



ISO-9001-2015 Certified

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TECHNICAL BULLETIN

EPOXICAST™ EC-1850FT THERMALLY CONDUCTIVE POTTING COMPOUND

EC-1850FT is a pourable filled epoxy resin system offering excellent heat transfer, high voltage insulation, low exotherm and minimum shrinkage. It is a lower viscosity version of EC-1850FT. It rapidly transfers heat, eliminates hot spot, and increases the operating efficiency of most encapsulated devices. Its low shrinkage minimizes risk of damage to fragile components. It is useful for potting and encapsulating densely packaged power supplies and heat generating components, integrated circuits, power and operational amplifiers, transformers and many types of semiconductors.

Hardener	EH-9	EH-21LP	EH-22*	EH-26
DOT/IATA Shipment	HAZMAT	HAZMAT	NON-HAZMAT	HAZMAT UN2922 Special Box required
Mix ratio by weight, phr	3.5	7.5	6.5	7.5
Mixed Viscosity at 25°C, cp	50,000-60,000	5000-6000	50,000-6,000	8,000-12,000
Pot life at 25°C (500 gram)	40-60 min	60-90 min	30-50 min	>4 hr
Recommended Cure	2hr/70°C	Gel @ RT+ 2hr/70°C	Gel @ RT+ 2hr/70°C	2 hr/100°C+ 2 hr/150°C
Alternate Cure	24-48 hr/25°C	24-48 hr/25°C	24-48 hr/25°C	2-4 hr/125°C
Color	Black	Black	Black	Black
Specific Gravity	2.3	2.20	2.20	2.20
Hardness, Shore D	90	90	90	92
Lap shear strength to aluminum, psi	2400	2700	2700	2600
Linear Shrinkage (%)	0.013	0.012	0.012	0.011
% Water Absorption (24 hr immersion at RT)	0.03	0.02	0.02	<0.02
Thermal Conductivity, W/m°K	1.53	1.40	1.50	1.40
Glass Transition Temperature, °C	86	85	85	143
Coefficient of Thermal Expansion, 10 ⁻⁶ /°C (From -55°C to 25°C)	26	28	28	22
Flexural Strength, psi	14,700	14,300	14,300	14,500
Flexural Modulus, psi	1x10 ⁶	1x10 ⁶	1x10 ⁶	2x10 ⁶
Dielectric Strength, Volts/mil	430	430	430	430
Dielectric Constant at 1 kHz	5.8	5.9	5.9	5.8
Dissipation Factor at 1 kHz	0.01	0.01	0.01	0.01
Volume Resistivity, ohm-cm	2x10 ¹⁵	8x10 ¹⁵	8x10 ¹⁵	2x10 ¹⁵

INSTRUCTIONS FOR USE:

The individual components containing fillers should be stirred or agitated without introducing excessive air before use to ensure that all fillers are properly dispersed. To obtain the best cured properties; accurate proportioning and thorough mixing are essential.

Mix contents thoroughly each time before removing material. To each 100 grams of Epoxicast-1850FT, add appropriate amount of Hardener of your choice and mix it well preferably using a mechanical mixer. Vacuum degasses for about five minutes to remove any dissolved or entrapped air. Proceed with the bonding application and cure as recommended.

FOR INDUSTRIAL USE ONLY:

These materials are intended for industrial use only, and the practices of good housekeeping, safety and cleanliness should be followed before, during and after use.

WARNING!

Although the system contains low volatility materials, care should be taken in handling. Adequate ventilation of workplace and ovens is essential. These materials may cause injury to the skin following prolonged or repeated contact and dermatitis in susceptible individuals. In case of skin contact, wash thoroughly with soap and water. For eyes, flush immediately with plenty of water for at least 10 minutes and seek medical attention. Refer to Material Safety Data Sheet for additional health and safety information.

SHELF LIFE:

The shelf life of these materials is greater than one year when stored in unopened containers at an average temperature of 25°C.

DISCLAIMER:

All data given here is offered as a guide to the use of these materials and not as a guarantee of their performance. The user should evaluate their suitability for own purposes. Properties are typical and should not be used in preparing specifications. Statements are not to be construed as recommendations to infringe any patent.