

PRODUCT DESCRIPTION

LOCTITE® Product 3886 is a silver plated copper flake filled, two-component, epoxy adhesive that will cure at room temperature in 24 hours or at elevated temperatures in shorter amounts of time. It combines high tensile strength with good electrical and thermal conductivity. Product 3886 offers the conductivity and environmental stability obtained with conventional silver filled epoxies while maintaining the economy of a copper-filled formulation. It can be used to bond such substrates as copper, brass, lead, aluminium, steel, nickel, ceramic and FR-4 with operating temperatures ranging from -54 to 121 °C. Cured properties are determined by the time and temperature of the cure cycle. Clean parts are essential for proper cure and adhesion.

TYPICAL APPLICATIONS

Designed for Solder Replacement

- Room temperature cure for attaching heat sensitive components or moulded interconnects
- PCB repair, passive and active component replacement
- Bonding RFI/EMI gaskets
- Ground paths

PROPERTIES OF UNCURED MATERIAL

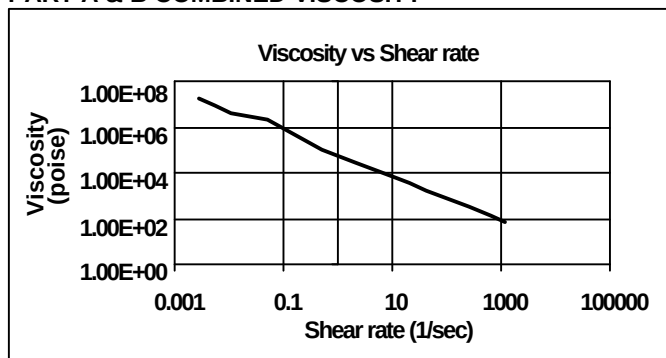
PART A

	Typical Value
Chemical Type	Epoxy
Appearance	Copper
Viscosity @ 25°C, mPa.s (cP)	3,000,000
VOC (g/l)	0
Flash Point (TCC), °C	200

PART B

	Amine
Chemical Type	
Appearance	Light Straw
Viscosity @ 25°C, mPa.s (cP)	25
VOC (gl)	980
Flash Point (TCC), °C	118

PART A & B COMBINED VISCOSITY



Viscosity data was generated on a Carri-Med CS Rheometer (temperature 21°C) 2 degree cone.

TYPICAL CURING PERFORMANCE

Product 3886 will cure to its final properties in 24 hours at room temperature (21°C). The cure can be accelerated by exposing the product to elevated temperatures. It should be noted that conductivity and adhesive properties will be improved by curing at elevated temperatures.

Cure times at temperature as determined by DSC:

@80 °C	15 min.
@100 °C	7 min.
@125 °C	3 min.

The above times give an indication of the time/temperature relation needed to cure the adhesive. Actual times needed will be longer since various part and board configurations heat at different rates depending on mass and types of ovens used. The adhesive itself needs reach the indicated temperature for the indicated time to achieve full cure.

TYPICAL PROPERTIES OF CURED MATERIAL

Physical Properties

	Typical Value
Volume Resistivity, Mil 883D, ohm-cm	< 0.0005
Coefficient of thermal expansion, ASTM D696, K ⁻¹	94 x 10 ⁻⁶
Tg, °C	72
Thermal Conductivity, W/m²C	1.0
Modulus, psi	292,000
Tensile @ peak, psi	3,383
Elongation @ peak, %	2.3
Weight Loss 30 minute @ 200 °C, %	0.30
Chloride, ppm	332
Sodium, ppm	1
Potassium	4

PERFORMANCE OF CURED MATERIAL

Lapshear Strength

Materials cured as indicated.

Material	1Hr @ 130 °C PSI	7 days RTC PSI
Copper	800	400
G-10	1,100	370
Glass	250	500
Aluminium	540	430

NOT FOR PRODUCT SPECIFICATIONS.

THE TECHNICAL DATA CONTAINED HEREIN ARE INTENDED AS REFERENCE ONLY.

PLEASE CONTACT LOCTITE CORPORATION QUALITY DEPARTMENT FOR ASSISTANCE AND RECOMMENDATIONS ON SPECIFICATIONS FOR THIS PRODUCT.

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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 oxidising materials.

For safe handling information on this product, consult the Material Safety Data Sheets, (MSDS).

Where aqueous washing systems are used to clean the surfaces before bonding, it is important to check for compatibility of the washing solution with the adhesive. In some cases these aqueous washes can affect the cure and performance of the adhesive.

This product is not normally recommended for use on plastics (particularly thermoplastic materials where stress cracking of the plastic could result). Users are recommended to confirm compatibility of the product with such substrates.

Directions for use

Add 1 part by weight of product 3886 Part "B" to 14.6 parts by weight of product 3886 Part "A". Gently stir with a spatula until the mixture is a uniform consistency. If material is supplied in a two compartment pouch then remove divider and carefully knead the two components together until the mixture is uniform.

At room temperature (70 °F) product 3886 will have a useful pot life (before doubling in viscosity) of 30 minutes or more after mixing.

Storage

Products should be stored at room temperature. Avoid exposure to heat. Dispense from original container only.

Data Ranges

The data contained herein may be reported as a typical value and/or range (based on the mean value ± 2 standard deviations). Values are based on actual test data and are verified on a periodic basis.

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, 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 Loctite Corporation's products. 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 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.