

LOCTITE® 549™

September 2012

PRODUCT DESCRIPTION

LOCTITE® 549™ provides the following product characteristics:

Technology	Acrylic
Chemical Type	Dimethacrylate ester
Appearance (uncured)	Orange liquid ^{LMS}
Components	One component - requires no mixing
Viscosity	Medium, thixotropic
Cure	Anaerobic
Application	Gasketing and Sealing
Strength	Medium

LOCTITE® 549™ is a ready-to-use, single component, gel-like anaerobic flange sealant that cures at room temperature when it is isolated from air contact. This product seals close fitting joints between rigid metal faces and flanges. It provides an instant seal to low pressures immediately after assembly of flanges. Typical application is as a formed-in-place gasket for pumps, thermostats, compressors, transmission housings and axle covers.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Weight per volume	kg/L	1.2
	(lbs/gal)	(10.1)

Flash Point - See SDS

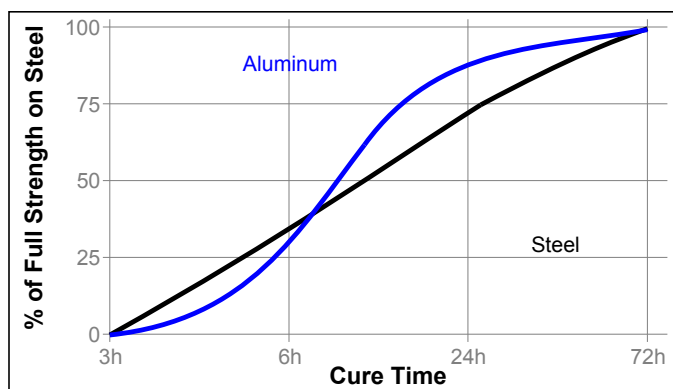
Viscosity, Brookfield - RVT, 25 °C, mPa·s (cP):

Spindle 6, speed 20 rpm, 10,000 to 35,000^{LMS}

TYPICAL CURING PERFORMANCE

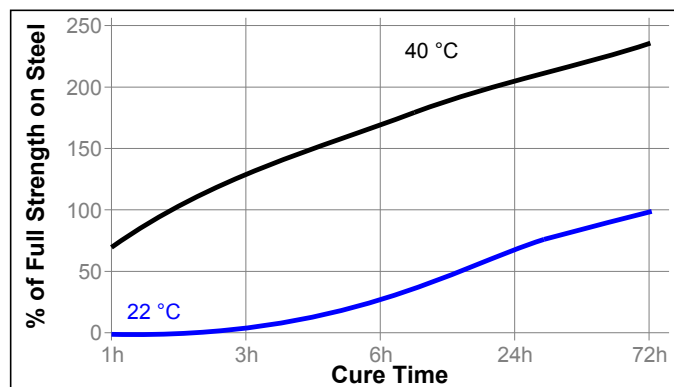
Cure Speed vs. Substrate

The rate of cure will depend on the substrate used. The graph below shows the shear strength developed with time on grit blasted steel lap shears compared to different materials and tested according to ISO 4587.



Cure Speed vs. Temperature

The rate of cure will depend on the ambient temperature. The graph below shows the shear strength developed with time on grit blasted steel lap shears at different temperatures and tested according to ISO 4587.



TYPICAL PERFORMANCE OF CURED MATERIAL

Adhesive Properties

Cured for 24 hours @ 22 °C

Compressive Shear Strength, ISO 10123:

Steel pins and collars	N/mm ²	≥15.2 ^{LMS}
	(psi)	(≥2,200)

Tensile Strength, ISO 6922, N/mm² (psi):

Steel pin to Steel pin	N/mm ²	7.7
	(psi)	(1,120)

Cured for 72 hours @ 22 °C

Lap Shear Strength, ISO 4587:

Steel (grit blasted)	N/mm ²	3.6
	(psi)	(520)

TYPICAL ENVIRONMENTAL RESISTANCE

The following tests refer to the effect of environment on strength. This is not a measure of sealing performance.

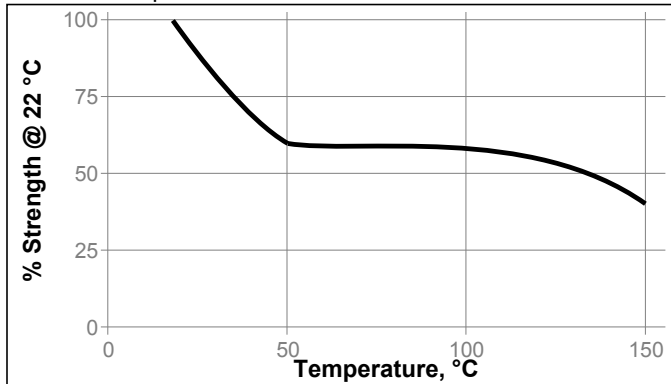
Cured for 1 week @ 22 °C

Lap Shear Strength, ISO 4587:

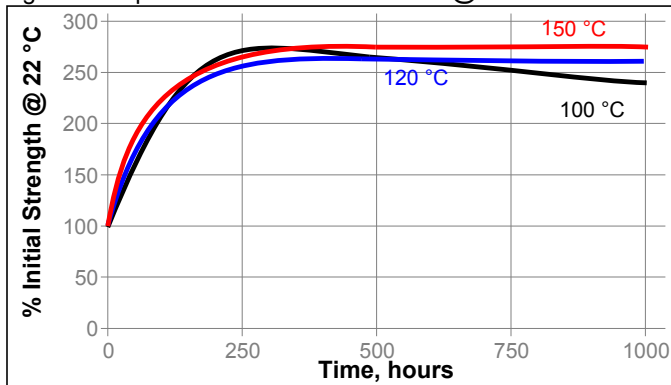
Steel (grit blasted)

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			
		250 h	500 h	750 h	1000 h
Motor oil	125	190	220	235	220
Water/glycol 50/50	87	160	165	115	105
Gasoline	22	75	40	55	40

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:

1. For best performance bond surfaces should be clean and free from grease.
2. The product is designed for close fitting flanged parts with gaps up to 0.25mm (0.010 inches).
3. Apply manually as a continuous bead or by screen printing to one surface of the flanges.
4. Low pressures (<0.5 bar, <5 psi) may be used when testing to confirm a complete seal immediately after assembly and before curing.
5. Flanges should be tightened as soon as possible after assembly to avoid shimming.

Loctite Material Specification^{LMS}

LMS dated February 28, 2012. 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 0.2