



LOCTITE[®] Straight Thread Sealant[™] (STS)

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PRODUCT DESCRIPTION

LOCTITE[®] Straight Thread Sealant[™](STS) provides the following product characteristics:

Technology	Acrylic
Chemical Type	Methacrylate ester
Appearance (uncured)	Creamy light blue dispersion ^{LMS}
Components	One component - requires no mixing
Viscosity	Medium
Cure	Anaerobic
Application	Thread sealing
Strength	Medium

LOCTITE[®] Straight Thread Sealant[™](STS) is a pre-applied adhesive/sealant coating for threaded fasteners and fittings. The product, as a pre-applied film, is dry-to-the-touch and remains an inert coating until assembly. During assembly of the fitting/fastener, a microencapsulated activator is then released, thereby initiating the cure process. Straight Thread Sealant[™] possesses high lubricity to minimize friction for a more controllable torque tension relationship. The resin fills all the voids in the threads and cures to securely lock and seal the assembly. Straight Thread Sealant[™] prevents loosening through vibration to provide locking and sealing of straight threaded assemblies including: ring gear bolts, carburetor screws, transmission nuts, head bolts, truck axle bolts, tower bolts, transmission bolts and pipe plugs and fittings.

NOTE: LOCTITE[®] Straight Thread Sealant[™](STS) is not recommended for use on copper or brass surfaces.

TYPICAL PROPERTIES OF UNCURED MATERIAL

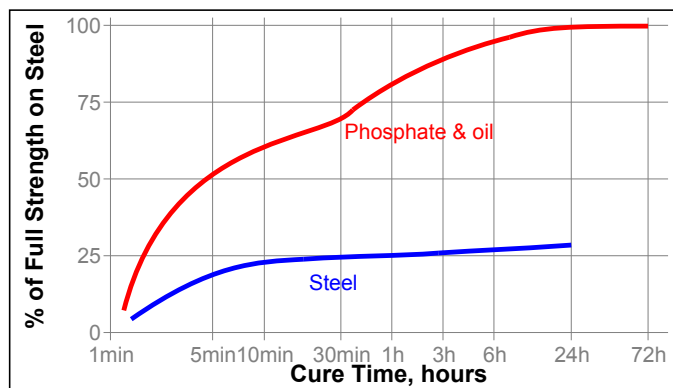
Flash Point - See MSDS

Viscosity, Brookfield - RVF, 25 °C, mPa·s (cP):	
Spindle 5, speed 2 rpm	35,000 to 100,000 ^{LMS}
On Part Life, years	4

TYPICAL CURING PERFORMANCE

Cure Speed vs. Substrate

The rate of cure will depend on the substrate used. The graph below shows the breakaway strength developed with time on 3/8 x 16 nuts and bolts from different materials. compared to different materials and tested according to MIL-S-46163.



Fixture Time

Fixture time is defined as the time to develop a shear strength of 0.1 N/mm².

Fixture Time, minutes 10

TYPICAL PERFORMANCE OF CURED MATERIAL

Adhesive Properties

After 24 hours @ 22 °C

On - Torque, :		
3/8 x 16 phosphate and oil grade 2 nuts and grade 5 bolts	N·m (lb.in.)	≤0.6 ^{LMS} (≤5.3)
Breakaway Torque, :		
3/8 x 16 phosphate and oil grade 2 nuts and grade 5 bolts	N·m (lb.in.)	≥17.0 ^{LMS} (≥150.4)

After 72 hours @ 22 °C

Breakaway Torque, ISO 10964:		
3/8 x 16 phosphate and oil grade 2 nuts and grade 5 bolts	N·m (lb.in.)	≥22.6 ^{LMS} (≥200)
Prevail Torque, :		
3/8 x 16 phosphate and oil grade 2 nuts and grade 5 bolts	N·m (lb.in.)	≥7.9 ^{LMS} (≥69.9)

TYPICAL ENVIRONMENTAL RESISTANCE

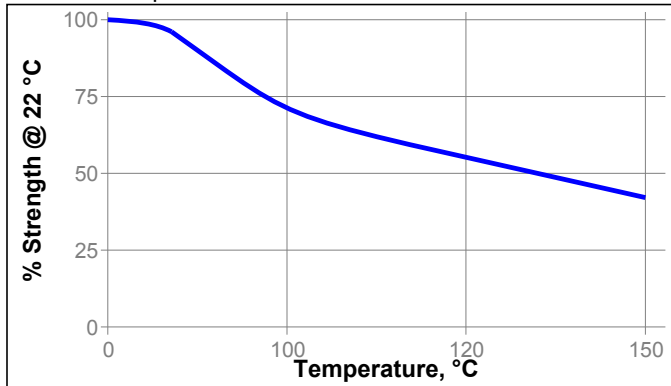
Cured for 72 hours @ 22 °C

Breakaway Torque, MIL-S-46163:
 3/8 x 16 phosphate and oil nuts and bolts

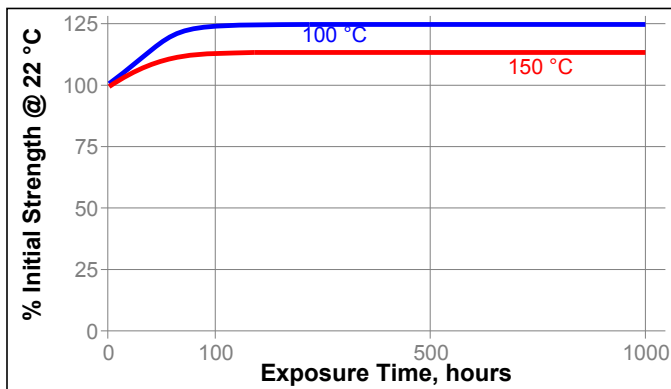


Hot Strength

Tested at temperature

**Heat Aging**

Aged at temperature indicated and tested @ 22 °C

**Chemical/Solvent Resistance**

Aged under conditions indicated and tested @ 22 °C.

Environment	°C	% of initial strength		
		100 h	500 h	1000 h
Motor oil	125	105	105	102
Motor oil	87	119	124	126
Gasoline (unleaded)	22	109	116	118
Brake fluid	22	105	109	110
1,1,1 Trichloroethane	22	103	116	115
Water/glycol 50/50	87	124	116	110

CORROSIVITY

LOCTITE® Straight Thread Sealant™(STS) may stain or discolor some metals. However, this does not effect its performance or the materials to which it is applied.

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).

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.

This product 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 of the product with such substrates.

Directions for use:**Application Method:**

LOCTITE® Straight Thread Sealant™(STS) is applied to threaded parts by authorized converters who have automatic fastener cleaning, feeding, coating, rust proofing and drying equipment. Quantities can be handled promptly with minimum turnaround time. Sample bolts should be sent to the nearest authorized converter where they will coat your parts and return them to you for evaluation. **SAMPLE TESTS ARE RECOMMENDED TO OBTAIN DESIRED RESULTS ON YOUR PARTS.** Contact the nearest LOCTITE® Technical Service Center for the authorized converter nearest to you.

Loctite Material Specification^{LMS}

LMS dated May 28, 2004. 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

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Reference 0.2