



LOCTITE® 3861™

December 2006

PRODUCT DESCRIPTION

LOCTITE® 3861™ provides the following product characteristics:

Technology	Epoxy
Chemical Type	Epoxy
Appearance (Resin)	Black liquid ^{LMS}
Appearance (Hardener)	Clear to amber liquid ^{LMS}
Appearance (Mixed)	Black Solid ^{LMS}
Components	Two part - Resin & Hardener
Viscosity	Low
Cure	Heat cure
Application	Potting, Encapsulating or Casting
Other Application Areas	Thermal conduction
Key Substrates	Electronic components
Mix Ratio, by weight - Resin : Hardener	100 : 9.5

LOCTITE® 3861™ is a low viscosity versatile epoxy casting system that exhibits high thermal conductivity and low thermal expansion. It is recommended for electronic/electrical casting and encapsulating applications that require a unique combination of excellent wetting, flow, good thermal expansion coefficients, thermal shock resistance, high heat transfer capabilities and outstanding electrical properties. Fully cured LOCTITE® 3861™ is highly resistant to weathers, water, gases and vapors, petroleum lubricants and fuels and many mild acids and alkalis.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Resin:

Viscosity, Brookfield - resin, 25 °C, mPa·s (cP):	
Spindle 7, speed 5 rpm	40,000 to 70,000 ^{LMS}
Spindle 7, speed 50 rpm	19,000 to 39,000 ^{LMS}
Thixo ratio:	
5 RPM / 50 RPM	≥1.8 ^{LMS}
Specific Gravity @ 25 °C	2.25 to 2.45 ^{LMS}
Flash Point - See MSDS	

Mixed:

Viscosity @ 25°C, mPa·s (cP)	
After mixing, extrusion	10,000
Flash Point - See MSDS	

TYPICAL CURING PERFORMANCE

Recommended Curing Conditions

120 minutes @ 100 °C
60 minutes @ 180 °C

TYPICAL PROPERTIES OF CURED MATERIAL

Cured for 2 hours @ 130 °C

Physical Properties:

Coefficient of Thermal Expansion, ISO 11359-2, K ⁻¹	28×10 ⁻⁶
Coefficient of Thermal Conductivity, ISO 8302, W/(m·K)	1.25
Glass Transition Temperature, ISO 11357-2, °C	118
Tensile Strength, ISO 527-3	≥48 (6,960)
Elongation, ISO 527-3, %	6.2
Shore Hardness, ISO 868, Durometer D	≥75

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).

Loctite Material Specification^{LMS}

LMS dated April 13, 2005 (Resin) and LMS dated April 5, 2005 (Hardener). 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.

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. If supplied pre-mixed and frozen, store at -40 °C. Shelf life will vary with speciality packages

. 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/mm² 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 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 0.0