CORCHEM®

TECHNICAL BULLETIN

CORCHEM® 204 HIGH BUILD EPOXY

GENERIC Advanced technology diglycidyl ether of bisphenol-A resin reacted with a modified Mannich-base aliphatic amine adduct. The polymer structure is extremely tough and has high adhesive properties.

DESCRIPTION High build fast drying epoxy coating modeled after Military Specification MIL-C-4556 and Bureau of Ships Specification MIL-P-23236 Class I designed to cure at low temperature conditions to provide protection for surfaces in severe chemical and physical environments. It is formulated to have excellent chemical and abrasion resistance properties. The cured film (free of solvents) conforms to United States Department of Agriculture requirements for incidental food contact.

USE Steel and concrete storage vessels, containment areas, piping and processing equipment handling industrial waste, brine waters and water solutions containing salts, detergents, many alkalies and other chemicals. Also petroleum products such as sweet and sour crude oil, kerosene, diesel, gasoline, aviation fuels, motor oils, lubrication materials, greases, hydraulic fluids and aliphatic hydrocarbon solvents. Intended for use in both field and shop operations. The principal use is in water-chemical problem areas such as marine service, oil field production and refining, mining, pulp and paper plants, hydroelectric generating and wastewater treatment facilities. Suggested as a heavy-duty, all purpose, corrosion resistant protective coating. Self-priming to steel, concrete, and most surfaces or may be used in combination with primers such as CORCHEM® 97, 260, MCTHANE™ 150, and many other CORCHEM® products.

SERVICE LIMITATIONS Temperature resistance up to 250°F (dry) and up to 200°F (wet) depending upon the individual exposure. CONTACT CORCHEM® FOR SPECIFIC RECOMMENDATIONS BEFORE PROCEEDING for immersion service and exposure to corrosive chemicals, elevated temperatures, and/or pressures, or use with cathodic protection systems. Avoid sudden depressurization of lining. NOTE: Exterior insulation of tanks, vessels, and processing equipment is recommended to prevent “cold wall effect” if interior lining is subject to elevated temperatures.

COLORS White, Gray, & Black

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

CAUTION! Color and gloss retention may be affected (yellowing, darkening, and/or flattening) by exposure to elevated temperatures. Chalking will occur with extended exposure to sunlight (UV).

VOLUME SOLIDS 85%

DRY COVERAGE Theoretical (no loss): 1360 sq. ft. per gallon for one mil (.001). When computing coverage allow for application loss and surface irregularities.

DRY FILM THICKNESS Normal / standard dry film thickness of 6 – 8 mils applied per coat with a total system dry film thickness of 12 – 16 mils applied in two or more coats. Multiple applications are recommended and may be necessary to achieve the specified or desired film thickness or due to variations in design configurations, application equipment, temperature and other factors.

COMPONENTS Two. By volume 1 to 4 (Component A : Component B).

POT LIFE <2 hours @ 70°F (mixed one-gallon kit). No induction time is required. Pot life is significantly shorter for higher temperatures or larger mixed quantities and longer for lower temperatures or smaller quantities.

VOC CONTENT 120 gms/l or 1.0 lbs/gal. Conforms to United States National Volatile Organic Compound Emission Standards.

THINNER CORCHEM® 4. Thin only as required for proper application. Do not exceed applicable volatile organic compound (VOC) regulations. Thinner added:

05% - 158 gms/lit or 1.32 lbs/gal	10% - 188 gms/lit or 1.57 lbs/gal
15% - 216 gms/lit or 1.80 lbs/gal	20% - 241 gms/lit or 2.00 lbs/gal

APPLICATION METHODS Conventional air spray or airless spray, roller or brush (small areas).

TEMPERATURES Apply at 35°F to 125°F (Air and Surfaces) and 5°F above the dew point. Sudden and/or substantial temperature change during curing process or in-service conditions can cause film defects.

CURING TIME This suggested curing schedule is predicated upon application conditions where the mixed product, substrate, and ambient air temperatures are the same:

Temperature	50°F	70°F	90°F
Minimum Recoat Time	8 Hours	4 Hours	2 Hours
Maximum Recoat Time	5 Days	72 Hours	36 Hours
Immersion – Final Cure	7 Days	5 Days	3 Days

Curing times are significantly shorter for higher temperatures or lower thickness and are longer for lower temperatures or higher thickness. Curing times are affected by the method of application; thickness of applied film; the quantity of thinner (if used); the amount of ventilation and air circulation; relative humidity; etc. *Refer to RECOAT AND REPAIR Section for extended recoat instructions, if subjected to extended exposure to sunlight, or if coating reaches complete cure and hardness.*

NOTICE! For faster curing and lower temperature applications CORCHEM® 204-WA-0C0, Component A, [WINTER CURE] curing agent may be desired. Heat curing will increase drying speed and improve resistance properties. Contact CORCHEM® for instructions and heat cure times.

PACKAGING 1-gallon & 5-gallon pre-measured packaged kits.

SHELF LIFE 2-years from shipment date protected between 40°F and 100°F in its original sealed container.

DOT/FLASH POINT Flammable Liquid Classification.

PERFORMANCE DATA Contact CORCHEM® for desired information.

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 visible 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. Repair perforations in steel by patching or plugging with ≥3/16 inch steel using full filet welds on large perforations and CORCHEM® 263 FILLER SURFACER as bonding adhesive on small perforations. Grind top edges of patches to a round contour.

CARBON STEEL Immersion or Severe Exposures: NACE No. 2 / SSPC-SP-10 (Near-White Blast Cleaning). Mild Exposures: NACE No. 3 / SSPC-SP-6 (Commercial Blast Cleaning). Metal surfaces should have an anchor profile of two mils (.002) or more.

NON-FERROUS METALS NACE No. 4 / SSPC-SP-7 (Brush-Off Blast Cleaning). Coatings applied to these surfaces may not achieve the same degree of adhesion and toughness.

WELDING Welding should precede coating. If already coated, follow instructions in American Welding Society, ANSI 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 surfaces by abrasive "brush-off" blast. Level protrusions and repair cavities, voids, and cracks. Apply a suitable CORCHEM® primer sealer or the first application coat "thinned" and back roll to completely wet and thoroughly penetrate surface to ensure that all irregularities are filled and sealed.

APPLICATION MIXING All equipment should be cleaned and flushed with CORCHEM® 4 THINNER. Pre mix each component separately before combining as follows: **Add 1-Part Component A into 4-Parts Component B by volume.** Do not vary proportions. No induction time is required. Power-stir until completely mixed and continue agitation during application. Strain only if required for proper application. Do not allow catalyzed material to stand in equipment after use! Clean immediately with CORCHEM® 4 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 or "mist" coat prior to regular application may be needed to reduce pinholing and/or blistering over a rough/porous type primer or substrate.

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.

AIRLESS SPRAY Graco or equal. Pump ratio 45:1 or higher, gun with fluid tip of .021" or larger orifice size with Reverse-A-Clean tip, 3/8" I.D. or larger high-pressure solvent resistant fluid line, 1/2" I.D. or larger air supply line. Continuous air source capable of 80 to 100 psi inbound pressure at pump.

CONVENTIONAL SPRAY Binks or equal. Pressure material pot with mechanical agitator, dual regulators, air-gages, and oil and moisture separators. No. 2001 gun (external mix), 68SS fluid nozzle, 568 fluid needle, 68 PB air cap, heavy-duty fluid spring, Teflon fluid packing, 3/8" I.D. or larger high solvent resistant fluid line and 3/8" I.D. or larger air-supply line. Continuous air source capable of 20 cfm or more at 80 psi per nozzle and 60 psi to the pot.

BRUSH Short hair or natural bristle.

ROLLER Short nap synthetic covers for back rolling.

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.

INSPECTION Check for desired dry film thickness, (relevant standards: ASTM D7019 / SSPC PA 2), and for pinholes, holidays, bare areas, (relevant standards: ASTM D5162 / NACE SP0188), etc. before placing in operating service.

CLOTHING **Refer to the Safety Data Sheet (SDS) for complete safety information.** Wear protective garments, shoes, goggles, and filter masks. Use protective barrier creams on exposed skin areas.

TANKS & VESSELS **Refer to the Safety Data Sheet (SDS) for complete safety information**. If thinner is added to this product use explosion-proof lighting and electrical equipment, non-sparking tools, clothes and shoes. Ground all structures and equipment. Use procedures that prevent static electrical sparks. 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 with sufficient cfm capacity to keep solvent vapors below 20% of the explosive limit. CAUTION! Air circulation and exhausting of solvent vapors must be continued until the coatings have fully cured to insure that no potential for fire, explosion or health hazard remains.

SAFETY INFORMATION

THIS PRODUCT CONTAINS KETONES, PETROLEUM DISTILLATES, ALCOHOLS, EPOXY RESINS, AND AMINE COMPOUNDS. DO NOT USE IF YOU HAVE HAD A REACTION TO THESE MATERIALS.

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

Keep away from heat, sparks, and open flame. 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. 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

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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.

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