STYCAST® W 19

Very Low Viscosity, Epoxy Impregnant

Key Feature:	Benefit:
• Very low viscosity	• Ease of use and dispensing
• Excellent impregnation	• Complete encapsulation of tightly packed components and coils

Product Description:

STYCAST W 19 is an unfilled, 100% solids, epoxy impregnant that can be cured with a variety of catalysts. It can be used as a casting resin in applications where a small quantity (<25 grams) of material is needed.

Applications:

STYCAST W 19 is designed as an impregnant for tightly wrapped coils, small device potting, or as a surface coating applied by dip, brush, or spray.

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.

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 eliminate moisture absorbed in coils, paper, and other insulation components, the part to be impregnated or potted should be preheated to 100-120°C. For coil molding, preheat the components and mold to 70-90°C prior to pouring.

Submerge components in reservoir containing the STYCAST W 19 and allow to stand until assembly is completely penetrated by the resin. Vacuum can be applied to ensure complete penetration in components containing tightly wound coils. Remove impregnated assembly from reservoir and allow to drain.

Resin “runoff” from impregnated components can be minimized during cure when using Catalyst 11 by allowing units to stand overnight at 25-35°C, then curing for 4 hours at 105°C.

Properties of Material As Supplied:

Property	Test Method	Unit	Value
Chemical Type			Epoxy
Appearance	Visual		Clear, red liquid
Density	ASTM-D-792	g/cm^3	1.20
Brookfield Viscosity	ASTM-D-2393	Pa.s cP	0.25 250

Choice of Curing Agents		
Curing agent	Catalyst 9	Catalyst 11
Description	General purpose with good chemical resistance and physical strength.	Long pot life, excellent chemical resistance, good physical and chemical properties at elevated temperatures.
Type of cure	Room	Heat
Viscosity Pa.s cP	0.080 to 0.105 80 to 105	0.035 to 0.060 @ 65 °C 35 to 60 @ 65 °C

Properties of Material As Mixed:

Property	Test Method	Unit	Value	
			Catalyst 9	Catalyst 11
Mix Ratio - Catalyst per 100 parts of STYCAST W 19		By Weight By Volume	15 16.5	17.5 17.5
Working Life (100 g @ 25°C)	ERF 13-70		45 minutes	>4 hours
Density	ASTM-D-792	g/cm^3	1.09	1.11
Brookfield Viscosity	ASTM-D-2393	Pa.s cP	0.20 200	0.20 200

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. Alternate cure schedules may also be possible. Contact your Henkel Corporation Specialty Polymers Technical Representative for further information.

Temperature	Cure Time	
°C	Catalyst 9	Catalyst 11
25	16-24 hours	
45	4-6 hours	
65	1-2 hours	
80		8-16 hours
100		2-4 hours
120		30-60 minutes

Properties of Material After Application:

Property	Test Method	Unit	Value	
			Catalyst 9	Catalyst 11
Hardness	ASTM-D-2240	Shore D	78	78
Flexural Strength	ASTM-D-790	mPa psi		48 7,000
Water Absorption (7 days)	ASTM-D-570	%		0.2
Temperature Range of Use		°C	-40 to +130	-55 to +155
Dielectric Strength	ASTM-D-149	kV/mm V/mil	15.7 400	15.7 400
Dielectric Constant @ 1 mHz	ASTM-D-150	-		3.3
Dissipation Factor @ 1 mHz	ASTM-D-150	-		0.02
Volume Resistivity @ 25°C	ASTM-D-257	Ohm-cm	$>10^{12}$	$>10^{12}$

Storage and Handling:

The shelf life of STYCAST W 19 is 12 months at 25°C. For best results, store in original, tightly covered containers. Storage in cool, clean and dry areas is recommended. Usable shelf life may vary depending on method of application and storage conditions. 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 W 19, 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.

Good industrial hygiene and safety practices should be followed when handling this product. Proper eye protection and appropriate chemical resistant clothing should be worn to minimize direct contact. Consult the Material Safety Data Sheet (MSDS) for detailed recommendations on the use of engineering controls and personal protective equipment.

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 values contained herein are considered typical properties only and are not intended to be used as specification limits. For assistance in preparing specifications, please contact Henkel Quality Assurance for further details..

Medical Implantable Disclaimer

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