#329
SOLID FILM LUBRICANT: HEAT CURE
SERIES L270
CONFORMS TO MIL-PRF-81329

DESCRIPTION
Sandstrom #329 is a single component, waterborne, inorganic heat-curing coating that may be applied to a wide variety of metals. It is intended for use on components that will operate in environments where properties of organic materials are not desired.

OUTSTANDING FEATURES/BENEFITS
• Provides lubrication
• Offers resistance to friction, wear, galling and seizing
• Exhibits excellent thermal stability
• VOC compliant

SANDSTROM #329 CONTAINS NO LEAD.

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.

TYPICAL USES
• Extreme environments where temperature, radiation and vacuum preclude the use of conventional lubricants and organic solid film lubricants.
• In liquid oxygen systems, space vehicles, bearing assemblies and other equipment.

LIMITATIONS
• Do not use with oils or grease unless field use indicates need.
• Do not use on materials that may be adversely affected by a cure temperature of 300°F.

COMPOSITION AND PHYSICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net Weight per gallon</td>
<td>13.90 ± 0.5 lbs.</td>
<td>Vehicle</td>
<td>Sodium Silicate</td>
</tr>
<tr>
<td>Weight Solids</td>
<td>50 – 56%</td>
<td>Lubricating Pigment</td>
<td>Molybdenum Disulfide/Graphite</td>
</tr>
<tr>
<td>VOC</td>
<td>0 lbs./gallon (Theoretical)</td>
<td>Color</td>
<td>Matte Gray</td>
</tr>
<tr>
<td>Odor</td>
<td>Odorless</td>
<td>Thinner</td>
<td>See THINNING</td>
</tr>
<tr>
<td>Viscosity</td>
<td>80 – 110 KU's @ 77°F</td>
<td>Drying Time</td>
<td>See BAKING</td>
</tr>
<tr>
<td>Shelf Life</td>
<td>1 year from date of shipment</td>
<td>Coverage Rate *</td>
<td>340 sq. ft./gal @ 1.0 mil DFT</td>
</tr>
<tr>
<td>Storage Conditions</td>
<td>40°F – 100°F</td>
<td>Dry Film Thickness</td>
<td>1.0 – 1.4 mils</td>
</tr>
<tr>
<td>Freeze/Thaw Stability</td>
<td>One cycle</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flash Point</td>
<td>Nonflammable</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

PERFORMANCE AND FUNCTIONAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical/Fluid Resistance</td>
<td>Insoluble in solvents, conventional fuels &amp; greases. Withstands LOX cleaning - LOX compatible.</td>
</tr>
<tr>
<td>Load Carry Capacity</td>
<td>2500 lbf</td>
</tr>
<tr>
<td>Operating Temperature Range</td>
<td>-320°F to +750°F</td>
</tr>
<tr>
<td>Thermal Stability</td>
<td>Withstands thermal shock from 750°F to LOX immersion with no signs of blistering, cracking, peeling, chipping, loss of adhesion or high temperature aging</td>
</tr>
<tr>
<td>Wear Life</td>
<td>60 – 80 minutes</td>
</tr>
</tbody>
</table>

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 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 products means you have accepted the terms of this warranty, whether or not purchase orders of other deliveries 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: 07/23/15
TECHNICAL DATA SHEET

One gallon of this material will cover 340 sq. ft. with a dry film thickness of 0.001 inches. Coverage depends on 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
Surface needs to be degreased to achieve adhesion. Avoid touching the cleaned surface with fingers.

**Application on Steel**. Grit blast to a surface profile of 50 - 60 RMS. Remove grit blast.

Call Sandstrom Technical Representative for information on preparing other metals.

**STIRRING**
**IMPORTANT!** This lubricant contains heavy pigments which settle rapidly. Therefore, it should be stirred thoroughly before use and continuously during application.

**THINNING**
Thin as needed with deionized water.

**APPLICATION**
For Mil Spec work, follow all instructions in MIL-PRF-81329.

Apply #329 by conventional spraying, dipping or brushing.

**BAKING**
Flash off parts 30 minutes at 77°F ± 5°F and ≤70% relative humidity before placing in oven. Cure for 2 hours at 175°F, then 2 hours at 300°F.

**IMPORTANT!** The time begins when the part has reached required temperature, NOT when it is placed in a Class A oven.

**CLEANUP**
It is imperative to clean up with water immediately, as the coating will cure rapidly. Once dried, the coating is very difficult to remove.

**REMOVAL**
In the event it is necessary to remove Sandstrom #329, physical removal is best (i.e.: grit blasting, sanding or grinding).

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

**DANGER! USE WITH ADEQUATE VENTILATION.**