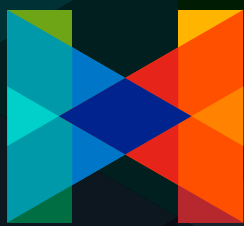


▶ THANK YOU FOR CHOOSING ◀



**HELIX**  
COLOR SYSTEMS

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

TECH  
DATA SHEET

SAFETY  
DATA SHEET

## Stains & Dyes

# ACID STAIN

## 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 Acid Stain produces a rich and variegated finish unique to each surface. Instead of covering up the concrete like a paint or coating, stains infuse color into the surface while also showcasing the character of the substrate. The translucent effects and the broad drifts in color—considered hallmarks of the stains—give surfaces the appearance of a timeworn finish.

### ► PRODUCT BENEFITS

- Helix Acid Stain is a combination of metallic salts in water-based solutions that are slightly acidic. By reacting with the free lime available after concrete has fully cured, stains penetrate and etch new or existing concrete that is free from sealers, paints, and other forms of resists. Stains form permanent precipitates, becoming part of the concrete. Color remains in the concrete pores which means color won't chip, crack, fade or peel.
- Helix Acid Stain does not "cover up" the concrete surface but rather works in conjunction with the finish character of the substrate. Helix Acid Stain produces a variegated finish and beautiful patina, an "old world" surface effect, similar to the patination of bronze or the natural oxidation of copper. The broad drifts of color and mottled surface effects are not considered defects but rather architectural hallmarks of this concrete coloring method. (Helix Acid Stain is

reactive by nature. Stains are not paints or coatings, and therefore contain no pigments.)

- Available in eight standard colors, Helix Acid Stain creates expanses of rich color and marbled hues from plain, gray concrete.
  - Inside or outside, Helix Acid Stain can be applied to walkways, driveways, pool decks, patios, plazas, street pavements and more.
  - To expand the color palette on new projects, Helix Acid Stain can be used over all Helix Color Hardener\*, Helix Microtopping INT\*, Helix Microtopping HD\*, Helix Stampable Overlay\* and Helix Integral Color\* colors to further enhance the tone of colored concrete. To produce enhanced and richer effects, white-based surfaces can be used.
  - Stain can also be applied over another stain to expand color possibilities.
  - A wide variety of artistic and graphic effects are possible with this product. Utilize an experienced contractor or artisan for installations of Helix Acid Stain and other decorative concrete products.
  - These stains may also be used to treat other cementitious materials (such as terrazzo, gunite, shotcrete, stucco, cement plaster, and certain self-leveling toppings) as well as any lime-based natural stone that has a chemistry similar to concrete (for example, limestone).

## ► PRE-APPLICATION

1. A jobsite sample is strongly recommended.
2. Helix Acid Stain should be applied to concrete that has fully cured. Concrete should be cured according to ACI standards. For optimum results, allow concrete to cure for 28 days. If stains are applied to concrete that has not fully cured, unpredictable results may occur.
3. If a curing compound is needed for freshly placed concrete that will later be stained, an impregnating internal cure may be considered. Unlike other curing compounds, internal curing compounds do not form a film or membrane. Designed for use on non-colored concrete, internal cures, unlike common sodium silicate curing products, will not interfere with the reaction of chemical stains. Because there is no membrane to remove during preparation, contact a Helix Acid Stain Sales Representative for more technical information on internal curing compounds.
4. Do not over apply stain. This can cause reduced stain penetration, resulting in reduced or no color development. Strive for 300 sq/ft per gallon during application of Helix Acid Stains.
5. Before applying Helix Acid Stain, your surface must be dry, structurally sound and clean—free of dirt, grime and any other material that would act as a resist to the stain.

## ► APPLICATION

1. Helix Color Systems recommends applying Helix Acid Stain Pretreatment and Concrete Cleaner\* as a surface cleaner and stain enhancer to all surfaces prior to staining with Helix Acid Stain. Lightly spray the areas to be stained with a good commercial pretreatment and cleaner. Very dense and hard burnished surfaces may require slight agitation with stiff bristle nylon brushes. Avoid puddling the pretreatment and cleaner. Rinsing the surfaces prior to staining is not necessary. Apply Helix Acid Stain directly over damp or dry surfaces that have been treated with a stain pretreatment or cleaner. In most cases, the use of a good commercial pretreatment and cleaner will enhance the final color of the stain.
2. Helix Acid Stain is best applied with an all-plastic pump-up sprayer at a rate of 200–400 square feet per gallon per application depending on surface texture. Smoother surfaces may yield higher coverage rates, resulting in less material usage.

3. Once sprayed onto surface, a stiff nylon brush can be used to massage stain in a circular motion into the surface. Avoid leaving brush marks or puddles, as they will become permanent if left to dry.
4. As stain is applied, various degrees of acidic reactions, such as fizzing and foaming, might occur. These types of reactions are generally signs that the substrate is accepting the stain. In certain cases, and with certain stain colors, no immediate visible reaction may take place. It is important to let the stain dwell for a minimum of 5 hours before rinsing or cleaning.
5. Stains may need to be applied in two or more applications. Important Note: Two or more applications are typical for concrete flatwork.
6. After the first coat has fully reacted (five hours minimum), additional coats can be applied. To avoid any unevenness, brush out any excessive puddles.
7. Many faux effects can be achieved by the use of special application methods. Applicators such as, but not limited to, sponges, rags and hand sprayers can produce multiple effects. Any modifications to the product or application procedure or applied combinations of Helix Acid Stain are done at applicator's risk.
8. Allow final coat to dry. Recommended minimum dry time for final coat on many surfaces is 10 hours. Dense or burnished surfaces will require a minimum of 18 hours dry time. Important Note: For drying times on Adobe and Blackfoot stains, please see "Limitations" section.
9. Removal of all salty colored residue and proper surface neutralization of the stained surface is critical. Apply an alkaline solution (1 cup of a good commercial cleaner/degreaser to 1-gallon of water) to the stained surface. Agitate with stiff bristle nylon brushes to remove all colored residues. (A rotary floor machine with a pad driver and soft pad may also be used with care.) The use of a wet/dry vacuum is recommended to pick up colored waste water. Control and/or collect run-off to keep from discoloring surface not designated for stain. Once all colored residue has been removed, rinse the floor with clean water until rinse water runs clear. When the floor is wiped with a white rag and comes away clean, the surface has been properly cleaned. Note: Multiple cleaning and neutralization cycles may be needed, especially when using high-solids stain colors such as Adobe and Blackfoot. Under normal circumstances all colored residue water and rinse water

should be collected and disposed of properly. (Always consult Material Safety Data Sheets and appropriate agencies for disposal information.)

10. Prior to sealing, the surface must be clean and dry. After the final rinse cycle, wait 24 hours before applying any sealer. Fans and blowers may be used to speed the drying process. **Note:** Temperature and humidity will affect the drying times of the surface.

### ▶ SURFACE PROTECTION AND MAINTENANCE

- Helix Color Systems offers a full range of high-end sealer systems for colored and stained surfaces to ensure the long lasting protection and enhanced color of the final project. The interior system consists of two coats with a durable base coat sealer, followed by three coats of a special high-solids top coat maintenance sealer. The exterior system consists of two thin coats of a high performance solvent or waterbased sealer.
- All decorative concrete installations should be maintained on a routine basis with the use of 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. Stained surfaces should be routinely swept and damp-mopped of dirt/loose debris to avoid unnecessary wear to the surface. 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 the care it is given. The use of a qualified flooring maintenance contractor is recommended for resealing, especially in commercial applications.

### ▶ LIMITATIONS AND PRECAUTIONS

- Inconsistencies in job site conditions, base color, concrete mix design and slump, curing methods, finishing practices, stain application, surface permeability, and age and condition of concrete in existing slabs may produce variations in the color of the finished product.
- Avoid applying stain to surfaces with temperatures

below 60 °F or above 100 °F.

- On the Helix Acid Stain Color Chart, standard Helix Acid Stain colors are shown applied to both uncolored gray concrete and white concrete.
- However, every concrete substrate is unique and Helix Acid Stain may produce differing effects from what is shown on the color chart. There is an element of uncertainty and unpredictability inherent in the use and final appearance of Helix Acid Stain, including uneven, mottled or translucent effects.
- Product literature photos and sample color chips provide a good representation of the colors, but the actual colors achieved may differ significantly.
- Adobe and Blackfoot are high-solid Helix Acid Stains that work best in very thin applications. For these colors, two thin applications are recommended with the longest possible drying times in between coats. The recommended dry time after each coat is a minimum of 10 hours with 18 hours being the optimal dry time.
- Allowing adequate dry time is especially important if applying these stains to hard-troweled surfaces. A job site sample is highly recommended whenever applying stain. Producing jobsite samples is of particular importance for these two colors.
- Neptune, Bluegrass and Jade stains (the blue and green stains) react to the presence of moisture and can create a black, spotty effect. When working with these stains, a minimum of 24 hours dry time is recommended to ensure rinse moisture has left the slab before sealing. When using these stains, it is especially important to follow instructions outlined in the "Application" section.
- Hard-troweled concrete may be difficult to stain. Allowing adequate dry time in between application coats is especially important if applying stains to hard-troweled surfaces. The recommended reaction time after each application on hard-troweled surfaces is a minimum of 10 hours with 18 hours being the optimal dry time.

- Helix Acid Stain can be diluted to achieve lighter more subtle colors and tones. Dilute Helix Acid Stain with a solution of 10 parts water 1 part muriatic acid.
- Avoid the use of any type of tape on concrete surfaces prior to or after staining. Migration of glues and or plasticizers from the tape can affect the ability of the stain to penetrate and/or the final color. In some cases if tape is left on the surface for a long period of time, when removed, it may remove the stain or sealer or both.
- Avoid contact with any metal objects, particularly galvanized objects as an explosive gas (hydrogen) will be evolved.

### ► COVERAGE RATES AND DRYING TIMES

**Coverage rates** may vary depending on the texture, porosity and condition of the concrete, application method, and other local conditions.

- *Rough or Broom Finish:* Material usage is 200–400 square feet per gallon/coat.
- *Hard Troweled or Polished Concrete:* Material usage is approximately 400 square feet per gallon/coat.

**Drying times** below will vary depending on surface permeability, temperature, humidity and local conditions. When drying, do not cover the surface with anything non-permeable for a minimum of 24 hours. See the “Limitations” section for more detailed information.

- Typical dry times are at 70 °F and 50% relative humidity.
- Allow a minimum of five hours dry time for the first coat.
- Allow 24 hours dry time prior to applying protective sealer.
- Hard-troweled surfaces need a minimum of 10 hours dry time for the first coat, with 18 hours being optimal.
- Adobe and Blackfoot colors need a minimum of 10 hours dry time. Neptune, Bluegrass and Jade colors need 5 hours dry time.

### ► SHELF LIFE AND STORAGE

Helix Acid Stain has a shelf life of one year. Store product indoors, away from heat or direct sunlight. Do not store below 40 °F and do not allow product to freeze.

### ► PACKAGE SIZES

Helix Acid Stain is available in 1-and 5-gallon units.

### ► APPLICABLE STANDARDS

EQ Credit 4.2: Low-Emitting Materials: Paints & Coatings (when used with a low VOC sealer)

### ► TECHNICAL DATA

Please refer to the corresponding-color MSDS for hazard-related information.

Physical:	Liquid, various colors
Odor	Chlorine-like
Flash Point	None
VOC Content	0 (Zero)
Other	Nontoxic; contains no VOCs or solvents

### ► PRODUCT HANDLING

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

### ► WARRANTY

Helix Acid Stain 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 shall be limited to refunding the purchase price of that portion of the material proven to be defective. The user assumes all other risks and liabilities resulting from use of this product.

## Stains & Dyes

# ACID STAIN

## SAFETY DATA SHEET

### ▶ SECTION 1 PRODUCT DESCRIPTION

**Product Name:**

Acid Stain

**Recommended Use:**

Staining concrete

**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

Wheat Colors:

**Skin Corrosive: Category 1B****Acute Oral Toxicity: Category 3****Signal Word:** Danger**Hazard Statements:**

- H301 Toxic if swallowed
- H312 Harmful in contact with skin
- H314 Causes severe skin burns and eye damage
- H332 Harmful if inhaled
- H290 May be corrosive to metals

**Precautionary statements:****Prevention:**

- P233 Keep container tightly closed
- P220 Keep/Store away from clothing
- P261 Avoid breathing mist
- P270 Do not eat, drink, or smoke while using this product

- P271 Use only outdoors or in a well-ventilated environment
- P273 Avoid release to the environment
- P280 Wear protective gloves/protective clothing/eye protection/face protection.
- P284 Upper respiratory protection
- P264 Wash skin thoroughly after handling

**Response:**

- P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P302+P352 IF ON SKIN: Wash with plenty of water
- P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
- P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing

Bluegrass, Neptune, &amp; Jade Colors:

**Skin Corrosive: Category 1B****Acute Oral Toxicity: Category 3****Acute Aquatic Toxicity: Category 1****Chronic Aquatic Toxicity: Category 2****Signal Word:** Danger**Hazard Statements:**

- H301 Toxic if swallowed
- H312 Harmful in contact with skin
- H314 Causes severe skin burns and eye damage
- H332 Harmful if inhaled
- H290 May be corrosive to metals
- H410 Very toxic to aquatic life with long-lasting effects

**Precautionary statements:**

**Prevention:**

- P233 Keep container tightly closed
- P220 Keep/Store away from clothing
- P261 Avoid breathing mist
- P270 Do not eat, drink, or smoke while using this product
- P271 Use only outdoors or in a well-ventilated environment
- P273 Avoid release to the environment
- P280 Wear protective gloves/protective clothing/eye protection/face protection.
- P284 Upper respiratory protection
- P264 Wash skin thoroughly after handling

**Response:**

- P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P302+P352 IF ON SKIN: Wash with plenty of water
- P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
- P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing

All Other Colors:

**Skin Corrosive: Category 1B**

**Acute Oral Toxicity: Category 3**

**Acute Dermal Toxicity: Category 4**

**Germ Cell Mutagenicity: Category 1B**

**Reproductive Toxicity: Category 1B**

**Acute Aquatic Toxicity: Category 1**



**Signal Word:** Danger

**Hazard Statements:**

- H301 Toxic if swallowed
- H312 Harmful in contact with skin
- H314 Causes severe skin burns and eye damage
- H332 Harmful if inhaled
- H290 May be corrosive to metals

- H351 Suspected of causing cancer
- H341 Suspected of causing genetic defects
- H400 Very toxic to aquatic life

**Precautionary statements:**

**Prevention:**

- P233 Keep container tightly closed
- P220 Keep/Store away from clothing
- P261 Avoid breathing mist
- P270 Do not eat, drink, or smoke while using this product
- P271 Use only outdoors or in a well-ventilated environment
- P273 Avoid release to the environment
- P280 Wear protective gloves/protective clothing/eye protection/face protection.
- P284 Upper respiratory protection
- P264 Wash skin thoroughly after handling

**Response:**

- P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P302+P352 IF ON SKIN: Wash with plenty of water
- P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
- P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing

► SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

Color	Component	CAS #	OSHA PEL (TWA)	ACGIH (TLV-TWA)	Wt. %
Adobe	Ferric Chloride	10025-77-1	None Listed	1 mg/m <sup>3</sup>	25.0
	Sodium Dichromate	7789-12-0	0.005 mg/m <sup>3</sup>	0.05 mg/m <sup>3</sup>	7.0
	Water	7732-18-5	Not Established	Not Established	90.0
Bluegrass	Hydrochloric Acid	7647-01-0	5 ppm	5 ppm	2.0
	Cupric Chloride	10125-13-0	1 mg/m <sup>3</sup>	1 mg/m <sup>3</sup>	25.0
	Water	7732-18-5	Not Established	Not Established	85.0
Ember	Hydrochloric Acid	7647-01-0	5 ppm	5 ppm	1.5
	Ferric Chlorid	13478-10-9	None Listed	1 mg/m <sup>3</sup>	35.0
	Sodium Dichromate	7789-12-0	0.005 mg/m <sup>3</sup>	0.05 mg/m <sup>3</sup>	1.0
	Water	7732-18-5	Not Established	Not Established	75.0
Jade	Hydrochloric Acid	7647-01-0	5 ppm	5 ppm	2.0
	Ferric Chloride	10025-77-1	None Listed	1 mg/m <sup>3</sup>	10.0
	Cupric Chloride	10125-13-0	1 mg/m <sup>3</sup>	1 mg/m <sup>3</sup>	25.0
	Sodium Dichromate	7789-12-0	0.005 mg/m <sup>3</sup>	0.05 mg/m <sup>3</sup>	2.5
	Water	7732-18-5	Not Established	Not Established	85.0
Kodiak	Hydrochloric Acid	7647-01-0	5 ppm	5 ppm	5.0
	Sodium Dichromate	7789-12-0	0.005 mg/m <sup>3</sup>	0.05 mg/m <sup>3</sup>	4.7
	Ferrous Chloride	13478-10-9	None Listed	1 mg/m <sup>3</sup>	15.0
	Manganese Chloride	13446-34-9	5 mg/m <sup>3</sup>	200 ppm	15.0
	Water	7732-18-5	Not Established	Not Established	85.0
Neptune	Hydrochloric Acid,	7647-01-0	5 ppm	5 ppm	2.0
	Cupric Chloride, Sodium	10125-13-0	1 mg/m <sup>3</sup>	1 mg/m <sup>3</sup>	25.0
	Dichromate, Water	7789-12-0	0.005 mg/m <sup>3</sup>	0.05 mg/m <sup>3</sup>	1.0
		7732-18-5	Not Established	Not Established	85.0
Onyx	Hydrochloric Acid	7647-01-0	5 ppm	5 ppm	3.0
	Ferrous Chloride	13478-10-9	None Listed	1 mg/m <sup>3</sup>	10.0
	Manganese Chloride	13446-34-9	5 mg/m <sup>3</sup>	200 ppm	15.0
	Sodium Dichromate	7789-12-0	0.005 mg/m <sup>3</sup>	0.05 mg/m <sup>3</sup>	13.5
	Water	7732-18-5	Not Established	Not Established	85.0
Wheat	Hydrochloric Acid	7647-01-0	5 ppm	5 ppm	2.0
	Ferrous Chloride	13478-10-9	None Listed	1 mg/m <sup>3</sup>	20.0
	Water	7732-18-5	Not Established	Not Established	90.0

► SECTION 4 FIRST AID MEASURES

**Emergency First Aid Procedures**

**Skin:** Remove contaminated clothing and rinse the affected area for at least 20 minutes. Thoroughly wash with soap and water until no evidence of the chemical remains. For chemical burns, cover with proper dressing and bandage.

Call a physician.

**Eyes:** Flush with water for 20 minutes lifting upper and lower eyelids occasionally. Continue irrigation with normal saline until pH returns to normal. Call a physician.

**Inhalation:** Remove to fresh air. Administer artificial respiration if necessary. Call a physician.

**Ingestion:** Drink large amounts of water or milk to dilute the acids. If vomiting persists, take fluids repeatedly. Ingested acid must be diluted 100:1 to render harmless to tissues.

► SECTION 5 FIREFIGHTING PROCEDURES

**Extinguishing Media:** Dry chemical, alcohol-resistant foam, or CO<sub>2</sub>

**Flash Point (TCC):** N/A

**Flammable Limits (% volume in air for solvents):**

**LEL:** Not Determined **UEL:** Not Determined

**Special Fire Fighting Procedures:** Reactions with metals and water can liberate hydrogen gas and may form explosive mixture in the air. At high temperatures toxic corrosive fumes of anhydrous gas may be emitted. Because fire may produce toxic thermal decomposition products, wear a self-contained breathing apparatus (SCBA) with a full face-piece operated in pressure-demand or positive-pressure mode.



## ▶ SECTION 6 SPILL OR LEAK PROCEDURES

**Small Spills:** Spills may be absorbed using cement powder or fly ash and shoveled into containers. Neutralize spills with lime, sodium bicarbonate or crushed limestone and prevent runoff. Notify proper authorities if runoff should occur.

**Large Spill Containment:** For large spills, dike far ahead of liquid spill for later disposal. Do not release into sewers or waterways.

**Cleanup:** Spills may be absorbed using cement powder or fly ash and shoveled into containers. Neutralize spills with lime, sodium bicarbonate or crushed limestone and prevent runoff. Notify proper authorities if runoff should occur.

**Regulatory Requirements:** Follow applicable OSHA regulations (29 CFR 1910.120).

**Disposal Regulatory Requirements:** Follow applicable Federal, state, and local regulations.

**Container Cleaning and Disposal:** Containers must not be washed out or used for other purposes. Do not weld or flame cut empty containers.

## ▶ SECTION 7 HANDLING AND STORAGE

**Normal Handling:** Keep away from chlorine-type bleaches and other household chemicals. Use only in well ventilated areas.

**Storage:** Store material in its original container. Keep containers tightly closed when not in use.

**Waste Disposal Method:** Dispose of material in accordance with federal, state, and local guidelines.

**Special Precautions:** Avoid breathing mist. Avoid freezing.

## ▶ SECTION 8 PROTECTION INFORMATION

**Respiratory Protection:** Seek professional advice prior to respirator selection and use. Follow OSHA respirator regulations (29 CFR 1910.134) and, if necessary, wear an OSHA/NIOSH approved respirator. Select respirator based on its suitability to provide adequate worker protection for given working conditions, level of airborne contaminations, and presence of sufficient oxygen. For emergency or non-routine operations (cleaning spills, reactor vessels, or storage tanks), wear an SCBA.

**Ventilation:** Provide general or local exhaust ventilation systems to maintain airborne concentrations below OSHA PELs (Sec. 2). Local exhaust ventilation is preferred because it prevents contaminant dispersion into the work area by controlling it at its source.

**Protective Clothing/Equipment:** Wear chemically protective gloves, boots, aprons, and gauntlets to prevent prolonged or repeated skin contact.

**Eye Protection:** Wear protective eyeglasses or chemical safety goggles, per OSHA eye and face protection regulations (29 CFR 1910.133). Contact lenses are not eye protective devices. Appropriate eye protection must be worn instead of, or in conjunction with contact lenses.

**Safety Stations:** Make emergency eyewash stations, safety/quick drench showers, and washing facilities available in work area.

**Contaminated Equipment:** Separate contaminated work clothes from street clothes. Launder before reuse. Remove this material from your shoes and clean personal protective equipment.

Comments: Never eat, drink, or smoke in work areas. Practice good personal hygiene after using this material, especially before eating, drinking, smoking, using the toilet, or applying cosmetics.

## ▶ SECTION 9 PHYSICAL DATA

- **Appearance:** Colored liquid
- **Odor:** Chloride odor
- **Odor Threshold:** No data available
- **pH:** <1
- **Melting Point:** Not determined
- **Freezing Point:** <32° F
- **Boiling Point:** 215° F (102° C)
- **Flash Point:** N/A
- **Evaporation Rate:** Not determined
- **Flammability (solid, gas):** Non-flammable under normal conditions
- **Upper/Lower Flammability:** N/A
- **Vapor Pressure:** H20
- **Vapor Density:** Equal to water
- **Relative Density:**
- **Water Solubility:** 100%
- **Partition Coefficient:** No data available
- **Auto-ignition Temperature:** N/A
- **Decomposition temperature:** Not determined
- **Viscosity:** 1.004 centistokes (20° C)
- **Specific Gravity (H2O=1, at 4 °C):** 1.03–1.30

## ▶ SECTION 10 REACTIVITY DATA

**Reactivity:** Acid Stain is stable at room temperature in closed containers under normal storage and handling conditions

**Conditions to avoid:** Heat, open flame, reactive metals, and strong oxidizers.

**Incompatibility (Materials to Avoid):** Contact with common metals, including aluminum or magnesium, may produce hydrogen which may form explosive mixtures in the air.

**Hazardous Decomposition (Byproducts):** Thermal oxidative decomposition of Acid Stain can produce toxic and hazardous gases including fumes of hydrogen chloride and oxides of copper.

**Hazardous Polymerization:** Hazardous polymerization cannot occur under normal temperatures and pressures.

## ▶ SECTION 11 TOXICITY DATA

**Routes of Exposure:** Inhalation, Ingestion, eyes, and skin.

### Acute Toxicity Lethal Doses:

Sodium Dichromate:	LC50 (inhl, 4h) Rat 124 mg/m <sup>3</sup> LD50 (oral) Rat 51 mg/kg LD50 (skin) Rabbit 1000 mg/kg
Cupric Chloride:	LC50 (inhl) No data available LD50 (oral) Rat 584 mg/kg LD50 (skin) No data available
Manganese Chloride:	LC50 (inhl) No data available LD50 (oral) Rat 1484 mg/kg LD50 (skin) No data available
Ferric Chloride:	LC50 (inhl) No data available LD50 (oral) Rat 316 mg/kg LD50 (skin) No data available
Ferrous Chloride:	LC50 (inhl) No data available LD50 (oral) No data available LD50 (skin) No data available
Hydrochloric Acid:	LC50 (inhl, 30 min.) Rat 6400 mg/m <sup>3</sup> LD50 (oral) Rabbit 900 mg/kg LD50 (skin) Rabbit >5010 mg/kg

**Skin Contact:** Severe irritation, inflammation, ulceration, necrosis and burns with permanent damage.

**Eye Contact:** May cause severe irritation, impairment and permanent damage.

**Inhalation:** Burning sensation in the throat, coughing and choking.

**Ingestion:** Burns of the mouth, throat, esophagus and stomach with consequent pain, uneasiness, nausea, vomiting, diarrhea, chills and intense thirst.

**Carcinogen:** IARC and NTP have determined that there is sufficient evidence for the carcinogenicity of hexavalent chromium compounds both in humans and experimental animals. However, the hexavalent chromium compounds responsible (for human carcinogenicity) cannot be specified. There is laboratory evidence that aqueous sodium bichromate administered directly into the lung, at the highest tolerated dose, over the lifetime of rats, causes a significant increased incidence of lung cancer. Sodium Bichromate contains hexavalent chromium, which is classified as an IARC (Group I) carcinogen and a known carcinogen by NTP.

**Aggravation of Pre-existing Conditions:** Inhalation of fumes may aggravate existing lung problems.

## ▶ SECTION 12 ECOLOGICAL DATA

Sodium Dichromate: **Acute Toxicity to Fish:** LC50 (96 hr) 31 mg/L (Fathead minnow)

Cupric Chloride: Harmful to aquatic life in very low concentrations. Do not allow to enter waterways.

Manganese Chloride: No data available

Ferric Chloride: **Acute Toxicity to Fish:** LC50 (96 hr) 6 mg/L (Striped bass)

**Acute Toxicity to Aquatic Invertebrates:** EC50 (96 hr) 15 mg/L (Daphnia magna)

Ferrous Chloride: No data available

Hydrochloric Acid: **Acute Toxicity to Fish:** LC50 (96 hr) 282 mg/L (Mosquito fish)

**Acute Toxicity to Aquatic Invertebrates:** EC50 (48 hr) 100–300 ppm (shrimp, salt water)

**Persistence and Degradability:** No data available

**Bioaccumulation Potential:** Potential for bioaccumulation of metals

**Mobility in the Soil:** Highly mobile in wet soil

**Other Adverse Effects:** None

▶ **SECTION 13 DISPOSAL INFORMATION**

**Waste Disposal Method:** Dispose of material in accordance with all Federal, State, and Local regulations.

▶ **SECTION 14 TRANSPORT INFORMATION**

**USDOT:**

**Proper Shipping Name:** Corrosive Liquid, Acidic, Inorganic, N.O.S. (Hydrochloric Acid)

**Hazard Class:** 8

**UN:** UN3264

**Packing Group:** PGIII

**Marine Pollutant:** No

**RQ:** (cupric chloride) only in 5-gallon containers or larger for Jade, Neptune, and Bluegrass colors.

**IATA:**

**Proper Shipping Name:** Corrosive Liquid, Acidic, Inorganic, N.O.S. (Hydrochloric Acid)

**Hazard Class:** 8

**UN:** UN3264

**Packing Group:** PGIII

**Marine Pollutant:** No

**IMO:**

**Proper Shipping Name:** Corrosive Liquid, Acidic, Inorganic, N.O.S. (Hydrochloric Acid)

**Hazard Class:** 8

**UN:** UN3264

**Packing Group:** PGIII

**Marine Pollutant:** Limited Quantity Exempt in 1-gallon containers

▶ **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.

▶ **SECTION 15 REGULATORY INFORMATION**

**RCRA Hazardous Waste Number (40 CFR 261.33):** Possibly D002 or D007

Component	CAS #	SARA 313	SARA311/312
Hydrochloric Acid	7647-01-0	Yes	Yes (Acute)
Manganese Chloride	13446-34-9	Yes	Yes (Acute, Chronic)
Sodium Dichromate	7789-12-0	Yes	Yes (Acute, Chronic)
Ferric Chloride	10025-77-1	No	Yes (Acute)
Copper (II) Chloride	10125-13-0	Yes	Yes
Ferrous Chloride	7758-94-3	No	Yes (Acute)

**State Regulations:** Consult individual state agency for further information.

**California Prop. 65:** This product contains chemical(s) known to the state of California to cause cancer and/or birth defects.

Chromium (hexavalent compounds) contained in Taupe, Patina, Onyx, Kodiak, Jade, Graphite, Garnet, Copper, Cocoa, Bronze, and Amber colors.