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TECHNICAL DATA SHEET

NEOLUBE® NO. 2 LUBRICANT - COLLOIDAL GRAPHITE IN ISOPROPANOL

HIGH CHEMICAL PURITY • LOW HALOGEN CONTENT • DRY FILM LUBRICANT • NUCLEAR GRADE

NEOLUBE® NO. 2 is an exceptionally stable compound of processed micro graphite and thermoplastic resin in isopropanol. Coatings are easily applied to an ultra-thin opaque film during manufacture or assembly by brush, spray or dipping; it dries in seconds to a slippery, lustrous, adherent film of purest graphite.

NEOLUBE® NO. 2 is a dry film conductive 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 thinness of the coating, coupled with high lubricity, provides clean long wearing lubrication without redesign of component dimensions.

NEOLUBE® NO. 2 is also an easy-to-apply resistance coating designed to provide conductivity, and excellent release properties to many nonconductive substrates, including most plastics. **NEOLUBE® NO. 2** has the ability to vary conductivity.

NEOLUBE® NO. 2 resists abrasion and lubricates threaded parts, moving parts and rubbing surfaces. This material allows easier assembly and nondestructive disassembly.

NEOLUBE® NO. 2 does not migrate, is non-freezable and has high chemical purity. **NEOLUBE® NO. 2** provide a non-corrosive dry adherent lubrication for metal parts with limited clearances in applications where control of impurities is required.

NEOLUBE® NO. 2 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 USE IN CONTAINMENT AND/OR SECONDARY SIDE IN NUCLEAR APPLICATIONS. NEOLUBE® NO. 2 IS NOT RECOMMENDED FOR USE IN AN OXYGEN ENVIRONMENT.

Mercury Certification: Instruments and equipment containing Mercury or compounds of Mercury are not used in the manufacture and packaging of **NEOLUBE® NO. 2**, nor in testing or inspection, unless samples are discarded after tests. Compounds containing Boron are not used in cleaning, nor processing equipment, nor containers. There is no intentional addition of low melting point metals (Lead, Bismuth, Zinc, Mercury, Antimony, Cadmium or Tin) to this product, nor of Copper or Silver. This product is not approved by NSF for drinking water applications.

PHYSICAL PROPERTIES

Physical Properties (Wet Product)

Pigment:	Colloidal Graphite
Binder:	Thermoplastic Resins
Carrier:	Isopropanol
Diluents:	Isopropanol
Color:	Black
Temperature Range:	-70°F - 400°F
Flash Point:	52°F (11.11°C) Pensky-Martens Closed Tester
Consistency:	Thixotropic Gel
Density:	6.6 lbs/gal (0.8 kg/l)
Shelf Life:	No Limit in Closed Container
VOC:	766 g/l (6.4 lbs/gal)
Approximate Coverage:	63 sq. ft/gal@1mil

Physical Properties (As Cured)

Color:	Black
Coefficient of Friction:	0.19 (Static) (0.030 - 0.090) **
Service Temperature Continuous:	400°F (204°C) ***
Intermittent Temperature:	850°F (454°C)

Sheet Resistance: <2400 ohms/sq@25µm (1 mil) dry film thickness

The binder, which is present to prevent rub-off during assembly, slowly decomposes above 200°F (93°C).

PROVEN APPLICATIONS

Industrial applications of **NEOLUBE® NO. 2** include those where oils or greases, because of their very nature, are inadequate or objectionable. Oils collect dust, burn off or congeal; drip, soil and insulate. When used within load limits, **NEOLUBE® NO. 2** is an adequate substitute for oils or greases with none of their disadvantages. **(DO NOT USE NEOLUBE® NO. 2 ON BALL OR ROLLER BEARINGS.)**

Other proven applications include:

1. Non-seize lubricant for bolts-metals-valves. Anti-seize lubricant for stainless steel bolts.
2. Mating surfaces of assemblies and machinery components.
3. Lubricant for high pressure air fittings or hydraulic systems.
4. Lubricant for buss bars carrying contact shoes, high tension switch contacts. Reduces chatter, arcing and pitting.
5. Static bleeding of conveyor belts; lubricate conveyor chains in degreasing operations; reduce static on floors.
6. Excellent shielding properties for certain types of electric interference. Prevents radio wave interference. Maybe used in printed circuit techniques, static bleed. Used for shielding tape recorder cases.
7. Coating for gaskets, grid coating for cathode ray tubes.
8. Cutting lubricant on difficult metal cutting jobs.
9. Ideal source for graphite films in nuclear applications.
10. Ideal where a dry film lubricant prevents soiling as in: knitting, weaving and lace making machines.
11. Excellent for die and mold pretreatment conditioners. Protects from atmospheric elements and aids in initial lubricant.
12. Engine components for assembly and break-in requirements.
13. Automotive and industrial gaskets.
14. Rubber components (assembly and break-in).
15. Opaque coating for film negatives.
16. Low noise communication cables.
17. Impregnation of fibers and paper.
18. High resistance coating on plastics.

PHYSICAL AND CHEMICAL REQUIREMENTS	
Solids Content By Weight	3.30% -3.70%
Total Halogen Content, ppm Fluorine, ppm Chlorine, ppm Sulfur, ppm (ppm=parts per million)	200 ppm (Maximum) 75 ppm (Maximum) 200 ppm (Maximum) 900 ppm (Maximum)
Odor	Characteristic of isopropanol, no odor of halogenated solvents shall be detected.
Hiding Power	1200.0000 (Minimum)

MIXING/BLENDING/DILUTION

NEOLUBE® NO. 2 is supplied in a Ready-For-Use form. **MIX UNIFORMLY PRIOR TO USE.** If dilution is required, use isopropanol (or equivalent) to the consistency required by the application method chosen. **NEOLUBE® NO. 2** is intended for spray application, however, application by brush, dip or roller can be used. Always mix uniformly just prior to use.

Typical film thickness ranges from 0.2 to 0.5 mil (5-12 microns). A coating of 1 mil (25 microns) of **NEOLUBE® NO. 2** is best built up by the application of 5 coats of 0.2 mil thickness by spray application.

SURFACE PREPARATION

Substrates to be coated must be clean and dry. A solvent wipe with air dry is sufficient for smooth surfaces. For porous surfaces, use the same procedure followed by heating to drive off entrapped contaminants, solvents or moisture.

CURING

The coating air dries to the touch in 5 minutes and is ready for use in 30 minutes. Following the air dry, bake for 5 minutes at 75°C (167°F) to achieve optimum coating qualities in a shorter curing cycle.

AVAILABLE SIZES

2 Ounce - Brush in Cap Bottle, Pint, Quart, Gallon and 5 Gallon Containers.

REGULATORY RATINGS

UN1219, Isopropanol, 3, II
ERG Guide 129 - Flammable Liquid
INFOTRAC: 1-800-535-5053 U.S. (HURON 89770)
HMIS = H1/F3/R0/PP-B
NFPA = H1/F3/R0/SH-N/A

Use the customary safeguards in storing, handling and applying flammable materials of this type. Insure adequate ventilation. A Safety Data Sheet is furnished with each shipment.

STORAGE

Keep from freezing. Keep container tightly closed when not in use. Store in a cool, well ventilated area. Keep away from heat, sparks and open flame. Protect material from direct sunlight. Ground and bond containers when transferring materials. Empty containers may retain hazardous properties. Follow all SDS/label warnings even after container is emptied.

HEALTH & SAFETY

Flammable. Harmful if swallowed, inhaled, or absorbed through skin. May cause eye irritation. Wash thoroughly after handling. Keep away from heat, sparks, and open flame. Keep container tightly closed when not in use. Use with adequate ventilation. Avoid breathing vapor. See Safety Data Sheet for proper first aid instructions.

A product certification is available for each batch and shipment.

NEOLUBE® is available certified to Military Specification MIL-L-24131 (Specify **NEOLUBE® NO. 1**)

NEOLUBE® products are not considered safety related goods. As such, they are not designed, fabricated, handled, shipped, stored, etc., under a quality assurance program, which complies with the requirements of 10CFR50 , Appendix B, 10CFR21, or ANSI.

*Also listed in some specifications as **NEOLUBE® 'B'**.
**Machine Design - June 1967 - "*Torquing Stresses in Lubricated Bolts*"
***The binding resin, which is present to prevent rub-off during assembly, slowly decomposes above 200°F (93°C).