TECHNICAL BULLETIN

CORCHEM® CORPORATION

CORCHEM® 239 FIRE TUBE COATING

GENERIC Proprietary technology densely cross-linked reactive polymer catalyzed to form a barrier structure that is extremely chemically inert with a high heat deflection temperature.

DESCRIPTION Heavy-duty coating designed to cure at ambient temperature conditions to provide exceptional elevated temperature protection for surfaces in severe chemical and physical environments. It is formulated to be extremely adhesive, hard, tough and abrasion resistant.

USE Intended for fire tube's in oil field treaters handling hot crude, brine and waste water at oil field production sites including water solutions containing carbon dioxide, hydrogen sulfide and methane gases, salts, detergents, many acids, alkali, and other chemicals. Also suggested as a protective coating for hot transfer lines and steam generating equipment; steel boiler stacks and shells; furnaces, exhaust manifolds and mufflers. The principal use is in chemical problem areas such as oil field production and chemical manufacturing and processing facilities.

SERVICE LIMITATIONS Temperature resistance up to 450°F 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.

COLORS Black.

FINISH Medium Gloss.

CAUTION! Color and gloss variation may occur due to different induction and heat/dry time cure cycles used or if subject to moisture before curing is complete. Color and gloss retention are affected by exposure to elevated temperatures. Chalking will occur with extended exposure to sunlight.

VOLUME SOLIDS 42%

DRY COVERAGE Theoretical (no loss): 672 sq. ft. per gallon for one mil (.001). When computing coverage allow for application loss and surface irregularities.

DRY FILM THICKNESS 2.0 to 3.0 mils per coat. Two or more coats to a dry film thickness of 4.0 to 6.0 mils. 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 3 to 1 (Base:Activator).

POT LIFE 4 hours @ 70°F (mixed one-gallon kit). Pot life is significantly shorter for higher temperatures or larger quantities and longer for lower temperatures or smaller quantities.

VOC CONTENT 475 gms/l or 3.95 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% - 490 gms/lit or 4.08 lbs/gal	10% - 504 gms/lit or 4.20 lbs/gal
15% - 516 gms/lit or 4.30 lbs/gal	20% - 527 gms/lit or 4.39 lbs/gal

APPLICATION METHODS Air or airless spray and 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 Recoat 4-24 Hours @ 70°F (when material is relatively dry and firm, but before coating reaches complete cure and hardness. Refer to RECOAT AND REPAIR Section if coating reaches complete cure and hardness or if subjected to extended exposure to sunlight). Final cure for immersion service is 2 days @ 70°F. Curing times are significantly shorter for higher temperatures or lower thickness and longer for lower temperatures or higher thickness. Curing times are affected by the method of application; the quantity of thinner used; the amount of ventilation and air circulation; relative humidity; etc.

NOTICE! Heat curing may be used to increase drying speed and resistance properties. After the final coat has been applied, allow the minimum flash off/curing time necessary to prevent blistering and defects, then gradually raise the temperature not more the 50°F every 30 minutes until the substrate reaches 250°F to 300°F and bake for 1.5 hours. Contact CORCHEM® for complete instructions and heat cure times.

PACKAGING 1-gallon pre-measured packaged kits.

SHELF LIFE 1 year from shipment date protected between 40°F and 100°F.

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 dirt, chalk, grease, oils, salts, and deleterious materials before application is performed. Vacuum the topside of all horizontal and sloped surfaces.

CARBON STEEL Immersion or Severe Exposures: SSPC-SP-5 (White Metal Blast Cleaning). Metal surfaces should have an anchor profile of 1.0 to 1.5 mils.

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

APPLICATION MIXING All equipment should be cleaned and flushed with CORCHEM® 4 THINNER. Add Component A into Component B. Do not vary proportions. 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 a thin wet coat, allow the material to flash off several minutes but not dry completely, then apply multiple passes to produce an even wet coat to

achieve a dry film thickness of 2.0 to 3.0 mils. Ensure seams and irregularities are completely covered. Application below minimum or above maximum suggested dry film thickness ranges might adversely affect performance.

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 desired dry film thickness and for pinholes, holidays, bare areas, etc. before placing in operating service.

AIRLESS SPRAY Graco or equal. Pump ratio 30:1 or higher, 206-718 gun with fluid tip of .015" 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. 62 gun (external mix), 66-SS fluid nozzle, 65 fluid needle, 66-SD air cap, heavy-duty fluid spring, Teflon fluid packing, 1/2" 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.

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.

TANKS & VESSELS 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 ALCOHOLS, KETONES, AND PETROLEUM DISTILLATES. 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. Inc 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 is not to 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.

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