SAFETY DATA SHEET

1. Identification

Product identifier: **HYDREX 4301**

Other means of identification: None.

Recommended use of the chemical and restrictions on use

Recommended use: Water Treatment Chemical – Reduced agent

Recommended restrictions: PROFESSIONAL USE ONLY. No other uses are advised.

Manufacturer/Importer/Supplier/Distributor information

SupplierAddress: Veolia Water Technologies (SEA) PTE LTD
6 Serangoon North Avenue 5, #05-05 Singapore 554910

Contact Person: Hydrex Product Manager

Telephone / Fax: + 65 67155200 / + 65 67155205

E-mail: hydrex.asia@veolia.com

Local Emergency PhoneNumber: +65 3158 6734 (Code: 333239)

Global EmergencyContact: +1-760-476-3960 (Code: 333239)

2. Hazards identification

GHS classification

Physical hazards:	Not classified.	
Health hazards:	Acute toxicity, oral	Category 4
	Serious eye damage/eye irritation	Category 2A
Environmental hazards:	Not classified.	

GHS label elements, including precautionary statements

Pictograms:

Signal word: WARNING

Hazard statements: H302 - Harmful if swallowed.
H319 - Causes serious eye irritation.
EUH031 - Contact with acids liberates toxic gas.

Precautionary statement

Prevention: P264 - Wash thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P280 - Wear eye protection/face protection.

Response: P301 + P312 - IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
P337 + P313 - If eye irritation persists: Get medical advice/attention.

Storage: Store in a well-ventilated place. Keep container tightly closed.

Disposal: P501 - Dispose of contents/container in accordance with local / regional / national / international regulations.

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

Supplemental information EUH031 - Contact with acids liberates toxic gas.

3. Composition/information on ingredients

Substance or mixture	Mixture		
Chemical name	**Common name and synonyms**	**CAS Number**	**Concentration (%)**
Sodium Bisulfite	NaHSO3	7631-90-5	30 - 40
Other components below reportable levels			> 60

4. First-aid measures

Inhalation:	Move to fresh air. Call a physician if symptoms develop or persist
Skin contact:	Wash off with soap and water. Get medical attention if irritation develops and persists
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. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.
Most important symptoms/effects, acute anddelayed:	Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.
Indication of immediate medical attention and special treatment needed:	Provide general supportive measures and treat symptomatically. Keep victim warm. 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. Show this safety data sheet to the doctor in attendance.

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 chemical:	During fire, gases hazardous to health may be formed. Thermal decomposition can emit : Sulphur Oxides (SOx).
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. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Environmental precautions:	Avoid discharge into drains, water courses or onto the ground.
Methods and materials for containment and cleaning up:	Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this ispossible. 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 toremove residual contamination.

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.

7. Handling and storage

Precautions for safe handling:	Avoid forming spray/aerosol mists. Do not taste or swallow. Avoid contact with eyes. Avoid prolonged exposure. When using, do not eat, drink or smoke. Provide adequate ventilation. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Observe good industrial hygiene practices.
Conditions for safe storage, including any incompatibilities:	Protect from sunlight. Store in tightly closed container. Store away from incompatible materials (seeSection 10 of the SDS). Store in cool, dry place.

8. Exposure controls/personal protection

Occupational exposure limits

Singapore. PELs. (Workplace Safety and Health (Permissible Exposure Levels of Toxic Substances) Order)

Components	Type	Value
Sodium Bisulfite (CAS 7631-90-5)	TWA	5 mg/ m3

Control parameters/Occupational exposure limits

US. ACGIH Threshold Limit Values

Components	Type	Value
Sodium Bisulfite (CAS 7631-90-5)	TWA	5 mg/ m3

Appropriate engineering control measures:	Ensure adequate ventilation, especially in confined areas. Provide eyewash station.

Individual protection measures, such as personal protective equipment

Eye/face protection:	Avoid contact with eyes. Wear safety glasses with side shields (or goggles). Use face shield in case of splash risk.
Skin protection:	
Hand protection	Wear appropriate chemical resistant gloves. Use protective gloves made of: Polyvinyl chloride (PVC). Butyl rubber. Nitrile rubber.
Other	Wear suitable protective clothing. Wear apron or protective clothing in case of splashes.
Respiratory protection:	In case of insufficient ventilation, wear suitable respiratory equipment. Avoid forming spray/aerosol mists.
Thermal hazards:	Not applicable.
General hygiene considerations:	Keep away from food and drink. 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.

9. Physical and chemical properties

Appearance	Clear
Physical state:	Liquid
Form:	Liquid
Color:	Colorless to pale yellow
Odor:	Pungent.

Odor threshold:	Not available.
pH (as is) @ 25 °C:	3.0 – 5.0
Melting point/freezing point:	42.8 - 44.6 °F (6 - 7 °C)
Initial boiling point:	225 °F (107,2 °C)
Flash point:	Not available.
Evaporation rate:	Not available.
Flammability:	Not available.
Vapor pressure:	Not available.
Vapor density:	Not available.
Relative density:	Not available.
Solubility (Water):	Miscible (100%, solube in all propotion)
Explosive property:	Not explosive
Kinematic viscosity:	Not available.
Oxidizing property:	Not oxidizing
Specific gravity (@20 °C):	1.30 – 1.40

10. Stability and reactivity

Reactivity:	Not available
Chemical stability:	Material is stable under normal conditions
Possibility of hazardous reactions:	No dangerous reaction known under conditions of normal use. Hazardous polymerization does not occur
Conditions to avoid:	Freezing. Heat, sparks, flames.
Incompatible materials:	Acids. Contact with acids liberates toxic gas. Oxidizing agents.
Hazardous decomposition products:	Thermal decomposition can emit : Sulfur oxides.

11. Toxicological information

Information on likely routes of exposure

Inhalation:	Prolonged inhalation may be harmful
Skin contact:	No adverse effects due to skin contact are expected
Eye contact:	Causes serious eye irritation.
Ingestion:	Harmful if swallowed.
Acute toxicity	Harmful if swallowed.

Product	Acute		Species	Test Results
Hydrex 4301	Oral	LD50	Rat	288 - 595 mg/kg

Symptoms:	Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision
Skin corrosion/irritation:	Prolonged skin contact may cause temporary irritation
Respiratory or skin sensitization	
Respiratory sensitization:	Not a respiratory sensitizer
Skin sensitization:	This product is not expected to cause skin sensitization
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic
Carcinogenicity	

IARC Monographs. Overall Evaluation of Carcinogenicity	Sodium Bisulfite (CAS 7631-90-5): Not classifiable as to carcinogenicity to humans
Reproductive toxicity:	This product is not expected to cause reproductive or developmental effects
Specific target organ toxicity Single / repeated exposure:	Not classified.
Aspiration hazard:	Not an aspiration hazard.
Chronic effects:	Prolonged inhalation may be harmful

12. Ecological information

Ecotoxicity: 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 4301	Crustacea	LD50	Daphnia magna	> 100 mg/l Calculated

Persistence and degradability:	No data is available on the degradability of any ingredients in the mixture.
Bioaccumulative potential:	No data available.
Mobility in soil:	No data available.
Other adverse effects:	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creationpotential, 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. Dispose of contents/container in accordance with local/regional/national/international regulations.
Special precautions:	Dispose in accordance with all applicable regulations

14. Transport information

ADR / RID / AND / IATA / IMDG:	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.
Drug Precursors (Misuse of Drugs Act, Third Schedule, Parts I & II, as amended)	Not regulated.
Controlled Specified Drugs (Misuse of Drugs Act, Fourth Schedule, as amended)	Not regulated.
Temporarily Listed Drugs (Misuse of Drugs Act, Fifth 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)	Yes
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)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	Yes
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
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	Yes

*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 governingcountry(s).

16. Other information

References:	Not available
Issued by:	VEOLIA WATER Technologies (SEA) Pte Ltd
Prepared by:	Veolia Hydrex Team
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