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Ink Resins, Alkyds, Varnishes and Additives Product Guide

Asia Pacific



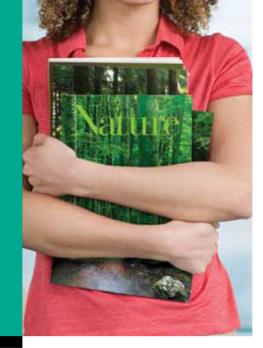
Lawter ™ is a leading global supplier of quality raw materials for the printing ink industry. We provide ink manufacturers with specialty products including resins, alkyds, vehicles and varnishes, wax compounds and additives for offset and liquid inks. ∧



Research and development:

We work in close cooperation with our customers to improve results and create value. History proves that this collaboration achieves the required performance. We have a proud history of creating innovative and successful solutions, meeting our customers' requirements. Our total organization is committed to supporting our customers' drive for success, and we believe that our combined strength is the most efficient method of advancing the industries we serve.





Brief description of test methods

Viscosity

Viscosity is measured with a rotational rheometer using a cone and plate. Materials tested include hard resins, alkyds and varnishes. A solution of hard resin is first made in a specified solvent or vegetable oil by using a Thermotronic (Novomatics GmbH). The viscosity of alkyds and varnishes are measured neat.

Another method of measuring viscosity is the Gardner-Holdt bubble tube method. The Gardner-Holdt bubble tube viscosity is run by adding a quantity of alkyd or vehicle to a predetermined height and sealing to a specified level, leaving a volume of air. The tube is inverted and the air bubble is then timed from one end of the tube to the other (or from one line to another) at an agreed-upon temperature. Air bubble time is compared to standardized tubes (Byk-Gardner).

Cloudpoint

Cloudpoint is measured in order to obtain an indication of the solubility of hard resins and varnishes based on a specified solvent. The resin or varnish is combined with a specified solvent and a solution is prepared using the Chemotronic (Novomatics GmbH). The solution is heated until the pre-set maximum temperature is reached. The solution is allowed to cool at a fixed rate. When clouding occurs, the temperature is recorded.

Acid value

Acid value is the number of milliliters of potassium hydroxide (at 0.1N) required to neutralize one gram of material (including alkyd, resin and varnish). A solution of testing material is prepared in a mixture of xylems/ alcohol (2:1). The value is determined with a known normality KOH solution using phenolphthalein as indicator.

Methanol value

Methanol compatibility is an indication of the polarity of material. Materials are first dissolved in toluene and then titrated with anhydrous methanol until the solution becomes just cloudy. The temperature (agreed upon between customer and supplier) should be maintained throughout the measurement.

Tack

The tack of varnishes is measured on an inkometer or tack-oscope at 32.2°C. Tack is read after a specified time at a specified speed, agreed upon between customer and supplier.

Softening point

There are two methods for measuring softening point, Mettler Drop and Ring and Ball. In both methods, softening point is measured by filling a cup with molten resin. The excess material is removed using a slightly heated metal spatula. For Mettler Drop determination, the cup is placed in the Mettler apparatus and the heating program is started. The softening point is registered automatically by means of an optical sensor. For Ring and Ball determination, the cup is suspended in a glass container of glycerin and a steel ball is placed on its surface and the heating program is started. The softening point is the temperature at which the ball passes through the resin.

Flow time

The flow time is time needed to empty the cup by flowing out the opening. The flow is the time (seconds) starting from the moment when the liquid flows out of the orifice of the cup to the point that the flow is interrupted, at a given temperature and concentration.

pH value

pH is measured with a glass/calomel electrode filled with 3M KCl.

Solids

The solid content of an acrylic dispersion is measured by drying one hour at 125°C.

Molecular weight

Molecular weight is measured by means of gel permeation chromatography (GPC), relative to polystyrene standards.

Dilutability

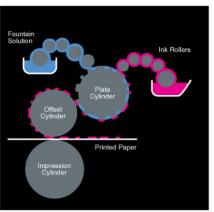
The dilutability is the solvent (toluene) uptake (in percentage) of a varnish of certain concentration, diluted to a flow time in a special cup, at a given temperature.

Tg

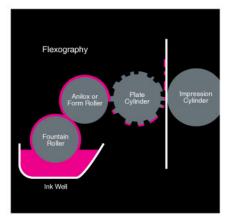
The glass transition temperature (Tg) is measured by means of differential scanning calorimetry.

"Abietic acid is at the center of our technology and the means for creating valuable products."



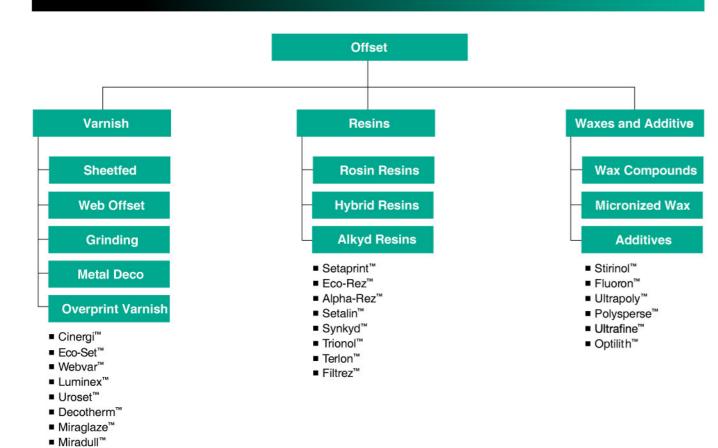


The liquid inks printing process



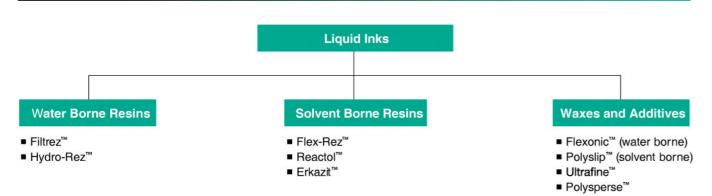


Product Lines Offset



Product Lines Liquid Inks

■ Eco-Web[™]



Offset Printing

Phenolic Modified		5 1 1 1	-	-					
Product	Applications	Physical Characterization	Features		cteristics		01	-1-1 (00)	
				23°C,2	sity (Pa.s 5 s-1	5)	Cloudp	oint (°C)
					test oil	typical value	solids (%)	test oil	typical value
Setaprint [™] 1200 C	Webfed (Heatset and Coldset) offset inks. Sheetfed offset inks. Waterless. Letterpress.	High soluble, medium /high viscous, structured visco-elastic resin.	Very high gloss and fast setting. Good press stability.	40	6/9	26	10	6/9 AFN	65
Setaprint [™] 1310 E	High gloss inks. Wetting varnishes and flushes. Aromatic free varnishes and inks. Overprint varnishes.	Very high soluble, medium viscous resin.	Very good pigment wetting. High gloss combined with fast setting. Good flow and low misting.	40	6/9	35	10	6/9 AF	95
Setaprint [™] 1350 C	Webfed (Heatset and Coldset) offset inks. Sheetfed offset inks. Waterless. Letterpress.	Medium high soluble, medium high viscous resin.	Fast setting combined with high gloss. Good gelling properties.	33.3	ARLO	Z51/2 G-H	10g varnish	M47	52ml
Setaprint [™] 1600 C	Sheetfed offset inks. Webfed (Heatset and Coldset) offset inks. Waterless. Letterpress.	Medium soluble, structured visco-elastic resin.	Fast setting, good press stability, very high stability of rheology under high shear conditions. Low misting, improved water balance, less gelling.	35	ARLO	26 Laray	10g varnish*	21KB	22ml
Setaprint [™] 1800 C	Sheetfed offset inks. Webfed (Heatset and Coldset) offset inks. Waterless. Letterpress	Medium soluble, structured visco-elastic resin.	Fast setting, good press stability, very high stability of rheology under high shear conditions. Low misting, improved water balance, less gelling.	35	6/9 AR	33	10	6/9	160
Setaprint [™] 2330 C	Sheetfed offset inks. Webfed (Heatset and Coldset) offset inks. Letterpress.	Medium and high soluble resin.	Fast setting, high gloss, less gelling.	42.5	6/9 ARB	25	10	6/9	55
Setaprint [™] 2376 E	High gloss webfed- and sheetfed offset inks. Wetting varnishes and flushes. Aromatic free inks and varnishes.	High soluble, low viscous resin.	Excellent pigment wetting. Very good co-resin (combine with high structured, high viscous and low soluble resins).	50	6/9	37	10	6/9 AF	134
Setaprint [™] 2406 C	High gloss webfed- and sheetfed offset inks. Wetting varnishes and flushes. Aromatic free inks and varnishes.	High soluble, medium low viscous resin.	Excellent pigment wetting. Very good co-resin (combine with high structured, high viscous and low soluble resins).	60	xylene	O G-H	10g varnish	21KB	47ml
Setaprint [™] 2654 C	Sheetfed offset inks. Webfed (Heatset and Coldset) offset inks. Gel and let down varnishes.	Medium soluble, medium /high viscous, structured visco-elastic resin.	High gloss. Very fast setting. Very good water balance. Low misting. Less gelling.	40	6/9 ARB	20	10	6/9 AFN	85
Setaprint [™] 2655 C	Sheetfed offset inks. Webfed (Heatset and Coldset) offset inks. Overprint varnishes.	Medium and high soluble structured visco-elastic resin.	High gloss and excellent setting. Low misting.	40	6/9 ARB	30	10	6/9 AFN	85
Setaprint [™] 3855 C	Sheetfed offset inks. Coldset) offset inks. Letterpress.	High soluble resin.	High gloss and low colour. Excellent water balance.	40	6/9 AF	50	10	6/9 AF	62

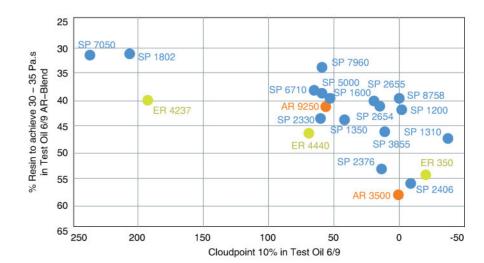
* Varnish : 60% solids in xylene

Product	Applications	Physical	Features	Characteristics						
	9000	Characterization		Viscosity (Pa.s) 23°C,25 s-1			Cloudpoint (°C)			
				solids (%)	test oil	typical value	solids (%)	test oil	typical value	
Setaprint [™] 5000 C	Webfed (Heatset and Coldset) offset inks. Sheetfed offset inks. Waterless. Letterpress.	Medium soluble, medium high viscous, high structured visco-elastic resin. Low polarity.	High gloss and excellent setting. Improved water balance. Low misting. Low tack. Less gelling.	40	6/9 AR	25	10	6/9 AFN	130	
Setaprint [™] 6710 C	Sheetfed offset inks. Webfed (Heatset and Coldset) offset inks. Gel and let down varnishes.	Medium soluble, medium high viscous, high structured visco-elastic resin.	High gloss and fast setting Improved water balance. Low misting. Low tack. Less gelling.	40	6/9 ARB	60	10	6/9 AFN	130	
Setaprint [™] 7050 C	For mineral distillate free inks and inks based on vegetable oil. Inks based on esters of tall oil fatty acid / vegetable oil fatty acid.	Very high structured visco-elastic resin.Very low solubility in mineral distillates. Very high viscosity.	High gloss and fast setting in mineral distillate free inks. Excellent for inks based on soya bean oil and ester solvents.	45	methyl ester of rape oil fatty acid	18	10	6/9 ARB	115	
Setaprint [™] 8758 C	Webfed (Heatset and Coldset) offset inks. Sheetfed offset inks. Waterless. Letterpress.	High soluble, medium / high viscous, structured visco-elastic resin.	Very high gloss and fast setting. Good press stability.	42.5	6/9 ARB	45	10	6/9 AFN	78	

Phenol Free Rosin			_						
Product	Applications	Physical Characterization	Features		eteristic sity (Pa.: 5 s-1		Cloudpoint (°C)		
				solids (%)	test oil	typical value	solids (%)	test oil	typical value
Eco-Rez [™] 350 C	Sheetfed and Heatset offset inks. Pigment dispersions.	High viscosity rosin ester with excellent tolerance for low KB oils.	Fast setting. Higher melting point. Low yellowing.	50	M47	Z4 G-H	10g varnish	M47	>100ml
Eco-Rez [™] 4237 C	Webfed (Heatset and Coldset) offset inks. Sheetfed. Low odour inks. Flushes. Wetting varnishes.	High viscous, low soluble rosin ester.	Fast setting. Higher melting point. Low odour. Low yellowing.	33.3	ARLO	Z6 G-H	10g varnish	M47	15ml
Eco-Rez [™] 9710 A	Overprint varnishes. Webfed (Heatset and Coldset) offset inks. Sheetfed. Pigment wetting.	Pigment wetting resin	Outstanding lithographic and pigment wetting properties.	33.3	ARLO	7 sec G-H	10	6/9 AF	90
Eco-Rez™ 9730 A	Webfed (Heatset and Coldset) offset inks. Sheetfed.	Structured resin.	Outstanding lithographic properties for high speed ink.	33.3	ARLO	75 25°C, 2.5 s-1	10	6/9	90
Eco-Rez™ 9760 A	Webfed (Heatset and Coldset) offset inks. Sheetfed.	Highly structured resin.	Hightly structured vehicle systems, outstanding water balance.	33.3	ARLO	215 25°C, 2.5 s-1	10	6/9	120

Hybrid Resins and	Functional Hydrocarb	on Resins									
Product	Applications Physical Characterization Features		Features	Characteristics							
			Viscosity (Pa.s) 23°C,25 s-1		Cloudpoint (°C)				
				solids (%)	test oil	typical value	solids (%)	test oil	typical value		
Alpha-Rez [™] 3500 E	Offset inks. Waterless inks.	Very high soluble, low viscous resin.	Very good pigment wetting resin, in particular for black and cyan.	60	6/9 AFN	65	10	6/9 AF	132		
Alpha-Rez™ 9250 E	Webfed (Heatset and Coldset) offset inks. Sheetfed offset inks. Waterless. Letterpress.	High soluble, high iscous structured visco-elastic hybrid resin. Low polarity.	Very stable visco-elasticity, even at high temperatures. High stability of rheology under high shear condition. Low tack.	40	6/9 ARB	50	10	6/9 AFN	123		

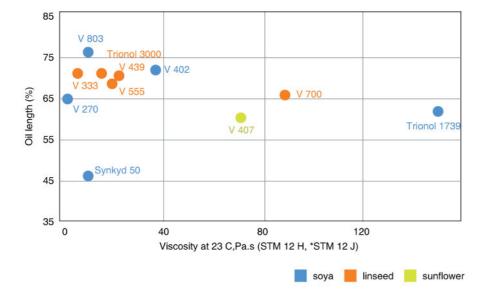
Resins for Offset





Alkyd Resins	A 11 41		01					
Product	Applications	Features	Charact Oil type	Oil length (%)	Acid value (mg KOH/g substance)	Viscosity at 23℃ at 25 s-1 (Pa.s)	Viscosity at 25℃ (s) G–H tube	Methanol number (ml MeOH/ 5g substance)
					typical value	typical value	typical value	typical value
Setalin [™] V270C	Wetting vamishes. Sheetfed and webfed offset inks. Letterpress inks.	Good pigment wettting. Hard films.	soya bean	65	8	3 (100 s-1) 70% in white spirit.		35
Setalin [™] V333C	Wetting vamishes. Sheetfed and webfed offset inks.	Good pigment wetting. Good overall properties: gloss, flow.	linseed	72	10	6	70	45
Setalin [™] V402C	Sheetfed– and webfed offset inks. Metal deco inks. Low odour inks. Wetting and letdown.	Low polarity. Good overall properties: gloss, flow, waterbalance.	soya bean	73	9	37		28
Setalin [™] V407E	Metal deco inks (3-piece can) especially white inks. Low odour sheetfed inks.	Good pigment wetting. Low yellowing, low odour.	sunflower	60	8	72		45
Setalin™ V439C	Wetting vamishes. Sheetfed and webfed offset inks.	Fast setting. Good water balance.	linseed	71	14	19	210	30
Setalin [™] V555C	Wetting vamishes. Sheetfed and webfed offset inks.	Good pigment wetting. Good overall properties: gloss, flow.	linseed	70	10	17	240	40
Setalin [™] V700C	Wetting vamishes. Sheetfed and webfed offset inks.	Good pigment wetting. Good overall properties: gloss, flow.	linseed	66	10	86	70	35
Setalin™ V803C	Wetting varnishes. Sheetfed and webfed offset inks. Metal deco inks (3–piece can). Low odour.	Good pigment wetting. Low yellowing. Good gloss, improved flow.	soya bean	76	9	7		45
Synkyd™ 50E	Offset inks. Heatset. Coldset. Screen inks. Letterpress inks. Flush varnishes.	High solubility in mineral distillates. Alkyd "alternative". Low polarity. Better water resistance. Higher gloss. Fast setting. Improved transfer.	soya bean	46	20	10		26
Trionol™ 1739C	Sheetfed- and webfed offset inks. Metal deco inks (3-piece can). Low odour.	Good pigment wetting. Excellent litho properties. High gloss. Fast setting. Low color and low yellowing.	soya bean	60	10	142	320 (37.8℃)	39
Trionol™ 3000C	Sheetfed and webfed offset inks.	Stable rheology under higher shear conditions. Low misting. Combines high gloss with fast setspeed and good drying.	linseed	72	8	14		36

Setalin and Trionol Alkyds



Varnishes									
Product	Applications	Features	Charact						
			Drying oil / alkyd type	Mineral distillate type (°C)	Non- volatiles (%)	Viscosity at 23°C at 25 s-1 (Pa.s)	Viscosity TA 25°C 2.5S 2.5 s−1 (Pa.s)	Tack 1' at 100 mpm	Tack 1 at 400 mpm
						typica	l value	typic	al value
Wetting Varnish	es		•	•					
Uroset [™] 100SC	Pigment concentrates. Flushes. Offset, metal deco and letterpress inks.	Best grinding properties. Excellent pigment wetting. High pigment loading.	linseed	260 – 290	85	100 sec (G-H)		N/A	
Uroset [™] 2055C	Sheetfed inks	" Formulated form alkali blue." Excellent flow properties. Free-flow.	soya bean	280 – 310	65	30 sec (G-H)			N/A
Uroset [™] 8802C	Pigment dispersions / concentrates. Offset inks. Quickset, sheetfed and gloss offset.	Excellent pigment wetting. Fast setting with high gloss. Good rheological and press stability. Good water balance	soya bean	280 – 310	75	60 (30℃)			14
Uroset [™] 8825C	Pigment dispersions / concentrates. Offset inks. Quickset, sheetfed and gloss offset. Non–VOC Inks.	Excellent pigment wetting. Fast setting with high gloss. Good rheological and press stability. Good water balance.	soya bean	N/A	100	75 (30℃)			21
Uroset [™] 8850C	Pigment dispersions / concentrates. Offset inks. Quickset, sheetfed and gloss offset.	Excellent pigment wetting. Fast setting with high gloss. Good rheological and press stability. Good water balance	soya bean	280 – 310	84	75 (30°C)			17
Uroset [™] FGVC	Dry grinding pigment dispersion.	Premium fast setting flushing / grinding varnish for dry pigment dispersion including carbon black.	linseed	243 – 323	63	240 sec (G-H)	50		8
Sheetfed Varnish	nes Letdown and Specialitie	s							
Cinergi [™] 1060	Sheetfed printing inks.	Free flow varnish. High gloss. Good water balance.	linseed	290 – 340	60	20 (30°C)			11
Cinergi [™] 1061	Sheetfed printing inks.	Gel vamish. Fast setting. Good water balance.	linseed	290 – 340	58	70 (30°C)			11
Cinergi™ 2000E	Non-absorbing substrates, sheetfed, webfed and metal deco inks. Sheetfed printing inks.	High gloss. Good adhesion. Low bronzing and good litho properties.	linseed	N/A	100	12		N/A	
Cinergi [™] 2091	Sheetfed printing inks.	Fast setting combined with high gloss. Good printability, transfer and superior leveling.	linseed	265 - 355	70	150 (30°C)		N/A	21
Cinergi™ 8710C	Mineral oil free sheetfed inks. Non–VOC Inks.	Structured. Fast setting combined with high gloss. Very good press stability at high printing speed.	soya bean- blend	280 – 310	78	150 (30°C)			17
Cinergi™ 8735C	Soya bean oil base Sheetfed printing inks.	Fast setting combined with high gloss. Very good press stability at high speed.	soya bean- blend	N/A	100	150 (30°C)			20
Cinergi [™] 8760C		Fast setting combined with high gloss. Very good press stability. Improved water balance.	soya bean- blend	280 – 310	83				20
Heatset Varnishe	es								
Webvar [™] 1126	Heatset gel vamish.	Fast setting. High gloss. Excellent press stability. Good water balance.	soya bean	260 – 290	60	170 (30°C)			7
Webvar [™] 1127	Heatset freeflow.	Good pigment wetting. Excellent water balance.	linseed	260 – 290	73	60 (30°C)			20

Product	Applications	Features	Characte	eristics				
			Drying oil-type	Mineral oil type (°C)	Solids content (%)	Viscosity at 23°C at 25 s-1 (Pa.s)	Tack, 1' at 100 mpm	Tack 1' at 400 rpm
						typical value	typical	value
Miraglaze™ 22	Overprint varnish for sheetfed.	Alkyd based OPV gel for better rheological balance.	blend	240–307	68			7.5
Miraglaze [™] 8614	Overprint varnish for sheetfed.	Varnish with wax and driers. Non-yellowing. Low colour. Low tack.	blend	240–307	68			6
Miraglaze™ 8909E	Complete overprint varnish.Wet-on-wet and wet-on-dry.	Vamish with wax and driers. Combines very high gloss with fast drying and high rub resistance.Excellent leveling.	D.C.O. / tung	260–290	70	4	75(85mpm)	
Miradull™ 7060	Overprint varnish for sheetfed.	Varnish with wax and driers. Excellent drying properties and resists burnishing.	blend	240–307	80	N/A		5
Miradull™ 8689QL	Overprint varnish for sheetfed.	Varnish with wax, driers and matting agent. Ultra-dull OPV. Resistance to polishing.	blend	240–280	76			3.5
Miradull™ E	Complete matt overprint varnish.	Vamish with wax, driers and matting agent. High degree of matting. Fast set speed and fast drying combined with high rub and polish resistance.	tung / alkyd	240–270	75	43	95(85mpm)	

Metal Decorating						
Product	Applications	Product Description	Features	Characteristi	cs	
				Solvent type	Acid value (mg KOH/g substance)	Viscosity at 23°C at 25 s-1 (Pa.s)
Two Piece Can						
Decotherm [™] 210E	Dry offset / spindle printing.	Polyester resin in TXIB.	High gloss. Very good pigment wetting (in particular white).	TXIB	8	370
Decotherm [™] 260E	Dry offset / spindle printing.	Polyester resin in Trypolylene glycol.	High performance, high gloss, fast cure, vercoatable with water–based coating.	TPG	26	93
Decotherm [™] 290E	Dry offset / spindle printing.	Structured polyester in TDA / TPG / mineral distillate.	Very low misting. Very fast curing. Low tack.	TDA/TPG/ 260-290distillate	35	105
Three Piece Can						
Decotherm [™] 100C	Lithographic / flat sheet printing.	Complete vamish with high gloss and good adhesion on steel, tin and aluminium.	Vary fast drying.	Mineral distillate 260 – 290	N/A	67
Decotherm [™] 1720C	Lithographic / flat sheet printing.	Vamish on steel, tin, and aluminium.	Fast setting and pigment setting. Lower the baking temperature.	Mineral distillate 260 – 320 none	N/A	279
Setalin [™] V402C	Lithographic / flat sheet printing.	Soya bean oil alkyd for colours. Low odour.	Fast setting.	none	9	37
Setalin™ V407E	Lithographic / flat sheet printing.	Sunflower based alkyd for mainly white inks.	Low yellowing and low odour.	none	8	45
Trionol™ 1739C	Lithographic / flat sheet printing.	Soya bean oil alkyd for colours. Low odour.	Low odour, tough ink films.		10	142

Product	Applications	Туре	Features	Characteristic	es	
				Vegetable oil (alkyd) type	Solids (%)	Average particle size (µ m)
Ultrapoly [™] 210A	Sheetfed Mineral distillate free inks.	PE compound	100% non-valatile and high PE %. Very high rub resistance and good gloss.	blend	100	3
Ultrapoly [™] 452E	Sheetfed Mineral distillate free inks.	PE compound	Very good rub and slip on matt card and paper.	blend	100	2
Ultrpoly [™] 990E	Sheetfed Mineral distillate free inks.	PE compound	Excellent rub, abrasion and scratch resistance with good slip and gloss. Best for Waterbalance.	blend	100	3

Product	Applications	Туре	Features	Characteristics			
				Vegetable oil (alkyd) type	Solids (%)	Average particle size (µ m)	
Fluoron™ 735	Inks, UV, metal deco, OPV, coatings, laser improving, AQ and UV coatable.	PTFE compound	Premium PTFE, 100% active system. Excellent slip, abrasion and heat resistance, economical.	N/A	100	N-4(NPIRI)	
Stirinol [™] 97	Heatset offset ink. Hot foil stamping.	Microcrystalline compound	Workhorse for rub and slip. Exceptional recrystallization resistance.	N/A	100	N-3(NPIRI)	

Product	Applications	Туре	Features	Characteristics			
				Melting point (°C)	Average particle size (µ m)		
Polysperse™	Sheetfed, Heatset and liquid inks.	Micronised FT wax.	Good rub resistance and good slip.	98	3		
Polysperse [™] HPC	Sheetfed, Heatset and liquid inks.	Micronised FT wax.	Very good rub resistance and Very good slip. Higher melt point.	105	3		
Ultra-Fine™ 1000PE	Sheetfed, Heatset and liquid inks.	Micronised PE wax.	Good for rub, mar, slip and gloss. UV and AQ coatable.	98–104	7		
Ultra-Fine™ 1WLS	Sheetfed, Heatset and liquid inks.	Micronised PTFE wax.	Ultimate rub resistance and slip. Low particle size.	320	2.5		

Ink and Press Add	Ink and Press Additives									
Product	Applications	Feature	Form	Benefits						
Optilith [™] 4A	Heatset and Sheetfed, flushing vamishes.	Water balance regulator.	compound	Reduces water–pick up, minimal impact on tack and meology.						
Optilith™ 1486	Heatset and Sheetfed inks.	Anti-oxidant.	solution	High performance anti–oxidant, anti–skinning, long stay–open time, fast dry–time.						

Flexo, Gravure and Digital Printing

Product	Applications	Features	Characteristics				
			Acid Value (mg KOH/g substance)	Hydroxyl number (mg KOH/g substance)	Melt point (°C)		
Polyketones	-			v			
Reactol [™] 1717B C	Flexo and gravure inks and lacquers. Screen inks. Ballpoint inks. Jet inks.	Broad compatibility with solvents and other resins. Very good pigment wetting and high gloss. Reduces gel point of polyamide inks. Improves adhesion. Low colour.	<1	270	99		
Reactol [™] 1717H C	Flexo and gravure inks and lacquers. Screen inks. Ballpoint inks. Jet inks.	Broad compatibility with solvents and other resins. Very good pigment wetting and high gloss. Reduces gel point of polyamide inks. Improves adhesion. Low colour. Excellent solvent release. Higher melt point, improved heat resistance and block resistance.	<1	270	120		

Product	Applications	Features	Characteris	tics				
			Acid Value (mg KOH/g	Amine Value (mg KOH/g	Melt	Viscosity (se Ford 4 cup, 2		Dilutibilit
			substance)	substance)	(℃)	solution*	50% solids in ethanol	ethanol
Co Solvent polyamid	es						-	
Flex-Rez [™] 0080 CS	Flexo and gravure inks. Overprint varnishes. Cold seal release lacquer.	Excellent adhesion on treated films. Water-, oil-, grease-, alkali resistance.	<5	<5	110	34		
Flex-Rez [™] 0100 CS	Flexo and gravure inks. Overprint varnishes. Cold seal release lacquer.	Excellent adhesion on treated films. Water-, oil-, grease-, alkali resistance.	<5	<5	110	40		
Flex-Rez [™] 0120 CS	Flexo and gravure inks. Overprint varnishes. Cold seal release lacquer.	Excellent adhesion on treated films. Water-, oil-, grease-, alkali resistance.	<5	<5	110	46		
Flex-Rez [™] 1060 CS	Flexo and gravure inks. Overprint varnishes. Cold seal release lacquer.	Excellent adhesion on treated films. Water-, oil-, grease-, alkali resistance.	<6	<6	110	34		
Flex-Rez [™] 1066 CS	Flexo and gravure inks. Overprint varnishes. Cold seal release lacquer.	Excellent adhesion on treated films. Water-, oil-, grease-, alkali resistance.	<5	<5	110	60		
Flex-Rez [™] 1074 CS	Flexo and gravure inks and lacquers for polyolefin films. Cold seal release lacquers.	Good solvent release. High gloss. Excellent adhesion on treated films. Excellent cold seal release properties.	< 6	< 6	100	43		
Flex-Rez [™] 1094 CS	Flexo and gravure inks and lacquers forpolyolefin films.	Very good gel resistance. Very high gloss.Excellent adhesion on treated films.	<6	< 6	110	46		
Flex-Rez [™] 1104 LCS	Flexo and gravure inks. Overprint varnishes. Cold seal release lacquer.	Excellent adhesion on treated films. Water-, oil-, grease-, alkali resistance.	<5	<3	115	65		
Flex-Rez [™] 3370 CS	Flexo and gravure inks and lacquers for polyoleinfin film.	Improved gel resistance.	< 6	< 6	95	34		
Alcohol Dilutable Po	lyamides							
Flex-Rez [™] 2433 AD	Flexo and gravure inks and lacquers for polyolefin films.	Very high gloss.	< 6	< 6	120		46	Max. 40
Flex-Rez [™] 2445 AD	Flexo and gravure inks and lacquers for polyolefin films.	High gloss. Good gel resistance. Greaseoil-,lard-,alkali-, and water resistance.	<6	<6	145		55	Max.35
Flex-Rez [™] 4399 AD	Flexo and gravure inks and lacquers for polyolefin films.	High gloss. Good gel resistance. Good water and ice crinkle.	< 4	< 6	100		48	Max. 45
Flex-Rez [™] 4584 AD	Flexo and gravure inks and lacquers for polyolefin films.	Good gel resistance and recovery. Very good water and ice crinkle resistance.	< 6	< 6	116		48	Max. 47
Flex-Rez [™] 5111 AD	Flexo and gravure inks and lacquers for polyolefin films. Deepfreeze packaging (bread bags).	Excellent gel resistance. High gloss combined with excellent water and ice crinkle resistance.	< 4	< 6	110		51	Max. 33

* 40% solids in solution: xylene/IPA/Ethanol = 1:1:1

Product	Applications	Features	Characteris	tics				
			Acid Value (mg KOH/g substance)	Amine Value (mg KOH/g substance)	Melt point	Viscosity (second) Ford 4 cup, 25°C		Dilutibility (%) in
					(℃)	solution*	50% solids in ethanol	ethanol
Alcohol Soluble Pol	yamides		'			•	•	
Flex-Rez [™] 1084 AS	Flexo and gravure inks and lacquers for polyolefin film. Modifying resin.	Higher melt point. Very high heat resistance. No gel formation.	<15	<15	185		132	Max.6.6
Flex-Rez [™] 1155 AS	Flexo and gravure inks and lacquers for polyolefin films. Cold seal release lacquers.	Non-film forming. Rapid solvent release. Very good NC-compatibility. Very good gel resistance. High gloss. Good cold seal release lacquer properties.	<6	<6	115		46	Max.30
Flex-Rez [™] 4512 AS	Flexo and gravure inks and lacquers for polyolefin films.	Outstanding water and ice crinkle resistance. High gloss.	<6	<6	110		24	Max.26
Flex-Rez [™] 6243 AS	Flexo and gravure inks and lacquers for polyolefin films.	Higher melt point. Very high heat resistance. No gel formation. Non-film forming.	<10	<10	150		181	Max.29

* 40% solids in solution: xylene/IPA/Ethanol = 1:1:1

Product	Applications	Features	Characteristics				
			Acid Value (mg KOH/g substance)	Hydroxyl number (mg KOH/g substance)	Melt point (°C)		
Maleic and Fumaric	 Modified Rosin Resins. Polyeste	rs and Phenolics.					
Filtrez [™] 521	Flexo and gravure inks and lacquers. Water / alcohol soluble inks and lacquers.	Rapid water release in aqueous systems. Improves gloss and adhesion in aqueous system. Good flexibility. Low viscosity.	220	N/A	150		
Filtrez™ 526	Flexo and gravure inks and lacquers. Water / alcohol soluble inks and lacquers.	Rapid water release in aqueous systems. Improves gloss and adhesion in aqueous system. Good flexibility. Low viscosity.	125	N/A	115		
Hydro-Rez [™] 5614 A	Flexo and gravure inks and lacquers. Water / alcohol soluble inks and lacquers.	Rapid water release in aqueous systems. Improves gloss and adhesion in aqueous system. Good flexibility. Low viscosity.	185	< 15	170		
Hydro-Rez [™] 5626 A	Flexo and gravure inks and lacquers. Water / alcohol soluble inks and lacquers.	Rapid water release in aqueous systems. Improves gloss and adhesion. Good flexibility. Low viscosity.	200	< 15	170		
Hydro-Rez [™] 6200 A	Flexo and gravure inks and lacquers. Water / alcohol soluble inks and lacquers.	Excellent rub resistance. Good adhesion on aluminium foil. Good flexibility.	185	< 15	145		
Reactol [™] 1111 E	Flexo and gravure inks and lacquers. Alcohol soluble inks and lacquers.	Non reactive pure phenolic (Novolak). Improves toughness, gloss, adhesion and hardness of the film. Improves heat resistance. Rapid drying.	<1	<1	130		
Reactol [™] 5145 A	Flexo and gravure inks and lacquers. Water / alcohol soluble inks and lacquers.	Improves gloss and adhesion. Is crosslinkable. Excellent compatibility with cellulose resins (NC, CAP, CAB). Very good heat, product, water, alkali, oil, solvent and block resistance (when cured). Flexible and fast solvent release.	120	130	130		

Product	Applications	Туре	Features	Characteristics		
bosenbal Charlescoler				Melting point (°C)	Average particle size (µ m)	
Polysperse™	Sheetfed, Heatset	Micronised FT wax.	Good rub resistance and good slip.	98	3	
Polysperse [™] HP	Sheetfed, Heatset	Micronised FT wax.	Very good rub resistance and	105	3	
Ultra-Fine™ 1WLS	Sheetfed, Heatset and liquid inks.	Micronised PE wax.	Good for rub, mar, slip and gloss. UV and AQ coatable.	320	2.5	
Ultra-Fine [™] 1000PE	Sheetfed, Heatset and liquid inks.	Micronised PTFE wax.	Ultimate rub resistance and slip. Low particle size.	101	6	

Product	Applications	Features	Characteristics					
			Solids Viscosity (%) (mPa.s)		PH	Tg (℃)	Acid Value (mg KOH/g substance)	
Sulfopolyesters				25				
	Flexo and gravure inks and lacquers for paper and foil.	Fast drying. Amine / ammonia–free. Low odour. Neutral pH. Low foaming. Stable with metallic pigments. Good adhesion on polyolefins.						
Hydro-Rez [™] 1100D	Pigment dispersions. Cigarette packaging. Pre– and post–metal primers. Metallic inks.	Excellent pigment wetting and high gloss. Outstanding ay of aluminium (metallization). Alcohol resistance. Good resolubility, easy wash-up.		89	6.2	55	<1	
Hydro-Rez [™] 1200D2	Primers for foil and metallised films. General use inks and OPV's.	Adhesion to metal surfaces. Good water and alcohol resistance.		100	6.2	63	<1	
Hydro-Rez [™] 1400D	Film-forming co-resin.Lamination.	Lowest Tg, good lamination bond strengths. Excellent adhesion PET films. Easy wash-up.	30	14	6.8	29	<1	
Solid Acrylic Resins								
Hydro-Rez [™] 2007E	Flexo and gravure inks and OPV's.	Low molecular weight. For high gloss OPV's.	100	N/A	N/A	122	245	
Hydro-Rez [™] 2710E	Flexo and gravure inks and OPV's.	Very good pigment wetting. High colour strength.	100	N/A	N/A	116	245	
Maleic and Fumaric	Modified Rosin Resins	-					20	
Hydro-Rez [™] 5614A	Flexo and gravure inks and lacquers. Water / alcohol soluble inks and lacquers.	Rapid water release in aqueous systems. Improves gloss and adhesionin aqueous systems. Good flexibility. Low viscosity.	100			N/A	185	
Hydro-Rez [™] 5626A	Flexo and gravure inks and lacquers. Water / alcohol soluble inks and lacquers.	Rapid water release in aqueous systems. Improves gloss and adhesionin aqueous systems. Good flexibility. Low viscosity.	100			N/A	200	
Hydro-Rez [™] 6200A	Flexo and gravure inks and lacquers. Water / alcohol soluble inks and lacquers.	Rapid water release in aqueous systems. Improves gloss and adhesion in aqueous systems. Good flexibility. Low viscosity.	100			N/A	185	
	L	I .						

Water Borne Wax Emulsions							
Product	Applications	Туре	Features	Characteristics			
	5,000	535		Solvent	Solids (%)	Average particle size (nm / μ m)	
Flexonic™ EN41E	w / b inks and overprint vamishes.	PE wax dispersion.	Good rub and scratch resistance with gloss retention.	water	33	50nm	
Flexonic [™] W378E	w / b inks and overprint vamishes.	PE wax dispersion.	Excellent compatibility with good rub and scratch resistance with gloss retention.	water	55	6 µ m	

Micronised Waxes							
Product	Applications	Туре	Features	Characteristics			
				Solvent	Solids (%)	Average particle size (nm / μ m)	
Polysperse [™] W2F	w/b inks.	Micronised FT wax.	Good rub resistance and good slip.		98	3	
Ultra-Fine™ 1000PE	Solvent / w / b / flexo and gravure, HS, SF, UV, OPV, paints and coatings.	Micronised PE wax.	Workhorse PE for rub, mar, slip and gloss. UV and AQ coatable.		101	6	

Product	Applications	Features	Characteristics					
			Acid Value (mg KOH/g substance)	Tg (℃)	Melt Point (°C)	Molecular weight (Daltons)		
			typical value					
Resins for Water Ba	sed Jet Inks	·	•					
Hydro-Rez [™] 1100 D	Sulfo polyester resin dispersion in water.	For water based inks. No solubilizing agents needed. Low foaming. Low odour.	<1	55	N/A	15000		
Hydro-Rez [™] 2007 E	Solid acrylic resin.	For water based inks. Low molecular weight. Waterwhite colour. To be dissolved in water with the help of a solubilizing agent. Very high gloss.	240	122	120	2000		
Hydro-Rez [™] 2710 E	Solid acrylic resin.	For water based inks. Low molecular weight. Waterwhite colour. To be dissolved in water with the help of a solubilizing agent. Very high gloss.	210	116	150	8500		
Reactol [™] 5145 A	Polyester resin.	For water / alcohol based inks. To be dissolved in water / alcohol with the help of a solubilizing agent. High flexibility, good adhesion and high gloss.	120	140	130	7500		
Resins for Solvent B	ased Jet Inks							
Reactol™ 1717B C	Polyketone resin.	For ketone and ketone / alcohol based inks. Excellent for gloss and adhesion.	<1	N/A	99	1400		
Reactol™ 1717H C	Polyketone resin.	For ketone and ketone / alcohol based inks. Higher melt point. Excellent for gloss and adhesion.	<1	N/A	120	1600		
Reactol [™] 5145 A	Polyester resin.	For alcohol based inks. Improves gloss and adhesion. Is crosslinkable. Very good heat, product, water, alkali, oil, solvent and block resistance (when cured). Flexible and fast solvent release.	120	140	130	7500		
Flex-Rez [™] 4584 AD	Polyamide resin.	For alcohol based inks. High gloss and excellent adhesion. Very high flexibility.	5	N/A	116	9000		

Notes	Notes