

REFRAC EPOXY ULTRA HB

epigen XR005 PHOENIX ULTRA

TECHNICAL BULLETIN

Epigen XR005 PHOENIX ULTRA brings together all the real high performance, solventless, properties derived from the EPIGEN XR367 technology, with the practical ease of real Ultra High Build outcomes. Meeting the highest standards of elevated temperature service, chemical resistance and corrosion protection, Ultra designates builds of up to 20mm in one application to thoroughly line badly corroded assets, and ensure enough lining can be applied in a very short time to cover and protect even the most pitted, corroded or rough surfaces.

PHOENIX ULTRA is a barrier coating or lining suited to the treatment of steel, concrete and brick in applications where temperatures may exceed 1400 Celsius or the substrate requires protection from hot chemicals.

The high cross linking density gives PHOENIX ULTRA the ability to resist a range of organic solvents including ketones and chlorinated aromatics . Also highly favoured where the lining is required to protect against hot highly corrosive acids.

TYPICAL APPLICATIONS

Ducting Systems	Exhaust Stacks
Heat Exchangers	Scrubbers
Process Vessels	Tanks
Pipelines	Valves & Pumps

FEATURES

- Can be applied over rough concrete, brick or steel
- Highly erosion resistant polymer system
- Application DFT from 0.5 to 20 mm in the one coat
- Free of all solvents - zero VOC
- Engineered for high mechanical strength
- Resistant to organic solvents, acid and alkali
- Versatility in application
- HDT 125 Celsius - Practical service beyond 1400 Celsius



PROFILE

Ratio by weight	5 parts "A" to 1 part "B"
Pot Life minutes @ 24°C	45
Mixed consistency @ 24°C	Flowable Liquid
Specific gravity when mixed	1.5
Kg/m ² for 500 micron	0.75
Tack free time @ 24°C	120 minutes

TYPICAL CURED PROPERTIES

Compressive strength ASTM D695, Mpa	>110
Tensile strength ASTM D638, Mpa	>30
Flexural strength ASTM D790, Mpa	>50
Hardness, Shore D	90
Dielectric constant ASTM D150 (150KHz)	3.0
Maximum exposure temperature, °C	1400*
Heat deflection temperature ASTM D648, °C	125
Coeff of Lin Thermal Exp / °C (10 ⁻⁶ m/m K)	22

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

Flue Gas Desulfurization Systems ASTM D5499 - 94 : Passes, No cracking, checking, flaking or other surface disturbances observed

Acid Resistance of Polymer Lining ASTM D6137 - 97 : Passes, No cracking, flaking observed. Colour change to approx 50 micron

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 etching, abrasive blasting techniques. A method that provides satisfactory anchor is required. Specialist advice is available from Peerless Industrial Systems to ensure the 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 homogenous and free from lumps. Avoid air entrainment.

Epigen PHOENIX ULTRA can be applied either by airless spray, brush or trowel. 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 PHOENIX ULTRA 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.

Epigen PHOENIX ULTRA provides functional performance as a coating or lining. It may not provide aesthetic properties such as high gloss or colour retention.

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

AIRLESS SPRAY

Recommended:

Ratio Pump = in the range 70:1

Lines (internal) to whip = 1/2" lines

Whip = 3/8"

Tip Size = 525 but field work often uses 30 to 35 thou

Hopper Feed or direct leg, Remove inline filters

Ideally 2" inlet with ball return spring fitted

Pressure (manufacturers recommended)

POSTCURE

To achieve full cross linking density and maximum performance, applied product should be allowed to become "tack free" before applying heat cure.

Heat curing may be carried out by:

(a) Post gel at 50°C for 6 - 8 hours.

(b) Followed by post cure for 6 - 8 hours at 120°C.

Step (b) can be carried out by insitu curing. 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 15mm, this product will gel satisfactorily without sagging.

Protection should be taken against air encapsulation in final product, and carbamate formation. Consult with the manufacturer for more information.

PHOENIX ULTRA:2019/June

rev02,2020/July

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 %	2	Acetone	1
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 %	2	Isopropyl Alcohol	1
Nitric Acid, 10 %	2	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	2
Potassium Hydroxide, 20 %	1	Trichloroethane	1
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

MANUFACTURED BY

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