



LOCTITE[®] 5248[™]

October 2004

PRODUCT DESCRIPTION

LOCTITE[®] 5248[™] provides the following product characteristics:

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

LOCTITE[®] 5248[™] is used for gasketing and sealing applications.

ISO-10993

An ISO 10993 Test Protocol is an integral part of the Quality Program for LOCTITE[®] 5248[™]. LOCTITE[®] 5248[™] has been qualified to Loctite'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 at www.loctite.com or through the Henkel Loctite Quality Department.

TYPICAL PROPERTIES OF UNCURED MATERIAL

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

TYPICAL CURING PERFORMANCE

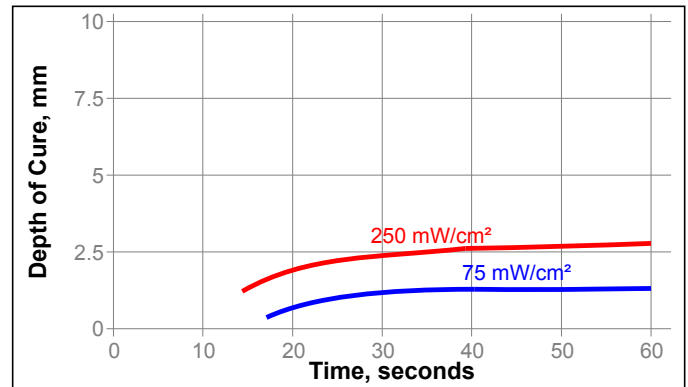
Normal processing conditions will include exposure to sufficient UV light irradiance to effectively cure the material. Surface and/or atmospheric moisture will promote the cure of material in shadowed regions. Although functional strength is developed almost instantly due to the UV curing nature of LOCTITE[®] 5248[™], 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/cm² for 60 seconds per side plus 7 days @ 22°C / 50% RH

Physical Properties:

Coefficient of Thermal Expansion, ASTM D 696, K ⁻¹	2.89×10 ⁻⁴
Water Absorption, ISO 62, %:	
24 hours in water @ 22 °C	0
Shrinkage, %	0
Water Vapor Transmission Rate, ASTM E 96, g/(h·m ²)	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, ASTM D 150:	
100 Hz	2.9 / 0.002
100 kHz	2.88 / 0.003
Volume Resistivity, ASTM D 257, Ω·cm	8.3×10 ¹³

Cured @ 70 mW/cm² for 60 seconds per side plus 3 days @ 22°C / 50±5% RH

Physical Properties:

Shore Hardness, ASTM D 2240, Durometer A	≥25 ^{LMS}
Elongation, ASTM D 412, %	≥135 ^{LMS}
Tensile Strength, ASTM D 412	N/mm ² ≥1 ^{LMS} (psi) (≥145)
Tear Strength, ASTM D 624, Die B	N/mm ≥1.7 ^{LMS} (lb./in.) (≥9.7)

TYPICAL PERFORMANCE OF CURED MATERIAL**Adhesive Properties**

Cured @ 40 mW/cm² for 60 seconds, plus 7 days post UV
Cure @ 22 °C / 50% RH

Lap Shear Strength, ISO 4587:

Aluminum to Glass	N/mm ²	0.1 to 0.5
	(psi)	(15 to 70)
Steel to Glass	N/mm ²	0.4 to 1.2
	(psi)	(60 to 175)
Glass to Glass	N/mm ²	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

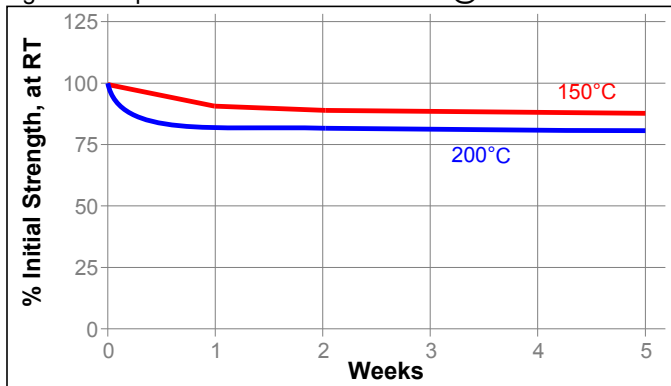
2 mm thick samples cured @ 40 mW/cm² for 60 seconds per side

Physical Properties

Tensile Strength, ASTM D 412

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 Material Safety Data Sheet (MSDS).

Directions for use

1. For best performance bond surfaces should be clean and free from grease.
2. The product is designed to be initially cured with UV light at a minimum irradiance of 30 mW/cm² for approximately 20 seconds, increased exposure may be required for curing deeper sections.
3. Functional strength is achieved almost instantly.
4. Full performance properties will develop over 72 hours.
5. 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.
6. Excess material can be easily wiped away with non-polar solvents.

Loctite Material Specification^{LMS}

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
N x 0.225 = lb
N/mm x 5.71 = lb/in
N/mm² x 145 = psi
MPa x 145 = psi
N·m x 8.851 = lb·in
N·mm x 0.142 = oz·in
mPa·s = cP

Note

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Reference 1.1