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THE HOME OF COLLOIDAL GRAPHITE

NEOLUBE® THREAD SEALANT NO. 100 TECHNICAL DATA SHEET Low Halogen Content - High Chemical Purity

PRODUCT DESCRIPTION

NEOLUBE® NO. 100 is a high-performance, pipe thread sealant, designed for locking and sealing of metal pipes and fittings. This sealant is a creamy paste formulated to impart lubricity for assembly purposes, to provide immediate low pressure sealing, and to cure to a solid for sealing and securing threaded pipe connections. This product has excellent solvent resistance and withstands temperatures to 300°F (149°C) continuously. NEOLUBE® No. 100 does not contain Teflon.

NEOLUBE® No. 100 *is Not Normally* Recommended For Use On Plastics (Particularly Thermoplastic Materials Where Stress Cracking Of The Plastic Could Result). Users Are Recommended To Confirm Compatibility With Such Substrates.

NEOLUBE® No. 100 Is Not Recommended For Use In Pure Oxygen And/or Oxygen Rich Systems And Should Not Be Selected As A Sealant For Chlorine Or Other Strong Oxidizing Materials. For Safe Handling Information On NEOLUBE® No. 100, Consult The Safety Data Sheet.

TYPICAL APPLICATIONS

NEOLUBE® NO. 100 PIPE THREAD SEALANT is recommended for sealing thread fittings in fossil fuel, solar and hydro power plant piping systems. Application areas include:

- Instrumentation
- Pumps and Valves
- Water/Coolant Systems
- Condensers
- Controls
- Low Pressure Steam Lines
- Hydraulics
- Fuel Oil Piping
- Compressors
- Gas Lines
- Electrical Conduit
- Rad-Waste Systems

TYPICAL PROPERTIES OF UNCURED MATERIAL

Chemical Type	Methacrylate Ester
Solvent Content	None
Appearance (Uncured)	Smooth, creamy, off-white paste
Cure	Anaerobic
Technology	Acrylic
Components	One Component – Requires No Mixing
Specific Gravity @ 25°C	1.08
Flash Point (TCC)	>199.94°F - >(93.3°C)
Toxicity	Low
Application	Thread Sealing
Strength	Medium
Viscosity	Very High
Viscosity, Brookfield - RFV	
25°C, mPa*s (cP):	
Spindle 7, speed 2 rpm	300,000 to 900,000
Lubricity	
K factor (torque/tension) @ 4950 Lbs (bolt load)	
3/8 x 16 Grade 5 phosphate and oil fasteners	
NO. 100 treated fastener	0.16
Degreased fastener	0.20
As-received/oil fastener	0.15

CHEMICAL PURITY

Halogen Content.....200 ppm (maximum)
Chlorine Content.....200 ppm (maximum)
Sulfur Content.....1500 ppm (maximum)

This pipe sealant has no directly added Lead, Zinc, Mercury, Antimony, or Copper where such elements are leachable or could be released by breakdown of the sealant under expected environmental conditions.

DIRECTIONS FOR APPLICATION

1. Optimum results will be obtained on fittings that are clean. Clean all surfaces (external and internal) with reagent grade toluene, acetone, isopropyl alcohol, or methyl ethyl ketone, and allow to dry.
2. Apply a 360° bead of NEOLUBE® NO. 100 to the leading threads of the male fitting, leaving the first thread free. Force the material into the threads to thoroughly fill the voids. For bigger threads and voids, adjust product amounts accordingly and apply a 360° bead of NEOLUBE® NO. 100 on the female threads also.
3. Using accepted trade practices, assemble and wrench tighten fittings in accordance with manufacturers recommendations.
4. Properly tightened fittings will seal instantly to moderate pressures. For maximum pressure and solvent resistance, allow NEOLUBE® NO. 100 to cure a minimum of 24 hours.
5. NEOLUBE® NO. 100 has been formulated to cure without the use of heat or activators on stainless steel or other inactive surfaces. Higher temperatures will speed cure; lower temperatures will retard the cure process.
6. The product cures when confined in the absence of air between close fitting metal surfaces and prevents loosening and leakage from shock and vibration.

TYPICAL PERFORMANCE OF CURED MATERIAL

Environmental Resistance

The following characteristics of NO. 100, PIPE THREAD SEALANT have been tested by an independent laboratory.

1. Calculated estimates under continued temperature and radiation exposure reported the following judgments:
 - "The product will provide a 40-year service life at ambient temperature not exceeding 122°F (50°C)."
 - "A 10-year performance life can be expected for service not exceeding 200°F (94°C)."
 - "The pipe thread sealant can be safely used to seal threaded pipe joints for approximately 1-year at a temperature of 250°F (131°C). Under high radiation and at temperatures greater than 250°F, long-term service life has not been predicted accurately."
 - Under non-nuclear (standard radiation) environments, thermal stability of this high purity PIPE THREAD SEALANT NO. 100 can be expected at temperatures up to 400°F.

- Product is suitable for sealing low-pressure steam, not exceeding 300°F (149°C).
- NEOLUBE® NO. 100, PIPE THREAD SEALANT IS NOT RECOMMENDED FOR SEALING APPLICATIONS IN THE REACTOR PRIMARY CONTAINMENT AREAS; WHERE OPERATING TEMPERATURES FOR THE FITTINGS ARE GREATER THAN 300°F OR WHERE THE INDUSTRIAL STANDARD REQUIRES WELDED ASSEMBLIES.**
- Where aqueous washing systems are used to clean the surfaces before bonding, it is important to check for compatibility of the washing solution with the adhesive. In some cases these aqueous washes can affect the cure and performance of the adhesive.

Solvent Resistance

Suitable for use with piping systems containing air, water, gas, hydrocarbons (aromatics), boric acid, alcohols, halocarbons (perchloroethylene, trichloroethylene), organic acids (citric and acetic), mild mineral acids and bases (diluted and cold), and aqueous solutions of lithium salts, hydrazine and mercaptans.

Suitable Piping Materials

NEOLUBE® NO. 100 is recommended for use on Iron, Magnesium, Bronze, Nickel, Zinc, Aluminum, Austenitic, Stainless Steel, Carbon Steel, Monel, Cadmium, bright plating, anodized surfaces, passivated surfaces and Titanium fittings. Elevated temperatures will cause threaded Copper to oxidize. High reliability Copper piping should be pickled prior to use of any sealant.

TYPICAL PROPERTIES OF CURED MATERIAL

Physical Properties:

Time to achieve full strength on steel @72°F (25°C)	24 Hours	Minimum
Coefficient of Thermal Expansion ISO 11359-2, K ⁻¹	0.10	
Coefficient of Thermal Conductivity ISO 8302, W/(m*K)	0.10	
Specific heat, kJ/(kg*K)	0.30	

TYPICAL PERFORMANCE OF CURED MATERIAL

Adhesive Properties:

After 24 hours @ 25°C		
Breakaway Torque, ISO 10964: 3/8 x 24 steel nuts (grade 2) and bolts (grade 2)	N*m (lb.in.)	≥0.9 (8)
Cured for 24 hours @ 93°C, tested @ 25°C		
Breakaway Torque, ISO 10964: 3/8 x 24 steel nuts (grade 2) and bolts (grade 2)	N*m (lb.in.)	≥2.3 (20)

DISASSEMBLY

Fittings assembled with **NEOLUBE® NO. 100** may be disassembled with normal hand tools. Where hand tools do not work because of excessive engagement length or large diameters (over 1"), apply localized heat to approximately 250°C, and disassemble while hot. Cured product can be removed with a combination of soaking in a solvent and mechanical abrasion such as a wire brush.

MATERIAL COMPATIBILITY

NEOLUBE® NO. 100 can be used in conjunction with many metals, glass, ceramics and some thermoset plastics such as phenolic, polyester, etc. **NEOLUBE® NO. 100** will, however, soften and sometimes craze thermoplastics including: ABS, polycarbonate, vinyl, methacrylates, etc. They will also soften varnish and lacquer finishes. Most baked enamel finishes are not harmed by initial contact but should be wiped clean within an hour of application. The cured sealant will not affect any of these materials.

STORAGE CONDITIONS

Store material in the original container. Maintain in a cool, dry location.

Optimal Storage: 8°C to 21°C (46°F to 70°F). Storage below 8°C (46°F) or greater than 28°C (82°F) can adversely affect product properties.

Material removed from containers may be contaminated during use. Do not return product to original containers. The information supplied is believed to be reliable for the time encompassed by the shelf-life period. Huron cannot assume responsibility for product which as been contaminated or stored under conditions other than those previously recommended. **NEOLUBE® NO. 100** has a shelf life of 24 months from date outlined on the Certificate of Quality Conformance. Refer to the Certificate of Quality Conformance for expiration date.

SAFETY DATA

Eye Irritant; may irritate sensitive skin. Contains methacrylate esters. In case of eye contact, flush with water for fifteen minutes; get medical attention. Wash after the skin contact.

Excessive or repeated skin contact with this sealant may cause skin irritation. In case of irritation to sensitive skin, discontinue contact with the product. If skin reaction occurs, discontinue use and consult a physician. To avoid skin contact use the applicator nozzle provided. Keep material away from children. Use in accordance with a Safety Data Sheet.

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

APPROXIMATE COVERAGE PER 50 CC TUBE

1/8" Pipe	750 Pipes
1/4" Pipe	500 Pipes
3/8" Pipe	300 Pipes
1/2" Pipe	150 Pipes
3/4" Pipe	100 Pipes
1" Pipe	50 Pipes

A product certification is available for each batch and shipment. **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.

The data contained herein are furnished for information only and are believed to be reliable. We cannot assume responsibility for the results obtained by others over whose methods we have no control. It is the user's responsibility to determine suitability for the user's purpose of any production methods mentioned herein and to adopt such precautions as may be advisable for the protection of property and of persons against any hazards that may be involved in the handling and use thereof.

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