Lubrizol

Imagined for Life. Enabled by Science.™

PTFE-Free Wax Additives

DON'T SACRIFICE ON PERFORMANCE!

Lubrizol has developed a range of PTFE-free micronized waxes and liquid wax dispersions for water-based and solvent-based inks and coatings that significantly improve rub, scratch and abrasion resistance while reducing coefficient of friction (COF) comparable to traditional PTFE-based wax additives.

BENEFITS

- Highly effective surface protection
- Suitable for use in water-based and solvent-based inks & coatings
- Small particle size and narrow particle size distribution
- Excellent slip/COF reduction
- Rub, scratch and mar resistance
- Anti-blocking
- Gloss retention
- EU 10/2011 and FDA 21 CFR 175.300 Compliant

BENEFITS OF PTFE

Polytetrafluoroethylene (PTFE) has brought desirable properties for traditional ink and coating applications. Low molecular weight PTFE micronized powders have been used to reduce the coefficient of friction of the film to aid mobility and to lubricate and protect surfaces from scratch and abrasion forces. Anti-blocking properties and release effects can also be generated.

Achieving low molecular weight and friability has typically required irradiation to enable particle size reduction using conventional micronization techniques. The irradiation process has been demonstrated to generate PFAS components, with PFOA and PFOS both classified as reproductive toxins and suspected carcinogens.

REGULATORY ACTIONS IMPACTING THE USE OF PTFE

In 2019, a global ban on PFOA and its salts as persistent organic pollutants (POPs) was agreed under the Stockholm Convention restricting the use of raw materials containing >25 ppb PFOA. Following the legislation, certain PTFE raw materials were withdrawn. This global impact is driving the ink and coating industries to shift away from raw materials like PTFE. Additionally, PTFE stability properties that have driven use in many applications and its halogen content also impact cradle-to-cradle policies.

LUBRIZOL'S SOLUTIONS

Lubrizol's technical team has focused on development of PTFE-alternative wax additives to deliver similar properties to PTFE-containing additives. PTFE-alternative technologies are available in micronized and dispersed forms of surface modifying additives under the Lanco™ wax additives brand. More products are currently under development to meet specific customer needs and to provide additives for a wider range of applications.

EU/FDA Compliant

Gloss Retention

Mar Resistance

Anti-blocking

Surface Protection

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Micronized PTFE-Free Wax Additives

		Particle Size				Applications			
Product Name	Polymer Type	Dv50 µm	Dv90 µm	Melting Point °C (°F)	Density at 20°C g/cm³	Can & Coil Coatings	General Industrial Coatings	Wood Coatings	Inks
Lanco™ 1510 SF	Modified Polyolefin Wax	≤6	≤14	106 (223)	0.96	•	•	•	•
Lanco™ 1510 EF	Modified Polyolefin Wax	≤5	≤10.5	106 (223)	0.96	• (thin film)	•		•
Lanco™ 2510 SF	Inorganically Modified Wax Compound	≤6	≤14	105 (221)	1.05	•	•	•	•
Lanco™ 2520 SF	Inorganically Modified Wax Compound	≤6	≤14	105 (221)	1.07		•	•	
Lanco™ 2520 EF	Inorganically Modified Wax Compound	≤5	≤10	105 (221)	1.07		•	•	
Lanco™ 2530 EF	Organically Modified Wax Compound	≤6	≤12	116 (241)	0.92	• (thin film)	•		•
Lanco™ 2540 SF	Organically Modified Wax Compound	≤6	≤14	128 (262)	0.95	•	•	•	•
Lanco™ 2540 EF	Organically Modified Wax Compound	≤5.2	≤10	128 (262)	0.95	• (thin film)	•	•	•
Lanco™ 2541 SF	Organically Modified Wax Compound	≤6	≤14	144 (291)	0.95	•	•	•	•

Dispersed PTFE-Free Wax Additives

				Particle Size				Applications		
Product Name	Polymer Type	Solids %	Solvent	Dv50 µm	Dv90 µm	Melting Point °C (°F)	Density at 20°C g/cm³	Can & Coil Coatings	General Industrial Coatings	Wood Coatings
Lanco™ Glidd 6635	Wax Combination	30	Water, Butyl Glycol	≤6	≤12	128 (262)	0.96	•	•	•
Lanco™ Glidd 6692 E	Wax Combination	29	Water, Butyl Glycol	≤3	≤7	106 (223)	0.98	• (thin film)	•	•
Lanco™ Glidd 7605	Inorganically Modified Polyolefin Wax	20	Aromatic Solvent, Butyl Glycol	≤4	≤8	105 (221)	0.93		•	
Lanco™ Glidd 7610	Inorganically Modified Polyolefin Wax	18.5	Butyl Glycol	≤4	≤8	105 (221)	0.93		•	•
Lanco™ Glidd 7678	Polyolefin Wax	20	Butyl Glycol	≤3.5	≤7	106 (223)	0.91	• (thin film)	•	•