

# STYCAST<sup>0</sup> 2762

## Epoxy Encapsulant And Sealant For 260°C Use

Key Feature	Benefit

### Product Description :

STYCAST 2762 is an extremely high temperature epoxide encapsulant and sealing compound. It has a thermal expansion coefficient close to that of aluminum and brass. The material is usable over the temperature range from -70°C to 230°C. For short periods it is usable at 260°C. CATALYST 17 or CATALYST 14 are used for curing. CATALYST 17 is generally preferred because handleability is improved. Shrinkage during cure is negligible. Adhesion to metals, glass and plastic materials is excellent. Colour is black. (STYCAST 2762 FT has lower thermal conductivity and greater thermal expansion. It is not quite as good as STYCAST 2762 on thermal shock.)

STYCAST 2762 is compatible with STYCAST 2662. STYCAST 2762 has a higher heat distortion temperature and a lower thermal expansion coefficient than STYCAST 2662.

### Applications :

STYCAST 2762 is used to embed electronic compounds, to hermetically seal metal surfaces, or act as a high temperature resistant protective coating.

### Instructions For Use :

1. Powdered for paste applications - CATALYST 14.
  - 1.1. Mix STYCAST 2762 in the container in which it is received.
  - 1.2. Weigh out required quantity of STYCAST 2762. For each 100 parts of STYCAST 2762, use 8 parts of CATALYST 14. Mix the dry powdered CATALYST 14 into the resin at room

temperature. Extreme care should be taken to insure thorough mixing. The resultant mixture is almost paste consistency. It is stable for at least one day at room temperature. Slight improvement in pouring characteristics is obtained by warming to about 70°C.

- 1.3. Pour into mold or cavity. Vibration will improve flowability. For sealing applications, apply to the cleaned surfaces and squeeze out the excess. Cure for three hours at 120°C. For many applications this is adequate cure. For improved high temperature properties, cure for an additional three hours at 150°C.
2. Preferred for easy pourability - CATALYST 17.
  - 2.1. Mix STYCAST 2762 in the container in which it is received. Mix CATALYST 17 in its container to assure uniformity.
  - 2.2. For each 100 parts of STYCAST 2762 by weight, add 10 parts CATALYST 17. CATALYST 17 may be solid at room temperature. When warmed to about 65°C, it will become liquid. STYCAST 2762 can also be warmed to about 65°C to improve flowability. If desired, the catalyzed resin can be maintained at about 65°C. At this temperature, pot life is at least 8 hours. The item to be embedded and mold can also be preheated.
  - 2.3. Pour. Cure at 3 hours at 90°C, followed by 3 hours at 150°C. This cure cycle is adequate for most applications. For large or extremely critical castings, cure overnight (about 16 hours) at 65°C, followed by 3 hours at 120°C and 3 hours at 150°C. A post cure may also be used - 16 hours at 180°C.
  - 2.4. For certain applications, it is useful to gel STYCAST 2762 rapidly. This will prevent settling of the filler. In order to do this, add CATALYST 17 to STYCAST 2762 as mentioned above. In addition, add 2,5 parts by weight CATALYST 16 as an accelerator. Mix. Pot life is shortened, however, a gel is formed within 30 minutes at 95°C. Continue cure as indicated in Step 3.

Note : Heat up to 65°C to decrystallise product (maximum of 24 h, depending on packaging).

### Properties Of Material As Supplied :

Property	Test Method	Unit	Value
Chemistry			epoxy
Appearance	Visual		black
Density	ASTM-D-792	g/cm <sup>3</sup>	2,0 - 2,4
Viscosity at 25°C	ASTM-D-2393	Pa.s	70 - 110

### Cure Schedule :

Please refer to the instructions for use above.

### Properties Of Material After Application (with CATALYST 17) :

Property	Test Method	Unit	Value
Hardness	ASTM-D-2240	Shore D	90 minimum
Compressive Strength	ASTM-D-695	MPa	120
Elastic Modulus, Compressive	ASTM-D-695	MPa	8200
Flexural Strength at 20°C at 150°C	ASTM-D-790 ASTM-D-790	MPa MPa	70 minimum 50 minimum
Flexural Modulus at 20°C at 150°C	ASTM-D- ASTM-D-	MPa MPa	8000 minimum 5400 minimum
Thermal Conductivity	ASTM-D-2214	W/m.K	1,4
Coefficient Of Linear Thermal Expansion	ASTM-D-3386	10 <sup>-6</sup> K <sup>-1</sup>	20
Volume Resistivity at 20°C at 150°C	ASTM-D-257 ASTM-D-257	Ohm.cm Ohm.cm	10 <sup>16</sup> minimum 10 <sup>11</sup> minimum
Dielectric Constant at 60 Hz at 10 <sup>6</sup> Hz at 10 <sup>9</sup> Hz	ASTM-D-150 ASTM-D-150 ASTM-D-150		4,3 3,9 3,3
Dissipation Factor at 60 Hz at 10 <sup>6</sup> Hz at 10 <sup>9</sup> Hz	ASTM-D-150 ASTM-D-150 ASTM-D-150		0,007 0,009 0,012
Dielectric Strength at 20°C at 150°C	ASTM-D-149 ASTM-D-149	kV/mm kV/mm	16 14,8
Moisture Absorption In 24 h	ASTM-D-570	%	0,02 maximum
Machinability			must be ground
Service Temperature	ASTM-D-794	°C	-70 to +230

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### Storage And Handling :

Store STYCAST 2762 in well sealed, unopened containers at temperatures between 18°C and 25°C.

Storage Temperature (°C)	Usable Shelf Life
18 to 25	1 year

### Health & Safety :

It is recommended to consult the Emerson & Cuming product literature, including material safety data sheets, prior to using Emerson & Cuming products. These may be obtained from your local sales office.

### Attention Specification Writers :

The technical information contained herein is consistent with the properties of the material and should not be used in the preparation of specifications, as it is intended for reference only. For assistance in preparing specifications, please contact your local Emerson & Cuming office for details. Please contact Emerson & Cuming Quality Assurance for test method details.

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