

▶ THANK YOU FOR CHOOSING ◀



HELIX
COLOR SYSTEMS

Before beginning any project, please review the enclosed training and materials packets in full, including:

TECH
DATA SHEET

SAFETY
DATA SHEET

Overlays & Toppings

MICROSTONE SPRAY SYSTEM

TECH DATA SHEET

Helix Color Systems is a premier line of specialty decorative concrete systems manufactured for the professional installer. Specializing in custom colors, specialty products, and superior service, Helix Color Systems offers an innovative alternative in the decorative concrete industry.

► DESCRIPTION

Helix MicroStone Spray System is an ultra-thin, architectural concrete topping consisting of a combination of liquid polymer and specially formulated powder mixtures that is spray applied in colorful layers providing a durable and slip resistant coating. **MicroStone Spray System** is sold as an easy to use kit.

MicroStone Spray System tenaciously bonds to many substrates, including concrete, wood, metal, plastic and sheet rock. **MicroStone** is applied in layers—using a hopper gun, each producing different colors, each accenting and highlighting the previous color spray..

► PRODUCT BENEFITS

- MicroStone features exceptional bond strength. This product adheres to most stable substrates, well bonded adhesives and coatings on stable substrates.
- MicroStone features excellent abrasion resistance and can achieve a compressive strength of 6,000 PSI.
- MicroStone is a non-toxic design product and dries completely in 24 hours (70 °F/21 °C).
- The durable, high-strength MicroStone is sold as a kit and is available in 8 color kits. Refer to the
- MicroStone Spray System color chart/brochure.
- The kit includes a sparkle finishing effect.
- MicroStone is an ideal product for creating long lasting, colorfast and vibrant surfaces.
- MicroStone gives architects, designers and owners an expanded range of cementitious color selection
- that, in the past, was only available in less wear-resistant paint-type materials. The uses of MicroStone include, but are not limited to, large-scale commercial flooring, graphic artwork, stenciling, monograms, logos

and traversing vertical surfaces.

► PRE-APPLICATION

1. Sweep or vacuum loose dirt from the surface. Use a floor scraper or grinder to remove bumps and surface build-up. For best results, surface should be as smooth and level as possible. Tools and equipment requirements are largely dependent on the project. Common to most projects are: mixing motor, mixing paddle, eye goggles, polyethylene sheeting (and/or rosin paper), duct or reinforced tape, graduated measuring containers, empty containers for mixing and cleanup, gloves and rags. Application tools depend on the project and include squeegees, hopper guns, trowels, drywall knives, brushes and rollers. Suggested prep, cleanup and trimming tools include: scrapers, drywall knives, hammers, chisels, brooms, dustpan and vacuum. Additional specialSuggested prep, cleanup and trimming tools include: scrapers, drywall knives, hammers, chisels, brooms, dustpan and vacuum. Additional specialty tools may be necessary, depending on the type and extent of preparation required. This is typically accomplished by either grinding or a light sandblast finish. Acid etching or pressure washing alone is not sufficient.
2. ChemSystems Inc. utilizes the International Concrete Repair Institute (ICRI) Concrete Surface Profile (CSP) standards for specifying finished surface roughness prior to applying MicroStone. For proper adhesion, the concrete must be a minimum #2 according to the ICRI CSP chart. This is typically accomplished by either grinding or a light sandblast finish. Acid etching or pressure washing alone is not sufficient. Contact the ICRI at www.icri.org.

ICRI.org or ChemSystems Inc. for more information on these surface profiles..

3. If there are foreign materials (such as adhesives, paints, sealers, primers, or high-performance coatings) on the substrate they should be removed before applying MicroStone. MicroStone may bond to those foreign materials if used in a vertical application. However, the ultimate test of the stability of the substrate depends on the integrity of the bond between the foreign material and the substrate (not between the foreign material and MicroStone).
4. Standing oil and grease should be wiped clean, scrubbed with an appropriate industrial detergent, rinsed with clean water and completely dried before application of MicroStone. Any remaining oil or grease stains should not affect adhesion, but over time can produce shadowing or ghosting of the original stain.
5. MicroStone will not adhere to wet or damp surfaces.
6. Holes and large chips should be filled and troweled flat using an appropriate structural- grade repair product prior to the base coat application.
7. Control joints and moving/working cracks in the existing concrete are expected to transfer through the surface of the topping and create potential cracking problems. To isolate moving cracks, use a semi-rigid crack repair material. Install according to kit instructions. In the case of existing joints or saw cuts, new joints or saw cuts must be placed in the MicroStone directly over the existing joints or saw cuts. Any new joint or saw cut must penetrate entirely through the new layers of MicroStone.
8. Mask off perimeter and vertical surfaces for protection. Remove masking as soon as possible after application.
9. If the concrete surface exhibits moisture issues, dusting or flaking, a concrete densifying sealer should be used to waterproof and densify problem areas prior to application of MicroStone.

► MIXING PREPARATION

- Mixing should be done in a cool area using clean buckets. Because material dries quickly when exposed to air, buckets and small mixing drums work best. Do not allow MicroStone to air dry on tools or equipment. Wash mixing equipment immediately or place in water for later cleaning.

► BASE COAT MIXING

- Add 4 – 4 3/4 quarts of MicroStone Liquid Polymer diluted 1:1 with cool clean water to a clean empty bucket, add colorant labeled “BASE COAT” and blend.
- Add MicroStone powder labeled “BASE COAT” to the liquid and blend until lump free. Maintain the material’s consistency for the entire area being treated. Change in mix ratio could result in a color variation. Repeat this process for the second “BASE COAT” once the first “BASE COAT” has been applied.
- The BASE COAT application should be applied in a wet fluid state to ensure proper adhesion and surface penetration. Verify that the most current versions of product technical data sheets (PTDS), material safety data sheets (MSDS), and installation guidelines (IG) are being utilized for project submittals and application reference.

► BASE COAT APPLICATION

- Prime 1/2 of the surface to be treated prior to the application of the first BASE COAT with Helix MicroStone Liquid Polymer diluted 1:1 with cool clean water. Do not allow the primer to dry completely. Spray or roll on the primer making sure the eliminate any puddles. If the primer dries, reapply, and agitate to achieve a wet or tricky surface. The primer is needed for the BASE COAT application only.
- While the primer is still tacky, apply the first BASE COAT to 1/2 of area being treated using a trowel, magic trowel, squeegee at 1/16” to 1/8” thickness not to exceed 1/8” thick or spray through hopper gun.
- Once the first BASE COAT is dry, prime the second 1/2 of the surface prior to the application of the second BASE COAT with Helix MicroStone micro Polymer diluted 1:1 with cool clean water. Do not allow the primer to dry completely.
- While the primer is still tacky, apply the second BASE COAT to the second 1/2 of area being treated using a trowel, magic trowel, or squeegee at 1/16” to 1/8” thickness not to exceed 1/8” thick. Allow the second BASE COAT to dry completely before moving on to the SPRAY COAT applications. Rinse off equipment immediately after use.
- Hot surfaces can accelerate the hydration rate,

while cool temperatures will tend to slow the hydration rate. Moderate surface temperatures of 60 °F to 80 °F are recommended for best results.

- At 70 °F, the BASE COAT should dry in about 20 minutes. If high humidity exists, fans can be used to move across the surface to speed set time.
- Once each base coat application can be walked on without marring the surface, care should be taken to knock down any irregularities, lumps or squeegee marks with a trowel, scraper or drywall knife. If base coat material dries to a final hardness before the surface can be manually smoothed, an 80- to 120-grit screen may be needed to smooth the surface.

▶ SPRAY & SPLATTER COAT MIXING

- Add 2 1/2 – 3 quarts of MicroStone Liquid Polymer diluted 1:1 with cool clean water to a clean empty bucket, add colorant labeled “SPRAY COAT #1” and blend.
- Add MicroStone powder labeled “SPRAY COAT” to the liquid and blend until lump free.
- Repeat process for the second “SPRAY COAT”, the first “SPLATTER COAT” and the second “SPLATTER COAT” after each previous application is dry.

▶ SPRAY & SPLATTER APPLICATION

- For each spray application, pour mixed material into a hopper gun.
- The first and second SPRAY COATS are sprayed evenly over the entire area being treated. Allow each SPRAY COAT to dry completely before applying the next colored spray coat.
- Once each SPRAY COAT application can be walked on without marring the surface, care should be taken to knock down any irregularities or lumps using a trowel, scraper or drywall knife. SPRAY COATS are at about 70–75% coverage.
- The first and second SPLATTER COATS are shot in small bursts to accent the first two SPRAY COATS. Allow each SPLATTER COAT to dry completely before spraying the next colored SPLATTER COAT. Rinse off all equipment immediately after use. SPLATTER COATS are sprayed at about 25% coverage.
- When all SPRAY & SPLATTER COAT applications are complete, allow to cure 24 hours before sealing.

▶ SEALING WITH SPARKLE ADDITIVE

- After sufficient curing, if water gets on the surface before sealing, a white film can result. While this film won't affect bond or durability, the film should be cleaned off prior to sealing. Clean with a good commercial cleaner/degreaser and clear water rinse.
- Sealing should be done as soon as possible after the surface has completely dried.
- Once MicroStone has cured for 24 hours, apply 2 coats of sealer.
- **FOR LIGHT SPARKLE:** Do not add the sparkle additive in the first coat of sealer. Always roll on or the first coat of sealer. Allow the first coat to dry completely (dry time is contingent upon weather conditions). Second Coat – Add sparkle additive to the sealer container and slowly mix to disperse the sparkle. The sparkle additive will settle between rolls so re-mixing is necessary to keep the sparkle dispersed. Roll on the second coat of sealer.
- **FOR HEAVY SPARKLE:** Add sparkle additive to the sealer container and slowly mix to disperse the sparkle. Roll on sealer. The sparkle additive will settle between rolls so re-mixing is necessary to keep the sparkle dispersed. Once first coat of sealer is dry, re-mix the sealer to disperse the sparkle and apply a second coat evenly over the entire surface.

▶ EQUIPMENT SUGGESTIONS

- An air compressor with continuous air delivery at 40–80 psi is recommended.
- Hopper gun pressure control is recommended.

▶ SURFACE PROTECTION & MAINTENANCE

- All installations should be maintained on a routine basis with the use of ChemSystems Inc. maintenance products to ensure the preservation of a high-quality, long-lasting surface. Maintenance schedules will vary depending on a number of factors, including volume and intensity of traffic, ultraviolet light exposure, geographical location and weather conditions. Resealing will be required periodically, depending on the amount of foot traffic. As with any other surface treatment, the lifetime of this product is dependent on

▶ SHELF-LIFE & STORAGE

- Helix MicroStone has a shelf life of approximately 18 months.
- **Liquid Polymer:** Helix MicroStone Liquid Polymer should be stored indoors and above freezing temperatures. If Helix MicroStone Liquid Polymer freezes, discard.
- **Powder:** Helix MicroStone powders should be stored indoors and away from moisture..

▶ LIMITATIONS AND PRECAUTIONS

- MicroStone will not properly bond to wet or damp concrete.
- MicroStone will not properly bond to existing coatings, paints, sealers, etc.
- MicroStone will not adhere properly to salt-damaged concrete (i.e. salt-finished surfaces or de-icing salt-infested surfaces).
- MicroStone will not adhere to standing oil or grease.
- Certain aggressive stains, such as hydraulic fluids, proteins and animal waste by-products, may appear through the topping as "shadowing" on the finished surface. Any of these materials found on the substrate should be cleaned with an appropriate cleaner and then sealed with a water-based epoxy.
- If heavy adhesive tapes (such as duct tape) are left on sealed MicroStone over an extended period of time, a chemical "weld" will be created between the tape and the MicroStone. If this happens, the MicroStone may be subject to delamination.
- Do not allow water on the surface until MicroStone has completely cured. Excessive water before sufficient cure will affect bond and durability.

▶ TECHNICAL DATA

Bond Strength

Range: 414–466 PSI (ASTM D4541)

Compressive Strength

7-day cure: 6,225 PSI (ASTM C579)

28-day cure: 6,622 PSI

Abrasion Resistance

1,000 cycles, H-22 calibrade wheels – average depth of wear:

24 mils (roughly the equivalent to 5,000 PSI concrete in accordance with ASTM C501)

Weathering

After 31 cycles (5,208 hours), no sign of peeling, chalking, blistering, loss of adhesion, fading or algae growth (ASTM

G43 – modified to include freeze-thaw cycle)

Smoke/Toxic Fume Emission

Negligible emission (British Standard 6853)

Skid Resistance

Dry: 65, Wet: 58 (British Pendulum Test)

▶ COVERAGE RATES & DRYING TIMES

Coverage per kit is approximately 350–400 square feet. Coverage per XL kit covers 1,200 square feet. Actual coverage may vary depending on surface, application method, and other local conditions.

▶ PACKAGE SIZES

2 – BLUE pails consisting of pre-measured MicroStone Powder (1 bag– BASE COAT, 1 bag – SPRAY COAT, 1 bag – SPLATTER COAT)

1 – WHITE pail of MicroStone Liquid Polymer concentrate
1 – box consisting of 6 jars of liquid pigment (2) jars BASE COAT(s), 2 jars SPRAY COAT(s), 2 jars SPLATTER COAT (s) and 1 – jar of SPARKLE

XL Kit

6 – BLUE pails consisting of pre-measured MicroStone Powder (1 bag– BASE COAT, 1 bag – SPRAY COAT, 1 bag – SPLATTER COAT)

3 – WHITE pails of MicroStone Liquid Polymer concentrate

1 – box consisting of 6 jars of liquid pigment (2) jars BASE COAT(s), 2 jars SPRAY COAT(s), 2 jars SPLATTER COAT (s) and 1 – jar of SPARKLE

▶ PRODUCT HANDLING

For complete instructions on handling and use, consult the corresponding Material Safety Data Sheet before using product.

▶ WARRANTY

Helix MicroStone Spray System a proprietary product, is warranted to be of uniform quality within manufacturing tolerances. Since control is not exercised over its use, no warranty, expressed or implied, is made as to the effects of such use. Seller's and manufacturer's obligation under this warranty

Overlays & Toppings

MICROSTONE SPRAY SYSTEM

SAFETY DATA SHEET

▶ SECTION 1 PRODUCT DESCRIPTION

Product Name:

Microstone Liquid Polymer

Recommended Use:

Acrylic Primer Emulsified in a Mixture of Water, Surfactant, and Ammonia

Supplier:

ChemSystems, Inc. 10101 Genard Road Houston, TX 77041
P: 713.329.9066 support@helixcolorsystems.com
www.helixcolorsystems.com

Emergency Phone:

CHEMTRAC 1-800-424-9300

▶ SECTION 2 HAZARD IDENTIFICATION

Hazard Statements:

- Not a dangerous substance of mixture according to the Globally Harmonized System (GHS)

Precautionary statements:**Prevention:**

- P264 Wash skin thoroughly after handling
- P352 Wash with soap and water

Response:

- P301+P314 IF SWALLOWED: Get medical advice if you feel unwell.
- P302+P353 IF ON SKIN: Rinse skin with water.
- P304+P340+P342+P313 IF INHALED: Remove person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms: Get medical advice.
- P305+ P351+P338+P314 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact

lenses if present and easy to do – continue rinsing. Get medical advice if you feel unwell.

- P332+P313 If skin irritation occurs, get medical advice/attention.
- P362 Take off contaminated clothing and wash before reuse.
- P370+P378 In case of fire: Use dry sand, dry chemical, or alcohol-resistant foam for extinction.

Storage:

- P403+P233+P235 Store in a well-ventilated place. Keep container tightly closed. Keep cool.

Disposal:

- P501 Dispose of contents/container in accordance with Local/Federal regulations.

▶ SECTION 3 COMPOSITION/ INFORMATION ON INGREDIENTS

	CAS #	OSHA PEL(TWA)	ACGIH(TLV-TWA)	Conc.(wt. %)
Bisphenol A Epoxy resin	Proprietary	Not established	Not established	95 – 100%
Ethylene Glycol	107-21-1	Not established		1 – 3%

▶ SECTION 4 FIRST AID MEASURES

Emergency First Aid Procedures:

- **Skin:** Wash with soap and water. Consult physician if irritation persists. Launder contaminated clothing before reuse.
- **Eyes:** Flush with large amounts of water for at least 15 minutes. If irritation persists, consult a physician.
- **Inhalation:** Move subject to fresh air. If not breathing, give artificial respiration. If breathing is difficult, call a physician.
- **Ingestion:** Give 2 glasses of water to drink. Do not induce vomiting. Consult a physician.

▶ SECTION 5 FIREFIGHTING PROCEDURES

- **Suitable Extinguishing Media:** Use foam, dry chemical or carbon dioxide
- **Unsuitable Extinguishing Media:** N/A
- **Flash Point (TCC):** N/A
- **Flammable Limits (% volume in air for solvents):**
LEL=N/A UEL=N/A
- **Special Fire Fighting Procedures:** Use water spray to keep nearby containers cool to reduce pressure build up. Wear self-contained breathing apparatus and full protective gear.

▶ SECTION 6 SPILL OR LEAK PROCEDURES

- **Steps to Take if Material is Released or Spilled:**
Ventilate the area and do not breath the vapors. Use caution, floor may be slippery. Contain spills immediately with inert materials. Transfer liquid and diking materials to a separate container for recovery or disposal. Do not allow to enter drains or water courses CAUTION: Keep spills and cleaning runoff out of municipal sewers and open bodies of water.

▶ SECTION 7 HANDLING AND STORAGE

- **Normal Handling:** Always use good industrial hygiene practices and safety guidelines.
- **Storage:** Store material in its original container. Keep

containers tightly closed when not in use. Keep material away from open sources of heat and ignition.

- **Waste Disposal Method:** Incinerate, in accordance with Federal, State and Local regulations.
- **Special Precautions:** N/A

▶ SECTION 8 PROTECTION INFORMATION

- **Respiratory Protection:** Where concentrations in air may exceed allowable limits, NIOSH approved respirators should be worn.
- **Ventilation:** Use explosion proof exhaust system designed & maintained to keep vapor level below the TLV & LEV.
- **Protective Gloves:** Wear neoprene gloves.
- **Skin Protection:** Wear long sleeves and chemically resistant clothing to prevent prolonged or repeated skin contact.
- **Eye Protection:** Use chemical, splash goggles and face shield (ANSI Z87.1 or =).
- **Other Protective Clothing or Equipment:** As needed to prevent repeated/prolonged contact.
- **Work/Hygienic Practices:** Wash thoroughly with soap and water after handling and before eating, smoking, or using washroom. If clothes become contaminated, change to clean clothing and wash contaminated clothes before re-use.

▶ SECTION 9 PHYSICAL DATA

- **Appearance:** Colorless, Light Liquid
- **Odor:** Slight
- **Odor Threshold:** N/A
- **pH:** N/A
- **Freezing/Melting Point:** N/A
- **Boiling Point:** -390° F
- **Flash Point:** N/A
- **Evaporation Rate:** N/A
- **Flammability (solid, gas):** N/A

- **Lower/Upper Flammability:** N/A
- **Vapor Pressure:** N/A
- **Vapor Density:** N/A
- **Density:** 1.17 g/cc
- **Solubility:** Essentially insoluble
- **Partition Coefficient:** No data available
- **Auto-ignition Temperature:** N/A
- **Decomposition temperature:** No data available
- **Viscosity:** N/A
- **% Volatile (by weight):** Approximately 0%

▶ SECTION 10 REACTIVITY DATA

- **Reactivity:** Stable
- **Conditions to avoid:** Keep containers tightly closed and away from heat. Closed containers may explode if exposed to heat.
- **Incompatibility (Materials to Avoid):** Avoid contact with strong oxidizing agents as well as strong acids or bases.
- **Hazardous Decomposition (Byproducts):** Thermal decomposition may yield carbon monoxide & carbon dioxide and oxides of nitrogen.
- **Hazardous Polymerization:** N/A
- **Unusual Hazards:** Byproducts of combustion include oxides of carbon and nitrogen.

▶ SECTION 11 TOXICITY DATA

- **Routes of Exposure:** Inhalation, eyes, and Skin.
- **Health Hazards:**
 - **Acute:** Irritation and burning to eyes, nose, throat & lungs.
 - **Chronic:** Repeated skin contact may cause dermatitis.
- **Skin Contact:** May cause irritation and redness. Prolonged or repeated exposure can cause defatting and drying of the skin which may result in a burning sensation and a dried, cracked appearance.
- **Eye Contact:** May cause redness, tearing, and irritation of the eyes. Direct contact may cause permanent eye damage.
- **Inhalation:** May cause headache, nausea, dizziness, and loss of coordination. Continued inhalation may result in unconsciousness and death.

- **Carcinogen:** N/A
- **Aggravation of Pre-existing Conditions:** May irritate existing dermatitis conditions.

▶ SECTION 12 ECOLOGICAL DATA

- **Acute Toxicity to Fish:** N/A
- **Acute Toxicity to Aquatic Invertebrates:** N/A
- **Toxicity to Aquatic Plants:** N/A
- **Toxicity to Microorganisms:** N/A
- **Chronic Toxicity to Fish:** N/A
- **Chronic Toxicity to Aquatic Invertebrates:** N/A
- **Persistence and Degradability:** N/A
- **Bioaccumulation Potential:** N/A
- **Mobility in the Soil:** N/A
- **Other Adverse Effects:** N/A

▶ SECTION 13 DISPOSAL INFORMATION

- **Waste Disposal Method:** Liquid material is an ignitable waste (D001). Dispose of material in accordance with all Federal, State, and Local regulations.

▶ SECTION 14 TRANSPORT INFORMATION

- **Proper Shipping Name:** N/A
- **Hazard Class:** N/A
- **UN:** N/A
- **Packing Group:** N/A
- **Marine Pollutant:** No

▶ SECTION 15 REGULATORY INFORMATION

- **SARA 311/312:** N/A
- **OSHA:** N/A
- **TSCA:** N/A
- **California Proposition 65:** N/A
- **Massachusetts Right To Know:** N/A
- **Pennsylvania Right To Know:** N/A
- **New Jersey Right To Know:** N/A

▶ SECTION 16 ADDITIONAL INFORMATION

- The regulatory information provided is not intended to be comprehensive. Other Federal, State and Local regulations may apply to this material.
- **DISCLAIMER:** Although the information and recommendations set forth herein are presented in good faith and believed to be correct as of the date hereof, manufacturer makes no representations as to the completeness or accuracy thereof.

