



NORTH AMERICA

# Product Guide

**LAWTER**<sup>TM</sup>



Better, cleaner chemistry



# Lawter™ has over 70 years of experience in creating innovative solutions

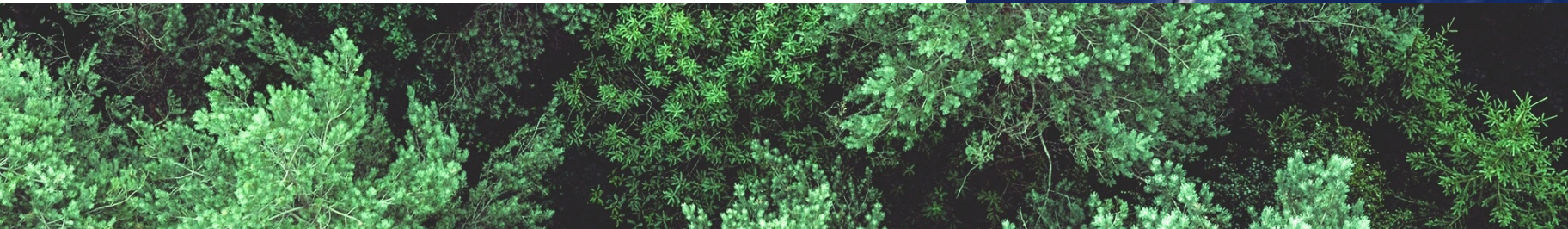
Our global network of manufacturing plants gives us the ability to serve customers around the world. And with products formulated to meet thousands of diverse end-use applications, we are experts in serving a wide variety of industries.

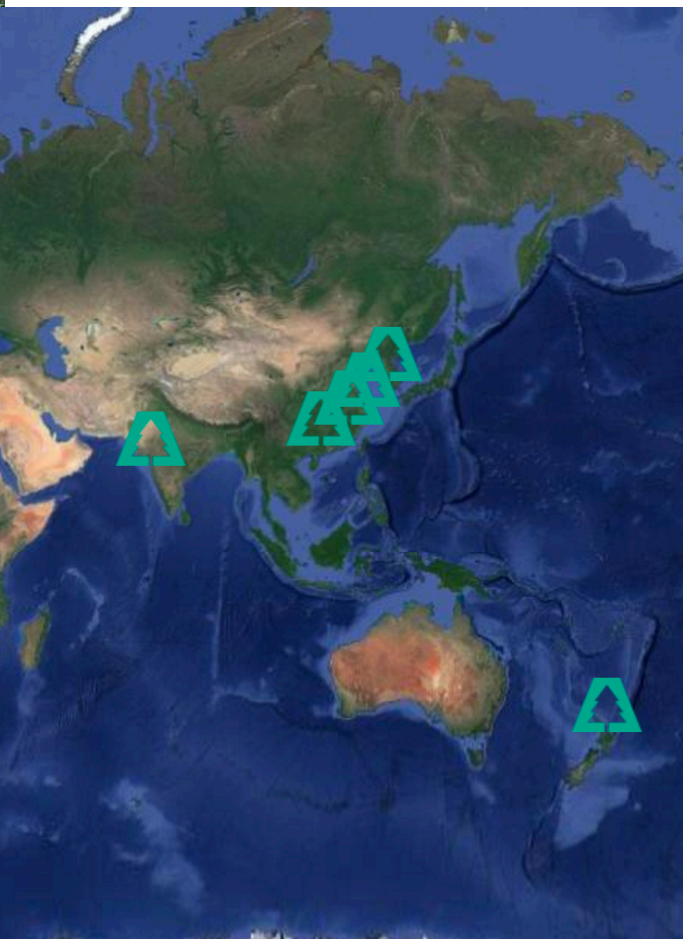
With so many customers counting on us, our sales and production teams are backed by technical service and support that sets the industry standard. In an increasingly competitive world, you can count on Lawter to find a cost-effective and innovative solution to your industrial bonding and binding needs.



**Lawter**  
is a leading global  
supplier of resins  
and resin dispersions  
for adhesives.

Our resin derivatives are also used in applications such as pigments, rubber intermediates, aroma chemicals and road marking.





## Global presence

Lawter's customers enjoy the benefits of global manufacturing, paired with regional support. Our production sites are located in:

- United States
- The Netherlands
- Belgium
- South Korea
- China
- New Zealand
- Argentina

## Technical support

Your products are important to us. With technical service labs located in key regions of the world, Lawter is able to work closely with customers to achieve product excellence and value.

Our knowledge of resin chemistry paired with our customer's expertise has led to some exciting new products, including our latest waterborne tackifier systems.

## Renewable raw material sources

Many of our raw materials are derived from renewable sources such as the rosin tapped from pine trees or from the pulp-making process for the paper industry.

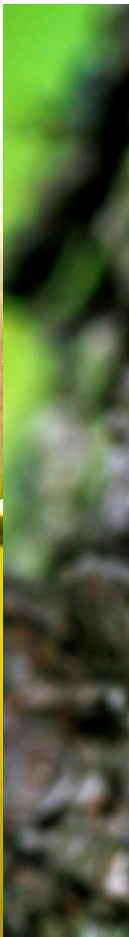


— 250

200

150

APPROX. VOL.





# Research and development

We work in close cooperation with our customers to improve their results and help create value. This collaboration achieves the required results.

We have a proud history of creating innovative and successful solutions to meet the exact requirements in all the industries we serve. Combining our knowledge of resin chemistry and our customers' expertise in their field of excellence has been the impulse for the creation of new resin types, like our latest waterborne tackifier systems. Customised products are developed by working under mutually confidential conditions. We also have product development centers located in all key regions.





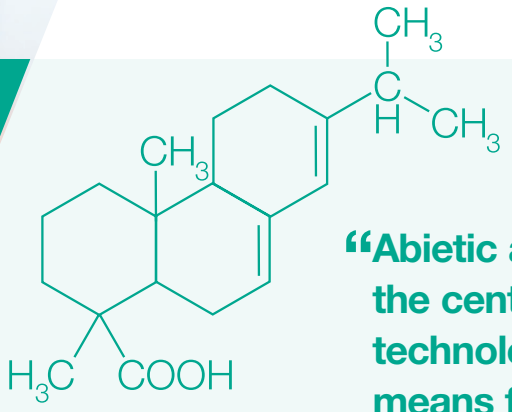
# **Ink resins, vehicles, and additives**

---



**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.

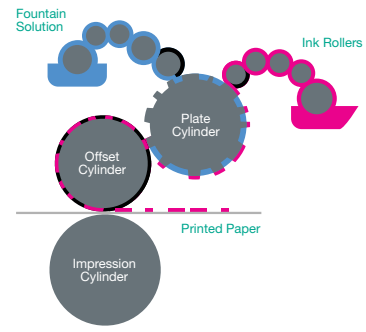


**“Abietic acid is at the center of our technology and the means for creating valuable products.”**

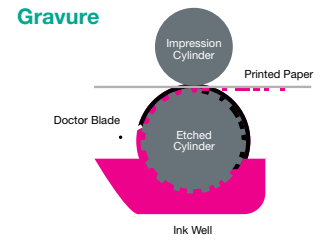
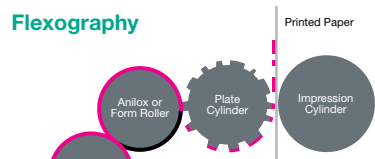
↓ Resin, alkyd and wax compound for offset printing inks.



### The offset printing process



### The liquid inks printing process



# Product Lines: Offset

## Varnish

Sheetfed

Web Offset

Grinding

Metal Deco

Overprint Varnish

- Cinergi™
- Webvar™
- Eco-Set™
- Eco-Web™
- Luminex™
- Uroset™
- Decotherm™
- Miraglaze™
- Miradull™

## Resins

Rosin Resins

Hybrid Resins

Alkyd Resins

- Setaprint™
- Eco-Rez™
- Alpha-Rez™
- Setalin™
- Synkyd™
- Trionol™
- Terlon™
- Filtrez™

## Waxes and Additives

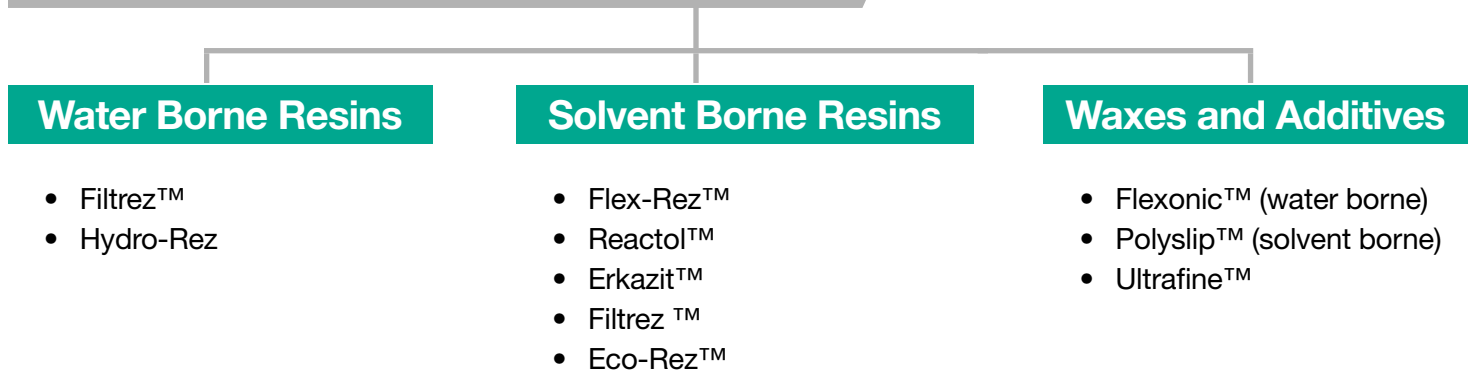
Wax Compounds

Micronized Wax

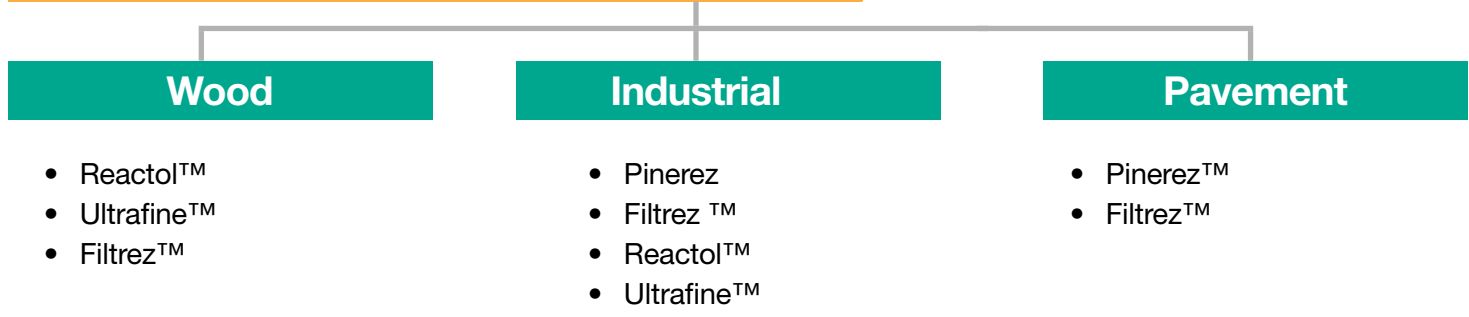
Additives

- Stirinol™
- Fluoron™
- Ultrapoly™
- Polysperse™
- Ultrafine™
- Optilith™

# Product Lines: Liquid Inks



# Product Lines: Coatings





# **Coating Resins, Adhesive Resins, and Tackifier Dispersions**

---

---

# Snowtack® tackifier dispersions

Capitalizing upon technology that dates back to the first stable colloidal resin emulsions produced during the 1920s, Lawter has developed a wide range of tackifying dispersions which are specifically designed to serve the needs of the adhesive and surface coating Industries.

Snowtack® tackifier resin dispersions are aqueous, solvent-free dispersions for the manufacture of pressure-sensitive adhesives based on acrylic, natural rubber or SBR emulsions. When formulated correctly, they provide an excellent balance of adhesion and cohesion to a wide range of substrates. Snowtack® can run on industry standard coaters at high speed due to its excellent stability. Snowtack® is an environmentally friendly component for your adhesive. All Snowtack® grades are alkyl phenol ethoxylate (APE) free.

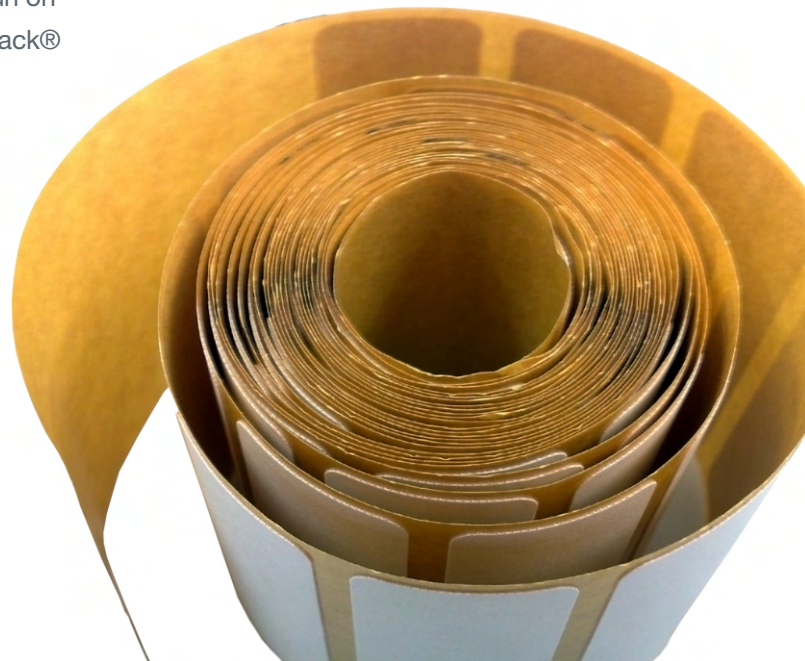
## Markets and applications

### **Waterborne Pressure-Sensitive Adhesive:**

- Paper label, filmic label and tape

### **Waterborne Adhesive:**

- Automotive
- Building and construction
- Bottle Labelling







# Burez<sup>®</sup> rosin soaps

Burez<sup>®</sup> soaps are based upon disproportionated and modified rosins, saponified with sodium or potassium hydroxide. All our soaps have good stability and excellent resistance to crystallization and are available in a range of differing solids and viscosities. The Burez range has been mainly designed for three specific applications: emulsion polymerization, organic pigment production and wet glue formulations.

## Markets and applications

- Emulsifiers for the manufacture of SBR, Polychloroprene rubber, ABS, PVC, and other specialty rubbers
- Modifier/tackifier in wet glues
- Pigment coating
- Lubricant
- Plasticizer





# Pinerez® and Pineclear® stabilised rosin esters, modified rosin esters, rosin acids and liquid rosin esters

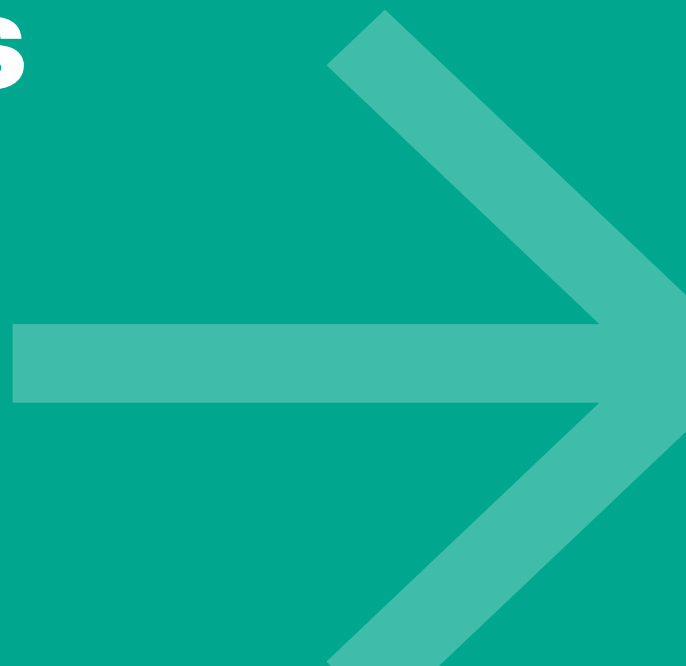
Pinerez® tackifier resins are recommended to enhance the adhesive performance in hot-melt and solvent-based adhesive applications. They are stabilized, light-colored resins with excellent viscosity stability, and have excellent compatibility with a range of polymers that are widely used in packaging and pressure-sensitive adhesives. These polymers include EVA, SIS, and SBS block copolymers, natural and synthetic rubber, and acrylics. Low VOC Pinerez products provide performance value in water-based, solvent-free flooring adhesives.

## Markets and applications

- Hot melt adhesives
- Solvent-based adhesives
- Reactive PUR adhesives
- Construction adhesives
- Rubber compounding
- Sealants
- Depilatory waxes
- Chewing gum
- Water-based flooring adhesives
- Coatings
- Pavement Markings



# Ink resins, vehicles, and additives





# 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).

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.

## 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 xylenes/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.

## 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.

## 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.

## Molecular weight

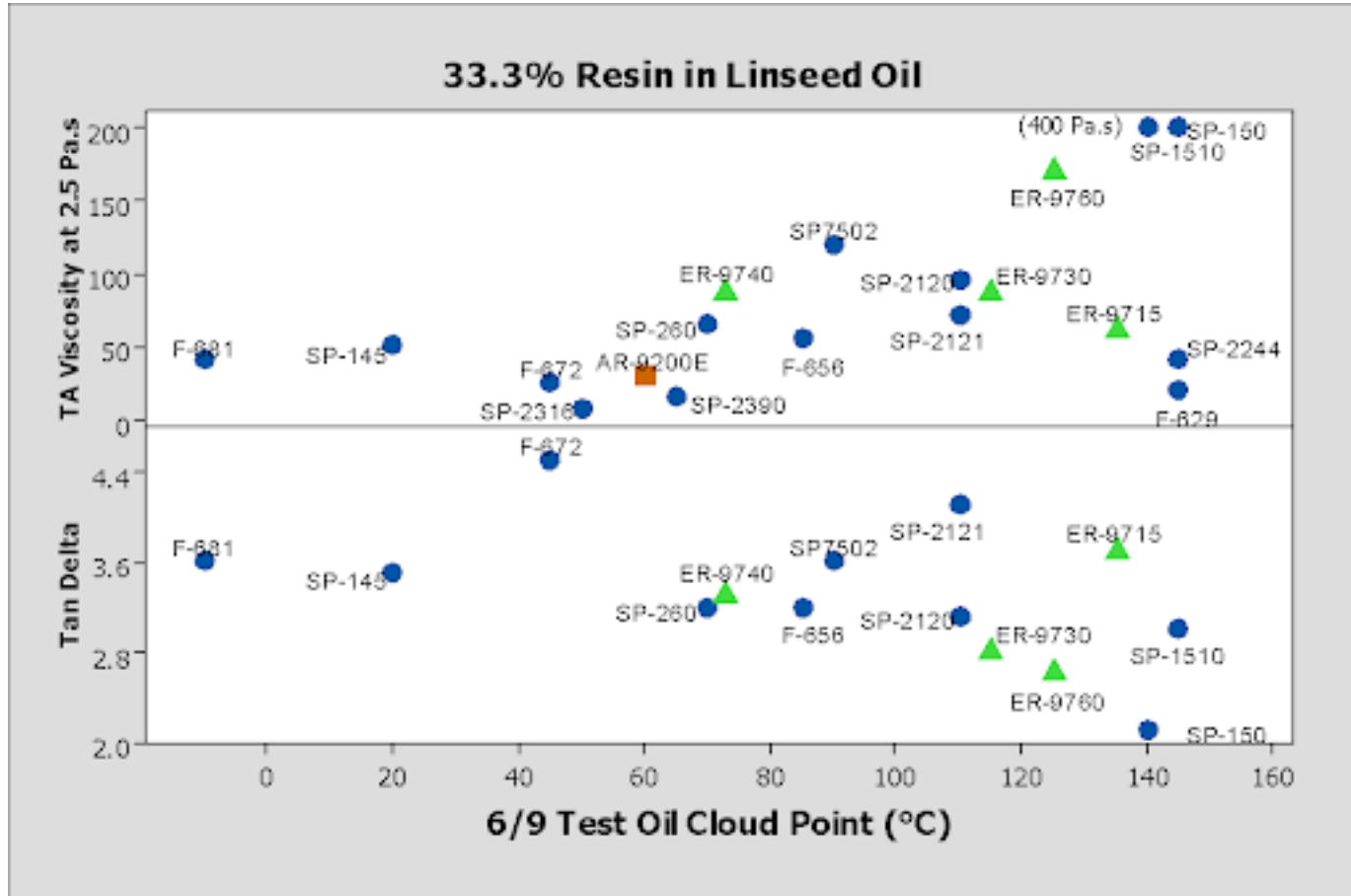
Molecular weight is measured by means of gel permeation chromatography (GPC), relative to polystyrene standards.

## Dilutability

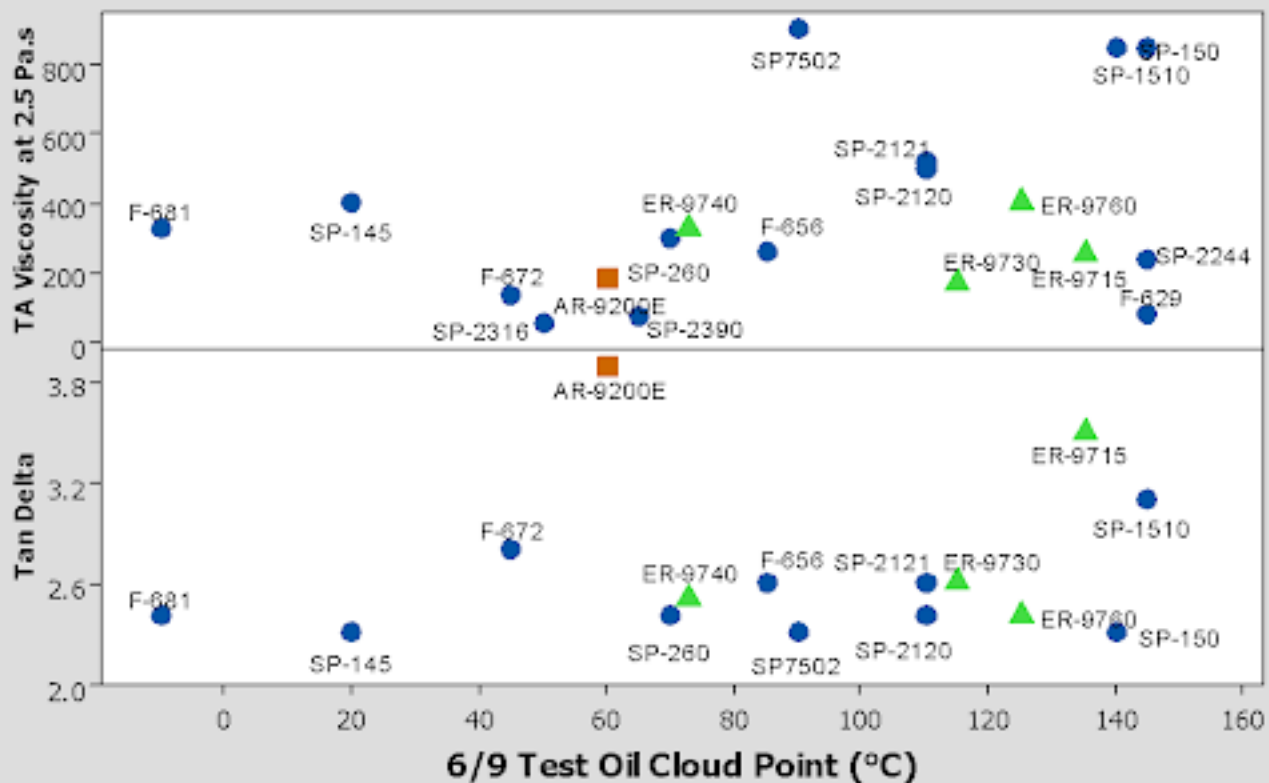
The dilutability is the solvent (toluene) uptake (in percentage) of a varnish of certain concentration, diluted to a flow time in a special cup, at a given temperature.

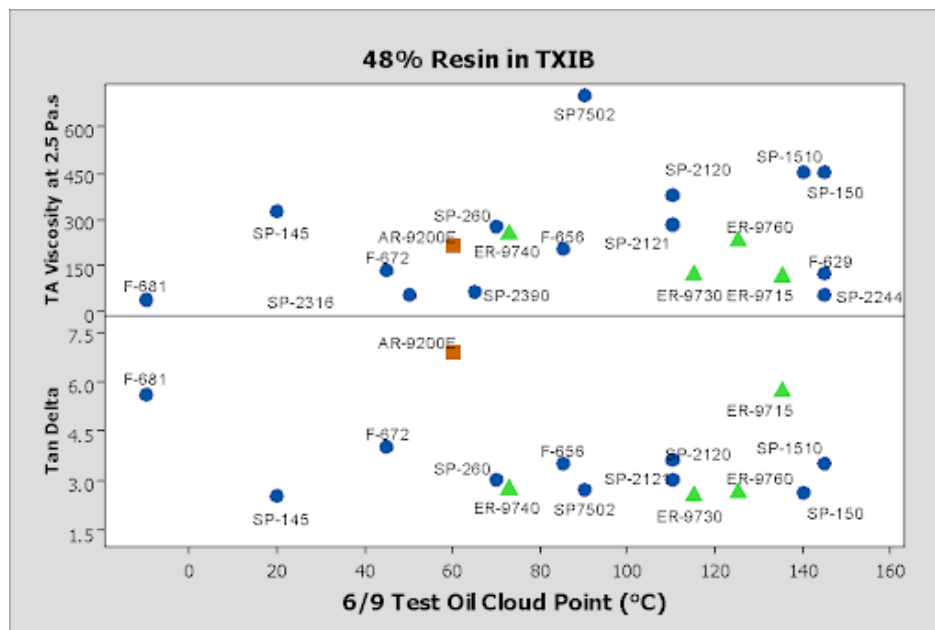
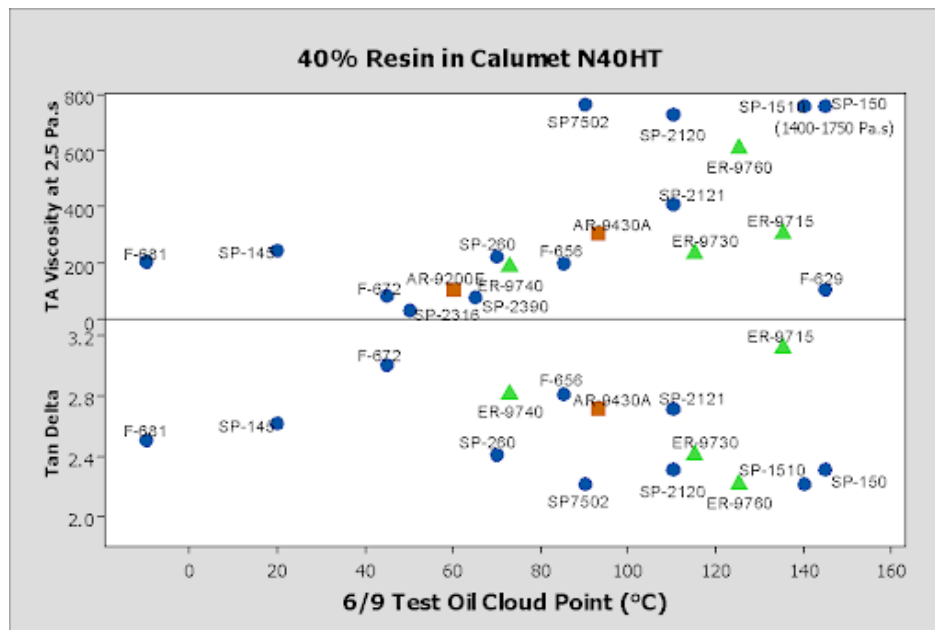
## Tg

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



### 50% Resin in 25% TXIB, 25% Magie 47





# Offset Resins

## Phenolic Modified Rosin Resins

Product Description	Application	Features and Benefits	Bio-Renewable Content (+/- 2%)	Ring & Ball Melt Point - °C	Acid Value	TA Viscosity (1:2 ARLO)@ 2.5s-1 and 25°C (Pa.s)	TA Tan Delta (1:2 ARLO)@ 2.5s-1 and 25°C	1:2 ARLO: LTL@25°C (sec)	TA Viscosity (50:25:25, Resin:IM47:TXI-B)@2.5s-1 and 25°C (Pa.s)	TA Tan Delta (50:25:25, Resin:IM47:TXIB)@ 2.5s-1 and 25°C	Cloud Point(10% in G/9) °C	50% in Magie 47:LTL@25°C (sec)
FILTREZ™ 618	Sheetfed/heatset dispersion vehicles.	Excellent resin for wetting, pigment stabilization and system solubilizer.	62	140	25 Max	3.5	N/A	30	N/A	N/A	N/A (55 in 6/9AFN)	355
FILTREZ™ 629	Sheetfed/heatset letdown vehicles.	Medium viscosity, medium to low dilution resin for improved transfer, gloss.	76	150	25 Max	20	10	170	80	8	145	
FILTREZ™ 656	Sheetfed/heatset letdown vehicles.	Highly elastic medium viscosity, medium dilution resin for improved transfer, gloss, and low misting.	66	160	25 Max	55	3.2	550	260	2.6	85	
FILTREZ™ 672	Sheetfed/heatset letdown vehicles.	Good solubility in aliphatic solvents. This resin can serve as a good foundation for building sheetfed and heatset systems, especially in high shear and temperature applications.	62	150	30 Max	25	4.5	275	135	2.8	45 (115 in 6/9AFN)	
FILTREZ™ 681	Sheetfed/heatset letdown vehicles.	Highly elastic medium viscosity, high dilution resin for greatly improved transfer and gloss.	41	165	30 Max	35		420	325	2.4	-10 (100 in 6/9AF)	
SETAPRINT™ 145 A	Sheetfed/heatset letdown vehicles.	The high viscosity of SETAPRINT 145A improves lithographic performance when modifying less soluble resin systems. Ideal for high speed, high performance ink vehicles.	50	165	25 Max	50	3.5	550	400	2.3	20 (65 in Magie 47)	
SETAPRINT™ 150 A	Sheetfed/heatset letdown vehicles.	Elastic structure with low solubility allows for good press stability, tight dot structure, and greatly reduced gellant concentration.	71	170	25 Max	400	2.1	6000	850	2.3	140	
SETAPRINT™ 260 A	Sheetfed/heatset letdown vehicles.	Elastic structure and good solubility allows for good transfer, low misting, and reduced gellant concentration.	68	165	25 Max	65	2.9	750	280	2.4	70	

# Offset Resins (continued)

## Phenolic Modified Rosin Resins (continued)

Product Description	Application	Features and Benefits	Bio-Renewable Content (+/- 2%)	Ring & Ball Melt Point - °C	Acid Value	TA Viscosity (1:2 ARL0)@ 2.5s-1 and 25°C (Pa.s)	TA Tan Delta (1:2 ARL0)@ 2.5s-1 and 25°C	1-2 ARL0: LTL@25°C (sec)	TA Viscosity (50:25:25, Resin:IM47:TXI-B)@2.5s-1 and 25°C (Pa.s)	TA Tan Delta (50:25:25, Resin:IM47:TXI(B)@ 2.5s-1 and 25°C	Cloud Point(10% in 6/9) °C	50% in Magie 47:LTL@25°C (sec)
SETAPRINT™ 999 A	Sheetfed/ heatset dispersion vehicles.	Low viscosity phenolic modified rosin ester with high solubility in aliphatic solvents.	75	135	25 Max	2	N/A	14	N/A	N/A	20(100 in AFN)	170
SETAPRINT™ 1510 A	Sheetfed/ heatset letdown vehicles.	Bisphenol A free version of Setaprint 150.	71	170	25 Max	400	2.6	6000	850	3	145	
SETAPRINT™ 2120 A	Sheetfed/ heatset letdown vehicles.	Good gel response to aluminum chelates. Provides fast solvent release, high gloss and superior holdout properties.	67	165	25 Max	95	190	1100	510	2.4	110	
SETAPRINT™ 2121 A	Sheetfed/ heatset letdown vehicles.	Bisphenol A free version of Setaprint 2120.	66	165	25 Max	75	4.1	1000	500	2.6	110	
SETAPRINT™ 2244 A	Sheetfed/ heatset letdown vehicles.	Bisphenol A free version of Setaprint 2243.	72	165	25 Max	40	8	460	240	6	145	
SETAPRINT™ 2316 A	Sheetfed/ heatset dispersion vehicles.	Low viscosity, middle to high dilution for improved transfer and gloss.	63	155	20 Max	7	N/A	60	55	50	50(115 in 6/9 AFN)	
SETAPRINT™ 2390 A	Sheetfed/ heatset letdown vehicles.	Medium to low viscosity, medium dilution resin for excellent transfer, good set, and good gloss.	66	150	25 Max	15	40	130	70	11	65	
SETAPRINT™ 7502 A	Sheetfed/ heatset letdown vehicles.	Ultrahigh viscosity and structure with good solubility.	60	170	25 Max	120	3.6	1800	900	2.3	90	

# Offset Resins (continued)

## Phenol Free Rosin Resins

Product Description	Application	Features and Benefits	Bio-Renewable Content (+/- 2%)	Ring & Ball Melt Point - °C	Acid Value	TA Viscosity (1:2 ARL0)@ 2.5s-1 and 25°C (Pa.s)	TA Tan Delta (1:2 ARL0)@ 2.5s-1 and 25°C	1:2 ARL0: LTL@25°C (sec)	TA Viscosity (50:25:25,Resin:M47:TXI-B)@2.5s-1 and 25°C (Pa.s)	TA Tan Delta (50:25:25,Resin:M47:TXI)@ 2.5s-1 and 25°C	Cloud Point(10% in 6/9) °C	50% in Magie 47:LTL@25°C (sec)
ECO-REZ™ 303 A	Sheetfed/heatset dispersion vehicles.	The primary purpose of this resin is to provide good pigment wetting capability.	84	125	25 Max	2	N/A	6	N/A	N/A	-10 (85 in 6/9AF)	12
ECO-REZ™ 468 A	Sheetfed/heatset letdown vehicles.	Low structured rosin resin suitable for all offset inks, including heatset, sheetfed and coldset applications.	77	135	25 Max	5	N/A	24	N/A	N/A	95	
ECO-REZ™ 9711 A	Sheetfed/heatset letdown vehicles.	Low structured rosin resin suitable for all offset inks, including heatset, sheetfed and coldset applications.	82	130	25 Max	3	N/A	14	N/A	N/A	50(130 in 6/9AFN)	150
ECO-REZ™ 9715 A	Sheetfed/heatset letdown vehicles.	A medium structured, low aliphatic soluble rosin resin suitable for all offset inks, including heatset, sheetfed and coldset applications.	77	165	25 Max	60	3.7	550	250	3.5	135	
ECO-REZ™ 9720 A	Sheetfed/heatset letdown / dispersion vehicles	Low structured rosin resin suitable for all offset inks, including heatset, sheetfed and coldset applications.	67	120	25 Max	6	N/A	25	N/A	N/A	0 (115 in 6/9AF)	300
ECO-REZ™ 9730 A	Sheetfed/heatset letdown vehicles.	Structured rosin resin suitable for all offset inks, including heatset, sheetfed and coldset applications.	80	150	25 Max	85	2.6	800	180	2.4	110	
ECO-REZ™ 9740 A	Sheetfed/heatset letdown vehicles.	Highly structured rosin resin suitable for all offset inks, including heatset, sheetfed and coldset applications.	80	160	25 Max	85	3.3	1000	325	2.5	73	
ECO-REZ™ 9760 A	Sheetfed/heatset letdown vehicles.	Highly structured rosin resin suitable for all offset inks, including heatset, sheetfed and coldset applications.	80	160	25 Max	170	2.8	2200	380	2.2	125	

## Hybrid Resins

Product Description	Application	Features and Benefits	Bio-Renewable Content (+/- 2%)	Ring & Ball Melt Point - °C	Acid Value	TA Viscosity (1:2 ARLO)@ 2.5s-1 and 25°C (Pa.s)	TA Tan Delta (40% in N40HT)@ 2.5s-1 and 25°C	TA Viscosity (50:25:25, Resin:M47:TXI- B)@2.5s-1 and 25°C (Pa.s)	TA Tan Delta (50:25:25, Resin:M47:TXIB)@ 2.5s-1 and 25°C	Cloud Point(10% in 6/9) °C
ALPHA-REZ™ 9200 E	Perfect for heatset, sheetfed and waterless offset ink applications.	Enables low tack, low misting and outstanding water balance properties.	29	N/A	25 Max	100	4	180	3.9	60
ALPHA-REZ™ 9430 A	Heatset letdown vehicles.	Provides high viscosity and structure with superior water balance properties. Also, 40% in 6/9 AR Blend TA viscosity is 100 and tan delta is 3.1.	40	170	25 Max	300	3	650	2.6	95

# Metal Decorating Vehicles

Product Description	Applications	Features	Tack at 400rpm, 60"	% Non Volatiles	Viscosity	Major Oil Type	Distillate Boiling Range (°F)
DECOTHERM™ 260 E	Two piece metal decorating.	#7 Bodied 2-piece metal decorating vehicle, especially for high bake white.	23	91	210" ee at 37.8°C	Glycol	520
DECOTHERM™ 290 E	Two piece metal decorating.	Gelled 2-piece metal decorating vehicle, low misting, great for high bake white.	13	84	90 Pa.S (Physica Rheometer at 23°C)	Mineral Oil	485 - 585
DECOTHERM™ 295 E	Two piece metal decorating.	Mineral oil free version of DECOTHERM 290E. Medium structured gel for reduced misting at high press speeds.	12	85	100 Pa.S (Physica Rheometer at 23°C)	Glycol	485 - 510
DECOTHERM™ 100 E	Flat sheet metal decorating.	Fast cure rates for high bake pigmented systems.	12	86	600" ee at 25°C		500 - 585

Product Description	Applications	Features	Bio-Renewable Content (+/- 2%)	Acid Value	TA Viscosity at 25C (Pa.s)	Bubble Tube Gardner (end to end) at 25C, seconds
TERLON™ 1114A	Flat sheet metal decorating.	#4 Alkyd, contributes pale color, speed of dry, and a cohesive film build.	62	10	11	150
TERLON™ 1162A	Flat sheet metal decorating.	#9 Alkyd, very low color development great for metal decorating.	60	10	115	1400
TRIONOL™ 1739A	Flat sheet metal decorating.	#9 Alkyd, very low color development great for metal decorating.	60	10	100	1300

# Liquid Ink and Coating Resins

## Maleic Modified Rosin Resins

Product Description	Application	Features	Bio-Renewable Content (+/- 2%)	Ring & Ball Melt Point -°C	Acid Value	Viscosity
FILTREZ™ 339	Lacquer coatings, specialty coatings, thermoplastic applications.	Soluble in low aromatic solvents.	90	135	42 Max	J (3.3") Gardner Holdt EE at 25°C, (60% NV Toluene)
FILTREZ™ 3305	Lacquer coatings, specialty coatings, thermoplastic applications.	Requires less liquid plasticizer in finished applications.	94	105	45 Max	95 centipoise - Neat, Brookfield Thermocell@ 410°F
FILTREZ™ 3310 A	Lacquer coatings, specialty coatings, thermoplastic applications.	High viscosity for more viscous applications such as thermoplastic.	92	118	42 Max	320 centipoise - Neat, Brookfield Thermocell @ 410°F
FILTREZ™ 3320	Lacquer coatings, specialty coatings, thermoplastic applications.	Soluble in low aromatic solvents.	91	122	60	D (1.6") Gardner Holdt EE at 25°C, (60% NV Toluene)

## Polyamide Resins

Product Description	Applications	Features	Bio-Renewable Content (+/- 2%)	Ring & Ball Melt Point -°C	Gardner Viscosity (50% Ethanol)	Ford #4 Viscosity, 50% in Ethanol
FLEX-REZ™ 1074 CS	Flexo, gravure and lacquers for polyolefin films. Cold seal release lacquers.	Good solvent release. High gloss. Excellent adhesion to treated films. Excellent cold seal release properties.	91	110	F (40% N.V. in Toluene/Isopropanol 70/30)	
FLEX-REZ™ 3370 CS	Flexo, gravure and lacquers for polyolefin films.	Improved gel resistance.	90	100	D (40% N.V. in Toluene/Isopropanol 70/30)	
FLEX-REZ™ 2433 AD	Flexo, gravure and lacquers for polyolefin films.	Very high gloss.	78	120	D	46
FLEX-REZ™ 4584 AD	Flexo, gravure and lacquers for polyolefin films.	Good gel resistance and recovery. Very good water and nice crinkle resistance.	82	115	G	83
FLEX-REZ™ 1084 AS	Flexo, gravure and lacquers for polyolefin films.	Very high heat resistance. No gel formation. Non-film forming.	60	185		130
FLEX-REZ™ 1155 AS	Flexo, gravure and lacquers for polyolefin films. Cold seal release lacquers.	Rapid solvent release. Very good NC compatibility. Very good gel resistance. High gloss. Good cold seal release lacquer properties.	80	115	D	45

# Liquid Ink and Coating Resins (continued)

## Fumaric Modified Rosin Resins

Product Description	Applications	Features	Bio-Renewable Content (+/- 2%)	Ring & Ball Melt Point -°C	Acid Value	Tg(°C)	Gardner Holdt EE at 25°C, (60% NV Ethanol)	Brookfield LV3/40 rpm/25C (34% in water/ammonia)
FILTREZ™ 521	Water based flexo and gravure inks for commercial and packaging.	High acid value, high softening point and broad range of compatibility and solubility.	76	155	220	98.5	F (2.0")	175
FILTREZ™ 526	Water based flexo and gravure inks for commercial and packaging.	Generates higher viscosity in water therefore allowing lower resin solids.	71	120	125	72	D (1.7")	9500
FILTREZ™ 530	Water based flexo and gravure inks for commercial and packaging.	Alcohol soluble fumaric with high softening point.	75	150	195	105.8	F (2.1")	425
FILTREZ™ 531	Water based flexo and gravure inks for commercial and packaging.	Alcohol soluble fumaric with high softening point.	79	155	175	105	K (3.4")	3600
FILTREZ™ 575	Water based flexo and gravure inks for commercial and packaging.	Characteristics paralleling acrylic resins with regards to drying, transfer, gloss and water resistance of the dry film.	71	150	195	67	D (1.7")	375
FILTREZ™ 591	Water based flexo and gravure inks for commercial and packaging.	High acid value and low molecular weight.	80	140	300	108	B (1.3")	15 (140 at 44% solids)
FILTREZ™ 5014	Water based flexo and gravure inks for commercial and packaging.	Excellent pigment wetter, enhances viscosity stability, provides excellent wet and dry rub and strength.	71	140	175	85°	H (2.8")	500
HYDRO-REZ™ 5614 A	Water based flexo and gravure inks for commercial and packaging.	Alcohol soluble fumaric with high softening point.	77	165	190	N/A	21" at 50%, #4 Ford Cup	1500 (at 28% solids)
HYDRO-REZ™ 5626 A	Water based flexo and gravure inks for commercial and packaging.	Alcohol soluble fumaric with high softening point.	79	165	200	N/A	20" at 50%, #4 Ford Cup	850

## Specialty Resins

Product Description	Resin Type	Application	Features	Acid Value	Hydroxyl Number (mg KOH/g substance)	Ring & Ball Melt Point -°C
HYDRO-REZ™ 3886 A	Fumaric Modified Rosin Ester	Flexographic inks, carton inks, specialty inks, ink jet.	Promotes gloss and adhesion.	150	N/A	130
REACTOL™ 1111 A	Pure Phenolic Resin, Unreactive (Novolac)	Flexo and gravure inks and lacquers. Aromatic hydrocarbon / alcohol soluble inks, ink jet.	Non reactive pure phenolic. Improves toughness, gloss adhesion and hardness.	75	N/A	145
REACTOL™ 1717	Polyketone	Lamination inks, flexographic inks, rotogravure inks, heat seal coatings, primer coatings, ink jet.	Provides excellent adhesion to difficult substrates; low viscosity; can be used to increase solids. Excellent intercoat adhesion properties.	<1	270	100
REACTOL™ 1717 H	Polyketone	Lamination inks, flexographic inks, rotogravure inks, heat seal coatings, primer coatings, ink jet.	Higher melting point version of Reactol 1717.	<1	270	115
REACTOL™ 1979 A	Polyester	Flexo and gravure and paper and wood coatings, ink jet.	Low molecular weight hydroxyl functional polyester. Outstanding color retention. Excellent adhesion properties.	8	280	85
REACTOL™ 5145 A	Polyester	Flexo and gravure inks and lacquers. Water / alcohol soluble inks, ink jet.	Improves gloss and adhesion. Cross linkable. Excellent compatibility with cellulose resins (NC, CAP, CAB). Very good heat, product, water, alkali, oil and block resistance when cured.	130	130	120

# Wax Products

## Micronized Wax Powders

Product Description	Application	Features	Melt Point (°F)	Average Particle Size (Microns)	Particle Size (NPIRI Grind)
ULTRAFINE™ 1000 A	Solvent/w/b flexo and gravure, HS, SF, UV, OPV, paints & coatings.	Workhorse polyethylene for rub and mar resistance and enhanced slip. UV & AQ coatable.	235-245	7	N-2
ULTRAFINE™ 1W A	Inks, UV, metal deco, OPV, coatings, laser imprinting, AQ & UV coatable.	Premium PTFE grade with narrow particle distribution. Enhances lubricity, abrasion and heat resistance.	> 600	4.5	N-2
OPTIRUB™ OP	W/B flexo & gravure, offset inks, paints and coatings.	Water dispersible oxidized polyethylene. Enhances rub, mar resistance, slip, anti-blocking, and flatting.	220-250	11	N-5
OPTIRUB™ PC	Solvent/w/b flexo and gravure, HS, SF, UV, OPV, paints & coatings.	Blend of PE and carnauba waxes for improved rub and mar resistance. Recommended where gloss retention and clarity are vital.	181-240	7	N-3
OPTIRUB™ SP1	Solvent/w/b flexo and gravure, HS, SF, UV, OPV, paints & coatings.	Blend of PE and PTFE for improved slip and mar resistance while enhancing heat resistance.	235-245	6	N-2
POLYSPERSE™ A	Solvent/w/b flexo and gravure, HS, SF, UV, OPV, paints & coatings.	Fischer-Tropsch wax for rub and mar resistance and enhanced slip.	205-220	7	N-3

## PTFE Dispersions

Product Description	Application	Features	% Non Volatiles	Distillate Boiling Range (°F)	Particle Size (NPIRI - Peppering)
FLUORON™ 672 A	Inks, UV, metal deco, OPV, coatings, laser imprinting, AQ & UV coatable.	Workhorse PTFE concentrate. Excellent for slip, abrasion, and heat resistance.	100	N/A	N-4
FLUORON™ 735 A	Inks, UV, metal deco, OPV, coatings, laser imprinting, AQ & UV coatable.	Premium PTFE concentrate, 100% active system. Excellent slip, abrasion and heat resistance, economical.	100	N/A	N-4

## Sheetfed Compounds

Product Description	Application	Features	Vegetable Oil (Alkyd) Type	% Non Volatiles	Particle Size (NPIRI - Peppering)
ULTRAPOLY™ 210 A	SF & UV ink, OPV, metal deco, AQ & UV coatable, hot-foil stampable.	Workhorse polyethylene for improved rub, slip and gloss. Enhanced slip without the use of PTFE.	Linseed	100	N-6
ULTRAPOLY™ 211 A	SF & UV ink, OPV, metal deco, AQ & UV coatable, laser, hot-foil stampable.	Workhorse PE/PTFE for a higher degree of slip, rub and heat resistance versus Ultrapoly 210.	Linseed	100	N-5
ULTRAPOLY™ 213 A	SF & UV ink, OPV, metal deco, AQ & UV coatable, hot-foil stampable.	A fine particle size PE/PTFE with a high degree of slip, rub and heat resistance.	Linseed	100	N-4
ULTRAPOLY™ 215 A	SF & UV ink, OPV, metal deco, AQ & UV coatable, hot-foil stampable.	Softer version of Ultrapoly 211 A. Workhorse PE/PTFE for a higher degree of slip, rub and heat resistance versus UP2300 A.	Linseed	100	
ULTRAPOLY™ 2300 A	SF & UV ink, OPV, metal deco, AQ & UV coatable, hot-foil stampable.	Softer version of Ultrapoly 210 A. Workhorse Polyethylene for improved rub, slip and gloss.	Linseed	100	N-6

# Wax Products (continued)

## Heatset Compounds

Product Description	Application	Features	% Non Volatiles	Distillate Boiling Range (°F)	Particle Size (NPRI - Peppering)
STIRINOL™ 350 A	HS inks, OPV, UV coatable, hot-foil stampable.	UV coatable polyethylene/PTFE yielding a high degree of rub and slip.	45	465-530	N-5
STIRINOL™ 92 A	HS inks, OPV, hot-foil stampable, non-imprintable.	Workhorse microcrystalline wax for rub, slip, gloss. Excellent on low grade substrates. Non-recrystallizing.	60	475-575	N-2
STIRINOL™ 97 A	HS inks, OPV, hot-foil stampable, non-imprintable.	Workhorse microcrystalline wax for rub, slip, gloss. Excellent on low grade substrates. Non-recrystallizing.	100	N/A	N-2
STIRINOL™ 98 A	HS inks, OPV, hot-foil stampable, non-imprintable.	Softer version of Stirinol 97. Workhorse for rub, slip, gloss. Excellent on low grade substrates. Non-recrystallizing.	85	475-575	N-2

## Water Based Dispersions / Emulsions

Product Description	Application	Features	% Non Volatiles	Distillate Boiling Range (°F)	Average Particle Size (Microns)
FLEXONIC™ 4104 A	AQ inks and coatings.	PTFE dispersion for ultimate mar resistance and slip enhancement.	44	212	4.5
FLEXONIC™ 601 A	AQ inks and coatings.	PE modified microcrystalline dispersion for enhanced heat resistance. Excellent mar and scuff resistance.	42	212	2
FLEXONIC™ 902 A	AQ flexo & gravure ink and coatings, for use over all inks and substrates.	PE/Paraffin dispersion for high rub and low COF, water beading.	44	212	2.5

# Additives

## Specialty Additives

Product Description	Application	Features	Form	Distillate Boiling Range (°F)	Particle Size (NPIRI - Peppering)
OPTILITH™ AM	Heatset and sheetfed inks, OPV, metal decorating.	Inhibits misting while having a minimal effect on gloss and ink rheology.	Paste	95	N-4
OPTILITH™ 3094 M	Heatset ink, sheetfed (at low levels).	Economical anti-oxidant yielding long stay-open times. Low viscosity for easy dispersement. Bubble Tube Gardner (end to end) at 25C, seconds: 2	Solution	18	N/A
OPTILITH™ 1486 A	Heatset and sheetfed inks.	High performance anti-oxidant, pourable. Yields high stay-open times but maintains fast dry times. Bubble Tube Gardner (end to end) at 25C, seconds: 130	Solution	49	N/A
OPTILITH™ TRG	Heatset and sheetfed inks, web no-heat inks.	Reduces tack while maintaining ink rheology. Also improves transfer.	Light Gel	100	N/A
OPTILITH™ 3A	Heatset and sheetfed, flushing vehicles.	Reduces water-pick-up with minimal impact on tack and rheology. Bubble Tube Gardner (end to end) at 25C, seconds: 100	Solution	60	N/A
OPTILITH™ 4A	Heatset and sheetfed, flushing vehicles.	Reduces water-pick-up with minimal impact on tack and rheology. High solids.	Paste	94	N/A
OPTILITH™ 4920	Heatset and sheetfed, flushing vehicles.	Reduces water pick-up in a low viscosity, easily pourable and dispersible form. Bubble Tube Gardner (end to end) at 25C, seconds: 3	Solution	92	N/A

# Alkyds

## Linseed

Product Description	Application	Features	Bio-Renewable Content (+/- 2%)	Acid Value	TA Viscosity at 25C (Pa.s)	Bubble Tube Gardner (end to end) at 25C, seconds
TERLON™ 1143 A	Heatset, sheetfed, pigment dispersion vehicles. Metal decorating systems.	#3 Bodied workhorse.	75	10	5.5	70
TERLON™ 1147 A	Heatset, sheetfed, pigment dispersion vehicles.	#7 Bodied workhorse.	70	10	80	930
TERLON™ 3010 A	Heatset, sheetfed, pigment dispersion vehicles.	#10 Bodied High Performance yet Cost Effective, Broad Resin Compatibility.	73	10	125	1700
TERLON™ 311 A	Heatset, sheetfed, pigment dispersion vehicles.	#1 Bodied High Performance yet Cost Effective, Broad Resin Compatibility.	84	7	2.4	28
SETALIN™ V406 E	Heatset, sheetfed, pigment dispersion vehicles.	#3 Bodied workhorse.	68	10	6	75
SETALIN™ V701 E	Heatset, sheetfed, pigment dispersion vehicles.	#7 Bodied workhorse.	61	10	80	930

## Soybean Oil

Product Description	Applications	Features	Bio-Renewable Content (+/- 2%)	Acid Value	TA Viscosity at 25C (Pa.s)	Bubble Tube Gardner (end to end) at 25C, seconds
TERLON™ 613A	Heatset, sheetfed, pigment dispersion vehicles.	#3 Bodied High Performance yet Cost Effective, Broad Resin Compatibility.	81	7	5.5	70
TERLON™ 605A	Heatset, sheetfed, pigment dispersion vehicles.	#4 Bodied High Performance yet Cost Effective.	75	7	12	150
TERLON™ 607A	Heatset, sheetfed, pigment dispersion vehicles.	#7 Bodied High Performance yet Cost Effective.	72	7	80	930

## Speciality

Product Description	Applications	Features	Bio-Renewable Content (+/- 2%)	Acid Value	TA Viscosity at 25C (Pa.s)	Bubble Tube Gardner (end to end) at 25C, seconds
SOLVAR™ A	Additive for offset ink formulations.	#0 High molecular weight, low viscosity alkyd, unique wetting properties.	70	10	1	11
SYNKYD™ 50 E	Heatset, sheetfed, pigment dispersion vehicles.	#3 Soybean hybridized resin - superior hydrocarbon compatibility and water balance.	53	14	6	80
TERLON™ 1114A	Recommended for metal decorating inks.	Contributes pale color, speed of dry, and a cohesive film build.	62	10	11	150
TERLON™ 1162A	Metal decorating systems.	#9 Alkyd, very low color development - great for metal decorating.	60	10	115	1400
TRIONOL™ 1739A	Heatset, sheetfed, pigment dispersion vehicles. Metal decorating systems.	#9 Alkyd, very low color development - great for metal decorating	60	10	100	1300
TRIONOL™ 3A	Heatset, sheetfed, pigment dispersion vehicles.	#4 High molecular weight alkyd, ultra hard film.	73	10	11	140



# Adhesive Resins and Tackifier Dispersions





# Snowtack® Tackifier Dispersions

## Rosin Acids

Dispersion	Dispersion Properties						Dry Properties			Application Comments
	Solids (%)	Viscosity (mPa·s)	pH	Stabiliser	Particle size (mean) (microns)	Sieve residue at 100 (ppm)	Acid value (mg KOH/g)	Softening point (°C)	Glass transition point (°C)	
Snowtack® 765A	50	500	7.5	anionic	<0.5	<100	>100	64	12	General purpose acid grade tackifier to boost adhesion when formulated with acrylic and SBR PSA polymers.
Snowtack® 775A	52	650	7.5	anionic	<0.5	<100	>100	76	21	Higher softening point acid grade tackifier giving higher cohesive strength when formulated with acrylic and SBR PSA polymers.
Snowtack® 779F E	59	350	8	anionic	<0.5	<100	>100	75	20	High solids, provides excellent cohesive strength, adhesion and water resistance for PSA tape and label applications.

## Rosin Esters

Dispersion	Dispersion Properties						Dry Properties			Application Comments
	Solids (%)	Viscosity (mPa·s)	pH	Stabilizer	Particle size mean (microns)	Sieve residue at 100 (ppm)	Acid value (mg KOH/g)	Softening point (°C)	Glass transition point (°C)	
Snowtack® SE724G	51	400	9.0	polymeric	<1.0	<100	<25	37	-8	Modifying resin dispersion for low temperature applications and improved low energy substrate adhesion.
Snowtack® SE780G	55	300	9.0	polymeric	<0.6	<100	<20	83	34	Provides excellent cohesive strength, adhesion and water resistance for PSA tape and label applications.
Snowtack® SE782G	57	475	9.0	polymeric	<0.6	<100	<20	83	34	High solids, provides excellent cohesive strength, adhesion and water resistance for PSA tape and label applications.
Snowtack® SE783G	60	300	9.0	polymeric	<0.6	<100	<20	83	34	Highest solids, provides excellent cohesive strength, adhesion and water resistance for PSA tape and label applications.
Snowtack® 100G	57	300	9.0	polymeric	<0.6	<100	<20	99	60	High softening point tackifier for pressure sensitive adhesives, for tape applications and labels requiring good mandrel performance.
Snowtack® 880G	57	300	9.0	polymeric	<0.6	<100	<20	85	36	A hybrid tackifier designed to improve adhesion to apolar substrates with 2EHa acrylic and SBR PSA polymers.
Snowtack® 110X	58	400	9.0	polymeric	<0.6	<100	<20	107		High softening point tackifier for pressure sensitive adhesives, for tape applications and labels requiring good mandrel performance and high SAFT.

## Hydrogenated Rosin Esters

Dispersion	Dispersion Properties						Dry Properties			Application Comments
	Solids (%)	Viscosity ( mPa.s )	pH	Stabiliser	Particle size mean (microns)	Sieve residue at 100 micron (ppm)	Acid value (mg KOH/g)	Softening point (°C)	Glass transition point (°C)	
Snowtack® FH95G	57	300	9.0	polymeric	<0.75	<100	<25	94	45	Hydrogenated resin dispersion based on wood rosin for applications where better compatibility and UV resistance is required. Suitable for use with acrylic and SBR systems.
Snowtack® FH94G	57	300	9.0	polymeric	<0.75	<100	<25	94	45	Hydrogenated resin dispersion based on gum rosin for applications where better compatibility and UV resistance is required. Suitable for use with acrylic and SBR systems.
Snowtack® FH93C	58	350	9.0	anionic	<0.5	<100	<25	93		Hydrogenated resin dispersion based on gum rosin for applications where better compatibility and UV resistance is required. Suitable for use with acrylic and SBR systems. FDA 175.300 compliant.

## Terpene Phenolic

Dispersion	Dispersion Properties						Dry Properties			Application Comments
	Solids (%)	Viscosity ( mPa.s )	pH	Stabiliser	Particle size mean (microns)	Sieve residue at 100 micron (ppm)	Acid value (mg KOH/g)	Softening point (°C)	Glass transition point (°C)	
Snowtack® TP600G	57	300	9.0	polymeric	<0.75	<100		100		Terpene Phenolic dispersion where high heat resistance is needed. Suitable for use with acrylic, SBR, natural and synthetic rubber systems.

## Pinerez<sup>®</sup> Tackifier Resins

Resin	Ring & Ball Softening Point (°C)	Gardner Colour (50% Soln.)	Acid Value (mgKOH/g)	Viscosity ( mPa·s )	Application Comments
Pinerez <sup>®</sup> 7024		7	9	4500	Improves adhesion in flooring adhesives and solvent based adhesives.
Pinerez <sup>®</sup> 2490 A	90	5	14		Improves tack and adhesion in a wide range of hot melt and solvent based adhesives.
Pinerez <sup>®</sup> 9089	148	10			Improves tack in hot melt adhesives and acts as a cure accelerator in rubber based adhesives.
Pineclear <sup>®</sup> 4306 A	100	3	15		Improves tack and adhesion in a wide range of hot melt and solvent based adhesives.

## Burez<sup>®</sup> Rosin Soaps

Soap	Solids (%)	Acid Value (mgKOH/g)	Abietic acid (%)	Dehydro Abietate (%)	Application Comments
Burez <sup>®</sup> K80-500D	80	12	not detectable	42	Emulsifier for emulsion process SBR, ABS and CR. Tackifier for bottle label adhesives. Used in pigment resination.



# Pavement Marking and Coatings



# Pavement Marking

## Maleic Modified Rosin Ester

Coating Resins	Applications	Features & Benefits	Bio-Renewable Content (+/-2%)	Ring & Ball Melt Point -°C	Acid Value	Viscosity
Filtrez™ 3305	Lacquer coatings, specialty coatings, thermoplastic applications.	Requires less liquid plasticizer in finished applications.	94	105	45 max	95 centipoise - Neat, Brookfield Thermocell @ 410°F
Filtrez™ 3310 A	Lacquer coatings, specialty coatings, thermoplastic applications.	High viscosity and melt point for demanding thermoplastic applications.	92	118	42 max	320 centipoise - Neat, Brookfield Thermocell @ 410°F
Pineclear® 4305 A	Lacquer coatings, specialty coatings, thermoplastic applications.	Very low color, requires less liquid plasticizer in finished applications.	95	105	45 max	95 centipoise - neat, Brookfield thermocell @ 410°F
Pineclear® 4310 A	Lacquer coatings, specialty coatings, thermoplastic applications.	Very low color, high viscosity and melt point for demanding thermoplastic applications.	93	118	42 max	320 centipoise - neat, Brookfield thermocell @ 410°F

## Rosin Ester

Coating Resins	Applications	Features & Benefits	Bio-Renewable Content (+/-2%)	Ring & Ball Melt Point -°C	Acid Value	Viscosity
Pinerez® 2306 A	Specialty coatings and thermoplastic applications.	Stablized rosin for excellent color and heat stability. Excellent adhesion to a variety of substrates.	85	100	20 max	85 centipoise - neat, Brookfield thermocell @ 410°F
Pineclear® 4306 A	Specialty coatings and thermoplastic applications.	Very low color, stabilized rosin for enhanced heat stability. Excellent adhesion to a variety of substrates.	86	100	25 max	85 centipoise - neat, Brookfield thermocell @ 410°F

## Modified Rosin Ester

Coating Resins	Applications	Features & Benefits	Bio-Renewable Content (+/-2%)	Ring & Ball Melt Point -°C	Acid Value	Viscosity
Pinerez® 2307 A	Specialty coatings and thermoplastic applications.	Stablized rosin for excellent color stability. Excellent adhesion. High bio-renewable content.	94	102	25 max	100 centipoise at 410°F (210°C)
Pinerez® 2308 A	Specialty coatings and thermoplastic applications.	Stablized rosin for excellent color and heat stability. Excellent adhesion to a variety of substrates. High bio-renewable content.	93	109	25 max	140 centipoise at 410°F (210°C)
Pineclear® 4307 A	Specialty coatings and thermoplastic applications.	Very low color, stabilized rosin for enhanced heat stability. Excellent adhesion. High bio-renewable content	95	103	25 max	100 centipoise at 410°F (210°C)

# Coatings

## Coating Resins

Product Description	Resin Type	Features and Benefits	Acid Value	Hydroxyl Number	Ring & Ball Melt Point -°C	Viscosity
REACTOL™ 1111 A	Pure Phenolic Resin, Unreactive (Novolac)	Non-reactive pure phenolic. Improves toughness, gloss adhesion and hardness.	75	N/A	145	Z6 Gardner Holdt at 25C (60% in Xylene)
REACTOL™ 1717	Polyketone	Provides excellent adhesion to difficult substrates; low viscosity; can be used to increase solids. Excellent intercoat adhesion properties	<1	270	100	545 centipoise, Brookfield at 25C (60% in Isopropyl Alcohol)
REACTOL™ 1717 H	Polyketone	Higher melting point version of Reactol 1717	<1	270	115	1000 centipoise, Brookfield at 25C (60% in Isopropyl Alcohol)
REACTOL™ 1979 A	Polyester	Low molecular weight hydroxyl functional polyester. Outstanding color retention. Excellent adhesion properties.	8	280	85	4" Gardner Holdt LL at 25C (60% in Ethanol)
REACTOL™ 5145 A	Polyester	Improves gloss and adhesion. Cross linkable. Excellent compatibility with cellulose resins (NC, CAP, CAB). Very good heat, product, water, alkali, oil and block resistance when cured.	130	130	120	26" Ford Cup at 25C (50% in Ethanol)
FILTREZ™ 339	Maleic Modified Rosin Ester	Soluble in aliphatic and aromatic solvents, vegetable oils. Promotes high gloss. Useful in sandng sealers.	35	N/A	135	2" Gardner Holdt LL at 25°C, (60% NV Toluene)
ECO-REZ™ 303 A	Maleic Modified Rosin Ester	Soluble in aliphatic and aromatic solvents, vegetable oils. Promotes high gloss.	20	N/A	125	6" Gardner Holdt LL at 25C (1:2 in Linseed Oil)
SETAPRINT™ 999 A	Phenolic Modified Rosin Ester	Soluble in aliphatic and aromatic solvents, vegetable oils. Promotes high gloss and film toughness.	20	N/A	135	14" Gardner Holdt LL at 25C (1:2 in Linseed Oil)
FILTREZ™ 807	Fumaric Modified Rosin Ester	Soluble in polar solvents and water/amine. Promotes gloss. Excellent pigment wetting.	125	N/A	120	2" Gardner Holdt LL at 25C (60% in Ethanol)
FILTREZ™ 809	Fumaric Modified Rosin Ester	Soluble in polar solvents and water/amine. Promotes gloss and film hardness.	133	N/A	160	13" Gardner Holdt LL at 25C (60% in Ethanol)
HYDRO-REZ™ 3886 A	Fumaric Modified Rosin Ester	Soluble in polar solvents and water/amine. Promotes gloss. Excellent pigment wetting.	150	N/A	130	2" Gardner Holdt LL at 25C (50% in Ethanol)



**LAWTER**<sup>™</sup>  
Better, cleaner chemistry

learn more at [lawter.com](https://www.lawter.com)

**Lawter Asia Pacific****Customer Service**

+86 21 2329 5201

4information.ap@lawter.com

**Technical Inquiries**

4techinfo.ap@lawter.com

**Lawter EMEA****Customer Service**

+32 3570 9494

+32 3570 9490 fax

4information.eu@lawter.com

**Technical Inquiries**

+32 3570 9494

+32 3570 9490 fax

4techinfo.eu@lawter.com

**Lawter New Zealand****Customer Service**

+64 7 572 7381

+64 7 572 7396 fax

4information.anz@lawter.com

**Technical Inquiries**

4techinfo.anz@lawter.com

**Lawter North America****Customer Service**

+1 912 366 4322

+1 281 205 2082 fax

4information.na@lawter.com

**Technical Inquiries**

Resins, Vehicles and Additives

+1 847 649 9500

Adhesive Resins

+1 804 387 6822

4techinfo.na@lawter.com

**Lawter South America****Customer Service**

+54 11 4717 8900

+54 11 4717 9040 fax

4information.sa

@lawter.com

Technical Inquiries

4techinfo.sa@lawter.com

**EHS inquirees**

4EHSinfo@lawter.com

**REACH Inquiries**

reach02@lawter.com

**Lawter, Inc.**

200 North LaSalle Street

Suite 2600

Chicago, IL 60601

+1 312 662 5700

For worldwide locations visit [lawter.com](http://lawter.com) ® and TM Licensed trademarks of Lawter, Inc. © 2017 Lawter Inc. Printed in the United States.

LAW-001 09/17

The information provided herein was believed by Lawter, Inc. to be accurate at the time of preparation or prepared from sources believed to be reliable, but it is the responsibility of the user to investigate and understand other pertinent sources of information, to comply with all laws and procedures applicable to the safe handling and use of the product and to determine the suitability of the product for its intended use. All products supplied by Lawter are subject to Lawter's terms and conditions of sale. LAWTER MAKES NO WARRANTY, EXPRESS OR IMPLIED, CONCERNING THE PRODUCT OR THE MERCHANTABILITY OR FITNESS THEREOF FOR ANY PURPOSE OR CONCERNING THE ACCURACY OF ANY INFORMATION PROVIDED BY LAWTER, except that the product shall conform to Lawter's specifications. Nothing contained herein constitutes an offer for the sale of any product.