SAFETY DATA SHEET

Issue Date 06-Oct-2018 **Revision Date** 08-Oct-2018 **Version** 1.2

1. Identification

Product identifier

Product Name NitraVer® 6 Nitrate Reagent

Other means of identification

Product Code(s) 1412099

Recommended use of the chemical and restrictions on use

Recommended Use Laboratory reagent. Determination of nitrate.

Restrictions on use For Laboratory Use Only.

Uses advised against Consumer use

Details of the supplier of the safety data sheet

Manufacturer Address
Hach Company P.O.Box 389 Loveland, CO 80539 USA +1(970) 669-3050

Emergency telephone number

Emergency Telephone +1(303) 623-5716 - 24 Hour Service +1(515)232-2533 - 8am - 4pm CST

2. Hazards identification

Classification

Acute toxicity - Oral	Category 5 - (H303)
Acute toxicity - Inhalation (Dusts/Mists)	Category 4 - (H332)
Skin corrosion/irritation	Category 2 - (H315)
Serious eye damage/eye irritation	Category 1 - (H318)
Germ cell mutagenicity	Category 2 - (H341)
Carcinogenicity	Category 1B - (H350)
Reproductive toxicity	Category 2 - (H361)
Specific target organ toxicity (repeated exposure)	Category 1 - (H372)
Acute aquatic toxicity	Category 1 - (H400)
Chronic aquatic toxicity	Category 1 - (H410)

Label elements

Signal word - Danger

Hazard statements
H303 - May be harmful if swallowed
H315 - Causes skin irritation

H318 - Causes serious eye damage
H332 - Harmful if inhaled
H341 - Suspected of causing genetic defects
H350 - May cause cancer
H361 - Suspected of damaging fertility or the unborn child
H372 - Causes damage to organs through prolonged or repeated exposure
H410 - Very toxic to aquatic life with long lasting effects

Exclamation mark
Health hazard
Corrosion
Environment

Precautionary statements
P271 - Use only outdoors or in a well-ventilated area
P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P302 + P352 - IF ON SKIN: Wash with plenty of water and soap
P332 + P313 - If skin irritation occurs: Get medical advice/attention
P362 + P364 - Take off contaminated clothing and wash it before reuse
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor
P201 - Obtain special instructions before use
P308 + P313 - IF exposed or concerned: Get medical advice/attention
P405 - Store locked up
P501 - Dispose of contents/ container to an approved waste disposal plant
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P270 - Do not eat, drink or smoke when using this product
P273 - Avoid release to the environment
P391 - Collect spillage

Other Hazards Known
Not applicable

3. Composition/information on ingredients

Substance

Not applicable.

Mixture

Chemical Family Mixture.

Chemical nature Mixture of inorganic salts. Mixture of inorganic compounds. Mixture of organic compounds.

Chemical name	CAS No.	Synonyms	Percent Range

Sodium sulfate	**7757-82-6**	**No information available**	**40 - 50%**
Glycine, N,N-1,2-cyclohexanediylbis[N-(carboxymethyl)-, trisodium salt	**36679-96-6**	**No information available**	**20 - 30%**
Phosphoric acid, potassium salt (1:1)	**7778-77-0**	**No information available**	**7 - 13%**
Potassium pyrosulfate	**7790-62-7**	**No information available**	**5 - 10%**
Cadmium	**7440-43-9**	**None**	**1 - 5%**
Cuprate(2-), [[N,N-1,2-cyclohexanediylbis[N-(carboxymethyl)glycinato]](4-)-N,N,O,O,ON,ON]-, [OC-6-21-(trans)]-	**19332-78-6**	**No information available**	**<1%**
2-Propenamide, homopolymer	**9003-05-8**	**Polyacrylamide**	**<0.1%**

4. First aid measures

Description of first aid measures

General advice Show this safety data sheet to the doctor in attendance. IF exposed or concerned: Get medical advice/attention.

Inhalation Remove to fresh air. Get medical attention immediately if symptoms occur. If breathing has stopped, give artificial respiration. Get medical attention immediately. If symptoms persist, call a physician.

Eye contact Get immediate medical advice/attention. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Keep eye wide open while rinsing. Do not rub affected area.

Skin contact Wash off immediately with soap and plenty of water for at least 15 minutes. Get medical attention if irritation develops and persists.

Ingestion Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Get medical attention.

Self-protection of the first aider Avoid contact with skin, eyes or clothing. Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Avoid breathing dust/fume/gas/mist/vapors/spray. Use personal protective equipment as required. See section 8 for more information.

Most important symptoms and effects, both acute and delayed

Symptoms Burning sensation. Coughing and/ or wheezing. Difficulty in breathing.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

5. Fire-fighting measures

Suitable Extinguishing Media Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media CAUTION: Use of water spray when fighting fire may be inefficient.

Specific hazards arising from the chemical No information available.

Hazardous combustion products Cadmium oxide. Phosphorus oxides. Sulfur oxides.

Explosion data
Sensitivity to mechanical impact None.
Sensitivity to static discharge None.

Special protective actions for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions Avoid contact with skin, eyes or clothing. Use personal protective equipment as required. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid generation of dust. Do not breathe dust.

Other information Refer to protective measures listed in Sections 7 and 8.

Environmental precautions

Environmental precautions Prevent further leakage or spillage if safe to do so.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Pick up and transfer to properly labeled containers.

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

7. Handling and storage

Precautions for safe handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Remove contaminated clothing and shoes. Ensure adequate ventilation. Take off contaminated clothing and wash before reuse. Avoid breathing dust/fume/gas/mist/vapors/spray. Avoid generation of dust.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Store locked up. Keep out of the reach of children.

8. Exposure controls/personal protection

Control parameters

Exposure Limits Based on NOM-010-STPS-2014.

Chemical name	TWA	STEL	Ceiling Limit Value
Cadmium 7440-43-9	0.01 mg/m³ 0.002 mg/m³	-	-

Appropriate engineering controls

Engineering controls	Showers Eyewash stations Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection	Tight sealing safety goggles.
Hand protection	Wear suitable gloves. Impervious gloves.
Skin and body protection	Wear suitable protective clothing. Long sleeved clothing.
Respiratory protection	No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.
General hygiene considerations	Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Wash hands before breaks and immediately after handling the product. Avoid breathing dust/fume/gas/mist/vapors/spray.

9. Physical and chemical properties

Information on basic physical and chemical properties

Physical state	Solid		
Appearance	powder	**Color**	blue metallic
Odor	None	**Odor threshold**	Not applicable

Property	**Values**	**Remarks • Method**
Molecular weight	Not applicable	
pH	4.2	5% Solution
Melting point/freezing point	No data available	
Boiling point / boiling range	No data available	
Evaporation rate	Not applicable	
Vapor pressure	Not applicable	
Vapor density (air = 1)	Not applicable	
Specific gravity (water = 1 / air = 1)	2.377	
Partition Coefficient (n-octanol/water)	log K_{ow} ~ -2.94	
Soil Organic Carbon-Water Partition Coefficient	log K_{oc} ~ -0.66	
Autoignition temperature	No data available	
Decomposition temperature	No data available	
Dynamic viscosity	Not applicable	
Kinematic viscosity	Not applicable	

Solubility(ies)

Water solubility

Water solubility classification	Water solubility	Water Solubility Temperature
Slightly soluble	> 0.1 mg/L	25 °C / 77 °F

Solubility in other solvents

Chemical Name	Solubility classification	Solubility	Solubility Temperature
Acid	Slightly soluble	> 0.1 mg/L	25 °C / 77 °F

Other Information

Metal Corrosivity

Steel Corrosion Rate Not applicable
Aluminum Corrosion Rate Not applicable

Volatile Organic Compounds (VOC) Content
Not applicable

Chemical name	CAS No.	Volatile organic compounds (VOC) content	CAA (Clean Air Act)
Sodium sulfate	7757-82-6	No data available	-
Glycine, N,N-1,2-cyclohexanediylbis[N-(carboxymethyl)-, trisodium salt	36679-96-6	No data available	-
Phosphoric acid, potassium salt (1:1)	7778-77-0	No data available	-
Potassium pyrosulfate	7790-62-7	No data available	-
Cadmium	7440-43-9	Not applicable	-
Cuprate(2-), [[N,N-1,2-cyclohexanediylbis[N-(carboxymethyl)glycinato]](4-)-N,N,O,O,ON,ON]-, [OC-6-21-(trans)]-	19332-78-6	No data available	-
2-Propenamide, homopolymer	9003-05-8	No data available	-

Explosive properties

Upper explosion limit No data available
Lower explosion limit No data available

Flammable properties

Flash point Not applicable

Flammability Limit in Air
Upper flammability limit No data available
Lower flammability limit No data available

Oxidizing properties No data available.

Bulk density No data available
Particle Size No information available

Particle Size Distribution No information available

10. Stability and reactivity

Reactivity No information available.

Chemical stability Stable under normal conditions.

Possibility of Hazardous Reactions None under normal processing.

Hazardous polymerization Hazardous polymerization does not occur.

Conditions to avoid Excessive heat.

Incompatible materials Strong acids. Strong bases. Strong oxidizing agents.

Hazardous Decomposition Products Sulfur oxides. Phosphorus oxides. Cadmium oxide.

11. Toxicological information

Information on Likely Routes of Exposure

Inhalation May cause irritation of respiratory tract. Harmful by inhalation.

Eye contact Severely irritating to eyes. Causes serious eye damage. May cause burns. May cause irreversible damage to eyes.

Skin contact Causes skin irritation.

Ingestion Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms Redness. Burning. May cause blindness. May cause redness and tearing of the eyes. Coughing and/ or wheezing.

Acute toxicity

Aggravated Medical Conditions Eye disorders. Skin disorders. Respiratory disorders. Blood disorders. Kidney disorders. Prostate. lungs.

Toxicologically synergistic products None known.

Toxicokinetics, metabolism and distribution See ingredients information below.

Chemical name	Toxicokinetics, metabolism and distribution
2-Propenamide, homopolymer (<0.1%) CAS#: 9003-05-8	Polyacrylamide is not toxic; however, unpolymerized acrylamide, which is a neurotoxin, can be present in very small amount in the polymerized acrylamide. Therefore, it is recommended to handle it with caution.

Product Acute Toxicity Data

Oral Exposure Route No data available
Dermal Exposure Route No data available
Inhalation (Dust/Mist) Exposure Route No data available
Inhalation (Vapor) Exposure Route No data available
Inhalation (Gas) Exposure Route No data available

Numerical measures of toxicity

Unknown acute toxicity 0 % of the mixture consists of ingredient(s) of unknown toxicity
0 % of the mixture consists of ingredient(s) of unknown acute oral toxicity
0 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity

0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)
0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)
0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)

Acute Toxicity Estimations (ATE)

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)	3,961.00 mg/kg
ATEmix (dermal)	No information available
ATEmix (inhalation-dust/mist)	1.45 mg/l
ATEmix (inhalation-vapor)	No information available
ATEmix (inhalation-gas)	No information available

Ingredient Acute Toxicity Data

Oral Exposure Route If available, see data below

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Phosphoric acid, potassium salt (1:1) (7 - 13%) CAS#: 7778-77-0	Mouse LD_{50}	1700 mg/kg	None reported		IUCLID (The International Uniform Chemical Information Database)
Potassium pyrosulfate (5 - 10%) CAS#: 7790-62-7	Rat LD_{50}	2340 mg/kg	None reported		Vendor SDS
Cadmium (1 - 5%) CAS#: 7440-43-9	Rat LD_{50}	225 mg/kg	None reported	None reported	ERMA (New Zealands Environmental Risk Management Authority)

Dermal Exposure Route If available, see data below

Inhalation (Dust/Mist) Exposure Route If available, see data below

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Cadmium (1 - 5%) CAS#: 7440-43-9	Rat LC_{50}	0.0125 mg/L	4 hours	None reported	ERMA (New Zealands Environmental Risk Management Authority)

Inhalation (Vapor) Exposure Route If available, see data below

Inhalation (Gas) Exposure Route If available, see data below

Product Specific Target Organ Toxicity Single Exposure Data

Oral Exposure Route	No data available
Dermal Exposure Route	No data available
Inhalation (Dust/Mist) Exposure Route	No data available
Inhalation (Vapor) Exposure Route	No data available
Inhalation (Gas) Exposure Route	No data available

Ingredient Specific Target Organ Toxicity Single Exposure Data

Oral Exposure Route If available, see data below

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Cadmium (1 - 5%) CAS#: 7440-43-9	Rabbit TD_{Lo}	70 mg/kg	None reported	None reported	RTECS (Registry of Toxic Effects of Chemical Substances)

Dermal Exposure Route If available, see data below

Inhalation (Dust/Mist) Exposure Route If available, see data below

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Cadmium (1 - 5%) CAS#: 7440-43-9	Human LC_{Lo}	39 mg/m³	20 minutes	**Vascular** Thromobosis distant from injection site **Lungs, Thorax, or Respiration** Respiratory depression	RTECS (Registry of Toxic Effects of Chemical Substances)

Inhalation (Vapor) Exposure Route If available, see data below
Inhalation (Gas) Exposure Route If available, see data below

Aspiration toxicity
If available, see data below
Kinematic viscosity Not applicable

Product Skin Corrosion/Irritation Data
No data available.

Ingredient Skin Corrosion/Irritation Data
If available, see data below

Chemical name	Test method	Species	Reported dose	Exposure time	Results	Key literature references and sources for data
Sodium sulfate (40 - 50%) CAS#: 7757-82-6	Standard Draize Test	Rabbit	500 mg	4 hours	Not corrosive or irritating to skin	ECHA (The European Chemicals Agency)
Potassium pyrosulfate (5 - 10%) CAS#: 7790-62-7	None reported	None reported	None reported	None reported	Corrosive to skin	Vendor SDS

Product Serious Eye Damage/Eye Irritation Data
No data available.

Ingredient Eye Damage/Eye Irritation Data
If available, see data below

Chemical name	Test method	Species	Reported dose	Exposure time	Results	Key literature references and sources for data
Sodium sulfate (40 - 50%) CAS#: 7757-82-6	Standard Draize Test	Rabbit	90 mg	24 hours	Not corrosive or irritating to eyes	ECHA (The European Chemicals Agency)
Potassium pyrosulfate (5 - 10%) CAS#: 7790-62-7	None reported	None reported	None reported	None reported	Corrosive to eyes	Vendor SDS

Sensitization Information

Product Sensitization Data
Skin Sensitization Exposure Route No data available.
Respiratory Sensitization Exposure Route No data available.

Ingredient Sensitization Data
Skin Sensitization Exposure Route If available, see data below.

Chemical name	Test method	Species	Results	Key literature references and sources for data
Sodium sulfate (40 - 50%) CAS#: 7757-82-6	OECD Test No. 406: Skin Sensitization	Guinea pig	Not confirmed to be a skin sensitizer	HSDB (Hazardous Substances Data Bank)

Respiratory Sensitization Exposure Route If available, see data below.

Chronic Toxicity Information

Product Specific Target Organ Toxicity Repeat Dose Data
Oral Exposure Route No data available.
Dermal Exposure Route No data available.
Inhalation (Dust/Mist) Exposure Route No data available.
Inhalation (Vapor) Exposure Route No data available.
Inhalation (Gas) Exposure Route No data available.

Ingredient Specific Target Organ Toxicity Repeat Exposure Data

Oral Exposure Route If available, see data below

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Cadmium (1 - 5%) CAS#: 7440-43-9	Rat TD_{Lo}	37.5 mg/kg	30 days	**Biochemical** Enzyme inhibition, induction, or change in blood or tissue levels (other enzymes) **Blood** Other changes **Kidney, Ureter, or Bladder** Other changes in urine composition	RTECS (Registry of Toxic Effects of Chemical Substances)

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Cadmium (1 - 5%) CAS#: 7440-43-9	Rat LOAEL	0.025 mg/m³	90 days	**Lungs, Thorax, or Respiration** Structural or functional change in trachea or bronchi	ECHA (The European Chemicals Agency)

Dermal Exposure Route If available, see data below

Inhalation (Dust/Mist) Exposure Route If available, see data below

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Cadmium (1 - 5%) CAS#: 7440-43-9	Man TD_{Lo}	0.000088 mg/L	8.6 years	**Kidney, Ureter, or Bladder** Proteinuria	RTECS (Registry of Toxic Effects of Chemical Substances)

Inhalation (Vapor) Exposure Route If available, see data below

Inhalation (Gas) Exposure Route If available, see data below

Product Carcinogenicity Data

Oral Exposure Route No data available

Dermal Exposure Route No data available

Inhalation (Dust/Mist) Exposure Route No data available

Inhalation (Vapor) Exposure Route No data available

Inhalation (Gas) Exposure Route No data available

Ingredient Carcinogenicity Data

Chemical name	CAS No.	ACGIH	IARC	NTP	OSHA	Mexico
Sodium sulfate	7757-82-6	-	-	-	-	-
Glycine, N,N-1,2-cyclohexanediyl bis[N-(carboxymethyl)-, trisodium salt	36679-96-6	-	-	-	-	-
Phosphoric acid, potassium salt (1:1)	7778-77-0	-	-	-	-	-
Potassium pyrosulfate	7790-62-7	-	-	-	-	-
Cadmium	7440-43-9	A2	Group 1	Known	X	A2
Cuprate(2-), [[N,N-1,2-cyclohexanediylbis[N-(carboxymethyl) glycinato]](4-)-N,N,O,O, ON,ON]-, [OC-6-21-(trans)]-	19332-78-6	-	-	-	-	-
2-Propenamide, homopolymer	9003-05-8	-	-	-	-	-

Legend

English
Group
Known

Reasonably Anticipated	**Translation** Group Known Reasonably Anticipated

ACGIH (American Conference of Governmental Industrial Hygienists)	A2 - Suspected Human Carcinogen
IARC (International Agency for Research on Cancer)	Group 1 - Carcinogenic to Humans
NTP (National Toxicology Program)	Known - Known Carcinogen
OSHA (Occupational Safety and Health Administration of the US Department of Labor)	X - Present

Oral Exposure Route If available, see data below
Dermal Exposure Route If available, see data below
Inhalation (Dust/Mist) Exposure Route If available, see data below

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Cadmium (1 - 5%) CAS#: 7440-43-9	Human	0.129 mg/L	20 years	**Lungs, Thorax, or Respiration** Tumors	RTECS (Registry of Toxic Effects of Chemical Substances)

Inhalation (Vapor) Exposure Route If available, see data below
Inhalation (Gas) Exposure Route If available, see data below

Product Germ Cell Mutagenicity *invitro* **Data**
No data available.

Ingredient Germ Cell Mutagenicity *invitro* **Data**
If available, see data below

Chemical name	Test	Cell Strain	Reported dose	Exposure time	Results	Key literature references and sources for data
Cadmium (1 - 5%) CAS#: 7440-43-9	DNA damage	Human lymphocyte	0.25 mmol/L	1 hours	Positive test result for mutagenicity	RTECS (Registry of Toxic Effects of Chemical Substances)
Chemical name	**Test**	**Cell Strain**	**Reported dose**	**Exposure time**	**Results**	**Key literature references and sources for data**
Cadmium (1 - 5%) CAS#: 7440-43-9	Micronucleus test	Mouse embryo	0.006 mmol/L	None reported	Positive test result for mutagenicity	RTECS (Registry of Toxic Effects of Chemical Substances)

Product Germ Cell Mutagenicity *invivo* **Data**
Oral Exposure Route No data available
Dermal Exposure Route No data available
Inhalation (Dust/Mist) Exposure Route No data available
Inhalation (Vapor) Exposure Route No data available
Inhalation (Gas) Exposure Route No data available

Ingredient Germ Cell Mutagenicity *invivo* **Data**
Oral Exposure Route If available, see data below
Dermal Exposure Route If available, see data below
Inhalation (Dust/Mist) Exposure Route If available, see data below
Inhalation (Vapor) Exposure Route If available, see data below
Inhalation (Gas) Exposure Route If available, see data below

Product Reproductive Toxicity Data
Oral Exposure Route No data available
Dermal Exposure Route No data available
Inhalation (Dust/Mist) Exposure Route No data available
Inhalation (Vapor) Exposure Route No data available
Inhalation (Gas) Exposure Route No data available

Ingredient Reproductive Toxicity Data
Oral Exposure Route If available, see data below

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Sodium sulfate (40 - 50%) CAS#: 7757-82-6	Mouse TD_{Lo}	14000 mg/kg	4 days	**Effects on Newborn** Other neonatal measures or effects	RTECS (Registry of Toxic Effects of Chemical Substances)
Cadmium (1 - 5%) CAS#: 7440-43-9	Rat TD_{Lo}	23 mg/kg	22 days	**Specific Developmental Abnormalities** Blood and lymphatic systems (including spleen and marrow)	RTECS (Registry of Toxic Effects of Chemical Substances)
Chemical name	**Endpoint type**	**Reported dose**	**Exposure time**	**Toxicological effects**	**Key literature references and sources for data**
Cadmium (1 - 5%) CAS#: 7440-43-9	Rat TD_{Lo}	215 mg/kg	Multiple generations	**Effects on Fertility** Pre-implantation mortality (e.g. reduction in number of implants per female; total number of implants per corpora lutea) **Effects on Newborn** Germ cell effects (in offspring)	RTECS (Registry of Toxic Effects of Chemical Substances)

Dermal Exposure Route If available, see data below
Inhalation (Dust/Mist) Exposure Route If available, see data below
Inhalation (Vapor) Exposure Route If available, see data below
Inhalation (Gas) Exposure Route If available, see data below

12. Ecological information

This product contains a chemical which is listed as a severe marine pollutant according to DOT.

Ecotoxicity Very toxic to aquatic life with long lasting effects.

Product Ecological Data
Aquatic toxicity

Fish No data available
Crustacea No data available
Algae No data available

Ingredient Ecological Data

Aquatic toxicity

Fish If available, see ingredient data below

Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Sodium sulfate (40 - 50%) CAS#: 7757-82-6	96 hours	None reported	LC_{50}	56 mg/L	IUCLID (The International Uniform Chemical Information Database)
Glycine, N,N-1,2-cyclohexanediylbis[N-(carboxymethyl)-, trisodium salt (20 - 30%) CAS#: 36679-96-6	96 hours	None reported	LC_{50}	356000 mg/L	Estimation through ECOSARS v1.11 part of the Estimation Programs Interface (EPI) Suite™
Potassium pyrosulfate (5 - 10%) CAS#: 7790-62-7	96 hours	*Oncorhynchus mykiss*	LC_{50}	420 mg/L	ERMA (New Zealands Environmental Risk Management Authority)
Cadmium (1 - 5%) CAS#: 7440-43-9	96 hours	*Morone saxatilis*	LC_{50}	0.019 mg/L	PEEN (Pan European Ecological Network)
Chemical name	**Exposure time**	**Species**	**Endpoint type**	**Reported dose**	**Key literature references and sources for data**

Cadmium (1 - 5%) CAS#: 7440-43-9	7 days	*Epinephelus coioides*	NOEC	0.03333 mg/L	ECHA (The European Chemicals Agency)

Crustacea If available, see ingredient data below

Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Sodium sulfate (40 - 50%) CAS#: 7757-82-6	48 Hours	*Daphnia magna*	EC_{50}	3150 mg/L	IUCLID (The International Uniform Chemical Information Database)
Glycine, N,N-1,2-cyclohexanediylbis[N-(carboxymethyl)-, trisodium salt (20 - 30%) CAS#: 36679-96-6	48 Hours	None reported	EC_{50}	26162 mg/L	Estimation through ECOSARS v1.11 part of the Estimation Programs Interface (EPI) Suite™
Potassium pyrosulfate (5 - 10%) CAS#: 7790-62-7	48 Hours	*Daphnia magna*	EC_{50}	140 mg/L	ERMA (New Zealands Environmental Risk Management Authority)
Cadmium (1 - 5%) CAS#: 7440-43-9	48 Hours	None reported	EC_{50}	0.58 mg/L	PEEN (Pan European Ecological Network)
2-Propenamide, homopolymer (<0.1%) CAS#: 9003-05-8	48 Hours	*Daphnia pulex*	LC_{50}	0.08 mg/L	CEPA (Canadian Environmental Protection Agency)
Chemical name	**Exposure time**	**Species**	**Endpoint type**	**Reported dose**	**Key literature references and sources for data**
Cadmium (1 - 5%) CAS#: 7440-43-9	21 days	*Ctenodrilus serratus*	NOEC	0.001 mg/L	ECHA (The European Chemicals Agency)

Algae If available, see ingredient data below

Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Glycine, N,N-1,2-cyclohexanediylbis[N-(carboxymethyl)-, trisodium salt (20 - 30%) CAS#: 36679-96-6	96 hours	None reported	EC_{50}	56103 mg/L	Estimation through ECOSARS v1.11 part of the Estimation Programs Interface (EPI) Suite™
Cadmium (1 - 5%) CAS#: 7440-43-9	72 Hours	None reported	EC_{50}	0.132 mg/L	PEEN (Pan European Ecological Network)
Chemical name	**Exposure time**	**Species**	**Endpoint type**	**Reported dose**	**Key literature references and sources for data**
Cadmium (1 - 5%) CAS#: 7440-43-9	3 days	*Chaetoceros compressum*	EC_{10}	0.00183 mg/L	ECHA (The European Chemicals Agency)

Other Information

Persistence and degradability

Product Biodegradability Data
No data available.

Ingredient Biodegradability Data

Chemical name	Test method	Biodegradation	Exposure time	Results
Glycine,	None reported	None reported	None	Not readily

N,N-1,2-cyclohexanediylbis[N-(carboxymethyl)-, trisodium salt (20 - 30%) CAS#: 36679-96-6			reported	biodegradable
Cadmium (1 - 5%) CAS#: 7440-43-9	Element	None reported	None reported	Not readily biodegradable

Bioaccumulation

Product Bioaccumulation Data
No data available.

Partition Coefficient (n-octanol/water) log K_{ow} ~ -2.94
Ingredient Bioaccumulation Data

Chemical name	Test method	Exposure time	Species	Bioconcentration factor (BCF)	Results
Cadmium (1 - 5%) CAS#: 7440-43-9	None reported	None reported	None reported	None reported	Not determined

Mobility

Soil Organic Carbon-Water Partition Coefficient log K_{oc} ~ -0.66
Water solubility

Water solubility classification	Water solubility	Water Solubility Temperature
Slightly soluble	> 0.1 mg/L	25 °C / 77 °F

Other adverse effects
Contains a substance with an endocrine-disrupting potential.

13. Disposal considerations

Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging Do not reuse empty containers.

14. Transportation information

MEX
UN/ID no UN3077
Proper shipping name Environmentally hazardous substance, solid, n.o.s.
Hazard Class 9
Packing Group III
Description UN3077, Environmentally hazardous substance, solid, n.o.s. (Cadmium), 9, III

Note: No special precautions necessary.

TDG
UN/ID no UN3077
Proper shipping name Environmentally hazardous substance, solid, n.o.s.
Hazard Class 9

Packing Group	III
Marine pollutant	This product contains a chemical which is listed as a severe marine pollutant according to TDG.
Description	UN3077, Environmentally hazardous substance, solid, n.o.s. (Cadmium), 9, III

U.S. DOT

UN/ID no	UN3077
Proper shipping name	Environmentally hazardous substance, solid, n.o.s.
Hazard Class	9
Packing Group	III
Reportable Quantity (RQ)	Cadmium: RQ kg= 131.59
Special Provisions	146, 335, A112, B54, B120, IB8, IP3, N20, T1, TP33, 8
Marine pollutant	This product contains a chemical which is listed as a severe marine pollutant according to DOT.
Emergency Response Guide Number	171

ICAO (air)

UN/ID no	UN3077
Proper shipping name	Environmentally hazardous substance, solid, n.o.s.
Hazard Class	9
Packing Group	III
Special Provisions	A158, A97, A179
Description	UN3077, Environmentally hazardous substance, solid, n.o.s. (Cadmium), 9, III

IATA

UN/ID no	UN3077
Proper shipping name	Environmentally hazardous substance, solid, n.o.s.
Hazard Class	9
Packing Group	III
ERG Code	9L
Special precautions for user	A158, A179, A97

IMDG

UN/ID no	UN3077
Proper shipping name	Environmentally hazardous substance, solid, n.o.s.
Hazard Class	9
Packing Group	III
EmS-No	F-A, S-F
Special precautions for user	274, 335, 966, 967
Marine pollutant	This material meets the definition of a marine pollutant

RID

UN/ID no	UN3077
Proper shipping name	Environmentally hazardous substance, solid, n.o.s.
Hazard Class	9
Packing Group	III
Classification code	M7
Description	UN3077, Environmentally hazardous substance, solid, n.o.s. (Cadmium,2-Propenamide, homopolymer), 9, III

ADR

UN/ID no	UN3077
Proper shipping name	Environmentally hazardous substance, solid, n.o.s.
Hazard Class	9
Packing Group	III
Classification code	M7
Tunnel restriction code	(E)
Special precautions for user	274, 335, 601
Description	UN3077, Environmentally hazardous substance, solid, n.o.s. (Cadmium,2-Propenamide, homopolymer), 9, III, (E)
Labels	9

ADN

Proper shipping name	Environmentally hazardous substance, solid, n.o.s.
Hazard Class	9
Packing Group	III
Classification code	M7
Special Provisions	274, 335, 601
Description	UN3077, Environmentally hazardous substance, solid, n.o.s. (Cadmium,2-Propenamide, homopolymer), 9, III
Hazard label(s)	9
Limited quantity (LQ)	5 kg

Additional information

There is a possibility that this product could be contained in a reagent set or kit composed of various compatible dangerous goods. If the item is not in a reagent set or kit, the classification given above applies.
If the item is part of a reagent set or kit the classification would change to the following:
UN3316 Chemical Kit, Hazard Class 9, Packing Group II or III.
If the item is not regulated, the Chemical Kit classification does not apply.

15. Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture

International Regulations

The Montreal Protocol on Substances that Deplete the Ozone Layer Not applicable

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

International Inventories

TSCA	Complies.
DSL/NDSL	Complies.
EINECS/ELINCS	Contact supplier for inventory compliance status.
ENCS	Contact supplier for inventory compliance status.
IECSC	Complies.
KECL	Complies.
PICCS	Contact supplier for inventory compliance status.
AICS	Contact supplier for inventory compliance status.

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances

16. Other information

NFPA	**Health hazards** 3	**Flammability** 0	**Instability** 0	**Physical and chemical properties** -
HMIS	**Health hazards** 3 *	**Flammability** 0	**Physical hazards** 0	**Personal protection** X

Key or legend to abbreviations and acronyms used in the safety data sheet

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	SKN*	Skin designation

Key literature references and sources for data used to compile the SDS
Agency for Toxic Substances and Disease Registry (ATSDR)
U.S. Environmental Protection Agency ChemView Database
European Food Safety Authority (EFSA)
EPA (Environmental Protection Agency)
Acute Exposure Guideline Level(s) (AEGL(s))
U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
U.S. Environmental Protection Agency High Production Volume Chemicals
Food Research Journal
Hazardous Substance Database
International Uniform Chemical Information Database (IUCLID)
Japan GHS Classification
Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
NIOSH (National Institute for Occupational Safety and Health)
National Library of Medicine's ChemID Plus (NLM CIP)
National Library of Medicine's PubMed database (NLM PUBMED)
National Toxicology Program (NTP)
New Zealand's Chemical Classification and Information Database (CCID)
Organization for Economic Co-operation and Development Environment, Health, and Safety Publications
Organization for Economic Co-operation and Development High Production Volume Chemicals Program
Organization for Economic Co-operation and Development Screening Information Data Set
RTECS (Registry of Toxic Effects of Chemical Substances)
World Health Organization

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The information is believed to be accurate, but it is not exhaustive and must be used only as guidance. It is based on the current state of knowledge of the chemical substance or mixture and is applicable to the appropriate safety precautions for the product.

Disclaimer

USER RESPONSIBILITY: Each user should read and understand this information and incorporate it in individual site safety programs in accordance with applicable hazard communication standards and regulations.

THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED TO BE ACCURATE. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF.

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End of Safety Data Sheet