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## TECHNICAL DATASHEET

### NEOLUBE® NO. 1 LUBRICANT - COLLOIDAL GRAPHITE IN ISOPROPANOL

APPLICATION: NUCLEAR POWER GENERATING PLANTS, NUCLEAR REACTORS, COMMERCIAL AND NAVAL

**NEOLUBE® No. 1** is a dry film lubricant used extensively at nuclear power generating plants and other nuclear facilities as an anti-seize compound, thread lubricant, and for lubricating moving parts and rubbing surfaces.

The composition of this material is 99% pure furnace graphite particles, a thermoplastic resin, and isopropanol. The material has excellent radiation resistance and high chemical purity. The thin, dry, non-corrosive film of **NEOLUBE® No. 1** prevents seizing, fretting, and galling and resists abrasion. It is easy to apply by spray, dip, or brush and has excellent adhesion after a fast air dry. The dry film of **NEOLUBE® No. 1** will not migrate and is unaffected by frost.

**NEOLUBE® No. 1** has satisfied the stringent requirements for lubricating the internal and auxiliary equipment mechanisms of commercial and naval nuclear reactor systems. **NEOLUBE® No. 1** provides non-corrosive, dry adherent lubrication for metal parts with limited clearances in applications where control of impurities is required. In addition, **NEOLUBE® No. 1** resists abrasion and effectively lubricates moving parts, rubbing surfaces, and threaded parts for easier assembly, trouble-free operation, and non-destructive disassembly.

**NEOLUBE® No. 1** is ***NOT RECOMMENDED FOR LUBRICATING THREADS IN THE REACTOR PRIMARY CONTAINMENT AREAS***, where operating temperatures for the fittings are greater than 400°F. **NEOLUBE® No. 1260** is recommended for containment and/or secondary side in nuclear applications. ***NOT RECOMMENDED FOR USE IN OXYGEN SYSTEMS.***


A Certificate of Quality Conformance and Analysis is available for each lot upon request.

Physical and Chemical Requirements	MIL-L-24131C
<b>Total Solids Content</b> , weight percent <b>Graphite Content</b> , percent of total solids	3.3%  0.50% 75%  5%
<b>Particle size</b> , microns Maximum dimension of 90% of the particles Maximum dimension of any particle	4 Microns 10 Microns
<b>Ash</b> , weight percent, maximum on total solids <b>Fluorine</b> , parts per million, maximum on total solids <b>Chlorine</b> , parts per million, maximum on total solids <b>Sulfur</b> , parts per million, maximum on total solids <b>Lead</b> , parts per million, maximum on total solids	0.75% 20 PPM 200 PPM 200 PPM 150 PPM
<b>Film Properties (regular &amp; irregular surfaces):</b> <b>Adherence</b>	The coated surface shall be dry and shall not become exposed when subjected to light abrasion.
<b>Spalling</b>	Film continuity shall not be broken, metal surfaces shall not be exposed.
<b>Appearance</b>	Dry, non-oily.
<b>Odor</b>	Characteristic of isopropanol, no odor of halogenated solvents shall be detected.

**Mercury:** Instruments and equipment containing mercury or mercury compounds were not used in the manufacture and packaging of the lubricant, nor testing and inspection unless samples were discarded after the test. During the manufacturing processes, tests, and inspection, **NEOLUBE® No. 1** did not come in contact with mercury, any of its compounds, or any mercury-containing devices employing a single boundary of containment. Compounds containing boron were not used in cleaning, processing equipment, or containers. There is no intentional addition of low melting point metals such as lead, bismuth, zinc, mercury, antimony, cadmium, tin, silicon, gallium, indium, or arsenic to this product, nor of copper or silver. MeOH is not a component of **NEOLUBE® No. 1**. NSF does not approve this product for drinking water applications.

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**Physical Properties  
(As Supplied)**

Lubricant	Processed micro-graphite	Shelf Life	No limit in a closed container
Binder	Thermoplastic Resin	Flash Point	52°F (11°C)
Diluent	Isopropanol	Color	Black
Consistency	Liquid	Solids Content	3.30%  0.50%
Density	6.6 lb./gal (0.791 kg/l)		

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**(As a Cured Coating)**

Service Temperature	400°F (204°C)	Intermittent Temperature	850°F (454°C)
Coefficient of Friction	0.15 (Static)		

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**Dilution:**

**NEOLUBE® No. 1** is supplied in a ready-for-use form conforming to the requirements of MIL-L-24131C. If the application requires further dilution, add isopropanol while mixing uniformly.

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**Pretreatment:**

Substrates should be clean and dry before application. A solvent wipe and air drying are usually sufficient. For critical applications requiring maximum adhesion, mechanical or chemical pretreatment such as grit blasting, phosphating, anodizing, or etching is recommended.

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**Application:**

Mix uniformly before using. Apply with the brush in cap applicator or by conventional spray, brush, or dip methods.

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**Cure Time:**

Material air dries in approximately 5 minutes, depending on temperature and humidity.

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**Packaging:**

**NEOLUBE® No. 1** is packaged in 2-ounce and 8-ounce non-halogenated plastic bottles with a brush in cap applicator.

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**Precautions:**

Employ the customary safeguards in storing, handling, and applying flammable materials of this type. Use adequate local exhaust ventilation if the product is sprayed. Avoid prolonged contact with eyes, skin, and clothing. (See the Safety Data Sheet for proper first aid instructions.) Containers must be tightly resealed to prevent evaporation and contamination.

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**Qualification Approval:**

The approving organization is the Naval Ship Engineering Center, Hyattsville, Maryland, 20782. The approval letter date is 21 June 1974, Test Report Number (QPL) 10744.

PLEASE NOTE: ANEOLUBE® PRODUCTS ARE NOT CONSIDERED SAFETY-RELATED GOODS. AS SUCH, THEY ARE NOT DESIGNED, FABRICATED, HANDLED, SHIPPED, STORED, ETC., UNDER A QUALITY ASSURANCE PROGRAM THAT COMPLIES WITH THE REQUIREMENTS OF 10CFR50, APPENDIX B, 10CFR21, OR ANSI STANDARDS. @

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