HEAT RESISTANT SNHB LINING
epigen XD005 “special novolac”

epigen
Performance Resins & Composite Systems

TECHNICAL BULLETIN

Epigen XD-005 Special Novolac is a controlled release product developed to provide the high performance, high temperature chemical and corrosion resistance characterised by Epigen XD-005, but additionally to provide this chemical resistant protection at temperatures exceeding 200°C.

In common with most heat resistant epoxy based products, heat curing must be employed to obtain maximum properties and correct curing is most important

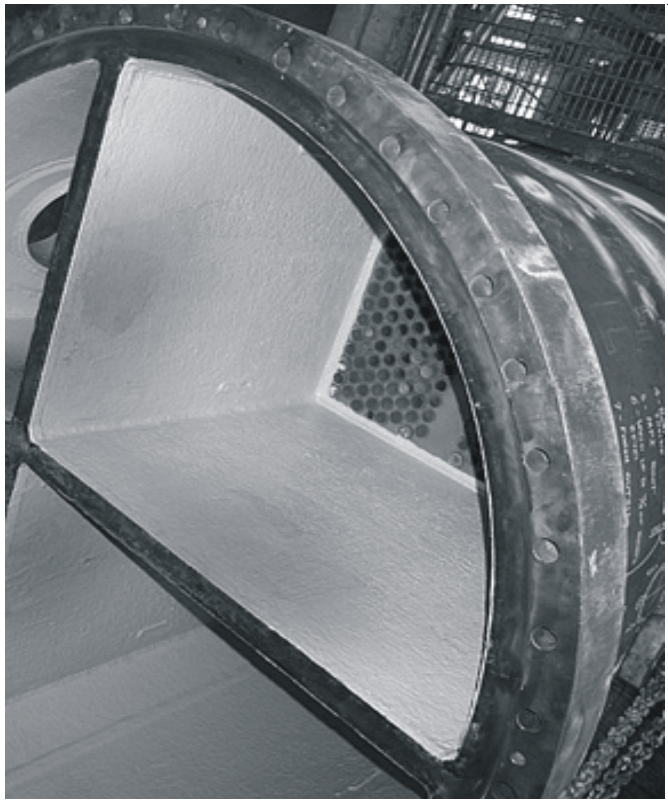
Extremely high cross linking density after cure provides Epigen XD-005 Special Novolac the ability to resist a range of organic solvents including ketones and chlorinated aromatics . Also highly favoured where the lining is required to address hot highly corrosive acids.

TYPICAL APPLICATIONS

Pumps & Impellors	Ducting Systems
Exhaust Stacks	Tanks & Vessels
Rail Cars	Scrubbers
Laundries	Steelwork Coating
Pipelines & Valves	Solvent Extraction

FEATURES

- Highly erosion and corrosion resistant polymer system
- Superior Novolac high cross linking density
- 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 >200 Celsius - practical service beyond 250 Celsius
- Outstanding resistance to chemicals & acids



PROFILE

Ratio by weight	4 parts “A” to 1 part “B”
Pot Life minutes @ 24°C	40
Mixed consistency @ 24°C	Flowable Liquid
Specific gravity when mixed	1.5
Kg/m² for 500 micron	0.75
Tack free time @ 24°C	180 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	89
Dielectric constant ASTM D150 (150KHz)	3.0
Maximum exposure temperature, °C	290*
Heat deflection temperature ASTM D648, °C	200

* 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.

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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. 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 homogenus and free from lumps. Avoid air entrainment.
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 that all material purchased actually contributes to the final DFT. Epigen XD005 Special Novolac 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 XD005 Special Novolac is a functional, industrial finish and is not developed to possess asthetic properties such as high gloss which would enable it to be used where appearance is particularly important.
Note : Re-application or second coat application over cured product should only be carried out after adrading back the existing application.

POSTCURE
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 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.
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 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.

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	1
Acetic Acid, Glacial	1	Ammonium Chloride	1
Hydrochloric Acid, 5 %	1	Beer	1
Hydrochloric Acid, 10 %	1	Dichloromethane	1
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	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**
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XD005SN:2009/Mar
Rev3,2021/Jan