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STYCAST 2760 A/B

Two Component Epoxy/Urethane Encapsulant

Key Feature:	Benefit:
• Good adhesion to vinyl	• Bonds to vinyl insulated wires and cables
• Low viscosity	• Ease of use

Product Description:

STYCAST 2760 A/B is a two component, filled, room temperature curable, epoxy/urethane potting and encapsulating compound. It has been designed for excellent adhesion to vinyl substrates. The epoxy portion of the system offers good physical, mechanical, electrical, and chemical resistance properties, while the urethane portion offers good resilience, impact resistance, thermal shock, and cycling properties.

Applications:

STYCAST 2760 A/B is recommended for potting components containing vinyl insulated wires or cables.

Instructions For Use:

Thoroughly read the information concerning health and safety contained in this bulletin before using. Observe all precautionary statements that appear on the product label and/or contained in individual Material Safety Data Sheets (MSDS).

To ensure the long term performance of the potted or encapsulated electrical / electronic assembly, complete cleaning of 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.

Some filler settling is common during shipping and storage. For this reason, it is recommended that the contents of the shipping container be thoroughly mixed prior to use. Power mixing is preferred to ensure a homogeneous product.

Accurately weigh resin and hardener into a clean container in the recommended ratio. Weighing apparatus having an accuracy in proportion to the amounts being weighed should be used.

Blend components by hand, using a kneading motion, for 2-3 minutes. Scrape the bottom and sides of the mixing container frequently to produce a uniform mixture. If possible, power mix for an additional 2-3 minutes. Avoid high mixing speeds which could entrap excessive amounts of air or cause overheating of the mixture resulting in reduced working life.

To ensure a void-free embedment, vacuum deairing or degassing should be performed to remove any entrapped air introduced during the mixing operation. Pump-down or pull vacuum on the mixture to achieve an ultimate vacuum or absolute pressure of 1- 5 torr or mm Hg. The foam will rise several times the liquid height and then subside. Continue vacuum deairing until most of the bubbling has ceased. This usually requires 3-10 minutes.

To facilitate deairing in difficult to deair materials, add 1-3 drops of an air release agent, such as ANTIFOAM 88, into 100 grams of mixture. Gentle warming will also help, but working life will be shortened.

Pour mixture into cavity or mold. Gentle warming of the mold or assembly reduces the viscosity. This improves the flow of the material into the unit having intricate shapes or tightly packed coils or components. Further vacuum deairing in the mold may be required for critical applications.

Properties of Material As Supplied:

Property	Test Method	Unit	Value - Part A	Value - Part B
Chemical Type			Epoxy/Urethane	Amine
Appearance	Visual		Black liquid	Black liquid
Density	TP-13	g/cm^3	1.60	1.46
Brookfield Viscosity	TP-10 or TP-11	Pa.s cP	53 53,000	9.6 9,600

Properties of Material As Mixed:

Property	Test Method	Unit	Value
Mix Ratio - Amount of Part B per 100 parts of Part A		By Weight By Volume	50 55
Working Life (100 g @ 25°C)	ERF 13-70	Minutes	60
Density	TP-13	g/cm^3	1.55
Brookfield Viscosity	TP-10 or TP-11	Pa.s cP	18 18,000

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Cure Schedule:

Cure at any one of the recommended cure schedules. For optimum performance, follow the initial cure with a post cure of 2 - 4 hours at the highest expected use temperature.

Temperature	Cure Time
°C	Time (hour)
25	24 – 48
65	4
100	2

Properties of Material After Application:

Property	Test Method	Unit	Value
Hardness	TP-311	Shore D	80
Flexural Strength	ASTM-D-790	mPa psi	15.9 2,300
Compressive Strength	TP-207	mPa psi	76 11,000
Coefficient of Thermal Expansion	TMA	10^{-6}/°C	122
Thermal Conductivity	ASTM-D-2214	W/m.K Btu-in/hr-ft^2-°F	0.6 4.2
Temperature Range of Use		°C	-40 to +130
Dielectric Strength	TP-297	kV/mm V/mil	17.7 450
Dielectric Constant @ 1 mHz	TP-184	-	3.95
Dissipation Factor @ 1 mHz	TP-184	-	0.011
Volume Resistivity @ 25°C	TP-183	Ohm-cm	>10^{14}

TPs are internal test procedures typically derived from ASTM or other norms. Copies of these test procedures can be obtained upon request.

Storage and Handling:

The shelf life of STYCAST 2760 Parts A and B are 6 months at 25°C. For best results, store in original, tightly covered containers. Storage in cool, clean and dry areas is recommended. Certain resins and hardeners are prone to crystallization. If crystallization does occur, warm the contents of the shipping container to 50-60°C until all crystals have dissolved. Be sure the shipping container is loosely covered during the warming stage to prevent any pressure build-up. Allow contents to cool to room temperature before continuing.

Health and Safety:

The STYCAST 2760 Part A, like most epoxy compounds, possesses the ability to cause skin and eye irritation upon contact. Certain individuals may also develop an allergic reaction after exposure (skin contact, inhalation of vapors, etc.) which may manifest itself in a number of ways including skin rashes and an itching sensation. Handling this product at elevated temperatures may also generate vapors irritating to the respiratory system.

The STYCAST 2760 Part B is classified as a corrosive material. Direct contact with unprotected eyes or skin can cause severe burns. Certain individuals may also develop an allergic skin or respiratory reaction after exposure. These reactions may manifest themselves in a number of ways including skin rashes, itching sensation and breathing difficulties. Handling this product may also generate vapors irritating to the respiratory system.

Good industrial hygiene and safety practices must be used when handling this product. Proper eye protection and appropriate chemical resistant clothing must be worn to prevent contact. Consult the Material Safety Data Sheet (MSDS) for detailed recommendations on the use of engineering controls , personal protective equipment and first aid procedures.

This information is only a brief summary of the available safety and health data. Thoroughly review the MSDS for more complete information before using this product.

Attention Specification Writers:

The technical information contained herein is consistent with the properties of this material but should not be used in the preparation of specifications as it is intended for reference only.

Medical Implantable Disclaimer

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