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## NEOLUBE® THREAD SEALANT NO. 100 TECHNICAL DATASHEET Low Halogen Content - High Chemical Purity

### PRODUCT DESCRIPTION

NEOLUBE® NO. 100 is a high-performance pipe thread sealant for locking and sealing 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 continuously withstands temperatures to 300°F (149°C). 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). However, 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 hydropower plant piping systems.

Application areas include:

\$Instrumentation	\$Hydraulics
\$Pumps and Valves	\$Fuel Oil Piping
\$Water/Coolant Systems	\$Compressors
\$Condensers	\$Gas Lines
\$Controls	\$Electrical Conduit
\$Low-Pressure Steam Lines	\$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 - RVF, 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 the breakdown of the sealant under expected environmental conditions.

### DIRECTIONS FOR APPLICATION

- Optimum results will be obtained on clean fittings. Clean all surfaces (external and internal) with reagent grade toluene, acetone, isopropyl alcohol, or methyl ethyl ketone, and allow to dry.
- 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.
- Using accepted trade practices, assemble and wrench tighten fittings following the manufacturer's recommendations.
- 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.
- NEOLUBE® NO. 100 has been formulated to cure without heat or activators on stainless steel or other inactive surfaces. Higher temperatures will speed the cure; lower temperatures will retard the curing process.
- 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.

- Calculated estimates under constant temperature and radiation exposure reported the following judgments:
  - \$ AThe product will provide a 40-year service life at ambient temperature not exceeding 122°F (50°C). @
  - \$ AA 10-year performance life can be expected for service not exceeding 200°F (94°C). @
  - \$ AThe pipe thread sealant can be safely used to seal threaded pipe joints for approximately one 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, the thermal stability of this high-purity PIPE THREAD SEALANT NO. 100 can be expected at temperatures up to 400°F.

## STORAGE CONDITIONS

- 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 vital 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. Therefore, high-reliability Copper piping should be pickled before using 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 <sub>-1</sub>	0.1
Coefficient of Thermal Conductivity, ISO 8302, W/(m·K)	0.1
Specific Heat, kJ/(kg·K)	0.3

### 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 ≥0.9 (lb.in.) (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 ≥2.3 (lb.in.) (20)

### DISASSEMBLY

Fittings assembled with **NEOLUBE® NO. 100** may be disassembled with standard 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 products 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 with many metals, glass, ceramics, and thermoset plastics such as phenolic, polyester, etc. **NEOLUBE® NO. 100** will 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.

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 the product to the original containers. The information supplied is believed to be reliable for the time encompassed by the shelf-life period. Huron cannot assume responsibility for the product that was contaminated or stored under conditions other than those previously recommended. **NEOLUBE® NO. 100** has a shelf life of 24 months from the date outlined on the Certificate of Quality Conformance. Refer to the Certificate of Quality Conformance for the 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 a skin reaction occurs, discontinue use and consult a physician. To avoid skin contact, use the applicator nozzle provided. Keep material away from children. Use per 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

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 that 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. However, we cannot assume responsibility for the results obtained by others over whose methods we have no control. Therefore, 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 persons against any hazards that may be involved in the handling and use thereof.

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