MATERIAL SAFETY DATA SHEET

This Material Safety Data Sheet complies with the United States Occupational Safety and Health Administration (OSHA) Hazard Communication Standard, 29 CFR 1910.1200.

1. Product and Supplier Identification

Product: **Patina Stain – Cape Blue**

Product Use: Concrete stain

Supplier: **True Lasting Colors, Ltd.,**
325 Commerce Blvd.,
Liverpool, New York, USA, 13088
Emergency Telephone: Chem-Tel Inc. (813) 248-0573

Manufacturer: As above

2. Composition

Component	% (w/w)	Exposure Limits
Hydrochloric acid (CAS No.7647-01-0)	2-3	OSHA PEL-TWA 5ppm ceiling ACGIH TLV-TWA 5ppm ceiling
Cupric chloride (CAS No.7447-39-4)	22-25	OSHA PEL-TWA 1 mg/m^3 for copper dusts and mists as Cu ACGIH TLV-TWA 1 mg/m^3 for copper dusts and mists as Cu

3. Hazards Identification

Routes of Entry: (under normal conditions of use)

Skin Contact: Moderate Eye Contact: Major Ingestion: Moderate Inhalation: Moderate

EMERGENCY OVERVIEW:

Corrosive. The severity of damage depends on the duration of the exposure. In general, solutions and mists with a pH of 3 or less are a significant health concern. Contact with alkali liquids will generate heat. Contact with most metals will generate flammable hydrogen gas.

Effects of Short-Term (Acute) Exposure:

Inhalation: Vapour or mist in the 50 to 100 ppm range can cause severe nasal irritation, sore throat, choking, coughing and difficulty breathing. Prolonged exposures can cause burns and ulcers to the nose and throat. Severe exposures for a few minutes at 1000 to 2000 ppm can cause a life-threatening accumulation of fluid in the lungs called pulmonary edema. Symptoms of pulmonary edema such as shortness of breath may be delayed for 48 hours after exposure.

Skin Contact: Contact with liquid can cause irritation and burns. Vapour or mist may cause redness, irritation and burns if contact is prolonged.

Hazards Identification, continued

Eye Contact: Low concentrations of vapor or mist (10 - 35 ppm) can be immediately irritating and result in redness. Concentrated vapor, mist or splashed liquid can cause severe irritation, burns and permanent blindness.

Ingestion: Liquid can cause corrosive burns to mouth, throat, esophagus and stomach. Symptoms may include difficulty in swallowing, intense thirst, nausea, vomiting, diarrhea and in severe cases, collapse and death. Small amounts of acid which enter the lungs during ingestion or vomiting (aspiration) can cause serious lung injury and death.

Effects of Long-Term (Chronic) Exposure:

Repeated and prolonged exposure to low concentrations of mist or vapor can cause discolouration and damage to tooth enamel, bleeding of the nose and gums, gastrointestinal symptoms, and chronic bronchitis and gastritis. Repeated exposure to low concentrations of liquid, mist or vapour can cause redness, swelling, sensitization, and pain (dermatitis). Metallic taste and garlic breath are signs of selenium absorption. No evidence of carcinogenicity in human studies. This product does not accumulate in the body.

Medical Conditions Aggravated By Exposure:

Pre-existing respiratory and skin disorders.

4. First Aid Measures

Inhalation: Take precautions to ensure your own safety before attempting rescue. Wear appropriate personal protective equipment and use the 'buddy' system. Remove victim to fresh air. If breathing has stopped, begin artificial respiration, or if the heart has stopped, begin cardiopulmonary resuscitation (CPR) immediately. Oxygen should be administered by a trained person. Ensure victim is completely at rest - allow no physical exertion. Symptoms may be delayed for up to 48 hours. Immediately transport victim to an emergency medical facility.

Ingestion: Never give anything by mouth if victim is rapidly losing consciousness, or is unconscious or is convulsing. Have victim rinse mouth thoroughly with water. **Do not induce vomiting.** Have victim drink 300 mL (10 oz.) of water. If milk is available, administer AFTER the water. If vomiting ocurrs naturally, have the victim lean forward to reduce risk of aspiration. Repeat administration of water. Immediately transport to emergency medical facility.

Skin Contact: Avoid direct contact. Wear impervious protective gloves if necessary. Immediately flush contaminated areas with lukewarm, gently running water for at least 20 minutes. Under running water, remove contaminated clothing, shoes, and leather goods such as watchbands and belts. **Do not interrupt flushing** - have emergency vehicle wait if necessary. Transport victim to emergency medical facility. Decontaminate clothing, shoes and leather goods before reuse or discarding.

Eye Contact: Immediately flush contaminated eye(s) with lukewarm, gently running water for at least 30 minutes while holding the eyelid(s) open. Take care not to rinse contaminated water into a non-affected eye. Neutral saline solution may be used for flushing if available. **Do not interrupt flushing** - keep emergency vehicle waiting if necessary. If irritation persists, repeat flushing. Transport victim to emergency medical facility.

General Comments: Provide general supportive measures (comfort, warmth, rest). Seek medical attention for all exposures except minor instances of inhalation or skin contact. First-aid procedures should be reviewed by appropriate personnel familiar with hydrochloric acid and its conditions of use in the workplace.

5. Fire Fighting Measures

Flash point:	Not Applicable
Autoignition temperature:	Not applicable. See information under “Fire Fighting Instructions”
Lower Explosive Limit:	Not established
Upper Explosion Limit:	Not established
Sensitivity to Impact:	Not sensitive.
Sensitivity to Static Discharge:	Not sensitive.

Hazardous Combustion Products: None. See Hazardous Decomposition Products in Section 10, for information on thermal decomposition.

Extinguishing Media: No specific recommendation. Use media to suppress surrounding fire.

Fire Fighting Instructions: Wear adequate personal protective equipment. Use water to keep fire-exposed containers cool to prevent rupture. Use water spray or fog to reduce or direct vapours. Do not direct water at source of leak. Trained personnel may neutralize a spill. Contact with common metals produces hydrogen gas that may form explosive mixtures in air.

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) HAZARD INDEX:

HEALTH: 3 - Very short exposure could cause serious temporary or residual injury requiring immediate attention.

FLAMMABILITY: 0 - Will not burn.

REACTIVITY: 1 - Normally stable but can become unstable at elevated temperatures and pressures, or may react non-violently with water.

SPECIFIC HAZARDS: Corrosive.

6. Accidental Release Measures

Personal Protection: Evacuate unnecessary personnel from spill area and keep unprotected persons upwind. Wear appropriate personal protective equipment. Ventilate area. Vapour is heavier than air and will collect in low areas. Do not touch spilled hydrochloric acid.

Environmental Precautions: Implement spill control plan. Stop or reduce leak if safe to do so. Prevent from entering sanitary or storm sewers, waterways, or confined spaces. Use inert materials such as earth or sand to form dike.

Remedial Measures: Restrict access to area until completion of cleanup. Ensure cleanup is conducted by trained personnel only. Use all appropriate personal protective equipment. For small spills: absorb with neutralizing materials such as soda ash or lime and collect in sealed containers. Flush area with water. For large spills, contain and collect spilled material if possible. Notify government occupational health and safety and environmental authorities as per applicable regulations. In the United States, releases over 5,000 pounds must be reported to the National Response Center at 1-800-424-8802.

7. Handling and Storage

Handling Procedures: Prevent release of vapour or mist into workplace air. Ensure adequate ventilation. Have emergency equipment readily available. When diluting, slowly add acid to the water to avoid boiling or splattering. Keep containers closed when not in use. Wash face and hands thoroughly after handling and before eating, drinking, or using tobacco products.

Storage: Store in a cool, dry, well ventilated area, out of direct sunlight and away from heat sources. Store away from incompatible materials such as oxidizing materials, reducing materials, and strong bases. Keep storage area separate from populated work areas.

8. Exposure Controls, Personal Protection

Engineering Controls: Use general or local exhaust ventilation to maintain exposure below the exposure limits.

Respiratory Protection: If respiratory protection is required, NIOSH recommends for hydrogen chloride in air:

Up to 50 ppm: Chemical cartridge respirator with hydrogen chloride cartridge(s), powered air-purifying respirator with appropriate cartridge(s), Supplied Air Respirator (SAR), or a full face-piece SCBA.

IDLH Conditions (50 ppm) or Planned Entry in Unknown Concentrations: Positive pressure, full face-piece SCBA, or positive pressure full face-piece SAR with an auxiliary positive pressure SCBA.

Escape: Gas mask with canister, or escape type SCBA.

NOTE: Air purifying respirators do not protect against oxygen deficient atmospheres.

Skin protection: Wear impervious gloves and boots and/or other protective clothing according to circumstances.

Eye and Face Protection: Eye protection is required. Chemical safety goggles are recommended. The wearing of contact lenses is not recommended.

Footwear: As required by worksite rules.

Other: Have a safety shower and eye wash station readily available in the immediate work area.

9. Physical and Chemical Properties

Appearance:	Clear medium blue-green liquid (Cape Blue)	**Vapor Density:**	Not determined
		Freezing Point	≈0^{o}C
		Boiling Point:	108 ^{o}C
Odor:	Acrid odor	**Critical Temperature:**	Not applicable.
Odor Threshold:	Not determined	**Relative Density:**	≈1.18
pH:	< 1		(water = 1)
Vapor Pressure:	Not determined	**Partition Coefficient:**	No data
Solubility:	Completely soluble in water	**Evaporation Rate:**	Not determined

10. Stability and Reactivity

Chemical Stability: Stable. Avoid heat – releases toxic gases with heat.

Incompatibility: Very corrosive to most metals, producing flammable hydrogen gas. Reacts violently with bases to produce heat. Reacts with reducing agents to produce heat, fire and flammable hydrogen gas. Reacts with oxidizing agents to produce heat. Reacts with carbides, turpentine, phosphorus hydrogen sulphide, organic materials, and alkalis. Contact with explosives may cause detonation. Reacts with cyanides to produce toxic cyanide gas, and sulphides to produce toxic hydrogen sulphide gas.

Hazardous Decomposition Products: Thermal decomposition liberates toxic corrosive fumes of hydrogen chloride, chlorine, copper oxides, and/or copper fume.

Hazardous Polymerization: Will not occur

11. Toxicological Information

Acute Exposure: The theoretical LD_{50} (rat/oral) for Patina Stain is 2260 mg/kg

Chronic Exposure:	See Section 3.
Exposure Limits:	See Section 2.
Irritancy:	See Section 3.
Sensitization:	See Section 3.
Carcinogenicity:	No data
Teratogenicity:	No reports for ingestion or inhalation of copper compounds
Reproductive toxicity:	Not available
Mutagenicity:	Inconclusive results
Synergistic products:	None reported.

12. Ecological Information

Environmental toxicity: Copper chloride is a severe marine pollutant.

Biodegradability: No data available.

13. Disposal Considerations

Place used and contaminated material and packagings into suitable containers and dispose of as controlled waste. Review and follow all local, state, and national regulations.

14. Transport Information

Department of Transport (49 CFR): Corrosive Liquid, Acidic, Inorganic, n.o.s. (contains copper chloride and hydrochloric acid), Class 8, UN 3264, P.G. II, RQ 4.54 kg, or 15 liters of Patina Stain

International Air Transport Association (IATA): Corrosive Liquid, Acidic, Inorganic, n.o.s. (contains copper chloride and hydrochloric acid), Class 8, UN 3264, P.G. II

International Maritime Organization (IMO): Corrosive Liquid, Acidic, Inorganic, n.o.s. (contains copper chloride and hydrochloric acid), Marine Pollutant, Class 8, UN 3264, P.G. II

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15. Regulatory Information

UNITED STATES – FEDERAL REGULATIONS:

TOXIC SUBSTANCES CONTROL ACT (TSCA): All components are listed in the inventory.

OSHA, 29 CFR 1910, Subpart Z: Meets the criteria for a hazardous substance.

CERCLA, 40 CFR 302: RQ, Cupric chloride 4.54 Kg (10 pounds), Hydrochloric Acid, 2270 Kg (5000 pounds)

SARA 302, 40 CFR 355: No ingredients listed

SARA 313, 40 CFR 372: Hydrochloric Acid is subject to the reporting requirements.

SARA 311/312, 40 CFR 370: Immediate (Acute) Health, Delayed (Chronic) Health.

16. Other Information

Preparation Date: February 25, 2002

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Comments: This Material Safety Data Sheet was prepared using information provided by True Lasting Colors, Ltd., and CCINFO. The information in the Material Safety Data Sheet is offered for your consideration and guidance when exposed to this product. True Lasting Colors, Ltd., expressly disclaims all expressed or implied warranties and assumes no responsibilities for the accuracy or completeness of the data contained herein. The data in this MSDS does not apply to use with any other product or in any other process.

Revisions: None