



SAFETY DATA SHEET

Preparation Date: 1/06/2017 Revision Date: 1/06/2017 Revision Number: G1

1. IDENTIFICATION

Product identifier

Product code: C1358

Product Name: CUPRIC SULFATE, MONOHYDRATE, PURIFIED

Other means of identification

Synonyms: Copper Sulfate, monohydrate

Coppper (II), monohydrate

CAS #: 10257-54-2
RTECS # GL8850000
CI#: Not available

Recommended use of the chemical and restrictions on use

Recommended use:
Uses advised against
No information available.
No information available

Supplier: Spectrum Chemical Mfg. Corp 14422 South San Pedro St.

Gardena, CA 90248

(310) 516-8000.

Order Online At: https://www.spectrumchemical.com
Chemtrec 1-800-424-9300

Emergency telephone numberChemtrec 1-800-424-9300Contact Person:Martin LaBenz (West Coast)Contact Person:Ibad Tirmiz (East Coast)

2. HAZARDS IDENTIFICATION

Classification

This chemical is considered hazardous according to the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Considered a dangerous substance or mixture according to the Globally Harmonized System (GHS)

Acute toxicity - Oral	Category 4
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2A

Label elements

Warning

Hazard statements

Harmful if swallowed Causes serious eye irritation

Causes skin irritation

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Hazards not otherwise classified (HNOC)

Not Applicable

Other hazards

Very toxic to aquatic life with long lasting effects Very toxic to aquatic life

Precautionary Statements - Prevention

Wash face, hands and any exposed skin thoroughly after handling Do not eat, drink or smoke when using this product Wear protective gloves
Wear eye/face protection

Precautionary Statements - Response

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

IF ON SKIN: Wash with plenty of water

If skin irritation occurs: Get medical advice/attention
Take off contaminated clothing and wash it before reuse

IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell

Rinse mouth

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS-No.	Weight %
Cupric Sulfate, Monohydrate	10257-54-2	100

4. FIRST AID MEASURES

First aid measures

General Advice: National Capital Poison Center in the United States can provide assistance if you

have a poison emergency and need to talk to a poison specialist. Call

1-800-222-1222.

Skin Contact: Wash off immediately with soap and plenty of water removing all contaminated clothing and

shoes. Get medical attention. If skin irritation persists, call a physician.

Eye Contact: Flush eyes with water for 15 minutes. Get medical attention.

Inhalation: Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give

oxygen. Get medical attention.

Ingestion: Do not induce vomiting without medical advice. Never give anything by mouth to an

unconscious person. Obtain medical attention.

Most important symptoms and effects, both acute and delayed

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Symptoms

Causes eye irritation. Causes skin irritation. May cause a greenish discoloration of the skin. May cause discoloration of the cornea. May cause ulceration of the cornea. Ingestion may cause gastrointestinal irritation, nausea, vomiting, and diarrhea. Oral mucosa, vomitus, stools, and salilva may be stained blue or green following ingestion. May cause metallic taste. Abdominal pain. May cause metabolic acidosis. May cause methemoglobinemia. May affect the liver. Jaundice. It may affect the kidneys. May cause central nervous system effects. May affect the cardiovascular system. Hypotension. Perforation of the nasal septum if inhaled in excessive quantities. Irritating to respiratory system. Coughing and wheezing.

Indication of any immediate medical attention and special treatment needed

Notes to Physician: Treat symptomatically.

Protection of first-aiders

First-Aid Providers: Avoid exposure to blood or body fluids. Wear gloves and other necessary protective clothing. Dispose of contaminated clothing and equipment as bio-hazardous waste.

5. FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media: The product is not flammable. If it is involved in a fire,

extinguish the fire using an agent suitable for the type of

surrounding fire.

Unsuitable Extinguishing Media:No information available.

Specific hazards arising from the chemical

Hazardous Combustion Products: If inolved in a fire, the following may be released: copper

oxides, sulfur oxides

Hazardous Combustion Products:No information available.

Specific hazards:No information available.

Special Protective Actions for Firefighters

Specific Methods: No information available.

Special Protective Equipment for Firefighters: As in any fire, wear self-contained breathing apparatus

pressure-demand, MSHA/NIOSH (approved or equivalent)

and full protective gear

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions: Keep people away from and upwind of spill/leak. Ensure adequate ventilation. Do not touch

damaged containers or spilled material unless wearing appropriate protective clothing.

Avoid contact with skin, eyes and clothing. Use personal protective equipment.

Environmental precautions Prevent further leakage or spillage if safe to do so. Prevent product from entering

drains. Prevent entry into waterways, sewers, basements or confined areas.

Methods and material for containment and cleaning up

Methods for containment Stop leak if you can do it without risk. Cover with plastic sheet to prevent

spreading.

Methods for cleaning up Sweep up and shovel into suitable containers for disposal. Clean contaminated

surface thoroughly.

7. HANDLING AND STORAGE

Precautions for safe handling

Technical Measures/Precautions:

Provide sufficient air exchange and/or exhaust in work rooms. Keep away from incompatible materials.

Safe Handling Advice

Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Do not ingest. Do not breathe vapors/dust. Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Technical Measures/Storage Conditions:

Keep container tightly closed in a dry and well-ventilated place. Store at room temperature in the original container. Store away from incompatible materials.

Incompatible Materials:

Hydroxylamine
Acetylene
Hydrazine
Nitromethane
Strong reducing agents
Powdered metals
Magnesium

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Bases

National occupational exposure limits

United States

Components	CAS-No.	OSHA	NIOSH	ACGIH	AIHA WHEEL
Cupric Sulfate,	10257-54-2	None	None	None	None
Monohydrate					

Canada

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Components	CAS-No.	Canada - Alberta	Canada - British Columbia	Canada - Ontario	Canada - Quebec
Cupric Sulfate, Monohydrate	10257-54-2	None	None	None	None

Australia and Mexico

Components	CAS-No.	Australia	Mexico
Cupric Sulfate, Monohydrate	10257-54-2	None	None

Appropriate engineering controls

Engineering measures to reduce exposure: Ensure adequate ventilation. Use process enclosures,

local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants

below the exposure limit.

Individual protection measures, such as personal protective equipment

Personal Protective Equipment

Eye protection: Goggles or Safety glasses with side-shields

Skin and body protection: Chemical resistant apron. Long sleeved clothing. Gloves.

Respiratory protection: Effective dust mask. Use a dust respirator under conditions where exposure to

the substance is apparent (e.g. generation of high concentration of dust (dust clouds), inadequate ventilation, development of respiratory tract irritation), and engineering controls are not feasible. Be sure to use an approved/certified

respirator or equivalent.

Hygiene measures: Avoid contact with skin, eyes and clothing. Wash hands before breaks and

immediately after handling the product. When using, do not eat, drink or smoke.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state: Appearance: Color:

Solid Powder. Almost white.

Odor:TasteFormula:Odorless.No information available.CuSO4•H2O

Molecular/Formula weight: Flammability: Flashpoint (°C/°F):

No information available No information available.

Flash Point Tested according to: Autoignition Temperature (°C/°F): Lower Explosion Limit (%):

Not available No information available No information available

Upper Explosion Limit (%): Melting point/range(°C/°F): Decomposition temperature(°C/°F):

Boiling point/range(°C/°F): Bulk density: Density (g/cm3):

No information available
No information available
No information available

Specific gravity: pH: Vapor pressure @ 20°C (kPa):

No information available
No information available
No information available

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Evaporation rate: Vapor density: VOC content (g/L):
No information available
No information available

Odor threshold (ppm): Partition coefficient Viscosity:

No information available (n-octanol/water): No information available

No information available

Miscibility: Solubility: No information available Soluble in Water

Practically insoluble in alcohol

10. STABILITY AND REACTIVITY

Reactivity

Anhydrous copper sulfate causes hydroxylamine to ignite and the hydrated salt is vigorously reduced

Copper salts and nitromethane spontaneously form explosive materials

Copper salts promote the decomposition of hydrazine

May react with acetylene to form dangerous acetylides

Dangerous acetylides may be formed from many copper salts. The copper acetylides formed in ammonical or caustic solutions

with Cu(II) salts and acetylene are more explosive than those derived from cuprous Cu(I) salts

Solutions of hyprobromite are decomposed by powerful catalytic action of cupric ions, even as impurities

Chemical stability

Stability: Stable under recommended storage conditions.

Possibility of Hazardous Reactions: Hazardous polymerization does not occur

Conditions to avoid: Incompatible materials.

Incompatible Materials: Hydroxylamine

Acetylene Hydrazine Nitromethane

Strong reducing agents Powdered metals Magnesium

Bases

Hazardous decomposition

products:

When heated to decomposition it emits toxic fumes. Sulfur oxides.

Other Information

Corrosivity: No information available

Special Remarks on Corrosivity: Can be corrosive to ferrous based metals.

Very corrosive to plain steel

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Principal Routes of Exposure:

Ingestion. Inhalation.

Acute Toxicity

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Component Information

Cupric Sulfate, Monohydrate

CAS-No. 10257-54-2

LD50/oral/rat = No information available

LD50/oral/mouse = No information available

LD50/dermal/rabbit = No information available

LD50/dermal/rat = No information available

LC50/inhalation/rat = No information available

LC50/inhalation/mouse = No infomation available

Other LD50 or LC50information = No information available

Product Information

LD50/oral/rat =

VALUE- Acute Tox Oral = No information available

LD50/oral/mouse =

Value - Acute Tox Oral = No information available

LD50/dermal/rabbit

VALUE-Acute Tox Dermal = No information available

LD50/dermal/rat

VALUE -Acute Tox Dermal = No information available

LC50/inhalation/rat

VALUE-Vapor = No information available

VALUE-Gas = No information available

VALUE-Dust/Mist = No information available

LC50/Inhalation/mouse

VALUE-Vapor = No information available

VALUE - Gas = No information available

VALUE - Dust/Mist = No information available

Symptoms

Skin Contact: Causes skin irritation. May cause skin burns, itching allergic dermatitis, eczema,

and greenish discoloration of the skin and hair.

Eye Contact: Causes serious eye irritation. May cause burns. May cause conjunctivitis. May

cause corneal opacity. May cause corneal discoloration, ulceration.

Inhalation Causes respiratory tract (nose, throat, lung) irritation with coughing and wheezing.

May cause ulceration and perforation of the nasal septum if inhaled in excessive quantities. Burning copper sulfate may result in irritating and poisonous gases which may irritate the respiratory tract and lungs, and may cause fume metal fever which is characterized by flu-like symptoms such as fever, chills, muscle aches.

Ingestion Harmful if swallowed. May cause gastrointestinal tract irritation with nausea,

vomiting, hypermotility, diarrhea, metallic taste, burning sensation in the stomach or epigastrum, abdominal pain, and possible gastrointestinal tract bleeding. May affect metabolism(metabolic acidosis, anorexia, weight loss), liver (liver damage, jaundice), blood (rarely Methemoglobinemia, hemalytic anemia), urinary system (kidney damage, hematuria, hemoglobinuria, albuminuria), behavior/central nervous system (CNS depression, headache, seizures, somnolence, tremor, psychosis, muscle weakness, coma), cardiovascular system (lowering of blood

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pressure, dysrythmia). Oral mucosa, vomitus, stools, and saliva may be stained blue or green following ingestion. Aspiration pneumonia may develop following

emesis (vomiting).

Aspiration hazard No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Chronic Toxicity Repeated or prolonged skin contact may cause thickening of the skin. Skin:

Repeated exposure may cause allergic skin reaction (dermatitis), thickening of the skin and a greenish color to the skin and hair. Repeated exposure via inhalation may cause atrophy of the inner lining of the nose and may cause sores and/or holes in the bone (septum) dividing the inner nose sometimes with bleeding, discharge and/or formation of a crust. It may also cause a greenish discoloration of the teeth. Repeated or prolonged ingestion copper/copper compounds may affect the liver and kidneys. Chronic copper poisoning is rare. It has been mainly observed in individuals with Wilson disease or Indian childhood cirrhosis, in which progressive copper toxicity results from a hereditary metabolic disorder involving deficiency in the copper-binding and transport protein ceruloplasmin so these

individuals are unable to metabolize copper.

Sensitization: No information available.

Mutagenic Effects: Animal experiments showed mutagenic effects

Carcinogenic effects: Not considered carcinogenic.

Components	CAS-No.	IARC	ACGIH - Carcinogens	NTP	OSHA HCS - Carcinogens	Australia - Notifiable Carcinogenic Substances	Australia - Prohibited Carcinogenic Substances
Cupric Sulfate, Monohydrate	10257-54-2	Not listed	Not listed	Not listed	Not listed	Not listed	Not listed

ACGIH (American Conference of Governmental Industrial Hygienists)

IARC (International Agency for Research on Cancer)

NTP (National Toxicology Program)

OSHA (Occupational Safety and Health Administration of the US Department of Labor)

Reproductive toxicity No data is available

Reproductive Effects: No information available
Developmental Effects: No information available
Teratogenic Effects: No information available

Specific Target Organ Toxicity

STOT - single exposure
STOT - repeated exposure
Target Organs:

No information available.
No information available.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity effects: Aquatic environment.

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Cupric Sulfate, Monohydrate - 10257-54-2

Freshwater Fish Species Data: 0.1 ppm 48 LC50 48 hours (Goldfish); 0.1-2.5 mg/l LC50 96 hours (Rainbow

Trout);

Persistence and degradability: If released to soil, copper sulfate may leach to groundwater, be partly oxidized, or

bind to humic materials, clay, or hydrous of iron and manganese. In water, it will bind to carbonates as well as humic materials, clay and hydrous oxides of iron and manganese. Copper is accumulated by plants and animals, but it does not appear to biomagnify from plants to animals. This lack of biomagnification appears common with heavy metals. In air, copper aerosols (in general) have a residence time of 2 to 10 days in an unpolluted atmosphere and 0.1 to >4 in a polluted,

urban areas.

Bioaccumulative potential: No information available.

Mobility: No information available.

13. DISPOSAL CONSIDERATIONS

Disposal Methods

Waste from residues / unused products:

Waste must be disposed of in accordance with Federal, State and Local regulation.

Contaminated packaging:

Empty containers should be taken for local recycling, recovery or waste disposal

Components	CAS-No.	RCRA - F Series Wastes	RCRA - K Series Wastes	RCRA - P Series Wastes	RCRA - U Series Wastes
Cupric Sulfate, Monohydrate	10257-54-2	None	None	None	None

14. TRANSPORT INFORMATION

DOT

UN-No: UN3077

Proper Shipping Name: Environmentally hazardous substance, solid, n.o.s. (Cupric Sulfate)

Hazard Class:

Subsidiary Class No information available

Packing group: III Emergency Response Guide 171

Number

Marine Pollutant

DOT RQ (lbs):

Marine Pollutant

No information available

Special Provisions 146, 335, A112, B54, B120, IB8, IP3, N20, N91, T1, TP33, 8

Symbol(s): [DOT]: (G) - Identifies proper shipping names for which one or more technical

names of the hazardous material must be entered in parentheses, in association

with the basic description.

Description: UN3077, Environmentally hazardous substance, solid, n.o.s., 9, PG III, Marine

Pollutant UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID,

N.O.S., 9, III, Marine pollutant

TDG (Canada)

UN-No: UN307

Proper Shipping Name: Environmentally hazardous substance, solid, n.o.s.

Hazard Class:

Subsidiary Risk: No information available

Packing Group:

Product code: C1358 Product name: CUPRIC SULFATE, 9 / 13

Marine Pollutant Marine Pollutant

Description: UN3077,ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.,9,PG

III, Marine Pollutant UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE,

SOLID, N.O.S., 9, III

ADR

UN-No: UN3077

Proper Shipping Name: Environmentally hazardous substance, solid, n.o.s.

Hazard Class: 9
Packing Group: |||

Subsidiary Risk:No information availableSpecial Provisions274, 335, 375, 601

Description: UN3077 Environmentally hazardous substance, solid, n.o.s.,9,III UN3077,

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., 9, III

(CUPRIC SULFATE, MONOHYDRATE)

IMO / IMDG

UN-No: UN3077

Proper Shipping Name: Environmentally hazardous substance, solid, n.o.s.

Hazard Class: 9

Subsidiary Risk: No information available

Packing Group:

Marine Pollutant Marine Pollutant

EMS: F-A

Special Provisions 274, 335, 966, 967, 969

Description UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.

(CUPRIC SULFATE, MONOHYDRATE), 9, III, Marine pollutant

RID

UN-No: UN3077

Proper Shipping Name: Environmentally hazardous substance, solid, n.o.s.

Hazard Class:

Subsidiary Risk: No information available

Packing Group:

Special Provisions 274, 335, 375, 601

Description: UN3077 Environmentally hazardous substance, solid, n.o.s.,9,III UN3077,

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., 9, III

(CUPRIC SULFATE, MONOHYDRATE)

ICAO

UN-No: UN3077

Proper Shipping Name: Environmentally hazardous substance, solid, n.o.s.

Hazard Class: 9

Subsidiary Risk: No information available

Packing Group:

Description: UN3077, Environmentally hazardous substance, solid, n.o.s., 9, PG III UN3077,

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., 9, III

Special Provisions A158, A97, A179, A197

IATA

UN-No: UN3077

Proper Shipping Name: Environmentally hazardous substance, solid, n.o.s.

Hazard Class: 9

Subsidiary Risk: No information available

Packing Group: III ERG Code: 9L

Special Provisions No information available

Description: UN3077, Environmentally hazardous substance, solid, n.o.s., 9,PG III UN3077,

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., 9, III

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15. REGULATORY INFORMATION

International Inventories

Components	CAS-No.	U.S. TSCA	KOREA KECL	Philippines (PICCS)	Japan ENCS	CHINA	Australia (AICS)	EINECS-No.
Cupric Sulfate,	10257-54-2	Not Listed	Not present	Not present	Present	Present	Not present	Not present
Monohydrate				-	(1)-300		·	

U.S. Regulations

California Prop. 65: Safe Drinking Water and Toxic Enforcement Act of 1986.

Chemicals Known to the State of California to Cause Cancer:

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

<u>Chemicals Known to the State of California to Cause Reproductive Toxicity:</u>
This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Components	CAS-No.	Carcinogen	Developmental Toxicity	Male	Female
				Reproductive	Reproductive
				Toxicity	Toxicity:
Cupric Sulfate, Monohydrate	10257-54-2	Not Listed	Not Listed	Not Listed	Not Listed

CERCLA/SARA

Components	CAS-No.	CERCLA - Hazardous Substances and their Reportable Quantities	Section 302 Extremely Hazardous Substances and TPQs	Section 302 Extremely Hazardous Substances and RQs	Section 313 - Chemical Category	Section 313 - Reporting de minimis
Cupric Sulfate, Monohydrate	10257-54-2	None	None	None	None	None

U.S. TSCA

Components		TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)	TSCA 8(d) -Health and Safety Reporting
Cupric Sulfate, Monohydrate	10257-54-2	Not Applicable	Not Applicable

Canada

WHMIS hazard class:

D2B Toxic materials

Canada Controlled Products Regulation:

This product has been classified according to the hazard criteria of the CPR (Controlled Products Regulation) and the MSDS contains all of the information required by the CPR.

Inventory

Components	CAS-No.	Canada (DSL)	Canada (NDSL)
Cupric Sulfate, Monohydrate	10257-54-2	Not Listed	Not Listed

Components	CAS-No.	CEPA Schedule I - Toxic Substances
Cupric Sulfate, Monohydrate	10257-54-2	Not listed
Components	CAS-No.	CEPA - 2010 Greenhouse Gases Subject
		to Mandatory Reporting

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EU Classification

R-phrase(s)

R22 - Harmful if swallowed.

R36 - Irritating to eyes.

R38 - Irritating to skin.

R50 - Very toxic to aquatic organisms.

R53 - May cause long-term adverse effects in the aquatic environment.

S -phrase(s)

S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S46 - If swallowed, seek medical advice immediately and show this container or label.

S60 - This material and its container must be disposed of as hazardous waste.

S61 - Avoid release to the environment. Refer to special instructions/safety data sheets.

\$36/37/39 - Wear suitable protective clothing, gloves and eye/face protection.

Components	CAS-No.		Concentration Limits:	Safety Phrases
Cupric Sulfate, Monohydrate	10257-54-2		No information	

The product is classified in accordance with Annex VI to Directive 67/548/EEC

Indication of danger:

Xn - Harmful.

Xi - Irritant.

N - Dangerous for the environment.







16. OTHER INFORMATION

Preparation Date: 1/06/2017 1/06/2017 **Revision Date:** Prepared by: Sonia Owen

Disclaimer:

All chemicals may pose unknown hazards and should be used with caution. This Safety Data Sheet (SDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. The physical properties reported in this SDS are obtained from the literature and do not constitute product specifications. Information contained herein does not constitute a warranty, whether expressed or implied, as to the safety, merchantability or fitness of the goods for a particular purpose. Spectrum Chemicals & Laboratory Products, Inc. assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Spectrum assumes no responsibility for the completeness or accuracy of the information contained herein.

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End of Safety Data Sheet

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