PRODUCT INFORMATION

HIGH TECHNOLOGY MATERIALS

MERECO XL-389 FRLV
FLEXIBLE, THERMALLY CONDUCTIVE, FLAME RETARDANT
EPOXY ENCAPSULANT AND POTTING COMPOUND

Mereco XL-389 FRLV is a new, flexible, low viscosity thermally conductive epoxy potting and encapsulating compound which will pass UL-94V0 requirements and has been specifically designed for potting transformers and power supplies where minimal change in inductance after potting is required. XL-389 FRLV has found extensive use in potting state of the art power components such as AC Input products, DC Input products, attenuator modules, module evaluation boards, military power components, as well as conventional power supplies. XL-389 FRLV's low viscosity allows it to penetrate difficult to pot areas.

Easy Mix Ratio, Flexible Cure Schedule XL-389 FRLV 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 XL-389 FRLV 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, XL-389 FRLV is lower in cost than Silicone RTV's and does not produce corrosive by products such as acetic acid during cure.

XL-389 FRLV has proven to be an excellent choice in power component potting applications where inductance drops after potting need to be less than 5% compared to power component inductance before potting.

Typical Properties of Uncured XL-389 FRLV

Product	Activator	Base	Mixture
Color	Gray	Gray	Gray
Form	Paste	Paste	Paste
Specific Gravity	2.1	2.2	2.15
Viscosity (25°/25° C) Brookfield 5 RPM Brookfield 20 RPM	 33,200 17,500	 10,800 11,400	 20-25,000 15-20,000
Flash Point, ° C	87	171	N/A

Typical Properties of Cured XL-389 FRLV

Should not be used for specification purposes

Mechanical	
Form	Tough, Rubbery
Short 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} to $°C^{-1}$	60 – 65
Thermal Conductivity, Btu-in-hr^{-1}-ft^{-2}-$°F^{-1}$	3.83
Glass Transition Temperature, °C	-34
Electrical	
Dielectric Strength, volts/mil	350
Volume Resistivity, ohm-cm	1 x 10^{14}
Dielectric Constant, 1000 Hz	4.7

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Preparation of Mixture

For product purchased in two-component kits, mix the entire contents of Mereco XL-389 FRLV 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 material can be poured in the required thickness after which the parts are set aside to cure using the recommended cure schedules on the front of this data bulletin.

Safety, Storage and Handling

Before using Mereco XL-389 FRLV, consult the Material Safety Data Sheet for appropriate handling procedures and protective equipment.

Availability and Order Information

Packaging

Mereco XL-389 FRLV is available as a two-component kit consisting of separate equal weight containers of epoxy resin and curing agent. XL-389 FRLV is available in pint, quart, 2 quart and 2-gallon kits.

For those customers who do not want to mix XL-389 FRLV, 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.