TECHNICAL BULLETIN

CORCHEM® CORPORATION

CORCHEM® 210 POLYURETHANE LINING

GENERIC Cross-linked aromatic polyurethane elastomeric membrane based on 4,4'-diphenylmethane diisocyanate. Conforms to ASTM D16 Type V Classification. The polymer structure is elastic, tough, flexible and resilient.

DESCRIPTION Solventless, quick curing, thick film, heavy duty urethane elastomer designed to provide exceptional protection for surfaces subject to movement or cracking in severe chemical and physical environments. It is formulated to provide excellent resistance to abrasion, thermal shock, direct and indirect impact.

USE Steel and concrete storage reservoirs, containment areas, tank trucks, frac tanks, piping and processing equipment handling fresh and brine waters, and water solutions containing industrial waste, salts, detergents, many acids, alkalies and other chemicals. It will provide a high degree of protection against corrosive moisture, fumes, chlorine, carbon dioxide, hydrogen sulfide and methane gases. It is also resistant to aliphatic hydrocarbon petroleum products such as sweet and sour crude oil, kerosene, diesel, motor oils, lubrication materials, and greases. May be used in both field and shop operations. The principal use is in water-chemical problem areas such as petrochemical, power generating and wastewater treatment facilities. Designed to be self-priming to steel and concrete or used in combination with primers such as CORCHEM® 262 PRIMER SEALER and other CORCHEM® products.

SERVICE LIMITATIONS Temperature resistance up to 180°F (dry) and up to 140°F (wet) depending upon the individual exposure. CONTACT CORCHEM® FOR SPECIFIC RECOMMENDATIONS BEFORE PROCEEDING for immersion service and exposure to corrosive chemicals, elevated temperatures, or use with cathodic protection systems.

COLORS Off-White and Limited Colors.

FINISH Low Gloss. Finish may vary due to texture and porosity of substrate.

CAUTION! Color and gloss retention affected (yellowing, darkening and/or flattening) by exposure to elevated temperatures and sunlight.

VOLUME SOLIDS 100%

DRY COVERAGE Theoretical (no loss): 1600 sq. ft. per gallon for one mil (.001). Allow for application loss and surface irregularities when computing coverage.

DRY FILM THICKNESS Up to 250 mils. The standard dry film thickness per application coat is 20 – 80 mils. Multiple applications may be necessary to achieve the desired film thickness due to variations in design configurations, application equipment, temperature and other factors.

COMPONENTS	Two. Mix by volume 2 to 1 (Base:Activator).
VISCOSITY	1000 ± 200 cps / Component B (Base). 200 ± 50 cps / Component A (Activator).
WEIGHT PER GALLON	8.86 ± .10 lbs / Component B (Base). 10.25 ± .10 lbs / Component A (Activator).
MIXED GEL TIME	<1 minute @ 70°F.
VOC CONTENT	0 gms/l or 0.0 lbs/gal. Conforms to United States National Volatile Organic Emission Standards.
CLEAU UP THINNER	CORCHEM® 5 or Methyl Ethyl Ketone (MEK).
APPLICATION METHODS	Plural component, high pressure, dual proportioning airless spray. CONTACT CORCHEM® FOR SPECIFIC RECOMMENDATIONS BEFORE PROCEEDING.
TEMPERATURES	Apply at 40°F to 125°F (Air and Surfaces) and 5°F above the dew point. Material temperature maintained at 70°F to 110°F.
CURING TIME	Dry to touch <½ hour, return to water service 2 hours @ 70°F. Recoat (refer to RECOAT AND REPAIR Section if coating reaches complete cure and hardness or if subjected to extended exposure to sunlight). Final cure for severe immersion service is 5 days @ 70°F. Curing times are significantly shorter for higher temperatures and longer for lower temperatures.
PACKAGING	55-gallon drums (packaged multiples of three).
SHELF LIFE	One year from shipment date protected between 40°F and 100°F.
DOT/FLASH POINT	Non-Flammable Liquid Classification.
PERFORMANCE DATA	Contact CORCHEM® for desired information and immersion service data.
HARDNESS	ASTM D 2240 Method. Result: 60 ± 5 Shore D.
ELONGATION	ASTM D 638 Method. Result: >50%.
WATER VAPOR	ASTM E/F Method. Result: <.05 gms/24 hrs/sq. ft.
FRICTION COEFFICIENT	Ice Method. Result: .07 (static), .06 (dynamic).
ABRASION RESISTANCE	ASTM D 4060 Method. Result: <50 mg.
ADHESION	Elecometer Method. Result: >1500 psi.
TENSILE STRENGTH	ASTM D 412 Method. Result: >2900 psi.
TEAR STRENGTH	ASTM D 624 Method. Result: >210 psi.
ACCELERATED WEATHERING	ASTM G 53 Method. Result: Passes 2000 hours [chalky color change].
CATHODIC DISBONDMENT	ASTM G 8 Method. Result: Passes.
IMPACT RESISTANCE	ASTM G 14 Method. Result: No cracking or delamination.
SURFACE PREPARATION	Round off sharp edges and rough welds. Burrs and weld spatter should be completely removed. Surfaces must be clean, dry and free of any dirt, chalk, grease, oils, salts, and deleterious materials before application is performed. Vacuum the topside of all horizontal and sloped surfaces. Fill pitted steel by troweling CORCHEM® 263 FILLER SURFACER over pits leaving them flush with surface.

CARBON STEEL Immersion or Severe Exposures: SSPC-SP-5 (White Metal Blast Cleaning). Mild Exposures: SSPC-SP-10 (Near White Blast Cleaning). Metal surfaces should have an anchor profile of three mils (.003) or more. If metal substrate has "cavities" or "indentations", apply CORCHEM® 262 PRIMER SEALER before applying this product.

NON-FERROUS METALS SSPC-SP-7 (Brush-Off Blast Cleaning). Coatings applied to these surfaces may not achieve the same degree of adhesion and toughness. Apply CORCHEM® 262 PRIMER SEALER before applying this product.

WELDING Welding should precede coating. If already coated, follow instructions in U.S.A. Standard Z49.1 Safety in Welding and Cutting.

CONCRETE AND MASONRY Concrete and masonry to cure at least 28 days. Surface and substrate must be dry. Clean and open surfaces by dry abrasive "brush-off" blast. Remove all concrete laitance. Open all "blow" holes and cavities in order to properly fill and seal. Level protrusions and repair cavities, voids, and cracks. Apply CORCHEM® 262 PRIMER SEALER "thinned" and back roll to completely wet and thoroughly penetrate surface to ensure all irregularities are filled and sealed before applying this product.

APPLICATION MIXING All equipment should be cleaned and flushed with CORCHEM® 5 THINNER, Methyl Ethyl Ketone (MEK) or Di-Octyl Phthalate (DOP). Do not vary mixing proportions. Strain only if required for proper application. Do not allow catalyzed material to stand in equipment after use! Clean immediately with CORCHEM® 5 THINNER or Methyl Ethyl Ketone (MEK).

APPLY In an even wet coat. Ensure seams and irregularities are completely covered. Application below minimum or above maximum suggested dry film thickness ranges might adversely affect performance. Use of a thin coat before the regular application coat may be needed to reduce pinholing and/or blistering over a rough/porous substrate.

RECOAT AND REPAIR If material has reached complete cure and hardness, or if subjected to extended exposure to sunlight, uniformly abrade the surface and feather the edges. The surface must be roughened sufficiently to provide a profile adequate to ensure a mechanical bond. The use of CORCHEM® 11 ADHESION PROMOTER may be desired.

INSPECTION Check for the desired dry film thickness and for pinholes, holidays, bare areas, etc. before placing lining in operating service. Use 2500 voltage spark detector on conductive substrates.

AIRLESS SPRAY CONTACT CORCHEM® FOR SPECIFIC RECOMMENDATIONS BEFORE PROCEEDING. Requires plural component, high pressure, and dual proportioning airless spray equipment. Pump fluid to air ratio 45:1 or higher, plural component (mixes at the gun) airless spray gun; with 1/4" by 18' whip hoses, individual "resin" and "catalyst" check valves and tip filters, static mixer, chipper bracket, and fluid tip of .019" or larger orifice size with Reverse-A-Clean tip. 3/8" I.D. or larger high-pressure solvent resistant fluid lines, 1/2" I.D. or larger air-supply line. Continuous air source capable of 80 to 100 psi inbound pressure at pump. Heated hoses and drum heaters. Direct suction feed system. Use re-circulation system, pump-stoke counter; and automatic high-pressure shut-off system.

GENERAL Regulate pressure as required for proper application. Proportionally adjust pressure higher for smaller hose diameter and/or longer hose length and adjust pressure lower for larger hose diameter and/or shorter hose length. Select tip angles and orifice diameters according to application needs.

BRUSH Short hair or natural bristle.

CLOTHING Wear protective garments, shoes, goggles, and filter masks. Use protective barrier creams on exposed skin areas.

CONFINED SPACES - TANKS Wear properly fitted appropriate NIOSH/MSHA approved fresh air respirator such as MSA or equal with 1/4" I.D. or larger air supply line connected directly to proper air source during and after application unless air monitoring demonstrates vapor/mist levels are within safe limits. Use suction type exhaust fans and blowers. **CAUTION!** Air circulation and exhausting of vapors must be continued until the coatings have fully cured.

SAFETY INFORMATION

THIS PRODUCT CONTAINS AROMATIC POLYISOCYANATE RESINS AND AMINE COMPOUNDS. DO NOT USE IF YOU HAVE HAD A REACTION TO THESE MATERIALS.

WARNING! VAPOR HARMFUL! CAUSES SEVERE EYE AND SKIN BURNS. MAY CAUSE SKIN SENSITIZATION OR OTHER ALLERGIC RESPONSES. HARMFUL OR FATAL IF SWALLOWED!

Use only with adequate ventilation. Prevent breathing of vapor or spray mists. Wear a properly fitted appropriate respirator during application and until all vapors and spray mists are gone. **DO NOT USE IF YOU HAVE CHRONIC LUNG OR BREATHING PROBLEMS.** Prevent contact with eyes and skin. Do not take internally. Keep closures tight and upright to prevent leakage. Keep container closed when not in use. In case of spillage, absorb and dispose of in accordance with local applicable regulations. **FIRST AID:** In case of skin contact, wash thoroughly with soap and water; for eyes, flush immediately with plenty of water for 15 minutes and call a physician. Remove and wash contaminated clothing before reuse. (Discard contaminated shoes). If inhaled, remove to fresh air. If breathing difficulty persists or occurs later, consult a physician and have label and MSDS information available. If swallowed, **CALL A PHYSICIAN IMMEDIATELY. DO NOT** INDUCE VOMITING.

IN CONFINED SPACES AND TANKS OBEY SPECIAL SAFETY AND EQUIPMENT INSTRUCTIONS!

FOR INDUSTRIAL USE BY PROFESSIONAL APPLICATORS ONLY. NOT INTENDED FOR SALE TO THE GENERAL PUBLIC. This product should not be sold or delivered to any person under 18 years of age. **KEEP OUT OF THE REACH OF CHILDREN! IF, FOR ANY REASON, ADDITIONAL PRODUCT AND SAFETY INFORMATION, INSTRUCTIONS OR EXPLANATIONS ARE NEEDED, CONTACT CORCHEM® IMMEDIATELY!**

LIMITED WARRANTY

WARRANTY & LIMITATION OF SELLER'S LIABILITY: CORCHEM® CORPORATION warrants only that its coatings represented herein meet the formulation standards of CORCHEM® CORPORATION.

THE ABOVE WARRANTY SHALL BE IN LIEU OF ANY OTHER WARRANTY, EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. THERE ARE NO WARRANTIES THAT EXTEND BEYOND THE DESCRIPTIONS ON THE FACE HEREOF.

The buyer's sole and exclusive remedy against CORCHEM® CORPORATION shall be for replacement of the product in the event, a defective condition of the product should be found to exist. NO OTHER REMEDY (INCLUDING, BUT NOT LIMITED TO, INCIDENTAL OR CONSEQUENTIAL DAMAGES FOR LOST PROFITS, LOST SALES, INJURY TO PERSON OR PROPERTY, OR ANY OTHER INCIDENTAL OR CONSEQUENTIAL LOSS) SHALL BE AVAILABLE TO THE BUYER. The sole purpose of this exclusive remedy shall be to provide buyer with replacement of the product if any defect in materials is found to exist. This exclusive remedy shall not be deemed to have failed its essential purpose so long as CORCHEM® CORPORATION is willing and able to replace the defective materials.

Technical and application information is provided for the purpose of establishing a general profile of the coating and proper coating application procedures. Test performance results were obtained in a controlled environment and CORCHEM® CORPORATION makes no claim these tests or any other tests, accurately represent all environments. As application, environmental and design factors can vary significantly, due care should be exercised in the selection and use of the coating.

PUBLISHED TECHNICAL DATA AND INSTRUCTIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE.
CONTACT YOUR CORCHEM® REPRESENTATIVE FOR CURRENT TECHNICAL DATA AND INSTRUCTIONS.

C210 Polyurethane Lining