

LOCTITE[®] LB N-1000

Known as LOCTITE[®] N-1000[™] High Purity Anti-Seize
January 2015

PRODUCT DESCRIPTION

LOCTITE[®] LB N-1000 provides the following product characteristics:

| | |
|----------------------|-------------------------------------|
| Technology | Anti-Seize |
| Chemical Type | Copper-based |
| Appearance | Copper colored paste ^{LMS} |
| Components | One component - requires no mixing |
| Cure | Non-curing |
| Application | Lubrication |

LOCTITE[®] LB N-1000 is a copper-based anti-seize lubricant, produced under 100% controlled conditions for the highest purity. It is formulated to have the lowest practical levels of halogens, sulfur and heavy metals. It has a general composition of copper and graphite flake in petroleum carrier. All ingredients are selected for extreme purity. Typical applications include bolts, studs, valves, pipe fittings, slip fits and press fits in nuclear power generating plants, chemical plants, pharmaceutical plants, paper mills and other locations where stainless steel fasteners are used. During assembly, it prevents high friction, galling and seizing and promotes uniform and predictable clamping. During operation, the high purity prevents stress corrosion. During disassembly, it prevents seizing, galling and destruction of threads. This product is typically used in applications with an operating range up to 982 °C.

TYPICAL PROPERTIES

| | |
|---|-----------------------------|
| Specific Gravity @ 25 °C | 1.14 to 1.24 ^{LMS} |
| Unworked Penetration, ISO 2137, 1/10 mm | 330 to 375 ^{LMS} |
| Weight Per Gallon, lbs/gal | 9.5 to 10.1 |
| Flash Point - See SDS | |
| Ionic Contaminants, ppm: | |
| Chloride | ≤50 ^{LMS} |
| Sulfur | ≤100 ^{LMS} |
| Lead | ≤100 ^{LMS} |
| Tin | ≤200 ^{LMS} |
| Cadmium | ≤5 ^{LMS} |
| Zinc | ≤500 ^{LMS} |
| Mercury | ≤5 ^{LMS} |

TYPICAL PERFORMANCE

An anti-seize lubricant used on a bolt helps to develop greater clamp load for the same torque compared to an unlubricated bolt. An additional benefit is greater uniformity in clamp load among a series of bolts. The relationship between torque and clamp load is expressed in the following equation:

$$T = K \times F \times D$$

T = Torque (N·m, lb.in, lb.ft)

K = Torque coefficient or nut factor, determine experimentally

F = Clamp load (N, lb.)

D = Nominal diameter of bolt (mm, in.)

Torque coefficient, k:

| | |
|---|------|
| 12.7 mm steel bolts (grade 8) and nuts (grade 5) | 0.17 |
| 12.7 mm steel bolts (grade 8) and nuts (grade 5), solvent cleaned, not lubricated | 0.27 |

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 Safety Data Sheet (SDS).

Directions for use:

1. Before or during assembly, wipe or brush onto threads and other joint surfaces needing protection.
2. Use full strength. Do not thin.

Loctite Material Specification^{LMS}

LMS dated December 08, 2009. Test reports for each batch are available for the indicated properties. LMS test reports include selected QC test parameters considered appropriate to specifications for customer use. Additionally, comprehensive controls are in place to assure product quality and consistency. Special customer specification requirements may be coordinated through Henkel Quality.

Storage

Store product in the unopened container in a dry location. Storage information may be indicated on the product container labeling.

Optimal Storage: 8 °C to 21 °C. Storage below 8 °C or greater than 28 °C can adversely affect product properties. Material removed from containers may be contaminated during use. Do not return product to the original container. Henkel Corporation cannot assume responsibility for product which

has been contaminated or stored under conditions other than those previously indicated. If additional information is required, please contact your local Technical Service Center or Customer Service Representative.

Conversions

$(^{\circ}\text{C} \times 1.8) + 32 = ^{\circ}\text{F}$
 $\text{kV/mm} \times 25.4 = \text{V/mil}$
 $\text{mm} / 25.4 = \text{inches}$
 $\mu\text{m} / 25.4 = \text{mil}$
 $\text{N} \times 0.225 = \text{lb}$
 $\text{N/mm} \times 5.71 = \text{lb/in}$
 $\text{N/mm}^2 \times 145 = \text{psi}$
 $\text{MPa} \times 145 = \text{psi}$
 $\text{N}\cdot\text{m} \times 8.851 = \text{lb}\cdot\text{in}$
 $\text{N}\cdot\text{m} \times 0.738 = \text{lb}\cdot\text{ft}$
 $\text{N}\cdot\text{mm} \times 0.142 = \text{oz}\cdot\text{in}$
 $\text{mPa}\cdot\text{s} = \text{cP}$

Note:

The information provided in this Technical Data Sheet (TDS) including the recommendations for use and application of the product are based on our knowledge and experience of the product as at the date of this TDS. The product can have a variety of different applications as well as differing application and working conditions in your environment that are beyond our control. Henkel is, therefore, not liable for the suitability of our product for the production processes and conditions in respect of which you use them, as well as the intended applications and results. We strongly recommend that you carry out your own prior trials to confirm such suitability of our product.

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Reference 1.3