Technical Data Sheet

**Epo-Weld™ HTE-5355**

incure™
ADHESIVES, EPOXIES AND COATINGS

# High Temperature, High Performance, Corrosion Resistant Epoxy System

## PRODUCT DESCRIPTION

Incure Epo-Weld™ HTE-5355 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 12,000 PSI is achievable on full cure. Incure HTE-5355 delivers outstanding performance on applications within the -65ºC to 205ºC (-85ºF to 400ºF) temperature range. Meets NASA outgassing requirements.

## UNCURED PROPERTIES

| | | | |
|---|---|---|---|
| Chemical Type | Epoxy | Mix Ratio | 100:13 |
| Appearance | Grey | Density, g/ml | 1.52 |
| Viscosity, cP (rpm) | Gel | Pot-Life @25ºC (hrs) | > 8.0 |

## CURE SCHEDULE

| Recommended | | Alternate | |
|---|---|---|---|
| First Cure | 1d @ 25ºC<br>(1d @ 77ºF) | First Cure | 1h @ 25ºC<br>1h @ 77ºF |
| Followed By | N.A. | Followed By | 4h @ 80ºC<br>4h @ 176ºF |

## 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% | Hyraulic Oil |
| NaOH Caustic Soda, 10% | WATER |
| NaOH Caustic Soda, 25% | H20 Water@ 25ºC |
| NaCO3 Sodium Carbonate, 25% | H20 Water@ 100ºC |

## CURED PROPERTIES

| | |
|---|---|
| Hardness, Shore | D84 |
| Linear Shrinkage, in/in | 0.003 |
| Chemical Resistance | Good |
| Service Temperature | Good |
| Flexural Strength, PSI (ASTM D790) | 12,000 |
| Tensile Shear, PSI (ASTM D1002-94) | 2,500 |
| CTE, in/in°F x $10^{-6}$ °C | 18 |
| Thermal Conductivity, Btu-in/hr-ft2 °F | - |
| Volume Resistivity, ohms-cm@RT | 1.0E+15 |
| Dielectric Strength, volts/mil | 465 |
| Dielectric Constant, 1.0kHz | 4.20 |
| Dissipation Factor | 0.04 |

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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™ 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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