

High Temperature, High Performance, Corrosion Resistant Epoxy System

PRODUCT DESCRIPTION

Incure Epo-Weld™ HTE-5351 is a two-part epoxy system designed for bonding and potting applications operating at high temperatures. Bonds various substrates, it offers exceptional chemical resistance of submerged parts for up to 6 months in various acids, bases, salts, organic fluids and water. Flexural strengths of up to 10,200 PSI is achievable on full cure. Incure HTE-5351 delivers outstanding performance on applications within the -65°C to 205°C (-85°F to 400°F) temperature range. Meets NASA outgassing requirements.

UNCURED PROPERTIES

Chemical Type	Epoxy	Mix Ratio	1:1
Appearance	Amber	Density, g/ml	1.13
Viscosity, cP (rpm)	20,000 - 30,000	Pot-Life @25°C (hrs)	4.0

CURE SCHEDULE

Recommended		Alternate	
First Cure	2h @ 95°C (2h @ 203°F)	First Cure	2d @ 25°C 2d @ 77°F
Followed By	N.A.	Followed By	N.A.

CHEMICAL RESISTANCE TABLE

ACIDS	SALTS
CH3COOH Acetic Acid, 10%	NaCl Sodium Chloride, 10%
HCl Hydrochloric Acid, 10%	NaCl Sodium Chloride, 25%
HNO3 Nitric Acid, 10%	NaHSO4 Sodium Bisulphate, 10%
H2SO4 Sulphuric Acid, 3%	ORGANIC FLUIDS
H2SO4 Sulphuric Acid, 10%	C8H18 Gasoline
H2SO4 Sulphuric Acid, 30%	C6H6 Benzene
BASES	C2H6O Ethanol
NH3 Ammonia, 25%	C2H6O2 Ethylene Glycol
NaOH Caustic Soda, 1%	Hydraulic Oil
NaOH Caustic Soda, 10%	WATER
NaOH Caustic Soda, 25%	H2O Water@ 25°C
NaCO3 Sodium Carbonate, 25%	H2O Water@ 100°C

CURED PROPERTIES

Hardness, Shore	D75
Linear Shrinkage, in/in	0.002
Chemical Resistance	Good
Service Temperature	Good
Flexural Strength, PSI (ASTM D790)	10,500
Tensile Shear, PSI (ASTM D1002-94)	3,200
CTE, in/in°F x 10 ⁻⁶ °C	28
Thermal Conductivity, Btu-in/hr-ft ² °F	-
Volume Resistivity, ohms-cm@RT	1.2E+14
Dielectric Strength, volts/mil	450
Dielectric Constant, 1.0kHz	3.15
Dissipation Factor	0.01

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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 35° - 50°C (95°F to 122°F) 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 exceed 12.5mm to 20mm (1/2" - 3/4").

SURFACE PREPARATION

All bonding surfaces must be free from contaminants such as grease, loose 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™ HTCP 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

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