HIGH TEMP HB LINING
epigen 1369

epigen
Performance Resins & Composite Systems

TECHNICAL BULLETIN

A solventless, high build protective coating, possessing exceptional heat resistance properties under ambient cure conditions. Suitable for use in potable water applications up to 100 celcius, to combat corrosion in tanks, wells, structural members and fluid transfer systems, this high performance, epoxy polymer lining is designed to meet high standards of elevated temperature service and chemical resistance, with minimal relience on post cure.

1369 is primarily a barrier coating or lining for the treatment of steel, concrete or brick where temperatures do not exceed 125 Celsius or the substrate requires protection from hot chemicals.

Extremely high cross linking density affords 1369 the ability to resist a range of organic solvents and hot corrosive acids.

TYPICAL APPLICATIONS

Ducting Systems	Cooling Towers
Exhaust Stacks	Tanks & Vessels
Scrubbers	Pipelines & Valves

FEATURES

- Highly erosion resistant filler within polymer system
- Application DFT up to 1000 micron in the one coat
- Free of all solvents - zero VOC
- Engineered for high mechanical strength
- Resistant to organic solvents
- Versatility in application - can be used with GF
- HDT 125 Celsius - Practical service beyond 150 Celsius
- Outstanding resistance to acid & alkali

POTABLE WATER SUITABILITY

Assessed to

AS/NZS4020:1999 “PRODUCTS FOR USE IN CONTACT WITH DRINKING WATER”

Passed all requirements at:

a/	20°C cure	45,000mm² per litre
b/	100°C cure	30,000mm² per litre

PROFILE

Ratio by weight	5 parts “A” to 1 part “B”
Pot Life minutes @ 24°C	50
Mixed consistency @ 24°C	Flowable Liquid
Specific gravity when mixed	1.4
Kg/m² for 500 micron	0.7
Tack free time @ 24°C	140 minutes

TYPICAL CURED PROPERTIES

Compressive strength ASTM D695, Mpa	>110
Tensile strength ASTM D638, Mpa	>28
Flexural strength ASTM D790, Mpa	>50
Hardness, Shore D	89
Dielectric constant ASTM D150 (150KHz)	3.0
Maximum exposure temperature, °C	180*
Heat deflection temperature ASTM D648, °C	125

* Thermal degradation temperature. This does not necessarily represent the ultimate maximum permissable temperature.

This information is supplied as an indicative reference only. Caution should be used where direct comparisons are to be made.

SURFACE PREPARATION

Methods for substrate preparation may include chemical means such as washing & etching, high pressure water blasting, or traditional abrasive blasting techniques .
Caution should be maintained in selecting a technique that provides satisfactory anchor for the lining.
Specialist advice is available to ensure correct preparation procedure is employed for specific applications.

APPLICATION

Mixing of product should be carried out using slow speed mixers and completed by adding to the part "A", the part "B". Ensure the mix is homogenus and free from lumps. Avoid air entrainment.
Epigen 1369 can be applied either by airless spray, brush or roller. Since it does not contain solvents, application by spray allows the application of high film thicknesses in single coats, and ensures minimal issues with solvent entrapment or shrinkage. Epigen 1369 is of higher viscosity than conventional solvent containing coatings and application may require more specialised practices but is generally compensated for by the speed of application and need to apply fewer coats.
Epigen 1369 provides functional performance as a coating or lining . It may not provide asthetic properties such as high gloss or colour retention.

Note : Re-application or second coat application over cured Epigen 1369 should only be carried out after abrading back the existing application.

POSTCURE
Epigen 1369 is formulated to have rapid achievement of toughness and chemical resistance without post cure. Under harsh first service shock conditions or in other arduous instances, immediate need for maximum properties may be required to acheive full cross linking density and maximum performance.
Applied product should be allowed to "gel" or become "tack free" before applying heat cure. This will take several hours at 25°C.

Heat curing can be carried out by:
(a) Post gel at 50°C for 6 - 8 hours using heat lamps, etc.
(b) Followed by post cure for 6 - 8 hours at 120°C.
Excessive heat should be avoided during the gel stage to protect against sag and curtaining. Tests have shown that, at an air temperature of 50°C and DFT of 500 micron, this product will gel satisfactorily without sagging.

EVERY EFFORT SHOULD BE TAKEN TO PROTECT AGAINST AIR ENCAPSULATION & CARBAMATE FORMATION DURING APPLICATION. CONSULT WITH THE MANUFACTURER FOR MORE DETAILS IF UNCLEAR.

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CHEMICAL RESISTANCE

Tested at 21°C. Samples cured for 10 days at 25°C.
Curing at elevated temperatures will improve chemical resistance.

1 = Continuous or long term immersion
2 = Short term immersion
3 = Splash and spills
4 = Avoid contact

Acetic Acid, 10 %	1	Acetone	2
Acetic Acid, Glacial	2	Ammonium Chloride	1
Hydrochloric Acid, 5 %	1	Beer	1
Hydrochloric Acid, 10 %	1	Dichloromethane	2
Hydrochloric Acid, conc	1	Diesel Fuel	1
Nitric Acid, 5 %	1	Isopropyl Alcohol	1
Nitric Acid, 10 %	1	Kerosene	1
Phosphoric Acid, 5 %	1	Petrol	1
Phosphoric Acid, 20 %	1	Salt Water	1
Sulfuric Acid, 5 %	1	Sewage	1
Sulfuric Acid, 20 %	1	Skydrol	1
Ammonium Hydroxide, 5 %	1	Sodium Cyanide	1
Ammonium Hydroxide, 20 %	1	Sodium Hypochlorite	1
Potassium Hydroxide, 5 %	1	Toluene	1
Potassium Hydroxide, 20 %	1	Trichloroethane	2
Sodium Hydroxide, 5 %	1	Wine	1
Sodium Hydroxide, 20 %	1	Xylene	1

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CURE

Variations in cure may arise due to the amount of material being applied, the thickness of material being applied, the surface temperature, and the product temperature. The cure may be increased by heating product or by leaving mixed material stand for 15 minutes before use. The cure may be decreased by cooling the product before mixing.

EPIGEN **PRODUCTS**
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