



PTFE-ALTERNATIVE WAX ADDITIVES FOR PRINTING INKS

OUTSTANDING SURFACE PROTECTION WITHOUT PTFE

Specifically developed for the ink and packaging industries, Lubrizol offers a range of PTFE-free* micronized waxes to significantly improve rub resistance while reducing coefficient of friction (COF) and maintaining gloss comparable to traditional PTFE-based wax additives.

These PTFE-free wax additives are easy to handle and designed for use in water-based, solvent-based and UV inks.

*Not intentionally added to the composition of this product.

Benefits

- Highly effective surface modification
- Halogen-free functional PTFE replacement additives
- Suitable for use in water, solvent-based and UV inks
- Small and narrow particle size distribution
- EU 10/2011 and FDA 21 CFR 175.300 compliant

Micronized PTFE-Free Wax Additives

Product Name	Polymer Type	Particle Size		Melting Point °C (°F)	Density at 20°C g/cm ³
		Dv50 µm	Dv90 µm		
Lanco™ 1510 SF	Modified Polyolefin Wax	≤6	≤14	106 (223)	0.96
Lanco™ 1510 EF	Modified Polyolefin Wax	≤5	≤9.5	106 (223)	0.96
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
Lanco™ 2541 SF	Organically Modified Wax Compound	≤6	≤14	144 (291)	0.83



Performance Coatings



Features & Benefits

- Surface Protection
- Excellent slip/COF reduction
- Rub resistance
- Anti-blocking
- Gloss retention

Benefits of PTFE

For years, polytetrafluoroethylene (PTFE) has brought several desirable properties for traditional ink and coating applications. Low molecular weight PTFE micronized powders have been used for a variety of purposes, including 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.

To achieve 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 May of 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. Most of the 182 countries that have ratified the Stockholm Convention have 12 months to implement the ban. 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.

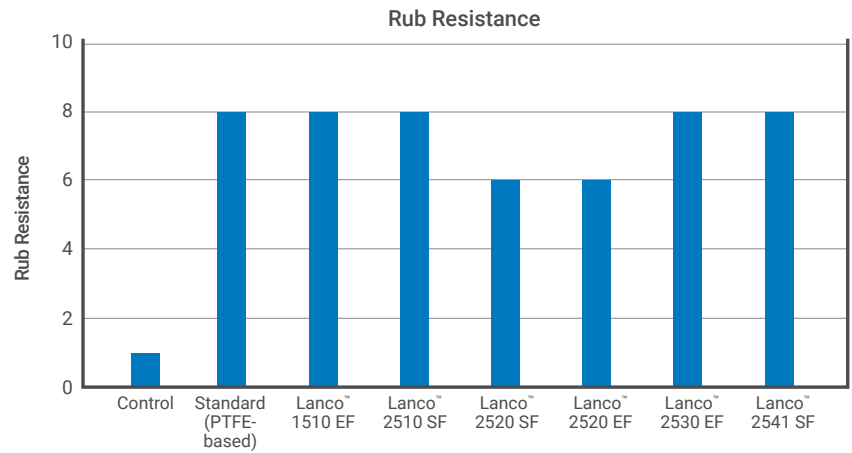
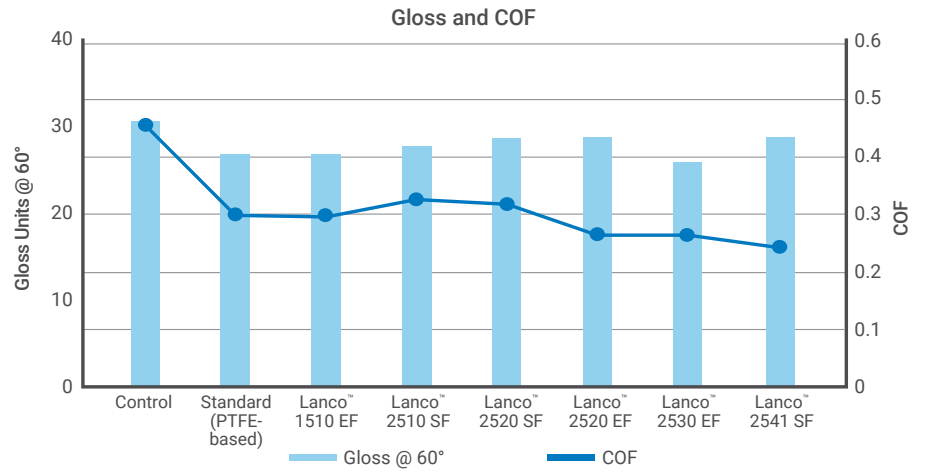


Lubrizol's Solutions

Lubrizol's technical team has focused on development of PTFE-free wax additives to deliver similar properties to PTFE-containing additives. PTFE-free 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 provide additives for a wider range of applications.

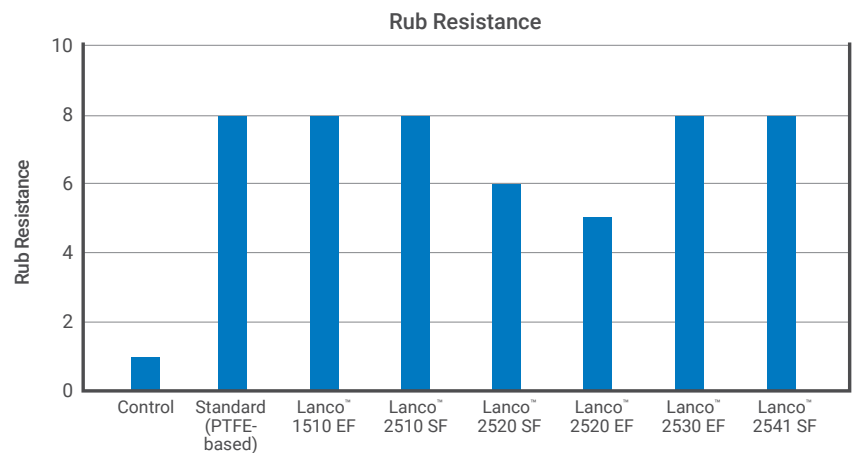
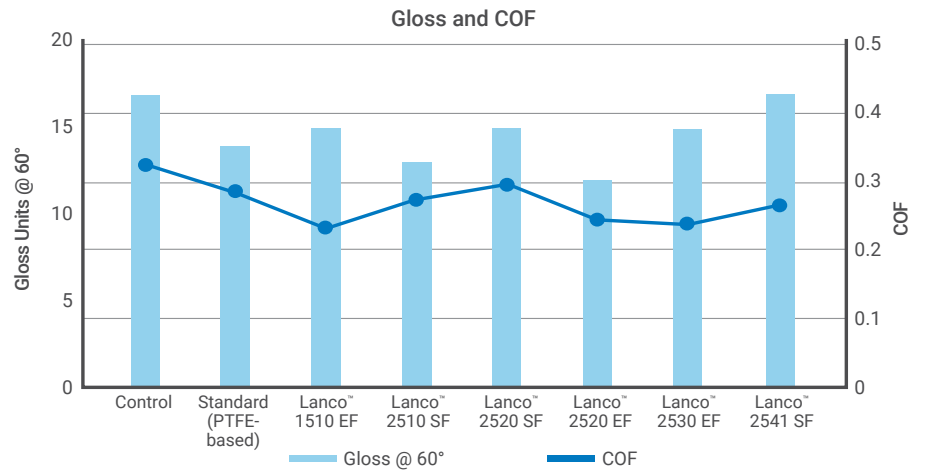
Performance Data in Water-Based Acrylate Resin Ink

2% active content, application on Leneta paper 3NT-31 backside, drying time 24h.



Performance Data in Solvent-Based NC Ink

2% active content, application on Leneta paper 3NT-31 backside, drying time 24h.



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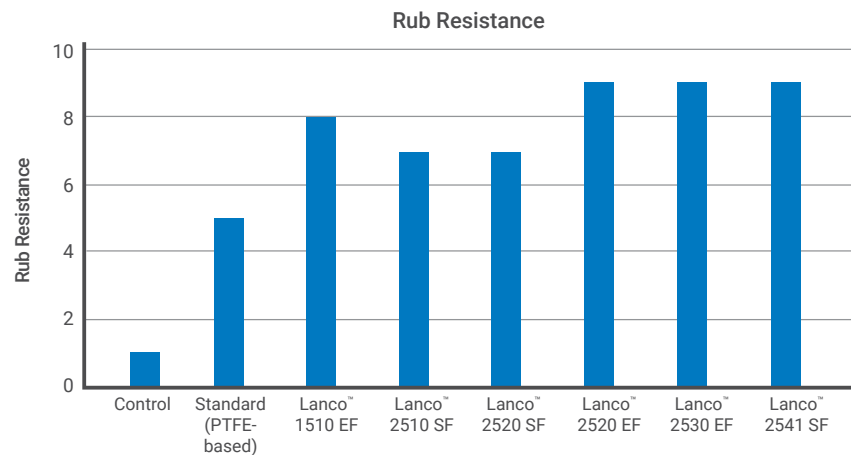
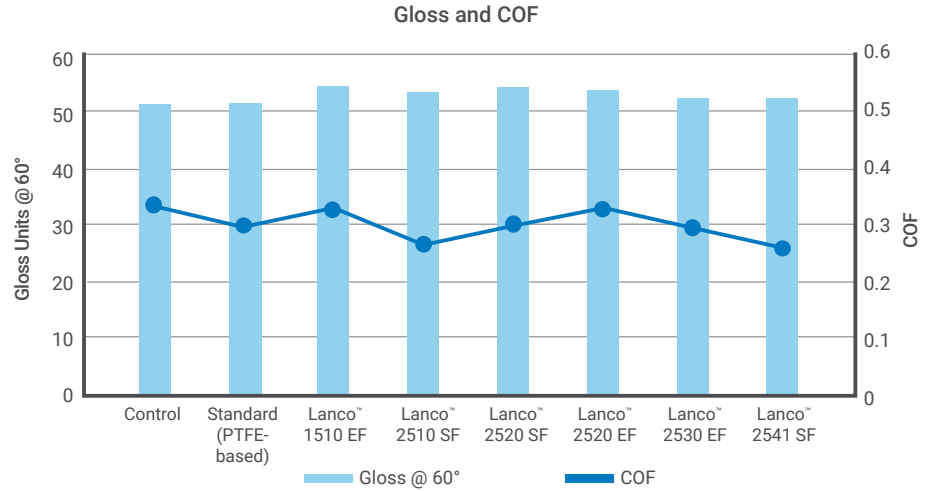
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Performance Data in UV Acrylate Resin Ink

2% active content, application on Leneta paper 3NT-31 backside, radiation drying.



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