Safety Data Sheet

Date of Issue 11 January 2016

Version 1.01

PROPRIETARY FORMULA-TRADE SECRET

1. Product and Company Identification

Product Name BLUE HALO™

Supplier/Manufacturer
STEEL F/X®
893 E FACTORY DR
ST. GEORGE, UT 84790

Emergency Telephone #'s
(800)-710-1273 (U.S.)
(800)-710-1273 (Canada)

Technical Phone # **(800)-710-1273**

HMIS Hazard Rating:

4 = Severe
3 = Serious
2 = Moderate
1 = Slight
0 = Minimal

2. Hazards Identification

Emergency Overview

WARNING! Corrosive!
CAUSES EYE AND SKIN IRRITATION. MAY BE HARMFUL IF INHALED OR SWALLOWED. CONTAINS MATERIAL THAT MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA.
Do Not Get in Eyes or on Skin or Clothing. Use Only With Adequate Ventilation. Keep Container Tightly Closed and Sealed Until Ready for Use. Wash Thoroughly After Handling.

Potential Acute Health Effects

Inhalation: May be Harmful if Inhaled.

Ingestion: May be Harmful if Swallowed

Skin: Severely Irritating to the Skin.

Eyes: Severely Irritating to Eyes. Risk of Serious Damage to Eyes.

Over-Exposure Signs/ Symptoms:

Inhalation: Irritation, Sore Throat

Ingestion: No specific data.

Skin: Adverse Symptoms May Include The Following:
Irritation
Redness

Eyes: Adverse symptoms may include the following:
Pain or Irritation
Watering
Redness

Medical Conditions Aggravated by Over-Exposure: Pre-Existing Disorders Involving Any Target Organs Mentioned in This (M)SDS as being at Risk May Potentially be Aggravated by Over-Exposure to This Product.

This Material Safety Data Sheet Has Been Prepared in Accordance with OSHA (U.S.) Standards & Canada's Workplace Hazardous Materials Information System (WHMIS). See Toxicological Information (Section 11)

PROPRIETARY FORMULA TRADE SECRET

3. Composition/Information on Ingredients

Name/Identifier	CAS Number	% (v/v)	Synonyms
Cupric Sulfate	7758-98-7	.01-6.5%	Blue Copper, Blue Stone, Blue Vitriol, Copper (II) Sulfate Pentahydrate
Cupric Chloride	7477-39-4	.01 - 5.5%	Copper Chloride
Distilled Water	7732-18-5	93-99%	H_2O, De-Ionized Water, Water Distillate
Ammonium Molybdate	12027-67-7	.01-1.2%	Molybdic Acid

Balance: Proprietary. There Are No Additional Ingredients Present Which, Within the Current Knowledge of the Manufacturer and/or Supplier and in the Concentrations Applicable, Are Classified as Hazardous to Health or the Environment and Hence Require Reporting in This Section.

4. First Aid Measures

If Ingestion, Irritation, or Any Type of Over-Exposure or Symptoms of Over-Exposure Occur During or Persists After use of This Product, Contact a POISON CONTROL CENTER, EMERGENCY ROOM OR PHYSICIAN Immediately; Have Material Safety Data Sheet Information Available. Never Give Anything By Mouth to an Unconscious or Convulsing person.

Eye Contact: Check for and Remove Any Contact Lenses. Immediately Flush Eyes With Running Water For at Least 15 Minutes, Keeping Eyelids Open. Seek Immediate Medical Attention.

Skin Contact: Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognized skin cleanser. Do NOT use Solvents or Thinners.

Inhalation: Remove to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.

Ingestion: If swallowed, seek medical advice immediately and show this container or label. Keep person warm and at rest. Do NOT induce vomiting.

Notes to Physician: No Specific Treatment. Treat Symptomatically. Contact Poison Treatment Specialist Immediately if Large Quantities Have Been Ingested or Inhaled.

5. Firefighting Measures

Flammability of the Product N/A

Extinguishing Media Use an extinguishing agent suitable for the surrounding fire.

Unsuitable Methods None known.

Special Exposure Hazards Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Hazardous Combustion Content Decomposition products may include the following materials: None Known

Special Protective Equipment for Firefighters Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

6. Accidental Release Measures

Personal Precautions No action shall be taken involving any personal risk or without suitable training.

Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).

Environmental Precautions Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform Relevant Authorities if the product has caused environmental pollution in the items mentioned above. Copper Sulfate is Toxic to Aquatic Life.

6. Accidental Release Measures (Continued From Page 2)

Large Spill

Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Small Spill

Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble or absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

7. Handling and Storage

Handling : Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Do not swallow. Do not get in eyes or on skin or clothing. Avoid breathing vapor or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Vapors are heavier than air and may spread along floors. Empty containers retain product residue and can be hazardous. Do not reuse container.

Storage : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. Do not store above the following temperature: 120F / 49C.

8. Exposure Controls/Personal Protection

Name		Result	ACGIH	Ontario	Mexico	Mfg.
Copper Sulfate (Dust/Dry)	TLV	Not Established	10 mg/m³	10 mg/m³	N/E	N/E

Key To Abbreviations

- **A** = Acceptable Maximum Peak
- **ACGIH** = American Conference of Governmental Industrial Hygienists.
- **C** = Ceiling Limit
- **F** = Fume/s
- **IPEL** = Internal Permissible Exposure Limit
- **R** = Respirable
- **S** = Potential Skin Absorption
- **SR** = Respiratory Sensitization
- **SS** = Skin Sensitization
- **STEL** = Short Term Exposure Limit Values
- **TD** = Total dust
- **TLV** = Threshold Limit Value
- **TWA** = Time Weighted Average
- **N/E** = Not Established

Consult Local Authorities for Acceptable Exposure Limits.

Recommended Monitoring Procedures

If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

Engineering Measures

Good General Ventilation Should be Sufficient to Control Worker Exposure to any Airborne Contaminants.

Hygiene Measures

Wash Hands, Forearms and Face Thoroughly After Handling Chemical Products, Before Eating, Smoking & Using the Lavatory, and at the End of the Working Period.

Personal Protection - PPE (Personal Protective Equipment)

8. Exposure Controls/Personal Protection (Cont. From Page 3)

Eyes : Chemical Splash Goggles.

Hands : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Gloves : Nitrile, Latex, Rubber or Neoprene

Respiratory : If workers are exposed to concentrations above the exposure limit, they must use appropriate, certified respirators. Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Personal protective equipment for the body should be

Skin : selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Environmental Exposure Controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

9. Physical and Chemical Properties

Physical State : Liquid.

Flash Point : No Flash Point.

Color : Translucent Light Blue.

Odor : None.

pH : ± 3.5

Boiling/Condensation Point : >39.85°C (>210°F)

Melting/Freezing point : Freeze Point: <28ºF

Specific Gravity : 1.03 (Water is 1.0)

Density (lbs. / gal.) : 9.29

Vapor Pressure : Not Available.

Vapor Density : Similar to Water.

Volatility : 0% (w/w)

Evaporation Rate : Not Available.

Solubility : Soluble in Water.

Partition Coefficient: N-Octanol/Water : Not Available. :

% Solid. (w/w) <0.04

10. Stability and Reactivity

Stability : Stable Under Recommended Storage and Handling Conditions (See Section 7).

Conditions to Avoid : No Specific Data.

Materials to Avoid : Reactive or Incompatible With the Following Materials: Oxidizing Materials, Strong Alkalis (Bases)

Hazardous Decomposition Products : Under Normal Conditions of Storage and Use, Hazardous Decomposition Products Should Not Be Produced.

Hazardous Polymerization : Under Normal Conditions of Storage and Use, Hazardous Polymerization Will Not Occur.

11 . Toxicological Information

Acute Toxicity

Product/Ingredient Name	Result	Species	Dose	Exposure
Copper Sulfate Distilled Water	LD50 Oral N/A	Rat	3 g/kg	-

Conclusion/Summary : Not Available.

Chronic Toxicity

Conclusion/Summary : Not Available.

Target Organs : Contains Material Which May Cause Damage to the Following Organs: Kidneys, Upper Respiratory Tract, Skin, Eyes, Stomach.

12 . Ecological information

Environmental Effects : Harmful To Aquatic Life. No Other Known Significant Effects or Critical Hazards.

13 . Disposal considerations

Waste Disposal

The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.
Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal Should be in Accordance With Applicable Regional, National and Local Laws and Regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for Additional Handling Information and Protection of Employees. Section 6. Accidental Release Measures.

14. Transport Information

	TDG	Mexico	IMDG
UN Number	Not regulated.	Not regulated.	Not regulated.
UN Proper Shipping Name	-	-	-
Transport Hazard Class(es)	-	-	-
Packing Group	-	-	-
Environmental Hazards **Marine Pollutant Substances**	Cu Sulfate (II) Pentahydrate in Large Qty. Can Pose Risk to Aquatic Life. N/A to This Blend.	No. Not Applicable.	No. Not Applicable.

Additional Information

14. Transport Information

TDG : None Identified.
Mexico : None Identified.
IMDG : None Identified.

Special Precautions For User : **Transport Within User's Premises:** Always Transport in Closed Containers That are Upright and Secure. Ensure That Persons Transporting the Product Know What To Do in the Event of an Accidental Spill or Leakage.

15 . Regulatory Information

United States inventory (TSCA 8b) : All components are listed or exempted.
Australia inventory (AICS) : All components are listed or exempted.
Canada inventory (DSL) : All components are listed or exempted.
China inventory (IECSC) : All components are listed or exempted.
Europe inventory (REACH) : Please contact your supplier for information on the inventory status of this material.
Japan inventory (ENCS) : All components are listed or exempted.
Korea inventory (KECI) : All components are listed or exempted.
New Zealand (NZIoC) : All components are listed or exempted.
Philippines inventory (PICCS) : All components are listed or exempted.

Canada

WHMIS (Canada) : Class E: Corrosive Liquid.

Mexico Classification

Flammability : 0 **Health** : 2 **Reactivity** : 0

16 . Other Information

Hazardous Material Information System (U.S.A.)

Health : 2 **Flammability** : 0 **Physical hazards** : 1
(*) - Chronic Effects

CAUTION: HMIS® Ratings are Based on a 0-4 Rating Scale, With 0 Representing Minimal Hazards or Risks, and 4 Representing Significant Hazards or Risks. Although HMIS® Ratings Are Not Required on SDS's Under 29 CFR 1910. 1200, The Preparer May Choose to Provide Them. HMIS® Ratings Are to be Used With a Fully Implemented HMIS® program. HMIS® is a Registered Mark of the National Paint & Coatings Association (NPCA).

The Customer is Responsible For Determining the PPE Code For This Material.

N.F.P.A. (National Fire Protection Association) U.S.A.

Health : 2 **Flammability** : 0 **Instability** : 0

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SDS Preparer : WWIH

◤ **Indicates information that has changed from previously issued version.**

Disclaimer

The information contained in this data sheet is based on present scientific and technical knowledge. The purpose of this information is to draw attention to the health and safety aspects concerning the products supplied by STEEL F/X®, and to recommend precautionary measures for the storage and handling of the products.
No Warranty or Guarantee is Given in Respect of the Properties of the Products. No Liability Can Be Accepted For Any Failure To Observe The Precautionary Measures Described In This Safety Data Sheet (SDS), Or For Any Misuse Of The Products.