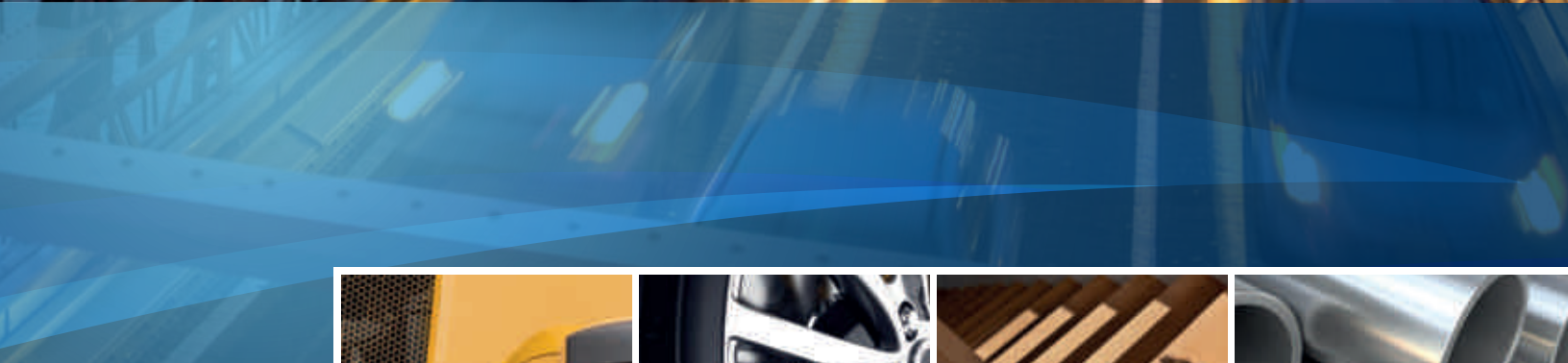


# LIQUID RESINS & ADDITIVES LATIN AMERICA



# About allnex



## Facts & Figures

- Global company with €2.2 bn in sales
- Broad Technology portfolio: liquid coating resins, energy curable resins, powder coating resins, crosslinkers and additives, composites and construction materials
- Approximately 4000 employees
- Customers in more than 100 countries
- 33 manufacturing facilities
- 23 research and technology centers
- 6 joint ventures
- Extensive range of solutions for key coating segments: automotive, industrial, packaging coating and inks, protective, industrial plastics and specialty architectural

With manufacturing, R&D and technical facilities located throughout Europe, North America, Asia Pacific and Latin America, allnex offers global and reliable supply of resins and additives combined with local, responsive customer support.

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## Introduction

allnex is a leading producer of liquid coating resins and additives (LRA). The LRA business provides a comprehensive range of products with its core technologies including: Alkyds, Acrylics, Epoxies, Polyesters, Polyurethane Dispersions and Additives for use in water borne, solvent borne and solvent free paint and coatings. Our products lend themselves

to be used in multiple end-user segments including Automotive OEM, Vehicle Refinish, Marine & Protective, High End Metal Finishes, Decorative and Construction. With research and development and technical facilities located on five continents, we offer innovative solutions to fulfill technical and regulatory requirements around the world.





## SOLVENT BORNE

Resin type	Trade names	Resin sub type	Page
Acrylic Resin	MACRYNAL®	Acrylic polyol, low solids	10
	SETALUX®	Acrylic polyol, medium solids	10
	VIACRYL®	Acrylic polyol, high solids	12
		Thermoplastic acrylic	12
		Thermosetting acrylic	12
Alkyd Resin	SETAL®	Long oil alkyd	14
	SETYRENE®	Long oil alkyd, styrene modified	18
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		Short oil alkyd	12
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Natural Oil Polyol	SETATHANE®	Polyester polyol	24
		Polyether-ester polyol	24
Polyester Resin	DUROFTAL®	Polyester polyol	18
	SETAL®	Saturated polyester	18
Rheology Control Resin	SETAL®	Long oil alkyd, thixotropic modified	26
		Polyester polyol, SCA modified	26
		Saturated polyester, SCA modified	26
Unsaturated Polyester Resin	ROSKYDAL®	Amine-accelerated unaturated polyester resin	22
		Standard unsaturated polyester resin	22

WATER BORNE

Resin type	Trade names	Resin sub type	Page
Acrylic Resin	UCECRYL® SETAQUA® VIACRYL®	Water Borne Acrylic Emulsions	32
		Acrylic polyol emulsion	34
		Thermosetting water borne acrylic	30
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	UCECRYL®	Acrylic emulsion	32
Alkyd Resin	RESYDROL®	Water borne alkyd for air drying	34
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CED Resin	RESYDROL®	Epoxy resin for Industrial CED	38
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		Radiation curable resin for Industrial CED	38
Epoxy Resin	DUROXYN™	Epoxy ester	36
	BECKOPOX™	Epoxy resin	36
		One-component epoxy resin	36
Epoxy Hardener	BECKOCURE™	Amine hardener for Easy Cure system	36
	BECKOPOX™	Amine hardener	36
Polyester Resin	DUROFTAL®	Water borne polyester resin	34
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	SETAQUA®		
Polyurethane Resin	DAOTAN™	Polyurethane dispersion	40

ADDITIVES

Trade names	Additive sub type	Page
ADDITOL®	Dispersing additives	42
MODAFLOW®	Hybrid polymer leveling	42
ADDITOL®	Drier	44
MODAFLOW®	Flow and leveling additive	42
ADDITOL®	Rheology additive	44
	Wetting and dispersing additive	42

## ABBREVIATIONS

AEW	Amine Equivalent Weight	Met	Methanol
AC	Acetone	MFFT	Minimal Film Forming Temperature
AHC	Aliphatic hydrocarbons	MP	Methoxy propanol
AV	Acid Value	MPP	Methoxypropoxy propanol
APEO	Alkyl phenol ethoxylate	MS	Mineral Spirits
A100	Aromatic 100	n.a.	not applicable
A150	Aromatic 150	nBut	n-Butanol
BG	Butyl glycol	NEP	N-Ethyl pyrrolidone
BP	Butoxy propanol	NH3	Ammonia
nBP	n-Butyl propionate	OH	Hydroxyl Value
BuAc	Butyl acetate	PCBTF	Parachlorobenzotrifluoride
nBA	N-Butyl alcohol	PE	Propoxy ethanol
CED	Cathodic electrodeposition	PGME	Propylene glycol methyl ether
COCO	Coconut	PGMEA	Propylene glycol methyl ether acetate
DCO	Dehydrated castor oil	PMA	Methoxy propyl acetate
D40	Solvent D40	SB	Solvent borne
D60	Solvent D60	SCA	Sag Control Agent
DEGBE	Diethylene glycol monobutyl ether	SN	Solvent Naphtha
DMEA	Dimethyl ethanol amine	SN 180-210	Solvent Naphtha 180-210
DPGDME	Dipropylene glycol dimethyl ether	SOFA	Soya bean fatty acids
DPM	Dowanol DPM <sup>1)</sup>	Sty	Styrene
EEP	Ethyl 3-Ethoxypropionate	TDI	Toluene diisocyanate
EEW	Epoxy Equivalent Weight	TEA	Triethyl amine
EPA	Ethoxypropyl acetate	Tex	Texanol
Eth	Ethanol	Tol	Toluene
HEW	Hydroxy Equivalent Weight	TPG	Tripropylene glycol
i-But	Isobutanol	Tur	Turpentine
i-Pro	Isopropanol	WA	Demineralized water
KOH	Potassium Hydroxide	WB	Water borne
MAK	Methyl n-Amyl Ketone	Xyl	Xylene
MB	Methoxy butanol		

<sup>1)</sup> Dowanol is a registered trade mark of The Dow Chemical Company



## GENERAL NOTES

Listed values are indicative averages. See datasheets for actual specifications and measuring methods.

Equivalent Weights are given in gram/equivalent, calculated on delivery form.

The thixotropic index for rheology control resins is defined as the ratio between low shear viscosity and high shear viscosity.

All following trade names are registered and owned by allnex.

Trade name	Resin sub type
ADDITOL®	Dispersing, leveling, defoaming, drying additives
BECKOCOAT®	Moisture curing resins
BECKOCURE™	Amine hardeners for epoxy resins and dispersions
BECKOPOX™	Water borne and solvent borne epoxy resins and hardeners
DAOTAN™	Water borne polyurethane dispersions
DUROFTAL®	Solvent borne hydroxylated polyesters
DUROXYN™	Water borne and solvent borne epoxy ester resins
G-CURE®	Acrylic Polyol
MACRYNAL®	Water borne and solvent borne acrylic polyols
MODAFLOW®	Flow and leveling additives
MULTIFLOW®	Flow and leveling additives
RESAMIN®	Solvent borne plasticizing resin
RESYDROL®	Water borne modified alkyd resins
ROSKYDAL®	Unsaturated polyesters
SETAL®	Solvent borne alkyd and polyester resins
SETALUX®	Solvent borne acrylic resins
SETAQUA®	Water borne acrylic and alkyd resins
SETATHANE®	Hydrophobic polyols
SETYRENE®	Acrylic modified short oil alkyd
UCECRYL®	Water borne acrylic emulsions
VIACRYL®	Water borne and solvent borne acrylic resins
VIALKYD®	Solvent borne alkyd resins

## SOLVENT BORNE ACRYLIC RESINS

Resin name	OH - % (on solids)	HEW (as supplied)	NV (%)	Solvents	Viscosity (23°C, Pa.s) or Gardner	AV as supplied (mg KOH/g)
<b>Acrylic Polyol - Low Solids</b>						
G-CURE® 867PX60 (17-0866)	2.7	1060	60	PMA/ Xyl	4.2	n.a.
MACRYNAL® SM 540/60X	1.4	240	60	Xyl	2.0	max. 3.0
MACRYNAL® SM 548/50X	2.0	1725	50	Xyl	0.9	max. 2.5
SETALUX® 1184 SS-51	2.0	1630	52	BuAc	9.2	3.6
SETALUX® D A 450 BA (17-4450)	2.0	1700	50	BuAc	4.0	4.0
SETALUX® H-1760 (17-5882)	1.7	1700	58	Xyl	3.2	max. 13
MACRYNAL® VSM 2706/60X	2.6	1100	60	Xyl	2.5	5.7
SETALUX® D A 160 X (17-4161)	2.7	1065	60	Xyl	1.8	4.0
SETALUX® D A 163 X (17-4163)	2.7	1000	63	Xyl	4.4	4.0
SETALUX® 17-1152	4.2	400	51	Xyl / A100 / BuAc	U+ to X+	8
SETALUX® D A 960 SN (17-4096)	1.3	2265	60	A100	4.6	3.6
MACRYNAL® SM 500/60X	2.9	1050	60	Xyl	2.9	4.5
MACRYNAL® VSM 1509/60LG	3.0	935	60	BuAc / A100	6.0	7.2
SETALUX® 17-1608	2.8	1000	60	Xyl	4.6	17.0
SETALUX® 17-1745	2.0	1700	50	BuAc	4.6	14.0
SETALUX® 17-4451	2.0	1700	50	BuAc/ Xyl	4.5	4.5
SETALUX® 17-2400	3.1	870	63	nBP / Xyl	4.6	15.0
SETALUX® 57-2500	4.2	670	60	PCBTF / AC	2.7	27.0
SETALUX® 1186 SS-60	3.0	930	61	Xyl / A100 / BuAc	2.2	4.8
SETALUX® 1199 XS-60	3.5	810	60	Xyl / A100 / BuAc	6.0	6.9
MACRYNAL® SM 510n/60LG	4.5	625	60	Xyl / BuAc / A100	3.0	4.5
<b>Acrylic Polyol - Medium Solids</b>						
G-CURE® 105P70 (17-0105)	3.0	810	70	PMA	12.0	n.a.
MACRYNAL® SM 2727/70X	2.7	890	70	Xyl	2.2	4.6
SETALUX® 1218 VX-70 (17-1218)	2.8	870	70	A100 / Xyl	4.1	6.5
SETALUX® D A 870 BA (17-4760)	4.2	575	70	BuAc	3.5	7.5
SETALUX® D A 365 BA/X (17-4365)	4.5	580	65	BuAc / Xyl	3.0	7.5
MACRYNAL® SM 515/70BAC	4.5	535	70	BuAc	4.8	5.2
MACRYNAL® SM 516/70BAC	4.5	535	70	BuAc	9.0	5.2
SETALUX® 17-1447	4.2	570	70	BuAc / Xyl	4.6	15.0

Color (max. value)	Density (kg/dm <sup>3</sup> )	Description and Features
100 APHA	1.03	Durable and flexible. Good chemical resistance and color retention.
200 APHA	0.99	High gloss, excellent mechanical properties and superior adhesion to metals and non-iron metals (aluminum, zinc). Low NCO demand. Recommended for industrial metal primers and topcoats.
70 APHA	0.98	Fast drying two-component systems with high hardness for industrial topcoats. Low NCO demand.
50 APHA	1.01	Excellent fast drying, very good through hardening, good stackability, long pot life, good chemical resistance, excellent mar and stain resistance, good light fastness, good compatibility with poly-isocyanates.
50 APHA	1.01	Extremely fast-drying.
2 Gardner	0.99	Cost effective hydroxylated Acrylic resin with good hardness and gloss.
200 APHA	0.99	Fast drying two-component coatings for the industrial lacquer sector. Low NCO demand, better and good outdoor durability.
50 APHA	0.98	Good weather stability and good resistance to water, washing solutions and chemicals.
50 APHA	0.98	Good weather stability and good resistance to water, washing solutions and chemicals.
125 APHA	0.98	Ease of application, high film build and good chemical resistance for excellent outdoor durability. Good pigment wetting. Minimize tint colorant problems.
50 APHA	1.00	Good lightfastness and chalking resistance, good single-coat adhesion on steel and most non-ferrous metals.
70 APHA	0.97	High gloss, good mechanical properties and good adhesion to metals and plastic substrates. In combination with polyisocyanates for air drying as well as forced drying primers and topcoats in industrial applications.
100 APHA	1.04	Very fast drying, good balance of elasticity and hardness. High outdoor durability. For auto refinish systems.
100 APHA	1.02	Fast dry. Flexible. Good chemical resistance. Good outdoor durability.
100 APHA	1.01	Fast dry with long pot life. Good mar and stain resistance.
50 APHA	1.01	Fast dry. Good durability, gloss and chemical resistance.
50 APHA	1.01	Fast hardness development and chemical resistance. Ready to buff in two hours. Excellent gloss, DOI and good durability.
30 APHA	1.11	Clearcoat / Monocoat for vehicle refinish. Modifying resin for bicomponent basecoats. Fast healing and longer pot life.
40 APHA	1.00	Excellent hardness, very good exterior durability, good gloss, good build, excellent solvent and mechanical resistance and excellent mechanical properties.
35 APHA	1.01	High mechanical strength and good corrosion, chemical and weather resistance.
25 APHA	1.01	At ambient temperature drying or forced drying two-component systems with high gloss, excellent mechanical properties, superior outdoor durability and chemical resistance, in particular for automotive refinish topcoats and clearcoats.
100 APHA	1.09	High build. High volume solids.
100 APHA	1.04	Air drying as well as forced drying industrial applications. Fast drying systems with high hardness, robustness and good UV resistance.
50 APHA	1.01	Fast drying and good chemical resistance, good adhesion.
50 APHA	1.03	High hardness with very high flexibility, high gloss and body, outstanding weather and lightfastness, good solvent and gasoline resistance.
100 APHA	1.03	High hardness and toughness with good flexibility, high gloss and body, excellent weather stability and lightfastness, good solvent and gasoline resistance.
80 Hazen	1.05	Air drying and forced drying two-component systems with high gloss, excellent mechanical properties and excellent chemical resistance. Best in class for automotive refinish.
70 Hazen	1.05	Air drying and forced drying two-component medium high solids systems with high gloss, excellent mechanical properties, excellent chemical resistance and good outdoor durability for automotive refinish topcoats and clearcoats.
30 APHA	1.04	For high quality clear coats and wet-on-wet systems.

## SOLVENT BORNE ACRYLIC RESINS

Resin name	OH - % (on solids)	HEW (as supplied)	NV (%)	Solvents	Viscosity (23°C, Pa.s) or Gardner	AV as supplied (mg KOH/g)
<b>Acrylic Polyol - Medium Solids (continued)</b>						
SETALUX® 17-1746	2.1	1200	65	BuAc	4.6	max. 3.1
SETALUX® D A 665 BA/X (17-4665)	4.6	570	65	BuAc / Xyl	2.4	6.5
MACRYNAL® SM 2855/70BAC	6.0	400	70	BuAc	4.2	5.2
TIRES® 2890	3.0	900	70	BuAc	2.5	7.0
<b>Acrylic Polyol - High Solids</b>						
SETALUX® 27-1550	4.2	500	80	MAK	2.3	max. 5
SETALUX® 27-1551	4.2	500	80	BuAc	2.7	max. 5
SETALUX® 27-1316	2.1	1000	80	BuAc	6.3	max. 7.5
MACRYNAL® SM 2703/80BACX	2.2	768	80	BuAc / Xyl	8.0	5.6
SETALUX® 1915 BA-75	4.1	550	75	BuAc	5.8	4.5
MACRYNAL® VSM 2805/80BAC	4.3	560	80	BuAc	6.2	7.2
SETALUX® 1909 BA-75 (27-1909)	5.0	450	75	BuAc	3.0	6.2
<b>Thermoplastic Acrylic</b>						
SETALUX® 17-1261	n.a.	n.a.	51	Xyl	4.6	max. 9.8
SETALUX® 17-1265	n.a.	n.a.	40	Tol	9.8	37.0
SETALUX® 17-1291	n.a.	n.a.	50	Xyl / Tol	1.2	max. 8
VIACRYL® SC 160/60T	n.a.	n.a.	60	Tol	12.0	6 - 18
VIACRYL® SC 200/40X	n.a.	n.a.	40	Xyl	1.6	12.0
VIACRYL® AQ 1518	n.a.	n.a.	60	Xyl	Z4 - Z6	20 - 25
VIACRYL® AQ 1523	n.a.	n.a.	60	Tol	Z5 - Z7	max. 6
VIACRYL® AQ 1538	n.a.	n.a.	50	Tur	Z - Z1	max. 2
VIACRYL® AQ 1532	n.a.	n.a.	40	Tol	X - Z	max. 10
<b>Thermosetting Acrylic</b>						
VIACRYL® SC 303/65XB	2.4	1078	65	Xyl / nBA	24.0	8.1
SETALUX® 1756 VV-65	2.7	970	65	A100	4.0	11.0
SETALUX® 1757 VV-70	3.6	670	70	A100	5.0	8.4
<b>Carboxylic Acrylic</b>						
VIACRYL® AQ 1581	n.a.	n.a.	59	A100	X - Y	64.0

Color (max. value)	Density (kg/dm <sup>3</sup> )	Description and Features
150 APHA	1.02	For hard durable coatings with very good chemical and abrasion resistance. Excellent gloss, color retention and durability.
100 APHA	1.03	High hardness with good flexibility, high gloss and body, outstanding weather stability and lightfastness, good resistance to solvents and gasoline.
100 Hazen	1.04	Fast drying, excellent chemical and solvent resistance. Especially suited for coatings on airplanes or military vehicles.
50 APHA	1.03	Balanced cost and performance for automotive and industrial coatings.
100 APHA	1.03	Low VOC. Early water resistance. Good flow and leveling.
100 APHA	1.04	Low VOC. Early water resistance. Good flexibility and DOI.
200 APHA	1.04	Good adhesion, flexibility and excellent water resistance.
100 Hazen	1.04	Air drying as well as forced drying high-solids two-component topcoats for industrial applications. Especially suited for industrial topcoats providing a low content of volatile organic compounds (VOC) and high pigment loading.
50 APHA	1.06	Super fast drying, high build and gloss, good mechanical properties, good chemical resistance and good outdoor durability.
200 Hazen	1.09	High quality ultra high solids two-component industrial coatings with high gloss, very good mechanical properties, very good chemical resistance and ease of application. Especially well-suited for thick-layer coatings.
35 APHA	1.06	Excellent scratch resistance.
125 APHA	0.98	Fast dry. Good durability and yellowing resistance. Can be used with acrylic modified alkyds. Clear coat for concrete.
50 APHA	0.96	Fast dry. Excellent adhesion and sanding properties. Aerosol coatings.
250 APHA	0.99	Properties of resistance, durability and drying speed make an excellent choice for use in refinish coatings.
3 Iodine	0.97	Sole binder for road marking paints. Excellent adhesion and flexibility after aging. Well suited for warm climates.
2 Iodine	0.96	Air and forced drying industrial coatings with fast drying and high hardness. Specialty coatings for glass, precious metals and plastics.
1 Gardner	0.98	Enamels and varnishes for masonry, tiles, bricks, stones, concrete floors, and reflective road marking paints. Primers for galvanized and metallic. Enamels for metal surfaces.
1 Gardner	0.97	Enamels and varnishes for masonry, tiles, bricks, stones, concrete floors, and reflective road marking paints.
1 Gardner	0.87	Inks Spray. Acrylic enamels floor / walls.
1 Gardner	0.97	Enamels, varnishes and waterproofing for natural and cemented stones, floors, tiles, bricks and concrete. Automotive enamels, varnishes and modifier.
80 Hazen	1.01	Automotive metallic basecoats (wet-on-wet process). Stoving enamels with good outdoor stability and color retention.
125 APHA	1.01	High solids content at spraying viscosity, good durability and gloss.
125 APHA	1.03	High solids content at spraying viscosity, excellent gloss, good mechanical properties, good solvent and acid resistance, adhesion and excellent accelerated weathering test.
2 Iodine	1.005	Metallic enamels and varnishes cured with melamine and epoxy.

## SOLVENT BORNE ALKYD RESINS

Resin name	NV (%)	Viscosity (Gardner)	OH - % (on solids)	Oil type	Solvents	Color (max. value)
<b>Long Oil Alkyd</b>						
SETAL® 312 SM-88	88	Z3 - Z5	n.a.	SOYA	Tur	3
SETAL® 11-3466	70	Z - Z2	n.a.	SOYA	MS / Xyl	6
VIALKYD® AQ 310	100	Z - Z2 (*)	n.a.	SOYA	n.a.	10 (*)
VIALKYD® AQ 316	100	X - Y(**)	n.a.	SOYA	n.a.	10 (**)
VIALKYD® AQ 339	100	Z1 - Z3	n.a.	SOYA/ Linseed	n.a.	12
VIALKYD® AQ 340	78 - 82	Z1 - Z3	n.a.	SOYA	Tur	8
(*) Dilution in 70% of mineral spirits (**) Dilution in 80% of mineral spirits						
<b>Medium Oil Alkyd</b>						
SETAL® 11-2408	50.5	Z6 - to Z7+	2.3	SOYA	A100 / Xyl	4
SETAL® 11-2418	50	Z2 - Z5	1.4	SOYA	MS / EEP/ Xyl / Tol / butoxyethanol	4
VIALKYD® AQ 210	48 - 52	Z6 - Z8	n.a.	SOYA	Tur	8
VIALKYD® AQ 216	47 - 51	V - X	3.0 - 4.0	DCO	Xyl / A100	8
VIALKYD® AQ 217	48 - 52	Z2 - Z3	n.a.	SOYA	Tur	8
VIALKYD® AQ 225	88 - 92	Z6 - Z8	n.a.	SOYA	DMC	9
<b>Short Oil Alkyd</b>						
SETAL® 11-1492	50	U - W	3.3	SOYA	Xyl	6
VIALKYD® AQ 100	58 - 62	Z3 - Z5	2.8 - 3.5	SOYA	A100	8
VIALKYD® AQ 111	68 - 72	Z6 - Z8	3.5 - 4.0	SOYA	A100	8
VIALKYD® AQ 120	48 - 52	Z2 - Z4	2.7 - 3.3	DCO	A100	6
VIALKYD® AQ 126	78 - 82	Z6 - Z8	2.8 - 3.5	SOYA	DMC	10
SETAL® 142 XX-60	60	3.7	2.2	SOFA	Xyl	5
<b>Phenolic</b>						
VIALKYD® AQ 402	58 - 62	Z4 - Z6	n.a.	SOYA	Xyl / Tur	10
VIALKYD® AQ 404	59 - 63	Z7 - Z8	n.a.	SOYA	Xyl / Tur	10
VIALKYD® AQ 414	53 - 57	Z3 - Z5	n.a.	SOYA	Tur / Tol	10
VIALKYD® AQ 419	68 - 72	Z8 - Z9	n.a.	SOYA	Xyl / Tur	10
VIALKYD® AQ 445	63 - 67	Z10	n.a.	SOYA	Xyl / Tur	10
VIALKYD® AQ 456	81 - 87	Z8 - Z9	n.a.	SOYA	DMC	10
VIALKYD® AQ 462	58 - 62	Z3 - Z4	n.a.	SOYA	Tol / Tur	10

AV as supplied (mg KOH/g)	Description and Features
6.3	High solid enamels, decorative coatings for interior and exterior, varnishes and pigmented systems.
14	Good flow and leveling. Good exterior durability. High specular gloss.
12	Metal graphic enamels, off-set and heat-set printing ink and grinding medium.
8.5	Off-set and heat-set printing ink and grinding medium.
8	Metal graphic enamels and varnishes, off-set and heat-set printing ink and grinding medium.
12	Enamels, varnishes and primers. Grinding medium. Stain for wood varnishes and marine finishes.
max. 7.9	Economical alkyd with good exterior durability and gloss retention for DIY and industrial enamels.
max. 20	Economical alkyd for DIY and industrial enamels. Additional chemical resistance and enhanced performance may be obtained by crosslinking with melamine resin.
15	Finishes for agricultural implements. Enamels, industrial primers and automotive refinish. Enamels, synthetic primers, air-drying Grinding medium. Marine, copal and stain type varnishes.
10	Enamels, lacquers and primers 2K systems. Automotive refinish.
15	Finishes for agricultural implements. Enamels, industrial primers and automotive refinish. Enamels, synthetic primers, air-drying Grinding medium. Marine, copal and stain type varnishes.
15	Synthetic enamels and primers for air drying. Paints for agricultural implements. Grinding medium.
20	Good dry and film hardness. Good for exterior paints.
15	Enamels, primers and varnishes 2K systems. Air drying and cured stove with melamine. Quick drying varnishes, lacquers and primers with nitro. Synthetics, quick drying with phenolates. Grinding medium.
15	Enamels, primers and varnishes 2K systems. Air drying and cured stove with melamine. Quick-drying varnishes, lacquers and primers with nitro. Synthetic quick-drying enamels with phenolates and furniture sealant
15	Synthetic and industrial enamels air drying, cured stove with melamine. Enamels, quick drying primers.
15	Primers and enamels for metal, wood. Industrial enamels and fast drying decorative paints.
6	Very fast drying, good elasticity and yellowing resistance (also at elevated temperature), good adhesion on steel.
22	Enamels for automotive and chassis refinishing. Enamels and primers. Sealers and varnishes for wood. Paints for agricultural implements.
20	Enamels for automotive and chassis refinishing. Enamels and primers fast drying. Sealers and varnishes for wood. Paints for agricultural implements.
22	Enamels for automotive and chassis refinishing, extra-fast drying synthetic enamels, quick-drying primers, wood sealants and varnishes, drum paints and agricultural implements.
22	Enamels for automotive and chassis refinishing. Enamels and primers fast drying. Sealers and varnishes for wood. Paints for agricultural implements.
20	Varnish with high solvent resistance (dilution) . Enamels for automotive and chassis refinishing. Extruding primers and primers. Sealers and varnishes for wood. Paints for agricultural implements.
22	Enamels for automotive and chassis refinishing, extra-fast drying synthetic enamels, quick-drying primers, wood sealants and varnishes, drum paints and agricultural implements.
18	Enamels for automotive and chassis refinishing, decorative synthetic enamels, fast drying industrial enamels. Wood sealers and varnishes, drum paints and varnishes for metallization, agricultural implements. Applications for plastics.

## SOLVENT BORNE ALKYD RESINS

Resin name	NV (%)	Viscosity (Gardner)	OH - % (on solids)	Oil type	Solvents	Color (max. value)
<b>Modified Alkyd</b>						
VIALKYD® AQ 413	73 - 77	Z4 - Z6	n.a.	SOYA	A150	10
VIALKYD® AQ 452	58 - 62	Z6 - Z8	3.0 - 4.0	SOYA	Tol / A100	8
VIALKYD® AQ 453	68 - 72	Z6 - Z8	2.5 - 3.2	SOYA	A100	10
VIALKYD® AQ 454	58 - 62	Z4 - Z6	3.5 - 4.0	SOYA	Tol / A100	8
<b>Physically drying Alkyds</b>						
VIALKYD® AQ 500	58 - 62	Z4 - Z6	2.5 - 3.0	COCO	Tol	5
VIALKYD® AQ 507	68 - 72	Z6 - Z8	1.5 - 2.0	COCO	Tol	5
VIALKYD® AQ 509	68 - 72	Z6 - Z8	3.0 - 3.5	COCO	Tol	5
VIALKYD® AQ 518	95 - 100	Z4 - Z6	n.a.	DCO	n.a.	8
<b>Thermoset Alkyd</b>						
VIALKYD® AN 950/70X	70	2300 - 3100	3.0	n.a.	Xyl	5 Iodine
<b>Copolymer Alkyd</b>						
SETYRENE® 13-1405	60	Z2 - Z4	n.a.	SOYA	Xyl	6



AV as supplied (mg KOH/g)	Description and Features
5	Aluminum paint of good leafing. Paints and varnishes for silk screen
15	Air drying synthetic enamels of good color retention and automotive refinishing. Extra-quick drying industrial synthetic enamels and primers. Enamels 2K systems.
15	Industrial enamels, quick drying. Enamels, primers and varnishes 2K systems . Air drying and stove with melamine. Varnish, lacquers and quick drying primers with nitro.
15	Air drying synthetic enamels of good color retention and automotive refinishing. Extra-quick drying industrial synthetic enamels and primers. Enamels 2K systems.
10	White and colored lacquers, for furniture and automotive applications with excellent color retention, high brightness, and great flexibility.
20	Economic resin with excellent color retention, high brightness and great flexibility for air or oven curing for furniture.
12	Excellent color retention, high brightness and great flexibility.
14 - 22	Excellent adhesion and high gloss. This product provides good wetting of pigments and drying, as well as great flexibility and spread for off-set and head-set printing, grinding medium and road marking paints.
max. 12	Outdoor durable, non-yellowing one coat stamping and deep drawing coil-coating systems for aluminum, sheet steel and tin sheet as well as for automotive primer surfacers and metallic base coats. VIALKYD AN 950 can be crosslinked with melamine resin and with polyisocyanates 2K systems.
max. 23	STYRENE and SOYA copolymer recommended for very fast dry gloss and semigloss enamels and sealers for metal and wood substrates.

## SOLVENT BORNE POLYESTER RESINS

Resin name	NV (%)	Solvents	Viscosity (23°C, Pa.s) or Gardner	Color (max. value)	OH - % (on solids)	HEW (as supplied)
<b>Polyester Polyol</b>						
SETAL® 26-1619	80	BuAc	W - Y	3 Gardner	4.5	380
SETAL® 168 SS-80 (26-1688)	79	BuAc / Xyl	2.4	100 APHA	4.3	500
SETAL® D RD 181 X (26-4181)	75	Xyl	7.5	150 APHA	4.9	460
<b>Saturated Polyester</b>						
SETAL® 16-1084	70	EB / Xyl	Z2 - Z4	4 Gardner	1.2	1370
SETAL® 16-1089	75	BuAc	Z3 - Z5	10 APHA	8.0	212
SETAL® 26-1056	95	BuAc	Z4 - Z6	4 Gardner	6.8	250
SETAL® 1715 VX-74 (26-1715)	72	SN / Xyl	5.4	50 APHA	4.4	540
SETAL® 189 XX-65 (16-1189)	65	Xyl	1.7	100 APHA	2.3	1140
SETAL® 1671 SS-65	65	SN / BDGA / i-But / Xyl	1.2	8 Gardner	2.9	900
SETAL® 173 VS-60 (16-1173)	60	SN / MP / Xyl	1.4	100 APHA	2.4	1180

AV as supplied (mg KOH/g)	Density (kg/dm <sup>3</sup> )	Description and Features
4	1.08	Low VOC. Cross-linkable. Flexible and very durable. May be used as a reactive plasticizing modifier. Aerospace coatings.
max. 1.7	1.10	High flexibility, even at low temperatures. Good outdoor durability.
max. 12	1.08	Weather resistant, good resistance to yellowing and aging, also suitable for pigment pastes.
12	1.08	Excellent gloss and color retention post bake. Good adhesion. Zero-T flexibility.
17	1.11	Low VOC and HAPs free. High crosslink density. Excellent hardness. Low temperature cure. Excellent compatibility with acrylic resins.
30	1.07	Low VOC. Excellent hardness at low temperature cure. High gloss and DOI.
8.2	1.05	Extremely good outdoor durability, no loss of gloss and no yellowing in QUV, high solids content at spraying viscosity. Good mechanical properties and chemical resistance. Broad compatibility.
13	1.06	High hardness, very good adhesion and flexibility, good chemical and water resistance, good compatibility with CAB and good pigment wetting.
max. 5.9	1.05	Urethane modified. Excellent chip resistance and mechanical properties, very good appearance.
4.8	1.04	High hardness, very good adhesion and flexibility, good chemical and water resistance.

## SOLVENT BORNE EPOXY RESINS AND HARDENERS

Resin name	NV (%)	Solvents	Oil type	Viscosity (23°C, Pa.s)	AEW (as supplied)	EEW (as supplied)
<b>Solvent borne Epoxy Ester</b>						
DUROXYN™ EF 900/60X	60	Xyl	DCO fatty acid	3.8	n.a.	n.a.
DUROXYN™ AQ 916	60	Xyl	DCO fatty acid / SOFA	Z1 – Z3 Gardner	n.a.	n.a.
DUROXYN™ EF 935/60X	60	Xyl	DCO fatty acid / SOFA	0.43	n.a.	n.a.
<b>Solvent free, solvent borne Epoxy resin</b>						
BECKOPOX™ EP 128	100	n.a.	n.a.	1.1	n.a.	195
BECKOPOX™ EP 301/75X	75	Xyl	n.a.	11.0	n.a.	500
<b>Amine hardener, solvent borne</b>						
BECKOPOX™ EH 651/70X	70	Xyl	n.a.	1.1	255	n.a.
<b>Carbamide resin</b>						
RESAMIN® HF 480	100	n.a.	n.a.	8.5	n.a.	n.a.

Density (kg/dm <sup>3</sup> )	Description and Features
0.97	Superior adhesion. Good hardness, impact resistance and flexibility. High pigment loading, capable of high gloss. Excellent resistance to temperature, water and alkali. Used in anticorrosive paint systems and primers, zinc rich primer surfacers.
1.00	Metal-mechanical anticorrosive primers. Primers rich in zinc. Industrial varnishes for finishes and coatings in packages. High temperature enamels with silicone resins
1.00	Very fast air drying. Excellent hardness, flexibility and adhesion. Excellent resistance to alkali, excellent color retention at elevated temperatures. Recommended for industrial bake enamels and anticorrosive primers.
1.12	Bis-A liquid epoxy containing reactive diluent for low viscosity. Cured systems show low shrinkage and excellent resistance to chemicals, solvents and moisture. Used in abrasion resistance flooring compounds, castings, impregnations and composites.
1.07	Type 1 solid epoxy resin for anticorrosion primers, zinc rich paints and high durability coatings. Used in combination with polyamines for ambient curing. Can also be used to improve adhesion and chemical resistance properties of saturated polyesters or thermoset acrylics in bake systems.
0.95	Polyamidoamine hardener with long pot life, good flexibility, adhesion and chemical resistance. For both metallic and mineral substrates.
1.10	Carbamic resin based on butylurethane and formaldehyde. Plasticizing component and compatibility promoter for thermoplastic backbone coating resins (e. g. nitrocellulose, PVC copolymers, cyclized rubber, PVB), alkyd/amino bake enamels and acrylic/isocyanate combinations.

## UNSATURATED POLYESTER RESINS

Resin name	NV (%)	Solvents	Viscosity (23°C, mPa.s)	Color (max. value)	AV as supplied (mg KOH/g)
<b>Standard Unsaturated Polyester Resins</b>					
ROSKYDAL® 300/1	70	Sty	650	150 APHA	18
ROSKYDAL® 500 A	76	Sty	1800	100 APHA	15
ROSKYDAL® 502 BA	80	BuAc	4500	100 APHA	18
ROSKYDAL® E 70	66	Sty	950	3 Iodine	12
<b>Amine-accelerated Unsaturated Polyester Resins</b>					
ROSKYDAL® K 36	62	Sty	400	15 Iodine	10
ROSKYDAL® K 58	61	Sty	500	12 Iodine	20
ROSKYDAL® K 65	67	Sty	725	10 Iodine	10
ROSKYDAL® K 68	65	Sty	750	10 Iodine	10

Density (kg/dm <sup>3</sup> )	Description and Features
1.10	Tough but flexible, very good leveling and high scratch resistance.
1.12	High brilliance, little yellowing in darkness, very good leveling properties and scratch resistance, reproducible matt effects.
1.15	For monomer-free coatings in thin layers, good resistance to chemicals, solvents and yellowing in the light and dark, scratch resistant.
1.12	Soft resin for the flexibilization of all ROSKYDAL types, especially for wood/furniture coatings.
1.12	High reactivity, medium hardness, ideal sole binder for car body repair fillers.
1.10	High reactivity, yields polymers of medium flexibility, sole binder for all automotive substrates, good adhesion properties on galvanized car panels.
1.11	High reactivity, yields highly flexible polymers, sole binder for flexible UP-fillers, but in combination with ROSKYDAL K 14 M also suitable for universal putties.
1.14	Medium reactivity, yields highly flexible polymers, ideal sole binder for overbaking resistant fillers.

## NATURAL OIL POLYOLS

Resin name	OH - % (on solids)	HEW (as supplied)	NV (%)	Solvents	Viscosity (23°C, mPa.s)	AV as supplied (mg KOH/g)	pH
<b>Polyester Polyol</b>							
SETATHANE® D 1160 (20-4160)	5.4	315	100	n.a.	1000	1.7	n.a.
<b>Polyether-ester Polyol</b>							
SETATHANE® D 1150 (20-4150)	4.7	360	100	n.a.	3500	max. 2	n.a.
SETATHANE® D 1145 (20-4145)	7.1	240	100	n.a.	2950	max. 2	n.a.
<b>Polyol Emulsion</b>							
SETATHANE® D E 2656 (34-4656)	4.3	425	70	WA	250	n.a.	7.0
SETATHANE® D E 2761 (34-4761)	3.7	565	70	WA	250	n.a.	7.0
SETATHANE® E 2000 (34-2000)	5.5	210	70	WA	max. 350	n.a.	8.8



Color (max. value)	Density (kg/dm <sup>3</sup> )	Description and Features
5 Iodine	0.99	High flexibility and good mechanical strength.
5 Iodine	1.01	Tough and flexible, hard-wearing and chemical resistant.
5 Iodine	1.01	Hard to tough but flexible films which are resistant to abrasion and chemicals.
n.a.	0.97	Very good resistance to organic and inorganic acids, alkalis and solvents.
n.a.	0.99	Phthalate-free. Excellent working time and flow and leveling.
n.a.	1.05	Excellent working time and early hardness development.

## RHEOLOGY CONTROL RESINS

Resin name	NV (%)	Solvents	Density (kg/dm <sup>3</sup> )	HEW, on NV	Acid value Max	Viscosity (range)
<b>Microgels</b>						
SETALUX® 10-1302	50	MAK/ VM&P/ Heptane	0.92	n.a.	5	100 - 300 cP
SETALUX® 10-1310	50	AHC/nBut	0.91	350	3	20 - 170 cP
SETALUX® 10-1387	40	Heptane/ MAK/ MS/ VM&P	0.87	n.a.	n.a.	n.a.
<b>Rheology Control Agent</b>						
SETALUX® 10-6266	45	MAK/ A100	0.96	1250	8	1,200 cP Max
<b>SCA Modified Acrylic</b>						
SETALUX® 91757 VX-60 (10-1657)	60	SN / Xyl	0.99	790	n.a.	Thixotropic
SETALUX® 91756 VS-60 (10-1601)	60	A100/ BuAc	0.97	615	n.a.	Thixotropic
SETALUX® 91767 VX-60 (10-1604)	60	SN / Xyl	1.00	630	n.a.	Thixotropic
<b>SCA Modified Polyester</b>						
SETAL® 90173 SS-50 (10-1600)	50	A100/ Xyl/ PGME	0.97	650	n.a.	Thixotropic
SETAL® 10-1803	65	BuAc	1.04	300	n.a.	Thixotropic
SETAL® 82166 SS-64 (10-1821)	64	BuAc/ Xyl	1.05	315	n.a.	Thixotropic
SETAL® 91715 SS-55 (10-1615)	52	Xyl / SN	0.94	760	n.a.	Thixotropic
<b>Long Oil Alkyd, thixotropic modified</b>						
VIALKYD® AS 6140SCA/49SD60	49	D60	0.91	n.a.	15	Thixotropic

Fineness, micron Max	Descriptions and Features
15	Very good application properties and is excellent yellowing resistance for high solids metallic and solid color basecoats.
15	Very good application properties and is excellent yellowing resistance for high solids metallic and solid color basecoats.
15	Excellent metal flake orientation. Prevents strike-in over basecoats.
n.a.	Excellent balance of sag resistance and leveling properties. Excellent clarity, DOI, and edge coverage.
15	Excellent gloss, good mechanical properties, solvent and acid resistance, good adhesion and excellent accelerated weathering test, good sagging limit, excellent application properties.
15	Opaque SCA modified thermosetting acrylic resin for improved application and sag control properties. Enhances chip resistance, solvent, fuel and acid resistance.
15	Excellent anti-sagging effect, good appearance, adhesion, durability, chemical and gasoline resistance and excellent application properties.
15	Opaque SCA modified polyester resin improves rheology of high solids automotive coatings.
15	Transparent SCA modified polyester polyol - slightly branched, for low bake applications, clear coats in wet-on-wet automotive, and plastic finishes.
15	Transparent SCA modified polyester polyol - slightly branched, for improved flow at low film builds. Flexible clear coats for plastic substrates.
15	Excellent anti-sagging effect, extremely good outdoor durability, high solids content at spraying viscosity, good mechanical properties and chemical resistance.
n.a.	Liquid pumpable thixotropic urethane alkyd based on soya bean oil, which can be used as sole binder or in combination with other alkyds for decorative paints and wood stains.





## WATER BORNE ACRYLIC POLYOL RESINS

Resin name	MFFT (approx.) (°C)	NV (%)	Solvents	Viscosity (23°C, Pa.s)	pH	Density (kg/dm <sup>3</sup> )
<b>Thermoplastic Acrylic Dispersion</b>						
VIACRYL® VSC 6279w/45WA	25	45	WA	0.94	8.1 (10WA)	1.04
VIACRYL® VSC 6265w/40WA	26	40	WA	0.85 (25°C)	8.5 (10WA)	1.05
VIACRYL® VSC 6254w/40WA	45	40	WA	0.14 (25°C)	8.5 (10WA)	1.04
<b>Self-Crosslinking Acrylic Dispersion</b>						
SETAQUA® 6756 (37-6756)	15	40	WA	max. 0.72	8.0	1.04
SETAQUA® 6766 (37-6766)	50	40	WA	max. 0.15	9.0	1.04
SETAQUA® 6770 (37-6770)	15	44	WA	0.4 to 1.0	8.9	1.04
SETAQUA® 6781 (37-6781)	22	44	WA	0.75	8.8	1.04
VIACRYL® SC 6827w/46WA	10	46	WA	max. 0.15	4.2	1.06
VIACRYL® VSC 6286w/45WA	11	45	WA	0.30	7.2	1.05
VIACRYL® VSC 6295w/45WA	30	45	WA	0.07	7.2	1.05

Descriptions and Features

	Excellent compatibility with alkyd resin emulsions. High shear stability. Fast drying. Excellent non yellowing properties and outdoor durability Recommended for rapid drying anticorrosion primers and decorative finishes.
	Excellent compatibility with alkyd resin emulsions. High shear stability. Extremely quick set and through drying. High yellowing and weather resistance Recommended for quick drying anticorrosion primers and topcoats. Due to its good sandability, this grade is also suitable for wood primers. Contains APEO
	Mainly suitable in combinations with alkyd emulsions and hydroxy functional copolymer dispersions in order to improve the physical drying properties.
	Surfactant free, excellent flow and levelling, clarity, hardness development, and block resistance
	High gloss, good appearance, good application properties and excellent blocking resistance.
	Self crosslinking for 1K water borne wood and metal applications. Excellent overall performance, low coalescent demand.
	Self crosslinking. Gradient morphology. Excellent block resistance, good application properties. For joinery and wood finishes.
	Formaldehyde-free epoxy modified. Good adhesion to metal and non metal substrates. Excellent chemical resistance against alkaline and detergents Very good thermal stability. For monocoat, primer and topcoat application.
	Sole binder for non yellowing decorative paints, wood stains and for industrial applications.
	Fast drying and high hardness. Excellent sandability, chemical resistance and abrasion resistance. Sole binder for water borne wood coatings.

## WATER BORNE ACRYLIC RESINS

Resin name	MFFT (approx.) (°C)	NV (%)	Solvents	APEO free	Viscosity (25°C, mPa.s)	pH at 10% solids
<b>Water Borne Acrylic Emulsions</b>						
UCECRYL® B 746	2	50	WA	✓	500 - 1700	8.5
UCECRYL® B 1470	20	49	WA	✓	100- 600	8.2
UCECRYL® AQ 1607	15	49	WA	-	6 - 12	8.7
UCECRYL® B 3022	12	44	WA	✓	600	8.8
UCECRYL® B 3016	18	43	WA	✓	max. 500	8.5
UCECRYL® B 1009	41	48	WA	-	500	8.5
UCECRYL® B 3025	55	50	WA	✓	max. 200	8.5
UCECRYL® B 3030	2	50	WA	✓	1100	8.5
UCECRYL® B 3033	17	45	WA	✓	400	7.8
UCECRYL® AQ 1650	20	50	WA	-	200 - 800	9
UCECRYL® BMR 47	2	55	WA	✓	200 - 800	8.5
VISCOPOL® 6186	15	50	WA	-	200 - 800	10
SETAQUA® Express Line 88	15	50.5	WA	-	200 - 800	10.5
UCECRYL® AQ 1651	4	50 - 54	WA	-	200 - 800	7.5



Neutralization	Descriptions and Features
NH3	Low MFFT styrene acrylic emulsion copolymer for paints and concrete tiles. Suitable for fresh concrete. Excellent durability. It can be used as a co-binder to increase flexibility and durability.
NaOH	Medium MFFT direct acrylic emulsion copolymer recommended for use in high weathering concrete roofing inks.
NH3	Anionic low particle size acrylic-styrene copolymer with good resistance to water absorption and good washability, great film formation and durability for Latex paints, textured coatings, sealants, varnishes and waterproofing.
NH3	Medium MFFT straight acrylic emulsion copolymer with good resistance to water whitening. For formulating low VOC (<50g/l), semi-transparent vertical stains on multiple wood species with good durability, wet adhesion, low water uptake and efficient thickener response.
NH3	Medium MFFT straight acrylic emulsion copolymer. Topcoat for metal roof tiles with a very good resistance to water whitening and a low water absorption.
NH3	High MFFT straight acrylic emulsion copolymer. Recommended for Hydrophobic paints for fiber-cement sheets.
NH3	High MFFT styrene acrylic emulsion copolymer, recommended for use in concrete floor coatings and renovation paints for metal siding.
NH3	Low MFFT styrene acrylic emulsion copolymer recommended for use in high PVC coatings for concrete tiles. Suitable for fresh concrete. Excellent durability. May be used as co-binder to improve flexibility and durability.
NH3	Medium MFFT straight acrylic emulsion copolymer recommended for clear and pigmented concrete sealers that exhibit excellent hardness development, water whitening resistance, chemical resistance and hot-tire pickup resistance.
NH3	Acrylic aqueous dispersion of an anionic copolymer offering great durability and drying, high gloss and excellent resistance to water and weathering. It provides optimum film formation, leveling and spreading.
NH3	Low MFFT acrylic emulsion copolymer, recommended for use on high solids primers with low water absorption and excellent adhesion to metal for base metal layers.
NH3	Fast drying for road marking paint and concrete floor applications
NH3	Rapid drying road marking and concrete floor applications.
NH3	High resistance to water absorption and dirt pick-up with good ability to disperse pigments, high elongation and durability for use in elastomeric inks, paste and sealant for cracks and flexible waterproofing.

## WATER BORNE ALKYD AND POLYESTER RESINS

Resin name	NV (%)	Solvents	Type of modification	Oil length %	Viscosity (23°C, Pa.s)	pH	Neutralization
<b>Water borne Alkyd - Air Drying</b>							
RESYDROL® AY 586w/42WA	45	WA	Acrylic	58	7.5	8.0	NH3
RESYDROL® AY 6150w/45WA	45	WA / BP	Acrylic	35	1.2	8.6	NH3
RESYDROL® AY 6705w/44WA	44	WA	Acrylic	35	0.55	8.5	NH3
RESYDROL® AZ 6710w/41WA	41	WA	Acrylic/urethane	29	0.75	8.5	NH3
SETAQUA® 6407 (46-6407)	26	WA / BG	n.a.	n.a.	4.4	8.2	DMEA
<b>Water Borne Alkyd - Baking</b>							
RESYDROL® VAZ 6600w/36WA	36	WA / MPP	Acrylic / polyester	n.a.	0.45	7.5	DMEA
<b>Water Borne Polyester - Baking</b>							
RESYDROL® AZ 541w/42WA	42	WA / TPG	Urethane	n.a.	1.5	7.8	DMEA
SETAQUA® B E 356	56	WA / DEGBE	n.a.	n.a.	9.5	8.6	DMEA
<b>Water Reducible Alkyd - Air Drying</b>							
RESYDROL® VAL 5547w	98	n.a.	n.a.	62	1.2	6.5	Not neutralized
<b>Water Reducible Alkyd - Baking</b>							
RESYDROL® VAF 5540w/70MP	70	MP	n.a.	11	0.42	n.a.	Not neutralized
<b>Water Reducible Polyester - Baking</b>							
DUROFTAL® PE 6607/60BGMP	60	BG / MP	n.a.	n.a.	1.2	n.a.	Not neutralized
RESYDROL® AN 6617w/65MPP	65	MPP	Polyester	n.a.	5.5	7.5	DMEA

Density (kg/dm <sup>3</sup> )	Descriptions and Features
1.02	Sole binder for water borne decorative paints, exterior wood stains and industrial finishes. Low particle size that shows good wood penetration, provides good durability.
1.05	Designed for the production of air drying, water borne one-component topcoats, multi-purpose primers and monolayers. Quick drying, good hardness development, high gloss and corrosion protection, good adhesion on various substrates and very good recoatability at any time.
1.03	Exhibits very good durability and fast dry when used as a vertical or horizontal stain. Can be used alone or in combination with other water borne resins for decorative paints, exterior wood stains and industrial finishes.
1.02	Sole binder for (trim) paints, primers and wood-stains. Good penetration, good open time drying balance, good weathering resistance.
1.04	Good pigment wetting, good stabilization of aluminum pigments, improves film forming and flow.
1.06	Very high film hardness and elasticity, very good gloss, excellent chemical resistance, excellent adhesion to steel or CED primers, very good stone chip resistance.
1.07	Primer surfacers have excellent processing properties and resistance against stone chipping, even at higher layer thickness of top coat.
1.00	Extremely good resistance to hydrolysis.
1.02	Water dilutable without the need for neutralization agents. Very high penetration into the wood and is compatible with alkyd dispersions Great for wiping stains.
1.10	Good pigment wetting, Excellent mechanical properties, Very good storage stability. Additional resin for water dilutable primer surfacers to improve leveling.
1.10	Replacement of epoxy resins for interior and exterior coatings for metal packaging goods (can coating). When combined with phenolic resins or amino resins, these lacquers neither contain BADGE, nor Bisphenol A.
1.09	Able to crosslink with melamine or isocyanate to provide highly elastic coatings especially recommended for soft-feel-coatings.

## WATER BORNE EPOXY RESINS AND HARDENERS

Resin name	NV (%)	Solvents	Viscosity (23°C, Pa.s)	AEW (as supplied)	EEW (as supplied)	pH
<b>Amine Hardener for Epoxy Resin and Dispersion</b>						
BECKOCURE™ EH 2100w/44WA	44	WA	1.0	570	n.a.	9.5
BECKOCURE™ EH 2260w/41WA	41	WA	1.0	1000	n.a.	9.0
BECKOPOX™ EH 613w/80WA	80	WA	27	145	n.a.	n.a.
BECKOPOX™ EH 623w/80WA	80	WA	16	200	n.a.	n.a.
BECKOPOX™ VEH 2106w/80WA	80	WA	18	142	n.a.	n.a.
BECKOPOX™ VEH 2177w/80WA	80	WA / i-Pro	9.5	175	n.a.	n.a.
BECKOPOX™ VEH 2188w/55WA	55	WA / PE	10	380	n.a.	n.a.
BECKOPOX™ EH 2189w/50WA	55	WA	0.045	138	n.a.	n.a.
BECKOPOX™ EH 2162w/75WA	75	WA / MP	4.5	225	n.a.	n.a.
<b>Water borne One-component Epoxy Resin</b>						
BECKOPOX™ EM 2120w/45WA	45	WA	0.50	n.a.	n.a.	n.a.
<b>Water borne Epoxy Resin and Dispersion</b>						
BECKOPOX™ EP 122w	100	n.a.	0.80	n.a.	195	n.a.
BECKOPOX™ EP 147w	100	n.a.	1.1	n.a.	194	n.a.
BECKOPOX™ EP 384w/53WA	53	WA / MP	0.58	n.a.	980	n.a.
BECKOPOX™ EP 386w/52WA	52	WA / PE	0.90	n.a.	1000	n.a.
BECKOPOX™ EP 387w/52WA	55	WA / MP	0.90	n.a.	1000	n.a.
BECKOPOX™ EP 2375w/60WA	60	WA / MP	1.0	n.a.	810	n.a.
BECKOPOX™ EP 2384w/57WA	57	WA	0.80	n.a.	750	n.a.
BECKOPOX™ EP 2392w/70MP	70	MP	3.0	n.a.	715	n.a.
<b>Water Borne Epoxy Ester</b>						
DUROXYN™ EF 2107w/45WA	45	WA	0.10	n.a.	n.a.	5.0
DUROXYN™ VEF 2406w/45WA	45	WA	0.50	n.a.	n.a.	5.0
DUROXYN™ VEF 4380w/35WA	35	WA / BG	7	n.a.	n.a.	8.7
DUROXYN™ SEF 968W	100	n.a.	1.15	n.a.	n.a.	n.a.
DUROXYN™ EF 2410w/40WA	40	WA	0.21	n.a.	n.a.	5.0

Density (kg/dm <sup>3</sup> )	Descriptions and Features
1.07	To be used with Liquid Epoxies and /or Epoxy Dispersions (perfect compatibility). Fast drying time / return to service.
1.06	Easy Cure System - low viscosity hardener, very fast drying, high sag resistance. Combine with BECKOPOX EP 2384w or BECKOPOX EP 387w for easy handling and application with fast return to service for metal applications.
1.10	Aliphatic polyamine adduct, fast drying, highly reactive hardener. Good anti-corrosion performance and high chemical resistance. Can be used alone or in combination with other hardeners to modify drying and pot life properties. For both metallic and mineral substrates.
1.10	Aliphatic polyamine adduct with medium reactivity with a good balance of drying time and long pot life. Workhorse hardener for mineral substrates.
1.08	Aliphatic polyamine adduct, visual end of pot life viscosity to a gel. Used as a combination partner with other hardeners to allow pot life indication. For both metallic and mineral substrates.
1.10	Aliphatic polyamine adduct: More reactive than BECKOPOX EH 623w and is especially suited for coatings on mineral substrates together with BECKOPOX EP 384w.
1.08	Hydrophobic aliphatic polyamine adduct, free of volatile amines, low reactivity and long pot life. Allows for excellent corrosion performance without the need for active pigments.
1.09	Highly reactive polyamine adduct hardener for waterbased two-component epoxy coatings on metallic substrates. Very fast drying and fast through curing coatings, excellent anticorrosion properties.
1.10	Aliphatic polyamine adduct with medium reactivity for mineral and metallic substrates. The lower viscosity of this hardener allows for easier use and handling. Pot life extension is seen when formulated in low VOC concrete coatings and used in combination with liquid epoxy resins.
1.07	Cationic epoxy-amine adduct dispersion for metallic coatings, excellent corrosion resistance, fast hardness development.
1.11	Emulsifiable, non-crystallizing Bis-A/Bis-F liquid epoxy resin with reactive diluent for low viscosity. Used for concrete coatings, joint compounds, tile adhesives and hydraulic epoxy mortars.
1.17	Water emulsifiable Bis-A/Bis-F, non-crystallizing, liquid epoxy. High abrasion resistance, good chemical resistance and corrosion protection. Combine with solid epoxy dispersions to improve penetration into concrete and chemical resistance. Used for coatings on metallic and mineral substrates, adhesives and water-washable joint compounds for tile.
1.10	Shear stable type 1 epoxy dispersion, fast drying, good hardness, for both metal and concrete applications.
1.08	Flexibilized type 1 epoxy dispersion with good shear stability. Excellent corrosion resistance. Best product to use when flexibility and adhesion to difficult substrates are required. Designed for metallic substrates. Can also be used on concrete in combination with liquid epoxy resin.
1.08	Flexibilized epoxy dispersion with excellent corrosion resistance. Developed to optimize formulation cost and performance. Designed for metallic substrates. Can also be used on concrete in combination with liquid epoxy resin.
1.11	Solid epoxy resin; dispersion in water. rapid drying coating system with excellent sagging resistance
1.09	Solvent free, shear stable type 1 epoxy dispersion. Fast drying and hardness development. For both mineral and metallic substrates.
1.08	Flexibilized type 1 water-emulsifiable epoxy dispersion. Designed for zinc-rich anti-corrosion primers.
1.07	Cationic epoxy ester emulsion, fatty acid modified, neutralized with acetic acid. Fast drying, more flexible than DUROXYN VEF 2406 Excellent stain blocking on wood.
1.07	Cationic epoxy ester emulsion, neutralized with acetic acid. Fast drying, high film hardness. Excellent stain blocking on wood.
1.02	Quick oxidative drying, excellent corrosion resistance, high water stability, good adhesion to metal and good recoatability. Used as a sole binder in anticorrosive primers, monocoats and topcoats.
1.13	Non-drying epoxy resin ester, water emulsifiable. Used as a binder for fiber sizings (glass and carbon fiber).
1.05	Cationic epoxy ester emulsion, neutralized with lactic acid. Fast drying, high film hardness. Excellent stain blocking on wood. Good adhesion to wood and metallic substrates. Good flash rust resistance without the use of flash-rust additives.

## CATHODIC ELECTRO DEPOSITION RESINS

Resin name	NV (%)	Solvents	Viscosity (23°C, Pa.s)	Density (kg/dm <sup>3</sup> )
<b>Acrylic resin for Industrial CED</b>				
VIACRYL® VSC 6250w/65MP	65	MP	26	1.04
VIACRYL® VSC 6292w/38WA	38	WA / MP	0.25	1.05
<b>Epoxy resin for Industrial CED</b>				
RESYDROL® EZ 6635w/35WA	35	WA / Tex	0.50	1.04
RESYDROL® EZ 6635wcat/35WA	35	WA / Tex	0.50	1.05
RESYDROL® EM 6642w/55BG	55	BG	7.0	1.00
<b>Radiation curable resin for Industrial CED</b>				
VIACRYL® 1111w/70MP	70	MP	7.0	1.09

## Descriptions and Features

External crosslinking acrylate binder for pigmented primer or clear paint for the production of transparent protective coatings on ferrous and nonferrous metals. Suggested for decorative and general industrial applications.

Self-crosslinking, thermoset acrylate binder for the production of white or bright cathodic electrodeposition coatings. Recommended for protective coatings on metal.

Self-crosslinking, thermoset CED binder for industrial applications. Film thickness can be adjusted between 20 and 45  $\mu\text{m}$ .

Self-crosslinking, internal catalyzed thermoset CED binder for industrial applications. Film thickness can be adjusted at 20 and 30  $\mu\text{m}$ .

Grinding resin for stable, highly pigmented pastes used in two-component CED paints.

Radiation curable cathodic depositable acrylate binder. Preferred substrates to be coated are heat sensitive metals like metalized plastics or special heat sensitive alloys.

## WATER BORNE POLYURETHANE RESINS

Resin name	NV (%)	Co-solvents	Type	Viscosity (23°C, mPa.s)	pH at 10%	Neutralization	Elongation %
<b>Water Borne Polyurethane Dispersion</b>							
DAOTAN™ TW 1237/32WANEP	32	WA / NEP	Aliphatic polyester	32	7.5	TEA	215
DAOTAN™ TW 1252/42WA	42	WA / NEP	Aliphatic Fatty acid	1000	8.2	NH3	n.a.
DAOTAN™ TW 6425/40WA	40	WA	Aliphatic/aromatic polyester	600	7.7	DMEA	n.a.
DAOTAN™ VTW 6462/36WA	36	WA	Aliphatic polyester/acrylic	130	7.9	DMEA	140
DAOTAN™ TW 6466/36WA	36	WA	Aliphatic polyester/acrylic	120	7.9	DMEA	n.a.
DAOTAN™ TW 6490/35WA	35	WA	Aliphatic polyester	75	9.2	TEA	400
DAOTAN™ TW 6493/35WA	35	WA	Aliphatic polyester	75	9.8	TEA	30
DAOTAN™ TW 7000/40WA	40	WA	Aliphatic polycarbonate	550	8.2	DMEA	n.a.



HEW (as supplied)	Density (kg/dm <sup>3</sup> )	Descriptions and Features
n.a.	1.03	Shear stable with good pigment compatibility. Cures at room temperature, giving clear, crack free films with good flexibility and adhesion to polycarbonate, ABS, PUR-RIM and untreated PP/EPDM.
3120	1.05	Very fast set and through drying. Very high gloss for decorative top coats. Good water and weather resistance.
2550	1.08	Shear stable. Good flexibility when cured with isocyanates as well as melamine resins, with good adhesion to polyamide, polycarbonate, ABS and pretreated PP/EPDM.
3900	1.06	Self-crosslinking, good shear stability, pigment wetting, abrasion resistance and resistance to household detergents. Good adhesion to ABS, PA, rigid and flexible PVC and PMMA. Especially suited for primers and basecoats.
n.a.	1.05	High quality, water borne metallic basecoat formulations for automotive OEM applications.
n.a.	1.04	Very good adhesion to plastic substrates like ABS, PVC, PC, PMMA. High elasticity and toughness, excellent mechanical properties (especially stone chip resistance), low yellowing at high temperature. Recommended for primer and basecoat applications.
n.a.	1.04	Glossy and flat furniture and parquet lacquers. High film hardness, high elasticity and toughness, quick physical drying.
825	1.05	Very high hardness along with flexibility. Very good adhesion to plastics substrates commonly used in automotive applications (ABS, PC, PP [flam.], PVC, PPSU). Extremely high water and chemical resistance including sunscreen and bug spray.

## ADDITIVES

Additive name	Dosage	Active content (%)	SB, WB, Universal	Additive type
<b>Pigment wetting</b>				
ADDITOL® XL 6577	2.5-10% inorg pigment 15-60% matting agent	50	SB	Anionic wetting
<b>Dispersing additives</b>				
ADDITOL® VXW 6208	3-10% inorg pigment 15-50% org pigment	50	WB	High MW polymer, non ionic
ADDITOL® AQ 9921	Consult allnex representative	0.45	WB	Acrylic emulsion
ADDITOL® XL 6514/80	Consult allnex representative	0.8	SB	Alkyd modified polyester
ADDITOL® AQ 9620	Consult allnex representative	0.52	SB	Modified alkyd polymer
ADDITOL® XW 6535	Consult allnex representative	45	Universal	High MW, auto emulsifying polymer
ADDITOL® XW 6565	Consult allnex representative	38	Universal	High MW, auto emulsifying polymer
<b>Flow and leveling additives silicone free</b>				
MODAFLOW® 9200	0.1 - 0.5% total	100	SB	Low MW acrylic polymer, crosslinkable
MODAFLOW® RESIN	0.1 - 1% total	100	SB	High MW acrylic polymer, FDA
<b>Silicone leveling additives</b>				
ADDITOL® VXL 4930	0.05 - 0.3% total	40	Universal	Polyether modified silicone
ADDITOL® XW 6580	0.05 - 0.5% total	1	WB / SB	Silicone
ADDITOL® XW 6503N	0.1% - 1% total	0.5	WB / SB	Silicone
<b>Hybrid polymer leveling</b>				
MODAFLOW® LAMBDA	0.1 - 0.5%	100	SB	OH-functional acrylic-silicone hybrid polymer
<b>Defoamer (silicone free)</b>				
ADDITOL® VXW 4973	0.1 - 0.6% total	100	WB	Mineral oil, waxes
ADDITOL® VXW 6386	0.5 - 1.5% total	100	WB	Hydro carbons, waxes
<b>Defoamer (silicone containing)</b>				
ADDITOL® VXL 4951	0.05 - 1% total	20	SB	Fluor modified silicone

Automotive	Industry	Architecture	Descriptions and Features
x	x		Excellent dispersant for inorganic pigments and extenders. Best in class efficiency, high loading and low viscosities.
x	x	x	High efficient dispersing additive for all pigment types. The non ionic polymer structure allows utilization in sensitive formulations such as water borne epoxy systems. Highly recommended for anti corrosive systems, for both direct grinding and pigment concentrates.
		x	General purpose dispersant for use in water based pigmented systems.
	x	x	Dispersant and wetting agent for inorganic pigments.
	x		Low viscosity calcium resin for the manufacture of rotogravure inks.
	x	x	Universal grinding medium for the production of in house and POS tinting systems suitable for architectural and light industrial colorants. Highly recommended for exterior application.
	x	x	Latest generation universal grinding medium for the production of in house and POS tinting systems suitable for architectural and light industrial colorants. Highly recommended for exterior application. Ultra low VOC and ECO labels 2009/543 - 544/EC.
x	x		High efficient flow modifier. Reduces film defects and strongly increases gloss and brilliancy. Recommended for high quality top / mono coats, especially recommended for clear coat systems.
x	x		High efficient flow promoter for all solvent borne top / mono coats. Recommended for pigmented systems, limited compatibility to clear coat systems. Improved degassing effect.
	x	x	Universal silicone leveling additive with very good compatibility. Very efficient spray mist absorption, anti orange peel and anti crater effect. No foam stabilization.
x	x	x	Leveling and substrate wetting agent for water borne and solvent borne paint systems.
x	x	x	Leveling and substrate wetting agent for water borne and solvent borne paint systems which does not increase surface slip, and does not influence recoatability.
x	x		Highly efficient, crosslinkable flow promoter for improved surface characteristics such as gloss, DOI, brilliancy and anti orange peel effect (appearance). Combined efficiency of acrylic flow promoter and silicone leveling additive.
x	x	x	Highly efficient defoamer with good compatibility and easy incorporation. Broad field of application.
x	x		Defoamer for high quality coatings such as high gloss stoving systems.
	x		Very efficient defoamer for solvent based paints. Strong anti blistering effect.

## ADDITIVES

Additive name	Dosage	Active content (%)	SB, WB, Universal	Additive type
<b>Rheology additives</b>				
ADDITOL® VXW 6360	0.1 - 0.3% total	30	WB	Polyurethane thickener
ADDITOL® VXW 6388	0.1 - 3% total	35	WB	Polyurethane thickener
ADDITOL® AQ 1680	Consult allnex representative	0.3	WB	Acrylic emulsion
ADDITOL® AQ 1681	Consult allnex representative	0.29	WB	Acrylic emulsion
ADDITOL® AQ 9803	Consult allnex representative	0.29	WB	Acrylic emulsion
<b>Driers for air drying systems</b>				
ADDITOL® VXW 4940N	2 - 3% solid binder	n.a.	WB	Co, Ba, Zr emulsion, NPE-free
ADDITOL® VXW 6206	1 - 3% solid binder	n.a.	Universal	Co, Li, Zr combination drier, NPE-free
<b>Other</b>				
ADDITOL® AQ 9610	Consult allnex representative	0.65	SB	Modified alkyd polymer
ADDITOL® AQ 9907	Consult allnex representative	0.52	WB	Modified alkyd polymer

Resin name	OH - % (on solids)	HEW (as supplied)	NV (%)	Solvents	Color (max. value)	Density (kg/dm <sup>3</sup> )
<b>Other</b>						
RALWAX 1010 (10-1010)	4.5	380	6.3	BuAc / Xyl / nBA	Milky	0.87

Automotive	Industry	Architecture	Descriptions and Features
x	x	x	Associative thickener to control rheology and flow. High shear active for roller and brush application.
x	x	x	Associative thickener to control rheology and flow. Low shear active for spray application - improved anti sagging and sedimentation.
		x	High viscosity acrylic thickener soluble alkali for use in aqueous type mass systems, including acrylic mortars.
		x	Medium viscosity acrylic thickener for use in paints, sealants, varnishes and waterproofing.
		x	Associative alkali-soluble acrylic thickener with medium thickening power for use in styrenated acrylic water borne paints, sealants, varnishes and waterproofing.
	x	x	Co-metal containing drier, high efficient and easy incorporation. Improves set and through drying.
	x	x	Co-metal containing drier, high efficient and easy incorporation. Improves set and through drying. Very fast set drying performance.
	x		Oil modified calcium resin for use in standardized aluminum paints. High temperature resistance paints added with silicone resin.
	x		Calcium resin with excellent emulsifying and improved appearance properties. Improved drying time of the emulsified enamel; imparts good emulsion viscosity and ease of incorporation.

Automotive	Industry	Architecture	Descriptions and Features
x	x		Ethylene vinyl acetate dispersion that is used to improve aluminum orientation and anti-sedimentation.







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