

TECHNICAL INFORMATION GUIDE

**POXYLUBE® #859**  
**HEAT CURING**  
**WATERBORNE PTFE COATING**  
**SERIES E859**



**GENERAL DESCRIPTION**

**SANDSTROM POXYLUBE® #859** Dry Film Lubricant is a single component **Heat Cured** waterbase coating formulated with molybdenum disulfide and/or PTFE to provide excellent lubrication, fluid resistance, and corrosion protection. This **Heat Cured** material prevents corrosion, galling, seizing and fretting.

Once **SANDSTROM 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. **SANDSTROM POXYLUBE® #859** can be applied to all metallic and nonmetallic surfaces by spray or dip application.

Complete application instructions are on the reverse of this sheet.

Excellent **Corrosion Protection, Low VOC** and ease of application are its outstanding characteristics. **SANDSTROM POXYLUBE® #859 CONTAINS NO GRAPHITE.**

**FEATURES/BENEFITS**

- Waterbase and low VOC
- Provides excellent lubrication
- Provides heavy duty service as an exterior protective coating for all metals including magnesium
  - Offers resistance to chemical corrosion, solvents, abrasion, impact
  - Exhibits good thermal stability

**COMPOSITION AND PHYSICAL PROPERTIES**

<b>WEIGHT PER GALLON</b> (theoretical)	9.75 ± .25 lbs. (Gray) (other colors vary)	<b>COLORS</b>	Gray, Black, Desert Tan, Olive Drab and custom colors available
<b>SOLIDS CONTENT</b> (By Weight)	41.0 ± 2.0% (Gray) (other colors vary)	<b>SHELF LIFE</b>	1 year from date of shipment
<b>VISCOSITY</b> #2 Zahn	25 ± 5.0 seconds	<b>VEHICLE TYPE</b>	Modified epoxy
#2 spindle at 20 rpm	200 ± 100 cps	<b>LUBRICATIVE PIGMENT</b>	Molybdenum Disulfide or PTFE (lubricative pigments dependent on colors)
<b>OPERATING TEMP. RANGE</b>	-320°F to +400°F	<b>VOC</b> (theoretical)	Gray (other colors vary with lower values)
<b>CORROSION PROTECTION</b> Surface preparation		minus water	2.07 lbs/gal (248 g/L)
<b>Steel</b> Grit blasted aluminum oxide		as supplied	0.87 lbs/gal (105 g/L)
ASTM B117 at 0.5 mil	150 hours*	<b>FLUID RESISTANCE</b>	MIL-PRF-46010G Table 1 test fluids
ASTM B117 at 1.5 mil	750 hours*	ASTM D2510A	Pass
<b>Aluminum</b> MIL-A-8625 type 2		ASTM D2510C	Pass
ASTM B117 at 0.5 mil	2500 hours*	MEK double rubs	200+ with no softening
*Tests halted before failure		<b>THERMAL STABILITY</b>	
<b>IMPORTANT!</b> The cure time begins when the part has reached the cure temperature, NOT when it is placed in the 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.		ASTM D2511	Pass
<b>It is IMPERATIVE to use a properly vented oven. (DIRECT VENT TO THE OUTSIDE).</b>		<b>CURING SCHEDULE</b>	
			60 minutes @ 300°F or 25 minutes @ 350°F or 20 minutes @ 375°F or 15 minutes @ 400°F.

**NOTICE**

Before using this product, read all warnings and safety information printed on the label, the Material Safety Data Sheet, and the Technical Info-Guide

**GENERAL**

For maximum service, the **APPLICATION INSTRUCTIONS MUST BE CLOSELY FOLLOWED**. 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 .0005 inches. Coverage depends upon methods 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**

The following surface preparations are recommended for the individual metals listed in the Application Appendix of the military specification to develop maximum adhesion, wear life, and corrosion protection. Please contact Sandstrom Products Company for substitute surface preparations if recommended steps cannot be followed.

**Application on steel.** Preclean the steel surface with aliphatic naphtha or any other EPA compliant cleaner that sufficiently cleans surfaces to pass ASTM F22. Sandblast the surfaces with 180-220 grit aluminum oxide. Phosphate IAW MIL-DTL-16232 (weight should be 11-22 g/m<sup>2</sup>), type M, class 3 or type Z, class 3.

**Application on stainless steels.** Preclean the steel surface with aliphatic naphtha or any other EPA compliant cleaner that sufficiently cleans surfaces to pass ASTM F22. Sandblast the surfaces with 120 grit aluminum oxide. Passivate the surfaces with ASTM A967, types nitric 1, nitric 2 or nitric 3, as applicable.

**Application on aluminum and aluminum alloys.** Preclean 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-A-8625 and seal the surface.

**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. Sandblast the surface with 180-220 grit aluminum oxide and alkaline anodize.

**Application on copper and copper alloys.** Preclean the copper surface with aliphatic naphtha or any other EPA compliant cleaner that sufficiently cleans surfaces to pass ASTM F22. Sandblast the surfaces with 180-220 grit aluminum oxide. Form a black oxide finish on the surfaces.

**IMPORTANT! AVOID TOUCHING THE SURFACES TO BE COATED WITH THE FINGERS - OIL FROM THE HANDS WILL INTERFERE WITH PROPER COATING.** Whenever possible treat both contact surfaces (i.e., the shaft and the bearing).

**STIRRING**

**IMPORTANT!**

THIS LUBRICANT SHOULD BE STIRRED THOROUGHLY BEFORE USE AND CONTINUOUSLY DURING APPLICATION

**THINNING**

Conventional spraying, use as supplied.  
Dipping: Not necessary, but can be reduced sparingly with deionized water that has been pH adjusted to greater than 11.0 with AMP-95.

**APPLICATION**

**SANDSTROM POXYLUBE® #859** should be sprayed or dipped to the desired film thickness (usually .0003 to .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 cure at 150° - 160° F for 10 - 30 minutes is an acceptable alternative to the air drying method.

**CURING**

**SANDSTROM POXYLUBE® #859** can be cured according to the following schedule:

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

**BAKING 300°F (149°C) FOR ONE (1) HOUR** in a **forced draft oven** will yield optimum corrosion protection.

**IMPORTANT!** The cure time begins when the part has reached the cure temperature, **NOT** when it is placed in the 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.

**It is IMPERATIVE to use a properly vented oven. (DIRECT VENT TO THE OUTSIDE).**

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

**CLEANUP**

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

**REMOVAL OF SANDSTROM POXYLUBE® #859**

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

\*Strict compliance to the instructions given in Surface Preparation and Stirring and Curing is essential to obtain optimum results.

**WARNINGS: Constant stirring is imperative for best results.**

**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 is accurate to the best of our knowledge. They are based on technical data which 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 or 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 April 26 2010