

Complying with Regulation (EC) No 1272/2008 (CLP) as amended by Commission Regulation (EU) 2015/830.

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Product name: **S-CHELATE-O Cu**
 CAS Number: Not applicable
 EC Number: Not applicable
 REACH No: Not applicable

1.2 Relevant identified uses of the substance or mixture and uses advised against:

Relevant identified uses: Fertilizer for agricultural use.
 Uses advised against: Uses other than those described above.

1.3 Details of the supplier of the safety data sheet

Company Name: Soil Biology Ltd
 Company Address: Unit 30 Branbridges Industrial
 Estate East Peckham
 TN12 5HF
 United Kingdom

Company Tel: +44 01892 883759
 Fax Number:

Contact Name:
 E-mail address of person responsible for this SDS: info@soilbiology.uk

1.4 Emergency telephone number

Emergency telephone number (including hours of operation): +44 (0) 1892 883759 (8am – 5pm).

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification in accordance to Regulation (EC) No. 1272/2008 (CLP/GHS)

Product name	GHS Classification
S-Chelate-O Cu	Acute Toxicity, Oral, Category 4 Skin Corrosion/Irritation, Category 2 Serious Eye Damage/Irritation, Category 2 Hazardous to the aquatic environment – short-term (acute) aquatic hazard, Category 1 Hazardous to the aquatic environment – long-term (chronic) aquatic hazard, Category 1

2.2 Label elements

Labelling in accordance with Regulation 1272/2008 (CLP)

Hazard pictograms:



Signal word: WARNING

Hazard statements:
 H302 - Harmful if swallowed
 H315 - Causes skin irritation
 H319 - Causes serious eye irritation
 H410 - Toxic to aquatic life with long lasting effects

Precautionary Statements:
 P264 - Wash thoroughly after handling.
 P270 - Do not eat, drink or smoke when using this product.
 P273 - Avoid release to the environment
 P280 - Wear protective gloves/protective clothing/eye protection/face protection.
 P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P391 - Collect spillage.

Supplemental Hazard Statements. None known

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances :

Not applicable.

3.2 Mixture :

Product/ Ingredient name	Identifiers	%	Classification 1272/2008/EC	M Factor	Specific conc'n limits (SCL)	Acute toxicity estimate (ATE)
Copper Sulphate Pentahydrate	CAS No 7758-99-8	50 - 60%	Acute Tox. Oral 4, H302 Eye Irrit 2, H319	M = 10	No SCL in Annex VI	No ATE in Annex VI

	EC No 231-847-6		Skin Irrit 2, H315 Aquatic Acute 1, H400 Aquatic Chronic 1, H410			
	REACH No 01- 2119520566- 40-XXXX					
2-Hydroxypropane-1,2,3-tricarboxylic acid	CAS No 5949-29-1					
	EC No 201-069-1	40 - 50%	Eye Irrit. 2, H319	1	No SCL in Annex VI	No ATE in Annex VI
	REACH No 01- 2119457026- 42-XXXX					

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in section 8.
See section 16 for the full text of the EUH, H and P phrases declared above.

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

Eye contact: If in eyes: Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If the irritation persists immediately call the medical service.

Skin contact: Wash the contaminated area with plenty of water, replace the contaminated clothing and shoes with clean ones, if necessary (contaminated clothes must be washed before reuse); if the irritation persists seek medical assistance.

Inhalation: Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Oxygen should only be administered by qualified personnel. Seek medical advice.

Ingestion: Do NOT induce vomiting. Get medical attention immediately. Never give anything by mouth to an unconscious person.

4.2 Most important symptoms and effects, both acute and delayed

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

The following symptoms may occur:

In case of inhalation	May cause irritation to respiratory tract
In case of skin contact	May cause redness or irritation
In case of eye contact	Causes serious eye irritation
In case of ingestion	Ingestion of large amounts may cause gastrointestinal disturbances

4.3 Indication of any immediate medical attention and special treatment needed

If any symptoms are observed, contact a physician and give them this SDS sheet.
Provide general supportive measures and treat symptomatically.

	SAFETY DATA SHEET	
S-Chelate-O Cu	12th August 2022	Page 4 of 11

SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media: : Use any suitable mean for extinguishing surrounding fire. Spray water for small fires. For large fires flood with abundant water.

Unsuitable extinguishing media: None, but attention should be paid to compatibility with surrounding chemicals.

5.2 Special hazards arising from the substance or mixture

Irritating and toxic gases or fumes may be released during a fire.

Hazardous combustion products:

Carbon oxides, metallic oxides.

5.3 Advice for firefighters

Keep upwind of fire. Wear full fire fighting turn-out gear (full Bunker gear) and respiratory protection (self contained breathing apparatus (SCBA)). In addition, wear other appropriate protective equipment as conditions warrant (see Section 8).

Keep out of drains, surface waters and soil against pollution.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

No action shall be taken involving any personal risk or without suitable training. Keep unnecessary and unprotected personnel from entering.

For emergency responders

Keep unauthorized people away and upwind. Wear appropriate personal protective equipment (refer to Section 8 Exposure controls/ personal protection) and avoid contact with eyes and skin. See also the information in "For non-emergency personnel".

6.2 Environmental precautions

Avoid dispersal of spilt material and runoff and contact with waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways or air).

6.3 Methods and materials for containment and cleaning up

Large Spills: Stop the flow of material, if safe to do so. Sweep up and collect into containers for disposal. Keep in suitable, closed containers for disposal.

Small Spills: Sweep up and collect into containers for disposal. Keep in suitable, closed containers for disposal. For waste disposal, see section 13 of the SDS.

6.4 Reference to other sections

See Section 1 for emergency contact information.

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

SECTION 7: HANDLING AND STORAGE
7.1 Precautions for safe handling

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid generation of dust. Avoid contact with skin and eyes. Avoid prolonged exposure. Provide appropriate exhaust ventilation at places where dust is formed. Wear appropriate personal protective equipment. Wash hands and face thoroughly after handling. Do not eat, drink or smoke when using this product. Observe good industrial hygiene practices.

7.2 Conditions for safe storage, including any incompatibilities

Keep/store only in original container. Store in a well-ventilated place. Keep container tightly closed. Store locked up. Store indoors and ideally at 20°C or under to prevent caking due to the product's low melting point.

Do not store together with: reducing agents (see Section 10 of the SDS).

7.3 Specific end use(s):

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

SECTION 8: EXPOSURE CONTROL / PERSONAL PROTECTION
8.1 Control parameters
Occupational exposure limit values:

Ingredient name	CAS Number	Occupational exposure limits	Source
Copper Sulphate Pentahydrate	7758-99-8	Short-term value: No data available Long-term value: No data available	UK. EH40/2005 (4th Edition 2020) Workplace exposure limits
2-Hydroxypropane-1,2,3-tricarboxylic acid	5949-29-1	Short-term value: No data available Long-term value: No data available	UK. EH40/2005 (4 th Edition 2020) Workplace exposure limits

Monitoring procedures: Use methods described in European Standards.

Derived No Effect Level (DNEL):
Copper Sulphate Pentahydrate

Application Area	Exposure routes	Health Effect	Value
Workers	Inhalation	Long-term systemic effects	1 mg/m ³
Workers	Inhalation	Long-term local effects	1 mg/m ³
Workers	Dermal	Long-term systemic effects	137 mg/kg bw/day
General population	Oral	Long-term systemic effects	0.041 mg/kg bw/day
General population	Oral	Short-term systemic effects	0.082 mg/kg bw/day

2-Hydroxypropane-1,2,3-tricarboxylic acid

None established

Predicted No Effect Concentration (PNEC):
Copper Sulphate Pentahydrate

Compartment	Value

Fresh water	7.8 µg/L
Marine water	5.2 µg/L
Sewage treatment plant	230 µg/L
Fresh water sediment	87 mg/kg sediment dw
Marine sediment	676 mg/kg sediment dw
Soil	65 mg/kg soil dw

2-Hydroxypropane-1,2,3-tricarboxylic acid

Compartment	Value
Fresh water	0.44 mg/L
Marine water	0.044 mg/L
Sewage treatment plant	1000 mg/L
Fresh water sediment	34.6 mg/kg sediment dw
Marine sediment	3.46 mg/kg sediment dw
Soil	33.1 mg/kg soil dw

8.2 Exposure controls

Appropriate Engineering Measures

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits.

If exposure limits have not been established, maintain airborne levels to an acceptable level.

Provide eyewash station. Eye wash fountain and emergency showers are recommended.

Concentrations should be monitored hazardous substances in the workplace in accordance with recognized test methods. Mode, method, type and frequency of testing and measurement of harmful factors in the working environment should meet the requirements of local/regional/national laws.

Individual protection measures, such as personal protective equipment:

Eye and face protection: Wear safety goggles.

Skin protection:

Hand protection: Wear appropriate chemical resistant gloves. Nitrile rubber gloves, over 0.11 mm thickness, > 480 min breakthrough time, recommended. The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material cannot be calculated in advance and has therefore to be checked prior to the application.

Penetration time of glove material: The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Other skin protection: The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace. Wash hands after use.

Respiratory protection: Wear respiratory protection, where airborne concentrations are expected to exceed exposure limits. Use respirators and components tested and approved under appropriate government standards such as NIOSH or MSHA-approved respiratory protection.

Thermal hazards: None known.

Environmental exposure controls: Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**9.1 Information on basic physical and chemical properties**

Appearance:	Powder
Colour:	Blue
Odour:	Faint odour
Odour threshold:	Not determined
pH (1% solution):	3
Melting point/Freezing point:	Not determined
Initial boiling point/boiling range:	Not determined
Flash point:	Not determined
Evaporation rate:	Not determined
Flammability (solid, gas):	Not applicable
Upper/lower flammability or explosive limits:	
Flammability limit – lower (%):	Not determined
Flammability limit – upper (%):	Not determined
Vapour pressure:	Not determined
Vapour density (air=1):	Not determined
Relative Density:	Not determined
Solubility(ies):	Highly soluble
Partition coefficient Octanol/Water:	Not determined
Auto-ignition temperature:	Not determined
Decomposition temperature:	Not determined
Viscosity at 20°C:	Not determined
Explosive properties:	Product does not present an explosion hazard.
Oxidising properties:	Not expected to be an oxidizer.

9.2 Other information:

No further data available

SECTION 10: STABILITY AND REACTIVITY**10.1 Reactivity**

No hazardous reactions anticipated under normal storage and handling conditions.

10.2 Chemical stability

Stable under normal ambient and anticipated conditions of use.

10.3 Possibility of hazardous reactions

None expected

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources. Avoid high temperatures.

10.5 Incompatible materials

Materials to avoid include; reducing substances under specific conditions

10.6 Hazardous Decomposition products:

Carbon oxides, metallic oxides

SECTION 11: TOXICOLOGICAL INFORMATION
11.1 Information on toxicological effects
Acute toxicity:

Product/ingredient name	Test	Species	Dose
Copper Sulphate Pentahydrate	LD50 Oral	Rat	482 mg/kg
	LD50 Dermal	Rabbit	> 2000 mg/kg
	LC50 Inhalation	Mouse	None known
2-Hydroxypropane-1,2,3-tricarboxylic acid	LD50 Oral	Rat	11700 mg/kg
	LD50 Dermal	Rabbit	> 2000 mg/kg
	LC50 Inhalation	Rat	None known

Skin corrosion/irritation:	Causes skin irritation.
Serious eye damage/eye irritation:	Expected to cause serious eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.
Respiratory or skin sensitization:	Not expected to cause respiratory or skin sensitization.
Germ cell mutagenicity:	This product is not anticipated to be a mutagen.
Carcinogenicity:	This product is not expected to be a carcinogen.
Reproductive toxicity:	This product is not expected to cause damage to fertility or the unborn child.
STOT - Single exposure:	This material is not expected to cause damage from a single exposure.
STOT - Repeat exposure:	This product is not expected to cause damage to organs after prolonged or repeated exposure.
Aspiration hazard:	This product is not anticipated to be an aspiration hazard if swallowed.

SECTION 12: ECOLOGICAL INFORMATION
12.1 Toxicity: Very toxic to aquatic life with long lasting effects

Substance name	Toxicity to fish / other aquatic invertebrates
Copper Sulphate Pentahydrate	Invertebrates - EC50 - Daphnia magna (Water flea) - 0.024 mg/l - 48 h
2-Hydroxypropane-1,2,3-tricarboxylic acid	Fish LC50 - Leuciscus idus (Golden orfe) - 440 - 760 mg/l - 96 h Invertebrates EC50 Daphnia magna (Water flea) - ca. 120 mg/l - 72 h Algae IC5 - M.aeruginosa - 80 mg/l - 8 d Bacteria EC5 - Pseudomonas putida - > 10,000 mg/l - 16 h

12.2 Persistence and Degradability:

No data available for this product

12.3 Bioaccumulative potential:

No data available for this product.

12.4 Mobility in soil:

No data available for this product

12.5 Results of PBT and vPvB assessment:

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Other adverse effects:

None known.

12.7 Additional information:

None known.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods:

Product

Do not allow product to reach sewage system.

Dispose of waste materials in accordance with applicable local and national laws and regulations.

Where possible, recycling is preferred to disposal or incineration. Contact the proper local authorities.

Contaminated packaging

Since emptied containers retain product residue, follow label warnings even after container is emptied.

Empty containers should be taken to an approved waste handling site for recycling or disposal.

SECTION 14: TRANSPORT INFORMATION

This product is classified as UN 3077, and when packaged in containers of 5kg or less, can be transported as Limited Quantities (LQ). Providing that the general requirements for packaging and markings are met, ADR will not apply.

International transport regulations

14.1 UN number:

ADR/RID: UN 3077

IMDG: UN 3077

IATA: UN 3077

14.2 Proper shipping name:

ADR/RID: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Contains Copper sulphate)

IMDG: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Contains Copper sulphate)

IATA: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Contains Copper sulphate)

14.3 Transport hazard class(es)
ADR/RID: 9

IMDG: 9

IATA: 9

14.4 Packing group
ADR/RID: III

IMDG: III

IATA: III

14.5 Environmental hazard

Marine Pollutant: Yes

14.6 Special precautions for user

No data available

14.7 Transport to bulk according to Annex II of MARPOL and the IBC Code

Not applicable

Section 15: REGULATORY INFORMATION
15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This safety datasheet complies with the requirements of:

EU Commission Regulation (EU) 2015/830 (Reach)

EU Regulation (EC) No 1272/2008 (CLP)

EINECS: All components in this product are listed on the European Inventory of Existing Chemical Substance

15.2 Chemical safety assessment

For this product a chemical safety assessment was not carried out on this product.

Section 16: OTHER INFORMATION
Full text of H & P-Statements referred to under sections 2 and 3.

Acute Tox Acute Toxicity

Aquatic Acute Aquatic Toxicity, Acute Exposure

Aquatic Chronic Aquatic Toxicity, Chronic Exposure

Eye Irrit Eye Irritation

Skin Irrit Skin Irritation

H302 Harmful if swallowed

H315 Causes skin irritation

H319 Causes serious eye irritation

H410 Very toxic to aquatic life with long lasting effects

P264 Wash thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P273 Avoid release to the environment

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P301+P312 IF SWALLOWED: Call a POISON CENTRE/doctor if you feel unwell.

P302+P352 IF ON SKIN: Wash with plenty of 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.

P321 Specific treatment (see section 4 to 8 on the SDS and any additional information on this label).

P330 Rinse mouth.

P332+P313	If skin irritation occurs: Get medical advice/attention.
P337+P313	If eye irritation persists: Get medical advice/attention.
P362+P364	Take off contaminated clothing and wash it before reuse.
P391	Collect spillage.
P501	Dispose of contents/container to a suitable disposal point in accordance with local/regional/national/international regulations.

Training advice: Before using/handling the product one must read carefully present SDS.

Abbreviations and acronyms:

ACGIH:	American Conference of General Industrial Hygienist
ADR:	Accord européen sur le transport des marchandises dangereuses par Route (European)
BCF:	Bio Concentration Factor
CAS:	Chemical Abstracts Service (division of the American Chemical Society)
CLP:	Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures
DGR:	Dangerous Goods Regulations
DNEL:	Derived No Effect Level
EC50:	Half maximal effective concentration
EINECS:	European Inventory of Existing Commercial Chemical Substances
EU:	European Union
GHS:	Globally Harmonized System of Classification and Labeling of Chemicals
IATA:	International Air Transport Association
IBC:	International Bulk Code
IMDG:	International Maritime Code for Dangerous Goods
IOELV:	Indicative Occupational Exposure Limit Value
LC50:	Lethal concentration, 50 percent
LD50:	Lethal dose, 50 percent
MARPOL:	International Convention for the Prevention of Pollution from Ships
OEL:	Occupational Exposure Level
OSHA:	Occupational Safety and Health Administration
PBT:	Persistent, Bioaccumulative and Toxic
PEL:	Permissible Exposure Limit
PNEC:	Predicted No Effect Level
REACH:	Registration, Evaluation, Authorisation and Restriction of Chemicals
SCBA:	Self Contained Breathing Apparatus
SCL:	Specific Concentration Limits
STEL:	Short Term Exposure Limit
TLV:	Threshold Limit Value
TWA:	Time Weighted Average
UN:	United Nations
VPvB:	Very Persistent and very Bioaccumulative
WEL:	Workplace Exposure Limit

Document history

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Version no. 4

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