

## LOCTITE® AA 3270™

Known as LOCTITE® 3270™  
November 2014

### PRODUCT DESCRIPTION

LOCTITE® AA 3270™ provides the following product characteristics:

<b>Technology</b>	Acrylic
<b>Chemical Type</b>	Urethane methacrylate
<b>Appearance (uncured)</b>	Clear, yellow to light amber liquid <sup>LMS</sup>
<b>Components</b>	One component - requires no mixing
<b>Viscosity</b>	Medium
<b>Cure</b>	Anaerobic with activator
<b>Cure Benefit</b>	Room temperature cure
<b>Application</b>	Bonding

LOCTITE® AA 3270™ is designed for bonding rigid assemblies. The product cures when confined between close fitting parts with the aid of Activator 7649™. Typical applications include bonding ferrites to plated materials in electric motors, loudspeaker hardware and jewelry where fast fixturing is required.

### TYPICAL PROPERTIES OF UNCURED MATERIAL

Specific Gravity @ 25 °C	1.1
Flash Point - See SDS	
Viscosity, Brookfield - RVT, 25 °C, mPa·s (cP): Spindle 5, speed 20 rpm,	5,500 to 8,500 <sup>LMS</sup>

### TYPICAL CURING PERFORMANCE

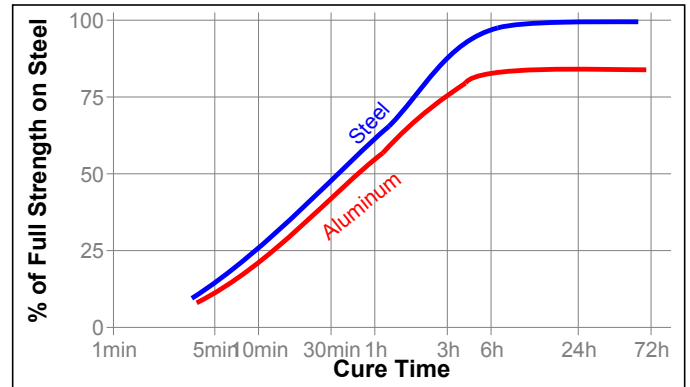
#### Fixture Time

Fixture time is defined as the time to develop a shear strength of 0.1 N/mm<sup>2</sup>.

Fixture Time, ISO 4587, seconds: Steel (grit blasted), Activator 7649™ on 1 side	7
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#### 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. (Activator 7649™ applied to one surface)



### TYPICAL PROPERTIES OF CURED MATERIAL

#### Physical Properties:

Coefficient of Thermal Expansion, ISO 11359-2, K <sup>-1</sup>	80×10 <sup>-6</sup>
Coefficient of Thermal Conductivity, ISO 8302, W/(m·K)	0.1
Specific Heat, kJ/(kg·K)	0.3
Elongation, at break, ISO 37, %	135
Tensile Modulus, ISO 527-2	N/mm <sup>2</sup> 300 (psi) (44,000)

#### Electrical Properties:

Dielectric Constant / Dissipation Factor, IEC 60250:	
100 Hz	5.6 / 0.03
1 kHz	5.3 / 0.03
1 MHz	4.6 / 0.04
Volume Resistivity, IEC 60093, Ω·cm	2×10 <sup>13</sup>
Surface Resistivity, IEC 60093, Ω	2×10 <sup>17</sup>
Dielectric Breakdown Strength, IEC 60243-1, kV/mm	30

### TYPICAL PERFORMANCE OF CURED MATERIAL

#### Adhesive Properties

After 24 hours @ 22 °C, Activator 7649™ on 1 side

Lap Shear Strength, ISO 4587:

Steel (grit blasted):	
0 gap	N/mm <sup>2</sup> ≥19.6 (psi) (≥2,850)
0.25 mm gap	N/mm <sup>2</sup> ≥18.0 (psi) (≥2,600)

After 24 hours @ 22 °C, Activator 7649™ on 2 sides

Lap Shear Strength, ISO 4587:

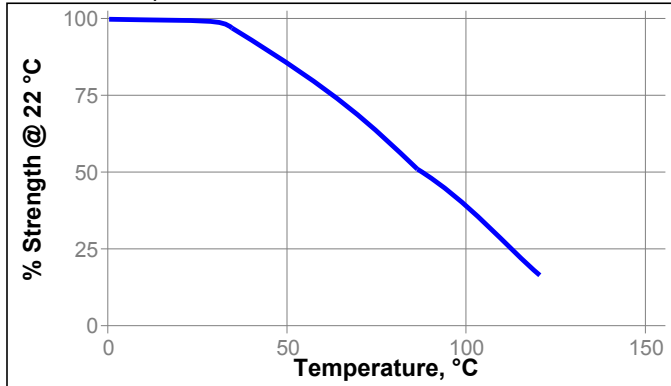
Steel (grit blasted)	N/mm <sup>2</sup> ≥15.2 <sup>LMS</sup> (psi) (≥2,200)
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**TYPICAL ENVIRONMENTAL RESISTANCE**

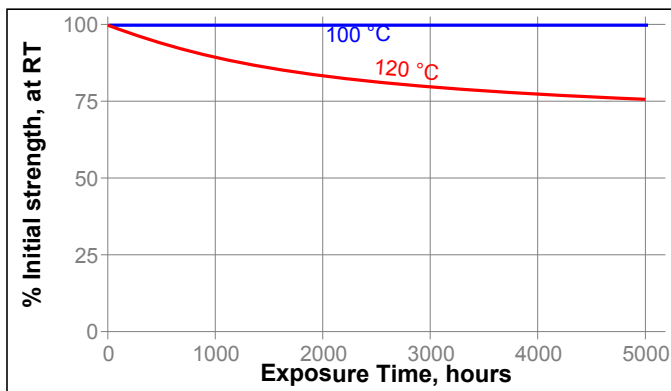
Cured for 1 week @ 22 °C, Activator 7649™ on 1 side  
Lap Shear Strength, ISO 4587:  
Steel (grit blasted)

**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			
		100 h	500 h	1000 h	5000 h
Motor oil (MIL-L-46152)	87	100	100	100	100
Leaded Petrol	22	100	60	60	60
ATF (Dextron II oil)	87	100	100	-	-
Phosphate ester	87	100	100	-	-
Humidity, 98% RH	40	85	50	45	45
Water/glycol 50/50	87	100	40	40	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. To ensure a fast and reliable cure, Activator 7649™ should be applied to one of the bond surfaces and the adhesive to the other surface. Parts should be assembled within 15 minutes.
3. The recommended bondline gap is 0.1 mm. Where bond gaps are large (up to a maximum of 0.5 mm), or faster cure speed is required, Activator 7649™ should be applied to both surfaces. Parts should be assembled immediately (within 1 minute).
4. Excess adhesive can be wiped away with organic solvent.
5. Bond should be held clamped until adhesive has fixtured.
6. Product should be allowed to develop full strength before subjecting to any service loads (typically 24 to 72 hours after assembly, depending on bond gap, materials and ambient conditions).

**Conversions**

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

**Loctite Material Specification<sup>LMS</sup>**

LMS dated September 8, 2000. 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.

Reference 1.1

**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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