

LOCTITE® 592™

January 2012

PRODUCT DESCRIPTION

LOCTITE® 592™ provides the following product characteristics:

Technology	Acrylic
Chemical Type	Dimethacrylate ester
Appearance (uncured)	Thick opaque off white paste ^{LMS}
Components	One component - requires no mixing
Viscosity	High
Cure	Anaerobic
Application	Thread sealing
Strength	Medium

The high lubricating properties of LOCTITE® 592™ prevent galling on pipe threads and fittings. It will provide immediate low pressure sealing and allow the readjustment of fittings shortly after assembly. After 72 hours the joint is sealed to pipe burst pressure. This product is typically used in applications up to 204 °C. **This product is not recommended for use on plastic piping.**

TYPICAL PROPERTIES OF UNCURED MATERIAL

Specific Gravity @ 25 °C	1.21
Flash Point - See SDS	
Viscosity, Brookfield - RVF, 25 °C, mPa·s (cP):	
Spindle 7, speed 2 rpm,	200,000 to 500,000 ^{LMS}

TYPICAL PROPERTIES OF CURED MATERIAL

Physical Properties:	
Coefficient of Thermal Expansion, ISO 11359-2, K ⁻¹	80×10 ⁻⁶
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 @ 93.3 °C, tested @ 22 °C

Breakaway Torque, ISO 10964:

3/8 x 24 steel nuts (grade 2) and bolts (grade 2)	N·m (lb.in.)	≥5.7 ^{LMS} (≥50)
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After 72 hours @ 22 °C

Breakaway Torque, ISO 10964:

3/8 x 24 steel nuts (grade 2) and bolts (grade 2)	N·m (lb.in.)	≥0.6 ^{LMS} (≥5)
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TYPICAL ENVIRONMENTAL RESISTANCE

Cured for 72 hours @ 22 °C

Breakaway Torque, ISO 10964:

3/8 NPT steel pipe tees and plugs (degreased)

Chemical/Solvent Resistance

Aged under conditions indicated and tested @ 22 °C.

Environment	°C	% of initial strength
		720 h
Motor oil (MIL-L-46152)	87	85
Unleaded gasoline	87	90
Phosphate ester	87	85
Isopropanol	87	90
Air	87	100
Distilled water	87	90
Auto trans. fluid	87	95
Brake fluid	87	80

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

1. For best results, clean all surfaces (external and internal) with a LOCTITE® cleaning solvent and allow to dry.
2. If the material is an inactive metal or the cure speed is too slow, spray with LOCTITE®Primer NF™ and allow to dry.
3. 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. 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 September 1, 1995. 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

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Reference 1.2