### SAFETY DATA SHEET

### 1. Identification

**Product identifier HYDREX 4106** 

Other means of identification

Recommended use Reverse Osmosis Antiscalant

PROFESSIONAL USE ONLY

Veolia Water Technologies, Inc.

**Recommended restrictions** No other uses are advised.

Manufacturer/Importer/Supplier/Distributor information

**Address** 945 S. Brown School Road

Vandalia, Ohio

45377

**Telephone** +1-937-890-4075 +1-937-890-5495 Fax

E-mail vwtdayton.hydrex@veolia.com

**Emergency phone** 

**Company Name** 

number

+1-760-476-3962 (Code: 333239) or +1 866-519-4752 (Code: 333239)

**Contact person** Hydrex Product Manager

# 2. Hazard(s) identification

**Physical hazards** Corrosive to metals Category 1 **Health hazards** Acute toxicity, oral Category 4 Acute toxicity, dermal Category 4 Skin corrosion/irritation Category 1 Serious eye damage/eye irritation Category 1 **Environmental hazards** Hazardous to the aquatic environment, acute Category 3

hazard

Hazardous to the aquatic environment,

long-term hazard

**OSHA** defined hazards Not classified.

Label elements



Signal word Danger

**Hazard statement** May be corrosive to metals. Harmful if swallowed. Harmful in contact with skin. Causes severe skin

burns and eye damage. Causes serious eye damage. Harmful to aquatic life. Harmful to aquatic life

Category 3

with long lasting effects.

**Precautionary statement** 

**Prevention** Keep only in original container. Wash thoroughly after handling. Do not eat, drink or smoke when

using this product. Avoid release to the environment. Wear protective gloves/protective

clothing/eye protection/face protection.

Rinse mouth. If swallowed: Rinse mouth. Do NOT induce vomiting. If on skin (or hair): Take off Response

immediately all contaminated clothing. Rinse skin with water/shower. If inhaled: Remove person to fresh air and keep comfortable for breathing. 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 center/doctor. Absorb spillage to prevent material damage.

**Storage** Store locked up. Store in corrosive resistant container with a resistant inner liner.

**Disposal** Not available. Hazard(s) not otherwise

classified (HNOC)

None known.

**Supplemental information** None.

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## 3. Composition/information on ingredients

#### **Mixtures**

**Ingestion** 

Chemical name	Common name and synonyms	CAS number	%
Nitrilotrimethylenetris(phosphonic acid)		6419-19-8	10 - < 20
Phosphonic Acid		13598-36-2	1 - < 5
Other components below reportable levels			70 - < 90

<sup>\*</sup>Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

## 4. First-aid measures

**Inhalation** Move to fresh air. Call a physician if symptoms develop or persist.

**Skin contact**Take off immediately all contaminated clothing. Rinse skin with water/shower. Call a physician or

poison control center immediately. Chemical burns must be treated by a physician. 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. Call a physician or poison control center immediately.

Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If

call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting.

vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

Most important

symptoms/effects, acute and delayed

Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result.

Indication of immediate medical attention and special treatment needed

Provide general supportive measures and treat symptomatically. Chemical burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. 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

Unsuitable extinguishing

media

Specific hazards arising from

the chemical

firefighters

Special protective equipment and precautions for

Fire fighting

equipment/instructions

Specific methods

Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).

Not available.

Carbon monoxide and carbon dioxide.

Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Move containers from fire area if you can do so without risk.

Use standard firefighting procedures and consider the hazards of other involved materials.

# 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 breathe mist/vapors. 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.

Methods and materials for containment and cleaning up

Should not be released into the environment. Prevent entry into waterways, sewer, basements or confined areas.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb spillage to prevent material damage. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. 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.

## **Environmental precautions**

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS. Avoid release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Do not contaminate water. Avoid discharge into drains, water courses or onto the ground.

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## 7. Handling and storage

Avoid forming spray/aerosol mists. Do not breathe mist/vapors. Do not get in eyes, on skin, or on Precautions for safe handling

clothing. Do not taste or swallow. Avoid prolonged exposure. When using, do not eat, drink or smoke. Provide adequate ventilation. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Avoid release to the environment. Wash contaminated clothing before

reuse. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Store in a cool, dry place out of direct sunlight. Store in corrosive resistant container with a resistant inner liner. Store in tightly closed container. Keep only in the original container. Store away from incompatible materials (see Section 10 of the SDS). Store in cool, dry place.

## 8. Exposure controls/personal protection

#### **Occupational exposure limits**

The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits.

Components	Туре	Value	Form	
Nitrilotrimethylenetris(phosp	TWA	10 mg/m3	Aerosol.	
honic acid) (CAS 6419-19-8)				

**Biological limit values** No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls

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

### 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. Wear face shield if there is risk of splashes.

Skin protection

**Hand protection** Use protective gloves made of: Polyvinyl chloride (PVC). Nitrile rubber.

Wear appropriate chemical resistant clothing. Wear apron or protective clothing in case of contact. Other

Wear apron or protective clothing in case of splashes.

In case of insufficient ventilation, wear suitable respiratory equipment. Avoid forming spray/aerosol Respiratory protection

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. Liquid. Physical state **Form** Liquid.

Color Colorless to Dark yellow.

Odor Not significant. **Odor threshold** Not available. pН 0.5 - 1.532 °F (0 °C) Melting point/freezing point Initial boiling point and Not available.

boiling range

Flash point No Flammable **Evaporation rate** Not available. Flammability (solid, gas) Not applicable. Upper/lower flammability or explosive limits

Flammability limit - lower Not available.

(%)

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Flammability limit -Not available.

upper (%)

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**Explosive limit - lower** 

(%)

Not available.

**Explosive limit - upper** 

(%)

Not available.

Vapor pressure Not available. Vapor density Not available. Relative density Not available.

Solubility(ies)

Solubility (water) Not available. **Partition coefficient** Not available.

(n-octanol/water)

**Auto-ignition temperature** Not available. **Decomposition temperature** Not available. Not available. **Viscosity** 

Other information

1.10 - 1.14 (@ 20 °C) Density

**Explosive properties** Not explosive. **Oxidizing properties** Not oxidizing. 1.1 - 1.2 Specific gravity

## 10. Stability and reactivity

Reactivity Reacts violently with strong alkaline substances. This product may react with reducing agents. May

be corrosive to metals.

Chemical stability Material is stable under normal conditions. **Possibility of hazardous** Hazardous polymerization does not occur.

Conditions to avoid

reactions

Contact with incompatible materials. Do not mix with other chemicals. Strong bases. Bases. Strong oxidizing agents. Reducing agents. Metals.

**Incompatible materials Hazardous decomposition** 

products

Phosphorus compounds. No dangerous reaction known under conditions of normal use.

## 11. Toxicological information

## Information on likely routes of exposure

Inhalation May cause irritation to the respiratory system. Prolonged inhalation may be harmful.

Skin contact Causes severe skin burns. Harmful in contact with skin. Nitrilotrimethylenetris(phosphonic acid) < 0.4 OECD 404

> Result: Not classified Test Duration: 4 hours Observation Period: 72 hours

Eye contact Causes serious eye damage.

Nitrilotrimethylenetris(phosphonic acid) **OECD Guideline 405** 

Result: 53.6

Test Duration: 24 hours Observation Period: 7 day Severity: Moderately severe

**Ingestion** Causes digestive tract burns. Harmful if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including

blindness could result.

Information on toxicological effects

Harmful in contact with skin. Harmful if swallowed. **Acute toxicity** 

**Product Test Results Species** HYDREX 4106

**Acute** Dermal

LD50 Rabbit >= 2000 mg/kg Calculated

Oral LD50

>= 2000 mg/kg Calculated

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Rat

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VEOLIA 4/9

Components Species Test Results

Nitrilotrimethylenetris(phosphonic acid) (CAS 6419-19-8)

Acute Oral Liquid

LD50 Rat  $\Rightarrow$  2000 mg/kg bw/day

Phosphonic Acid (CAS 13598-36-2)

Acute Oral Liquid

LD50 Rat 1600 mg/kg bw/day

**Skin corrosion/irritation** Causes severe skin burns and eye damage.

Serious eye damage/eye irritation

----- Causes serious eye damage.

Nitrilotrimethylenetris(phosphonic acid) OECD Guidline 405

**Eye Contact** 

Nitrilotrimethylenetris(phosphonic acid) OECD Guideline 405

Result: 53.6

Test Duration: 24 hours Observation Period: 7 day Severity: Moderately severe

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.

Mutagenicity

Nitrilotrimethylenetris(phosphonic acid) OCDE 471 - reverse mutation

Result: Negative Species: Mouse

**Carcinogenicity** Not classifiable as to carcinogenicity to humans.

Nitrilotrimethylenetris(phosphonic acid) > 500 mg/kg OCDE 453

Result: Negative Species: Rat

Test Duration: 24 months

IARC Monographs. Overall Evaluation of Carcinogenicity

Not listed.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

US. National Toxicology Program (NTP) Report on Carcinogens

Not listed.

**Reproductive toxicity**This product is not expected to cause reproductive or developmental effects.

Reproductivity

Nitrilotrimethylenetris(phosphonic acid) > 275 mg/kg bw/day

Result: Non-toxic for reproduction

Specific target organ toxicity

- single exposure

Not classified.

Specific target organ toxicity

Not classified.

- repeated exposure

**Aspiration hazard** Not an aspiration hazard.

**Chronic effects** Prolonged inhalation may be harmful.

12. Ecological information

**Ecotoxicity** Harmful to aquatic life with long lasting effects. Because of the low pH of this product, it would be

expected to produce significant ecotoxicity upon exposure to aquatic organisms and aquatic

systems.

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**Product Species Test Results** 

HYDREX 4106

**Aquatic** 

Acute

EC50 Crustacea Daphnia > 100 mg/l calculated Fish LC50 Fish > 100 mg/l calculated

Components **Species Test Results** 

Nitrilotrimethylenetris(phosphonic acid) (CAS 6419-19-8)

Aquatic

Acute

EC50 Crustacea Daphnia magna 297 mg/l, 48 hours Fish LC50 Oncorhynchus mykiss (reported as Salmo 160 mg/l, 96 hours

gairdneri)

Phosphonic Acid (CAS 13598-36-2)

Acute

Other EC50 Pseudokirchnerella subcapitata 153 mg/l, 72 hours NOEC Pseudokirchnerella subcapitata 1 mg/l, 72 hours

**Aquatic** 

Acute

EC50 Crustacea Daphnia magna > 1000 mg/l, 48 hours

Fish LC50 Fish > 100 mg/l, 96 hours Cyprinus carpio NOEC Fish > 100 mg/l, 96 hours Cyprinus carpio

**Persistence and degradability** No data is available on the degradability of any ingredients in the mixture.

**Bioaccumulative potential** 

Partition coefficient n-octanol / water (log Kow)

Nitrilotrimethylenetris(phosphonic acid) -3.5

Mobility in soil No data 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 instructions** 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.

Local disposal regulations

Dispose in accordance with all applicable regulations.

Hazardous waste code D002: Waste Corrosive material [pH <=2 or =>12.5, or corrosive to steel]

The waste code should be assigned in discussion between the user, the producer and the waste

disposal company.

Waste from residues / unused products

Dispose of in accordance with local regulations. Empty containers or liners may retain some product

Contaminated packaging

residues. This material and its container must be disposed of in a safe manner (see: Disposal

instructions).

Since emptied containers may 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.

# 14. Transport information

DOT

**UN number** UN3265

**UN proper shipping name** Corrosive liquid, acidic, organic, n.o.s. (Phosphonic Acid)

Transport hazard class(es)

Class 8 **Subsidiary risk** Label(s) 8 **Packing group** II

**Environmental hazards** 

Marine pollutant Not applicable

Special precautions for Read safety instructions, SDS and emergency procedures before handling.

user

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**Special provisions** B2, IB2, T11, TP2, TP27

Packaging exceptions154Packaging non bulk202Packaging bulk242Reportable Qty (lbs)RQ:

**IATA** 

**UN number** UN3265

**UN proper shipping name** Corrosive liquid, acidic, organic, n.o.s. (Phosphonic Acid)

Transport hazard class(es)

Class 8
Subsidiary risk Packing group II
Environmental hazards No.
ERG Code 8L

**Special precautions for** Read safety instructions, SDS and emergency procedures before handling.

user

Other information

**Passenger and cargo** Allowed with restrictions. aircraft

**Cargo aircraft only** Allowed with restrictions.

**IMDG** 

**UN number** UN3265

UN proper shipping name CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (Phosphonic Acid)

Transport hazard class(es)

Class 8
Subsidiary risk Packing group II
Environmental hazards

Marine pollutant No. EmS F-A, S-B

**Special precautions for** Read safety instructions, SDS and emergency procedures before handling.

user

Transport in bulk according to Not established.

Annex II of MARPOL 73/78

and the IBC Code

DOT



IATA; IMDG



# 15. Regulatory information

**US federal regulations**This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard,

29 CFR 1910.1200.

**Toxic Substances Control Act** 

(TSCA)

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### TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

### **CERCLA Hazardous Substance List (40 CFR 302.4)**

Not listed.

### **SARA 304 Emergency release notification**

Not regulated.

## OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

### Superfund Amendments and Reauthorization Act of 1986 (SARA)

### SARA 302 Extremely hazardous substance

Not listed.

**SARA 311/312** Yes

**Hazardous chemical** 

**Classified hazard** Corrosive to metal

categories Acute toxicity (any route of exposure)

Skin corrosion or irritation

Serious eye damage or eye irritation

### SARA 313 (TRI reporting)

Not regulated.

### Other federal regulations

### Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

### Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

**Safe Drinking Water Act** 

Not regulated.

**Inventory name** 

(SDWA)

### **US state regulations**

### **California Proposition 65**

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins. For more information go to www.P65Warnings.ca.gov.

## **International Inventories** Country(s) or region

		,,,
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)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	No
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	No
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes
*A "Yes" indicates that all compo	points of this product comply with the inventory requirements administered by the governing country(s)	

## 16. Other information, including date of preparation or last revision

**Issue date** 05-21-2015 **Revision date** 08-03-2021 Version # 04 **NFPA** ratings Health: 3

Flammability: 0 Instability: 0

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SDS US



On inventory (yes/no)\*

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).



#### List of abbreviations

ACGIH: American Conference of Governmental Industrial Hygienists.

ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways (Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures).

ADR: European agreement concerning the international carriage of dangerous goods by road (Accord européen relatif transport des merchandises dangereuses par route).

ANSI: American National Standards Institute.

ATE: Acute Toxicity Estimate according to REGULATION (EC) No 1272/2008 (CLP).

BCF: Bio-concentration factor.

CAS Number: Chemical Abstracts Service Registry Number.

Ceiling: Short Term Exposure Limit Ceiling value.

CLP: Classification, Labeling and Packaging REGULATION (EC) No 1272/2008 on classification,

labeling and packaging of substances and mixtures.

CMR: Substances classified as Carcinogenic, Mutagenic or toxic for Reproduction.

DOT: Department of Transportation (49 CFR 172.101).

DSL: Canada, Domestic Substances List. EC50: Effective Concentration 50%. ECHA: European Chemical Agency.

EINECS: European Inventory of Existing Commercial Chemical Substances.

ELINCS: European List of Notified Chemical Substances. EPA: United States Environmental Protection Agency.

GHS: Globally Harmonized System of Classification and Labeling of Chemicals.

IARC: International Agency for Research on Cancer. IATA: International Air Transport Association.

IBC Code: International Code for the Construction and Equipment of Ships Carrying Dangerous

Chemicals in Bulk.

IC50: Inhibition Concentration 50%.

IMDG Code: International Maritime Dangerous Goods Code. IUCLID: International Uniform Chemical Information Database.

LC50: Lethal Concentration 50%.

LD50: Lethal Dose 50%.

N.O.S.: Not Otherwise Specified.

NDSL: Canada, Non-Domestic Substances List. NFPA: National Fire Protection Association. NOEC: No observed effect concentration. NTP: National Toxicology Program.

OECD: Organization for Economic Cooperation and Development.

OSHA: Occupational Safety & Health Administration.

PBT: Persistent, bioaccumulative, toxic. PPE: Personal Protective Equipment.

RCRA: Resource Conservation Recovery Act.

REACH: Registration, Evaluation and Authorization of Chemicals (REGULATION (EC) No 1907/2006

concerning Registration, Evaluation Authorization and Restriction of Chemicals).

SARA: Superfund Amendments and Reauthorization Act.

STEL: Short-term Exposure Limit.

SCT: Secretariat of Communications and Transportation (NOM-002-SCT/2011).

TSCA: Toxic Substance Control Act. TWA: Time Weighted Average Value. VOC: Volatile organic compounds.

UN: United Nations.

WHMIS: Workplace Hazardous Materials Information System.

WHO: World Health Organization.

**Disclaimer** Veolia Water Technologies is not able to anticipate all conditions under which this information and

its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use and or non

respect of Veolia Water Technologies' requirement.

**Revision information** This document has undergone significant changes and should be reviewed in its entirety.

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