



PRODUCT INFORMATION

HIGH TECHNOLOGY MATERIALS

MERECO XLN-589 FLEXIBLE, THERMALLY CONDUCTIVE ADHESIVE AND SEALANT

Mereco XLN-589 is a new, flexible, thermally conductive adhesive sealant that is an excellent replacement for silicone RTV's and rigid epoxy systems where a compliant thermally conductive adhesive system with good bond strength is required. XLN-589 has found extensive use in bonding electronic components to epoxy coated aluminum heat sinks on circuit boards, since it maintains its properties during brief, high temperature operations like wave soldering.

Easy Mix Ratio, Flexible Cure Schedule

XLN-589 has an easy, one-to-one (1-1) mix ratio, with a long working life of 4 hours at room temperature, and the ability to be cured in 48 hours at room temperature or 4 hrs. at 65° C.

Cure Schedule

Hours	°C
4	65
48	25

The outstanding properties of XLN-589 are high adhesion, room temperature or heat accelerated cure schedule, forgiving one-to-one (1-1) mix ratio, long working life, repairability, thermal conductivity, and flexibility, all combined with a very low glass transition temperature which makes it suitable for military and low-temperature applications. Additionally, XLN-589 is lower in cost than Silicone RTV's and does not produce corrosive by products such as acetic acid during cure.

XLN-589 has proven to be an excellent choice in surface mount adhesive applications where low thermal expansion and low solder joint stress is desired. In high reliability applications, XLN-589 expansion coefficient does not have an impact on leaded component solder joint reliability.

Typical Properties of Uncured XLN-589

Product	Activator	Base	Mixture
Color	Gray	Gray	Gray
Form	Paste	Paste	Paste
Specific Gravity	2.2	2.0	2.1
Viscosity (25° / 25° C)			
Brookfield 5 RPM	250,000	60,000	80 – 250, 000
Brookfield 50 RPM	40,000	20,000	20 – 40,000
Flash Point, °C	87	171	N/A

Typical Properties of Cured XLN-589

Mechanical	
Form	Tough, Rubbery
Shore Durometer, A	85 +/-10
Modulus of Elasticity, psi	3,075
Tensile Lap Shear (AL-AL), psi	300
Thermal	
Operating Range °C, continuous	-55 to 150
Intermittent	to 177
Expansion Coefficient, 10 ⁶ X °C ⁻¹	140
Thermal Conductivity, W/m ² K	0.5
Btu-in-hr ⁻¹ - ft ⁻² - °F ⁻¹	3.2
Glass Transition Temperature, °C	-54
Electrical	
Dielectric Strength, volts/mil	350
Volume Resistivity, ohm-cm	1 x 10 ¹⁴
Dielectric Constant, 1000 Hz	4.7

Mereco CLN-845

Mereco CLN-845 is a version of Mereco XLN-589 which has a thermal conductivity of 3.7 and a slightly higher viscosity.

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Preparation of Mixture

For product purchases in two-component kits, mix the entire contents of Mereco XLN-589 base and activator in their original shipping containers to a uniform consistency and color, each time, before dispensing. Take care to incorporate all material adhering to the bottom, sides and corners of the containers. Mechanical mixing of the components for two to three minutes is satisfactory. Measure only the approximate amount that can be applied in four hours. A four day quantity may be mixed if promptly packaged, air free, in sealed containers and stored at 0° C. The premixed, frozen packaging needs thawing before dispensing. This normally takes no longer than 5 minutes at 25° C.

Air Removal

Air entrapment during mixing may be removed in vacuum (5 mm of mercury). The holding container should be no more than one-third full. Allow the mixture to foam and then subside. Maintain the low pressure for several more minutes, at which point most of the large bubbles have broken.

Application

The adhesive should be applied in a 2-5-mil thickness to one surface after which the parts are mated and set aside to cure using the recommended cure schedules on the front of this data bulletin.

Safety, Storage, and Handling

Before using Mereco XLN-589, consult the Material Safety Data Sheet for appropriate handling procedures and protective equipment.

Availability and Order Information

Packaging

Mereco XLN-589 is available as a two-component kit consisting of separate equal weight containers of epoxy resin and curing agent. XLN-589 is available in pint, quart, one gallon, five gallon, and fifty-five gallon drum kits. A one gallon kit contains 8 pounds of base and 8 pounds of activator. On special order, the product can also be made available in collapsible tubes in 2 oz. and 4 oz. sizes.

Mereco can also package XLN-589 in dual-pouch mixing packages, and in dual cartridges with a hand-held gun for hand dispensing. In both methods, the two components are premeasured, kept separate until needed, and do not need freezing.

For those customers who do not want to mix XLN-589, premixed and frozen syringes (usually EFD style) and smaller plastic cups are available. The premixed syringes or cups are degassed and frozen (-40° C) at the factory. The package requires frozen storage and prompt action at the receiving platforms to ensure that the package contents do not thaw prematurely.

When ordering, specify the name, number, letter designation, color, quantity, container size and packaging form. The order should be placed with the Mereco order entry department at 1-800-556-7164 or by mail to the address listed on this bulletin. The minimum order size is \$100.00. Evaluation kits are available for \$40.00. The \$40.00 fee will be credited against the first order for the product.