

SAFETY DATA SHEET

SECTION 1. IDENTIFICATION

Product identifier used on the label

: Acidified Copper Sulfate

Product Code(s) : 001

Recommended use of the chemical and restrictions on use

: Not available.
Restriction on use: None known

Chemical family : Metal compounds

Name, address, and telephone number
of the supplier:

Nutritech Solutions Inc.

1356 Sumas Way
Abbotsford, BC,
V2S 8H2

Supplier's Telephone # : 604-557-1481 8:30 am-4:30 pm

24 Hr. Emergency Tel # : (613) 996-6666 (CANUTEC)

Name, address, and telephone number of
the manufacturer:

Refer to supplier

SECTION 2. HAZARDS IDENTIFICATION

Classification of the chemical

Blue solid. Odourless.

Most important hazards: This material is classified as hazardous under U.S. OSHA regulations (29CFR 1910.1200) (Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015).

Hazard classification:

Acute toxicity - Oral - Category 4
Skin corrosion/irritation - Category 2
Serious eye damage/eye irritation - Category 1

Label elements

Hazard pictogram(s)



Signal Word

DANGER!

Hazard statement(s)

Harmful if swallowed.
Causes serious eye damage.
Causes skin irritation.

SAFETY DATA SHEET

Precautionary statement(s)

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

If swallowed: Call a poison center/doctor if you feel unwell.
Rinse mouth.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.
Continue rinsing.
Immediately call a POISON CENTRE or doctor/physician.
IF ON SKIN: Wash with plenty of soap and water.
If skin irritation occurs, get medical advice/attention.
Wash contaminated clothing before reuse.

Dispose of contents/container in accordance with local regulation.

Other hazards

Other hazards which do not result in classification:

May form combustible dust - air mixtures. Ingestion may cause irritation of the mouth, throat and stomach. Inhalation of fumes may result in metal fume fever, a flu-like illness. Prolonged overexposure may cause liver and kidney effects.

Environmental precautions:

Very toxic to aquatic life with long lasting effects. Avoid release to the environment. See ECOLOGICAL INFORMATION, Section 12.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Mixture

Chemical name	Common name and synonyms	CAS #	Concentration (% by weight)
Copper(II) sulfate	Copper II Sulphate	7758-98-7	84.68
Citric acid	2-Hydroxypropanetricarboxylic acid	77-92-9	14.00
White mineral oil	Paraffin oil Liquid petrolatum	8042-47-5	1.25

SECTION 4. FIRST-AID MEASURES

Description of first aid measures

- | | |
|---------------------|---|
| <i>Ingestion</i> | : IF SWALLOWED: Call a POISON CENTRE or doctor/physician if you feel unwell. Do not induce vomiting. Rinse mouth thoroughly. Never give anything by mouth to an unconscious person. |
| <i>Inhalation</i> | : Immediately remove person to fresh air. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen by qualified medical personnel only. Seek immediate medical attention/advice. |
| <i>Skin contact</i> | : Wash affected areas with soap and water. Get medical attention if irritation develops and persists. |
| <i>Eye contact</i> | : Flush eyes with water for at least 20 minutes. Call a physician or poison control center immediately. |

Most important symptoms and effects, both acute and delayed

- : Causes serious eye damage. Symptoms may include redness, pain, tearing and conjunctivitis. Permanent eye damage including blindness could result. Causes skin irritation. Redness, swelling, itching and dryness. Inhalation of dust may cause shortness of breath, tightness of the chest, a sore throat and cough. Inhalation of fumes may result in metal fume fever, a flu-like illness. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Prolonged or repeated overexposure may cause liver, kidney and blood system effects.

Indication of any immediate medical attention and special treatment needed

- : Treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

SAFETY DATA SHEET

Extinguishing media

Suitable extinguishing media

- : Use water fog or fine spray, foams, carbon dioxide or dry chemical. Use water with caution.

Unsuitable extinguishing media

- : Do not use a solid water stream as it may scatter and spread the fire.

Special hazards arising from the substance or mixture / Conditions of flammability

- : Dust may be ignited if suspended in air, however, not expected to be a significant fire risk.

Flammability classification (OSHA 29 CFR 1910.106)

- : Not flammable.

Hazardous combustion products

- : Copper oxides, Carbon oxides

Special protective equipment and precautions for firefighters

Protective equipment for fire-fighters

- : Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face piece operated in positive pressure mode. A full-body chemical resistant suit should be worn.

Special fire-fighting procedures

- : Move containers from fire area if safe to do so. Water spray may be useful in cooling equipment exposed to heat and flame. Dike for water control. Do not allow run-off from fire fighting to enter drains or water courses.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

- : All persons dealing with clean-up should wear the appropriate protective equipment including self-contained breathing apparatus. Keep all other personnel upwind and away from the spill/release. Restrict access to area until completion of clean-up. Refer to Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION, for additional information on acceptable personal protective equipment.

Environmental precautions

- : Ensure spilled product does not enter drains, sewers, waterways, or confined spaces. For large spills, dike the area to prevent spreading.

Methods and material for containment and cleaning up

- : Ventilate the area. Prevent further leakage or spillage if safe to do so. Sweep up or vacuum up spillage and collect in suitable container for disposal. Contact the proper local authorities.

Special spill response procedures

- : If a spill/release in excess of the EPA reportable quantity is made into the environment, immediately notify the national response center in the United States (phone: 1-800-424-8802).
US CERCLA Reportable quantity (RQ): See section 15.

SECTION 7. HANDLING AND STORAGE

Precautions for safe handling

- : Use only outdoors or in a well-ventilated area. Wear protective gloves and eye/face protection. Avoid breathing vapour or mist. Avoid contact with skin, eyes and clothing. Do not eat, drink or smoke when using this product. Keep away from heat and sources of ignition. Keep away from metals and incompatibles. Label containers appropriately. Wash thoroughly after handling. Keep containers closed when not in use. Avoid dust formation.

Conditions for safe storage

- : Store in a cool, dry, well-ventilated area. Store away from incompatibles and out of direct sunlight. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Inspect periodically for damage or leaks. No smoking in the area. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces.

Incompatible materials

- : Strong acids.

SAFETY DATA SHEET

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limits:

<u>Chemical Name</u>	<u>ACGIH TLV</u>		<u>OSHA PEL</u>	
	<u>TWA</u>	<u>STEL</u>	<u>PEL</u>	<u>STEL</u>
Copper(II) sulfate	N/Av	N/Av	N/Av	N/Av
Citric acid	N/Av	N/Av	N/Av	N/Av
White mineral oil	5 mg/m ³ (inhalable) (As 'Oil mist, mineral')	N/Av	5 mg/m ³ (As 'Oil mist, mineral')	N/Av

Exposure controls**Ventilation and engineering measures**

- : If product is processed in a manner that generates dusts or fumes, provide mechanical ventilation to control airborne exposure levels.

Respiratory protection

- : Respiratory protection is required if the concentrations exceed the TLV. Use a NIOSH approved dust respirator if dust levels exceed exposure limits. Seek advice from respiratory protection specialists.

Skin protection

- : Wear protective gloves. Advice should be sought from glove suppliers.

Eye / face protection

- : Wear eye/face protection. Chemical goggles must be worn to prevent dusts from entering the eyes.

Other protective equipment

- : Wear chemically protective gloves (impervious), boots, aprons, and gauntlets to prevent prolonged or repeated skin contact. An eyewash station and safety shower should be made available in the immediate working area. Other equipment may be required depending on workplace standards.

General hygiene considerations

- : Avoid breathing dust and fume. Avoid contact with skin, eyes and clothing. Do not eat, drink, smoke or use cosmetics while working with this product. Upon completion of work, wash hands before eating, drinking, smoking or use of toilet facilities. Remove soiled clothing and wash it thoroughly before reuse.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance** : Solid-blue/white
- Odour** : Odourless.
- Odour threshold** : No information available.
- pH** : Not available.
- Melting/Freezing point** : No information available.
- Initial boiling point and boiling range** : No information available.
- Flash point** : No information available.
- Flashpoint (Method)** : N/Ap
- Evaporation rate (BuAe = 1)** : No information available.
- Flammability (solid, gas)** : Not applicable.
- Lower flammable limit (% by vol.)** : N/Ap
- Upper flammable limit (% by vol.)** : N/Ap
- Oxidizing properties** : None known.
- Explosive properties** : Not explosive
- Vapour pressure** : No information available.
- Vapour density** : No information available.
- Relative density / Specific gravity** : No information available.

SAFETY DATA SHEET

Solubility in water : Soluble
Other solubility(ies) : No information available.
Partition coefficient: n-octanol/water or Coefficient of water/oil distribution : No information available.
Auto-ignition temperature : No information available.
Decomposition temperature : Not available.
Viscosity : No information available.
Volatiles (% by weight) : No information available.
Volatile organic Compounds (VOC's) : No information available.
Absolute pressure of container : N/Ap
Flame projection length : N/Ap
Other physical/chemical comments : None known or reported by the manufacturer.

SECTION 10. STABILITY AND REACTIVITY

Reactivity : Not normally reactive. Aqueous solutions may react with some metals (e.g. Aluminum, zinc, tin and their alloys) to release flammable hydrogen gas.
Chemical stability : Stable under normal conditions.
Possibility of hazardous reactions : Hazardous polymerization does not occur.
Conditions to avoid : Ensure adequate ventilation, especially in confined areas. Avoid contact with incompatible materials. Avoid dust formation. Avoid heat, open flames, sparks, static electricity and electrical equipment.
Incompatible materials : See Section 7 (Handling and Storage) for further details.
Hazardous decomposition products : None known, refer to hazardous combustion products in Section 5.

SECTION 11. TOXICOLOGICAL INFORMATION**Information on likely routes of exposure:**

Routes of entry inhalation : YES
Routes of entry skin & eye : YES
Routes of entry Ingestion : YES
Routes of exposure skin absorption : NO

Potential Health Effects:**Signs and symptoms of short-term (acute) exposure***Sign and symptoms Inhalation*

: Inhalation of dusts may cause respiratory irritation. Symptoms may include sore throat, running nose and shortness of breath. Inhalation of fumes may result in metal fume fever, a flu-like illness. Symptoms of metal fume fever may include fever, fatigue, vomiting, muscle aches and shortness of breath.

Sign and symptoms ingestion

: Harmful if swallowed. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. May cause liver effects.

Sign and symptoms skin

: Causes skin irritation. Symptoms may include redness, itching and swelling.

Sign and symptoms eyes

: Causes serious eye damage. Symptoms may include redness, pain, tearing and conjunctivitis. Permanent eye damage including blindness could result.

Potential Chronic Health Effects

: Prolonged or repeated contact may cause drying, cracking and defatting of the skin. Liver injury may occur.

Mutagenicity

: Not expected to be mutagenic in humans.

SAFETY DATA SHEET

Carcinogenicity : No components are listed as carcinogens by ACGIH, IARC, OSHA or NTP.

Reproductive effects & Teratogenicity

: Not expected to have other reproductive effects.

Sensitization to material : Not expected to be a skin or respiratory sensitizer.

Specific target organ effects : This material is not classified as hazardous under U.S. OSHA regulations (29CFR 1910.1200) (Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015).

Medical conditions aggravated by overexposure

: Pre-existing skin, eye and respiratory disorders.

Synergistic materials

: No information available.

Toxicological data

: There is no data available for this product. The calculated ATE values for this mixture are: ATE oral = 348.51 mg/kg

<u>Chemical name</u>	<u>LC₅₀(4hr)</u>	<u>LD₅₀</u>	
	<u>inh, rat</u>	<u>(Oral, rat)</u>	<u>(Rabbit, dermal)</u>
Copper(II) sulfate	N/Av	300 mg/kg	N/Av
Citric acid	N/Av	3000 mg/kg	> 2000 mg/kg (No mortality)
White mineral oil	> 5 mg/L (mist) (No mortality)	> 5000 mg/kg	> 2000 mg/kg

Other important toxicological hazards

: See Section 3 for additional information.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity : Very toxic to aquatic life with long lasting effects. The product should not be allowed to enter drains or water courses, or be deposited where it can affect ground or surface waters. See the following tables for the substance's ecotoxicity data.

Ecotoxicity data:

<u>Ingredients</u>	<u>CAS No</u>	<u>Toxicity to Fish</u>		
		<u>LC50 / 96h</u>	<u>NOEC / 21 day</u>	<u>M Factor</u>
Copper(II) sulfate	7758-98-7	0.032 mg/L (Rainbow trout)	N/Av	1
Citric acid	77-92-9	1516 mg/L (Bluegill sunfish)	N/Av	None.
White mineral oil	8042-47-5	> 1000 mg/L (Rainbow trout)	> 1000 mg/L/28-day	None.

<u>Ingredients</u>	<u>CAS No</u>	<u>Toxicity to Daphnia</u>		
		<u>EC50 / 48h</u>	<u>NOEC / 21 day</u>	<u>M Factor</u>
Copper(II) sulfate	7758-98-7	0.18 mg/L (Daphnia magna)	N/Av	1
Citric acid	77-92-9	1535 mg/L/24hr (Daphnia magna)	N/Av	None.
White mineral oil	8042-47-5	> 100 mg/L (Daphnia magna)	> 10 mg/L (Read-across)	None.

SAFETY DATA SHEET

<u>Ingredients</u>	CAS No	Toxicity to Algae		
		EC50 / 96h or 72h	NOEC / 96h or 72h	M Factor
Copper(II) sulfate	7758-98-7	N/Av	N/Av	None.
Citric acid	77-92-9	> 18 000 mg/L/96hr (Green algae)	N/Av	None.
White mineral oil	8042-47-5	N/Av	> 100 mg/L/72hr (NOEL) (Green algae)	None.

Persistence and degradability

: No data is available on the product itself.

Bioaccumulation potential

: No data is available on the product itself. See the following data for ingredient information.

<u>Components</u>	<u>Partition coefficient n-octanol/water (log Kow)</u>	<u>Bioconcentration factor (BCF)</u>
Copper(II) sulfate (CAS 7758-98-7)	N/Av	N/Av
Citric acid (CAS 77-92-9)	- 1.72	3 (estimated)
White mineral oil (CAS 8042-47-5)	>6	N/Av

Mobility in soil : No data is available on the product itself.**Other Adverse Environmental effects**

: No data is available on the product itself.

SECTION 13. DISPOSAL CONSIDERATIONS**Handling for Disposal**

: Handle waste according to recommendations in Section 7. Empty containers retain residue (liquid and/or vapour) and can be dangerous.

Methods of Disposal









: Dispose in accordance with all applicable federal, state, provincial and local regulations.

RCRA

: If this product, as supplied, becomes a waste in the United States, it may meet the criteria of a hazardous waste as defined under RCRA, Title 40 CFR 261. It is the responsibility of the waste generator to determine the proper waste identification and disposal method.

SAFETY DATA SHEET

SECTION 14. TRANSPORTATION INFORMATION

Regulatory Information	UN Number	UN proper shipping name	Transport hazard class(es)	Packing Group	Label
TDG	UN3077	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Copper II Sulphate)	9	III	 
TDG Additional Information	May be shipped as LIMITED QUANTITY when transported in units less than 5 kg, in packages not exceeding 30 kg. ERG #171				
49CFR/DOT	UN3077	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Copper II Sulphate)	9	III	 
49CFR/DOT Additional Information	US CERCLA Reportable quantity (RQ): Copper (II) sulfate (10 lbs / 4.54 kg)				
ICAO/IATA	UN3077	Environmentally hazardous substance, solid, n.o.s. (Copper sulphate)	9	III	 
ICAO/IATA Additional Information	Refer to ICAO/IATA Packing Instruction				
IMDG	UN3077	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Copper II Sulphate)	9	III	 
IMDG Additional Information	Consult the IMDG regulations for exceptions.				

Special precautions for user : Appropriate advice on safety must accompany the package.

Environmental hazards : This product meets the criteria for an environmentally hazardous material according to the IMDG Code. See ECOLOGICAL INFORMATION, Section 12.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

: This information is not available.

SECTION 15 - REGULATORY INFORMATION

US Federal Information:

Components listed below are present on the following U.S. Federal chemical lists:

Ingredients	CAS #	TSCA Inventory	CERCLA Reportable Quantity(RQ) (40 CFR 117.302):	SARA TITLE III: Sec. 302, Extremely Hazardous Substance, 40 CFR 355:	SARA TITLE III: Sec. 313, 40 CFR 372, Specific Toxic Chemical	
					Toxic Chemical	de minimus Concentration
Copper(II) sulfate	7758-98-7	Yes	10 lb/ 4.54 kg	N/Av	No	No
Citric acid	77-92-9	Yes	None.	None.	No	No
White mineral oil	8042-47-5	Yes	None.	None.	No	No

SARA TITLE III: Sec. 311 and 312, SDS Requirements, 40 CFR 370 Hazard Classes: Acute toxicity Serious eye damage ; Skin irritation.. Under SARA Sections 311 and 312, the EPA has established threshold quantities for the reporting of hazardous chemicals. The current thresholds are 500 pounds or the threshold planning quantity (TPQ), whichever is lower, for extremely hazardous substances and 10,000 pounds for all other hazardous chemicals.

SAFETY DATA SHEET

US State Right to Know Laws:

The following chemicals are specifically listed by individual States:

<u>Ingredients</u>	CAS #	California Proposition 65		State "Right to Know" Lists					
		Listed	Type of Toxicity	CA	MA	MN	NJ	PA	RI
Copper(II) sulfate	7758-98-7	No	N/Ap	Yes	Yes	No	Yes	Yes	No
Citric acid	77-92-9	No	N/Ap	No	No	No	No	No	No
White mineral oil	8042-47-5	No	N/Ap	No	No	No	No	No	No

Canadian Information:

Canadian Environmental Protection Act (CEPA) information: All ingredients listed appear on the Domestic Substances List (DSL). Refer to Section 2 for a WHMIS Classification for this product.

International Information:

Components listed below are present on the following International Inventory list:

<u>Ingredients</u>	CAS #	European EINECs	Australia AICS	Philippines PICCS	Japan ENCS	Korea KECI/KECL	China IECSC	New Zealand IOC
Copper(II) sulfate	7758-98-7	231-847-6	Present	Present	(1)-300	KE-08956	Present	HSR003117
Citric acid	77-92-9	201-069-1	Present	Present	(2)-1318	KE-20831	Present	HSR003138
White mineral oil	8042-47-5	232-455-8	Present	Present	(9)-1700	KE-35412	Present	May be used as a single component chemical under an appropriate group standard.

SECTION 16. OTHER INFORMATION**Legend**

: ACGIH: American Conference of Governmental Industrial Hygienists
 CA: California
 CAS: Chemical Abstract Services
 CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act of 1980
 CFR: Code of Federal Regulations
 DOT: Department of Transportation
 ERAP: Emergency Response Assistance Plan
 HMIS: Hazardous Materials Identification System
 IARC: International Agency for Research on Cancer
 Inh: Inhalation
 LC: Lethal Concentration
 LD: Lethal Dose
 MA: Massachusetts
 MN: Minnesota
 MSHA: Mine Safety and Health Administration
 N/Ap: Not Applicable
 N/Av: Not Available
 NIOSH: National Institute of Occupational Safety and Health
 NJ: New Jersey
 NTP: National Toxicology Program
 OSHA: Occupational Safety and Health Administration
 PEL: Permissible exposure limit
 RTECS: Registry of Toxic Effects of Chemical Substances
 SARA: Superfund Amendments and Reauthorization Act

SAFETY DATA SHEET

STEL: Short Term Exposure Limit
TDG: Canadian Transportation of Dangerous Goods Act & Regulations
TLV: Threshold Limit Values
TPQ: Threshold Planning Quantity
TWA: Time Weighted Average
TSCA: Toxic Substance Control Act
WHMIS: Workplace Hazardous Materials Identification System

References

- : 1. ACGIH, Threshold Limit Values for Chemical Substances and Physical Agents & Biological Exposure Indices for 2016
- 2. International Agency for Research on Cancer Monographs, searched 2017
- 3. Canadian Centre for Occupational Health and Safety, CCInfoWeb databases, 2017(Chempendium, HSDB and RTECs).
- 4. Material Safety Data Sheets from manufacturer.
- 5. US EPA Title III List of Lists - 2017 version.
- 6. California Proposition 65 List - 2017 version.
- 7. OECD - The Global Portal to Information on Chemical Substances - eChemPortal, 2017.

Preparation Date (mm/dd/yyyy)

: 05/15/2017

Other special considerations for handling

: Provide adequate information, instruction and training for operators.

Prepared for:

Nutritech Solutions Inc.
1356 Sumas Way
Abbotsford, BC V2S 8H2
Telephone: 604-557-1481

Prepared by:

ICC The Compliance Center Inc.
Telephone: (888) 442-9628 (U.S.): (888) 977-4834 (Canada)
<http://www.thecompliancecenter.com>

**DISCLAIMER**

This Safety Data Sheet was prepared by ICC The Compliance Center Inc. using information provided by Nutritech Solutions Inc. and CCOHS' Web Information Service. The information in the Safety Data Sheet is offered for your consideration and guidance when exposed to this product. ICC The Compliance Center Inc and Nutritech Solutions Inc. expressly disclaim all expressed or implied warranties and assume no responsibilities for the accuracy or completeness of the data contained herein. The data in this SDS does not apply to use with any other product or in any other process.

This Safety Data Sheet may not be changed, or altered in any way without the expressed knowledge and permission of ICC The Compliance Center Inc. and Nutritech Solutions Inc.

END OF DOCUMENT