Weaver
CONSTRUCTION MANAGEMENT
3679 S Huron Street, Suite 404 Englewood, Colorado 80110
Phone: (303) 789-4111 FAX: (303) 789-4310

SUBMITTAL TRANSMITAL

August 22, 2012
Submittal No: 09620-001

PROJECT: **Harold Thompson Regional WRF**
Birdsall Rd.
Fountain, CO 80817
Job No. 2908

ENGINEER: **GMS, Inc.**
611 No. Weber St., #300
Colorado Springs, CO 80903
719-475-2935 Roger Sams

OWNER: **Lower Fountain Metropolitan Sewage Disposal District**
901 S. Santa Fe Ave.
Fountain, CO 80817
719-382-5303 James Heckman

CONTRACTOR: **High Country Coatings Inc.**
715 N. Ventura Street
Aurora, CO 80011
303-367-4446 Buzz Haas
buzzhaas@highcountrycoatings.com

SUBJECT: Concrete Floor Stain at the Operations Building

SPEC SECTION: 09620 – Stain and Polish Floor

PREVIOUS SUBMISSION DATES:

DEVIATIONS FROM SPEC: ___ YES _X_ NO

CONTRACTOR'S STAMP: This submittal has been reviewed by Weaver Construction Management and, unless indicated otherwise, has been found to be in conformance with the intent of the contract documents.

Contractor's Stamp:	Engineer's Stamp:
Date: 9/22/12 Reviewed by: John Jacob ( ) Reviewed Without Comments (X) Reviewed With Comments ENGINEER'S COMMENTS:	

Weaver
CONSTRUCTION MANAGEMENT

PH 303-789-4111 3679 So. Huron St., Suite 404
FX 303-789-4310 Englewood, Colorado 80110

Project: HDTWRF **Submittal No.: 09620-001**

Location: Fountain, CO

Supplier: HCC

Date: 8/21/12

Submittal 09620-001 Concrete Floor Staining for Operation Building Floors

Additional Submittal Review Comments:

1. **WCM will prepare the Owner with one 5' x 5' sample of the concrete stain from one of the colors provide in the color chart herein. This sample will be prepared in accordance with the same application methods for the final product.**

End of Review

High Country Coatings, Inc.
715 N. Ventura Street
Aurora, Colorado 80011
Phone: (303) 367-4446
Fax: (303) 367-4448

August 21, 2012

Weaver Construction Management Co.
3679 S. Huron St, Suite 404
Englewood, CO 80110

High Country Coatings, Inc. in compliance with the project requirements will stain and polish the floors at the Harold D. Thompson Water Reclamation Facility totaling 1,742 square feet.

First we will sweep and scrub the floor. We will then proceed to grind the floor with metal bonded diamonds to polish to an 800 grit. After grinding the floor we will apply one coat of L.M. Scofield "Enhancer" followed by one coat of L.M. Scofield "Chemstain" concrete stain. Lastly, we will scrub up all the excess acid and neutralize the floor and then apply a finish sealer and buff with pads.

Products Applied

- **L.M. Scofield Enhancer**
- **L.M. Scofield Chemstain**
- **VMC V2 Finish Sealer**
- **VMC V3 Finish Sealer**
- **Zep Extra Concrete Floor Cleaner**

LITHOCHROME® Chemstain®

Classic

The Original Commercial Concrete Acid Stain

COLOR CHART A - 412.07S

CS-12 Weathered Bronze*

CS-11 Fern Green*

CS-13 Copper Patina*

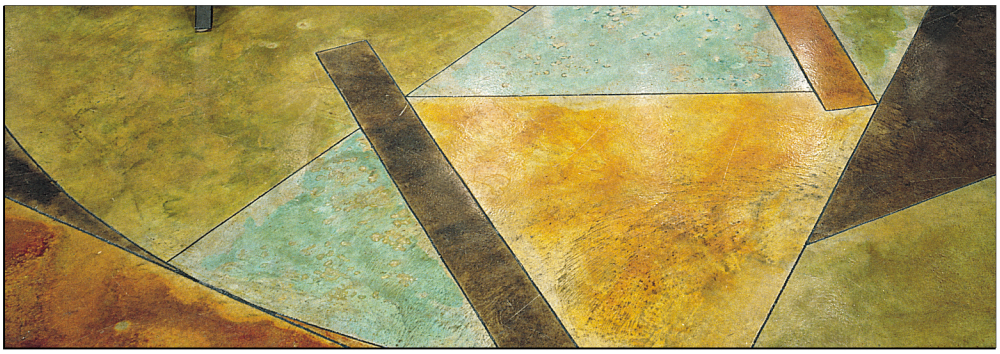
CS-2 Padre Brown

CS-16 Faded Terracotta

CS-15 Antique Amber

CS-14 Dark Walnut

CS-1 Black



LITHOCHROME® Chemstain® Classic chemically reacts with the surface of cured concrete to produce unique, permanent and one-of-a-kind color effects. The resulting colors become part of the concrete surface without developing a film and will not fade, chip, crack or peel.

LITHOCHROME Chemstain Classic colors and enhances, but will not hide the unique surface blemishes in the concrete. The antiqued, mottled and variegated look is ideal for either interior or exterior use including hardscapes, floors or artificial rock and water features.

LITHOCHROME Chemstain Classic contains no VOC's and meets stringent air quality management regulations.

*CS-11, CS-12 and CS-13 are suitable for interior applications only.

For professional use only.

Examples represent LITHOCHROME® Chemstain® Classic applied to uncolored concrete. Results will vary due to differences in concrete surfaces. Most projects will have a less monochromatic and more variegated apearance than shown here. Always perform a mockup prior to starting the job. For optimum performance and durability SCOFIELD® Selectseal-W™ is recommended for sealing and protecting chemically stained surfaces.

Read Scofield Tech-Data Bulletin A-414 LITHOCHROME Chemstain Classic for more information.

SCOFIELD® SYSTEMS

www.scofield.com

SCOFIELD SYSTEMS

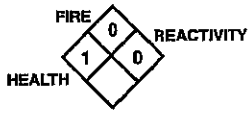
L. M. SCOFIELD COMPANY
6533 BANDINI BLVD. • LOS ANGELES, CALIFORNIA 90040
4155 SCOFIELD ROAD • DOUGLASVILLE, GEORGIA 30134

MATERIAL SAFETY DATA SHEET and WARRANTY

A454-9F02

Date: June 2, 2009

Section I Identification



HEALTH	[1]
FLAMMABILITY	[0]
REACTIVITY	[0]
PROTECTION	[G]

Product Name:	**LITHOCHROME® Chemstain® Enhancer**
Chemical Name:	**Mixture**
Chemical Family:	**Inorganic Salt**
Chemical Formula:	**Mixture**
Emergency Telephone Number:	**CHEMTREC (800) 424-9300**
Telephone Number for Information:	**SCOFIELD (770) 920-6000 (323) 720-3000**

Section II Composition/ Information on Ingredients

No hazardous ingredients identified as per 29 CFR 1900.1200.

Section III Hazards Identification

Emergency Overview:

Prolonged or repeated exposure may cause irritation to eyes, skin, and upper respiratory tract.

Signs and Symptoms of Exposure:

Inhalation — **Not applicable.**
Eyes — **Redness, irritation, and eye watering.**
Skin — **Redness and irritation.**
Ingestion — **Nausea, vomiting, diarrhea, or dizziness.**

Medical Conditions Generally Aggravated by Exposure: **Dermatitis**

Section IV First Aid Measures

Emergency and First Aid Procedures:

Inhalation — **Move to fresh air.**
Skin — **Wash thoroughly with soap and water. Remove soiled clothing and footwear and wash before reuse.**
Ingestion — **Get medical attention.**
Eyes — **DO NOT RUB EYES. Immediately flush thoroughly with large amounts of water.**

If symptoms persist or develop, get medical attention.

Section V Fire and Explosion Hazard Data

Flash Point (Method Used):	**None**
Flammable Limits:	**None**
Extinguishing Media:	**Water spray, dry chemical, foam, and CO_2.**
Special Fire Fighting Procedures:	**Noncombustible. Firefighters should wear appropriate protection for other materials involved. Cool tightly closed containers exposed to fire with water.**
Unusual Fire and Explosion Hazards:	**None. Noncombustible.**

Section VI Accidental Release Measures

Steps to be Taken in Case Material is Released or Spilled: **Only qualified personnel who have read the product Tech-Data Bulletins and this MSDS should conduct these procedures. Persons not wearing protective equipment should be excluded from the area. Follow procedures in *Section VIII–Exposure Controls/Personal Protection.* Liquid material spills may be slippery.**

Cordon off area if necessary to prevent unauthorized traffic or entry. Collect with wet vacuum or absorb with inert material and place in labeled waste container for disposal together with all contaminated matter or equipment.

Section VII Precautions for Safe Handling and Use

Precautions to be Taken in Handling and Storing: **Follow personal protection procedures *(Section VIII)* when handling the material. Store upright in a cool, dry, well-ventilated area in tightly closed containers. Protect from physical damage. Labels must not be removed from containers. Product should only be stored in original containers.**

Section VIII Exposure Controls/ Personal Protection

Ventilation/Engineering Controls: **Not applicable**

Respiratory Protection: **Not applicable**

Eye Protection: **Goggles recommended. Wearing of contact lenses when working with this product is not recommended.**

Skin Protection: **Impervious gloves recommended.**

Other Protective Clothing or Equipment: **Wear suitable clothing to minimize skin contact.**

Work/Hygienic Practices: **Minimize exposure in accordance with good hygienic practice. Wash with soap and water immediately after handling.**

Section IX Physical and Chemical Characteristics

Appearance:	**No color**
Odor:	**No odor**
Vapor Pressure (mm Hg.):	**Of water**
Vapor Density (Air = 1):	**Of water**
Boiling Point:	**Approximately 212° F**
Melting Point:	**Approximately 32° F**
Solubility in Water:	**100%**
Specific Gravity (H_2O = 1):	**Approximately 1**
Evaporation Rate (Butyl Acetate = 1):	**Of water**
Volatile Organic Compounds:	**None**

Section X Stability and Reactivity

Stability:	**Stable**
Conditions to Avoid:	**None**
Incompatibility (Materials to Avoid):	**Acids**
Hazardous Decomposition or By-products:	**Heated to decomposition, it will emit fumes of sodium oxide.**
Hazardous Polymerization:	**Will not occur.**

Section XI Toxicological Information

Toxicity: **No delayed, subchronic, or chronic test data are known. This product does not contain any ingredient designated by IARC, NTP, ACGIH, or OSHA as probable or suspected human carcinogens.**

Section XII Ecological Information

Aquatic Toxicity Rating:

No data

Section XIII Disposal Considerations

Waste Disposal Method: **Follow personal protection procedures *(Section VIII)* when disposing of material. Disposal of all residual product, used absorbent materials, and discarded equipment must be in accordance with all applicable federal, state, and local regulations.**

Scofield cannot make specific recommendations for disposal in any particular locality. The user is cautioned to be thoroughly familiar with all applicable requirements before use. Without endorsement of any particular waste disposal company, Scofield offers the following companies as possible resources for the disposal of industrial or hazardous waste:

Veolia Environmental 1-800-426-2382

Heritage Environmental 1-800-827-4374

Companies who dispose of hazardous waste may also be found on the Internet using "Hazardous Waste Disposal" as key search words.

Section XIV Transport Information

DOT Hazard Class:

Not regulated

Section XV Regulatory Information

U.S. Federal Regulations: **No hazardous ingredients identified as per 29 CFR 1900.1200.**

State Regulations: **State of California *Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65);* WARNING: This product contains one or more chemicals known to the State of California to cause cancer, or birth defects or other reproductive harm.**

For all state regulations, please check with the appropriate state agency.

International Regulations: **Consult the regulations of the importing country.**

Section XVI
Other Information

Before using this product:
Completely read the Scofield Tech-Data Bulletin *A-454 LITHOCHROME Chemstain Enhancer* and the container label.

WARRANTY

Since no control is exercised over product use, L. M. Scofield Company (Scofield) represents and warrants only that its products are of consistent quality within manufacturing tolerances. NO OTHER ORAL OR WRITTEN REPRESENTATION OR STATEMENT OF ANY KIND, EXPRESS OR IMPLIED, NOW OR HEREAFTER MADE IS AUTHORIZED OR WARRANTED BY SCOFIELD, INCLUDING THOSE OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Liability for breach of contract, negligence, or on any other legal basis is limited to the lesser of refund or replacement of defective materials. SCOFIELD WILL NOT BE LIABLE FOR SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES, INCLUDING FOR DELAYS OR LOST PROFITS. Communication of this warranty and its limitations to end users is not the responsibility of Scofield, but should be communicated by those in direct contract with the end user. Any claim regarding product defect must be received in writing within one year from the date of manufacture. No claim will be considered without such written notice or after the specified time interval. The end user shall determine the suitability of the products for the intended use and assumes all risks and liability in connection therewith.

SCOFIELD® SYSTEMS

LITHOCHROME® Chemstain® Enhancer

A ready-to-use, penetrating stain enhancer for use on weathered concrete to facilitate the reaction with LITHOCHROME® Chemstain® Classic.

TECH-DATA BULLETIN A-454.04

1. Product Description:

LITHOCHROME® Chemstain® Enhancer is designed to improve the results of staining weathered cementitious surfaces with LITHOCHROME Chemstain Classic. It is an integral part of the Scofield concrete staining system and will not work with other stain products.

LITHOCHROME Chemstain Classic chemically reacts with the surface of cured concrete to produce its color effects. Older or weathered concrete or areas that are frequently exposed to runoff or dripping water may lack the reactivity necessary for full color development and optimum performance when chemically stained. If little chemical activity takes place the use of LITHOCHROME Chemstain Enhancer may produce a stronger reaction. It replaces some of the chemicals lost in normal weathering and raises the pH level of the substrate, allowing the Chemstain solution to react more efficiently. Information about staining concrete and the effects achieved is available in the Scofield Tech-Data Bulletin *A-414 LITHOCHROME Chemstain Classic.*

2. Coverage:

LITHOCHROME Chemstain Enhancer is applied full-strength (undiluted) by hand-pump sprayer, roller, or mop. One application is normally sufficient. For very porous surfaces a minimum of two separate applications may be necessary.

Coverage will vary widely depending on the porosity and texture of the surface, composition and age of the concrete, application techniques, number of applications, and other factors.

The coverage rate per application is approximately 200–300 square feet per gallon (5–7 m^2/L).

3. Limitations:

Before using LITHOCHROME Chemstain Enhancer, Scofield's Tech-Data Bulletin *A-414 LITHOCHROME Chemstain Classic* must be read carefully. LITHOCHROME Chemstain Enhancer is used to raise the pH level and increase the alkalinity of neutral substrates to produce a stronger reaction with the chemical stain. Under no circumstances does it replace one or more coats of LITHOCHROME Chemstain Classic.

When staining with LITHOCHROME Chemstain Classic, the color obtained, the uniformity of color, and the depth of penetration are not predictable. It is not possible to successfully stain some concrete surfaces or cementitious toppings even when LITHOCHROME Chemstain Enhancer is used.

If contaminants remain on the surface, the penetration of the LITHOCHROME Chemstain Enhancer and LITHOCHROME Chemstain Classic may be blocked. Overapplication of LITHOCHROME Chemstain Enhancer may retard the drying time and reduce the reaction of LITHOCHROME Chemstain Classic with the substrate.

Do not mix LITHOCHROME Chemstain Enhancer with LITHOCHROME Chemstain Classic or any other product.

4. Composition and Materials:

LITHOCHROME Chemstain Enhancer is a proprietary, water-based formulation designed to penetrate the surface of concrete. It promotes greater reactivity allowing LITHOCHROME Chemstain Classic to perform more effectively.

5. Applicable Standards:

LITHOCHROME Chemstain Enhancer complies with applicable air quality management regulations. It contains no Volatile Organic Compounds (VOC) and no Hazardous Air Pollutants (HAP).

6. Sizes:

LITHOCHROME Chemstain Enhancer is available in 1-gallon (3.8 L) and 5 gallon (18.9 L) containers. Sample sizes are available for investigational use.

7. Storage and Shelf Life:

When stored indoors in the original unopened container, the shelf life of LITHOCHROME Chemstain Enhancer is at least 1 year from the date of purchase. Inventory must be rotated to maintain product that is within shelf life limits.

8. Cautions:

CAUTION!

Use only with adequate ventilation. Avoid contact with eyes, skin and clothing. DO NOT TAKE INTERNALLY. KEEP OUT OF THE REACH OF CHILDREN.

First Aid: Eyes—DO NOT RUB EYES. FLUSH IMMEDIATELY WITH WATER. Hold eyelids apart while flushing material out thoroughly with large amounts of water. Skin—Wash thoroughly with soap and water. Remove soiled clothing and footwear and wash before reuse. Inhalation—Move to fresh air. If symptoms persist or develop or if ingested, get medical attention.

Wash thoroughly immediately after handling. Close container after each use. In case of spillage, absorb with inert material and dispose of in accordance with applicable regulations. Do not reuse empty container. Before using or handling, read the *Material Safety Data Sheet and Warranty.*

9. Equipment for Preparation and Application:

When using equipment and materials during preparation and application, suitable protective gear must be worn and government regulations, manufacturer's instructions, and all applicable safety requirements must be followed.

Use of a pressure washer, a rotary floor machine, or a walk-behind scrubbing machine will facilitate surface preparation. A hand-pump sprayer, roller, or mop is required for application of LITHOCHROME Chemstain Enhancer. All equipment should be rinsed regularly with water.

For cleaning horizontal or vertical concrete, the pressure washer must be equipped with a fan tip and have a minimum pressure capability of 2000 psi (14 MPa). Hot water capability may facilitate cleaning of existing concrete. Nonmarking hoses are helpful.

For cleaning flatwork, the rotary floor machine must be heavy duty and operate at 175 rpm. It may be equipped with brushes or with a pad-driver that securely holds pads in place. For cleaning, a stiff-bristled bassine or nylon scrub brush is recommended. On flat interior floors, blue scrubbing pads may be required. Walk-behind scrubbing machines should be considered for cleaning larger areas.

For general application, the hand-pump sprayer must be of professional quality and should normally be equipped with a fan tip. The use of an airless sprayer is not recommended.

For general application, the roller must be of professional quality with a $^1/_4$–$^1/_2$ inch (6–13 mm) nap.

For general application, the mop must be new, of high-quality, clean, and manufactured of rayon.

■ *10. Test Sections:*

To verify and approve suitability and appearance, representative test sections must be produced prior to general application of the chemical stain on each individual concrete surface and for each color effect. Test sections should be of adequate size to be representative, and be produced by the same workers who will apply the LITHOCHROME Chemstain Enhancer and LITHOCHROME Chemstain Classic using the contemplated Chemstain colors, application equipment, and techniques. All test sections should be prepared, chemically stained, and sealed or finish-coated as specified.

Producing chemically stained concrete to achieve the desired effect requires experimentation, skill, and practice. The color produced is unique to each concrete surface and depends on the chemical composition, mix design, porosity, age, texture and color of the concrete.

Appearance will also be influenced by the color of LITHOCHROME Chemstain Classic used, preparation methods and application procedures, the number of chemical stain applications, experience in use of the material, sealing or finish-coating materials and methods, and other factors. Each will significantly affect the final appearance and performance of the chemically stained concrete.

If the concrete is so old or weathered that it is entirely nonreactive, it may not be possible to successfully use a chemical stain even with the use of LITHOCHROME Chemstain Enhancer.

■ *11. Preparation:*

Prior to application of LITHOCHROME Chemstain Enhancer, a representative test section must be produced and approved as described in section *10. Test Sections.*

Surrounding areas, landscaping, and adjacent surfaces must be protected from spills, overspray, tracking, equipment contact, and runoff. Adjoining flatwork and walls of porous material, such as masonry, should be masked. The work area should be roped off, nearby vehicles removed, and appropriate sections closed to traffic. Needed equipment, as described in section *9. Equipment for Preparation and Application*, should be available.

Prior to making LITHOCHROME Chemstain Enhancer applications, precautions should be taken to prevent water penetration into the concrete from any source. Sprinklers and fountains should be adjusted to avoid wetting the surface. In hard-water or high-alkali areas, soft water should be considered for use in water features to reduce discoloration of the surface.

Though the effect achieved is primarily dependent on the surface of the concrete to which it is applied, weather conditions should also be considered when planning LITHOCHROME Chemstain Enhancer and LITHOCHROME Chemstain Classic applications. The LITHOCHROME Chemstain Enhancer and chemical stain will dry faster and may require more material or additional applications to produce the desired results in hot, dry, and windy weather. Applications made at low temperatures may not achieve the desired color effects. Rain will wash the LITHOCHROME Chemstain Enhancer and chemical stain from the surface prematurely and runoff may stain adjacent areas or damage landscaping.

Before applying the LITHOCHROME Chemstain Enhancer to a concrete surface, dirt, form oil, plaster stains, oil, and grease must be completely removed by cleaning. The cleaning method to be used depends on the condition of the concrete. To remove dirt and other contaminants, detergents and other commercial cleaners should be considered and tested. Pressure washing or scrubbing with a rotary floor machine is normally required. Acid washing should normally not be used as a cleaning procedure, since it removes necessary reactants from the surface. Failure to remove all contaminants and coatings that impede the penetration of LITHOCHROME Chemstain Enhancer or LITHOCHROME Chemstain Classic into the concrete will cause appearance defects.

Concrete that has been previously treated with liquid curing materials, paints, coatings, waxes, or repellents, or surfaces that cannot be successfully cleaned by other methods, must be sandblasted. Sandblasting must be sufficient so that the coatings or contaminants are completely removed. Sand remaining on the surface after sandblasting should be removed by sweeping or by pressure washing before application of the LITHOCHROME Chemstain Enhancer or chemical stain.

Existing, older concrete must be completely penetrable before receiving the initial application of LITHOCHROME Chemstain Enhancer. An indication of whether the concrete is penetrable can be obtained by spotting the surface with water. The water should immediately darken the substrate and be readily absorbed. If the water beads and does not penetrate or only penetrates in some areas, additional surface preparation and testing must be performed. On denser floors, a light sandblasting may be needed to make the surface sufficiently penetrable for the LITHOCHROME Chemstain Enhancer or chemical stain to react.

After cleaning, the surface must be thoroughly rinsed to remove any remaining residue. Rinsing should continue until the rinse water is completely clean. Wet vacuums may be helpful to remove dirty water, particularly from interior floors. After drying, the surface must be carefully inspected and retested for penetrability. If necessary, additional general or spot cleaning and rinsing should be performed.

■ *12. Application:*

All surfaces must be prepared as described in section *11. Preparation.* The surface should be divided into small work sections using walls, joint lines, or other stationary features as natural stopping points. This allows for easier control of coverage, wet edge, and overlap. For safety and appearance, application procedures should be planned so that the wet surface is not stepped on. Safety precautions must be followed and full protective gear must be worn.

LITHOCHROME Chemstain Enhancer must be applied full strength (undiluted) at the coverage rate given in section *2. Coverage* and using the equipment described in section *9. Equipment for Preparation and Application.* Application should take place approximately 2–3 hours before applying LITHOCHROME Chemstain Classic.

After preparation as described in section *11. Preparation,* the LITHOCHROME Chemstain Enhancer should be applied to the thoroughly dry surface by hand-pump sprayer, roller, or mop. When using a mop the material should be applied using a figure eight motion to ensure even coverage. The surface should be thoroughly and uniformly saturated with liquid LITHOCHROME Chemstain Enhancer at the application rate given in section *2. Coverage.* It should not be overapplied or the drying time may be retarded and the Chemstain reaction with the substrate reduced.

Stepping on or contact with wet surfaces should be avoided. Contact points may appear darker than the surrounding surface after the concrete is chemically stained. If this occurs, the affected area should be brushed out immediately and allowed to dry evenly.

LITHOCHROME Chemstain Enhancer should be applied to vertical surfaces in the same manner. Application should start at the bottom and proceed upward. Excessive rundown should be avoided.

Drying time depends on wind conditions, temperature, and humidity. LITHOCHROME Chemstain Enhancer must be allowed to dry completely for 1–2 hours before chemical staining is performed. Proper safety precautions must be taken to prevent contact with the surface until LITHOCHROME Chemstain Classic has been applied and sealed.

LITHOCHROME Chemstain Classic must be applied as soon as possible, not longer than 12 hours after the LITHOCHROME Chemstain Enhancer has completely dried.

■ *13. Availability:*

LITHOCHROME Chemstain Enhancer is marketed nationwide and internationally, directly to the user through strategically located warehouses, dealers, and representatives. Contact Scofield for its nearest representative.

Scofield offers a complete line of engineered systems for coloring, texturing, and improving performance in architectural concrete. Scofield Systems address specialized requirements for interior, exterior and vertical uses with compatible systems of complementary products including coloring admixtures, color hardeners, colored cementitious toppings, stains, curing compounds, sealers, coatings, repair products and texturing tools. Visit the Scofield website at **www.scofield.com** for further information.

■ *14. Limited Warranty:*

Since no control is exercised over product use, L. M. Scofield Company (Scofield) represents and warrants only that its products are of consistent quality within manufacturing tolerances. NO OTHER ORAL OR WRITTEN REPRESENTATION OR STATEMENT OF ANY KIND, EXPRESS OR IMPLIED, NOW OR HEREAFTER MADE IS AUTHORIZED OR WARRANTED BY SCOFIELD, INCLUDING THOSE OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Liability for breach of contract, negligence, or on any other legal basis is limited to the lesser of refund or replacement of defective materials. SCOFIELD WILL NOT BE LIABLE FOR SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES, INCLUDING FOR DELAYS OR LOST PROFITS. Communication of this warranty and its limitations to end users is not the responsibility of Scofield, but should be communicated by those in direct contract with the end user. Any claim regarding product defect must be received in writing within one year from the date of manufacture. No claim will be considered without such written notice or after the specified time interval. The end user shall determine the suitability of the products for the intended use and assumes all risks and liability in connection therewith.

SCOFIELD

1 800 800 9900 or www.scofield.com

SCOFIELD PRODUCTS ARE INTENDED FOR PROFESSIONAL USE ONLY

■ **L. M. Scofield Company customer service:** 1 800 800 9900

Western Headquarters: 6533 Bandini Blvd., Los Angeles, CA 90040 **voice:** 323 720 3000 **fax:** 323 720 3030

Eastern Headquarters: 4155 Scofield Road, Douglasville, GA 30134 **voice:** 770 920 6000 **fax:** 770 920 6060

www.scofield.com

L. M. SCOFIELD COMPANY
6533 BANDINI BLVD. • LOS ANGELES, CALIFORNIA 90040
4155 SCOFIELD ROAD • DOUGLASVILLE, GEORGIA 30134

MATERIAL SAFETY DATA SHEET and WARRANTY

A414CS2-8A15

Date: January 15, 2008

Section I
Identification

HEALTH	[3]
FLAMMABILITY	[0]
REACTIVITY	[1]
PROTECTION	[H]

Product Name:	**LITHOCHROME® Chemstain™ Classic**
Color Name:	**CS-2 Padre Brown**
Chemical Name:	**Mixture**
Chemical Family:	**Inorganic Salt Solution**
Chemical Formula:	**Mixture**
Emergency Telephone Number:	**CHEMTREC (800) 424-9300**
Telephone Number for Information:	**SCOFIELD (770) 920-6000 (323) 720-3000**

Section II
Composition/ Information on Ingredients

Composition	Weight	OSHA TWA	ACGIH TLV	CAS Number
Hydrochloric Acid	**5–10%**	**5 ppm**	**5 ppm**	**7647-01-0**
Chromic Chloride	**1–5%**	**NA**	**0.5 mg/m^3**	**10025-73-7**
Ferrous Chloride	**15–40%**	**1 mg/m^3 (Fe)**	**1 mg/m^3 (Fe)**	**7758-94-3**

Section III
Hazards Identification

Emergency Overview:

Danger! Corrosive — Causes eye and skin burns. Harmful or fatal if swallowed. Highly reactive with alkaline materials.

Acute Exposure:

Causes severe irritation and damage to eyes, and may cause blindness very rapidly. Causes skin burns. Inhalation of vapor or mist can cause damage to nasal and respiratory passages. May result in severe liver and/or kidney damage if swallowed.

Chronic Exposure:

Prolonged or repeated skin exposure may cause dermatitis. Breathing of vapors or sprays (mists) may aggravate acute or chronic asthma and chronic pulmonary disease such as emphysema and bronchitis.

Signs and Symptoms of Exposure:

Inhalation — **Irritation of the upper respiratory tract, coughing, sore throat, and shortness of breath.**
Eyes — **Burning or stinging.**
Skin — **Irritation, redness, and burning.**
Ingestion — **Burning of mouth and throat, nausea, vomiting, diarrhea, or dizziness.**
Medical Conditions Generally Aggravated by Exposure — **Dermatitis**

Section IV
First Aid Measures

Emergency and First Aid Procedures:

Inhalation — **Move to fresh air. If breathing is difficult, administer oxygen. If breathing has stopped, give artificial respiration. Do not use mouth-to-mouth method if victim ingested or inhaled the substance: induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Give Cardiopulmonary Resuscitation (CPR) if there is no pulse AND no breathing. Obtain medical attention IMMEDIATELY.**

Skin — **Immediately flush contaminated areas with water. Start flushing while removing contaminated clothing. If irritation persists, repeat flushing. Wash soiled clothing and footwear before reuse. Discard shoes contaminated with this product. If symptoms persist or develop, get medical attention.**

Section IV First Aid Measures (continued)

Emergency and First Aid Procedures (continued):

Ingestion — **Do not induce vomiting. Vomiting will cause further damage to the throat. Give several glasses of water or milk. If spontaneous vomiting occurs, have victim lean forward with head down to avoid breathing in vomitus, rinse mouth and administer more water. IMMEDIATELY contact local poison control center. IMMEDIATELY transport victim to an emergency facility. Never give anything by mouth if victim is rapidly losing consciousness, or is unconscious or convulsing.**

Eyes — **OBJECT IS TO FLUSH MATERIAL OUT IMMEDIATELY, THEN GET MEDICAL ATTENTION. Flush IMMEDIATELY with large amounts of water while holding eyelids apart. Washing within several seconds is essential to achieve maximum effectiveness. GET MEDICAL ATTENTION IMMEDIATELY AFTER FLUSHING. If physician is not immediately available, continue flushing with water.**

Section V Fire and Explosion Hazard Data

Flash Point (Method Used):	**None**
Flammable Limits:	**Not applicable**
Extinguishing Media:	**Nonflammable/noncombustible. Use agents appropriate for surrounding fire.**
Special Fire Fighting Procedures:	**NIOSH/MSHA pressure-demand, self-contained breathing apparatus should be provided for fire fighters in buildings or confined spaces where this product is stored.**
Unusual Fire and Explosion Hazards:	**Closed containers may rupture due to high buildup of pressure and weakening of the container structure when exposed to extreme heat. Will give off toxic corrosive fumes of HCl at high temperatures. Reacts with most metals to produce hydrogen gas which can form explosive mixtures in air.**

Section VI Accidental Release Measures

Only qualified personnel who have read the product Tech-Data Bulletins and this MSDS should conduct these procedures. Persons not wearing protective equipment should be excluded from the area. Follow procedures in *Section VIII–Exposure Controls/Personal Protection*. Liquid material spills may be slippery. Spilled material may stain the floor and other surfaces.

Cordon off area if necessary to prevent unauthorized traffic or entry. Promptly dike to prevent spreading and stop spill at source. Collect with wet vacuum or absorb with inert material and place in labeled waste container for neutralization and disposal together with all contaminated matter or equipment. If unable to prevent release to soil or waters of the state, immediate notice to local regulatory authorities is required.

Section VII Precautions for Safe Handling and Use

Precautions to Be Taken in Handling and Storing:

Follow personal protection procedures *(Section VIII)* when handling the material. Store upright in a cool, dry, well ventilated area, in tightly closed containers away from combustible materials and sources of heat. Do not use metal containers or equipment. Isolate from other chemicals and materials to avoid chemical incompatibility. Protect from physical damage. Labels must not be removed from containers. Product should only be stored in original containers. Do not reuse empty containers. Empty containers may contain residues which must be neutralized prior to disposal. See *Waste Disposal Methods (Section XIII)* below.

Steps to be Taken During Application and Cleanup Process:

Do not permit runoff. Do not use unless all product, runoff, and rinsate can be kept away from drains, ground water, and soil. Collect all runoff and rinsate with wet vacuum or absorb with inert material and dispose of as detailed in *Waste Disposal Methods (Section XIII)* below.

MATERIAL SAFETY DATA SHEET and WARRANTY

Section VIII Exposure Controls/Personal Protection

Ventilation/Engineering Controls:	**Adequate ventilation and sufficient local exhaust as needed to maintain exposure below TWA and TLV limits.**
Respiratory Protection:	**Wear P100/Hydrogen Chloride respirator (NIOSH TC-84A approved). 3M Company's Tech Line (1-800-243-4630) may be helpful for respirator advice and availability. For respiratory protection guidelines refer to OSHA 29 CFR 1910.134.**
Eye Protection:	**Wear chemical-splash goggles.**
Skin Protection:	**Wear impervious, chemical-resistant gloves.**
Other Protective Clothing or Equipment:	**Wear suitable protective clothing, chemical-resistant apron and boots to avoid skin contact. Emergency eyewash and washing facilities should be available nearby.**
Work/Hygienic Practices:	**Minimize exposure in accordance with good hygienic practice. Wash with soap and water immediately after handling.**

Section IX Physical and Chemical Characteristics

Boiling Point:	**Not determined**
Vapor Pressure (mm Hg.):	**Not determined**
Vapor Density (Air = 1):	**Not determined**
Solubility in Water:	**Soluble**
pH:	**< 3.0**
Specific Gravity (H_2O = 1):	**Approximately 1.0–1.5**
Melting Point:	**Not applicable**
Evaporation Rate (Butyl Acetate = 1):	**Not determined**
Volatile Organic Compounds:	**Nil**
Appearance and Odor:	**Dark green liquid. Chlorine odor.**

Section X Stability and Reactivity

Stability:	**Stable**
Conditions to Avoid:	**Excessive heat**
Incompatibility (Materials to Avoid):	**Metals, especially alkali or alkaline earth metals, reducing agents, alkalis, organic and oxidizable materials.**
Hazardous Decomposition or By-products:	**May evolve highly toxic chloride and chlorine fumes. Hydrogen may be liberated in contact with certain metals.**
Hazardous Polymerization:	**Will not occur.**

Section XI Toxicological Information

There are no ingredient raw materials at 0.1% or greater listed as potential carcinogens by OSHA, IARC, or NTP.

Section XII Ecological Information

Aquatic Toxicity Rating:

LC50 aquatic toxicity rating not determined. Although there is no toxicity data available, it is reasonable to assume that sufficient quantities will affect aquatic life. Precautions should be taken to prevent the accidental release of this material to the environment.

MATERIAL SAFETY DATA SHEET and WARRANTY

Section XIII Disposal Considerations

Waste disposal method:

Follow personal protection procedures *(Section VIII)* when rinsing or washing equipment or disposing of material. Rinse or wash equipment in baking soda solution to neutralize pH (acidity). pH neutralized cleanup materials may still contain components listed in this MSDS on Page 1 which are hazardous. Disposal of all residual product, runoff, rinsate, used absorbent materials, and discarded equipment must be in accordance with applicable federal, state, and local regulations.

Scofield cannot make specific recommendations for disposal in any particular locality. The user is cautioned to be thoroughly familiar with all applicable requirements before use. Without endorsement of any particular waste disposal company, Scofield offers the following companies as possible resources for the disposal of industrial or hazardous waste:

Veolia Environmental 1-800-426-2382 Heritage Environmental 1-800-827-4374

Companies who dispose of hazardous waste may also be found on the Internet using "Hazardous Waste Disposal" as the key search words.

Section XIV Transport Information

Proper DOT Shipping Name: **Paint related material, 8, UN3066, II**

Section XV Regulatory Information

U. S. Federal Regulations:

This product contains a toxic chemical or chemicals subject to the reporting requirements of Section 313 of Title III of the *Superfund Amendments and Reauthorization Act of 1986 and 40 CFR 372.* See Section 2, List Legend 02.

OSHA Standard 19 CFR 1910.1200 requires that information be provided to employees regarding the hazards of chemicals by means of a hazard communication program including labeling, material safety data sheets, training, and access to written records. It is your legal duty to make all information in this Material Safety Data Sheet available to your employees.

Resource Conservation and Recovery Act:

Test waste material for corrosivity, D002, prior to disposal.

State Regulations:

State of California *Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65);* WARNING: This product contains a chemical known to the State of California to cause cancer, or birth defects or other reproductive harm.

For all state regulations, please check with the appropriate state agency.

International Regulations:

Consult the regulations of the importing country.

Section XVI Other Information

Before using this product: **Completely read the Scofield Tech-Data Bulletin *A-414 LITHOCHROME Chemstain Classic* and the container label.**

WARRANTY

Since no control is exercised over product use, L. M. Scofield Company (Scofield) represents and warrants only that its products are of consistent quality within manufacturing tolerances. NO OTHER ORAL OR WRITTEN REPRESENTATION OR STATEMENT OF ANY KIND, EXPRESS OR IMPLIED, NOW OR HEREAFTER MADE IS AUTHORIZED OR WARRANTED BY SCOFIELD, INCLUDING THOSE OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Liability for breach of contract, negligence, or on any other legal basis is limited to the lesser of refund or replacement of defective materials. SCOFIELD WILL NOT BE LIABLE FOR SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES, INCLUDING FOR DELAYS OR LOST PROFITS. Communication of this warranty and its limitations to end users is not the responsibility of Scofield, but should be communicated by those in direct contract with the end user. Any claim regarding product defect must be received in writing within one year from the date of manufacture. No claim will be considered without such written notice or after the specified time interval. The end user shall determine the suitability of the products for the intended use and assumes all risks and liability in connection therewith.

SCOFIELD® SYSTEMS

LITHOCHROME® Chemstain® Classic

A ready-to-use, penetrating, reactive stain that chemically combines with cured concrete to produce permanent, variegated or translucent color effects.

TECH-DATA BULLETIN A-414.12

1. Product Description:

Formulated to add color to uncolored concrete or to change the color of colored concrete, LITHOCHROME® Chemstain® Classic chemically reacts with the surface of cured concrete to produce unique and permanent color effects. It contains no Volatile Organic Compounds (VOC) and meets stringent air quality management regulations.

LITHOCHROME Chemstain Classic typically creates uneven, variegated or translucent color effects much like the shadings of natural stone or the aged appearance of a timeworn patina. Distinctive and lasting, the look obtained is ideal for exterior hardscapes, interior floors, walls, and artificial rock features. The result is unique to each concrete surface and cannot be duplicated with other coloring materials.

Chemically stained floors mimic the aged appearance of those from ancient civilizations or assume the understated aspect of modern sculpture. Walkways and eye-stopping features, such as concrete walls, blend aesthetically into the landscape. Concrete rock features lose their commonplace appearance and assume a rich, natural beauty. Commercial installations gleam with colored, easy-to-maintain floors. Many distinct, one-of-a-kind design effects are possible. Experimentation with stain colors and application methods is required, and the production of test sections is a necessity.

The color of chemically stained concrete is superior in durability and abrasion resistance to that of concrete surfaces coated with acrylic stains or other types of paint which can wear or weather off quickly and may delaminate. Due to their chemical reaction with concrete, Chemstain colors become part of the surface without developing a film. They will not fade, chip, crack, or peel and wear only as the concrete wears.

2. Coverage:

Coverage will vary widely depending on the porosity and texture of the surface, composition and age of the concrete, preparation and application techniques, number of applications, and other factors. The coverage rate is approximately 200–300 square feet per gallon (4.9–7.4 m^2/L) per application. A more exact coverage rate can be determined by producing representative jobsite test sections as described in section *11. Jobsite Test Sections* on each individual concrete surface for each color effect and noting the amount of material needed per square foot.

3. Limitations:

The wear resistance and durability of LITHOCHROME Chemstain Classic is dependent on the strength and abrasion resistance of the surface to which it is applied. Chemically stained surfaces subject to pedestrian and vehicular traffic will require initial application of a recommended Scofield sealer and periodic maintenance and resealing. Refer to section *16. Sealing* for more information.

LITHOCHROME Chemstain Classic cannot be used to hide surface blemishes or to cover construction errors. The variegated colors produced are unique to each concrete surface and depend on the chemical composition, mix design, porosity, age, texture, and color of the concrete substrate.

The surface appearance will also be influenced by the Chemstain color, the use of LITHOCHROME® Chemstain® Enhancer, preparation methods and application procedures, the number of Chemstain applications, experience in use of the material, sealing or finish-coating materials and methods, and other factors. Each will significantly affect the final appearance and performance of the chemically stained concrete. To verify and approve suitability and appearance, representative jobsite test sections as described in section *11. Jobsite Test Sections* must be produced on each individual concrete surface for each color effect prior to general application of the chemical stain.

LITHOCHROME Chemstain Enhancer is used to raise the pH level and increase the alkalinity of neutral substrates to produce a stronger reaction with the chemical stain. Under no circumstances does it replace one or more coats of LITHOCHROME Chemstain Classic.

Mottling and wide variations in color and intensity will usually occur. The color obtained and the depth of penetration is not predictable, and it is not possible to successfully stain some concrete surfaces even when LITHOCHROME Chemstain Enhancer is used. If contaminants remain on the surface, the penetration of the chemical stain may be blocked. Older or weathered concrete or areas that are frequently exposed to runoff or dripping water may lack the ingredients necessary for reaction with the chemical stain.

Concrete from different loads or pours and in patched areas may appear significantly different in color when chemically stained from that in adjacent areas.

WARNING!

LITHOCHROME Chemstain Classic must never be mixed with LITHOCHROME® Tintura™ Stain or any other highly alkaline chemical stain. Doing so will result in a dangerous chemical reaction.

The Chemstain colors Copper Patina, Fern Green, and Weathered Bronze must only be used for interior applications on substrates with a Moisture Vapor Emission Rate (MVER) of less than 5 pounds per 1000 square feet per 24 hours (2.5 kg/100 m^2/24 hr); these colors will darken or blacken irreversibly when exposed to moisture. When these colors are used, the chemically stained concrete must be protected from water from any source.

DANGER! CORROSIVE. CAUSES SEVERE EYE IRRITATION, POSSIBLE BLINDNESS. CAUSES EYE AND SKIN BURNS. MAY BE FATAL IF SWALLOWED, INHALED, OR ABSORBED THROUGH SKIN. Refer to section *10. Cautions* for more information.

TEST SECTION

Successful staining of concrete flatwork takes experimentation, skill and practice. Prior to general application, a representative jobsite test section must be produced and approved on each individual concrete surface for each color effect as described in section *11. Jobsite Test Sections* to verify and approve suitability, proper surface preparation methods, adhesion, safety, performance, wet and dry slip resistance, application techniques, and coverage.

LITHOCHROME Chemstain Classic is a waterborne solution and it must not be allowed to freeze at any time. Chemstain applications must take place on a calm day when air and substrate surface temperatures are between 50° F and 90° F (10–32° C). If the temperature is expected to drop below 50° F (10° C) during application, LITHOCHROME Chemstain Classic must not be applied. Chemstain applications made at low temperatures may not achieve the desired color effects. A jobsite test section is required as described in section *11. Jobsite Test Sections.*

■ *4. Composition and Materials:*

LITHOCHROME Chemstain Classic is an acidic solution of metallic salts that penetrate and react with chemicals in cured concrete and some cementitious, self-leveling toppings to produce insoluble color deposits in the pores. Each color is produced from a different, complex proprietary formulation containing no pigments or resins. They lightly etch the concrete surface to remove laitance and allow a more effective chemical reaction and deeper color penetration.

■ *5. Applicable Standards:*

LITHOCHROME Chemstain Classic complies with applicable air quality management regulations.

■ *6. Color Effects:*

LITHOCHROME Chemstain Classic is available in eight standard colors approximated on Scofield's Color Chart *A-412 LITHOCHROME Chemstain Classic.* The color effect produced is unique to each concrete surface, and may differ significantly from that shown on the color chart. Experimentation with stain colors and application methods is required. A representative test section must be prepared on the jobsite concrete as described in section *11. Jobsite Test Sections* to verify and approve suitability and color.

Wide color variations, mottling, and unevenness of color are normal and usually desired. These variations will be heightened when Chemstain flatwork is sealed with SCOFIELD® Selectseal-W™, SCOFIELD® Cureseal-W™, or SCOFIELD® Cureseal-S™. Color variations will be less apparent if COLORCURE® Concrete Sealer is used.

To produce satisfactory color effects more than one Chemstain Classic application may be required. One or two applications may be required over SCOFIELD® Texturetop® cementitious toppings, depending on their age and color and the color intensity desired. Additional applications may be needed on older or weathered concrete surfaces or to obtain a particular color effect.

For a greater selection of color effects, a single application of LITHOCHROME Chemstain Classic may be made over concrete previously colored with LITHOCHROME® Color Hardener or over SCOFIELD Texturetop colored toppings, producing a variegated surface color that is uniquely modified by the underlying concrete or topping color.

Chemstain color effects vary in intensity over color-hardened concrete, newer concrete, and concrete with a high cement content. On older or weathered concrete, the color may not fully develop. If little chemical activity takes place the use of LITHOCHROME Chemstain Enhancer may produce a stronger reaction. If the concrete is so old or weathered that it is not reactive it will not be possible to successfully use a chemical stain even when LITHOCHROME Chemstain Enhancer is used.

If a more polished surface appearance is desired for new floors, LITHOCHROME Chemstain Classic should be applied over LITHOCHROME Color Hardener, followed by SCOFIELD Cureseal-W, SCOFIELD Cureseal-S or for optimum performance, SCOFIELD Selectseal-W. Due to the density of the color-hardened surface, etching will be minimized, and the sealer will bring out the full beauty of the variegated color.

Depending on the composition of the aggregate, LITHOCHROME Chemstain Classic may color the aggregate as well as the concrete matrix when applied to exposed-aggregate concrete.

■ *7. Textures and Slip Resistance:*

Surfaces that are not slip resistant to meet the intended use must be roughened by some mechanical method. Adequate precautions must be taken to ensure that the surface is not slippery.

For safety considerations, a representative jobsite test section as described in section *11. Jobsite Test Sections* must be produced prior to general application and the entire surface inspected after completion to verify and approve the adequacy of wet and dry slip resistance.

LITHOCHROME Chemstain Classic lightly etches the surface during application, exposing some of the fine aggregate. The depth of etch depends on the concrete strength and porosity. Since the substrate is harder and the concrete more dense, surface etching is reduced when color-hardened concrete is chemically stained.

■ *8. Packaging:*

LITHOCHROME Chemstain Classic is available in 14-ounce (414 mL), 1-gallon (3.8 L) and 5-gallon (18.9 L) containers.

■ *9. Storage and Shelf Life:*

Under normal conditions when properly stored, the shelf life of LITHOCHROME Chemstain Classic is at least 1 year from the date of purchase. Containers should be tightly closed and stored upright, away from direct sunlight, combustible materials and sources of heat. Inventory must be rotated to maintain product that is within shelf life limits.

■ *10. Cautions:*

DANGER!

CORROSIVE. CAUSES SEVERE EYE IRRITATION, POSSIBLE BLINDNESS. CAUSES EYE AND SKIN BURNS. MAY BE FATAL IF SWALLOWED, INHALED, OR ABSORBED THROUGH SKIN. CONTACT WITH BROKEN SKIN MAY RESULT IN ULCERS. PROLONGED OR REPEATED BREATHING MAY CAUSE ULCERATION OR PERFORATION OF NASAL MEMBRANES. CANCER HAZARD—CAN CAUSE CANCER. RISK OF CANCER DEPENDS ON DURATION AND LEVEL OF EXPOSURE.

Contains Hydrochloric Acid, Chromic Chloride, Cupric Chloride, Ferrous Chloride, Ferric Chloride, Manganese Chloride, and Sodium Dichromate. Use only with adequate ventilation. Avoid breathing vapor or mist. Do not get in eyes, on skin or clothing. Wear P100/Hydrogen Chloride respirator (NIOSH TC-84A approved), chemical-splash goggles, impervious gloves and protective clothing, chemical-resistant apron and boots. Follow respirator manufacturer's directions for respirator use. DO NOT TAKE INTERNALLY. KEEP OUT OF THE REACH OF CHILDREN.

FIRST AID: Eyes—FLUSH IMMEDIATELY THEN SEEK MEDICAL ATTENTION. Hold eyelids apart while flushing material out thoroughly with large amounts of water. Ingestion—GET MEDICAL ATTENTION IMMEDIATELY. Skin—Wash thoroughly with soap and water. Remove soiled clothing and footwear and wash before reuse. Destroy contaminated shoes. Inhalation—Move to fresh air. If symptoms persist or develop, get medical attention.

Wash thoroughly immediately after handling. Close container immediately after each use. Store upright in tightly closed containers away from combustible materials and sources of heat. Do not transfer to unmarked container. In case of spillage, cordon off area if necessary to prevent unauthorized traffic or entry. Promptly dike to prevent spreading and stop spill at source. Collect with wet vacuum or absorb with inert material and place in labeled waste container for neutralization and disposal together with all contaminated matter or equipment. If unable to prevent release to soil or waters of the State, immediate notice to local regulatory authorities is required. Do not reuse empty container. Empty containers may contain hazardous product residues. Before use, review the *Material Safety Data Sheet and Warranty* for further information, including health effects.

■ *11. Jobsite Test Sections:*

To verify and approve suitability and appearance, representative jobsite test sections must be produced prior to general application of the chemical stain on each individual concrete or topping surface and for each color effect. Test sections must be of adequate size to be representative and be produced by the same workers who will apply the LITHOCHROME Chemstain Classic, using the selected Chemstain colors and the contemplated preparation and application equipment and techniques under jobsite conditions. All test sections must be prepared, chemically stained, and sealed as specified.

■ *12. Equipment for Preparation and Application:*

When using equipment and materials during preparation and installation, suitable protective gear must be worn and government regulations, manufacturer's instructions, and all applicable safety requirements must be followed.

LITHOCHROME Chemstain Classic is normally brush or spray applied and scrubbed into the concrete surface. In larger areas, an acid-resistant hand-pump sprayer may be used to transfer the Chemstain solution to the surface, while scrubbing.

Other types of acid-resistant equipment, such as sponges, sponge floats, lambswool applicators, or spray bottles may be used to create special effects. All preparation and application procedures and equipment should be tested before use.

For cleaning horizontal or vertical concrete, the pressure washer must be equipped with a fan tip and have a minimum pressure capability of 2000 psi (14 MPa). Hot water capability may facilitate cleaning of older concrete. Nonmarking hoses are helpful.

For cleaning flatwork, the rotary floor machine must be heavy duty and operate at 175 rpm. It may be equipped with brushes or with a pad-driver that securely holds pads in place. For cleaning, a stiff-bristled bassine or nylon grit brush is recommended. Walk-behind scrubbing machines should be considered for cleaning larger areas.

For transferring and scrubbing, brushes must be of professional quality, long-handled or handheld, with uncolored, acid-resistant nylon bristles of medium stiffness, having the ability to hold liquids. Inexpensive paintbrushes may be used when applying stain to small areas. They will be damaged by the Chemstain solution and should be frequently replaced. Brushes with colored bristles should be avoided since they may bleed, discoloring the surface. Push brooms will not retain the chemical stain when lifting it from a container or during scrubbing and should not be used. Since they splash liquids, rotary floor machines must be equipped with a splash skirt and used with caution. Rollers or mops should not be used because they cannot effectively scrub the Chemstain solution into the surface.

Containers for holding chemical stain during brush application must be acid-resistant, nonleaking, wide-mouthed plastic pails. They must be large enough to allow the entire bristle section to be dipped into the Chemstain solution. Use of a plastic mop bucket with rubber casters will facilitate application and reduce marking or ringing from liquid running down the side of the container. Metal containers should never be used as they rapidly corrode and may change the color of the Chemstain solution.

For transferring solution to the surface, the hand-pump sprayer must be of professional quality and should normally be equipped with a fan tip or a conical spray tip. All parts that will be in contact with the chemical stain must be made from acid-resistant plastic. The use of an airless sprayer is not recommended.

For residue and runoff collection, an acid-resistant wet vacuum must be used or residue and runoff can be absorbed by scattering an inert material, such as sawdust, over the surface or by wiping with rags.

■ *13. Preparation:*

Prior to stain application, a representative jobsite test section must be produced and approved as described in section *11. Jobsite Test Sections.* Concrete flatwork must have a uniformly slip-resistant surface. Surfaces that are not slip resistant must be roughened by some mechanical method.

Surrounding areas, landscaping, and adjacent surfaces should be protected. The work area should be roped off, nearby vehicles removed, and appropriate sections closed to traffic. Needed equipment, as described in section *12. Equipment for Preparation and Application,* should be available.

Prior to making Chemstain applications, precautions should be taken to prevent water penetration into the concrete from any source. Sprinklers and fountains should be adjusted to avoid wetting the surface. In hard-water or high-alkali areas, soft water should be considered for use in water features to reduce discoloration of the surface.

The Chemstain colors Copper Patina, Fern Green, and Weathered Bronze are water reactive after application and are suitable for interior use only and when the Moisture Vapor Emission Rate (MVER) of the substrate is less than 5 pounds per 1000 square feet per 24 hours (2.5 kg/100 m^2/24 hr). The Warning Section on page 1 should be read.

Though the effect achieved is primarily dependent on the surface of the concrete to which it is applied, weather conditions should also be considered when planning Chemstain applications. The chemical stain will dry faster and may require more material or additional applications to produce the desired results in hot, dry, and windy weather. Applications made at low temperatures may not achieve the desired color effects. Rain will wash the chemical stain from the surface prematurely and runoff may stain adjacent areas or damage landscaping.

All surfaces must be sufficiently cured and completely clean, sound, and free of any debris, contamination or weakly bonded surface material. Before chemically staining the concrete surface all dirt, form oil, plaster stains, oil, and grease must be completely removed by cleaning. Coatings, water repellents, previously applied adhesives, and curing membranes must be removed by sandblasting, though small spots of paint may be removed with a scraper and a commercial paint stripper. Acid washing should normally not be used as a cleaning procedure, since it removes necessary reactants from the surface. Failure to remove all contaminants and coatings that impede the penetration of LITHOCHROME Chemstain Classic into the concrete will cause appearance defects.

Older or weathered concrete surfaces or areas that are frequently exposed to runoff or dripping water may have lost some of the chemicals needed to produce a reaction with the chemical stain. In these instances, the use of LITHOCHROME Chemstain Enhancer should be considered. LITHOCHROME Chemstain Enhancer replaces some of the chemicals lost in normal weathering and raises the pH level of the substrate, allowing the Chemstain solution to react. Additional information is available in the Scofield Tech-Data Bulletin *A-454 LITHOCHROME Chemstain Enhancer.*

In some instances, on dense concrete surfaces, mechanical means to open the concrete surface such as light sandblasting or shot-blasting, high-pressure water-blasting, or use of a rotary floor machine with a nylon grit attachment may be needed and are preferable to acid washing to make the surface sufficiently penetrable for the chemical stain to react. However, if mechanical means to open the surface are not practical or acceptable due to potential surface texture variations, acid washing with a solution of one part muriatic acid (20° Baume or 31.4% hydrochloric acid) to 20 parts of water may be considered.

Newly placed concrete must be sufficiently cured, a minimum of 14 days. However, on interior applications of the Chemstain colors Copper Patina, Fern Green, and Weathered Bronze, the concrete must be sufficiently dry (typically 14–28 days) so that the Moisture Vapor Emission Rate (MVER) is less than 5 pounds per 1000 square feet per 24 hours (2.5 kg/100 m^2/24 hr) based on a 72 hour test period per ASTM *F 1869 Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride.* The Warning Section on page 1 should be read.

Liquid curing materials must not be used. Concrete flatwork should be cured with new and unwrinkled, nonstaining, high-quality curing paper conforming to ASTM *C 171 Sheet Materials for Curing Concrete.* Overlapping the curing paper should be avoided when possible, since the color may appear different under the overlapped sections. For a more similar color appearance, all surfaces should be cured by the same method and be chemically stained when the concrete is the same age.

Immediately prior to chemically staining, the concrete must be thoroughly cleaned. The surface should be swept and then pressure washed or scrubbed using a rotary floor machine. Use of a suitable, high-quality commercial detergent will facilitate cleaning. The surface must be rinsed after cleaning until the rinse water is completely clean.

Existing, older concrete must be cleaned so that the surface is completely penetrable before receiving the initial application of LITHOCHROME Chemstain Classic. An indication of whether the concrete is penetrable can be obtained by spotting the surface with water. The water should immediately darken the substrate and be readily absorbed. If the water beads and does not penetrate or only penetrates in some areas, additional surface preparation and testing must be performed.

The cleaning method to be used depends on the condition of the concrete. To remove dirt and other contaminants, detergents and other commercial cleaners should be considered and tested. Pressure washing or scrubbing with a rotary floor machine is normally required. After cleaning, the surface must be rinsed to remove any remaining residue. Rinsing should continue until the rinse water is completely clean. Wet vacuums may be helpful to remove dirty water, particularly from interior floors. After drying, the surface must be carefully inspected and retested for penetrability. If necessary, additional general or spot cleaning and rinsing should be performed.

Concrete that has been previously coated with liquid curing materials, paints, coatings, waxes, or water repellants, or surfaces that cannot be successfully cleaned by other methods must be sandblasted. Sandblasting must be sufficient so that the coatings or contaminants are completely removed. Sand remaining on the surface must be removed by sweeping, vacuuming, or pressure washing before the concrete is chemically stained.

Exterior flatwork or interior floors topped with SCOFIELD Texturetop must be sufficiently cured to walk on without damage prior to staining, at least 4–8 hours after installation at 70° F (21° C). SCOFIELD Texturetop cures at a rate similar to concrete and retains moisture which, when using the LITHOCHROME Chemstain Classic colors Copper Patina, Fern Green, or Weathered Bronze, can in some instances cause darkening if the Chemstain solution is applied too early. Prior to using these colors, the Texturetop topping must be sufficiently cured, normally 14–28 days, and the Moisture Vapor Emission Rate (MVER) of the topping must be less than 5 pounds per 1000 square feet per 24 hours (2.5 kg/100 m^2/24 hr) based on a 72 hour test period per ASTM F 1869.

Dust, slurry residue, or other contaminants must be removed from the SCOFIELD Texturetop surface before LITHOCHROME Chemstain Classic is applied. Do not use aggressive removal methods before the Texturetop topping is fully cured, a minimum of 14 days after installation.

■ *14. Application:*

All surfaces must be dry and properly prepared as described in section *13. Preparation.* Surrounding areas, landscaping, and adjacent surfaces must be masked or protected from spills, overspray, tracking, equipment contact, and runoff. The work area should be roped off, nearby vehicles removed, and appropriate sections closed to traffic. Adjoining walls of porous material, such as masonry, should be masked. The surface should be divided into small work sections using walls, joint lines, or other stationary features as natural stopping points. This allows for easier control of coverage, wet edge, and overlap. For safety and appearance, application procedures should be planned so that the wet surface is not stepped on. Safety precautions must be followed and full protective gear must be worn.

LITHOCHROME Chemstain Classic must be applied at the coverage rate given in section *2. Coverage* and using the equipment described in section *12. Equipment for Preparation and Application.* The color of the liquid Chemstain solution will have no resemblance to the final color produced on the concrete surface. The solution will appear transparent when first applied but will assume a cloudy or muddy appearance as the chemical reaction occurs.

LITHOCHROME Chemstain Classic normally fizzes while reacting on concrete. If fizzing does not occur, the surface has not been adequately prepared or the concrete is not sufficiently reactive to be chemically stained. If contaminants are preventing the chemical reaction from occurring, additional cleaning as described in section *13. Preparation* must be performed.

The Chemstain solution should be transferred to the surface by brush or spray and immediately scrubbed in as soon as it touches the concrete, using a circular or figure eight motion. For most applications the solution should be poured into a wide-mouthed container and then lifted from the container to the concrete surface with the brush, keeping bristles upward to reduce splashing. In larger areas or on vertical surfaces, spray equipment may be used to transfer the solution to the concrete. Working as a team, one workman should spray the Chemstain solution evenly a few inches ahead of the brush while a second workman scrubs it into the surface.

Work in small sections, keeping the brush in constant contact with the surface and in continuous motion. The Chemstain solution should be gradually spread until all fizzing action ceases. To avoid lap marks, reacted solution should not be spread to new work sections, but should be brushed back over the section just treated. New applications of chemical stain should be overlapped with and worked into the edges of adjacent, still-wet, previously treated areas. A wet edge must be maintained.

During brushing the surface should be thoroughly and uniformly saturated with the liquid Chemstain solution, but it should not be splashed, dripped or allowed to puddle in joint indentations and depressions unless desired for the color effect. Stepping on wet surfaces must also be avoided. Such irregularities or footprints will remain apparent in the surrounding surface and should be brushed out immediately and permitted to dry evenly.

The Chemstain solution should be applied to vertical surfaces in the same manner, starting at the bottom and proceeding upward. Overapplication leading to rundown must be avoided.

Reaction time depends on wind conditions, temperature, and humidity. Whether the Chemstain solution remains wet or dries on the surface, it should be allowed to remain in contact with the concrete until the desired effect is obtained, a minimum of 4 hours. Proper safety precautions must be taken to prevent contact with the surface until the stain residue is removed and the surface rinsed.

For one-color or mixed-color applications, the chemically stained surface should be washed between applications so that the color effect can be evaluated before another coat or color is applied.

■ *15. Rinsing:*

After the final application of LITHOCHROME Chemstain Classic has remained on the surface for a minimum of 4 hours, all unreacted Chemstain residue must be neutralized and then removed completely prior to sealing. A solution of baking soda (sodium bicarbonate) and water, using 1 pound of baking soda per 5 gallons of water (454 g/19 L), can be used to neutralize the residual Chemstain acid. Apply the solution until it stops fizzing. After neutralization, the surface must be rinsed thoroughly with clean water several times to remove soluble salts. While rinsing, lightly abrade the surface using a low-speed floor machine equipped with a white pad to remove any residue and/or weakened surface material. Runoff may stain adjacent areas or harm plants. It should be collected by wet-vacuuming or absorbing with an inert material.

After rinsing is complete, a pH test using litmus paper, pH paper or a properly calibrated surface pH meter must be performed to verify that no residual acid is present. A pH value of 7 or higher indicates that all acid has been neutralized. If the tested pH value is below 7 the neutralization step outlined above must be repeated until a pH value of 7 or more is obtained. After completion of neutralization, rinsing, and verification that no acid is present, the stained surface must be tested for cleanliness by wiping the surface with a white cloth. If residue appears on the cloth, additional surface cleaning must be performed.

Failure to completely remove all residue prior to sealing the surface will cause appearance defects, adhesion loss or peeling, reduced durability, and possible bonding failure and delamination of the sealer.

All stain residue, runoff liquid, rinse water, absorbent materials used during application, and discarded equipment must be collected and disposed of in accordance with local, state, and federal regulations. All chemically stained surfaces must be protected from traffic until they are sealed.

■ *16. Sealing:*

As soon as possible after the procedures described in section *15. Rinsing* have been completed, the surface should be sealed with one of the following: SCOFIELD Selectseal-W, SCOFIELD Cureseal-W, SCOFIELD Cureseal-S, or COLORCURE Concrete Sealer. Where a lower-cost sealer is desired, the use of CEMENTONE® Clear Sealer may be considered. Failure to completely remove all Chemstain residue and rinse the surface clean prior to sealing will result in performance problems with the sealer. The appropriate Scofield Tech-Data Bulletin *B-504 SCOFIELD Selectseal-W, B-204 SCOFIELD Cureseal-W, B-604 SCOFIELD Cureseal-S, A-634 COLORCURE Concrete Sealer,* or *A-764 CEMENTONE Clear Sealer* must be read completely before using.

For optimum performance and durability SCOFIELD Selectseal-W is recommended for sealing and protecting chemically stained flatwork. Prior to staining the substrate with LITHOCHROME Chemstain Classic and sealing with SCOFIELD Selectseal-W, the Moisture Vapor Emission Rate (MVER) of the concrete or cementitious topping must be measured and be less than 5 pounds per 1000 square feet per 24 hours (2.5 kg/100 m^2/24 hr). The Scofield Tech-Data Bulletin *B-504 SCOFIELD Selectseal-W* must be read completely before using.

Care must be taken when using any kind of adhesive tape on surfaces stained with LITHOCHROME Chemstain Classic and sealed with a recommended Scofield sealer. The sealer could disbond from the surface in areas where adhesive tape has been applied when the tape is removed.

All sealed or coated surfaces must be thoroughly inspected to verify and approve installation and safety, including wet and dry slip resistance, prior to opening the area to traffic.

■ *17. Maintenance:*

A maintenance application of the same Scofield sealer originally used should be made periodically as the sealer is worn off the surface. Instructions for the maintenance and resealing of concrete surfaces are available in the Scofield Tech-Data Bulletins *B-504 SCOFIELD Selectseal-W, B-204 SCOFIELD Cureseal-W, B-604 SCOFIELD Cureseal-S,* or *A-634 COLORCURE Concrete Sealer,* which must be read completely before using.

Interior floors sealed with a recommended SCOFIELD sealer should be protected with a compatible, slip-resistant, emulsion-type, commercial floor finish following the manufacturer's instructions and safety requirements. For recommendations, based on extensive product testing, or answers to your floor care questions, call the JohnsonDiversey 24-hour hot line: 800-558-2332.

■ *18. Availability:*

LITHOCHROME Chemstain Classic is marketed nationwide and internationally, directly to the user through strategically located warehouses, dealers, and representatives. Contact Scofield for its nearest representative.

Scofield offers a complete line of engineered systems for coloring, texturing, and improving performance in architectural concrete. Scofield Systems address specialized requirements for interior, exterior and vertical uses with compatible systems of complementary products including coloring admixtures, color hardeners, colored cementitious toppings, stains, curing compounds, sealers, coatings, repair products and texturing tools. Visit the Scofield website at **www.scofield.com** for further information.

See page 6 for Suggested Short Form Specifications.

19. Limited Warranty:
Since no control is exercised over product use, L. M. Scofield Company (Scofield) represents and warrants only that its products are of consistent quality within manufacturing tolerances. NO OTHER ORAL OR WRITTEN REPRESENTATION OR STATEMENT OF ANY KIND, EXPRESS OR IMPLIED, NOW OR HEREAFTER MADE IS AUTHORIZED OR WARRANTED BY SCOFIELD, INCLUDING THOSE OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Liability for breach of contract, negligence, or on any other legal basis is limited to the lesser of refund or replacement of defective materials. SCOFIELD WILL NOT BE LIABLE FOR SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES, INCLUDING FOR DELAYS OR LOST PROFITS. Communication of this warranty and its limitations to end users is not the responsibility of Scofield, but should be communicated by those in direct contract with the end user. Any claim regarding product defect must be received in writing within one year from the date of manufacture. No claim will be considered without such written notice or after the specified time interval. The end user shall determine the suitability of the products for the intended use and assumes all risks and liability in connection therewith.

Suggested Short Form Specification for Chemically Staining Concrete Flatwork:
All concrete surfaces designated in the plans or specifications as being chemically stained shall receive two applications of LITHOCHROME® Chemstain® Classic in _____ color after the concrete has cured a minimum of 14 days *(or has cured sufficiently to meet moisture vapor emission requirements, a minimum of 14–28 days, for the Chemstain colors Copper Patina, Fern Green, and Weathered Bronze)*. The surface shall be prepared and LITHOCHROME Chemstain Classic shall be applied in accordance with Tech-Data Bulletin A-414 using the recommended minimum coverage rate. The contractor shall submit the final stain color and application techniques on jobsite test samples to be approved by the architect prior to installation. All chemically stained surfaces shall be sealed with SCOFIELD® Selectseal-W™, SCOFIELD® Cureseal-W™, or SCOFIELD® Cureseal-S™ in accordance with Tech-Data Bulletin B-504, B-204, or B-604 *(or COLORCURE® Concrete Sealer in the matching color in accordance with Tech-Data Bulletin A-634)*. All products shall be manufactured by L. M. Scofield Company, (800) 800-9900, Los Angeles, CA, (323) 720-3000 and Atlanta, GA, (770) 920-6000.

SCOFIELD

1 800 800 9900 or www.scofield.com

SCOFIELD PRODUCTS ARE INTENDED FOR PROFESSIONAL USE ONLY

L. M. Scofield Company customer service: 1 800 800 9900

Western Headquarters: 6533 Bandini Blvd., Los Angeles, CA 90040 **voice:** 323 720 3000 **fax:** 323 720 3030

Eastern Headquarters: 4155 Scofield Road, Douglasville, GA 30134 **voice:** 770 920 6000 **fax:** 770 920 6060

www.scofield.com

V2

Technical Information

V2 Vitrification Liquid

VMC Technical Assistance Corporation
8311 Eastpoint Drive, Suite 80(
Dallas, TX 7522(
TELEPHONE
(214)381-845(
FA)
(214)381-489(
WEI
www.vmctac.com

Product Description:

V2 is a safe and proven crystallization liquid used to maintain polished marble, terrazzo and granite. The use of this time tested product has a history dating back to the 1960's. V2 chemically transforms the stones surface similar to conventional methodology done at the factory. The crystallization action can be equated as a chemical reaction that is initiated through the use of steel wool, special chemical compounds and the basic stone surface. The result is a harder, mirror like, vitrified surface. The VMC system allows the floor to continue to "breathe" through microscopic channels of the stone. V2 is "the" crystallizer by which all others are measured.

Special Features:

Easy to use.
Extends life of polished stones.
Greatly reduces the need for restoration.
Requires much less time as compared to traditional strip and wax methods.
Non scuffing.
Gives a mirror-like polish.

Where and When to Use:

V2 can be applied wherever the nature & condition of the floor surface permits. This product is for use on polished stone surfaces only.

Packaging:

1 quart (.95L)
1.5 Gallon (5.7L)

Directions for use:

Dust mop or sweep the flooring daily prior to cleaning.

If needed, clean surface using the proper dilution of VMC 30 cleaner and conditioner.

Crystallize the flooring as needed. Frequency may vary depending on foot traffic.

Using the VMC CCG1700 of CCG2000 machine begin by filling the left chemical dispensing bottle with V2 and the right chemical dispensing bottle with V3. Using a clean steel wool pad #0 of #1 begin the polishing process by applying about 1/2 ounce of V2 across 6 square feet of marble flooring using the left chemical dispensing bottle provided with your CCG1700 or CCG2000. Dispense the chemical while running the machine to the left into the stream of V2 during the dispensing process.

You will be using the direction of the machine and the steel wool pad to spread the V2 across the 6 square foot area. This motion will increase the actual working area to approximately 10 square feet.

Continue the buffing process until any trace of the wet chemical has been buffed into the stone. Repeat the V2 process until the entire area has been polished with V2. Next, begin the V3 application. Apply the V3 using the same machine and steel wool that was used in the V2 application. Apply the V3 using the right chemical dispensing bottle. Apply the V3 in the exact same fashion as the V2 was applied.

The only difference between the application process is that you will be dispensing the V3 from the right chemical dispensing bottle which means that you will be moving the machine to the right while dispensing the V3. Pay special attention to the floor surface to insure that all traces of V3 have been removed from the stone during the buffing process.

To complete the process repeat the V2 application. Sweep up any steel wool fibers and dust that could be left over from the process. This should leave the floor looking new with a highly reflective finish.

Note:

1. Protect aluminum and brass fixtures, furniture and baseboards.
2. A 1.5 gallon (5.7L) container of V2 will cover approximately 4500 sq. ft. (418 sq. meters)

Maintenance:

Contact VMC for complete specifications

Product Specifications:

Physical State: Liquid
Odor: Odorless
Appearance: Pink
pH: 1.8
Solubility in water: 80%-90%

Precautions Summary:

Eyes: Can produce slight irritation and sting.
Skin: Can produce slight irritation on the skin.
Ingestion: Can irritate the digestive system.
Flash point: None

V2 TECHNICAL INFORMATION

V2
MSDS Information

VERONA MARBLE COMPANY
TECHNICAL ASSISTANCE CORPORATION
8311 EASTPOINT DRIVE, SUITE 800
DALLAS, TX 75227
TELEPHONE
(214)381-8456
FAX
(214)381-4896
WEB
www.vmctac.com

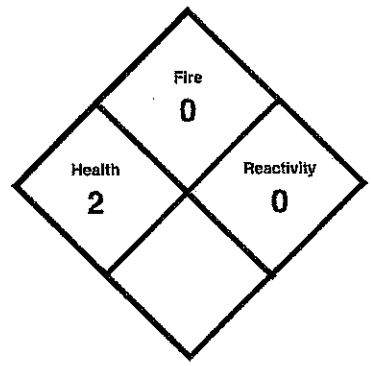
Material Safety Data Sheet

Product Name: V2

24 Hour Emergency Number - Chem-Tel: 1-800-255-3924

Revision Date: 02/01/03

Pages: 3



SECTION 1 OSHA HAZARD CLASSIFICATIONS

HARMFUL

SECTION 2 PRINCIPAL AND/OR HAZARDOUS COMPONENTS

MAGNESIUM FLUOROSILICATE CAS# 16949-65-8

SECTION 3 PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE:	PINK LIQUID
ODOR:	ODORLESS
DENSITY:	1,200
VAPOR PRESSURE (mm Hg):	NOT COMBUSTIBLE
BOILING POINT:	95°C
SOLUBILITY (Water):	80-90%
PH:	1.8

SECTION 4 FIRE AND EXPLOSION HAZARD DATA

FLASH POINT:	NONE
FLAMMIBILITY LIMITS:	NOT FLAMMIBLE
EXTINGUISHING MEDIA:	WITHOUT RESTRICTION
SPECIAL FIRE FIGHTING PROCEDURES:	NONE REQUIRED

SECTION 5 REACTIVITY DATA

STABILITY:	STABLE
CONDITIONS TO AVOID:	EXPOSURE TO SUN
INCOMPATIBILITY:	BASIC MATERIALS
HAZARDOUS DECOMPOSITION PRODUCTS:	NONE KNOWN

SECTION 6 HEALTH HAZARD DATA

INHALATION:	NONE KNOWN
CHRONIC EXPOSURE:	CONTINUED CONTACT MAY IRRITATE THE SKIN. INGESTION MAY RESULT IN NAUSEA, VOMITING, AND/OR DIARRHEA.
EYE CONTACT:	CAN PRODUCE SLIGHT IRRITATION AND STING
SKIN CONTACT:	CAN PRODUCE SLIGHT IRRITATION ON THE SKIN
INGESTION:	CAN IRRITATE THE DIGESTIVE SYSTEM
PRIMARY ROUTE OF ENTRY:	INGESTION AND SKIN - IN SOME CASES

V2 MSDS INFORMATION

VERONA MARBLE COMPANY
TECHNICAL ASSISTANCE CORPORATION
8311 EASTPOINT DRIVE, SUITE 80(
DALLAS, TX 7522;
TELEPHONE
(214)381-845(
FAX
(214)381-489(
WEB
www.vmctac.com

Material Safety Data Sheet

SECTION 7 HANDLING PRECAUTIONS

HANDLING: IT IS ADVISABLE TO USE GLOVES. NEVER MIX THE PRODUCT WITH OTHERS, ESPECIALLY WITH CHLORINE BASED (BLEACH) OR WITH HYDROCHLORIC ACID.
STORING: KEEP IT IN THE CAN OF ORIGIN CLOSED AND IN DRY PLACE. NEVER TO BE EXPOSED TO THE SUN.
PACKING MATERIAL: IN PVC CANS.

SECTION 8 EMERGENCY AND FIRST AID INFORMATION

EYE EXPOSURE: IMMEDIATELY FLUSH EYES WITH COOL RUNNING WATER FOR AT LEAST 15 MINUTES OCCASIONALLY HOLDING EYELIDS OPEN TO INSURE FLUSHING THE ENTIRE EYEBALL. SEE A PHYSICIAN, PREFERABLY AN OPHTHALMOLOGIST.

SKIN EXPOSURE: WASH OFF SKIN WITH SOAP AND WATER. SEE A PHYSICIAN IF IRRITATION PERSISTS.

INGESTION: DRINK WATER, PREFERABLY IN SMALL AMOUNTS, BUT FREQUENT DOSES. DO NOT INDUCE VOMITING.

SECTION 9 SPILL AND LEAK PROCEDURES

IMPORTANT: BEFORE RESPONDING TO A SPILL OR LEAK OF THIS PRODUCT, REVIEW EACH SECTION OF THIS MSDS. FOLLOW THE RECOMMENDATIONS GIVEN IN THE HANDLING PRECAUTION SECTION. CHECK THE FIRE AND EXPLOSION DATA SECTION TO DETERMINE IF THE USE OF NON-SPARKING TOOLS IS MERITED. IF IRRITATING FUMES ARE PRESENT, CONSIDER EVACUATION OF ENCLOSED AREAS.

EMERGENCY RESPONSE ASSISTANCE: EMERGENCY RESPONSE TECHNICAL INFORMATION IS AVAILABLE 24 HOURS A DAY FROM CHEM-TEL AT 1-800-255-3924.

SPILLS: TABSORB ON AN ABSORBENT MATERIAL AND DISPOSE OF IN AN APPROVED CONTAINER. NEUTRALIZE ANY RESIDUAL WITH SODIUM CARBONATE OR SODIUM BICARBONATE AND FLUSH TO SEWER.

NOTE: FOLLOW FEDERAL, STATE AND LOCAL REGULATIONS GOVERNING THE RELEASE OR DISPOSAL OF HAZARDOUS WASTES. HOWEVER, INSURE PROPER MANAGEMENT OF ANY RESIDUALS REMAINING IN THE CONTAINER.

V2 MSDS INFORMATION

V2
MSDS Information

Material Safety Data Sheet

VERONA MARBLE COMPANY
TECHNICAL ASSISTANCE CORPORATION
8311 EASTPOINT DRIVE, SUITE 80(
DALLAS, TX 7522;
TELEPHONE
(214)381-845(
FAX
(214)381-489(
WEB
www.vmctac.com

SECTION 10 REGULATORY PROCEDURES

DOT PROPER SHIPPING NAME: MAGNESIUM HEXAFLOUROSILICATE
HAZARD CLASS: POISON (6.1) - UN# 2853
PACKING GROUP: III
EPA REGISTRATION: NOT REQUIRED
TSCA INVENTORY: ALL COMPONENTS INCLUDED IN THE INVENTORY
FDA REGULATION(S): NONE KNOWN
SARA 302 EXTREMELY HAZARDOUS SUBSTANCE LIST: NO
SARA 312 HAZARD CLASSIFICATION(S): NO
SARA 313 TOXIC CHEMICALS LIST: NO
NFPA RATINGS: HEALTH 2, FLAMMABILITY 0, REACTIVITY 0
NPCA/HMIS RATINGS: HEALTH 2, FLAMMABILITY 0, REACTIVITY 0
HAZARD RATING KEY: 4-SEVERE, 3-SERIOUS, 2-MODERATE, 1-SLIGHT, 0-MINIMAL

The information on this Material Safety Data Sheet reflects the latest information and data that we have on hazards, properties and handling of this product under the recommended conditions of use. Any use of this product or method or application which is not described in the Product Data Sheet is the responsibility of the user.

This MSDS was prepared to comply with the OSHA Hazard Communication Standards

V2 MSDS INFORMATION

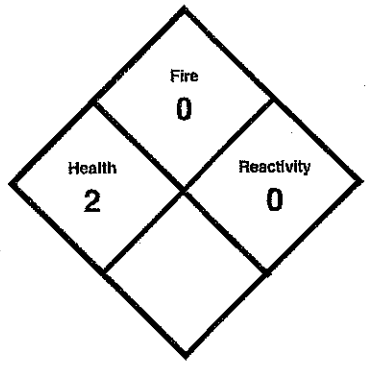
VERONA MARBLE COMPANY
TECHNICAL ASSISTANCE CORPORATION
8311 EASTPOINT DRIVE, SUITE 800
DALLAS, TX 75227
TELEPHONE
(214)381-8450
FAX
(214)381-4896
WEB
www.vmctac.com

V3
MSDS Information

Material Safety Data Sheet

Product Name: V3

24 Hour Emergency Number - Chem-Tel: 1-800-255-3924
Revision Date: 02/01/03
Pages: 3



SECTION 1 OSHA HAZARD CLASSIFICATIONS

NONE

SECTION 2 PRINCIPAL AND/OR HAZARDOUS COMPONENTS

NONE

SECTION 3 PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE:	GOLDEN WITH STRONG ODOR
VAPOR DENSITY (Air):	N/A
VAPOR PRESSURE (mm Hg):	N/A
BOILING POINT:	86.7°C
FLASH POINT:	410°C
SOLUBILITY (Water):	IS NOT

SECTION 4 FIRE AND EXPLOSION HAZARD DATA

FLASH POINT:	410°C
FLAMMIBILITY LIMITS:	N/A
EXTINGUISHING MEDIA:	NONE REQUIRED
SPECIAL FIRE FIGHTING PROCEDURES:	NONE REQUIRED

SECTION 5 REACTIVITY DATA

STABILITY:	STABLE
CONDITIONS TO AVOID:	NONE KNOWN
INCOMPATIBILITY:	
HAZARDOUS DECOMPOSITION PRODUCTS:	NONE KNOWN

SECTION 6 HEALTH HAZARD DATA

INHALATION:	NONE KNOWN
CHRONIC EXPOSURE:	CONTINUED CONTACT MAY IRRITATE THE SKIN. INGESTION MAY RESULT IN NAUSEA, VOMITING, AND/OR DIARRHEA.
EYE CONTACT:	CAN PRODUCE SLIGHT IRRITATION AND STING
SKIN CONTACT:	CAN PRODUCE SLIGHT IRRITATION ON THE SKIN
INGESTION:	CAN IRRITATE THE DIGESTIVE SYSTEM
PRIMARY ROUTE OF ENTRY:	INGESTION AND SKIN - IN SOME CASES

V3 MSDS INFORMATION

VERONA MARBLE COMPANY
TECHNICAL ASSISTANCE CORPORATION
8311 EASTPOINT DRIVE, SUITE 80(
DALLAS, TX 7522;
TELEPHONE
(214)381-845(
FAX
(214)381-489(
WEB
www.vmctac.com

Material Safety Data Sheet

SECTION 7 HANDLING PRECAUTIONS

HANDLING: IT IS ADVISABLE TO USE GLOVES. ENVIROMENT ALWAYS VENTILATED.
STORING: KEEP IT IN THE CAN OF ORIGIN, CLOSED, IN A DRY PLACE AND SHADED PLACE. NOT TO BE EXPOSED TO THE SUNLIGHT.
PACKING MATERIAL: IN SPECIAL PVC CANS, COEX APPROVED FOR SOLVENT PRODUCTS (MAX. 2 YEARS) OR IN METAL CANS.

SECTION 8 EMERGENCY AND FIRST AID INFORMATION

EYE EXPOSURE: IMMEDIATELY FLUSH EYES WITH COOL RUNNING WATER FOR AT LEAST 15 MINUTES OCCASIONALLY HOLDING EYELIDS OPEN TO INSURE FLUSHING THE ENTIRE EYEBALL. SEE A PHYSICIAN, PREFERABLY AN OPHTHALMOLOGIST.

SKIN EXPOSURE: WASH OFF SKIN WITH SOAP AND WATER. SEE A PHYSICIAN IF IRRITATION PERSISTS.

INGESTION: DRINK WATER, PREFERABLY IN SMALL AMOUNTS, BUT FREQUENT DOSES. DO NOT INDUCE VOMITING.

SECTION 9 SPILL AND LEAK PROCEDURES

IMPORTANT: BEFORE RESPONDING TO A SPILL OR LEAK OF THIS PRODUCT, REVIEW EACH SECTION OF THIS MSDS. FOLLOW THE RECOMMENDATIONS GIVEN IN THE HANDLING PRECAUTION SECTION. CHECK THE FIRE AND EXPLOSION DATA SECTION TO DETERMINE IF THE USE OF NON-SPARKING TOOLS IS MERITED. IF IRRITATING FUMES ARE PRESENT, CONSIDER EVACUATION OF ENCLOSED AREAS.

EMERGENCY RESPONSE ASSISTANCE: EMERGENCY RESPONSE TECHNICAL INFORMATION IS AVAILABLE 24 HOURS A DAY FROM CHEM-TEL AT 1-800-255-3924.

SPILLS: TABSORB ON AN ABSORBENT MATERIAL AND DISPOSE OF IN AN APPROVED CONTAINER. NEUTRALIZE ANY RESIDUAL WITH SODIUM CARBONATE OR SODIUM BICARBONATE AND FLUSH TO SEWER.

NOTE: FOLLOW FEDERAL, STATE AND LOCAL REGULATIONS GOVERNING THE RELEASE OR DISPOSAL OF HAZARDOUS WASTES. HOWEVER, INSURE PROPER MANAGEMENT OF ANY RESIDUALS REMAINING IN THE CONTAINER.

Material Safety Data Sheet

VERONA MARBLE COMPANY
TECHNICAL ASSISTANCE CORPORATION
8311 EASTPOINT DRIVE, SUITE 80(
DALLAS, TX 7522;
TELEPHONE
(214)381-845(
FAX
(214)381-489(
WEB
www.vmctac.com

SECTION 10 REGULATORY PROCEDURES

DOT PROPER SHIPPING NAME:
HAZARD CLASS: UN# 1710
EPA REGISTRATION: NOT REQUIRED
TSCA INVENTORY: ALL COMPONENTS INCLUDED IN THE INVENTORY
FDA REGULATION(S): NONE KNOWN
SARA 302 EXTREMELY HAZARDOUS SUBSTANCE LIST: NO
SARA 312 HAZARD CLASSIFICATION(S): NO
SARA 313 TOXIC CHEMICALS LIST: NO
NFPA RATINGS: HEALTH 2, FLAMMABILITY 0, REACTIVITY 0
NPCA/HMIS RATINGS: HEALTH 2, FLAMMABILITY 0, REACTIVITY 0
HAZARD RATING KEY: 4-SEVERE, 3-SERIOUS, 2-MODERATE, 1-SLIGHT, 0-MINIMAL

The information on this Material Safety Data Sheet reflects the latest information and data that we have on hazards, properties and handling of this product under the recommended conditions of use. Any use of this product or method or application which is not described in the Product Data Sheet is the responsibility of the user.

This MSDS was prepared to comply with the OSHA Hazard Communication Standards

V3 MSDS INFORMATION

V3

Technical Information

VMC Technical Assistance Corporation
8311 Eastpoint Drive, Suite 80(
Dallas, TX 7522;
TELEPHONE
(214)381-845(
FA)
(214)381-489(
WEE
www.vmctac.com

V3 Crystallization Filler-Sealer

Product Description:

V3 is an integral part of the VMC system incorporated over 30 years ago. The V3 makes our system uniquely different from the "me too's" on the market. V3 is an essential part of the process by improving surfaces reflectivity and slip resistance. It is fundamentally what sets our system apart from others. V3 is formulated to give the benefit of a sealer while allowing for vapor transmission. As a stand alone product, V3 works well on high polished marble and granite where one looks for improvement in slip resistance and soil resistance. Daily maintenance is improved for surfaces treated with V3 because soil and dirt are quickly removed.

Special Features:

Improves slip resistance.
Aids in stain resistance.
Provides additional polish after V2.
Easy to use.
Extends the life of polished stones.
Greatly reduces the need for restoration.
Requires much less time as compared to traditional strip and wax methods.
Non scuffing.
Gives a mirror-like polish.

Where and When to Use:

V3 can be applied wherever the nature & condition of the floor surface permits. This product is for use on polished stone surfaces only.

Packaging:

1 quart (.95L)
1.75 Gallon (6.6L)

Directions for use:

Dust mop or sweep the flooring daily prior to cleaning.

If needed, clean surface using the proper dilution of VMC 30 cleaner and conditioner.

Crystallize the flooring as needed. Frequency may vary depending on foot traffic.

Using the VMC CCG1700 of CCG2000 machine begin by filling the left chemical dispensing bottle with V2 and the right chemical dispensing bottle with V3. Using a clean steel wool pad #0 of #1 begin the polishing process by applying about 1/2 ounce of V2 across 6 square feet of marble flooring using the left chemical dispensing bottle provided with your CCG1700 or CCG2000. Dispense the chemical while running the machine to the left into the stream of V2 during the dispensing process.

You will be using the direction of the machine and the steel wool pad to spread the V2 across the 6 square foot area. This motion will increase the actual working area to approximately 10 square feet.

Continue the buffing process until any trace of the wet chemical has been buffed into the stone. Repeat the V2 process until the entire area has been polished with V2. Next, begin the V3 application. Apply the V3 using the same machine and steel wool that was used in the V2 application. Apply the V3 using the right chemical dispensing bottle. Apply the V3 in the exact same fashion as the V2 was applied.

The only difference between the application process is that you will be dispensing the V3 from the right chemical dispensing bottle which means that you will be moving the machine to the right while dispensing the V3. Pay special attention to the floor surface to insure that all traces of V3 have been removed from the stone during the buffing process.

To complete the process repeat the V2 application. Sweep up any steel wool fibers and dust that could be left over from the process. This should leave the floor looking new with a highly reflective finish.

Note:

1. Protect aluminum and brass fixtures, furniture and baseboards.
2. A 1.75 gallon (6.6L) container of V3 will cover approximately 5500 sq. ft. (511 sq. meters)

Maintenance:

Contact VMC for complete specifications.

Product Specifications:

Physical State: Liquid
Odor: Strong Odor
Appearance: Golden
Solubility in water: Non-Soluble

Precautions Summary:

Eyes: Can produce slight irritation and sting.
Skin: Can produce slight irritation on the skin.
Ingestion: Can irritate the digestive system.
Flash point: None

V3 TECHNICAL INFORMATION