



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 m²/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 overlapped 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.



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