Technical Data Sheet

LOCTITE 3626M

July 2014

PRODUCT DESCRIPTION

LOCTITE 3626M provides the following product characteristics:

Technology	Epoxy
Chemical Type	Epoxy
Appearance (uncured)	Red gel-like material[LMS]
Components	One component - requires no mixing
Cure	Heat cure
Application	Surface mount adhesive
Key Substrates	SMD components to PCB
Other Application Areas	Small parts bonding
Dispense Method	Syringe and Stencil print

LOCTITE 3626M is designed for bonding of surface mounted devices to printed circuit boards prior to wave soldering. This material is formulated to give excellent dot size and shape control when applied with a stencil using hand print or machine print process. LOCTITE 3626M is halogen free and offers a very high thermal mechanical strength even at temperatures as high as 260ºC.

TYPICAL PROPERTIES OF UNCURED MATERIAL

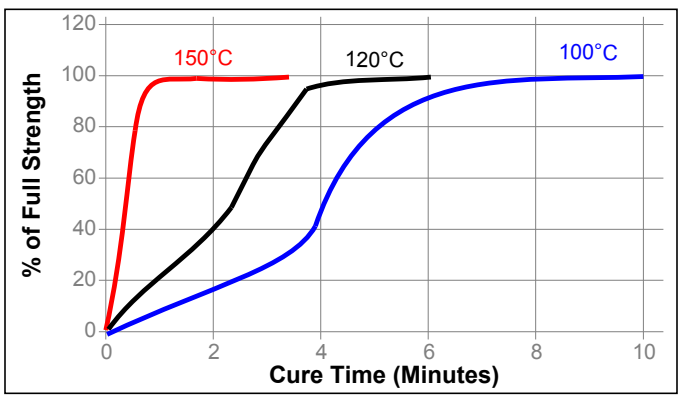
Specific Gravity @ 25 °C	1.4
Density, g/cm³	1.3
Flash Point - See SDS	
Yield Point, 25 °C, Pa	190 to 250[LMS]
Cone & Plate Rheometer:	
Haake PK 100, M10/PK 1 2° Cone	
Casson model @ 0.4 - 30 s^{-1}	

TYPICAL CURING PERFORMANCE

Recommended conditions for curing are exposure to heat above 100ºC, (minimum 120 seconds at 130°C or 90 secs at 150°C at the bondline). Rate of cure and final strength will depend on PCB type and population, ramp up temperature, stability of the component temperature and residence time at temperature.

Cure Speed vs. Time, Temperature

The following graph shows the rate of conversion with time under certain temperature.



TYPICAL PROPERTIES OF CURED MATERIAL

Cured for 30 minutes @ 150 °C

Physical Properties

Coefficient of Thermal Expansion, ASTM D696, K^{-1}:	
Below Tg, µm/mºC	48
Above Tg, µm/mºC	184
Glass Transition Temperature (Tg), °C	138

TYPICAL PERFORMANCE OF CURED MATERIAL

Shear Strength

Shear Strength, ISO 4587, ASTM D1002, Sample cured 30 minutes @ 150°C:

Grit Blasted Mild Steel	N/mm²	18
	(psi)	(2,610)

Push Strength, per IPC SM817, Sample cured 5 minutes @ 125°C

TYPICAL ENVIRONMENTAL RESISTANCE

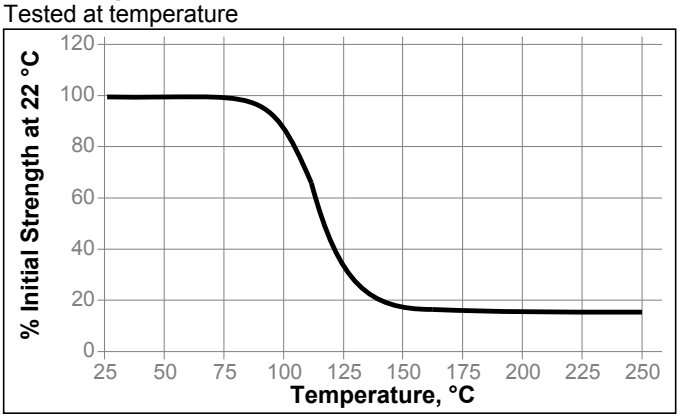
Cured for 30 minutes @ 150 °C

Lap Shear Strength, ISO 4587:

Mild steel (grit blasted)

Hot Strength

Tested at temperature



Resistance to Hot Solder Dip

Cured for 90 seconds @ 150 °C

Hot Solder Dip, IPC SM817, TM-650 Method 2.4.42.1, Pass/Fail:

R-1206 on bare FR4 board:

Supported 60 seconds above solder bath @ 260°C and dipped for 10 seconds	Pass

Resistance to Process Conditions

Cured for 90 seconds @ 150 °C

Torque Strength, IPC SM817,TM-650 Method 2.4.42, % of initial strength retained:

C-1206 on bare FR4 board:

Aged 30 seconds preheat to 100°C and 3 seconds @ 260°C with flux and wave solder	100

Resistance to Lead Free Solder

LOCTITE 3626M can be used in lead free wave solder with both water based and alcohol based fluxes

Lead Free Solder Test Conditions

Flux Types	Multicore MF200 (alcohol based) and Multicore MF300 (water based)
Wave Condition	100°C pre-heat with dual wave at 260°C
Components	C1608 bonded with twin dot 0.8mm SOD 80 bonded with single dot 1.1mm
Result	No component loss in the wave

GENERAL INFORMATION

For safe handling information on this product, consult the Safety Data Sheet (SDS).

Directions for use:

A. Syringe Dispense Use

1. LOCTITE 3626M is supplied de-aerated in a range of ready-to-use syringes which fit straight into a variety of air pressure/time dispensing systems commonly available.
2. After storage in a refrigerator the adhesive must be allowed to equilibrate to room temperature before use, typically 2 to 4 hours.
3. Avoid cross contamination with other adhesive residues by ensuring dispense nozzels, adapters etc. are thoroughly cleaned .
4. Do not leave dirty nozzles on dispensing equipment while not in use or soaking in solvents for long periods of time.
5. The quantity of adhesive dispensed will depend on the dispense pressure, time, nozzle size and temperature.
6. These parameters will vary depending on the type of dispensing system used and should be optimised accordingly.
7. Dispensing temperature should ideally be controlled at a value between 30 °C to 35 °C for optimum results, however higher dispense temperatures are possible.
8. LOCTITE 3626M can also be dispensed using positive displacement pump systems.
9. The product is not recommended for dispensing by pin transfer.
10. Uncured adhesive can be cleaned from the board with isopropanol, MEK or ester blends such as LOCTITE® 7360™.

B. Stencil Print Use

1. LOCTITE 3626M is suitable for all common open squeegee and enclosed head stencil printing systems, such as ProFlow®, PumpPrint®, Varidot™. Loctite stencil print Chipbonders are suitable for print speeds of 20 mm/s up to 150 mm/s - this will vary with product selected and printer set-up.
2. After storage in a refrigerator the adhesive must be allowed to equilibrate to room temperature before use, typically 2 to 4 hours.
3. Printing conditions should be about 25°C, and RH less than 70 % for optimum results. Higher temperatures will decrease the viscosity and will effect the printing results. Higher humidity conditions may lead to moisture pick up and will reduce the "on stencil" life of the product: At 25°C, 55 % RH, the product will remain dispensable on the stencil for a maximum of 5 days of continuous operation. The quality of the print results will depend on board support, print gap, print speed, print pressure and separation speed.
4. Typical starting parameters (steel stencil/ steel squeegee/ single stroke mode*):

Print Speed	60 mm/s
Squeegee Pressure	3 to 4 N/cm (just enough to clean the stencil)
Separation Speed	0.1 to 3 mm/s
Gap between Stencil and PCB	On contact

*For higher dots Print and Flood Mode can be used. Set up pressure for front squeegee as described above. For flood printing, rear squeegee pressure should be set to 0 kg to leave a sufficient adhesive layer (1 to 2 mm) on the stencil. These parameters will vary depending on type of printing process and should be optimized accordingly.

5. Uncured adhesive should only be cleaned from the board with isopropanol, MEK or ester blends such as LOCTITE® 7360™. Alcohols (e.g. Isopropanol) can cure the adhesive and may lead to blocked apertures if left on the stencil for over 5 minutes. Automatic under-stencil-wipe is not recommended.
6. Cured adhesive can only be removed mechanically with the aid of heat.

Loctite Material Specification[LMS]

LMS dated July 02, 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 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
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

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Reference N/A