

1. Identification of Substance & Company

Product

Product name	RectorSeal Root Destroyer
HSNO approval	HSR000824
Approval description	Solid material containing 232-250g/kg copper as copper sulphate
UN number	3077
DG class	9
Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, solid, n.o.s. (cupric sulphate)
Packaging group	III
Hazchem code	2Z
Uses	control of root growth in sewers

Company Details

Company	HYDROFLOW
Address	221 Bush Road, Albany, North Shore City 0632
Telephone	09 415 6151
Fax	09 415 6150
Email	info@hydroflow.co.nz

National Poison Centre NZ (24 hours): 0800 POISON [764 766]

2. Hazard Identification

Approval

This product is an approved substance under the Hazardous Substances and New Organisms Act (HSNO, Approval HSR000824, Solid material containing 232-250g/kg copper as copper sulphate). The substance has been classified as hazardous according to the criteria in the Hazardous substances (Minimum Degrees of Hazard) Notice 2017.

Classes

Hazard Statements

6.1D (oral)	H302 - Harmful if swallowed.
6.3A	H315 - Causes skin irritation.
6.4A	H319 - Causes serious eye irritation.
6.5B	H317 - May cause an allergic skin reaction.
6.9B	H373 - May cause damage to organs through prolonged or repeated exposure.
9.1A	H410 - Very toxic to aquatic life with long lasting effects.
9.3C	H433 - Harmful to terrestrial vertebrates.

SYMBOLS

WARNING



Other Classifications

There are no other Classifications that are known to apply.

Precautionary Statements

- P101 - If medical advice is needed, have product container or label at hand.
- P102 - Keep out of reach of children.
- P103 - Read label before use.
- P260 - Do not breathe dust.
- P264 - Wash hands thoroughly after handling.
- P270 - Do not eat, drink or smoke when using this product.
- P272 - Contaminated work clothing should not be allowed out of the workplace.
- P273 - Avoid release to the environment.
- P280 - Wear protective gloves/eye protection/face protection*.
- P301+P312 - IF SWALLOWED: Call a POISON CENTRE or doctor/physician if you feel unwell.
- P330 - Rinse mouth.
- P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P337+P313 - If eye irritation persists: Get medical advice/attention.

LEADING WITH KNOWLEDGE

P302+P352 - IF ON SKIN: Wash with plenty of soap and water.
 P333+P313 - If skin irritation or rash occurs: Get medical advice/attention.
 P363 - Wash contaminated clothing before reuse.
 P314 - Get medical advice/attention if you feel unwell.
 P309+P311 - IF exposed or if you feel unwell: Call a POISON CENTRE or doctor/physician.
 P391 - Collect spillage.
 P405 - Store locked up.
 P501 - Dispose of contents/container in accordance with local/regional/national/international regulation.

3. Composition / Information on Ingredients

Component	CAS/ Identification	Conc (%)
Copper Sulphate pentahydrate	7758-99-8	99%

This is a commercial product whose exact ratio of components may vary. Trace quantities of impurities are also likely.

4. First Aid

General Information

If medical advice is needed, have product container or label at hand. You should call the National Poisons Centre if you feel that you may have been harmed or irritated by this product. The number is 0800 764 766 (0800 POISON) (24 hr emergency service). IF exposed or if you feel unwell: Call a POISON CENTRE or doctor/physician.

Recommended first aid facilities Ready access to running water is required. Accessible eyewash is required.

Exposure

Swallowed IF SWALLOWED: Do NOT induce vomiting. Rinse mouth. If vomiting occurs, place victim face downwards, with the head turned to the side and lower than the hips to prevent vomit entering the lungs. IF exposed or concerned: Get medical advice/attention.

Eye contact IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Apply continuous irrigation with water for at least 15 minutes holding eyelids apart. If eye irritation persists: Get medical advice.

Skin contact IF ON SKIN: Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before reuse.

Inhaled Generally, inhalation of fumes is unlikely to result in adverse health effects. If coughing, dizziness or shortness of breath is experienced, remove the patient to fresh air immediately. If patient is unconscious, place in the recovery position (on the side) for transport and contact a doctor.

Advice to Doctor

Treat symptomatically

5. Firefighting Measures

Fire and explosion hazards: There are no specific risks for fire/explosion for this chemical. It is not classed as flammable.

Suitable extinguishing substances: Carbon dioxide, extinguishing powder, foam, fog sprays.

Unsuitable extinguishing substances: Unknown.

Products of combustion: Oxides of sulphur. May form toxic mixtures in air and may accumulate in sumps, pits and other low-lying spaces, forming potentially explosive mixtures.

Protective equipment: Self-contained breathing apparatus. Safety boots, non-flammable overalls, gloves, hat and eye protection.

Hazchem code: 2Z

6. Accidental Release Measures

Containment If greater than 100kg is stored, secondary containment and emergency plans to manage any potential spills must be in place. In all cases design storage to prevent discharge to stormwater.

Emergency procedures In the event of spillage alert the fire brigade to location and give brief description of hazard.
 Stop the source of the leak, if safe to do so.
 Wear protective equipment to prevent skin, eye and respiratory exposure. Clear area of any unprotected personnel. Contain using sand, earth or vermiculite. Prevent by whatever means possible any spillage from entering drains, sewers, or water courses. (If this occurs contact your regional council immediately).

LEADING WITH KNOWLEDGE

Clean-up method	Use absorbent (soil, sand or other inert material). Sweep up any solids taking care not to create any dust. Collect and seal in properly labelled containers or drums for disposal. If contamination of crops, sewers or waterways has occurred advise local emergency services.
Disposal	Sweep up and collect recoverable material into labelled containers for recycling or salvage. Recycle containers wherever possible. This material may be suitable for approved landfill. Dispose of only in accord with all regulations.
Precautions	Wear protective equipment to prevent skin and eye contamination and the inhalation of dusts. Work up wind or increase ventilation.

7. Storage & Handling

Storage	Avoid storage of harmful substances with food. Store out of reach of children. Containers should be kept closed in order to minimise contamination. Keep from extreme heat and open flames. Avoid contact with incompatible substances as listed in Section 10.
Handling	Keep exposure to a minimum, and minimise the quantities kept in work areas. See section 8 with regard to personal protective equipment requirements. Avoid skin and eye contact and inhalation of vapour, mist or aerosols.

8. Exposure Controls / Personal Protective Equipment

Workplace Exposure Standards



A workplace exposure standard (WES) has not been established by WorkSafe NZ for this product. There is a general limit of 3mg/m³ for respirable particulates and 10mg/m³ for inhalable particulates when limits have not otherwise been established.

NZ Workplace Exposure Stds	Ingredient	WES-TWA	WES-STEL
	Copper Sulphate pentahydrate as Cu, dusts/mists	1mg/m ³	data unavailable

Engineering Controls

In industrial situations, it is expected that employee exposure to hazardous substances will be controlled to a level as far below the WES as practicable by applying the hierarchy of control required by the Health and Safety at Work Act (2015) and the Health and Safety at Work (General Risk and Workplace Management) Regulations 2016. Exposure can be reduced by process modification, use of local exhaust ventilation, capturing substances at the source, or other methods. If you believe air borne concentrations of mists, dusts or vapours are high, you are advised to modify processes or increase ventilation.

Personal Protective Equipment

Eyes		Avoid contact with eyes. Use safety glasses and or chemical splash goggles if splashes are possible. Select eye protection in accordance with AS/NZS 1337.
Skin		Avoid repeated or prolonged skin contact. Wear overalls, rubber boots and impervious gloves. Protective gloves or suitably resistant material must comply with AS 2161. Replace frequently. Gloves should be checked for tears or holes before use. Protective clothing must comply with AS 2919, AS3765.1 or AS3765.2. PVC or rubber boots must comply with AS/NZS 2210.2 and selected and maintained in accordance with AS/NS2210.1. Remove protective clothing and wash exposed areas with soap and water prior to eating, drinking or smoking. Wash hands after handling.
Respiratory		A respirator when airborne concentrations approach the WES (section 8). Respirators must have filters appropriate to the duty and comply with AS/NZS1716 and selected, used and maintained in accordance with AS/NS 1715. Use a respirator with a particulate filter. If using a respirator, ensure that the cartridges are correct for the potential air contamination and are in good working order. Fit testing and clear guidelines and training for use and maintenance of PPE are necessary.

WES Additional Information

Not applicable

9. Physical & Chemical Properties

Appearance	blue granules
Odour	no odour
pH	4.8
Vapour pressure	no data
Viscosity	no data
Boiling point	dehydrates at 250°C
Volatile materials	0%
Freezing / melting point	no data

LEADING WITH KNOWLEDGE

Solubility	soluble in water
Specific gravity / density	2.284 (H ₂ O = 1)
Flash point	no data
Danger of explosion	not explosive
Auto-ignition temperature	no data
Upper & lower flammable limits	no data
Corrosiveness	non corrosive

10. Stability & Reactivity

Stability	Stable
Conditions to be avoided	Containers should be kept closed in order to avoid contamination. Keep from extreme heat and open flames.
Incompatible groups	hydroxylamine
Substance Specific Incompatibility	none known
Hazardous decomposition products	sulphur trioxide (above 650°C)
Hazardous reactions	none known

11. Toxicological Information

Summary

IF SWALLOWED: may cause nausea, vomiting, salivation, stomach pains, diarrhoea.

IF IN EYES: granules may cause severe irritation with redness, pain and blurred vision.

IF ON SKIN: dust/granules may cause slight irritation. Some sensitised individuals may experience allergic contact dermatitis. May cause irritation or burns on wet skin.

IF INHALED: dusts may cause irritation of the respiratory system.

CHRONIC TOXICITY: copper sulphate may cause liver and kidney damage and central nervous stimulation followed by depression. Jaundice, pain in the liver, haemolytic anaemia.

Some individuals may become sensitised to copper sulphate through prolonged or repeated exposure and develop allergic contact dermatitis.

Supporting Data

Acute	Oral	Using LD ₅₀ 's for ingredients, the calculated LD ₅₀ (oral, rat) for the mixture is between 300 and 2000 mg/kg. Data considered includes: Copper Sulphate pentahydrate 300 mg/kg (rat).
	Dermal	No evidence of acute dermal toxicity.
Chronic	Inhaled	No evidence of acute inhalation toxicity.
	Eye	Copper sulphate is considered to be an eye irritant.
	Skin	Copper sulphate is considered to be a skin irritant.
	Sensitisation	The mixture is considered to be a contact sensitizer. Copper salts are considered contact sensitizers.
	Mutagenicity	No ingredient present at concentrations > 0.1% is considered a mutagen.
	Carcinogenicity	No ingredient present at concentrations > 0.1% is considered a carcinogen.
	Reproductive / Developmental Systemic	No ingredient present at concentrations > 0.1% is considered a reproductive or developmental toxicant or have any effects on or via lactation. Copper sulphate is classed 6.9B (oral) by EPA. Primary organ: Kidney, but also may affect liver, blood, skin.
	Aggravation of existing conditions	Individuals that have previously been sensitised to copper sulphate.

12. Ecological Data

Summary

This substance is extremely toxic in the aquatic environment and harmful towards terrestrial vertebrates.

Supporting Data

Aquatic	Using EC ₅₀ 's for ingredients, the calculated EC ₅₀ for the mixture is < 1 mg/L. Data considered includes: Copper Sulphate pentahydrate 0.032 mg/l (96hr, Oncorhynchus mykiss Rainbow trout, donaldson trout), 0.18mg/l (48hr, Daphnia magna Water flea).
Bioaccumulation	no data
Degradability	not readily biodegradable
Soil	EPA has not classified copper sulphate as ecotoxic in the soil environment.
Terrestrial vertebrate	Copper sulphate has been classified by EPA as harmful to terrestrial vertebrates.
Terrestrial invertebrate	No evidence of ecotoxicity towards terrestrial invertebrates.
Biocidal	no data
Environmental effect levels	No EELs are available for this mixture or ingredients. The default Environmental Exposure Limits (EEL) are deleted. No EEL is set for this substance at this time.

13. Disposal Considerations

Restrictions	There are no product-specific restrictions, however, local council and resource consent conditions may apply, including requirements of trade waste consents.
Disposal method	Disposal of this product must comply with the Hazardous Substances (Disposal) Notice 2017 and the requirements of the Resource Management Act for which approval should be sought from the Regional Authority. The substance must be treated and therefore rendered non-hazardous before discharge to the environment.
Contaminated packaging	Disposal of contaminated packaging must comply with the Hazardous Substances (Disposal) Notice 2017 clause 12. Ensure that the package is rendered incapable of containing any substance and is disposed in a manner that is consistent with the requirements of the substance it contained and the material of the package. If possible reuse or recycle packaging.

14. Transport Information

Land Transport Rule: Dangerous Goods 2005 - NZS 5433:2007

Transport according to NZS 5433 (Transport of Hazardous Substances on Land). Considered a dangerous good for transport.

UN number:	3077	Proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, solid, n.o.s. (cupric sulphate)
Class(es)	9	Packing group:	III
Precautions:	Ecotoxic.	Hazchem code:	2Z

IMDG

UN number:	3077	Proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, solid, n.o.s. (cupric sulphate)
Class(es)	9	Packing group:	III
Precautions:	NA	EmS	F-A, S-F

IATA

UN number:	3077	Proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, solid, n.o.s. (cupric sulphate)
Class(es)	9	Packing group:	III
Precautions:	NA	ERG guide	171

15. Regulatory Information

This product is an approved substance under the Hazardous Substances and New Organisms Act (HSNO). Approval code: HSR000824, Solid material containing 232-250g/kg copper as copper sulphate.

Specific Controls

Key workplace requirements are:

SDS	To be available within 10 minutes in workplaces storing any quantity.
Inventory	An inventory of all hazardous substances must be prepared and maintained.
Packaging	All hazardous substances should be appropriately packaged including substances that have been decanted, transferred or manufactured for own use or have been supplied
Labelling	Must comply with the Hazardous Substances (Labelling) Notice 2017.
Emergency plan	Required if > 100kg is stored.
Certified handler	Not required.
Tracking	Not required.
Bundling & secondary containment	Required if > 100kg is stored.
Signage	Required if > 100kg is stored.
Location compliance certificate	Not required.
Flammable zone	Not required.
Fire extinguisher	Not required.

Note: The above workplace requirements apply if only this particular substance is present. The complete set of controls for a location will depend on the classification and total quantities of other substances present in that location.

Other Legislation

In New Zealand, the use of this product may come under the Resource Management Act and Regulations, the Health and Safety at Work Act 2015 and the Health and Safety at Work (General Risk and Workplace Management) Regulations 2016, local Council Rules and Regional Council Plans.

16. Other Information

Abbreviations

Approval Code	Approval HSR000824, Solid material containing 232-250g/kg copper as copper sulphate Controls, EPA. www.epa.govt.nz
CAS Number	Unique Chemical Abstracts Service Registry Number
EC₅₀	Ecotoxic Concentration 50% – concentration in water which is fatal to 50% of a test population (e.g. daphnia, fish species)
EPA	Environmental Protection Authority (New Zealand)
GHS	Globally Harmonised System of Classification and Labelling of Chemicals
HAZCHEM Code	Emergency action code of numbers and letters that provide information to emergency services, especially fire fighters
HSNO	Hazardous Substances and New Organisms (Act and Regulations)
IARC	International Agency for Research on Cancer
LEL/UEL	Lower Explosive Limit/ Upper Explosive Limit
LD₅₀	Lethal Dose 50% – dose which is fatal to 50% of a test population (usually rats).
LC₅₀	Lethal Concentration 50% – concentration in air which is fatal to 50% of a test population (usually rats)
MSDS (SDS)	Material Safety Data Sheet (or Safety Data Sheet)
NICNAS	National Industrial Chemicals Notification and Assessment Scheme
NZIoC	New Zealand Inventory of Chemicals
STEL	Short Term Exposure Limit - The maximum airborne concentration of a chemical or biological agent to which a worker may be exposed in any 15 minute period, provided the TWA is not exceeded
TWA	Time Weighted Average – generally referred to WES averaged over typical work day (usually 8 hours)
UN Number	United Nations Number
WES	Workplace Exposure Standard - The airborne concentration of a biological or chemical agent to which a worker may be exposed during work hours (usually 8 hours, 5 days a week). The WES relates to exposure that has been measured by personal monitoring using procedures that gather air samples in the worker's breathing zone.

References

Data	Unless otherwise stated comes from the EPA HSNO chemical classification information database (CCID).
Controls	EPA notices, www.epa.govt.nz , Health and Safety at Work (Hazardous Substances) Regulations 2017, www.legislation.govt.nz
WES	The latest NZ Workplace Exposure Standards, published by WorkSafe NZ and available on their web site – www.worksafe.govt.nz .
Other References:	Suppliers SDS, EU ECHA, ingredients SDS's, ChemIDplus

Review

Date	Reason for review
August 2015	Not applicable – new SDS
July 2020	5 yearly update. Hazard and Precautionary phrase numbers, HSE to HSAW, MBIE to Worksafe, review of toxicological section. Group standard, section 13, 14 and 15.

Disclaimer

This SDS was prepared by Datachem LTD and is based on our current state of knowledge, including information obtained from suppliers. The SDS is given in good faith and constitutes a guideline (not a guarantee of safety). The level of risk each substance poses is relevant to its properties (as summarised in the SDS) AND HOW THE SUBSTANCE IS USED. While guidelines are given for personal protective equipment, such precautions must be relevant to the use. The likely HSNO classifications for this SDS have been estimated based on general information from the supplier (e.g., hazard, toxicological). This SDS is copyright Datachem and must not be copied, edited or used for other than intended purpose. To contact the SDS author, email info@datachem.co.nz or phone: +64 9 940 30 80.

