



PRODUCT INFORMATION

HIGH TECHNOLOGY MATERIALS

METACAST 5448

THERMALLY CONDUCTIVE CASTABLE LIQUID HEAT SINK

METACAST 5448 is a high quality thermally conductive epoxy resin formulation. When catalyzed, it can be poured around heat producing electronic components and cured to an infusible solid with a thermal conductivity of 11.5 BTU/HR/FT²/°F/IN. This allows potentially damaging heat to dissipate providing the highest degree of environmental protection. In addition to its high thermal conductivity, **METACAST 5448** provides exceptional electrical and chemical resistance and a low thermal expansion coefficient.

Uses for **METACAST 5448** include potting and casting heat sensitive or heat producing components, bonding conventional heat sinks directly to electronic components and bonding a variety of materials with minimal stress over a wide temperature range.

METACAST 5448 is available with a choice of curing agents.

- MERECO HARDENER #10** - room temperature cure, low exotherm, minimal shrinkage, low cost
- MERECO HARDENER #16E** - mild heat cure, highest electrical and chemical resistance, high heat stability, lowest shrinkage.
- MERECO HARDENER #43** - room temperature cure, low viscosity, high adhesion, high impact resistance.

INSTRUCTIONS FOR USE

Thoroughly remix **METACAST 5448** in its container. Power mixing is preferred.

Select the desired curing agent.

Weigh out the desired amount of **METACAST 5448** and add the proper amount of curing agent as listed in Table I and mix thoroughly.

When using **HARDENER #16E**, **METACAST 5448** may be preheated to 150°F to aid in mixing.

Vacuum deair if desired to remove entrained air.

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FORM 1105 REV. 0

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Apply and cure according to Table I.

Postcure (optional) for maximum properties.

TABLE I

MERECO HARDENER	MIX RATIO (phr)*	POT LIFE (hrs.)	CURE TIME (hrs.)	TEMP.	POST CURE TIME (hrs.)	TEMP.
#10	4	1 ½	12	75°F	1	150°F
#16E	5	12	3	220°F	4	265°F
			12	<u>OR</u> 165°F	6	<u>OR</u> 225°F
#43	8	¾	12	75°F	1	150°F

TYPICAL PROPERTIES (UNCURED)

Color	Black
Specific Gravity	2.0
Viscosity @ 25°C (catalyzed with #16E)	70,000

PROPERTIES WITH HARDENER #16E (CURED)

Thermal Conductivity, BTU/HR/FT ² /°F/IN	11.5
Thermal Expansion Co-efficient, °C	15 x 10 ⁻⁶
Heat Distortion Temperature, °C (°F)	135 (275)
Compressive Strength, psi	15,000
Tensile Strength, psi	8,500
Flexural Strength, psi	13,500
Izod Impact, FT LB/IN	.25
Volume Resistivity, ohm-cm @ 25°C	1.2 x 10 ¹⁶
ohm-cm @ 150°C	1 x 10 ¹³
Dielectric Constant 10 ³ Hz	4.7
Dissipation Factor 10 ³ Hz to 10 ⁸ Hz	less than .01
10 ⁹ Hz	less than .02
Dielectric Strength, Volts/mil	460
Water Absorption, 7 Days	less than .1%

*Parts of curing agent per 100 parts **METACAST 5448**, by weight.