



Atlas Minerals & Chemicals, Inc.



DATA SHEET

3-28PI (5-23)
Supersedes 3-28PI (3-11)

CHEMESTER® GROUT

DESCRIPTION AND TYPICAL USES

CHEMESTER GROUT is a sanitary corrosion resistant novolac vinyl ester resin grout formulated specifically for grouting tile and paver floors utilizing the "Waxed- Tile" technique. CHEMESTER GROUT is used to grout vertical joints of tile set in epoxy resin bond coats. The consistency of CHEMESTER GROUT provides dense, homogenous joints ensuring a completely sanitary chemical resistant floor. CHEMESTER GROUT offers superior chemical resistance to cleaning agents and sanitizers when compared to many epoxy grouts being used in the food and beverage industries. CHEMESTER GROUT is suitable for intermittent temperature service to 225°F (107°C). CHEMESTER GROUT complies with ASTM C658 specifications for chemical resistant resin grouts.

CHEMICAL RESISTANCE

CHEMESTER GROUT is resistant to many acids, alkalis, salts, cleaning agents, detergents, oils, fats, greases, bleaches and solvents. It has outstanding resistance to chlorine, chlorine dioxide, sodium and calcium hypochlorite and nitric acid used in the food process industries as cleaners and sanitizers. CHEMESTER GROUT is unaffected by many food processing residues, wastes and bacteria. CHEMESTER GROUT is resistant to the chemicals used in the C.I.P. process. The black pigmented materials are not color stable when exposed to free chlorine and chlorine bleaches. Black joints will turn white, however, the performance of the floor is not impaired. Refer to the chemical resistance chart for specific information.

AVAILABLE COLORS

CHEMESTER GROUT is available in white, black or gray. Custom colors are available upon request.

PACKAGING AND COVERAGE

CHEMESTER GROUT

198 lb. 2 oz. (89.8 kg.) Unit Consisting of:

One - 5-gal. pail of Resin (40 lb. [18.1 kg.]

One - bottle of Hardener (9.6 oz. [272 g.]

Three - bags of Powder (52 lb. 8 oz. [23.8 kg.]) ea.

PHYSICAL PROPERTIES

| PROPERTY | TEST METHOD | TYPICAL VALUE |
|---|-------------|---|
| Density | ASTM C905 | 125 lb./cu. ft. (200 g./cc.) |
| Bond Strength, 14 days @ 77°F (25°C) | ASTM C321 | 245 psi. (1.69 MPa) |
| Tensile Strength, 7 days @ 77°F (25°C) | ASTM C307 | 1,800 psi. (12.4 MPa) |
| Compressive Strength, 7 days @ 77°F (25°C) | ASTM C579 | 10,600 psi. (73.1 MPa) |
| Modulus of Rupture, 7 days @ 77°F (25°C) | ASTM C580 | 3,700 psi (25.5 MPa) |
| Coefficient of Thermal Exp., in./in./°F (cm./cm./°C) | ASTM C531 | 1.8 x 10 ⁻⁵ (3.2 x 10 ⁻⁵) |
| Water Absorption | ASTM C413 | < 0.1% |
| Linear Shrinkage | ASTM C531 | 0.3% |
| Working Time @ 75°F (24°C) | — | 25 min. |

METHOD OF INSTALLATION

CHEMESTER GROUT is designed to be installed by the Tiler's method. The tile or brick pavers are set in a bond coat of Red Furnane® Setting Bed (Data Sheet 5-55PI) or ATLAS VTF Setting Bed (Data Sheet 5-58PI) with a nominal 1/8" to 1/4" space between the masonry units. After the bond coat has set, CHEMESTER GROUT is floated into the joints.

TEMPERATURE DURING APPLICATION

Store CHEMESTER GROUT at 70°F (21°C) to 80°F (27°C) for 24 hours prior to use. The best working characteristics of the materials will be attained when the temperature of the substrate, air, masonry units and CHEMESTER GROUT components are between 70°F (21°C) and 85°F (29°C).

Minimum temperature for installation is 60°F (16°C).

WAXING OF THE BRICK AND STEAM CLEANING

For applications where staining would be objectionable, paraffin wax must be applied to the surface face of the brick or tile. Tile with abrasive surface may require double waxing of the surface. The wax can be applied by the tile or brick factory or at the jobsite using waxing units available from ATLAS. The wax coating must be kept off the sides of the tile or brick and should be stacked waxed side to waxed side. The wax coating and excess grout are

NOTE: ATLAS makes it a practice to continuously update and enhance our CCM (Corrosion Resistant Construction Materials) products. For the most recent version of any Data Sheet, please visit our Web site at www.atlasmin.com.

ESTIMATING TABLE - CHEMESTER GROUT

FLOOR AREA

| Brick / Tile Size | Pieces per Sq. Ft. | 1/4" Wide x Full Depth Square Feet per Unit | 1/8" Wide x Full Depth Square Feet per Unit |
|-----------------------|--------------------|---|---|
| | | 198 lb. 2 oz. Unit | 198 lb. 2 oz. Unit |
| 6" x 6" x 1/2" | 3.8 | 485 sq. ft. | 941 sq. ft. |
| 6" x 6" x 3/4" | 3.8 | 323 sq. ft. | 627 sq. ft. |
| 8" x 3-7/8" x 1" | 4.2 | 213 sq. ft. | N/A |
| 8" x 3-7/8" x 1-3/16" | 4.2 | 179 sq. ft. | N/A |
| 8" x 3-7/8" x 1-3/8" | 4.2 | 155 sq. ft. | N/A |
| 8" x 4" x 1/2" | 4.3 | 435 sq. ft. | 841 sq. ft. |
| 8" x 4" x 3/4" | 4.3 | 290 sq. ft. | 560 sq. ft. |
| 8" x 4" x 1-3/8" | 4.3 | 158 sq. ft. | N/A |
| 8" x 4" x 1-1/2" | 4.3 | 145 sq. ft. | N/A |
| 3/4" Hex Tile | 8.9 | 119 sq. ft. | 240 sq. ft. |

Material estimating quantities may vary depending on job conditions and application techniques. Material quantities above are theoretical and do not include a safety factor.

removed from the surface of the tile or brick by steam cleaning. Use a minimum 60 psi. nozzle pressure (100 psi maximum) for cleaning. Refer to the "Typical Working & Setting Times" chart for the minimum cure time before steam cleaning.

MIXING AND APPLICATION INSTRUCTIONS

NOTE: ODORS FROM UNCURED CHEMESTER GROUT WILL CONTAMINATE CERTAIN FOOD, BEVERAGE AND PHARMACEUTICAL PRODUCTS. REMOVAL OF THESE PRODUCTS IS NECESSARY DURING THE INSTALLATION AND CURE OF THE FLOOR. EVACUATE ODORS TO EXTERIOR ENVIRONMENT AND RESTRICT ODORS FROM CIRCULATING THROUGHOUT THE BUILDING.

Pour 8 lb. (120 fl. oz. [3.58 liters]) of Resin into a five-gallon mixing can. Place the mixing can onto a KOL Mixer and begin mixing. Add 1.9 oz. (1.9 fl. oz. [0.06 liters]) of Hardener and mix until the color is uniform (not more than two minutes). After thoroughly blending the two liquid components, add 30 lb. (275 fl. oz. [8.21 liters]) of powder to the liquid mixture. Mix until uniform. Immediately place the material on the floor to be grouted and spread out to extend the working life. Spread the freshly mixed grout with a rubber-faced trowel. On the last pass,

hold the trowel at a right angle to the tile surface and pull diagonally across the open joints, leaving as little grout as possible on the surface of the tile. ATLAS recommends double grouting to ensure full joints when using brick or pavers. The second pass must be made within 24 hours of the initial pass.

COVE BASE

Adjust the consistency of CHEMESTER GROUT by adding Powder as necessary for application in vertical joints.

CLEANING OF TOOLS AND EQUIPMENT

Solvents, such as methyl ethyl ketone, toluene or xylene will remove the materials referred to in this Data Sheet from mixing tools and equipment if cleaning is done immediately after use. Fully hardened material will have to be removed by mechanical means.

Dispose of residues and wastes in accordance with the directions in the Safety Data Sheets and government regulations.

STORAGE AND SHELF LIFE

Store all materials in a cool, dry environment. Keep all materials out of direct sunlight. CHEMESTER GROUT Resin and Hardener must be stored at 60°F

MIX RATIO CHART - CHEMESTER GROUT

| CHEMESTER GROUT | Parts by Weight | Weight | Volume |
|--------------------------|-----------------|-------------------------|-----------------------------|
| CHEMESTER GROUT Resin | 100 | 8 lb. (3.6 kg.) | 120 fl. oz. (3.58 liters) |
| CHEMESTER GROUT Hardener | 1.5 | 1.9 oz. (53 g.) | 1.9 fl. oz. (0.06 liters) |
| CHEMESTER GROUT Powder | 375 | 30 lb. (13.6 kg.) | 275 fl. oz. (8.21 liters) |
| Batch Size | | 38 lb. 1 oz. (17.3 kg.) | 0.30 cu. ft. (11.85 liters) |

TYPICAL WORKING & SETTING TIMES OF THE CHEMESTER GROUT

| Temperature | Working Time | Support Foot Traffic | Cure Before Steam Cleaning |
|-------------|--------------|----------------------|----------------------------|
| 60°F (16°C) | 25-35 min. | 14-16 hours | 48 hours |
| 75°F (24°C) | 20-25 min. | 8-10 hours | 24 hours |
| 85°F (29°C) | 10-15 min. | 7-8 hours | 24 hours |

(16°C) or less. Protect from freezing. In unopened original containers, CHEMESTER GROUT Resin and Hardener have a shelf life of approximately four months. CHEMESTER GROUT Powder has a shelf life of approximately one year.

PRODUCT SPECIFICATION

The grout shall be CHEMESTER GROUT as manufactured by Atlas Minerals & Chemicals, Inc. The grout shall comply with the requirements of ASTM C658. The grout shall consist of an epoxy novolac vinyl ester resin with a silica filler.

PRECAUTIONS

The materials referred to in this Data Sheet are for Industrial Use Only. They contain materials that present handling and potential health hazards. Consult Safety Data Sheets and the container labels for complete precautionary information.

TECHNICAL SERVICES

ATLAS maintains a staff of Technical Service Representatives who are available to assist you with the use of ATLAS products. In the event of difficulties with the application of ATLAS materials, the installation should be stopped immediately and ATLAS' Technical Service Department consulted for assistance.

WARRANTY

ATLAS warrants that its products will be free from defects in workmanship and materials under normal use for a period of one (1) year from the date of shipment by ATLAS (provided the products are installed before the expiration of the shelf life). THERE ARE NO EXPRESS OR IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR THE PURPOSE FOR THIS PRODUCT WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF. ATLAS' LIABILITY FOR ALLEGED BREACH OF THIS WARRANTY SHALL BE LIMITED TO REPAIR OR REPLACEMENT OF THE DEFECTIVE PRODUCT (BUT NOT INCLUDING REMOVAL OF THE DEFECTIVE PRODUCT OR INSTALLATION OF REPLACEMENT PRODUCTS). ATLAS SHALL NOT BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES DURING THE WARRANTY PERIOD OR THEREAFTER. **ATLAS' WARRANTY IS VOIDED IF PAYMENT FOR PRODUCT IS NOT RECEIVED IN FULL.**

CHEMICAL RESISTANCE OF CHEMESTER® GROUT (3-28PI)

| | 80°F | H |
|-------------------------------------|------|---|
| Acetaldehyde | N | N |
| Acetic Acid, to 10% | R | R |
| Acetic Acid, Glacial | N | N |
| Alum or Aluminum Sulfate | R | R |
| Aluminum Chloride, Nitrate | R | R |
| Ammonium Chloride, Nitrate, Sulfate | R | R |
| Ammonium Hydroxide, to 25% | R | R |
| Amyl Acetate | N | N |
| Amyl Alcohol | R | C |
| Aniline | C | N |
| Aqua Regia | N | N |
| Barium Chloride, Nitrate, Sulfate | R | R |
| Barium Hydroxide | R | R |
| Barium Sulfide | R | R |
| Benzene | R | N |
| Benzene Sulfonic Acid, 30% | R | R |
| Benzoic Acid | R | R |
| Boric Acid | R | R |
| Bromine Water | N | N |
| Butyl Acetate | C | N |
| Butyl Alcohol, Normal | R | C |
| Butyric Acid | R | C |
| Cadmium Chloride, Nitrate, Sulfate | R | R |
| Calcium Bisulfite | R | R |
| Calcium Chloride, Nitrate, Sulfate | R | R |
| Calcium Hydroxide, to 25% | R | R |
| Carbon Disulfide | N | N |
| Carbon Tetrachloride | R | R |
| Chlorine Dioxide, Water Solution | R | R |
| Chlorine, Dry or Wet | R | R |
| Chlorine Water | R | R |
| Chloroacetic Acid, to 10% | R | C |
| Chlorobenzene | R | C |
| Chloroform | N | N |
| Chromic Acid, to 5% | R | R |
| Chromic Acid, 5% to 20% | R | R |
| Chromic Acid, above 50% | N | N |
| Citric Acid, to 10% | R | R |
| Copper Chloride, Nitrate, Sulfate | R | R |
| Dichloroacetic Acid, 10% | R | N |
| Dichlorobenzene | R | C |
| Diethyl Ether | N | N |
| Ethyl Acetate | N | N |
| Ethyl Alcohol | R | C |
| Ethyl Sulfate | R | C |
| Ethylene Dichloride | N | N |
| Ethylene Glycol | R | R |
| Fluosilicic Acid, 30% | R | C |

| | 80°F | H |
|---|------|----|
| Formaldehyde | R | R |
| Formic Acid | R | C |
| Gasoline | R | R |
| Glycerine | R | R |
| Gold Cyanide | R | R |
| Hexane | R | R |
| Hydrobromic Acid | R | R |
| Hydrochloric Acid | R | R |
| Hydrocyanic Acid | R | R |
| Hydrofluoric Acid | RA | RA |
| Hydrofluosilicic Acid | RA | RA |
| Hydrogen Peroxide | R | C |
| Hydrogen Sulfide Gas, Dry or Wet | R | R |
| Iron Chloride, Nitrate, Sulfate | R | R |
| Isopropyl Ether | N | N |
| Kerosene | R | C |
| Lactic Acid | R | R |
| Lead Acetate, Nitrate | R | R |
| Linseed Oil | R | R |
| Magnesium Chloride, Nitrate, Sulfate | R | R |
| Magnesium Hydroxide, to 25% | R | R |
| Maleic Acid | R | R |
| Mercuric Acetate | R | R |
| Methyl Acetate | R | C |
| Methyl Alcohol | R | C |
| Methyl Ethyl Ketone | C | N |
| Methyl Sulfate | C | N |
| Mineral Oil | R | R |
| Mineral Spirits | R | R |
| Muriatic Acid | R | R |
| Nickel Chloride, Nitrate, Sulfate | R | R |
| Nitric Acid, up to 40% | R | R |
| Nitric Acid, above 50% | N | N |
| Nitrobenzene | R | C |
| Oleic Acid | R | R |
| Oxalic Acid | R | R |
| Perchloric Acid, to 30% | R | C |
| Phenol, to 5% | R | R |
| Phosphoric Acid | R | R |
| Phosphorous Acid | R | R |
| Phosphorous Trichloride | N | N |
| Phthalic Acid | R | R |
| Picric Acid, to 10% | R | R |
| Potassium Bicarbonate, Carbonate | R | R |
| Potassium Chloride, Nitrate, Sulfate | R | R |
| Potassium Cyanide, Ferricyanide, Ferrocyanide | R | C |
| Potassium Hydroxide, to 25% | RA | RA |
| Pyridine | N | N |

| | 80°F | H |
|--------------------------------------|------|----|
| Rochelle Salt | R | R |
| Salicylic Acid | R | R |
| Silver Nitrate | R | R |
| Sodium Acetate | R | R |
| Sodium Bicarbonate, Carbonate | R | R |
| Sodium Chloride, Nitrate, Sulfate | R | R |
| Sodium Cyanide, 10% | R | R |
| Sodium Hydroxide | RA | RA |
| Sodium Hypochlorite, to 6% | R | R |
| Sodium Hypochlorite, 6% to 12% | R | C |
| Sodium Sulfide, Sulfite, Thiosulfate | R | C |
| Soya Oil | R | R |
| Stearic Acid | R | R |
| Sulfur Dioxide Gas, Dry or Wet | R | R |
| Sulfur Trioxide Gas, Dry | R | R |
| Sulfur Trioxide Gas, Wet | R | R |
| Sulfuric Acid, to 50% | R | R |
| Sulfuric Acid, above 50% | R | R |
| Sulfurous Acid | R | R |
| Tannic Acid | R | R |
| Tartaric Acid | R | R |
| Tin Chloride, Sulfate | R | R |
| Toluene | R | C |
| Trichloroethylene | N | N |
| Trisodium Phosphate | R | R |
| Tung Oil | R | R |
| Urea | R | R |
| Xylene | C | N |
| Zinc Chloride, Nitrate, Sulfate | R | R |

(5-23)

KEY

- R- Recommended
- N- Not Recommended
- C- Conditional; May be serviceable if the contaminant is immediately removed or washed off the surface.
- A- Silica Filler may be attacked.
- H Up to temperature limitations of the mortar. When the chemical boils below this point, resistance is shown to the boiling point.

Note - The information presented in the chemical resistance tables is based on judgments derived from laboratory testing and field service performance. The tables have been prepared as a guide to performance. No guarantee of results is made or implied and no liability in connection with this information is assumed. The information presented herein should be supplemented by in-service testing. The data furnished in the tables may be revised on the basis of further testing.