



BIO-BASED WAX ADDITIVES FOR COATINGS AND INKS

Lubrizol

Performance Coatings

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BIO-BASED WAX TECHNOLOGIES

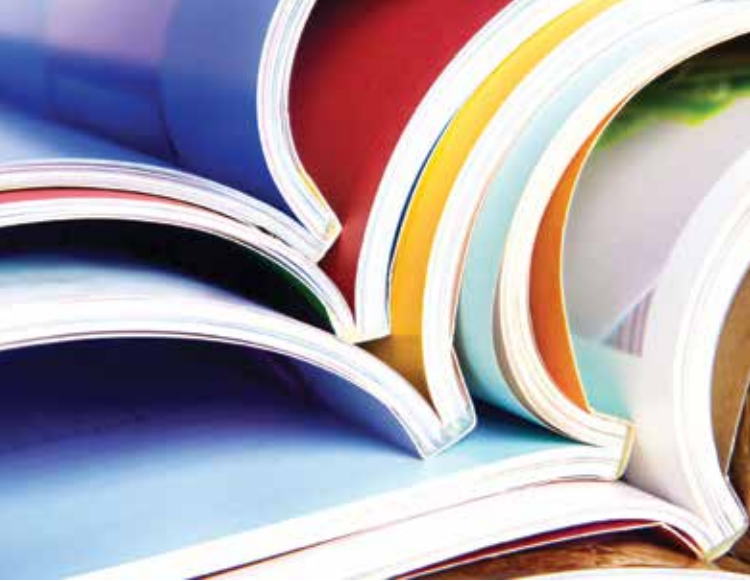
Addressing the growing demand for raw materials that deliver sustainability benefits and reduce the environmental impact of coatings and inks, Lubrizol offers a selection of wax technologies with bio-based content. These raw materials include micronized powders and liquid dispersions/emulsions designed for use in a range of applications. They are fully or partially based on waxes from plant-based or animal sources, which decrease the consumption of fossil resources and help improve the carbon footprint of coatings and inks without sacrificing performance. We continue to develop our range of bio-based waxes. Please contact us to discuss latest status and availability, and hear about the specific properties of new grades.

Micronized										
Product Name	Polymer Type	Bio-Based % of Solids	Particle Size μm		Melting Point $^{\circ}\text{C}$ ($^{\circ}\text{F}$)	Density g/cm^3 @ 20°C	Coating Types			
			DV50	DV90			Water-Borne	Solvent-Borne	Powder	Radiation-Cured
Lanco™ 1380 F	Modified Polypropylene Wax	25-50	≤ 9	≤ 22	150 (302)	0.95	●	●	○	●
Lanco™ 1380 SF	Modified Polypropylene Wax	25-50	≤ 6	≤ 14	150 (302)	0.95	●	●	○	●
Lanco™ 1400 SF	Modified Amide Wax	25-50	≤ 6	≤ 14	140 (284)	0.97	○	●	●	○
Lanco™ 1410 LF	Modified Amide Wax	25-50	≤ 9	≤ 19	140 (284)	0.97	●	●	●	○
Lanco™ 1955 SF	Carnauba Wax	≥ 90	≤ 6	≤ 14	82 (190)	0.99	●	●	○	○
Lanco™ 2510 SF	Inorganically Modified Wax Compound	25-50	≤ 6	≤ 14	105(221)	1.05	●	●	○	○
Lanco™ 2520 SF	Inorganically Modified Wax Compound	25-50	≤ 6	≤ 14	105(221)	1.07	●	●	○	○
Lanco™ 2520 EF	Inorganically Modified Wax Compound	25-50	≤ 5	≤ 10	105(221)	1.07	●	●	○	○
Lanco™ A 1602	Fatty Acid Amide Wax	≥ 90	≤ 9	≤ 22	142 (288)	0.99	○	●	●	○
Lanco™ A 1603	Vegetable Based Amide Wax	≥ 90	≤ 6	≤ 14	142 (288)	0.99	○	●	●	○
Lanco™ Flow P 30	Oleo-Based Modified Wax	≥ 90	≤ 20	≤ 80	87 (189)	1.00			●	
Lanco™ PE 1544 F	Modified Polyethylene Wax	25-50	≤ 9	≤ 22	140 (284)	0.99	●	●	●	○
Lanco™ PE 1554 SF	Modified Carnauba Wax	25-50	≤ 6	≤ 14	104 (219)	0.96	○	●		
Lanco™ PP 1362 D	Modified Polypropylene Wax	25-50	≤ 9	≤ 22	140 (284)	0.94	●	●		●
Lanco™ PP 1362 SF	Modified Polypropylene Wax	25-50	≤ 6	≤ 14	140 (284)	0.94	●	●		●
Lanco™ SM 2003	Modified Amide Wax	25-50	≤ 9	≤ 22	140 (284)	0.97	○	●	●	○
Pinnacle™ 2531	Amide Wax	≥ 90	≤ 10	≤ 24	83 (181)			●		
PowderAdd™ 9060	Amide Wax	≥ 90	≤ 9	≤ 22	140 (284)	0.99			●	
PowderAdd™ 9062	Modified Amide Wax	25-50	≤ 25		140 (284)	0.97			●	
PowderAdd™ 9421	Proprietary Polymer	51-89	≤ 7	≤ 16	80 (176)	0.097			●	
PowderAdd™ 9423	Proprietary Polymer	51-89	≤ 7.5	425	140 (284)	0.094			●	

● Premium performance ○ Good performance

Micronized						
Product Name	Performance Benefits					Other Properties/Benefits
	COF Reduction (Slip)	Scratch & Abrasion Resistance	Matting	Silky Feel	Anti-Blocking Non-Sticking	
Lanco™ 1380 F	○	●	●	○	●	Burnish resistance.
Lanco™ 1380 SF	○	○	○	●	●	For thin film applications.
Lanco™ 1400 SF	●	○	○	●	○	Excellent surface feel.
Lanco™ 1410 LF	○	○	○	●	●	Good compatibility in water-based systems.
Lanco™ 1955 SF	●	●			●	Good release properties. Acid value <15.
Lanco™ 2510 SF	○	●	○		○	Excellent abrasion resistance for PTFE-free formulations.
Lanco™ 2520 SF	○	●	○		○	Excellent abrasion resistance for PTFE-free formulations.
Lanco™ 2520 EF	●	●	○		○	Excellent abrasion resistance for PTFE-free formulations.
Lanco™ A 1602	○	○	●	○	●	Good sanding properties for wood coatings.
Lanco™ A 1603	○	○	○	●	●	Excellent release in can coatings.
Lanco™ Flow P 30						Degassing and wetting aid for powder coatings.
Lanco™ PE 1544 F	○	○	●		○	Very good release properties.
Lanco™ PE 1554 SF	●	●			○	Suitable for coil coatings.
Lanco™ PP 1362 D	○	●	●	○	●	Excellent multi-purpose wax.
Lanco™ PP 1362 SF	○	○	○	●	●	For thin film applications.
Lanco™ SM 2003	●	○	●	○	○	Good overall performance in wood coatings. Good degassing in powder coatings.
Pinnacle™ 2531	●	●		●	○	
PowderAdd™ 9060	○					Degassing in powder coatings.
PowderAdd™ 9062	○	○				Degassing in powder coatings.
PowderAdd™ 9421	○					Degassing in powder coatings. Suitable for low bake systems.
PowderAdd™ 9423	○					Degassing in powder coatings.

Please contact your local account manager or customer service member to find out about availability and specific properties of new grades in development.



Dispersions

Product Name	Product Type	Solids	Bio-Based % of Solids	Solvent	Particle Size μm		Melting Point $^{\circ}\text{C}$ ($^{\circ}\text{F}$)	Density	
					DV50	DV90		g/cm^3 @ 20°C	g/cm^3 @ 20°C
Lanco™ Glidd 4415	Carnauba Wax	15	≥ 90	Alcohol, Glycol Ether, Aromatic 150 ND	3	6	82 (180)	0.91	0.91
Lanco™ Glidd 4838	Modified Carnauba Wax	38	≥ 90	Butyl Glycol/ Isobutanol	3	7.5	82 (180)	0.92	0.92
Lanco™ Glidd 5350	Modified Carnauba Wax	30	≥ 90	Butyl Glycol	3.5	6.5	82 (180)	0.91	0.91
Lanco™ Glidd 5518	Modified Carnauba Wax	18	≥ 90	Butyl Glycol	3	7	82 (180)	0.92	0.92
Lanco™ Glidd 6502	Polyethylene/ Carnauba Wax	27	51-89	Water/Butyl Glycol	4.5	9.5	112(234)	0.97	0.97
Lanco™ Glidd BT	Carnauba Wax	15	≥ 90	Glycol Ether	3.5	8	82 (180)	0.96	0.96

● Premium performance ○ Good performance

Wax dispersions are a combination of natural and/or synthetic polymers that are mechanically dispersed in organic solvents, water or other liquid carriers using a variety of media mills or high-speed Cowles dispersion techniques.

Dispersions

Product Name	Coating Types		Performance Benefits				Other Properties/Benefits
	Water-Borne	Solvent-Borne	COF Reduction (Slip)	Scratch & Abrasion Resistance	Rub/Abrasion Resistance	Anti-Blocking Non-Sticking	
Lanco™ Glidd 4415		●	●	●		●	Good gloss retention.
Lanco™ Glidd 4838		●	●	●		●	Excellent gloss retention.
Lanco™ Glidd 5350	●	●	●				Meat release effect in can coatings.
Lanco™ Glidd 5518	●	●	●	●	○		Good gloss retention.
Lanco™ Glidd 6502	●		●	●	○	●	Good gloss retention.
Lanco™ Glidd BT	●	●	●	●	○	●	



Emulsions					
					Melting Point
Product Name	Product Type	Solids (%)	Bio-Based % of Solids	pH	°C (°F)
Aquaslip™ 912	T1 Carnauba Wax	25	51-89	6	81 (178)
Aquaslip™ 942	T3 Carnauba Wax	25	51-89	8.4	81 (178)
Aquaslip™ 952	T1 Carnauba Wax	25	51-89	9	81 (178)
Aquaslip™ 958	Proprietary Wax Combination	27.5	25-50	6.6	

● Premium performance ○ Good performance

Wax emulsions are a stable mixture of one or more natural or synthetic waxes in water. Emulsions always contain a wetting agent package adjusted to the appropriate HLB value depending on the wax being emulsified. Processing is performed at temperatures above the melt point of the wax. If the wax melt point is above the boiling point of water, the emulsion must be processed under pressure to prevent the water from boiling.

Emulsions					
Product Name	Ionic Character	COF Reduction (Slip)	Block Resistance	Scratch Abrasion Resistance	Other Properties/ Benefits
Aquaslip™ 912	Anionic	●	○	●	
Aquaslip™ 942	Non-Ionic	●	○	●	
Aquaslip™ 952	Non-Ionic	●	○	●	
Aquaslip™ 958	Non-Ionic	●	○	●	Good release properties.

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Lubrizol Performance Coatings is a market-driven innovator of specialty chemicals for coatings, inks and composites. Our portfolio of resin, binder, dispersant, wax additive and specialty additive technologies solves challenges across a wide range of markets and applications. Formulators choose Lubrizol to benefit from our innovative technologies, customer collaboration and global reliability. More than just a supplier, we are a valued partner with extensive experience in surface protection, dispersion, adhesion and barrier properties. We work closely with customers to enhance the performance, productivity and sustainability benefits of their products and drive new opportunities for market success.



Performance Coatings

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