Hysol

STYCAST EFF15

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PRODUCT DESCRIPTION

STYCAST EFF15 provides the following product characteristics:

Technology	Epoxy
Appearance	Light yellow
Cure	Heat cure
Product Benefits	• One component • Excellent dielectric properties • Low stress • Low shrinkage • Self-extinguishing
Operating Temperature	-65 to +175ºC
Application	Encapsulant

STYCAST EFF15 epoxy based free flowing syntactic foam powder is designed to be able to infiltrate around densely packed components and fill voids in electronic modules. This material exhibits low shrinkage during cure so that little stress is transmitted to the embedded components.

STYCAST EFF15 self extinguishes after an external flame is removed.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Density, ASTM-D-792, g/cm³	0.24
Shelf Life @ 10°C (from date of manufacture), months	6
Flash Point - See MSDS	

TYPICAL CURING PERFORMANCE

Cure Schedule

24 hours @ 100°C
4 hours @ 120°C
2 hours @ 150°C

The above cure profiles are guideline recommendations. Cure conditions (time and temperature) may vary based on customers' experience and their application requirements, as well as customer curing equipment, oven loading and actual oven temperatures.

TYPICAL PROPERTIES OF CURED MATERIAL

Physical Properties

Coefficient of Thermal Expansion , ASTM D 3386, ppm/°C	21
Thermal Conductivity, ASTM D-2214, W/mK	0.12

Electrical Properties

Dielectric Strength , ASTM D149, kV/mm	7.9
Dielectric Constant / Dissipation Factor, ASTM D150: @ 8.6GHz	1.38/0.006

TYPICAL PERFORMANCE OF CURED MATERIAL

Miscellaneous:

Compressive Strength , ASTM-D695	N/mm²	1.03
	(psi)	(150)

GENERAL INFORMATION

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

DIRECTIONS FOR USE

1. Complete cleaning of the components and substrates should be performed to remove contamination such as dust, moisture, salt and oils which can cause electrical failure, poor adhesion or corrosion in an embedded part.
2. Some separation of components is common during shipping and storage. For this reason, it is recommended that the contents of the shipping container be thoroughly mixed by tumbling or shaking prior to use.
3. STYCAST EFF15 has excellent adhesion to a variety of materials. This is of value when the cured foam is to remain in the cavity which it fills.
4. In the event that release from the mold is desired, a coating of paste wax or a silicone mold release such as MOLD RELEASE 122S is recommended.
5. Pour mixture into cavity or mold.
6. Overfill the cavity so there is a mound of material over the opening.
7. Place the container in a vibrating table and lightly vibrate until the level of the powder no longer changes. A spatula may be used to scrape off the excess and create a level surface.
8. One may also vibrate or tap the cavity by hand to fully infiltrate the cavity.
9. The final density of the system may be affected by the efficiency of the vibration method used.
10. The cured STYCAST EFF15 can be easily dug out of the cavity with tools to access or replace components. More STYCAST EFF15 is then added to the repair area and cured.
11. The cured material can be sealed with a liquid epoxy resin such as STYCAST 1090 to give the assembly enhanced moisture protection.

Storage

Store product in the unopened container in a dry location. Storage information may be indicated on the product container labeling.

Optimal Storage : 10 °C

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
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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Americas
+1.888.943.6535

Europe
+44.1442.278.000

Asia
+86.21.3898.4800

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