Product 3888

July 2003

PRODUCT DESCRIPTION

LOCTITE® 3888 Silver Filled Conductive Adhesive provides the following product characteristics:

Technology	Epoxy
Chemical Type	Epoxy
Appearance (Resin)	Silver paste[LMS]
Appearance (Hardener)	Clear to amber liquid[LMS]
Components	Two part - Resin & Hardener
Viscosity	Thick paste
Cure	Room Temperature Cure
Application	Bonding
Key Substrates	Electronic components
Other Application Areas	Thermally conductive
Dispense Method	Syringe
Operating Temperature	Up to +80°C

Product 3888 is designed for bonding of metals, ceramics, rubbers and plastics as used in electronic parts, where good adhesion combined with electrical and thermal conductivity is required. Typical applications include solder replacement, repair/rework of interconnections, and bonding of heat sensitive components where solder temperatures are impractical.

TYPICAL PROPERTIES OF UNCURED MATERIAL

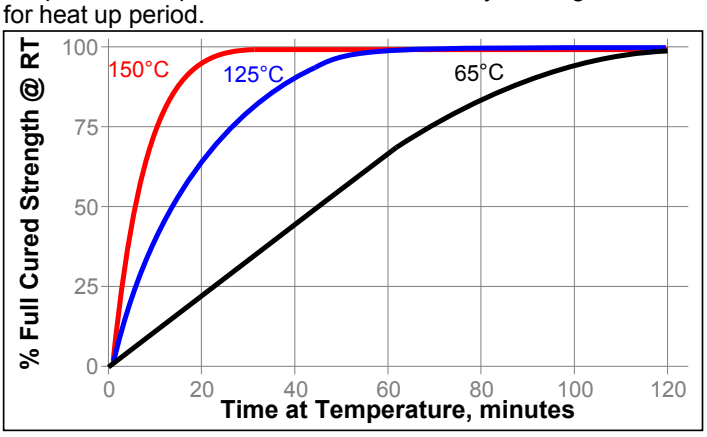
Specific Gravity @ 25°C	2.50
Hardness, Shore D	89
Mix Ratio, Resin: Hardener	100:6
Pot life, minutes	90

TYPICAL CURING PERFORMANCE

Recommended conditions for curing are exposure to room temperature heat for 24 - 48 hours. Rate of cure and final strength will depend on the residence time at the cure temperature.

Cure Speed vs. Time, Temperature

The following graph shows the rate of torque strength developed with time at different temperatures. These times are defined from the moment the adhesive reaches cure temperature. In practice, total oven time may be longer to allow for heat up period.



TYPICAL PROPERTIES OF CURED MATERIAL

Cured for 24 hours @ 22°C.

Physical Properties:

Coefficient of Thermal Expansion, ASTM E 831-93, µm/(m°C)	$<50\times10^{-6}$
Coefficient of Thermal Conductivity, W/m°C	>1.50
Glass Transition Temperature, Tg, ASTM D 3418-82, °C	50
Extractable Ionic Content:	
Flourine, ppm	<6.00
Chloride, ppm	95.80
Potassium, ppm	4.20
Sodium, ppm	2.80

Electrical Properties:

Volume Resistivity, MIL 883 E, Method 5011, Ωcm	<0.001

Cured for 1 hour @ 125°C.

Electrical Properties:

Volume Resistivity, MIL 883 E, Method 5011, Ωcm	≤0.0005[LMS]

PERFORMANCE OF CURED MATERIAL

Cured for 24 hours @ 22°C.

Adhesive Properties:

Shear Strength, ASTM D 1002, N/mm² :	
Aluminum	≥12

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).

Storage

Store product in the unopened container in a dry location. Storage information may be indicated on the product container labeling.

If supplied as separate containers of parts A and B, store at room temperature for up to 6 months. If supplied pre-mixed and frozen, store at -40°C for up to 1 year. Shelf life will vary with speciality packages

Material removed from containers may be contaminated during use. Do not return product to the original container. Loctite 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.

Loctite Material Specification[LMS]
LMS dated July 15, 2003. 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 Loctite Quality.

Conversions
(°C x 1.8) +32 = °F
kV/mm x 25.4 = V/mil
mm x 0.039 = inches
mPas = cP
N/mm² x 145 = psi
N x 0.225 = lbs

Note
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 Loctite 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 Loctite Corporation's products. Henkel Loctite 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 Loctite 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.

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Reference 0.0