

PTFE-ALTERNATIVE SURFACE MODIFIERS FOR COATINGS

OUTSTANDING SURFACE PROTECTION WITHOUT PTFE

For the coatings industry Lubrizol has developed a range of PTFE-free* micronized waxes and liquid wax dispersions that significantly improve scratch and abrasion resistance while reducing coefficient of friction (COF) comparable to traditional PTFE-based wax additives.

These halogen-free* surface modifiers are easy to handle wax additives and wax dispersions, designed for the use in water-based and solvent-based can, coil and general industrial coatings as well as wood coatings.

MICRONIZED POWDERS	LIQUID DISPERSIONS
Lanco™ 1510 EF	Lanco™ Glidd 7605
Lanco™ 2510 SF	Lanco™ Glidd 7607
Lanco™ 2520 SF	Lanco™ Glidd 7610
Lanco™ 2520 EF	Lanco™ Glidd 7612

WHAT WE ADD MAKES THE DIFFERENCE.™

- HIGHLY EFFECTIVE SURFACE MODIFICATION
- HALOGEN-FREE* PTFE-ALTERNATIVES
- SUITABLE FOR USE IN WATER-BASED AND SOLVENT-BASED COATINGS
- SUITABLE FOR THIN-FILM APPLICATIONS
- SMALL AND NARROW PARTICLE SIZE DISTRIBUTION
- EU 10/2011 AND FDA 21 CFR 175.300 COMPLIANT



* Not intentionally added to the composition of this product.



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 Following the legislation certain PTFE raw materials were withdrawn.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 surface modifiers 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™ Surface Modifiers brand. More products are currently under development to meet specific customer needs and provide additives for a wider range of applications.

Please contact Lubrizol to discuss further solutions.





MICRONIZED PTFE-FREE SURFACE MODIFIERS

PRODUCT NAME	POLYMER TYPE	PARTICLE SIZE		MELTING POINT °C (°F)	DENSITY at 20 °C g/cm ³	APPLICATIONS			
		Dv50 μm	Dv90 μm			CAN & COIL COATINGS	GENERAL INDUSTRIAL COATINGS	WOOD COATINGS	INKS
Lanco™ 1510 EF	Polyolefin Wax	≤ 5	≤ 9.5	106 (223)	0.96	• (thin film)	•		•
Lanco™ 2510 SF	Inorganically Modified Wax	≤ 6	≤ 14	105 (221)	1.05	•	•	•	•
Lanco™ 2520 SF	Inorganically Modified Wax	≤ 6	≤ 14	105 (221)	1.07	•	•	•	
Lanco™ 2520 EF	Inorganically Modified Wax	≤ 5	≤ 10	105 (221)	1.07	• (thin film)	•		

DISPERSED PTFE-FREE SURFACE MODIFIERS

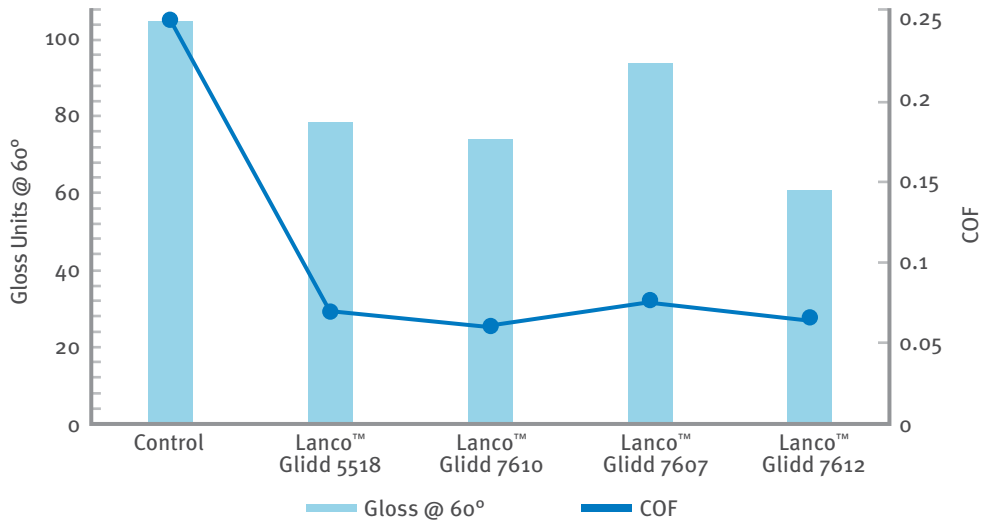
PRODUCT NAME	POLYMER TYPE	SOLIDS %	SOLVENT	PARTICLE SIZE		MELTING POINT °C (°F)	DENSITY at 20 °C g/cm ³	APPLICATIONS		
				Dv50 μm	Dv90 μm			CAN & COIL COATINGS	GENERAL INDUSTRIAL COATINGS	WOOD COATINGS
Lanco™ Glidd 7605	Inorganically Modified Polyolefin Wax	20	Aromatic 100, Butyl Glycol	≤ 4	≤ 8	105 (221)	0.93	• (thin film)		
Lanco™ Glidd 7607	Inorganically Modified Polyolefin Wax	20	Water, Butyl Glycol	≤ 4	≤ 8	105 (221)	0.99	• (thin film)	•	•
Lanco™ Glidd 7610	Inorganically Modified Carnauba Wax	18.5	Butyl Glycol	≤ 4	≤ 8	82 (180)	0.93	• (thin film)	•	•
Lanco™ Glidd 7612	Inorganically Modified Wax Compound	27	Water, Butyl Glycol	≤ 6	≤ 12	106 (223)	0.98	•	•	•



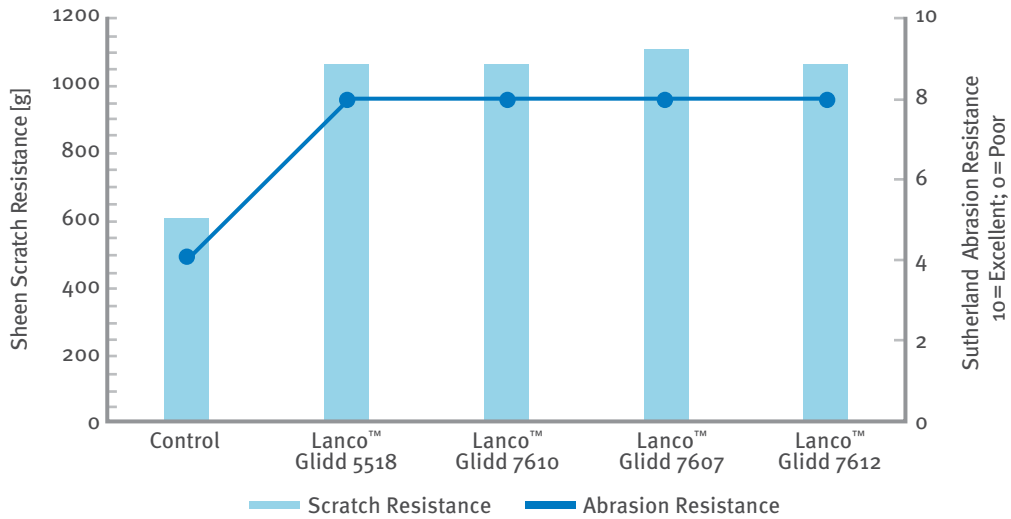
Performance Data in Water-Based Epoxy Phenolic Melamine Gold Lacquer (Can Coating)

0.5 % active content, 20µm wet film thickness on tin plate, curing conditions 12 min @ 200°C

Gloss and COF



Scratch and Abrasion Resistance



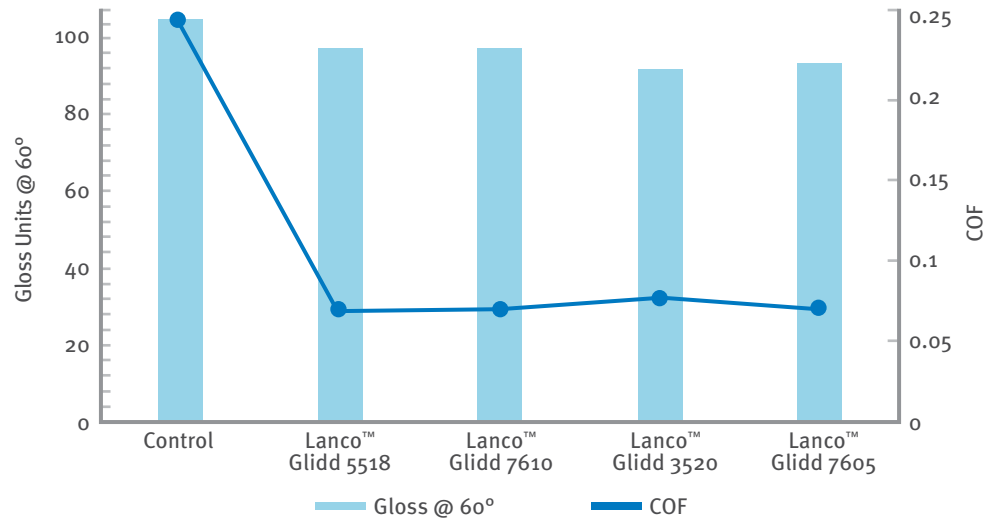
FEATURES & BENEFITS

- SURFACE PROTECTION
- EXCELLENT SLIP/ COF REDUCTION
- SCRATCH AND MAR RESISTANCE
- ANTI-BLOCKING
- GLOSS RETENTION
- LOW INFLUENCE ON POROSITY IN CAN COATINGS

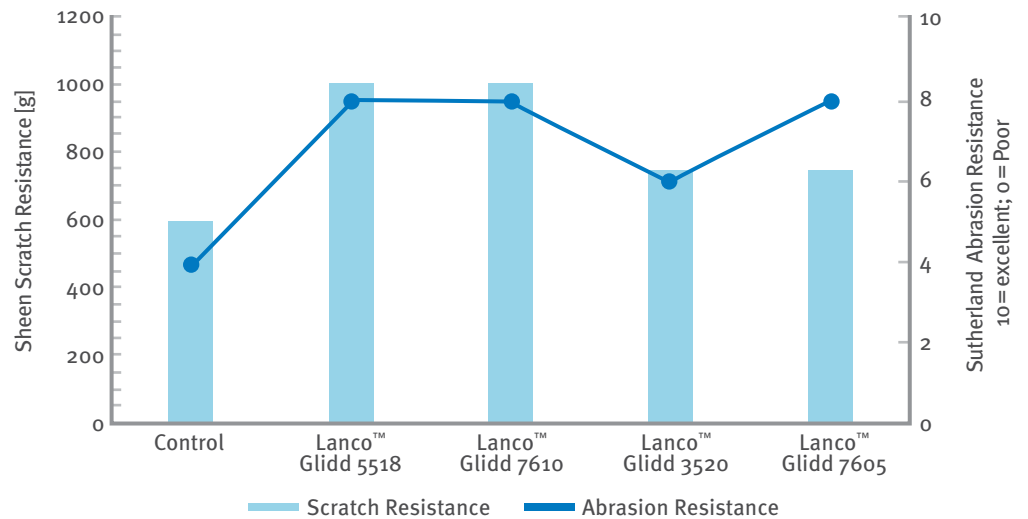
Performance Data in Solvent-Based Epoxy Melamine Clear Coat (Can Coating)

0.5 % active content, 20µm wet film thickness on tin plate, curing conditions 12 min @ 170°C

Gloss and COF



Scratch and Abrasion Resistance

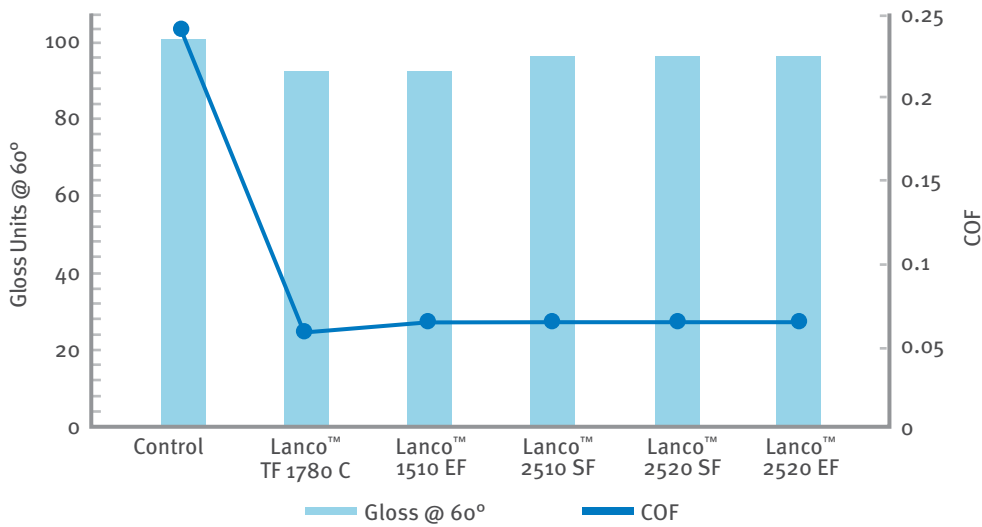




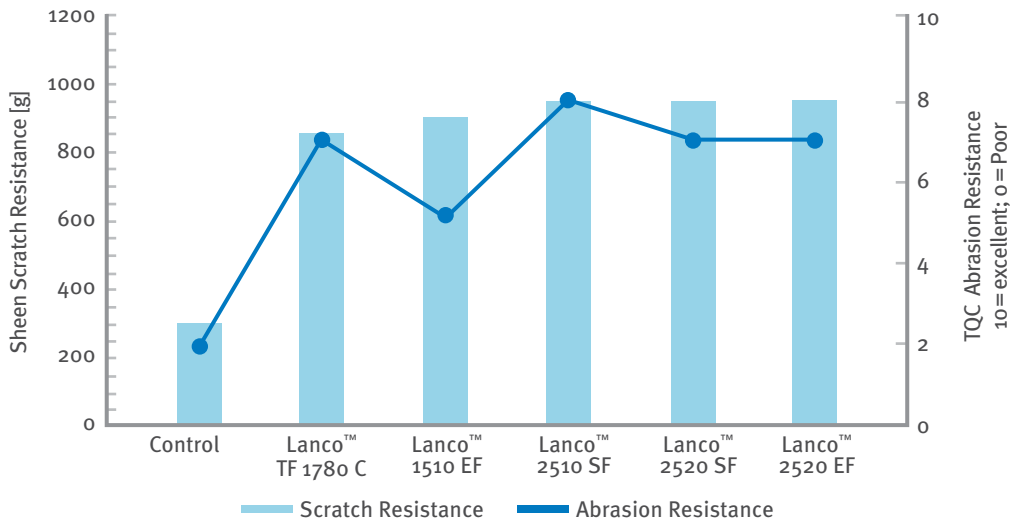
Performance Data in Solvent-Based Polyester Phenolic Gold Lacquer, BPA-NI* (Can Coating)

0.5 % active content, 20µm wet film thickness on tin plate, curing conditions 10 min @ 200°C

Gloss and COF



Scratch and Abrasion Resistance



* Bisphenol-A Non-Intent

NORTH AMERICA

Lubrizol Advanced Materials, Inc.
9911 Brecksville Road
Brecksville, OH 44141 USA
+1.888.234.2436

EUROPE

Lubrizol Deutschland GmbH
Max-Planck-Str. 6
27721 Ritterhude Germany
+49 421 69333

ASIA-PACIFIC

Lubrizol Specialty Chemicals
(Shanghai) Co., Ltd
10/F, Park Center International
No. 1088 Fang Dian Road
Shanghai 201204, PR China
+8621-3866-0366

SOUTH AMERICA

Lubrizol do Brasil Aditivos Ltda
Avenida Nove de Julho, 3653
Jardim Paulista
Sao Paulo – SP
01407-000
+55.11.4097.0250

Visit us at:
www.lubrizol.com/coatings



The information contained herein is believed to be reliable, but no representations, guarantees or warranties of any kind are made as to its accuracy, suitability for particular applications or the results to be obtained. The information is based on laboratory work with small-scale equipment and does not necessarily indicate end product performance. Because of the variations in methods, conditions and equipment used commercially in processing these materials, no warranties or guarantees are made as to the suitability of the products for the applications disclosed. Full-scale testing and end product performance are the responsibility of the user. Lubrizol Advanced Materials, Inc. shall not be liable for and the customer assumes all risk and liability of any use or handling of any material beyond Lubrizol Advanced Materials, Inc.'s direct control. **THE SELLER MAKES NO WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.** Nothing contained herein is to be considered as permission, recommendation, nor as an inducement to practice any patented invention without permission of the patent owner.

Product safety information required for safe use is not included. **BEFORE HANDLING, READ PRODUCT AND SAFETY DATA SHEETS AND CONTAINER LABELS FOR SAFE USE, PHYSICAL AND HEALTH HAZARD INFORMATION. THE SAFETY DATA SHEET IS AVAILABLE FROM YOUR LUBRIZOL REPRESENTATIVE, OR DISTRIBUTOR.**

Trademarks owned by The Lubrizol Corporation or its affiliates. ©The Lubrizol Corporation 2021, All Rights Reserved.

21-867