LOCTITE® 5963™

November 2004

PRODUCT DESCRIPTION

LOCTITE® 5963™ provides the following product characteristics:

Technology	Silicone
Chemical Type	Silicone
Appearance (uncured)	Grey paste[LMS]
Components	One component - requires no mixing
Cure	Heat cure
Application	Gasketing
Specific Benefit	Nonslumping

LOCTITE® 5963™ is designed to be easily dispensed and cured directly onto manufactured components to form cured-in-place compression gaskets. It is resistant to automotive underhood oils, ethylene glycol/water mixtures, and other fluids. Typical applications include valve covers, cam covers, radiator end tanks, front covers, ABS modules, engine and air bag control modules, and water pumps.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Specific Gravity @ 25 °C	1.38
Flash Point - See MSDS	
Flow, ISO 7390, mm	≤12.7
Extrusion Rate, g/min:	
Pressure 0.62 MPa, time 15 seconds, temperature 25 °C:	
Semco Cartridge	80 to 350[LMS]

TYPICAL PROPERTIES OF CURED MATERIAL

Cured for 1 hour @ 150 °C

Physical Properties:

Shore Hardness, ASTM D 2240, Durometer A		43 to 53[LMS]
Elongation, ASTM D 412, %		300 to 475[LMS]
Tensile Strength, ASTM D 412	N/mm²	4 to 6.2[LMS]
	(psi)	(580 to 900)
Tensile Modulus, ASTM D 412	N/mm²	1.97
	(psi)	(285)
Compression Set, ASTM D 395, Method B, %:		
Aged @ 177°C for 22 hours		≤45[LMS]
Aged @ 150°C for 168 hours		37
Aged @ 135°C for 1,008 hours		50
Compression Set Relaxation, Sealing force retained, %:		
Aged @ 150°C for 1,008 hours:		
ASTM service fluid 105 oil		17

TYPICAL PERFORMANCE OF CURED MATERIAL

Adhesive Properties

Cured for 1 hour @ 150 °C, tested @ 22 °C

Lap Shear Strength, ISO 4587:		
Aluminum	N/mm²	≥2.75[LMS]
	(psi)	(≥399)

TYPICAL ENVIRONMENTAL RESISTANCE

Heat Aging

Aged @ 200°C for 168 hours:	
Change in Durometer, Points	7
Change in Tensile Strength, %	16
Change in Elongation, %	-60
Visual	No Cracks

Typical Fluid Immersion Properties

Aged @ 150°C for 70 hours:	
ASTM IRM 902 oil:	
Change in Durometer, Points	-4
Change in Tensile Strength, %	-11
Change in Elongation, %	-10
Volume Swell, %	10
Compression Set, %	15
ASTM service fluid 105 oil:	
Change in Durometer, Points	-12
Change in Tensile Strength, %	-44
Change in Elongation, %	-31
Volume Swell, %	33
Compression Set, %	3
Aged @ 110°C for 70 hours:	
Ethylene glycol/water, 50:50:	
Change in Durometer, Points	3
Change in Tensile Strength, %	11
Change in Elongation, %	-28
Volume Swell, %	0
Compression Set, %	25

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. Product should be brought to room temperature before use.
2. For best performance bond surfaces should be clean and free from grease.
3. Excess material can be easily wiped away with non-polar solvents.
4. It is recommended that this product be heat cured at @ 150 °C for 10 minutes.
5. Actual cure schedule depends on mass and geometry of parts.

Loctite Material Specification[LMS]

LMS dated September 24, 2004. 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: 2 °C to 8 °C. Storage below 2 °C or greater than 8 °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

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