

# LOCTITE<sup>®</sup> SI 5248<sup>™</sup>

 Known as LOCTITE<sup>®</sup> 5248<sup>™</sup>

December 2013

## PRODUCT DESCRIPTION

LOCTITE<sup>®</sup> SI 5248<sup>™</sup> provides the following product characteristics:

<b>Technology</b>	Silicone
<b>Chemical Type</b>	Alkoxy silicone
<b>Appearance (uncured)</b>	Straw colored liquid <sup>LMS</sup>
<b>Components</b>	One component - requires no mixing
<b>Thixotropic</b>	Reduced migration of liquid product after application to substrate
<b>Cure</b>	Ultraviolet (UV) light
<b>Secondary Cure</b>	Moisture for shadowed areas
<b>Application</b>	Gasketing or Sealing
<b>Flexibility</b>	Enhances load bearing & shock absorbing characteristics of the bond area.

LOCTITE<sup>®</sup> SI 5248<sup>™</sup> is used for gasketing and sealing applications.

## ISO-10993

An ISO 10993 Test Protocol is an integral part of the Quality Program for LOCTITE<sup>®</sup> SI 5248<sup>™</sup>. LOCTITE<sup>®</sup> SI 5248<sup>™</sup> has been qualified to Henkel's ISO 10993 Protocol as a means to assist in the selection of products for use in the medical device industry. Certificates of Compliance are available on Henkel's website or through the Henkel Quality Department.

## TYPICAL PROPERTIES OF UNCURED MATERIAL

Specific Gravity @ °C	1.05
Solids/Non-Volatile Content, %	≥95 <sup>LMS</sup>
Flash Point - See SDS	
Viscosity, Brookfield - RVT, 25 °C, mPa·s (cP):	
Spindle 6, speed 2.5 rpm	50,000 to 80,000 <sup>LMS</sup>

## TYPICAL CURING PERFORMANCE

Normal processing conditions will include exposure to sufficient UV light irradiance to effectively cure the material. Surface and/or atmospheric moisture will promote the cure of material in shadowed regions. Although functional strength is developed almost instantly due to the UV curing nature of LOCTITE<sup>®</sup> SI 5248<sup>™</sup>, increased cure properties are developed during 72 hours at ambient conditions.

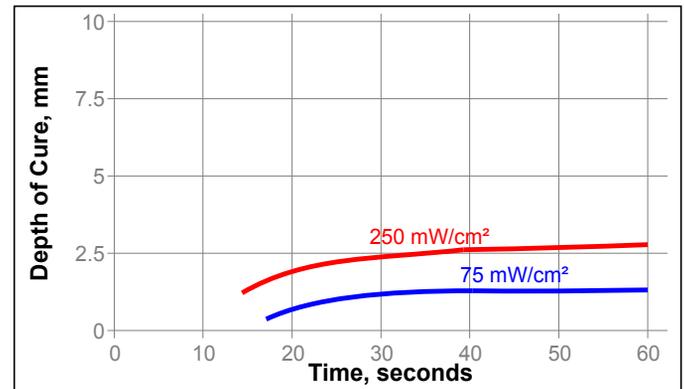
### Surface Cure

When curing with sufficient UV light irradiance, exposed

material will cure dry to the touch in seconds. Atmospheric moisture cures material not exposed to UV light. Typically, non-UV light cured areas will skin over in approximately 11 minutes and become tack free in 14 minutes.

## Depth of Cure

Shadowed areas rely on surface and/or atmospheric moisture to effect cure. Depth of cure is limited to approximately 6 millimeters and will take at least 24 hours to develop. Rapid depth of cure can be attained with focused UV light. The graph(s) below show the depth of cure obtained up to 60 seconds at two different levels of UV irradiance.



## TYPICAL PROPERTIES OF CURED MATERIAL

Cured @ 40 mW/cm<sup>2</sup>, for 60 seconds per side plus 7 days @ 22 °C / 50% RH

### Physical Properties:

Coefficient of Thermal Expansion, ISO 11359-2, K <sup>-1</sup>	2.89×10 <sup>-4</sup>
Water Absorption, ISO 62, %:	
24 hours in water @ 22 °C	0
Shrinkage, %	0
Water Vapor Trans. Rate, ASTM E96, g/(h·m <sup>2</sup> )	0.455
Compression Set, ASTM D 395, Method B, %:	
Aged @ 22 °C for 70 hours	6
Aged @ 75 °C for 70 hours	44
Aged @ 100 °C for 70 hours	80

### Electrical Properties:

Dielectric Constant / Dissipation Factor, IEC 60250:	
100 Hz	2.9 / 0.002
100 kHz	2.88 / 0.003
Volume Resistivity, IEC 60093, Ω·cm	8.3×10 <sup>13</sup>

Cured @ 70 mW/cm<sup>2</sup>, for 60 seconds per side plus 3 days @ 22 °C / 50±5% RH

#### Physical Properties:

Shore Hardness, ISO 868, Durometer A	≥25 <sup>LMS</sup>
Elongation, ISO 37, %	≥135 <sup>LMS</sup>
Tensile Strength, ISO 37	N/mm <sup>2</sup> ≥1 <sup>LMS</sup> (psi) (≥145)
Tear Strength, ISO 34-1, Die B	N/mm ≥1.7 <sup>LMS</sup> (lb./in.) (≥9.7)

## TYPICAL PERFORMANCE OF CURED MATERIAL

### Adhesive Properties

Cured @ 40 mW/cm<sup>2</sup>, for 60 seconds, plus 7 days post UV Cure @ 22 °C / 50% RH

Lap Shear Strength, ISO 4587:

Aluminum to Glass	N/mm <sup>2</sup> 0.1 to 0.5 (psi) (15 to 70)
Steel to Glass	N/mm <sup>2</sup> 0.4 to 1.2 (psi) (60 to 175)
Glass to Glass	N/mm <sup>2</sup> 0.3 to 1 (psi) (40 to 145)

180° Peel Strength, ISO 8510-2:

Aluminum	N/mm <1 (lb/in) (<5)
Steel	N/mm <1 (lb/in) (<5)

## TYPICAL ENVIRONMENTAL RESISTANCE

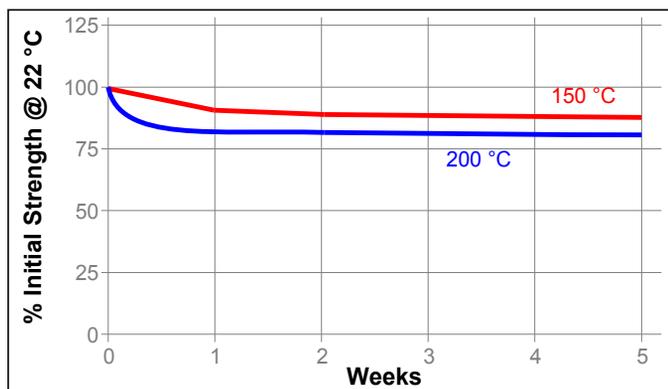
2 mm thick samples cured @ 40 mW/cm<sup>2</sup>, for 60 seconds per side

### Physical Properties

Tensile Modulus

### Heat Aging

Aged at temperature indicated and tested @ 22 °C



## 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:

- For best performance bond surfaces should be clean and free from grease.
- The product is designed to be initially cured with UV light at a minimum irradiance of 30 mW/cm<sup>2</sup> for approximately 20 seconds, increased exposure may be required for curing deeper sections.
- Functional strength is achieved almost instantly.

- Full performance properties will develop over 72 hours.
- Moisture curing begins immediately after the product is exposed to the atmosphere, therefore parts to be assembled should be mated within a few minutes after the product is dispensed.
- Excess material can be easily wiped away with non-polar solvents.

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

LMS dated February 3, 1997. 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

(°C x 1.8) + 32 = °F  
 kV/mm x 25.4 = V/mil  
 mm / 25.4 = inches  
 μm / 25.4 = mil  
 N x 0.225 = lb  
 N/mm x 5.71 = lb/in  
 N/mm<sup>2</sup> x 145 = psi  
 MPa x 145 = psi  
 N·m x 8.851 = lb·in  
 N·m x 0.738 = lb·ft  
 N·mm x 0.142 = oz·in  
 mPa·s = 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 1.2