

1. Identification

Product identifier: HYDREX 4601

Other means of identification: None.

Recommended use of the chemical and restrictions on use

Recommended use: Biological Control Treatment. PROFESSIONAL USE ONLY

Recommended restrictions: No other uses are advised.

Manufacturer/Importer/Supplier/Distributor information

SupplierAddress: Veolia Water Technologies (SEA) PTE LTD
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2. Hazards identification

GHS classification

Physical hazards: Not classified.

Health hazards:	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 2
	Sensitization, skin	Category 1

Environmental hazards:	Hazardous to the aquatic environment, long-term hazard	Category 2
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GHS label elements, including precautionary statements

Pictograms:



Signal word: WARNING

Hazard statements:
 H315 - Causes skin irritation
 H317 - May cause an allergic skin reaction
 H319 - Causes serious eye irritation
 H411 - Toxic to aquatic life with long lasting effects

Precautionary statement

Prevention:
 Observe good industrial hygiene practices.
 P261 - Avoid breathing mist or vapor.
 P264 - Wash hands thoroughly after handling.
 P272 - Contaminated work clothing should not be allowed out of the workplace.
 P273 - Avoid release to the environment.
 P280 - Wear eye protection/face protection. Wear protective gloves.

Response:
 Wash hands after handling.
 P302 + P352 - IF ON SKIN: Wash with plenty of water/soap.
 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 First aid measures on this label).
 P333 + P313 - If skin irritation or rash 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.

Storage: Store away from incompatible materials

P410 - Protect from sunlight

Disposal: Dispose of waste and residues in accordance with local authority requirements.

P501 - Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal

Other hazards which do not result in classification: None known.

Supplemental information None.

3. Composition/information on ingredients

Substance or mixture	Mixture		
Chemical name	Common name and synonyms	CAS Number	Concentration (%)
5-chloro-2-methyl-4-isothiazolin-3-one + 2-methyl-4-isothiazolin-3-one		55965-84-9	< 1
2-methyl-4-isothiazolin-3-one		2682-20-4	< 0.2
Cupric Sulfate		7758-98-7	< 0.2
Other components below reportable levels			> 98.6

4. First-aid measures

Inhalation:	Move to fresh air. Call a physician if symptoms develop or persist
Skin contact:	Remove contaminated clothing immediately and wash skin with soap and water. In case of eczema or other skin disorders: Seek medical attention and take along these instructions. Wash contaminated clothing before reuse.
Eye contact:	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.
Ingestion:	Rinse mouth. Get medical attention if symptoms occur.
Most important symptoms/effects, acute and delayed:	Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Skin irritation. May cause redness and pain. May cause an allergic skin reaction. Dermatitis. Rash..
Indication of immediate medical attention and special treatment needed:	Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.
General information:	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Wash contaminated clothing before reuse.

5. Fire-fighting measures

Suitable extinguishing media:	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).
Unsuitable extinguishing media:	Not available.
Specific hazards arising from the	Material can be slippery when wet. During fire, gases hazardous to health

chemical:	may be formed.
Fire fighting equipment/instructions:	Move containers from fire area if you can do so without risk.
Special protective equipment and precautions for firefighters:	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Specific methods:	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards:	No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures:	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Avoid breathing mist or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Slippery when wet
Environmental precautions:	Avoid release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Avoid discharge into drains, water courses or onto the ground.
Methods and materials for containment and cleaning up:	Prevent product from entering drains. Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Never return spills to original containers for re-use

7. Handling and storage

Precautions for safe handling:	Avoid forming spray/aerosol mists. Material can be slippery when wet. Avoid breathing mist or vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Provide adequate ventilation. Wear appropriate personal protective equipment. Avoid release to the environment. Observe good industrial hygiene practices.
Conditions for safe storage, including any incompatibilities:	Protect from sunlight. Store in original tightly closed container. Store in cool, dry place.

8. Exposure controls/personal protection

Occupational exposure limits No exposure limits noted for ingredient(s)

Control parameters/Occupational exposure limits

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Cupric Sulfate (CAS 7758-98-7)	TWA	1 mg/m ³	Dust & Mist
		0.2 mg/m ³	Fume

Appropriate engineering control 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. Eye wash facilities and emergency shower must be available when handling this product.

Individual protection measures, such as personal protective equipment

Eye/face protection:	Wear safety glasses with side shields (or goggles) and a face shield. Chemical goggles and face shield are recommended. Face shield is recommended.
Skin protection:	
Hand protection	Chemical resistant gloves. Suitable gloves can be recommended by the glove supplier.
Other	Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended. Chemical resistant gloves.
Respiratory protection:	In case of insufficient ventilation, wear suitable respiratory equipment. Avoid forming spray/aerosol mists.
Thermal hazards:	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations:	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Contaminated work clothing should not be allowed out of the workplace.

9. Physical and chemical properties

Appearance	Clear
Physical state:	Liquid
Form:	Liquid
Color:	Pale Green
Odor:	Mild
Odor threshold:	Not available.
pH (solution) @ 25 °C:	3.0 – 6.0
Melting point/freezing point:	32 °F (0 °C)
Initial boiling point:	> 212 °F (> 100 °C)
Flash point:	Not available.
Evaporation rate:	Not available.
Flammability:	Not available.
Flammability limit - lower(%):	Not available.
Flammability limit - upper(%):	Not available.
Explosive limit - lower (%):	Not available.
Explosive limit - upper (%):	Not available.
Vapor pressure:	Not available.
Vapor density:	Not available.
Relative density:	Not available.
Solubility (Water):	Miscible (100%, soluble in all proportion)
Explosive property:	Not explosive
Kinematic viscosity:	Not available.
Oxidizing property:	Not oxidizing
Specific gravity (@20 °C):	1.00 – 1.10

10. Stability and reactivity

Reactivity:	Amines. Oxidizing agents. Reducing agents. Mercaptans
Chemical stability:	Material is stable under normal conditions

Possibility of hazardous reactions:	No dangerous reaction known under conditions of normal use
Conditions to avoid:	Not available.
Incompatible materials:	Not available.
Hazardous decomposition products:	Sulfur oxides, Hydrogen chloride.

11. Toxicological information

Information on likely routes of exposure

Inhalation:	Prolonged inhalation may be harmful.
Skin contact:	Causes skin irritation. May cause an allergic skin reaction.
Eye contact:	Causes serious eye irritation
Ingestion:	Expected to be a low ingestion hazard

Acute toxicity May cause an allergic skin reaction.

Product	Acute	Species	Test Results	
Hydrex 4601	Dermal	LC50	Rat	>= 2000 mg/kg calculated
	Inhalation	LD50	Rat	>= 60 mg/l calculated
	Oral	LD50	Rat	>= 11000 mg/kg calculated

* Estimates for product may be based on additional component data not shown.

Symptoms: Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Skin irritation. May cause redness and pain. May cause an allergic skin reaction. Dermatitis. Rash.

Skin corrosion/irritation: Prolonged skin contact may cause temporary irritation. Causes skin irritation.

Serious eye damage/eye irritation: Causes serious eye irritation.

Respiratory or skin sensitization

Respiratory sensitization:	Not a respiratory sensitizer
Skin sensitization:	May cause an allergic skin reaction.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic
Reproductive toxicity:	This product is not expected to cause reproductive or developmental effects
Specific target organ toxicity single exposure:	Not classified.
Specific target organ toxicity repeated exposure:	Not classified.
Aspiration hazard:	Not an aspiration hazard.
Chronic effects:	Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity: Toxic to aquatic life with long lasting effects. The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Product	Acute	Species	Test Results
Hydrex 4601	Aquatic		
	Crustacea	LC50	Daphnia magna

Fish LC50 Fish <= 100 mg/l, 96 hours calculated

* Estimates for product may be based on additional component data not shown.

Persistence and degradability: No data is available on the degradability of any ingredients in the mixture
 Bioaccumulative potential: No data is available.
 Mobility in soil: No data is available.
 Other adverse effects: No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal methods/information: Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.
 Special precautions: Dispose in accordance with all applicable regulations

14. Transport information

ADN; ADR; IATA; IMDG; RID Not regulated as dangerous goods.
 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not established.

15. Regulatory information

Safety, health and environmental regulations specific for the product in question

Prior Informed Consent (PIC) Substances (Environment Protection and Management Act, 2nd Schedule, Part 1, Jul. 1, 2013): Not regulated.
 Chemical Weapons Prohibition (Act): Not applicable.
 Environmental Protection and Management (Hazardous Substances) Regulations: Not applicable.
 Environmental Public Health Act: Not applicable
 Misuse of Drugs Act:
 Controlled Narcotic Drugs (Misuse of Drugs Act, First Schedule, Part I, II & III, as amended) Not regulated.
 Controlled Specified Drugs (Misuse of Drugs Act, Fourth Schedule, as amended) Not regulated.

International regulations

Montreal Protocol; Stockholm Convention; Rotterdam Convention; Kyoto protocol; Basel Convention: Not applicable.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Industrial Chemicals (AICIS)	No
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances(EINECS)	No

Europe	European List of Notified Chemical Substances (ELINCS)	No
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances(PICCS)	Yes
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	No

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information

References:	Not available
Issued by:	VEOLIA WATER Technologies (SEA) Pte Ltd
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