Technical Data Sheet

Epo-Weld™ HTE-5350

incure™
ADHESIVES, EPOXIES AND COATINGS

High Temperature, High Bond, Thermally Conductive Epoxy

PRODUCT DESCRIPTION

Incure Epo-Weld™ HTE-5350 is a two-part (1:1) thermally conductive epoxy system designed for bonding and potting applications operating at high temperatures. Product offers excellent bonding of different substrates at the same time. Exceptional chemical resistance of submerged parts for up to 6 months in various acids, bases, salts, organic fluids and water. Tensile strength of 2,500 and flexural strengths of up to 11,500 PSI is achievable on full cure. Incure HTE-5350 delivers outstanding performance on applications within the -65ºC to 205ºC (-85ºF to 400ºF) temperature range.

UNCURED PROPERTIES

Chemical Type	Aluminum-Filled Epoxy	Mix Ratio	1:1
Appearance	Grey	Density, g/ml	0.86
Viscosity, cP (rpm)	Paste	Pot-Life @25ºC (hrs)	4.0

CURE SCHEDULE

Recommended Curing Temperature			
First Cure	2h @ 95ºC (2h @ 203ºF)	Followed By	1 - 2d @ 25ºC (1 - 2d @ 77ºF)
Followed By	N.A.	Followed By (with Liquid Binder)	N.A.

CHEMICAL RESISTANCE TABLE

ACIDS		SALTS	
CH3COOH Acetic Acid, 5%	Softens	NaCl Sodium Chloride, 5%	No Effect
CH3COOH Acetic Acid, Bath	Destroyed	ALKALIS	
H2CrO4 Chromic Acid, 10%	Discolored	NH4OH Ammonia Hydroxide, 5%	No Effect
C6H8O7 Citric Acid, 50%	No Effect	NaOH Sodium Hydroxide, 10%	No Effect
HCl Hydrochloric Acid, 50%	No Effect	NaOH Sodium Hydroxide, 50%	No Effect
HCl Hydrochloric Acid, 50%	No Effect	ORGANIC FLUIDS	
C3H6O3 Lactic Acid, 5%	No Effect	Fuel Oil	No Effect
HNO3 Nitric Acid, 10%	No Effect	C8H18 Gasoline	No Effect
HNO3 Nitric Acid, 10%	No Effect	Hyraulic Oil	No Effect
H3PO4 Phosphoric Acid, Concent	No Effect	Jet Fuel	No Effect
H2SO4 Sulphuric Acid, 10%	No Effect	Mineral Spirits	No Effect
H2SO4 Sulphuric Acid, 50%	No Effect	Toulene	No Effect
H2SO4 Sulphuric Acid, Concentra	Etched	Xylene	No Effect

CURED PROPERTIES

Hardness, Shore	D70 to D80
Linear Shrinkage, in/in	0.002
Chemical Resistance	Excellent
Service Temperature, ºC (ºF)	-65ºC to 205ºC (-85ºF to 400ºF)
Flexural Strength, PSI (ASTM D790)	11,500
Tensile Shear, PSI (ASTM D1002-94)	2,500
CTE, in/in^{o}F x 10^{-6} ºC	32
Thermal Conductivity, Btu-in/hr-ft^{2} ºF	9.1
Volume Resistivity, ohms-cm@RT	1.0E+05
Dielectric Strength, volts/mil	85
Dielectric Constant, 1.0kHz	N.A.
Dissipation Factor	N.A.

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RoHS COMPLIANT | Pb LEAD FREE | HF HALOGEN FREE

APPLICATION PROCEDURES

For two part epoxy systems should be thoroughly mixed until it is uniform. High viscosity systems, pre-heat Part A and Part B separately to 35º - 50ºC (95ºF to 122ºF) to facilitate ease of mixing. Apply product using a spatula, putty knife or caulking gun. Apply to both surfaces and maintain glue line of less than 250 microns (10 mils). Pressure should be applied to the assembled parts to get rid of any air trapped and minimise any warpage.
For HTCP products, cross sections of 3.2mm to 6.4mm (1/8" - 1/4"), consider applications in multiple times to prevent blistering. As a guide, all cross-section joints should not exceed12.5mm to 20mm (1/2" - 3/4").

SURFACE PREPARATION

All bonding surfaces must be free from contaminants such as grease, lose particles, oils, corrosive chemical stains etc. Rough or porous material such as metal castings should be baked at high temperature to burn off any embedded contaminants, especially trapped oils and chemicals. Smooth metal surfaces should ideally be abrasive blasted to 0.25mm (0.001") for optimum results.

STORAGE AND PREPARATION FOR USE

All Epo-Weld™ products should be stored in original containers (or replacement containers of similar material) in room temperature. Use a bigger container (twice the volume of the mixed contents) and leave mixed materials to settle (possibly some out-gassing) for 24hours.

NOTE