



POXYLUBE® #859

DRY FILM LUBRICANT: HEAT CURE

SERIES E859

WATERBORNE PTFE COATING RoHS COMPLIANT
QUALIFIED TO PWA 36538



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DESCRIPTION

Poxylube® #859 Dry Film Lubricant is a single component heat cured water base coating formulated with PTFE to provide excellent lubrication, fluid resistance and corrosion protection. This heat cured material prevents corrosion, galling, seizing and fretting.

Once Poxylube® #859 has been applied to a properly prepared surface and cured, it is virtually unaffected by atmospheric and fretting corrosion, solvents, acids, oils and degreasers. Poxylube® #859 can be applied to all metallic and nonmetallic surfaces by spray or dip application.

POXYLUBE® #859 CONTAINS NO GRAPHITE.

NOTICE

Before using this product, read all warnings, limitations and safety information printed on the product label, Safety Data Sheet (MSDS) and Technical Data Sheet. The properties listed on this sheet are not intended for use as a specification. Please contact our Technical Service Team.

Refer to our website for answers to common questions:
<https://www.sandstromproducts.com/resources/FAQs/>

OUTSTANDING FEATURES/BENEFITS

- Excellent corrosion protection
- Low VOC
- Easy application
- Water base
- Provides excellent lubrication
- Provides heavy duty service as an exterior protective coating for all metals including magnesium
- Offers resistance to chemical corrosion, solvents, abrasion and impact
- Exhibits good thermal stability
- Poxylube® #859 can be **textured** to produce a non-slip finish. Use of textured material will change Poxylube® #859 from a low Coefficient of Friction product to a **grip finish** product. Addition of the optional texture material can be adjusted to produce the feel desired by the end user. Use of the texture additive will not adversely affect chemical or corrosion resistance. NOTE: Taber Abrasion resistance will be reduced and upper operating temperature limit of the coating will drop to 320°F.
- Recoat or touch up without removal of original coat
- Compatible with laser etching

COMPOSITION AND PHYSICAL PROPERTIES (RESULTS ARE COLOR DEPENDENT)

Net Weight per gallon[^] <i>ASTM D1475</i>	8.50 – 11.0 lbs./Gal	Vehicle	Modified epoxy
Weight Solids	39.0 - 48.0% (Theoretical)	Lubricating Pigment	PTFE
Volume Solids	28.0 – 36.0% (Theoretical)	Color	Jet Black, Urban Assault Gray, Olive Drab Green, Tan Custom colors available
VOC + water	<1.0 lbs./gallon (<120 g/L)		
VOC – water	<2.1 lbs./gallon (<250 g/L)	Gloss[^] ASTM D523	< 12 gloss units @ 60°
pH	10+	Shelf Life	12 months from Date of Shipment
Viscosity[^] <i>ASTM D562 @ 77°F</i>	55 - 60 KU's	Storage Conditions	50° – 100°F
		Freeze/Thaw Stability	KEEP FROM FREEZING
Coverage Rate *	930 – 1155 sq. ft./gal @ 0.5 mil DFT	Flash Point	215°F +/-2°F SETAFLASH
Dry Film Thickness	0.5 – 1.0 mils		

* Actual figures do not include spray loss. Also allow for surface irregularities and porosity, as well as material loss when mixing.

[^] Property tested with each production batch.

PERFORMANCE AND FUNCTIONAL PROPERTIES

CS-17 Taber Abrasion <i>ASTM D4060</i>	67 mg loss / 1000 cycles	Corrosion Protection:	
Chemical/Fluid Resistance: <i>ASTM D2510A, ASTM D2510C</i>	<i>MIL-PRF-46010 Table I Fluids</i>	<i>ASTM B117: Steel MIL-DTL-16232 Type M Class 3</i>	700 hours (at 0.5 mil)
	<i>Skydrol</i>	<i>ASTM B117: Aluminum MIL-A-8625 Type 2</i>	2500 hours ** (at 0.5 mil)
<i>MEK double rubs[^]</i>	200+ with no softening ([^] tested to 100)	<i>ASTM B117 Grit Blasted Bare Steel</i>	150 hours
Coefficient of Friction*	Altek 2Kg Load .05	Operating Temperature Range	-320°F to +500°F
	Per ISO 16047 .15		
	ASTM D2714 .08	Thermal Stability ASTM D2511	Pass
* Results based on pigment used in color formulation. ** Tests halted before failure. [^] Property tested with each production batch.		Dielectric Strength ASTM D3755	940 Volts/mil

IMPORTANT NOTICE TO BUYER / WARRANTY AND LIMITATIONS ON OUR LIABILITY

We warrant our products to be free of manufacturing defects and that they meet our current published physical properties and specifications. All information and suggestions presented are rendered gratis and are accurate to the best of our knowledge. They are based on technical data we believe to be reliable and are intended for use by persons having skill and "know-how" at their own discretion and risk. Prior to use, customers are cautioned to determine the suitability of our products for any given application through their own testing. NO WARRANTY IS MADE, EXPRESS OR IMPLIED, REGARDING SUCH INFORMATION, THE DATA ON WHICH IT IS BASED OR THE RESULTS OBTAINED FROM ITS USE OR THAT OUR PRODUCT SHALL BE MERCHANTABLE OR FIT FOR ANY PARTICULAR PURPOSE. SUCH STATEMENTS ARE NOT INTENDED TO SUGGEST INFRINGEMENT OF ANY PATENT. Since conditions of use of our products are beyond our control, all suggestions and statements are made without guarantee, warranty or other responsibility, express or implied, on our part. We assume no responsibility for results obtained, or damages incurred, from their use beyond replacing material proved to be defective or refunding the purchase price of such material at our option. Acceptance of delivery of our product means you have accepted the terms of this warranty, whether or not purchase orders of other documents state terms that vary from this warning. No seller is authorized to make any representations or warranty or assume any other liability on our behalf with any sales of our products. SANDSTROM PRODUCTS COMPANY.

Revision Date: 02/10/2023

GENERAL

For maximum service, the APPLICATION INSTRUCTIONS MUST BE FOLLOWED CLOSELY. Use a forced draft oven for all curing operations.

COVERAGE

One gallon of this material will theoretically cover 960 sq. ft. with a dry film thickness of 0.0005 inches. Coverage depends upon method of application and other variables such as overspray and type of surface to be coated. Above coverage rates are based on 100% efficiency.

SURFACE PREPARATION

Please contact Sandstrom Products Company for substitute surface preparations if recommended steps cannot be followed.

Application on steel. Pre-clean the steel surface with aliphatic naphtha or any other EPA compliant cleaner that sufficiently cleans surfaces to pass ASTM F22. Abrasive blast the surfaces with 180-220 grit aluminum oxide (25-50 RMS optimum). Phosphate IAW MIL-DTL-16232 (weight should be 11-22 g/m²), type M, class 3 or type Z, class 3.

Application on stainless steels. Pre-clean the steel surface with aliphatic naphtha or any other EPA compliant cleaner that sufficiently cleans surfaces to pass ASTM F22. Abrasive blast the surfaces with 180-220 grit aluminum oxide (25-50 RMS optimum). Passivate the surfaces with ASTM A967, types nitric 1, nitric 2 or nitric 3, as applicable.

Application on aluminum and aluminum alloys. Pre-clean the aluminum surface with aliphatic naphtha or any other EPA compliant cleaner that sufficiently cleans surfaces to pass ASTM F22. Sulfuric acid anodize IAW MIL-PRF-8625 and seal the surface with hot deionized water (>180°F for 30 minutes).

Application on titanium and titanium alloys. Degrease the surfaces to be coated with aliphatic naphtha or any other EPA compliant cleaner that sufficiently cleans surfaces to pass ASTM F22. Abrasive blast the surface with 180-220 grit aluminum oxide (25-50 RMS optimum) and alkaline anodize.

Application on copper and copper alloys. Pre-clean the copper surface with aliphatic naphtha or any other EPA compliant cleaner that sufficiently cleans surfaces to pass ASTM F22. Abrasive blast the surfaces with 180-220 grit aluminum oxide (25-50 RMS optimum). Form a black oxide finish on the surfaces.

IMPORTANT! DO NOT TOUCH CLEAN SURFACE WITH FINGERS - OIL FROM THE HANDS WILL INTERFERE WITH PROPER COATING ADHESION. Whenever possible, treat both contact surfaces (i.e., the shaft and the bearing).

STIRRING

IMPORTANT! STIR THOROUGHLY BEFORE USE AND INTERMITTENTLY DURING APPLICATION.

DO NOT SHAKE. STIR ONLY

WARNINGS: It is IMPERATIVE to use a properly vented oven-DIRECT VENT TO THE OUTSIDE.

DANGER! USE WITH ADEQUATE VENTILATION.

THINNING

For conventional spraying - Use as supplied.

For dipping - Reduce 5.0 – 10% by weight with RO, DI or distilled water (Resistivity > 1.0 MΩ-cm) to a viscosity of 26 to 28 Seconds #2 EZ Zahn. Viscosity may need to be higher or lower to achieve proper drainage depending on the configuration of the part being dipped.

APPLICATION

Poxylube® #859 should be sprayed or dipped to the desired film thickness (usually 0.0003 to 0.0007 inches). Allow the surface to dry at least 30 minutes before baking at 77°F ± 5°F and ≤ 70% relative humidity before baking. Lower temperatures and/or higher humidity may require a longer dry time to prevent film defects.

A flash dry at 140°F - 160°F for 10 - 15 minutes followed by force drying at 200°F for 20 minutes will prevent blistering defects if the applied film exceeds 1.0 mil in dry film thickness. When applying the coating in multiple coats, use this method to prevent film defects and maintain inter-coat adhesion.

Textured Finish: For a textured finish, add 0.14 lbs. / 63.5 grams of Z859-000 Sandstrom Texturizing Agent into 1 gallon of any Poxylube® #E859 color and mix thoroughly. Spray coating, flash off and bake 60 minutes @ 300°F. This will produce a medium texture. More or less can be added to produce more or less texture.

It is Important to keep the container of Poxylube® #859 closed when not in use to avoid change in volume solids.

BAKING

Poxylube® #859 must be cured according to one of the following schedules:

- 60 minutes @ 300°F or
- 25 minutes @ 350°F or
- 20 minutes @ 375°F or
- 15 minutes @ 400°F.

IMPORTANT! The hour begins when the part has reached the baking temperature, NOT when it is placed in the Class A oven. In cases of very thick metals, an extra hour may be required to bring the part up to the proper temperature. Thermocouples may be used to determine the true temperature of the metal.

CLEANUP

Use soap and water before coating has dried. Acetone may be used for dried film before curing.

REMOVAL

In the event it is necessary to remove Poxylube® #859, physical removal is best (such as grit blasting, sanding or grinding).

Strict compliance to the instructions given in Surface Preparation, Stirring and Baking is very essential for obtaining optimum results.

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