

CHEMI-TECH UC

SUPERIOR CHEMICAL & CORROSION PROTECTION FOR STEEL & CONCRETE



CHEMI-TECH UC is a solvent-free epoxy novolac coating designed to provide exceptional chemical and corrosion protection for steel and concrete surfaces. Its superior resistance to strong acids and alkalis makes it ideal for use in bunds, tanks, and containment areas.

Key Features

- Resistant to harsh chemicals, including 98% sulfuric acid
- Provides long-term chemical protection for critical infrastructure
- Ideal for bund coatings and tank linings
- Can be hand or spray applied for flexible, efficient application

This advanced coating ensures durability and reliability in highly aggressive environments, extending the lifespan of protected surfaces.

TYPICAL APPLICATIONS

CHEMI-TECH UC is a high-build, solvent-free epoxy novolac coating designed for extreme chemical resistance in highly aggressive environments. Formulated to protect steel and concrete structures, it provides long-term durability against prolonged immersion in high-strength acids and alkalis, including 98% sulfuric acid and 36% hydrochloric acid.

Key Applications:

- **Chemical containment areas** – Prevents deterioration in harsh industrial settings
- **Tank lining** – Provides a protective barrier against corrosive chemicals
- **Process vessels** – Ensures structural integrity in extreme environments
- **Chemical drains & channels** – Protects against continuous chemical exposure
- **Internal pipe surfaces** – Prevents corrosion in pipelines carrying aggressive substances
- **Sumps** – Shields submerged surfaces from chemical attack

This high-performance coating is engineered for maximum protection, ensuring the longevity and reliability of critical infrastructure.

APPLICATION GUIDE

Phase 1: Surface Preparation

Proper surface preparation is essential to ensure optimal adhesion and long-term performance of the coating. Follow these guidelines for preparing metallic substrates:

Metallic Substrates

Abrasive Blast Cleaning (Recommended for Best Performance)

- Remove oil and grease using an appropriate cleaner such as MEK.
- Abrasive blast the surface to SSPC-SP10 / NACE No. 2 (Near-White Metal Blast Cleaning), ensuring a minimum blast profile of 3 mils using an angular abrasive.
- Degrease and clean the surface again using MEK or a similar solvent.

- Coat all surfaces immediately after preparation to prevent gingering (flash rusting) or oxidation.

⚠ Important: If the surface is salt-contaminated, pressure wash with clean water and check for residual salt contamination. Refer to the Surface Preparation & Pre-Application Guide for additional details on decontamination procedures.

New & Existing Concrete Surface Preparation

New Concrete Preparation:

1. Curing & Treatment – Allow new concrete to cure for a minimum of 21 days and treat the surface to remove any laitance (weak surface layer).
2. Moisture Check – Ensure the moisture content is 8% or below before coating.
3. Surface Scarification – Lightly scarify the surface, avoiding exposure of the aggregate.
4. Cleaning – Remove all dust and debris from the surface.
5. Priming – Apply FLOOR-TECH SP PRIMER (low-viscosity epoxy primer) at 6 mil WFT.
6. Curing Time – Allow the primer to cure for 3 hours at 68°F before overcoating.

Existing Concrete Preparation:

1. Contamination Removal – If the surface is contaminated, pressure wash using clean water and allow it to dry completely.
2. Surface Preparation – Lightly abrasive blast or scarify the surface, ensuring the aggregate remains unexposed.
3. Cleaning – Remove all dust and debris from the surface.
4. Priming – Apply FLOOR-TECH SP PRIMER (low-viscosity epoxy primer) at 6 mil WFT.
5. Curing Time – Leave the primer to cure for 3 hours at 68°F before applying the next layer.
6. This preparation ensures strong adhesion, durability, and long-term performance of the applied coating system.

Phase 2: Product Preparation

Before mixing, ensure the following conditions are met to achieve optimal application and performance of the product:

- Base Component Temperature – The base component must be maintained at a temperature between 60-77°F.
- Ambient & Surface Temperature – Ensure both the ambient and surface temperature are above 41°F.
- Dew Point Consideration – The ambient and surface temperatures must be at least 6°F above the dew point to prevent condensation and ensure proper adhesion.

⚠ Important: Failing to meet these conditions may impact mixing, adhesion, and overall coating performance.

Phase 3: Product Mixing

For proper application and performance, mix the full unit (4LTR or 16LTR) following these steps:

- Combine Components – Transfer the entire Activator unit into the Base container.
- Thorough Mixing – Use an electric paddle mixer to blend the two components until a uniform, streak-free consistency is achieved.
- Usage Time – Once mixed, apply the material within 25 minutes at 68°F to prevent premature curing.

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Spray Application Guidelines

Use an airless spray system with a 45:1 ratio pump for optimal application.

A hot water pump should be attached to heat the spray lines. Maintain the spray line temperature between 77-95°F for smooth and consistent flow.

⚠ Important: Proper mixing and temperature control are essential for ensuring uniform application, adhesion, and performance.

Phase 4: Product Application

Brush & Roller Application

Step 1 – Preparation:

- Pour the mixed material into a paint kettle or paint tray to maximize its usable life.

Step 2 – Stripe Coating (Edges & Joints):

- Use a 2 inch wide synthetic brush to stripe coat all edges, joints, corners, and equipment.
- Apply a 4 inch wide stripe coat at a wet film thickness of 10 mil.

Step 3 – First Full Coat:

- Once the stripe coat has cured sufficiently and is ready for overcoating, apply the first full coat to all surfaces.
- Maintain a wet film thickness of 10 mil.

Step 4 – Second Full Coat:

- After approximately 4 hours at 68°F (or once the first coat has cured sufficiently), apply the second coat at 10 mil WFT.

⚠ Note: Proper curing between coats ensures maximum adhesion, durability, and long-term protection of the coating system.

APPLICATION AT A GLANCE

Brush & Roller Application – Step-by-Step Guide

Step 1 - Ensure you have the following:

- 1 x Base unit
- 1 x Activator unit
- 1 x Spatula
- 1 x Slow speed drill and paddle

Step 2 – Mixing

- Pour the entire contents of the Activator container into the Base container.

Step 3 – Thorough Mixing

- Mix thoroughly using a slow-speed drill and paddle mixer.
- Use a spatula to scrape down any unmixed material from the edges of the container.
- Continue mixing until the material is completely uniform and streak-free.

Step 4 – Spray Application

- Apply the mixed material to the properly prepared substrate using an airless spray unit.
- Maintain a wet film thickness (WFT) of 10 mils.
- Use a minimum pump size of 60:1.
- Ensure heated and insulated spray lines are used to maintain a constant temperature of 77-95°F for optimal flow and application.

Step 5 – Second Coat Application

- Allow the first coat to cure for a minimum of 4 hours (or until touch dry).
- Apply the second coat at 10 mil WFT to achieve the required protection and durability.

⚠ Note: Using the correct spray equipment and maintaining consistent temperature control ensures a smooth, uniform finish and maximum performance of the coating system.

TECHNICAL DATA & PERFORMANCE

Characteristics

Appearance

Base	Highly Structured Thixotropic Liquid
Activator	Amber Liquid
Mixed	Thixotropic Liquid

Solids Content

100%

Volume Capacity

747cc/Kg

Sag Resistance

Nil at 19.7 mils

Density

Base	1.41
Activator	1.02
Mixed	1.32

Mixing Ratio

Component	Base	Activator
By Weight	4	1
By Volume	3	1

Shelf Life

5 years if unopened and stored in normal dry conditions 60-86°F

Coverage Rates

4LTR of fully mixed product will give the following coverage rates -

170ft² at 10mil

85ft² at 20mil

16LTR of fully mixed product will give the following coverage rates -

665ft² at 10mil

343ft² at 20mil

Please note that the coverage rates provided are theoretical and do not account for the profile or condition of the surface being repaired.

Cure Times

Useable Life

50°F	50 minutes
68°F	25 minutes
86°F	12 minutes
104°F	6 minutes

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Minimum Overcoating Times

50°F	8 hours
68°F	4 hours
86°F	2 hours
104°F	1 hour

Maximum Overcoating Times

50°F	24 hours
68°F	12 hours
86°F	6 hours
104°F	3 hours

Water / Seawater Immersion

50°F	8 days
68°F	4 days
86°F	2 days
104°F	1 day

Chemical Immersion

50°F	14 days
68°F	7 days
86°F	5 days
104°F	3 days

Chemical Resistance

The product is resistant to a wide range of inorganic acids, alkalis, salts, and organic media including:

Acetic Acid 10%	86°F
Ammonia Hydroxide 30%	113°F
Benzene 100%	95°F
Butanol 100%	104°F
Chromic Acid 10%	104°F
De-ionised Water	104°F
Ethanol 100%	113°F
Hydrobromic Acid 40%	86°F
Hydrochloric Acid 36%	95°F
Nitric Acid 10%	86°F
Phosphoric Acid 75%	113°F
Steam Out	356°F
Toluene 100%	104°F
Sulphuric Acid 20%	104°F
Sulphuric Acid 98%	104°F

For more detailed information, please refer to the Thortex Technical Centre for advice.

Pack Sizes

This product is available in the following pack sizes:

4LTR
16LTR

Mechanical Properties

Abrasion Resistance Taber CS17 Wheels / 1KG Load	138mg loss / 1,000 cycles 0.18cc loss / 1000 cycles
Compressive Strength ASTM D695	984kg/cm ² (13,950 psi)
Corrosion Resistance ASTM B117	Minimum 5,000 hours
Flexural Strength ASTM D790	871kg/cm ² (12,300 psi)
Hardness Shore D ASTM D2240	85
Tensile Shear Adhesion ASTM D1002	208kg/cm ² (2,950 psi)

(Abrasive Blasted Mild Steel with 75-micron profile)	
Heat Distortion ASTM D648 at 264psi Fibre Stress	68°F Cure – 125°F 212°F Cure – 167°F
Heat Resistance	Suitable for use in immersed conditions at temperature up to 140°F Resistant to dry heat up to 392°F dependent on load

Technical Service

Complete technical assistance is available. Please contact Thortex America, INC with your requirements:
1-610-831-0222 | kclarke@thortex.com

The products that we supply are for professional use only, it is your responsibility to read the technical data sheets before you place an order and prior to application of the product

Quality

All THORTEX AMERICA, INC products are manufactured and supplied in accordance with an ISO 9001 registered Quality Management System.

Warranty

All THORTEX AMERICA, INC warrants that the performance of the supplied product will conform to the typical descriptions provided in the Technical Data Sheet.

Health & Safety

Please ensure good practices are followed at all times during the mixing and application of this product. Protective gloves and other recommended personal protective equipment must be worn. Before mixing and applying the material, please ensure you have read and fully understood all relevant information.

Legal Notice

The data provided in this Product Technical Data Sheet is for informational purposes only and is believed to be accurate at the time of issuance. However, we cannot assume responsibility for results obtained by others whose methods are beyond our control. It is the customer's responsibility to assess the suitability of the product for their intended use. THORTEX AMERICA, INC accepts no liability arising from the use of this information or the product described herein.