

TECHNICAL INFORMATION GUIDE

LC-300 SOLID FILM LUBRICANT HEAT CURING

SERIES V765 LEAD FREE

MEETS SAE SPEC AS5272 TYPE I (FORMERLY MIL-L-46010 TYPE I)

SANDSTROM
PRODUCTS COMPANY

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DESCRIPTION

Sandstrom LC-300 Dry Film Lubricant is a lead free lacquer-like coating containing molybdenum disulfide and corrosion-inhibiting pigments. This **Heat Curing** material prevents corrosion, galling, seizing, and fretting. It is a low-friction coating which exhibits long wear life when operated at -320°F to +400°F under loads exceeding 100,000 psi.

LC-300 should be applied in place of **Sandstrom 9A** where maximum wear life and corrosion protection from a dry film lubricant are required on metals which may be adversely affected by 9A's 1 hour @ 400°F bake cycle.

Once **Sandstrom LC-300** has been heat cured, it is virtually unaffected by atmospheric and fretting corrosion, solvents, acids, oils, and degreasers, and is not resoftened again at elevated temperatures.

LC-300 may be applied to a wide variety of surfaces by spraying or dipping. Complete application instructions are on the reverse of this sheet.

OUTSTANDING FEATURES/BENEFITS

Excellent Corrosion Protection, Chemical Resistance, and Long Wear Life are its outstanding characteristics.

SANDSTROM LC-300 CONTAINS NO LEAD OR GRAPHITE

TYPICAL USES

Sandstrom LC-300 is an excellent solution to the problem of lubricating parts:

- Where "clean operation" is desired (**LC-300** will not collect dirt and debris as do grease and oils)
- Where parts may be subjected to frequent disassembly
- Where a protective coating and sacrificial break-in lubricant are needed
- Where fretting and galling is a problem (such as splines, universal joints, and keyed bearings)
- Where easy release is desired (such as acme nuts and screws and PVC molds)
- Where metallurgical properties are adversely affected by baking at temperatures higher than 300°F
- That will be operated in corrosive atmospheres
- That may be stored for long periods
- Which are seldom lubricated once they leave the factory and where permanent lubrication is desired
- Where operating pressures exceed the load-bearing capacities of ordinary oils and greases

COMPOSITION AND PHYSICAL PROPERTIES

Net Weight per gallon	10.20 lbs ± .2 lb	Vehicle type	Modified Vinyl
Solids content	41.0% ± 1%(By Wt.)	Lubricative pigment	Molybdenum Disulfide
Viscosity	80-95 sec / #1 Zahn	Color	Flat Dark Gray
Flash point	43°F ± 2°F Setflash	Shelf life	1 year from date of manufacture
Operating temperature range	-320°F to +400°F	Specifications	Meets SAE Spec AS5272 Type I (Formerly MIL-L-46010D TYPE I)
Wear life	298 minutes average ASTM D2625A	Corrosion protection	Sulfurous Acid-Salt Spray 4 cycles with no effect * Fed-STD-791c Method 5331.1
Load carrying capacity	2750 lbs. * ASTM D2625B		
Tests halted before failure		ASTMB117	1000 hours
		MIL-DTL-16232 type M or Z class3	

NOTICE

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

GENERAL

Sandstrom LC-300 is a paint-like material consisting of lubricative pigments dispersed in a thermosetting resin system thinned with appropriate solvents. For maximum service, the APPLICATION INSTRUCTIONS MUST BE FOLLOWED CLOSELY. The lubricant is flammable and the safety precautions usually followed when using flammable materials should be observed.

FILM THICKNESS AND ENGINEERING TOLERANCES

As supplied, **Sandstrom LC-300** will yield a film thickness of about .0005 inches per dip coat. Usually engineering tolerances will permit necessary minimum film buildup of .0002 to .0003 inches without interference. If excess buildup does occur and a force fit is necessary, burnishing lightly will assist in mating the parts. The remaining excess will be worn away in the first few cycles of operation. Whenever possible, the proper tolerances should be designed into the part.

COVERAGE

One gallon of this material will cover 625 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 to develop maximum adhesion, wear life, and corrosion protection. Please contact Sandstrom Products Company for substitute surface preparations if recommended steps cannot be followed.

STEEL - Degrease using naphtha meeting the requirements of FED spec TT-N-95, grit blast (25-50 rms optimum), remove grit blast debris from surface, phosphate according to DoD-P-16232 type M class 3 or type Z class 3.

STAINLESS STEEL - Degrease using naphtha meeting the requirements of FED spec TT-N-95, grit blast (25-50rms optimum), remove grit blast debris from surface, passivate.

ALUMINUM - Degrease using naphtha meeting the requirements of FED spec TT-N-95, anodize according to Mil-A-8625 type I, II or III, class 1.

TITANIUM - Solvent wash (nonchlorinated) and alkaline anodize (Tiodize Type I or II).

COPPER ALLOYS - Degrease using naphtha meeting the requirements of FED spec TT-N-95, then pretreat using one of the following methods (in order of preference).

- a) Black oxide treat (according to MIL. Spec. MIL-F-495C)
- b) Bright dip or grit blast (25-50 rms optimum)

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).

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 IT'S USE OR THAT OUR PRODUCT SHALL BE MERCHANTABILITY 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. © 5-20-05 SANDSTROM PRODUCTS COMPANY

STIRRING

IMPORTANT! THIS LUBRICANT CONTAINS HEAVY PIGMENTS WHICH SETTLE RAPIDLY. THEREFORE, IT SHOULD BE STIRRED THOROUGHLY BEFORE USE AND CONTINUOUSLY DURING APPLICATION.

THINNING

For spraying - **Sandstrom LC-300** may be thinned using **D169 Thinner**. The suggested starting point is 2 parts **LC-300** to 1 part thinner.

For dipping - **IF NECESSARY**, use a slow drying thinner such as PM acetate in such proportions as to provide proper runoff characteristics. The suggested starting point is 4 parts of **LC-300** to 1 part thinner.

APPLICATION

Sandstrom LC-300 should be sprayed or dipped to the desired film thickness (usually .0003 to .0007 inches). Allow the surface to dry **at least** 30 minutes at 77°F ± 5°F and at less than 70% relative humidity before baking. Lower temperatures and/or higher humidity may require longer dry time to prevent defects.

BAKING

BAKING AT 300°F FOR ONE (1) HOUR in a forced draft oven WILL YIELD OPTIMUM CORROSION PROTECTION AND WEAR LIFE.

IMPORTANT! The hour begins when **the part** has reached 300°F 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.

To test for complete cure, light rubbing with MEK on a rag will not remove coating to bare metal.

CLEANUP

Use the same solvents for cleaning tools as are recommended for thinning.

REMOVAL OF SANDSTROM LC-300

In the event it is necessary to remove **Sandstrom LC-300**, physical removal is best (such as grit blasting, sanding, or grinding). Also, selected epoxy cold strippers will remove **LC-300**.

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

WARNINGS: Constant stirring is imperative for best results. **DANGER! Flammable - keep away from heat, sparks, and open flame. USE WITH ADEQUATE VENTILATION. Avoid prolonged breathing of vapor or spray mist. If swallowed, DO NOT INDUCE VOMITING. CALL PHYSICIAN IMMEDIATELY!** Contains Toluene and Phenolic and Epoxy Resins.