LOCTITE

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Product Description Sheet

Product 771

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PRODUCT DESCRIPTION

LOCTITE® Nickel Anti-Seize Lubricant is a heavy duty, high temperature lubricant that resists galling and corrosion and reduces wear in heavy pressure applications. They contain tenacious metals, oils and graphite materials which cannot be burned away or removed by slow moving parts. This product withstands temperatures ranging from -65ºF to 1400ºF (-54ºC to 760ºC).

PRODUCT BENEFITS

- Exceptionally resistant to attack by acids, ammonia, acetylene and vinyl monomer.
- Prevents galling of parts, especially a stainless steel up to 1400ºF, **Nickel content stays intact up to 2600ºF**.
- Allows easy disassembly of parts after exposure to corrosive or hot environments.
- Prevents corrosion.
- Reduces friction for tight assembling of stainless threads and press fits.
- Supports 5 times as much pressure without galling as the leading competitor.
- Provides long life for slow speed parts.

Note: This is not a high-speed load carrying lubricant and should not be used on ball or roller bearings, or on parts where lubrication is critical.

It is not recommended for high stress grade 8 bolts where stress corrosion may occur.

TYPICAL APPLICATIONS

- Lubricate drop forge dies and hammers, catalyst bed and reaction chamber supports.
- Lubricates and seals pipe threads in acid environments.
- Coats gaskets in high temperature applications.
- Lubricate conveyor chains.
- Lubricates chemical plant bolts for pump housings and pipe flanges.

DIRECTIONS FOR USE

1. Stir Nickel Anti-Seize well before using.
2. For best results, remove dirt, oil and grease.
3. Apply a light coating of Nickel Anti-Seize Lubricant to parts requiring protection.
4. Assemble parts as usual.
5. Wipe away excess lubricant, protection of parts is now assured.
6. To prevent contamination on unused material, do not return any product to its original container.

PROPERTIES OF UNCURED MATERIAL

	Typical Value
Chemical Type	Mineral oil, nickel, graphite
Appearance	Silver, metallic paste
Viscosity @ 25ºC, cP	
Brookfield RVT Helipath	
Spindle TE @ 20 RPM	650,000 - 1,000,000
Flash Point, TCC, ºF (ºC)	>200 (93)

PERFORMANCE OF CURED MATERIAL

1. Temperature

Disassembly Characteristics

Unseating torque tests illustrate that nickel Anti-Seize Lubricant resists galling and seizing of tightened fasteners subject to elevated temperatures.

Procedure

Plain steel 3/8" - 16 threaded fasteners were degreased, coated and pre-torqued to 20 ft-lbs. The specimens were heat soaked at elevated temperatures for specified periods of time. At disassembly, torque values were recorded and parts inspected for any signs of galling.

Torque Test Results

Temperature	Exposure Time	Unseating Torque		Inspection
		ft-lbs.	Nm	
500ºF (260ºC)	24 hours	23	31	No galling
1,000ºF (540ºC)	24 hours	17	23	No galling
1,500ºF (820ºC)	24 hours	11	15	No galling

Low Temperature Application

Loctite Nickel Anti-Seize Lubricant remains spreadable to temperatures as low as -20ºF (-29ºC). Once applied, the continuous operating temperature range is -65ºF to 1,400ºF.

2. Corrosion Resistance

Salt Fog, ASTM B 117

Cleaned, ground steel specimens were coated with an even layer of lubricant and placed in an environmental chamber. The condition of this test environment was 5% salt fog at 95ºF (35ºC). The test samples were maintained under these conditions for a period of 168 hours, at which time they were removed and visually inspected for signs of corrosion on both the surface of the covering and the base steel surface.

Test samples coated with Nickel Anti-Seize showed no signs of corrosion when tested by the above procedure.

Nickel Anti-Seize has been formulated with pure nickel instead of copper for corrosion resistance at high temperatures and under acid conditions. Nickel is highly resistant to corrosion and oxidation and does not break down, even at very high temperatures. Likewise, the formulation contains no molybdenum disulfide which can break down above 1000ºF and may become corrosive to steel by itself.

3. Wear Resistance

Extreme Pressure Test (ASTM D 2509)

Extreme pressure testing utilizes a Timken Lubricant Tester in accordance with ASTM D 2509. This test gives an indication of the ability to resist seizure, scoring and wear under adverse load conditions.

The test consists of a rotating spindle which is loaded against a test block. The lubricant is fed continuously onto the rotating spindle and the load is held constant for a ten minute interval. If no scoring of the test block is noted, the load is increased and test continued until the test block is scored. The load at which scoring occurs is then reported as the "fail load". The last acceptable load recorded is considered to be the "OK Load". Sliding velocity is 406 ft/min (123 m/min).

Results of Extreme High Pressure Testing

Fail Load - 7,600 psi (53 megapascal)

4. Torque Tension on Threaded Assemblies

Where galling and seizing may occur, Nickel Anti-Seize Lubricant makes an excellent high temperature thread lubricant.

The "K" factor for Nickel Anti-Seize is 0.13 on as-received or lightly oiled bolts. The coefficient of friction is 0.10 as determined on bolt threads. Torque ratings of oily bolts should be reduced to 85% of listing if Nickel Anti-Seize is used.

GENERAL INFORMATION

This product 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 this product, consult the Material Safety Data Sheet (MSDS).

Storage

Product shall be ideally stored in a cool, dry location in unopened containers at a temperature between 8°C to 28°C (46°F to 82°F) unless otherwise labeled. Optimal storage is at the lower half of this temperature range. To prevent contamination of unused product, do not return any material to its original container. For further specific shelf life information, contact your local Technical Service Center.

Data Ranges

The data contained herein may be reported as a typical value and/or range. Values are based on actual test data and are verified on a periodic basis.

Note

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. In light of the foregoing, **Loctite Corporation specifically disclaims all warranties expressed or implied, including warranties of merchantability or fitness for a particular purpose, arising from sale or use of Loctite Corporation's products. Loctite Corporation specifically disclaims any liability for consequential or incidental damages of any kind, including lost profits.** The discussion herein of various processes or compositions is not to be interpreted as representation that they are free from domination of patents owned by others or as a license under any Loctite Corporation patents that may cover such processes or compositions. We recommend that each prospective user test his proposed application before repetitive use, using this data as a guide. This product may be covered by one or more United States or foreign patents or patent applications.