects; excellent compatibility; for high-end applications with excellent gloss.  
 Slow evaporation with excellent solvency, anti-pinhole.

Especially for low temperature stoving/baking applications.  
 Quick Defoaming/degassing; enhances build-up; crosslinkable.  
 For inorg./org. pigments and pigment concentrates/pastes.  
 For high quality lacquers; good compatibility; Homogenize well prior to use!  
 Prevents pigment sedimentation; reduces sagging; improves storage stability.  
 Excellent leveling and wetting properties; no foam stabilization; good recoatability.  
 Enhancement of flow and leveling.  
 Excellent substrate wetting; no foam stabilization; good recoatability.  
 Flow and leveling; prevents surface defects; crosslinkable.  
 Prevents floating and Bénard cells; reduces dispersing time.  
 Reduces dispersing time; enhances flow, gloss and color strength.  
 Excellent wetting and intercoat adhesion; no foam stabilization; crosslinkable.  
 Good wetting; prevent cratering and pin holes; effective against oil contaminations.  
 Co-crosslinkable; high loading capacity; improves gloss, improves chemical and corrosion resistance.  
 Optimizes flow and gloss; enhances degassing; facilitates pigment wetting.

## Enhancing your Color

The base coat is the most perceived layer by car buyers as it provides the metallic or solid color effect.

Base coat resins should have a good adhesion to both primer surfacer and different type of clear coat layers, regardless of the technology used: WB or SB.



## Liquid Resins

Products	Product description	Form of delivery % solids content
<b>Solvent-borne</b>		
<i>DUROFTAL®* PE 912</i>	Saturated oil-free polyester.	60 % in solvent naphtha 150/180
<i>DUROFTAL PE 912 sca</i>	Saturated oil-free polyester, modified with sagging control agent.	50 % in solvent naphtha 150/180 and xylene
<i>VIACRYL®* SC 303</i>	Acrylic resin.	55 % in solvent mixture
<i>VIACRYL VSC 9419 sca</i>	Acrylic resin, modified with sagging control agent.	48 % in solvent naphtha 150/180 and xylene
<i>VIALKYD®* AN 950</i>	Oilfree polyester.	70 % in xylene
<b>Waterborne</b>		
<i>DAOTAN®* VTW 1236 w</i>	Aliphatic polyurethane dispersion.	40 % in water/N-methylpyrrolidone
<i>DAOTAN VTW 1262</i>	Polyurethane dispersion.	35 % in water
<i>DAOTAN VTW 6460</i>	Polyurethane dispersion.	35 % in water
<i>DAOTAN VTW 6462</i>	Self crosslinking, aliphatic polyurethane dispersion, acrylic modified.	36 % in water
<i>RESYDROL®* AN 6481 w</i>	Oil-free polyester.	70 % in butanol/butoxy propanol, non neutralized
<i>VIACRYL VSC 6254 w</i>	Acrylic emulsion.	40 % in water

### Key to the table

Form of delivery non-volatile matter DIN EN ISO 3251

### Abbreviations

n.a. not applicable  
 OEM original equipment manufacturer  
 sca sagging control agent  
 1K one component

\**DAOTAN* polyurethane resins

\**DUROFTAL* polyester resins

\**RESYDROL* alkyd resins

\**VIACRYL* acrylic resins

\**VIALKYD* alkyd resins

The portfolio contains an extensive choice of acrylic or polyurethane dispersions, polyester resins, amino crosslinkers and additives.

As this layer is highly pigmented, then the most diluted; therefore due to environmental pressure, the base coat is the most converted layer to waterborne technology.

Cytec proposes a broad range of waterborne resins and additives meeting the base coat layer requirements.

Key features	Metallic effect	Hardness	Flexibility	Physically drying	Chemistry
Good compatibility with CAB, good pigment wetting.	●●●	●●	●●	n. a.	1K sb
Improves application properties by control of sagging.	●●●	●●	●●●	n. a.	1K sb
Good compatibility with CAB, good pigment wetting and weather resistance.	●●●	●●	●●	n. a.	1K sb
Improves application properties by control of sagging.	●●●	●●	●●	n. a.	1K sb
Good compatibility with CAB, good pigment wetting and weather resistance.	●●●	●●	●●●	n. a.	1K sb
Stable to shear forces, good pigment wetting, excellent adhesion on plastics.	●●●	●	●●●	●●●	1K wb
Stable to shear forces, good pigment wetting.	●●●	●●	●	●●●	1K wb
Stable to shear forces, good pigment wetting.	●●●	●●	●●●	●●●	1K wb
Stable to shear forces, good pigment wetting, excellent adhesion on plastics.	●●●	●●	●●●	●●●	1K wb
Blending partner for polyurethane dispersion; improves leveling; could be used as grinding resin.	●●	n. a.	●●	n. a.	1K wb
Improves physically drying and hardness.	●	●●●	●	●●●	1K wb

● low  
●● medium  
●●● high



## Amino Resin Crosslinkers

Products	Product description	Form of delivery	Dynamic viscosity mPa.s 23 °C	Key features
----------	---------------------	------------------	----------------------------------	--------------

### Waterborne

<b>CYMEL®* 303 LF</b>	Highly methylated melamine resin.	≥98	3000–6000	For high solids formulations very good film flexibility, formulation stability and resistance properties.
<b>CYMEL 328</b>	Methylated high NH melamine resin.	85 % in water	1000–3000	For fast curing waterborne formulations with good formulation stability.
<b>CYMEL 373</b>	Partially methylated melamine resin.	85 % in water	2500–6000	For fast curing waterborne formulations.
<b>CYMEL 203</b>	Mixed ether high NH melamine resin.	72 % in iBuOH	400–800	For very fast curing medium to high solids formulations with improved hydrophobicity to obtain good metal flakes orientation properties.

### Solvent-borne conventional and medium solids

<b>CYMEL 1158</b>	Butylated high NH melamine resin.	80 % in nBuOH	3000–7000	For fast curing medium solids formulations with very good film appearance properties.
<b>CYMEL MI-8-1</b>	Partially iso-butylated melamine resin.	55 % in iBuOH	300–500	For fast cure and very good metal flakes orientation.
<b>CYMEL 203</b>	Mixed ether high NH melamine resin.	72 % in nBuOH	400–800	For very fast curing medium to high solids formulations with improved hydrophobicity to obtain good metal flakes orientation properties.

### Solvent-borne high solids

<b>CYMEL 303 LF</b>	Highly methylated melamine resin.	≥98	3000–6000	For high solids formulations very good film flexibility, formulation stability and resistance properties.
<b>CYMEL 1130</b>	Mixed ether highly alkylated melamine resin.	≥96	3000–6000	For high solids formulations with improved hydrophobicity characteristics to balance VOC and film appearance properties.
<b>CYMEL 1133</b>	Mixed ether highly alkylated melamine resin.	≥98	750–1950	For high solids formulations with improved hydrophobicity characteristics to balance VOC and film resistance properties.
<b>CYMEL 1161</b>	Mixed ether highly alkylated melamine resin.	≥98	1050–2000	For high solids formulations with improved hydrophobicity characteristics to balance VOC and adhesion properties.
<b>CYMEL 1168</b>	Mixed ether highly alkylated melamine resin.	≥98	2000–4500	For high solids formulations with improved hydrophobicity characteristics to balance VOC, adhesion and resistance properties.

\*CYMEL amino crosslinking resins

Water solubility	Polymer compatibility	Formulation stability	Metallic flake orientation	Weight retention	Physical drying properties	Reaction speed	Adhesion properties	Water resistance
●●	●●●●●	●●●●●	●●●			●●●	●●●	●●●
●●●●●	●●●●	●●●●	●●●			●●●●●	●●●	●●●
●●●●●	●●●	●●●	●●●			●●●●●	●●●	●●●
●	●●●●	●●●●	●●●●			●●●●●	●●●●	●●●●
	●●●	●●●	●●●	●●	●●	●●●●	●●●●	●●●●
	●●●	●●●	●●●●	●	●●●●	●●●●●	●●●●	●●●●
	●●●	●●●	●●●●	●●●	●●●	●●●●	●●●●	●●●●
	●●●●●	●●●●●	●●●	●●●●●		●●●	●●●	●●●
	●●●●	●●●●●	●●●●	●●●●		●●	●●●●	●●●●
	●●●●	●●●●●	●●●●	●●●		●●	●●●●●	●●●●
	●●●●	●●●●●	●●●●	●●●●		●●	●●●●	●●●●
	●●●●	●●●●●	●●●●	●●●		●●	●●●●●	●●●●

● low  
 ●● moderate  
 ●●● good  
 ●●●● very good  
 ●●●●● excellent

(continued)

## Additives

Products	Product description
<b>Solvent-borne</b>	
<i>ADDITOL</i> <sup>®*</sup> <i>XL 180</i>	Phosphoric acid compound.
<i>ADDITOL XL 204</i>	Silicone containing phosphoric acid ester; anionic.
<i>ADDITOL XL 250</i>	Phosphoric acid ester, neutralized by amine; anionic; low molecular.
<i>ADDITOL XL 260 N</i>	Urethane modified acrylic copolymer; high molecular, non ionic.
<i>ADDITOL XL 270</i>	Modified silicone; amine neutralized.
<i>ADDITOL XL 480</i>	Modified acrylic copolymer; low molecular weight; FDA approved.
<i>ADDITOL XL 6505</i>	Quaternary ammonium compound.
<i>ADDITOL VXL 4920</i>	Quaternary ammonium compound.
<i>ADDITOL VXL 6212 N</i>	Urethane modified acrylic copolymer; high molecular; cationic.
<i>ADDITOL VXL 6237 N</i>	Wetting/dispersing agent; high molecular; cationic.
<i>ADDITOL VXW 6387</i>	Special fatty acids; amine neutralized; silicone-free.
<i>ADDITOL VXW 6395</i>	Amine blocked sulfonic acid.
<i>MODAFLOW</i> <sup>®*</sup> <i>Resin</i>	Acrylic copolymer; high molecular weight; FDA approved.
<i>MODAFLOW 2100</i>	Acrylic copolymer; low molecular weight; FDA approved.
<i>MODAFLOW 9200</i>	Modified acrylic copolymer; low molecular weight; crosslinkable.
<i>SANTOSOL</i> <sup>®*</sup> <i>DME-1</i>	Dimethylester mixture.
<b>Waterborne</b>	
<i>ADDITOL XW 6528</i>	Modified polyester acrylic resin.
<i>ADDITOL VXK 6395</i>	Amine blocked sulfonic acid.
<i>ADDITOL VXW 6208</i>	Nonionically stabilised polymer; diluted in water.
<i>ADDITOL VXW 6387</i>	Special fatty acids; amine neutralized; silicone-free.
<i>ADDITOL VXW 6396</i>	Highly fluoro-modified acrylic copolymer; neutralized by amine; low molecular weight.
<i>ADDITOL VXW 6503</i>	Silicone tenside.
<i>ADDITOL VXW 6508</i>	Acrylic copolymer; neutralized by amine.
<i>ADDITOL XW 390</i>	Fluoro-modified acrylic copolymer; neutralized by amine.
<i>ADDITOL XW 395</i>	Acrylic copolymer; neutralized by amine; silicone-free; FDA approved.
<i>MODAFLOW AQ 3025</i>	Acrylic copolymer; neutralized silicone free.
<i>ADDITOL VXW 4926</i>	Special fatty acid esters.
<i>ADDITOL VXW 6386</i>	Hydrocarbons, waxes.
<i>ADDITOL VXW 6502</i>	Neutralized acrylic copolymer.
<i>ADDITOL XL 180</i>	Phosphoric acid compound.
<i>ADDITOL XL 204</i>	Silicone containing phosphoric acid ester; anionic.
<i>ADDITOL XL 250</i>	Phosphoric acid ester, neutralized by amine; anionic; low molecular.

\**ADDITOL* additives\**MODAFLOW* resin flow modifier\**SANTOSOL* dimethyl ester**Abbreviations**

FDA food and drug administration

OEM original equipment manufacturer

## Key features

Enhances intercoat adhesion.
Prevents floating and Bénard cells; reduces dispersing time.
Reduces dispersing time; enhances flow, gloss and color strength.
Highly effective for difficult wettable inorg. and org. pigments.
Suitable for high gloss systems; prevents floating and sedimentation.
Reduces surface defects; good compatibility; for car-refinish applications.
Increases conductivity for electrostatically applied lacquers.
Increases conductivity for electrostatic applied lacquers.
Highly effective for difficult wettable inorg. and org. pigments; improved effectiveness in acrylic systems.
For difficult wettable pigments as well as for pigment concentrates /pastes.
Prevents pigment sedimentation; reduces sagging; improves storage stability.
Catalyst, reduces time and temperature of bake.
Highly effective leveling agent; good wetting behaviour; degassing properties.
Highly effective; good compatibility; short incorporation time and fast mode of action.
Reduces surface defects; excellent compatibility; for high-end applications with excellent gloss.
Slow evaporation with excellent solvency, anti-pinhole.

Crosslinkable grinding resin with improved anticorrosion properties.
Especially for low temperature stoving/baking applications.
For inorg./org. pigments and pigment concentrates/pastes.
Prevents pigment sedimentation; reduces sagging; improves storage stability.
Excellent leveling and wetting properties; no foam stabilization; good recoatability.
Excellent substrate wetting; no foam stabilization; good recoatability.
Flow and leveling; prevents surface defects; crosslinkable.
Excellent wetting and intercoat adhesion; no foam stabilization; crosslinkable.
Good wetting; prevent cratering and pin holes; effective against oil contaminations.
Optimizes flow and gloss; enhances degassing; facilitates pigment wetting.
Quick Defoaming /degassing; enhances build-up; crosslinkable.
For high quality lacquers; good compatibility; Homogenize well prior to use!
Enhancement of flow and leveling.
Enhances intercoat adhesion.
Prevents floating and Bénard cells; reduces dispersing time.
Reduces dispersing time; enhances flow, gloss and color strength.

## Easy Applicability and Protection of your Coating

The clear coat layer aims to protect all other layers and provides the last finish. The top coat layer combines both the base and clear coat in one layer.

Cytec proposes an extensive range of medium and high solids acrylic resins for all CC and TC types: 1k, 2k; SB or WB.

These resins have a good scratch and mar resistance and while needed have an excellent outdoor durability.

## Liquid Resins

Products	Product description	Form of delivery	Dynamic viscosity (mPa.s)	Acid value (solid resin)	Color index (Hazen)	Color index (Iodine)	OH % [resin solids]
<b>1K CC – Solvent-borne</b>							
<i>DUROFTAL</i> <sup>®</sup> * <i>VPE 6117</i>	Aliphatic polyester.	100 %	6000–12000	<10	<80	---	3,6–4,2
<i>VIACRYL</i> <sup>®</sup> * <i>SC 341</i>	Acrylic resin.	60 % in solvent naphtha 150 / 180 butyl acetate	1000–2000	max. 20	---	<2	2,6
<i>VIACRYL SC 370</i>	Acrylic resin.	70 % in solvent naphtha 150/180 butanol	1000–1500	max. 12	<100	---	3,3–3,9
<i>VIACRYL SC 370</i>	Acrylic resin.	75 % in solvent naphtha 150/180	4200–7000	max. 12	<100	---	3,3–3,9
<i>VIACRYL SC 2956 sca</i>	Acrylic resin sca modified.	50 % in solvent naphtha 150/180 and xylene	700–1300				
<i>VIACRYL SC 2960</i>	Acrylic resin.	75 % in solvent naphtha 150/180	4000–7000	max. 15	<100	---	4,0–4,5
<i>VIACRYL VSC 9419 sca</i>	Acrylic resin modified with sca.	48 % in solvent naphtha 150/180 and xylene	500–1200	---	---	---	---
<b>1K CC – Waterborne</b>							
<i>VIACRYL VSC 6273 w</i>	Acrylic copolymer emulsion.	44 % in water	200–2400	---	---	---	2,5
<i>VIACRYL VSC 6276 w</i>	Acrylic copolymer emulsion.	44 % in water	200–2400	---	---	---	2,5
<i>VIACRYL SC 6807 w</i>	Acrylic copolymer emulsion.	43 % in water	400–2500	---	---	---	2,3
<i>VIACRYL VSC 6800 w</i>	Polyester modified acrylic copolymer emulsion.	47 % in water	300–2000	---	---	---	3,3

### Key to the table

Acid value	DIN EN ISO 2114
Colour index	Iodine colour number DIN 6162 or Hazen colour scale DIN ISO 6271
Dynamic viscosity	DIN EN ISO 3219, 23 °C
Form of delivery	non-volatile matter DIN EN ISO 3251

### Abbreviations

CC	clear coat	TC	top coat
n. a.	not applicable	wb	waterborne
OEM	original equipment manufacturer	1K	one component
sb	solvent-borne	2K	two component
sca	sagging control agent		

\**DUROFTAL* polyester resins

\**VIACRYL* acrylic resins

Our SCA acrylic resins improve application properties by control of sagging and are developed according to the specific needs of our customers and their customers.

We are leading the waterborne development in this niche with proprietary acrylic based polymers for both clear and top coat layers.

The portfolio contains also a powder acrylic resin as the use of powder clear coats is increasing and provides to the formulator an extensive range of additives.

The portfolio offers a broad line of amino crosslinker resins to obtain high performance crosslinked coating films.

Curing temperature [°C]	Key features	Key features					Chemistry
		Gloss	Weather durability	Chemical resistance	Scratch resistance	Mechanical properties	
---	Blending partner - max 20 % addition, improves body, solids content, gloss and flexibility.	●●●	n. a.	n. a.	n. a.	●●●	1K sb
130–150	Easy handling, high gloss.	●●●	●●●	●●	●●	●●●	1K sb
130–150	Improves body, solids content and gloss.	●●●	●●●	●●	●●	●●●	1K sb
130–150	Improves body, solids content and gloss.	●●●	●●	●●	●●	●●	1K sb
	Improves application properties by control of sagging.	●●●	●●●	●●●	●●●	●●	1K sb
130–140	High scratch resistance, tough-elastic, gloss.	●●●	●●●	●●●	●●●	●●●	1K sb
	Improves application properties by control of sagging.	●●	●●	●●	●●	●●	1K sb
120–140	Incorporated catalyst, high reactive, high gloss and hardness.	●●●	●●●	●●●	●●●	●●	1K wb
120–140	High gloss and hardness.	●●●	●●●	●●●	●●●	●●	1K wb
120–140	Excellent flow, high gloss.	●●●	●●●	●●●	●●●	●●	1K wb
130–140	High gloss, improves leveling.	●●●	●●●	●	●	●●●	1K wb

● low  
●● medium  
●●● high



# OEM Clear and Top Coat

(continued)

## Liquid Resins

Products	Product description	Form of delivery	Dynamic viscosity (mPa.s.)	Acid value (solid resin)	Color index (Hazen)	Color index (Iodine)	Hydroxyl content [resin solids]
----------	---------------------	------------------	----------------------------	--------------------------	---------------------	----------------------	---------------------------------

### 1K TC – Solvent-borne

<b>VIACRYL®* VSC 5754</b>	Polyester modified acrylic resin.	60 % in solvent naphtha 150/180 butyl acetate	700–1100	max. 15	---	max. 5	–
<b>VIALKYD®* AC 451 n</b>	Medium oil alkyd.	70 % in solvent naphtha 150/180	2700–3500	max. 6	---	max. 3	–

### 1K TC – Waterborne

<b>VIACRYL VSC 6273 w</b>	Acrylic copolymer emulsion.	44 % in water	200–2400	---	---	---	2,5
<b>VIACRYL VSC 6276 w</b>	Acrylic copolymer emulsion.	44 % in water	200–2400	---	---	---	2,5
<b>VIACRYL SC 6807 w</b>	Acrylic copolymer emulsion.	43 % in water	400–2500	---	---	---	2,3
<b>VIACRYL VSC 6800 w</b>	Polyester modified acrylic copolymer emulsion.	47 % in water	300–2000	---	---	---	3,3

### 2K TC – Waterborne

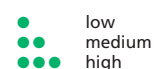
<b>MACRYNAL®* SM 6810 w</b>	Acrylic emulsion.	42 % in water	200–1200	---	---	---	4,0
<b>MACRYNAL VSM 2521 w</b>	Acrylic emulsion.	42 % in water/butanol	1000–4000	---	---	---	4,2
<b>MACRYNAL VSM 6299 w</b>	Acrylic emulsion.	42 % in water	800–4000	---	---	---	4,0

#### Key to the tables

Acid value	DIN EN ISO 2114
Colour index	Iodine colour number DIN 6162 or Hazen colour scale DIN ISO 6271
Dynamic viscosity	DIN EN ISO 3219, 23 °C
Form of delivery	non-volatile matter DIN EN ISO 3251
Hydroxyl content	DIN 53240
(1)	film thickness without blisters

#### Abbreviations

<b>OEM</b>	original equipment manufacturer
<b>sb</b>	solvent-borne
<b>wb</b>	waterborne
<b>1K</b>	one component
<b>2K</b>	two component



\***ADDITOL** additives

\***MACRYNAL** acrylic resins

\***VIACRYL** acrylic resins

\***VIALKYD** alkyd resins

Curing temperature [°C]	Key features	Key features					Chemistry
		Gloss	Weather durability	Chemical resistance	Scratch resistance	Mechanical properties	
120–150	High film hardness and flexibility, excellent chemical resistance and weather durability.	●●●	●●●	●●●	●●●	●●●	1K sb
120–140	High body and weather durability.	●●	●●	●●	●●	●●●	1K sb
120–140	Incorporated catalyst, high reactive, high gloss and hardness.	●●●	●●●	●●●	●●●	●●	1K wb
120–140	High gloss and hardness.	●●●	●●●	●●●	●●●	●●	1K wb
120–140	Excellent flow, high gloss.	●●●	●●●	●●●	●●●	●●	1K wb
130–140	High gloss, improves leveling.	●●●	●●●	●	●	●●●	1K wb
	High gloss, high film thickness.	●●●	●●●	●●	90–100 μm <sup>(1)</sup>	●●●	2K wb
	Quick drying, high chemical resistance.	●●	●●	●●●	45 μm <sup>(1)</sup>	●	2K wb
	Good drying and hardness.	●●	●●●	●●	55–60 μm <sup>(1)</sup>	●●	2K wb



# OEM Clear and Top Coat

(continued)

## Additives

Products	Product description
<b>CC or TC – Solvent-borne</b>	
<i>ADDITOL</i> <sup>®*</sup> <i>VXK 6395</i>	Amine blocked sulfonic acid.
<i>ADDITOL</i> <i>VXL 4930</i>	Polyether-modified silicone.
<i>ADDITOL</i> <i>VXL 4951</i>	Fluoro-modified silicone.
<i>ADDITOL</i> <i>VXL 6501</i>	Degassing / defoaming polymers; silicone containing.
<i>ADDITOL</i> <i>VXL 4920</i>	Quaternary ammonium compound.
<i>ADDITOL</i> <i>XL 6505</i>	Quaternary ammonium compound.
<i>ADDITOL</i> <i>XL 6507</i>	Degassing / defoaming, silicone free.
<i>ADDITOL</i> <i>XL 123 N</i>	Modified silicone.
<i>ADDITOL</i> <i>XL 480</i>	Modified acrylic copolymer; low molecular weight; FDA approved.
<i>MODAFLOW</i> Resin	Acrylic copolymer; high molecular weight; FDA approved.
<i>MODAFLOW</i> <sup>®*</sup> 2100	Acrylic copolymer; low molecular weight; FDA approved.
<i>MODAFLOW</i> 9200	Modified acrylic copolymer; low molecular weight; crosslinkable.
<i>SANTOSOL</i> <sup>®*</sup> <i>DME-1</i>	Dimethyl ester mixture.
<b>CC or TC – Waterborne</b>	
<i>ADDITOL</i> <i>XW 390</i>	Fluoro-modified acrylic copolymer; neutralized by amine.
<i>ADDITOL</i> <i>XW 395</i>	Acrylic copolymer; neutralized by amine; silicone-free; FDA approved.
<i>ADDITOL</i> <i>VXW 6396</i>	Acrylic resin amine neutralized, highly fluoro-modified, low molecular.
<i>ADDITOL</i> <i>VXW 6503</i>	Silicone tenside.
<i>ADDITOL</i> <i>VXW 6508</i>	Acrylic copolymer; neutralized by amine.
<i>MODAFLOW</i> <i>AQ 3025</i>	Acrylic copolymer; neutralized silicone free.
<i>ADDITOL</i> <i>VXL 4930</i>	Polyether-modified silicone.
<i>ADDITOL</i> <i>VXW 4926</i>	Special fatty acid esters.
<i>ADDITOL</i> <i>VXW 6386</i>	Hydrocarbons, waxes.
<i>ADDITOL</i> <i>VXW 6500</i>	Degassing polymer, solved in hydrocarbons; silicone-free.
<i>ADDITOL</i> <i>VXK 6395</i>	Amine blocked sulfonic acid.
<b>CC or TC – Powder</b>	
<i>ADDITOL</i> <i>P 791</i>	Powder aliphatic polyanhydride for GMA acrylics.

\**ADDITOL* additives

\**MODAFLOW* resin flow modifier

\**SANTOSOL* dimethyl ester

### Abbreviations

**OEM** original equipment manufacturer

**GMA** Glycidyl methacrylate

**FDA** food and drug administration

## Key features

Especially for low temperature stoving/baking applications.

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

Very effective; prevents foam and blister formation during processing and application.

Highly effective in industrial and 2K systems, anti-corrosion lacquers, PE and UV systems.

Increases conductivity for electrostatic applied lacquers.

Increases conductivity for electrostatically applied lacquers.

Highly effective in industrial and 2K-systems, anti-corrosion lacquers, PE and UV systems.

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

Reduces surface defects; good compatibility; for car-refinish applications.

Highly effective leveling agent; good wetting behaviour; degassing properties.

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

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

Slow evaporation with excellent solvency, anti-pinhole.

Excellent wetting and intercoat adhesion; no foam stabilization; crosslinkable.

Good wetting; prevent cratering and pin holes; effective against oil contaminations.

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

Excellent substrate wetting; no foam stabilization; good recoatability.

Flow and leveling; prevents surface defects; crosslinkable.

Optimizes flow and gloss; enhances degassing; facilitates pigment wetting.

Improves substrate wetting, slip and anti-cratering; excellent spray mist absorption.

Quick Defoaming/degassing; enhances build-up; crosslinkable.

For high quality lacquers; good compatibility; Homogenize well prior to use!

Very good de-aerating in forced drying and stoving/baking systems; easy to incorporate; for clear coats.

Catalyst, reduces time and temperature of bake.

Crosslinker for use with GMA-acrylic resins.

## Amino Resin Crosslinkers

Products	Product description	Form of delivery	Dynamic viscosity mPa.s 23 °C	Key features
----------	---------------------	------------------	----------------------------------	--------------

## Waterborne

<b>CYMEL®* 303 LF</b>	Highly methylated melamine resin.	≥98	3000–6000	For high solids formulations very good film flexibility, formulation stability and resistance properties.
<b>CYMEL 1133</b>	Mixed ether highly alkylated melamine resin.	≥98	750–1950	For high solids formulations with improved hydrophobicity characteristics to balance VOC and film resistance properties.
<b>CYMEL 328</b>	Methylated high NH melamine resin.	85% in water	1000–3000	For fast curing waterborne formulations with good formulation stability.
<b>CYMEL 202</b>	Mixed ether high NH melamine resin.	82% in nBuOH	2500–7500	For fast curing medium to high solids formulations with improved hydrophobicity characteristics.

## Solvent-borne conventional and medium solids

<b>CYMEL 327</b>	Methylated high NH melamine resin.	90% in iBuOH	5100–16000	For fast curing medium to high solids formulations with improved film flexibility properties.
<b>CYMEL 202</b>	Mixed ether high NH melamine resin.	82% in nBuOH	2500–7500	For fast curing medium to high solids formulations with improved hydrophobicity to obtain improved water resistance and adhesion properties.
<b>CYMEL 1158</b>	Butylated high NH melamine resin.	80% in nBuOH	3000–7000	For fast curing medium solids formulations with very good film appearance properties.
<b>CYMEL 688</b>	Partially butylated melamine resin.	70% in nBu/X	2850–5850	For fast cure, excellent compatibility and film gloss properties.

## Solvent-borne high solids

<b>CYMEL 303 LF</b>	Highly methylated melamine resin.	≥98	3000–6000	For high solids formulations very good film flexibility, formulation stability and resistance properties.
<b>CYMEL 1130</b>	Mixed ether highly alkylated melamine resin.	≥96	3000–6000	For high solids formulations with improved hydrophobicity characteristics to balance VOC and film appearance properties.
<b>CYMEL 1133</b>	Mixed ether highly alkylated melamine resin.	≥98	750–1950	For high solids formulations with improved hydrophobicity characteristics to balance VOC and film resistance properties.
<b>CYMEL 1161</b>	Mixed ether highly alkylated melamine resin.	≥98	1050–2000	For high solids formulations with improved hydrophobicity characteristics to balance VOC and adhesion properties.
<b>CYMEL 1168</b>	Mixed ether highly alkylated melamine resin.	≥98	2000–4500	For high solids formulations with improved hydrophobicity characteristics to balance VOC, adhesion and resistance properties.

\*CYMEL amino crosslinking resins

Water solubility	Formulation stability	Flow and leveling	Weight retention	Reaction speed	Film hardness	Adhesion properties	Mar resistance	Environmental etch resistance	Water resistance
●●	●●●●●			●●●	●●●	●●●	●●●●	●●	●●
●	●●●●●			●●	●●	●●●●	●●●●	●●	●●●●
●●●●●	●●●●			●●●●●	●●●●●	●●●	●●●	●●	●●
●	●●●●			●●●●●	●●●●●	●●●●	●●●	●●	●●●●
	●●●	●●	●●●●	●●●●	●●●●●	●●●	●●●	●●	●●
	●●●	●●●	●●●	●●●●	●●●●●	●●●●	●●●	●●	●●●●
	●●●	●●●●	●●	●●●	●●●●	●●●●●	●●●	●●	●●●●●
	●●	●●●●	●●	●●●●	●●●●●	●●●●●	●●●	●●	●●●●●
	●●●●●	●●●	●●●●●	●●●●	●●●●●	●●●	●●●	●●	●●●
	●●●●●	●●●●	●●●●	●●●	●●●	●●●●	●●●	●●	●●●●
	●●●●●	●●●●●	●●●	●●●	●●●	●●●●	●●●	●●	●●●●●
	●●●●●	●●●●	●●●●	●●●	●●●	●●●●●	●●●	●●	●●●●
	●●●●●	●●●●●	●●●	●●●	●●●	●●●●●	●●●	●●	●●●●●

● low  
 ●● moderate  
 ●●● good  
 ●●●● very good  
 ●●●●● excellent

Products	Product description	Form of delivery		Dynamic viscosity [mPa.s]

#### Waterborne Alkyds and Polyesters

<b>RESYDROL®* AM 224 w</b>	Modified alkyd resin.	Liquid	40 % in water	100–700 (22 % MPP)
<b>RESYDROL AN 6481 w</b>	Oil-free polyester.	Liquid	70 % in butanol/butoxypropanol, non neutralized	1000–2000
<b>RESYDROL AX 906 w</b>	Epoxy modified alkyd resin.	Liquid	35 % in water	160–560 (28 % BG)
<b>RESYDROL AZ 6608 w</b>	Urethane modified polyester.	Liquid	43 % in water	100–1500
<b>RESYDROL AZ 6612 w</b>	Urethane modified polyester, self-crosslinking.	Liquid	45 % in water	50–1500
<b>RESYDROL VAF 5540 w</b>	Modified polyester.	Liquid	70 % in methoxypropanol	300–550 (54 % BG)
<b>RESYDROL VAX 5227 w</b>	Epoxy modified polyester.	Liquid	55 % in solvent mixture	90–500 (44 % BG)
<b>RESYDROL VAX 5533 w</b>	Epoxy modified alkyd resin, self-crosslinking.	Liquid	40 % in solvent mixture	50–760 (22 % BG)
<b>RESYDROL VAZ 5550 w</b>	Urethane modified alkyd resin, self-crosslinking.	Liquid	47 % in water	50–3000
<b>RESYDROL VAZ 5555 w</b>	Urethane modified alkyd resin, self-crosslinking.	Liquid	42 % in water	100–1000
<b>RESYDROL VAZ 6600 w</b>	Urethane modified alkyd resin.	Liquid	36 % in water	100–800
<b>RESYDROL VAZ 6605 w</b>	Urethane modified alkyd resin.	Liquid	40 % in water	100–1000

#### Waterborne Polyurethane

<b>DAOTAN®* VTW 1225</b>	Polyurethane dispersion.	Liquid	40 % in water	100–800
<b>DAOTAN VTW 1233</b>	Polyurethane dispersion.	Liquid	36 % in water/ N-methylpyrrolidone	40–500
<b>DAOTAN VTW 1236 w</b>	Aliphatic polyurethane dispersion.	Liquid	40 % in water/nmp	1000–2000
<b>DAOTAN VTW 1262</b>	Polyurethane dispersion.	Liquid	35 % in water	5–50
<b>DAOTAN VTW 2229</b>	Aromatic polyurethane dispersion.	Liquid	40 % in water/ N-methylpyrrolidone	500–1200
<b>DAOTAN VTW 6434</b>	Polyurethane dispersion.	Liquid	40 % in water/ N-methylpyrrolidone	500–2200
<b>DAOTAN VTW 6460</b>	Polyurethane dispersion.	Liquid	35 % in water	20–400
<b>DAOTAN VTW 6462</b>	Acrylic modified aliphatic polyurethane dispersion, self-crosslinking.	Liquid	36 % in water	25–120

#### Key to the table

**Dynamic viscosity** DIN EN ISO 3219, 23 °C

**Form of delivery** non-volatile matter DIN EN ISO 3251

\***DAOTAN** polyurethane resins

\***RESYDROL** alkyd resins

● Recommended for use

Key features	Chemistry	Chemistry				
		Primer surfacer	Base coat	CC 1K	TC 1K	TC 2K
Basic resin, excellent balance of hardness and flexibility.	1K wb, melamine crosslinking	●				
Blending partner for polyurethane dispersion; improves leveling; could be used as grinding resin.	1K wb		●			
Modifier resin to improve hardness, corrosion resistance and adhesion.	1K wb, melamine crosslinking	●				
Modifier resin to improve flexibility and stone chip resistance.	1K wb, melamine crosslinking	●				
Basic resin with excellent allround properties and outstanding yellowing stability.	1K wb, self-crosslinking	●				
Modifier resin to improve hardness and leveling.	1K wb melamine crosslinking	●				
Modifier resin to improve corrosion resistance and adhesion.	1K wb, melamine crosslinking	●				
Modifier resin to improve hardness, corrosion resistance and adhesion.	1K wb, self-crosslinking	●				
Basic resin for low bake applications.	1K wb, self-crosslinking	●				
Basic resin with excellent allround properties.	1K wb, self-crosslinking	●				
Basic resin with excellent allround properties for low bake applications.	1K wb, melamine crosslinking	●				
Basic resin with excellent allround properties for low bake applications.	1K wb, melamine crosslinking	●				
Modifier resin to improve stone chip resistance.	1K wb, melamine crosslinking	●				
Modifier resin to improve stone chip resistance.	1K wb, melamine crosslinking	●				
Stable to shear forces, good pigment wetting, excellent adhesion on plastics.	1K wb		●			
Stable to shear forces, good pigment wetting.	1K wb		●			
Modifier resin to improve stone chip resistance.	1K wb, melamine crosslinking	●				
Modifier resin to improve stone chip resistance.	1K wb, melamine crosslinking	●				
Stable to shear forces, good pigment wetting.	1K wb		●			
Stable to shear forces, good pigment wetting, excellent adhesion on plastics.	1K wb		●			

#### Abbreviations

CC clear coat

OEM original equipment manufacturer

sb solvent-borne

TC top coat

VOC volatile content

wb waterborne

1K one component

2K two component

## Amino Resin Crosslinkers

Products	Product description	Form of delivery % solids content 45'/45°C (Foil)	Viscosity mPa.s 23°C ISO 3219
<b>CYMEL®* 3745</b>	Highly methylated melamine resin.	≥ 98	2500–7500
<b>CYMEL 303 LF</b>	Highly methylated melamine resin.	≥ 98	3000–6000
<b>CYMEL 1130</b>	Mixed ether highly alkylated melamine resin.	≥ 96	3000–6000
<b>CYMEL 1133</b>	Mixed ether highly alkylated melamine resin.	≥ 98	750–1950
<b>CYMEL 1161</b>	Mixed ether highly alkylated melamine resin.	≥ 98	1050–2000
<b>CYMEL 1168</b>	Mixed ether highly alkylated melamine resin.	≥ 98	2000–4500
<b>CYMEL 325</b>	Methylated high-NH melamine resin.	78–82	2500–4500
<b>CYMEL 327</b>	Methylated high-NH melamine resin.	88–92	5100–16000
<b>CYMEL 328</b>	Methylated high-NH melamine resin.	83–87	1000–3000
<b>CYMEL 202</b>	High-NH mixed ether melamine resin.	80–84	2500–7500
<b>CYMEL 203</b>	Mixed ether high-NH melamine resin.	70–74	400–800
<b>CYMEL 254</b>	High-NH mixed ether melamine resin.	83–87	1400–3000
<b>CYMEL 370</b>	Partially methylated melamine resin.	86–90	5100–10200
<b>CYMEL 373</b>	Partially methylated melamine resin.	83–87	2500–6000
<b>CYMEL 1158</b>	Butylated high-NH melamine resin.	78–82	3000–7000
<b>CYMEL 688</b>	Partially butylated melamine resin.	68–72 <sup>(2)</sup>	2850–5850 <sup>(1)</sup>
<b>CYMEL 683</b>	Partially butylated melamine resin.	73–77 <sup>(2)</sup>	3000–6000 <sup>(1)</sup>
<b>CYMEL MI-8-I</b>	Partially iso-butylated melamine resin.	53–57 <sup>(3)</sup>	300–500
<b>CYMEL MI-12-I</b>	Partially butylated melamine resin.	58–62 <sup>(3)</sup>	1050–1950
<b>CYMEL U-80</b>	Highly butylated urea resin.	≥ 96	1700–4500
<b>CYMEL U-640</b>	Partially butylated urea resin.	60–64 <sup>(3)</sup>	1000–1600
<b>CYMEL UI-27-IX</b>	Partially iso-butylated urea resin.	64–68 <sup>(3)</sup>	3200–4000
<b>CYMEL 659</b>	Partially butylated benzoguanamine resin.	70–74 <sup>(2)</sup>	650–1200
<b>CYMEL 1123</b>	Mixed ether highly alkylated benzoquanamine resin.	> 96	3800–10200
<b>CYMEL 1170</b>	Highly butylated glycoluril resin.	≥ 96	3000–6000
<b>CYMEL 1171</b>	Mixed ether highly alkylated glycoluril resin.	≥ 90	3800–7500

<sup>(1)</sup> at 25 °C  
<sup>(2)</sup> at 120 °C/2h Pan  
<sup>(3)</sup> at 100 °C/1h Pan

### Key to the table

**Dynamic viscosity** DIN EN ISO 3219, 23 °C  
**Form of delivery** non-volatile matter DIN EN ISO 3251

\***CYMEL** amino crosslinking resins

● Recommended for use

## Key features

Key features	Primer surfacer	Base coat	CC 1K	TC 1K
For high solids formulations slightly more water soluble compared to <i>CYMEL</i> ®* 303LF.	●	●		●
For high solids formulations very good film flexibility, formulation stability and resistance properties.	●	●		●
For high solids formulations with improved hydrophobicity characteristics to balance VOC and film appearance properties.	●		●	●
For high solids formulations with improved hydrophobicity characteristics to balance VOC and film resistance properties.	●		●	●
For high solids formulations with improved hydrophobicity characteristics to balance VOC and adhesion properties.	●		●	●
For high solids formulations with improved hydrophobicity characteristics to balance VOC, adhesion and resistance properties.	●		●	●
For very fast curing medium to high solids formulations.		●		●
For fast curing medium to high solids formulations with improved film flexibility properties.	●	●		●
For fast curing waterborne formulations with good formulation stability.	●	●		●
For fast curing medium to high solids formulations with improved hydrophobicity characteristics.	●	●	●	●
For very fast curing medium to high solids formulations with improved hydrophobicity to obtain good metal flakes orientation properties.	●	●	●	●
For fast curing medium to high solids formulations with improved hydrophobicity to obtain improved water resistance and adhesion properties.	●	●	●	●
For fast curing water and solvent-borne formulations.	●	●		
For fast curing waterborne formulations.	●	●		
For fast curing medium solids formulations with very good film appearance properties.			●	●
For fast cure, excellent compatibility and film gloss properties.			●	●
For topcoat and clearcoat formulations.			●	●
For fast cure and very good metal flakes orientation.		●		
For fast cure primer formulations.				
For high solids primer formulations with excellent compatibility and adhesion properties.	●			
For primer formulations with very good adhesion properties.	●			
For fast cure primer formulations with excellent adhesion properties.	●			
For primer formulations with good adhesion and corrosion resistance properties.	●			
For primer formulations to improve adhesion and chemical resistance properties.	●			
For high solids high quality formulations.	●			
For high solids and waterborne high quality formulations.	●			

## Abbreviations

CC	clear coat
TC	top coat
1K	one component
2K	two component

# 32 Product Range (continued)

Products	Product description	Form of delivery		Dynamic viscosity [mPa.s]

## Waterborne Acrylic

<b>ADDITOL®* VXW 6396</b>	Highly fluoro-modified acrylic copolymer; neutralized by amine; low molecular weight.	Liquid	–	–
<b>ADDITOL VXW 6502</b>	Neutralized acrylic copolymer.	Liquid	–	–
<b>ADDITOL VXW 6508</b>	Acrylic copolymer; neutralized by amine.	Liquid	–	–
<b>ADDITOL XW 390</b>	Fluoro-modified acrylic copolymer; neutralized by amine.	Liquid	–	–
<b>ADDITOL XW 395</b>	Acrylic copolymer; neutralized by amine; silicone-free; FDA approved.	Liquid	–	–
<b>ADDITOL XW 6528</b>	Polyester-modified acrylic resin.	Liquid	–	–
<b>MACRYNAL®* SM 6810 w</b>	Acrylic emulsion.	Liquid	42 % in water	200–1200
<b>MACRYNAL VSM 2521 w</b>	Acrylic emulsion.	Liquid	42 % in water/butanol	1000–4000
<b>MACRYNAL VSM 6299 w</b>	Acrylic emulsion.	Liquid	42 % in water	800–4000
<b>MODAFLOW®* AQ 3025</b>	Acrylic resin amine neutralized silicone-free.	Liquid		
<b>VIACRYL®* SC 6807 w</b>	Acrylic copolymer emulsion.	Liquid	43 % in water	400–2500
<b>VIACRYL VSC 6254 w</b>	Acrylic emulsion.	Liquid	40 % in water	150–700
<b>VIACRYL VSC 6273 w</b>	Acrylic copolymer emulsion.	Liquid	44 % in water	200–2400
<b>VIACRYL VSC 6276 w</b>	Acrylic copolymer emulsion.	Liquid	44 % in water	200–2400
<b>VIACRYL VSC 6800 w</b>	Polyester modified acrylic copolymer emulsion.	Liquid	47 % in water	300–2000

### Key to the table

Dynamic viscosity DIN EN ISO 3219, 23 °C  
Form of delivery non-volatile matter DIN EN ISO 3251

● Recommended for use

### Abbreviations

<b>CC</b>	clear coat	<b>wb</b>	waterborne
<b>OEM</b>	original equipment manufacturer	<b>1K</b>	one component
<b>sb</b>	solvent-borne	<b>2K</b>	two component
<b>TC</b>	top coat		

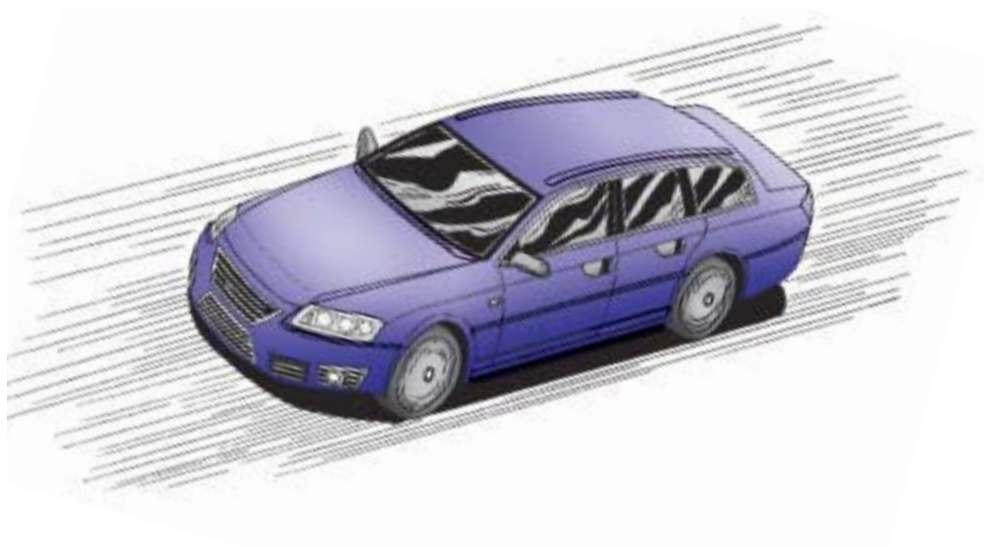
\***ADDITOL** additives

\***MACRYNAL** acrylic resins

\***MODAFLOW** resin flow modifier

\***VIACRYL** acrylic resins

Key features	Chemistry	Chemistry				
		Primer surfacer	Base coat	CC 1K	TC 1K	TC 2K
Excellent leveling and wetting properties; no foam stabilization; good recoatability.	-			•	•	•
Enhancement of flow and leveling.	-	•	•			
Enhances flow and leveling; prevents surface defects; crosslinkable.	-			•	•	•
Excellent wetting and intercoat adhesion; no foam stabilization; crosslinkable.	-			•	•	•
Good wetting; prevents cratering and pin holes; effective against oil contaminations.	-			•	•	•
Crosslinkable grinding resin with improved anti-corrosion properties.	-	•	•			
High gloss, high film thickness.	2K wb					•
Quick drying, high chemical resistance.	2K wb					•
Good drying and hardness.	2K wb					•
Leveling, anti-cratering without intercoat adhesion problems.				•	•	•
Excellent flow, high gloss.	1K wb			•	•	
Improves physically drying and hardness.	1K wb		•			
Incorporated catalyst, high reactive, high gloss and hardness.	1K wb			•	•	
High gloss and hardness.	1K wb			•	•	
High gloss, improves leveling.	1K wb			•	•	



# 34 Product Range (continued)

Products	Product description	Form of delivery		Dynamic viscosity [mPa.s]

## Other Waterborne Systems

<b>ADDITOL®* VXL 4930</b>	Polyether-modified silicone.	Liquid		
<b>ADDITOL VXW 4926</b>	Special fatty acid ester.	Liquid		
<b>ADDITOL VXW 6208</b>	Nonionically stabilised polymer; diluted in water.	Liquid		
<b>ADDITOL VXW 6386</b>	Hydrocarbons, waxes.	Liquid		
<b>ADDITOL VXW 6387</b>	Special fatty acids; amine neutralized; silicone-free.	Liquid		
<b>ADDITOL VXW 6500</b>	Degassing polymer, solved in hydrocarbons silicone-free.	Liquid		
<b>ADDITOL VXW 6503</b>	Silicone tenside.	Liquid		
<b>ADDITOL XL 204</b>	Silicone containing phosphoric acid ester; anionic.	Liquid		
<b>ADDITOL XL 250</b>	Phosphoric acid ester, neutralized by amine; anionic; low molecular.	Liquid		
<b>RESYDROL®* VAX 5538 w</b>	Epoxy mod. Phosphoric acid ester.	Liquid	50 % in water	1000–8000
<b>RESYDROL VAZ 6625 w</b>	Urethane mod. anionic resin.	Liquid	31 % in water/ N-methylpyrrolidone	50–800

## Solvent-borne Alkyds & Polyester

<b>DUROFTAL®* PE 912</b>	Saturated oilfree polyester.	Liquid	60 % in solvent naphtha 150/180	1000–1800
<b>DUROFTAL PE 912 sca</b>	Saturated oilfree polyester, sca modified.	Liquid	50 % in solvent naphtha 150/180 and xylene	350–1200
<b>DUROFTAL VPE 6117</b>	Aliphatic polyester.	Liquid	100 %	6000–12000
<b>VIALKYD®* AC 451 n</b>	Medium oil alkyd.	Liquid	70 % in solvent naphtha 150/180	2700–3500
<b>VIALKYD AN 903/70 EPAC</b>	Modified polyester.	Liquid	70 % in ethoxypropylacetat	2100–3500
<b>VIALKYD AN 927/70 X</b>	Modified polyester.	Liquid	70 % in xylene	1800–3500
<b>VIALKYD AN 950/70 X</b>	Modified polyester.	Liquid	70 % in xylene	2300–3100
<b>VIALKYD VAN 4392</b>	Modified polyester.	Liquid	65 % in solvent naphtha 150 /180	120–320 (55 % SNAIB)

## Solvent-borne Epoxy

<b>BECKOPOX®* EP 301/75 X</b>	Epoxy resin.	Liquid	75 % in xylene	7800–13000
-------------------------------	--------------	--------	----------------	------------

\***ADDITOL** additives  
 \***BECKOPOX** epoxy resins  
 \***DUROFTAL** polyester resins  
 \***RESYDROL** alkyd resins  
 \***VIALKYD** alkyd resins

### Key to the table

**Dynamic viscosity** DIN EN ISO 3219, 23 °C  
**Form of delivery** non-volatile matter DIN EN ISO 3251

● Recommended for use

Key features	Chemistry	Primer surfacer	Base coat	CC 1K	TC 1K	TC 2K
Highly effective; good spray mist absorption; prevents orange peel; no foam stabilization.				•	•	•
Quick Defoaming /degassing; enhances build-up; crosslinkable.				•	•	•
For inorg./org. pigments and pigment concentrates / pastes.		•	•			
For high quality lacquers; good compatibility; Homogenize well prior to use!				•	•	•
Prevents pigment sedimentation; reduces sagging; improves storage stability.		•	•			
Very good de-aerating in forced drying and stoving/baking systems; easy to incorporate; for clear coats.				•	•	•
Excellent substrate wetting; no foam stabilization; good recoatability.				•	•	•
Prevents floating and Bénard cells; reduces dispersing time.		•	•			
Reduced dispersion time; enhances flow; gloss and color strength.		•	•			
Modifier resin to improve adhesion and corrosion resistance.	1K wb, melamine crosslinking	•				
Modifier resin to improve hardness and stone chip resistance.	1K wb	•				
Good compatibility with CAB, good pigment wetting.	1K sb		•			
Improves application properties by control of sagging.	1K sb		•			
Blending partner – max 20 % addition, improves body, solids content, gloss and flexibility.	1K sb			•		
High body and weather durability.	1K sb				•	
Basic resin with excellent allround properties.	1K sb, melamine crosslinking	•				
Basic resin, excellent balance of hardness and flexibility.	1K sb, melamine crosslinking	•				
Basic resin with excellent allround properties, good compatibility with CAB, good pigment wetting and weather resistance.	1K sb, melamine crosslinking	•	•			
Basic resin, excellent balance of hardness and flexibility.	1K sb, melamine crosslinking	•				
Modifier resin to improve adhesion and corrosion resistance.	1K sb, melamine crosslinking	•				

#### Abbreviations

CC	clear coat	wb	waterborne
sb	solvent-borne	1K	one component
sca	sagging control agent	SNAIB	solvent naphtha A isobutanol
TC	top coat	CAB	cellulose aceto butyrate

# 36 Product Range (continued)

Products	Product description	Form of delivery		Dynamic viscosity [mPa.s]
<b>Solvent-borne Acrylic</b>				
<i>ADDITOL VXL 6212 N</i>	Urethane modified acrylic copolymer; high molecular; cationic.	Liquid		
<i>ADDITOL VXL 6237 N</i>	Wetting/dispersing agent; high molecular; cationic.	Liquid		
<i>ADDITOL XL 260 N</i>	Urethane modified acrylic copolymer; high molecular, non ionic.	Liquid		
<i>ADDITOL®* XL 480</i>	Modified acrylic copolymer; low molecular weight; FDA approved.	Liquid		
<i>MODAFLOW®* Resin</i>	Acrylic copolymer; low molecular weight; FDA approved.	Liquid		
<i>MODAFLOW 2100</i>	Acrylic copolymer, low molecular, FDA approved.	Liquid		
<i>MODAFLOW 9200</i>	Modified acrylic copolymer; low molecular weight; crosslinkable.	Liquid		
<i>VIACRYL®* SC 303</i>	Acrylic resin	Liquid	55 % in solvent mixture	1700–2600
<i>VIACRYL SC 341</i>	Acrylic resin	Liquid	60 % in solvent naphtha 150/180 butyl acetate	1000–2000
<i>VIACRYL SC 370</i>	Acrylic resin	Liquid	75 % in solvent naphtha 150/180	4200–7000
<i>VIACRYL SC 370</i>	Acrylic resin	Liquid	70 % in solvent naphtha 150/180 butanol	1000–1500
<i>VIACRYL SC 2956 sca</i>	Acrylic resin sca modified.	Liquid	50 % in solvent naphtha 150/180 and xylene	700–1300
<i>VIACRYL SC 2960</i>	Acrylic resin	Liquid	75 % in solvent naphtha 150/180	4000–7000
<i>VIACRYL VSC 5754</i>	Polyester modified acrylic resin.	Liquid	60 % in solvent naphtha 150/180 butyl acetate	700–1100
<i>VIACRYL VSC 9419 sca</i>	Acrylic resin, sca modified.	Liquid	48 % in solvent naphtha 150/180 and xylene	500–1200

#### Key to the table

Dynamic viscosity DIN EN ISO 3219, 23 °C

Form of delivery non-volatile matter DIN EN ISO 3251

- Recommended for use

#### Abbreviations

CC	clear coat
sb	solvent-borne
sca	sagging control agent
TC	top coat
1K	one component
2K	two component
CAB	cellulose aceto butyrate

\**ADDITOL* additives

\**MODAFLOW* resin flow modified

\**VIACRYL* acrylic resins

Key features	Chemistry	Chemistry				
		Primer surfacer	Base coat	CC 1K	TC 1K	TC 2K
Highly effective for difficult wettable inorg. and org. pigments; improved effectiveness in acrylic systems.		•	•			
For difficult wettable pigments as well as for pigment concentrates/pastes.		•	•			
Highly effective for difficult wettable inorg. and org. pigments.		•	•			
Reduces surface defects; good compatibility; for car-refinish applications.		•	•	•	•	•
Highly effective leveling agent; good wetting behaviour; degassing properties.		•	•	•	•	•
Highly effective; good compatibility; short incorporation time and fast mode of action.		•	•	•	•	•
Reduces surface defects; excellent compatibility; for high-end applications with excellent gloss.		•	•	•	•	•
Good compatibility with CAB, good pigment wetting and weather resistance.	1K sb		•			
Easy handling, high gloss.	1K sb			•		
Improves body, solids content and gloss.	1K sb			•	•	
Improves body, solids content and gloss.	1K sb			•	•	
Improves application properties by control of sagging.	1K sb			•	•	
High scratch resistance, tough-elastic, gloss.	1K sb			•		
High film hardness and flexible, excellent chemical resistance and weather durability.	1K sb				•	
Improves application properties by control of sagging.	1K sb		•	•		



Products	Product description	Modi- fication / Oil-free	Form of delivery		Dynamic viscosity [mPa.s]

### Other Solvent-borne

<b>ADDITOL®* VXK 6395</b>	Amine blocked sulfonic acid.	Additive	Liquid		
<b>ADDITOL VXL 4920</b>	Quaternary ammonium compound.	Additive	Liquid		
<b>ADDITOL VXL 4930</b>	Polyether modified silicone.	Additive	Liquid		
<b>ADDITOL VXL 4951</b>	Fluoro-modified silicone.	Additive	Liquid		
<b>ADDITOL VXL 6501</b>	Degassing/ defoaming polymers; silicone containing.	Additive	Liquid		
<b>ADDITOL VXW 6387</b>	Special fatty acids; amine neutralized; silicone-free.	Additive	Liquid		
<b>ADDITOL VXW 6395</b>	Amine blocked sulfonic acid.	Additive	Liquid		
<b>ADDITOL XL 123 N</b>	Modified silicone.	Additive	Liquid		
<b>ADDITOL XL 180</b>	Phosphoric acid compound.	Additive	Liquid		
<b>ADDITOL XL 204</b>	Silicone containing phosphoric acid ester; anionic.	Additive	Liquid		
<b>ADDITOL XL 250</b>	Phosphoric acid ester, neutralized by amine; anionic; low molecular.	Additive	Liquid		
<b>ADDITOL XL 270</b>	Modified silicone; amine neutralized.	Additive	Liquid		
<b>ADDITOL XL 433/60 MPAC</b>	Blocked isocyanate crosslinker based on IPDI, diluted in MPAC.		Liquid	60 % in methoxypropyl- acetate	9000 – 13000
<b>ADDITOL XL 6505</b>	Quaternary ammonium compound.	Additive	Liquid		
<b>ADDITOL XL 6507</b>	Degassing defoaming silicone free.	Additive	Liquid		
<b>SANTOSOL®* DME-1</b>	Dimethylester mixture.	Additive	Liquid		

Products	Product description	Modi- fication / Oil-free	Form of delivery		viscosity at 200 °C, mPa.s

### Powder Polyester

<b>CRYLCOAT®* 1622-0</b>	Polyester resin for polyester/epoxy blend.	Polyester	Powder	Flakes	2600
<b>CRYLCOAT 1783-0</b>	Polyester resin for polyester/epoxy blend.	Polyester	Powder	Flakes	5000
<b>UVECOAT®* 2300</b>	Unsaturated polyester resin.	Polyester	UV Powder	Flakes	2700

\*ADDITOL additives

\*CRYLCOAT powder polyester resins

\*SANTOSOL dimethyl esters

\*UVECOAT UV powder resins

#### Key to the tables

Dynamic viscosity DIN EN ISO 3219, 23 °C

Form of delivery non-volatile matter DIN EN ISO 3251

● Recommended for use

## Key features

Key features	Primer surfacer	Base coat	CC 1K	TC 1K	TC 2K
Catalyst, reduces time and temperature of bake.	●	●	●	●	●
Increases conductivity for electrostatic applied lacquers			●	●	●
Highly effective; good spray mist absorption; prevents orange peel; no foam stabilization.			●	●	●
Very effective; prevents foam and blister formation during processing and application.			●	●	●
Highly effective in industrial and 2K systems, anti-corrosion lacquers, PE and UV systems.			●	●	●
Prevents pigment sedimentation; reduces sagging; improves storage stability.	●	●			
Especially for low temperature stoving/baking applications.	●	●	●	●	●
Excellent slip and scratch resistance; degassing; thermostable up to 400 °C.			●	●	●
Enhances intercoat adhesion.	●	●			
Prevents floating and Bénard cells; reduces dispersing time.	●	●			
Reduced dispersion time; enhances flow; gloss and color strength.	●	●			
Suitable for high gloss systems; prevents floating and sedimentation.	●	●			
Improves stone chip resistance and hardness of saturated polyesters.					
Increases conductivity for electrostatically applied lacquers.	●	●	●	●	●
Highly effective in industrial and 2K-systems, anti-corrosion lacquers, PE and UV systems.			●	●	●
Slow evaporation with excellent solvency, anti-pinhole.	●	●	●	●	●

## Key features

Key features	Primer surfacer	Base coat	CC 1K	TC 1K	TC 2K	Powder 1K
Very good properties and excellent flow.	●					
Excellent flow, high gloss and elasticity.	●					
For application on metal or SMC. For interior use. Good adhesion on metal up to 75 µm.	●					

## Abbreviations

<b>CC</b>	clear coat
<b>sb</b>	solvent-borne
<b>TC</b>	top coat
<b>wb</b>	waterborne

<b>1K</b>	one component
<b>2K</b>	two component
<b>SMC</b>	sheet moulded component
<b>GMA</b>	glycidyl methacrylate

# Contacts

## EUROPE

### Cytec Surface Specialties SA/NV

Erasmus Office Park  
Square Marie Curie 11  
B-1070 Brussels  
Belgium  
Tel: +32 2 560 4511  
Fax: +32 2 560 4521

## USA

### Cytec Surface Specialties Inc.

1950, Lake Park Drive  
Smyrna-30080 Georgia  
United States  
Tel: +1 770 434 6188  
Fax: +1 770 434 8314

#### Trademark notice:

The ® symbol indicates a Registered Trademark in the United States and the TM or \* indicates a Trademark in the United States. The mark may also be registered, the subject of an application for registration or a trademark in other countries.

Trademark SANTOSOL under license from Proprietor Solutia Inc.

**Disclaimer:** Cytec Industries Inc. in its own name and on behalf of its affiliated companies (hereinafter 'Cytec Industries') decline any liability with respect to the use made by any third party of the information contained herein. The information contained herein represents Cytec Industries' best knowledge thereon without constituting any express or implied guarantee or warranty of any kind (including, but not limited to, regarding the accuracy, the completeness or relevance of the data set out herein). Cytec Industries is the sole owner or authorized user of the intellectual property rights relating to the information communicated.

The information relating to the use of the products is given for information purposes only. No guarantee or warranty is provided that the product is adapted to the client's specific use. The client should perform its own tests to determine the suitability for a particular purpose. The final choice of use of a product remains the sole responsibility of the client.

Pub. No. 250175E, Version B

[www.cytec.com](http://www.cytec.com)