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Technical Data Sheet

LOCTITE® 567™

(TDS for new formulation of Loctite® 567™)

February 2016

**PRODUCT DESCRIPTION**

LOCTITE® 567™ provides the following product characteristics:

Technology	Acrylic
Chemical Type	Methacrylate ester
Appearance (uncured)	Smooth, creamy, off-white paste ^{LMS}
Components	One component - requires no mixing
Viscosity	High
Cure	Anaerobic
Secondary Cure	Activator
Application	Thread sealing
Strength	Low

This Technical Data Sheet is valid for LOCTITE® 567™ manufactured from the dates outlined in the "Manufacturing Date Reference" section.

LOCTITE® 567™ is designed for the locking and sealing of metal tapered threads and fittings. The product cures when confined in the absence of air between close fitting metal surfaces and prevents loosening and leakage from shock and vibration. The high lubricating properties of this compound prevent galling on stainless steel, aluminum and all other metal pipe threads and fittings. The product offers high temperature performance and oil tolerance. It tolerates minor surface contaminations from various oils, such as cutting, lubrication, anti-corrosion and protection fluids. LOCTITE® 567™ is recommended for industrial applications in the chemical processing, petroleum refining, pulp/paper, waste treatment, textile, utilities/power generation, marine, automotive, industrial equipment, gas compression and distribution industries. It is also recommended for industrial plant fluid power systems.

UL Classification

Classified by Underwriters Laboratories Inc.® MH8007 - Fire hazard is small. No flash point in liquid state. Ignition temperature 455°C. For use in devices handling gasoline, petroleum oils, natural gas (pressure not over 300 PSIG), butane and propane not exceeding 2 in. pipe size. **Note:** This is a regional approval. Please contact your local Technical Service Center for more information and clarification.

ULC Classification

Classified by Underwriters Laboratories of Canada Inc. MH27131 - An anaerobic material which contains a lubricant and sets to form a tight seal and maintain a controlled locking strength. For use in joining threaded pipe connections or other closely fitting metal parts in devices handling natural gas and methane, gasoline and petroleum oils, and propane and butane at pressures not exceeding 13,790 kPa. Ignition temperature greater than 460 °C. Classed less than 10 below paraffin oil with respect to fire hazard. **Note:** This is a regional approval. Please contact your local Technical Service Center for more information and clarification.

Approved by the Australian Gas Association Certificate number 3207 Class III rated working pressure 2000 kPa, working temperature -10 to 205°C. **Note:** This is a regional approval. Please contact your local Technical Service Center for more information and clarification.

TYPICAL PROPERTIES OF UNCURED MATERIAL

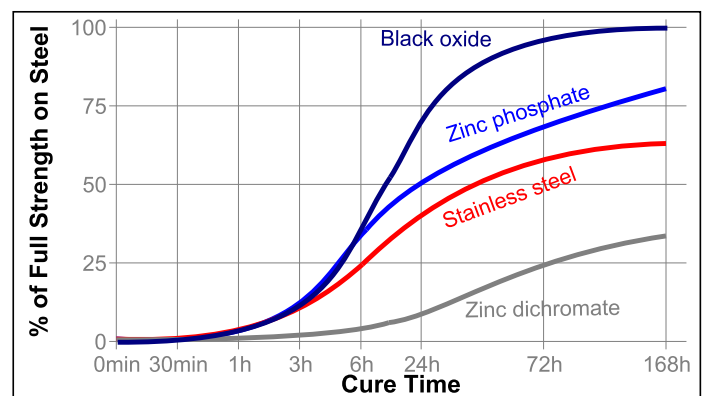
Specific Gravity @ 25 °C 1.15

Flash Point - See SDS

Viscosity, Brookfield - RVF, 25 °C, mPa·s (cP):
 Spindle 7, speed 2 rpm 280,000 to 800,000^{LMS}

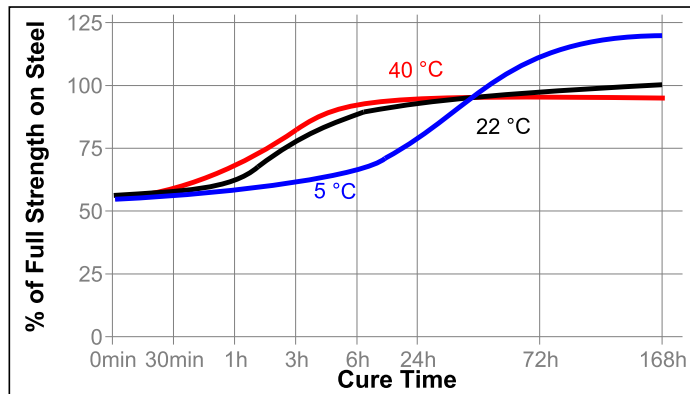
TYPICAL CURING PERFORMANCE**Cure Speed vs. Substrate**

The rate of cure will depend on the substrate used. The graph below shows the breakaway strength developed with time on M10 black oxide bolts and steel nuts compared to different materials and tested according to ISO 10964.



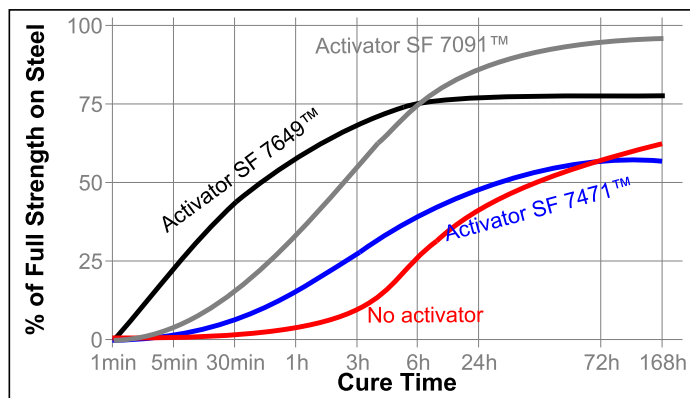
Cure Speed vs. Temperature

The rate of cure will depend on the temperature. The graph below shows the breakloose strength developed with time at different temperatures on NPT 3/8 malleable steel tees and steel plugs, pretorqued to 27 N·m and tested according to ASTM D6396.



Cure Speed vs. Activator

Where cure speed is unacceptably long, or large gaps are present, applying activator to the surface will improve cure speed. The graph below shows the breakloose strength developed with time using Activator SF 7471™, SF 7649™ and SF 7091™ on M10 stainless steel nuts and bolts and tested according to ISO 10964.



TYPICAL PERFORMANCE OF CURED MATERIAL

Adhesive Properties

After 4 hours @ 22 °C

Breakaway Torque, ISO 10964:
3/8 x 24 steel nuts (grade 2) and bolts N·m ≥0.3^{LMS}
(lb.in.) (≥2.6)

After 24 hours @ 22 °C

Removal Torque, ASTM D 6396, Pre-torqued to 27 N·m:
3/8 NPT steel pipe tees and plugs N·m 50
(lb.in.) (445)

Breakaway Torque, ISO 10964, Unseated:

M10 black oxide bolts and steel nuts N·m 12
(lb.in.) (110)
M10 brass nuts and bolts N·m 12
(lb.in.) (105)

M10 zinc dichromate nuts and bolts	N·m 2.6 (lb.in.) (22)
M10 zinc phosphate nuts and bolts	N·m 9.3 (lb.in.) (82)
M10 stainless steel nuts and bolts	N·m 8.0 (lb.in.) (70)
M6 black oxide bolts and steel nuts	N·m 0.9 (lb.in.) (8)
M16 black oxide steel nuts and bolts	N·m 13 (lb.in.) (115)
3/8 x 24 steel nuts (grade 2) and bolts (grade 2)	N·m ≥1.7 ^{LMS} (lb.in.) (≥15)

Prevail Torque, ISO 10964, Unseated:

M10 black oxide bolts and steel nuts	N·m 1.9 (lb.in.) (17)
M10 brass nuts and bolts	N·m 2.2 (lb.in.) (19)
M10 zinc dichromate nuts and bolts	N·m 1.4 (lb.in.) (12)
M10 zinc phosphate nuts and bolts	N·m 1.2 (lb.in.) (11)
M10 stainless steel nuts and bolts	N·m 1.3 (lb.in.) (12)
M6 black oxide bolts and steel nuts	N·m 0.2 (lb.in.) (1.3)
M16 black oxide steel nuts and bolts	N·m 2.3 (lb.in.) (20)

Breakloose Torque, ISO 10964, Pre-torqued to 5 N·m:

M10 black oxide bolts and steel nuts	N·m 17 (lb.in.) (150)
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Prevail Torque, ISO 10964, Pre-torqued to 5 N·m:

M10 black oxide bolts and steel nuts	N·m 2.3 (lb.in.) (20)
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After 1 week @ 22 °C

Breakloose Torque, ISO 10964, Pre-torqued to 5 N·m: M10 zinc phosphate nuts and bolts	N·m 17 (lb.in.) (150)
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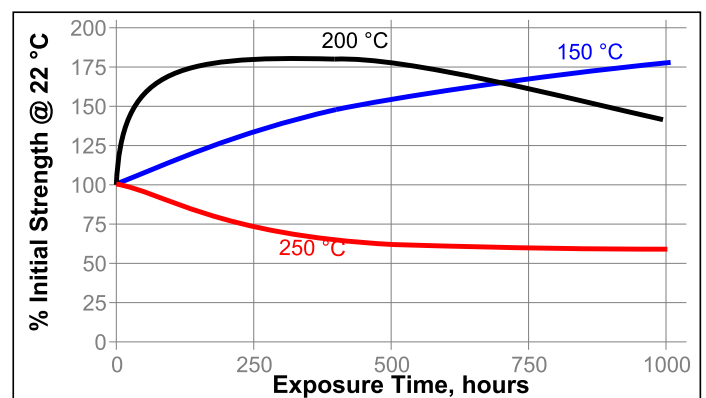
TYPICAL ENVIRONMENTAL RESISTANCE

Cured for 168 hours @ 22 °C

Breakloose Torque, ISO 10964, Pre-torqued to 5 N·m:
M10 zinc phosphate steel nuts and bolts

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 (MIL-L-46152)	125	100	95	100
Unleaded gasoline	22	95	90	85
Brake fluid	22	95	100	110
Ethanol	22	95	90	85
Acetone	22	85	60	55
Water/glycol 50/50	87	90	85	95
E85 Ethanol fuel	22	95	85	75
B100 Bio-Diesel	22	110	105	105
DEF (AdBlue®)	22	115	125	120

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).

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:**For Assembly**

- For best results, clean all surfaces (external and internal) with a LOCTITE® cleaning solvent and allow to dry.
- If the material is an inactive metal or the cure speed is too slow, spray with LOCTITE® SF 7471™ or LOCTITE® SF 7649™ and allow to dry.
- Apply a 360° bead of product 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 amount accordingly and apply a 360° bead of product on the female threads also.
- Using compliant practices, assemble and wrench tighten fittings in accordance with manufacturers recommendations.
- Properly tightened fittings will seal instantly to moderate pressures. For maximum pressure resistance and solvent resistance allow the product to cure a minimum of 24 hours.

For Disassembly

- Remove 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 (480F). Disassemble while hot.

For Cleanup

- Cured product can be removed with a combination of soaking in a LOCTITE® solvent and mechanical abrasion such as a wire brush.

Loctite Material Specification^{LMS}

LMS dated October 7, 2015. 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.

Manufacturing Date Reference

This Technical Data Sheet is valid for LOCTITE® 567™ manufactured from the dates below:

<u>Made in:</u>	<u>First manufacturing date:</u>
U.S.A.	May 2016
China	May 2016
Brazil	April 2016

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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