SAFETY DATA SHEET

10/01/16

SECTION I - PRODUCT AND COMPANY IDENTIFICATION

Sold by: Bradford Derustit Corp.
PO Box 1194
Yorba Linda, CA 92885
877-899-5315
sales@derustit.com

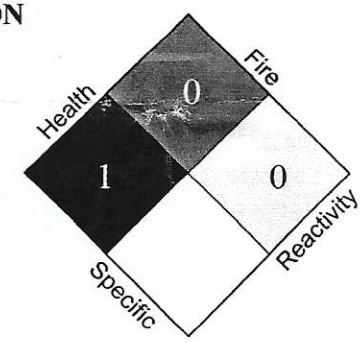
EMERGENCY TELEPHONE: **1-800-424-9300** USA & Canada
24 hr Chemtrec **1-703-527-3887** International

Trade Name: Copper Sulfate Passivation Test Solution
Product Use/Class: Standard test solution

SECTION II - HAZARDS IDENTIFICATION

HEALTH	1
FLAMMABILITY	0
PHYSICAL HAZARD	0
PERSONAL PROTECTION	B

B: Safety glasses, gloves



EMERGENCY OVERVIEW: Harmful if swallowed. May cause eye burns or skin irritation.

Effects of Overexposure - Eye Contact: Liquid, aerosols and vapors of this product are irritating and can cause conjunctivitis, inflammation of the eyelid lining, ulceration, and clouding of the cornea. May cause permanent eye damage if not treated immediately.

Effects of Overexposure - Skin Contact: Prolonged or repeated exposures can irritate or burn skin. Reaction may be more severe if there is skin abrasion(s). Allergic sensitization in susceptible individuals is possible.

Effects of Overexposure - Inhalation: Inhalation is not an expected hazard unless misted or heated to high temperatures. Prolonged mist or vapor inhalation may cause irritation to the nose, throat, and upper respiratory tract.

Effects of Overexposure - Ingestion: Irritating to mouth, throat and stomach. May cause discomfort, nausea, vomiting, headache if swallowed. Large quantity may cause injury to the brain, stomach, liver, or kidneys.

Effects of Overexposure - Chronic Hazards: Repeated skin contact may cause a persistent irritation or dermatitis.

Primary Routes of Entry: Skin contact, skin absorption, inhalation, ingestion, eye contact

SECTION II - HAZARDS IDENTIFICATION (continued)

Hazard statements: Danger
H302 Harmful if swallowed
H316 Causes mild skin irritation
H319 Causes serious eye irritation
H341 Suspected of causing genetic defects
H350 May cause cancer
H361 Suspected of damaging fertility or the unborn child
H370 Causes damage to organs
H401 Toxic to aquatic life

Precautionary statements:
P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P273 Avoid release to the environment.
P281 Use personal protective equipment as required.
P301 + P312 If swallowed: Call a poison center or doctor/physician if you feel unwell.
P302 + P352 If on skin: wash with plenty of soap and water.
P305 + P351 + P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P333 + P313 If skin irritation or rash occurs: Get medical advice/attention.
P337 + P313 If eye irritation persists: Get medical advice/attention.

SECTION III - COMPOSITION/INFORMATION ON INGREDIENTS

Item	Chemical Name	CAS NO.	% By Wt.
01	Water	7732-18-5	97.72%
02	Sulfuric Acid	7758-99-8	0.72%
03	Copper Sulfate Pentahydrate	7664-93-9	1.56%

Exposure Limits:

Item	TLV-TWA	TLV-STEL	PEL-TWA	PEL-CEILING	SKIN
01	N.E.	N.E.	N.E.	N.E.	NO
02	N.E.	N.E.	N.E.	N.E.	NO
03	N.E.	N.E.	N.E.	N.E.	NO

(See Section 16 for abbreviation legend)

SECTION IV - FIRST AID MEASURES

First Aid - Eye Contact: Remove contact lenses. IMMEDIATELY FLUSH EYES WITH WATER FOR AT LEAST 15 MINUTES, lifting lower and upper eyelids occasionally. Get medical attention immediately.

First Aid - Skin Contact: Wash with soap and water. Get medical attention if irritation develops or persists.

First Aid - Inhalation: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get immediate medical attention.

First Aid - Ingestion: If swallowed, induce vomiting. Give victim a glass of water or milk. Call a physician or poison control center immediately. Never give anything by mouth to an unconscious person.

SECTION V - FIRE AND EXPLOSION INFORMATION

Flash Point: N.A. - Aqueous solution

Flammable Limits: LEL: N.A. **UEL:** N.A.

Extinguishing Media: None required - Aqueous solution. Alcohol, foam, CO_2, dry chemical, water fog may be used.

Special Fire Fighting Procedures: If storage containers are involved in fire, keep cool with water spray to prevent pressure build-up. As in any fire, wear self-contained breathing apparatus pressure-demand (MSHA/NIOSH approved or equivalent) and full protective gear.

Unusual Fire and Explosion Hazard: None known. "Empty" containers retain some product residue (liquid and/or water vapor) and can be dangerous when pressurized. Bursting of containers can occur at elevated temperatures. Empty drums should be completely drained, properly bunged and promptly returned to a drum reconditioner, or properly disposed of.

SECTION VI - ACCIDENTAL RELEASE MEASURES

Steps to be taken in case material is released or spilled: Absorb spill with inert material (e.g. dry sand or earth) then place in a chemical waste container. Avoid runoff into storm sewers and ditches which lead to waterways. Follow all government regulations.

SECTION VII - HANDLING AND STORAGE

Handling: Wash thoroughly after handling. Do not get into eyes, on skin or on clothing.

Storage: Keep container closed when not in use. Store in corrosion resistant containers. Store away from incompatible materials. Store under a controlled environment. Avoid excessive heat. Keep from freezing.

SECTION VIII - EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls: Good general ventilation should be sufficient to control airborne levels. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

Respiratory Protection: A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace condition warrant a respirator's use.

Skin Protection: Rubber, neoprene or polyvinyl chloride impervious gloves may provide protection against permeation. Gloves of other chemically resistant materials may not provide adequate protection. Consult your glove manufacturer for compatibilities.

Eye Protection: Wear chemical splash goggles. DO NOT WEAR CONTACT LENSES.

Other Protective Equipment: Wear suitable protective clothing to minimize and/or prevent contact. An eye-wash and safety shower should be present in the immediate area when handling this product.

Hygienic Practices: Wash hands before eating. Remove contaminated clothing and wash before reuse. Use only in well ventilated area. Follow all MSDS/label precautions even after containers are emptied because they may retain product residues. Avoid contact with eyes, skin and clothing.

SECTION IX - PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point:	212°F (100°C)	**Melting/Freezing Point:**	32°F (0°C)
Odor:	N.D.	**Appearance:**	Blue liquid
Specific Gravity:	1.01	**Solubility in Water:**	Complete
Vapor Density:	Heavier than air	**Vapor Pressure:**	N.D.
Physical State:	Liquid	**Odor Threshold:**	N.D.
Evaporation Rate:	<1 (Butyl Acetate = 1)	**pH @ 100 %:**	<2
Viscosity:	N.D.	**Coeff. of Water/Oil Dist.:**	N.D.

(See Section 16 for abbreviation legend)

SECTION X - STABILITY AND REACTIVITY

Stability: This product is stable under normal storage conditions.

Conditions to Avoid: N.A.

Incompatibility: Hydroxylamine, alkali metals, oxides of sulfur, strong oxidizers, strong reducing agents, caustic materials.

Hazardous Decomposition or Byproducts: N.A.

Hazardous Polymerization: Will not occur under normal conditions.

SECTION XI - TOXICOLOGICAL PROPERTIES

Threshold Limit Value:
LD 50 (ORAL-RAT) 300 mg/kg (Copper Sulfate)
LD 50 (ORAL-RAT) 2140 mg/kg (Sulfuric Acid)
LC 50 (INHALATION-RAT) 510 mg/m^3/2H (Sulfuric Acid)

Carcinogenicity: May cause cancer, genetic defects.

SECTION XII - ECOLOGICAL PROPERTIES

Ecological Information: Toxic to aquatic life. Avoid release to the environment. Dispose of contents in accordance with local, state, federal and international regulations.

SECTION XIII - DISPOSAL CONSIDERATIONS

Disposal Method: Follow all federal, state and local regulations.

SECTION XIV - TRANSPORTATION INFORMATION

UN Number: Not listed **UN Proper Shipping Name:** Not Regulated (Copper sulfate solution)

Marine Pollutant: Yes

DOT, TDG, IMDG, ICAO/IATA: Not Regulated for single or inner packaging of 5 L or less.

SECTION XV - REGULATORY INFORMATION

U.S. Federal Regulations as Follows:

OSHA: Not listed.

CERCLA - SARA Hazard Category: This product has been reviewed according to the EPA "Hazard Categories" promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

Immediate Health Hazard

SARA Section 313: This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372:

Copper sulfate, sulfuric acid

Toxic Substances Control Act (TSCA): The chemical substances in this product are on the TSCA Section 8 Inventory.

This product contains the following chemical substances subject to the reporting requirements of TSCA 12(B) if exported from the United States:

No information is available.

Canada Regulations as Follows:

WHMIS: The Canadian Workplace Hazardous Materials Information System classification for this product is:

Copper sulfate, sulfuric acid

Refer elsewhere in the MSDS for specific warnings and safe handling information. Refer to the employer's workplace education program.

SECTION XVI - OTHER INFORMATION

Date Prepared: 10/01/2016
Date Revised: 10/01/2016
Reason for Revision: Update
Previous Revision Date: 10/01/2016

Legend: N.A. - Not Applicable N.E. - Not Established N.D. - Not Determined

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While the company believes that the data contained herein is factual and the opinions expressed are based on tests and data believed to be reliable, it is the user's responsibility to determine the safety, toxicity and suitability for his own use of the product described herein. Since the actual use by others is beyond our control, no guarantee, expressed or implied, is made by this company as to the effects of such use, the results to be obtained, or the safety and toxicity of the product, nor does this company assume any liability arising out of the use, by others, of the product referred to herein. Nor is the information herein to be construed as absolutely complete since additional information may be necessary or desirable when particular or exceptional conditions or circumstances exist or because of applicable laws or governmental regulations.

Copper Sulfate Passivation Test

The enclosed solution and the following procedure conforms to the ASTM A967, ASTM A380, ASTM F1089, AMS 2700, and MIL-STD-753 standards.

The copper sulfate test is intended to test the effectiveness of stainless steel passivation. It can also be used to determine if there is a need for passivation. The purpose of the copper sulfate test is to determine the presence of free iron which is usually induced onto the surface of a part during fabrication with steel components. The principle of the test is based on an oxidation-reduction reaction which causes the dissolved copper ions to deposit or plate out onto the free iron particles.

This test is recommended for the detection of free iron on the surface of austenitic stainless steels in the 200 and 300 series, precipitation hardened stainless steels, and ferritic 400 series stainless steels having a minimum of 16 % chromium. This test is not recommended for martensitic 400 series stainless steels or ferritic 400 series stainless steels with less than 16 % chromium because these steels will typically give a positive indication irrespective of the presence or absence of anodic surface contaminants. This test is also not recommended for laser marked areas.

The test solution is applied to the surface of the sample representing the lot of passivated parts, applying additional solution if needed to keep the surface wet for a period of at least 6 minutes. At the end of this period, the surface shall be carefully rinsed and dried with care taken not to disturb copper deposits if present. The test sample shall not exhibit copper deposits visible to the naked eye.

A copper color on the metal surface (brown or pinkish, like a penny) indicates that surface iron was still present and is considered a test failure. If no reaction occurs it is considered a test pass.

For best results, allow a few hours after passivation before testing. The copper sulfate test may not necessarily display a positive indication of iron on unpassivated parts. A failure state can be readily observed by using the copper sulfate solution on a piece of carbon steel.

Passivation Test Log			
Date	Time	Product/Lot # Tested	Result

Passivation Test Log			
Date	Time	Product Tested	Result