



# LOCTITE<sup>®</sup> 5590<sup>™</sup>

December 2011

## PRODUCT DESCRIPTION

LOCTITE<sup>®</sup> 5590<sup>™</sup> provides the following product characteristics:

<b>Technology</b>	MS <sup>®</sup> - Polymer
<b>Chemical Type</b>	Modified silane polymer
<b>Appearance (Comp. A)</b>	Black paste <sup>LMS</sup>
<b>Appearance (Comp. B)</b>	Black paste <sup>LMS</sup>
<b>Components</b>	Two component - requires mixing
<b>Mix Ratio, by weight -</b>	1 : 1
<b>Smoothness</b>	Smooth <sup>LMS</sup>
<b>Cure</b>	Room temperature cure after mixing
<b>Application</b>	Sealing or Bonding
<b>Operating Temperature-</b>	-40 to 100°C
<b>Maximum Intermittent Exposure Temperature</b>	120°C
<b>Product Benefits</b>	<ul style="list-style-type: none"> <li>• Solvent-free</li> <li>• Silicone free</li> <li>• UV resistant</li> <li>• Elastomeric</li> <li>• Sag resistant</li> <li>• Adheres well to a variety of substrates</li> </ul>

LOCTITE<sup>®</sup> 5590<sup>™</sup> is a highly viscous, sag-resistant, two-component adhesive based on silane-modified polymers, which cures independently of the atmospheric moisture to an elastic product. It is free from solvents, isocyanates and silicones. After mixing, the product cures to form an elastic material with adhesion to a wide range of products without the necessity of using primers. An increase in temperature accelerates the reaction time. After joining the mating parts, high adhesion strength (position tack) is obtained. LOCTITE<sup>®</sup> 5590<sup>™</sup> demonstrates good UV resistance and can therefore be used for interior and exterior applications. This product is used for elastic bonding of panels and windows in the railway, trailer and bus industries and seam sealing in cabs of vehicles and equipment.

## TYPICAL PROPERTIES OF UNCURED MATERIAL

### Part A:

Density, ISO 2811-1, g/cm <sup>3</sup>	1.3 to 1.4 <sup>LMS</sup>
Viscosity, Plate to Plate, Pa·s, Physica, 25mm Parallel plates at 0.5 mm gap @ 10 s-1, 23°C	120 to 170 <sup>LMS</sup>

### Part B:

Density, ISO 2811-1, g/cm <sup>3</sup>	1.26 to 1.36 <sup>LMS</sup>
Viscosity, Plate to Plate, Pa·s, Physica, 25mm Parallel plates at 0.5 mm gap @ 10 s-1, 23°C	90 to 150 <sup>LMS</sup>

### Mixed:

Density, ISO 2811-1, g/cm <sup>3</sup>	1.4
Flash Point - See MSDS	

## TYPICAL CURING PERFORMANCE

### Open Time

Open Time @ 23°C, (mixed), minutes	~30
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## TYPICAL PROPERTIES OF CURED MATERIAL

Lap Shear Strength, ISO 4587:

Al to Al (thickness 2 mm)	MPa (psi)	2 (290)
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### Physical Properties:

Tensile Strength, , ISO 37: After 3 days @ 21 °C / 50% RH	MPa (psi)	3 (435)
E-Modulus (10%) , ISO 37	MPa (psi)	3.6 (523)
Elongation, at break, ISO 37, %		194
Shore Hardness, ISO 868, Durometer A		46
Glass Transition Temperature ISO 11359-2, °C		-80
Coefficient of Thermal Expansion, ISO 11359-2, K <sup>-1</sup> : Above Tg		139

## 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).**

### Directions for use:

1. For high strength structural bonds, remove surface contaminants such as oxide films, oils, dust, mold release agents and all other surface contaminants.
2. Use gloves to minimize skin contact. DO NOT use solvents for cleaning hands.

**3. Dual Cartridges:** Insert the cartridge into the application gun and start the plunger into the cylinders using light pressure on the trigger. Next, remove the cartridge cap and expel a small amount of adhesive to be sure both sides are flowing evenly and freely. Attach the static mixing nozzle to the end of the cartridge and begin dispensing the adhesive. Purge and dispose of the first 3 - 5 cm from the end of the mix nozzle, as it may not be sufficiently mixed.

**Bulk Containers:** Utilize volumetric dispense system to ensure proper mix ratio and utilize mix nozzle to obtain adequate mixing.

4. Application to the substrates should be made as soon as possible. Larger quantities and/or higher temperatures will reduce the working time.

5. Keep assembled parts from moving during cure. The bond should be allowed to develop full strength before subjecting to any service load.

6. Excess material can be easily wiped away with non-polar solvents.

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

LMS dated October 30, 2007. 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.**

The product is frost sensitive. 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 0.0