

TEROSON® MS 5590™

Known as LOCTITE® 5590™
January 2015

PRODUCT DESCRIPTION

TEROSON® MS 5590™ provides the following product characteristics:

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

TEROSON® MS 5590™ 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. TEROSON® MS 5590™ 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 ³	1.3 to 1.4 ^{LMS}
Viscosity, Plate to Plate, Pa·s, Physica, 25mm Parallel plates at 0.5 mm gap @ 10 s-1, 23°C	80 to 160 ^{LMS}

Part B:

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

Mixed:

Density, ISO 2811-1, g/cm ³	1.4
Flash Point - See SDS	

TYPICAL CURING PERFORMANCE

Open Time

Open Time @ 23°C, (mixed), minutes	~30
------------------------------------	-----

TYPICAL PROPERTIES OF CURED MATERIAL

Lap Shear Strength, ISO 4587:

Al to Al (thickness 2 mm)	MPa	2
	(psi)	(290)

Physical Properties:

Tensile Strength, , ISO 37: After 3 days @ 21 °C / 50% RH	MPa	3
	(psi)	(435)
E-Modulus (10%) , ISO 37	MPa	3.6
	(psi)	(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 ⁻¹ :		
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 Safety Data Sheet (SDS).

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^{LMS}

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.

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.

Any liability in respect of the information in the Technical Data Sheet or any other written or oral recommendation(s) regarding the concerned product is excluded,

except if otherwise explicitly agreed and except in relation to death or personal injury caused by our negligence and any liability under any applicable mandatory product liability law.

In case products are delivered by Henkel Belgium NV, Henkel Electronic Materials NV, Henkel Nederland BV, Henkel Technologies France SAS and Henkel France SA please additionally note the following:

In case Henkel would be nevertheless held liable, on whatever legal ground, Henkel's liability will in no event exceed the amount of the concerned delivery.

In case products are delivered by Henkel Colombiana, S.A.S. the following disclaimer is applicable:

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. 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.

Any liability in respect of the information in the Technical Data Sheet or any other written or oral recommendation(s) regarding the concerned product is excluded, except if otherwise explicitly agreed and except in relation to death or personal injury caused by our negligence and any liability under any applicable mandatory product liability law.

In case products are delivered by Henkel Corporation, Resin Technology Group, Inc., or Henkel Canada Corporation, the following disclaimer is applicable:

The data contained herein are furnished for information only and are believed to be reliable. We cannot assume responsibility for the results obtained by others over whose methods we have no control. It is the user's responsibility to determine suitability for the user's purpose of any production methods mentioned herein and to adopt such precautions as may be advisable for the protection of property and of persons against any hazards that may be involved in the handling and use thereof. In light of the foregoing, **Henkel Corporation specifically disclaims all warranties expressed or implied, including warranties of merchantability or fitness for a particular purpose, arising from sale or use of Henkel Corporation's products. Henkel Corporation specifically disclaims any liability for consequential or incidental damages of any kind, including lost profits.** The discussion herein of various processes or compositions is not to be interpreted as representation that they are free from domination of patents owned by others or as a license under any Henkel Corporation patents that may cover such processes or compositions. We recommend that each prospective user test his proposed application before repetitive use, using this data as a guide. This product may be covered by one or more United States or foreign patents or patent applications.

Trademark usage

Except as otherwise noted, all trademarks in this document are trademarks of Henkel Corporation in the U.S. and elsewhere. ® denotes a trademark registered in the U.S. Patent and Trademark Office.

Reference 0.2