



Be Right™

SAFETY DATA SHEET

Issue Date 08-Mar-2021

Revision Date 10-Feb-2025

Version 5.2

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1. IDENTIFICATION

Product identifier

Product Name NitraVer® 5 Nitrate Reagent

Other means of identification

Product Code(s) 2106169

Safety data sheet number M00049

UN/ID no UN3288

Recommended use of the chemical and restrictions on use

Recommended Use Laboratory reagent. Determination of nitrate.

Uses advised against Consumer use.

Restrictions on use For Laboratory Use Only.

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

+1(303) 623-5716 - 24 Hour Service

2. HAZARDS IDENTIFICATION

Classification

Regulatory Status

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity - Oral	Category 4
Acute toxicity - Inhalation (Dusts/Mists)	Category 3
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2A
Skin sensitization	Category 1
Mutagenicity	Category 2
Carcinogenicity	Category 1B
Reproductive toxicity	Category 2
Specific target organ toxicity (repeated exposure)	Category 1
Aquatic Acute Toxicity	Category 1
Chronic aquatic toxicity	Category 1

Hazards not otherwise classified (HNOC)

Not applicable

Label elements

Signal word

Danger



Hazard statements

H302 - Harmful if swallowed
H315 - Causes skin irritation
H317 - May cause an allergic skin reaction
H319 - Causes serious eye irritation
H331 - Toxic 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

Precautionary statements

P271 - Use only outdoors or in a well-ventilated area
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P311 - Call a POISON CENTER or doctor/physician
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed
P405 - Store locked up
P501 - Dispose of contents/ container to an approved waste disposal plant
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P362 - Take off contaminated clothing and wash before reuse
P280 - Wear protective gloves, protective clothing, eye protection, and face protection
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 attention
P272 - Contaminated work clothing should not be allowed out of the workplace
P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention
P363 - Wash contaminated clothing before reuse
P201 - Obtain special instructions before use
P308 + P313 - IF exposed or concerned: Get medical advice/attention
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
P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
P330 - Rinse mouth

Other Hazards Known

None

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance

Not applicable

Mixture

Chemical Family

Mixture.

Chemical nature

Mixture of inorganic salts.

Percent ranges are used where confidential product information is applicable.

Chemical name	CAS No.	Percent Range	HMRIC #
Benzenesulfonic acid, 4-amino-	121-57-3	30 - 40%	-
Benzoic acid, 2,5-dihydroxy-	490-79-9	20 - 30%	-
Magnesium sulfate	7487-88-9	10 - 13%	-
Cadmium	7440-43-9	3 - 7%	-
Copper, [propanedioato(2-)-O,O]-	7268-92-0	<1%	-
2-Propenamide, homopolymer	9003-05-8	<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. Do not breathe dust. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If breathing is difficult, (trained personnel should) give oxygen.
Eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists. Do not rub affected area.
Skin contact	May cause an allergic skin reaction. In the case of skin irritation or allergic reactions see a physician. Wash off immediately with soap and plenty of water for at least 15 minutes.
Ingestion	Do NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately.
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. Do not breathe dust. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

Most important symptoms and effects, both acute and delayed

Symptoms	Itching. Rashes. Hives. Burning sensation. Coughing and/ or wheezing. Difficulty in breathing.
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Indication of any immediate medical attention and special treatment needed

Note to physicians	May cause sensitization in susceptible persons. Treat symptomatically.
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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	Product is or contains a sensitizer. May cause sensitization by skin contact.

Hazardous combustion products	Cadmium oxide. Nitrogen oxides. Sulfur oxides. Phosphorus oxides. Carbon monoxide, Carbon dioxide.
Special protective equipment for fire-fighters	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

6. ACCIDENTAL RELEASE MEASURES

U.S. Notice	Only persons properly qualified to respond to an emergency involving hazardous substances may respond to a spill according to federal regulations (OSHA 29 CFR 1910.120(a)(v)) and per your company's emergency response plan and guidelines/procedures. See Section 13, Special Instructions for disposal assistance. Outside of the US, only persons properly qualified according to state or local regulations should respond to a spill involving chemicals.
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Personal precautions, protective equipment and emergency procedures

Personal precautions	Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. 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.
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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	Take up mechanically, placing in appropriate containers for disposal.
Prevention of secondary hazards	Clean contaminated objects and areas thoroughly observing environmental regulations.
Reference to other sections	See section 8 for more information. See section 13 for more information.

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. In case of insufficient ventilation, wear suitable respiratory equipment. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse. Remove contaminated clothing and shoes. Do not breathe dust. Avoid generation of dust. Handle product only in closed system or provide appropriate exhaust ventilation.
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Conditions for safe storage, including any incompatibilities

Storage Conditions	Keep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children. Store locked up.
Flammability class	Not applicable

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Chemical name	ACGIH TLV	OSHA PEL	NIOSH
Cadmium CAS#: 7440-43-9	TWA: 0.01 mg/m ³ TWA: 0.002 mg/m ³ respirable particulate matter	TWA: 5 µg/m ³ (vacated) STEL: 0.3 ppm Ceiling: 0.3 mg/m ³ Ceiling: 0.6 mg/m ³	IDLH: 9 mg/m ³ dust
Copper, [propanedioato(2-)-O,O]- CAS#: 7268-92-0	TWA: 1 mg/m ³ Cu dust and mist	NDF	IDLH: 100 mg/m ³ Cu dust and mist TWA: 1 mg/m ³ Cu dust and mist

Appropriate engineering controls

Engineering Controls

Showers
Eyewash stations
Ventilation systems.

Individual protection measures, such as personal protective equipment

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.

Hand Protection

Wear suitable gloves. Impervious gloves. Barrier creams may help to protect the exposed areas of skin. Gloves must be inspected prior to use. The selected protective gloves have to satisfy the specifications of EU Directive 2016/425 and the standard EN 374 derived from it. Chemical resistant gloves made of butyl rubber or nitrile rubber category III according to EN 374-1:2016.

Eye/face protection

Wear safety glasses with side shields (or goggles). If splashes are likely to occur, wear safety glasses with side-shields.

Skin and body protection

Wear suitable protective clothing. Long sleeved clothing.

General Hygiene Considerations

Do not eat, drink or smoke when using this product. Wash hands before breaks and immediately after handling the product. Wear suitable gloves and eye/face protection. Avoid contact with skin, eyes or clothing. Do not breathe dust. Take off contaminated clothing and wash before reuse. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended.

Environmental exposure controls

Local authorities should be advised if significant spillages cannot be contained. Do not allow into any sewer, on the ground or into any body of water.

Thermal hazards

None under normal processing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Solid	Color	Gray
Appearance	powder	Odor threshold	Not applicable
Odor	Odorless		

Property	Values	Remarks • Method
Molecular weight	Not applicable	
pH	2.8	5% @ 20°C

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Melting point / freezing point 180 °C / 356 °F
Initial boiling point and boiling range No data available
Evaporation rate Not applicable
Vapor pressure Not applicable
Relative vapor density No data available
Specific gravity - VALUE 1 2.0
Partition coefficient log K_{ow} ~ 0.41
Soil Organic Carbon-Water Partition Coefficient log K_{oc} ~ 0.34
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
Soluble	> 1000 mg/L	25 °C / 77 °F

Solubility in other solvents

Chemical Name	Solubility classification	Solubility	Solubility Temperature
Acid	Soluble	> 1000 mg/L	25 °C / 77 °F

Other information

Corrosive to metals

Steel Corrosion Rate
Aluminum Corrosion Rate

Not applicable
Not applicable

Volatile Organic Compounds (VOC) Content

Not applicable

Chemical name	CAS No.	Volatile organic compounds (VOC) content	CAA (Clean Air Act)
Benzenesulfonic acid, 4-amino-	121-57-3	No data available	X
Benzoic acid, 2,5-dihydroxy-	490-79-9	No data available	-
Magnesium sulfate	7487-88-9	No data available	-
Cadmium	7440-43-9	Not applicable	-
Copper, [propanedioato(2-)-O,O]-	7268-92-0	No data available	-
2-Propenamide, homopolymer	9003-05-8	No data available	-

Explosive properties

Upper explosion limit
Lower explosion limit

No data available
No data available

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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

10. STABILITY AND REACTIVITY

Reactivity

Not applicable.

Chemical stability

Stable under normal conditions.

Explosion data

Sensitivity to Mechanical Impact None.

Sensitivity to Static Discharge None.

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

Phosphorus oxides. Sulfur oxides. Carbon dioxide. Carbon monoxide. Nitrogen oxides.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Inhalation

May cause irritation of respiratory tract. Toxic by inhalation.

Eye contact

Irritating to eyes. Causes serious eye irritation.

Skin contact

May cause sensitization by skin contact. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons. Causes skin irritation.

Ingestion

Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Harmful if swallowed.

Symptoms

Itching. Rashes. Hives. Redness. May cause redness and tearing of the eyes. Coughing and/ or wheezing. Difficulty in breathing.

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Acute toxicity

Harmful if swallowed
Toxic if inhaled

Mixture

Test data reported below.

Oral Exposure Route

Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Rat LD ₅₀	1500 mg/kg	None reported	Behavioral Decreased locomotor activity Lungs, Thorax, or Respiration Respiratory depression Gastrointestinal Diarrhea Piloerection Chronic Death	Outside testing

Ingredient Acute Toxicity Data

Test data reported below.

Oral Exposure Route

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Benzenesulfonic acid, 4-amino- (30 - 40%) CAS#: 121-57-3	Rat LD ₅₀	12300 mg/kg	None reported	None reported	IUCLID
Benzoic acid, 2,5-dihydroxy- (20 - 30%) CAS#: 490-79-9	Rat LD ₅₀	800 mg/kg	None reported	None reported	RTECS
Cadmium (3 - 7%) CAS#: 7440-43-9	Rat LD ₅₀	225 mg/kg	None reported	None reported	ERMA

Inhalation (Dust/Mist) Exposure Route

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Cadmium (3 - 7%) CAS#: 7440-43-9	Rat LC ₅₀	0.025 mg/L	None reported	None reported	LOLI

Unknown Acute Toxicity

0% of the mixture consists of ingredient(s) of unknown toxicity.

Acute Toxicity Estimations (ATE)

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

ATEmix (oral)	No information available
ATEmix (dermal)	No information available
ATEmix (inhalation-dust/mist)	0.646 mg/l
ATEmix (inhalation-vapor)	No information available
ATEmix (inhalation-gas)	No information available

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Skin corrosion/irritation

Classification based on data available for ingredients. Irritating to skin.

Mixture

No data available.

Ingredient Skin Corrosion/Irritation Data

Test data reported below.

Chemical name	Test method	Species	Reported dose	Exposure time	Results	Key literature references and sources for data
Benzenesulfonic acid, 4-amino- (30 - 40%) CAS#: 121-57-3	Standard Draize Test	Rabbit	500 mg	24 hours	Mild skin irritant	RTECS

Serious eye damage/irritation

Classification based on data available for ingredients. Irritating to eyes.

Mixture

No data available.

Ingredient Eye Damage/Eye Irritation Data

Test data reported below.

Chemical name	Test method	Species	Reported dose	Exposure time	Results	Key literature references and sources for data
Benzenesulfonic acid, 4-amino- (30 - 40%) CAS#: 121-57-3	Standard Draize Test	Rabbit	100 mg	24 hours	Eye irritant	RTECS

Respiratory or skin sensitization

May cause sensitization by skin contact.

Mixture

No data available.

Ingredient Sensitization Data

Test data reported below.

Skin Sensitization Exposure Route

Chemical name	Test method	Species	Results	Key literature references and sources for data
Benzenesulfonic acid, 4-amino- (30 - 40%) CAS#: 121-57-3	OECD Test No. 406: Skin Sensitization	Guinea pig	Confirmed to be a skin sensitizer	IUCLID

STOT - single exposure

Based on available data, the classification criteria are not met.

Mixture

No data available.

Ingredient Specific Target Organ Toxicity Single Exposure Data

Test data reported below.

Oral Exposure Route

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Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Cadmium (3 - 7%) CAS#: 7440-43-9	Rabbit TD _{Lo}	70 mg/kg	None reported	None reported	RTECS

Inhalation (Dust/Mist) Exposure Route

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Cadmium (3 - 7%) CAS#: 7440-43-9	Human LC _{Lo}	39 mg/m ³	20 minutes	Vascular Thromobosis distant from injection site Lungs, Thorax, or Respiration Respiratory depression	RTECS

STOT - repeated exposure

Causes damage to organs through prolonged or repeated exposure.

Mixture

No data available.

Ingredient Specific Target Organ Toxicity Repeat Exposure Data

Test data reported below.

Oral Exposure Route

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Cadmium (3 - 7%) 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

Inhalation (Dust/Mist) Exposure Route

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Cadmium (3 - 7%) CAS#: 7440-43-9	Man TD _{Lo}	0.000088 mg/L	8.6 years	Kidney, Ureter, or Bladder Proteinuria	RTECS

Carcinogenicity

Classification based on data available for ingredients. Contains a known or suspected carcinogen.

Mixture

No data available.

Ingredient Carcinogenicity Data

Test data reported below.

Chemical name	CAS No.	ACGIH	IARC	NTP	OSHA
Benzenesulfonic acid, 4-amino-	121-57-3	-	-	-	-

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Benzoic acid, 2,5-dihydroxy-	490-79-9	-	-	-	-
Magnesium sulfate	7487-88-9	-	-	-	-
Cadmium	7440-43-9	A2	Group 1	Known	X
Copper, [propanedioato(2-)-O,O]-	7268-92-0	-	-	-	-
2-Propenamide, homopolymer	9003-05-8	-	-	-	-

Legend

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	X - Present

Inhalation (Dust/Mist) Exposure Route

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Cadmium (3 - 7%) CAS#: 7440-43-9	Human	0.129 mg/L	20 years	Lungs, Thorax, or Respiration Tumors	RTECS

Germ cell mutagenicity

Based on available data, the classification criteria are not met.

Mixture invitro Data

No data available.

Substance invitro Data

Test data reported below.

Chemical name	Test	Cell Strain	Reported dose	Exposure time	Results	Key literature references and sources for data
Benzenesulfonic acid, 4-amino- (30 - 40%) CAS#: 121-57-3	Mutation in microorganisms	<i>Salmonella typhimurium</i>	None reported	None reported	Negative	IUCLID
Benzoic acid, 2,5-dihydroxy- (20 - 30%) CAS#: 490-79-9	DNA inhibition	Human lymphocyte	1 mmol/L	None reported	Positive test result for mutagenicity	RTECS
Cadmium (3 - 7%) CAS#: 7440-43-9	DNA damage	Human lymphocyte	0.25 mmol/L	1 hours	Positive test result for mutagenicity	RTECS

Mixture invivo Data

No data available.

Substance invivo Data

No data available.

Reproductive toxicity

Classification based on data available for ingredients. Contains a known or suspected reproductive toxin. The table below indicates ingredients above the cut-off threshold considered as relevant which are listed as reproductive toxins.

Mixture

No data available.

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Ingredient Reproductive Toxicity Data

Test data reported below.

Oral Exposure Route

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Cadmium (3 - 7%) CAS#: 7440-43-9	Rat TD _{Lo}	23 mg/kg	22 days	Specific Developmental Abnormalities Blood and lymphatic systems (including spleen and marrow)	RTECS

Aspiration hazard

Based on available data, the classification criteria are not met.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Very toxic to aquatic life with long lasting effects.

Unknown aquatic toxicity

0% of the mixture consists of components(s) of unknown hazards to the aquatic environment.

Mixture

Aquatic Acute Toxicity

No data available.

Aquatic Chronic Toxicity

No data available.

Substance

Aquatic Acute Toxicity

Test data reported below.

Fish

Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Benzenesulfonic acid, 4-amino- (30 - 40%) CAS#: 121-57-3	96 hours	<i>Pimephales promelas</i>	LC ₅₀	100.4 mg/L	IUCLID
Benzoic acid, 2,5-dihydroxy- (20 - 30%) CAS#: 490-79-9	96 hours	None reported	LC ₅₀	1140 mg/L	ECOSARS
Magnesium sulfate (10 - 13%) CAS#: 7487-88-9	96 hours	<i>Gambusia affinis</i>	LC ₅₀	15500 mg/L	IUCLID
Cadmium (3 - 7%) CAS#: 7440-43-9	96 hours	<i>Morone saxatilis</i>	LC ₅₀	0.019 mg/L	PEEN

Crustacea

Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Benzenesulfonic acid, 4-amino- (30 - 40%)	48 Hours	<i>Daphnia magna</i>	EC ₅₀	85.66 mg/L	IUCLID

CAS#: 121-57-3 Benzoic acid, 2,5-dihydroxy- (20 - 30%) CAS#: 490-79-9	48 Hours	None reported	EC ₅₀	9811 mg/L	ECOSARS
Cadmium (3 - 7%) CAS#: 7440-43-9	48 Hours	None reported	EC ₅₀	0.58 mg/L	PEEN
2-Propenamide, homopolymer (<0.1%) CAS#: 9003-05-8	48 Hours	<i>Daphnia pulex</i>	LC ₅₀	0.08 mg/L	CEPA

Algae

Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Benzenesulfonic acid, 4-amino- (30 - 40%) CAS#: 121-57-3	72 Hours	<i>Scenedesmus subspicatus</i>	EC ₅₀	91 mg/L	IUCLID
Benzoic acid, 2,5-dihydroxy- (20 - 30%) CAS#: 490-79-9	96 hours	None reported	EC ₅₀	388 mg/L	ECOSARS
Magnesium sulfate (10 - 13%) CAS#: 7487-88-9	72 Hours	<i>Scenedesmus subspicatus</i>	EC ₅₀	2700 mg/L	IUCLID
Cadmium (3 - 7%) CAS#: 7440-43-9	72 Hours	None reported	EC ₅₀	0.132 mg/L	PEEN

Aquatic Chronic Toxicity

Test data reported below.

Fish

Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Cadmium (3 - 7%) CAS#: 7440-43-9	7 days	<i>Epinephelus coioides</i>	NOEC	0.03333 mg/L	ECHA

Crustacea

Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Cadmium (3 - 7%) CAS#: 7440-43-9	21 days	<i>Ctenodrilus serratus</i>	NOEC	0.001 mg/L	ECHA

Algae

Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Cadmium (3 - 7%) CAS#: 7440-43-9	3 days	<i>Chaetoceros compressum</i>	EC ₁₀	0.00183 mg/L	ECHA

Persistence and degradability

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Mixture

No data available.

Bioaccumulation

Material does not bioaccumulate

Mixture

No data available.

Partition coefficient

log K_{ow} ~ 0.41

Mobility

Soil Organic Carbon-Water Partition Coefficient

log K_{oc} ~ 0.34

Other adverse effects

No information available

Chemical name	EU - Endocrine Disruptors Candidate List	EU - Endocrine Disruptors - Evaluated Substances	Endocrine disrupting potential
Benzoic acid, 2,5-dihydroxy- (20 - 30%) CAS#: 490-79-9	Group III Chemical	-	-

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.

US EPA Waste Number

D006

Chemical name	RCRA	RCRA - Basis for Listing	RCRA - D Series Wastes	RCRA - U Series Wastes
Cadmium 7440-43-9	-	Included in waste streams: F006, F039, K061, K069, K100	1.0 mg/L regulatory level	-

Special instructions for disposal

Dispose of material in an E.P.A. approved hazardous waste facility.

14. TRANSPORT INFORMATION

DOT

UN/ID no UN3288
Proper shipping name TOXIC SOLID, INORGANIC, N.O.S.
DOT Technical Name Cadmium
Transport hazard class(es) 6.1
Packing Group III
Emergency Response Guide Number 151

TDG

UN/ID no UN3288
Proper shipping name TOXIC SOLID, INORGANIC, N.O.S.
TDG Technical Name Cadmium
Transport hazard class(es) 6.1
Packing Group III

IATA

UN number or ID number	UN3288
Proper shipping name	Toxic solid, inorganic, n.o.s.
IATA Technical Name	Cadmium
Transport hazard class(es)	6.1
Packing group	III
ERG Code	6L
Special Provisions	A3,A5

IMDG

UN number or ID number	UN3288
Proper shipping name	TOXIC SOLID, INORGANIC, N.O.S.
IMDG Technical Name	Cadmium
Transport hazard class(es)	6.1
Packing Group	III
EmS-No	F-A, S-A
Special Provisions	223, 274

Note: No special precautions necessary.

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

National Inventories

For Inventory status, "complies" means, listed on the inventory, exempted or otherwise complies.

TSCA	Complies
DSL/NDSL	Complies

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

International Inventories

EINECS/ELINCS	Complies
ENCS	Complies
IECSC	Complies
KECI	Complies
PICCS	Does not comply
TCSI	Complies
AICS	Complies
NZIoC	Complies

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
TCSI - Taiwan Chemical Substances Inventory
AICS - Australian Inventory of Chemical Substances
NZIoC - New Zealand Inventory of Chemicals

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical

or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical name	SARA 313 - Threshold Values %
Cadmium (CAS #: 7440-43-9)	0.1
Copper, [propanedioato(2-)-O,O]- (CAS #: 7268-92-0)	1.0

SARA 311/312 Hazard Categories

Acute health hazard	Yes
Chronic Health Hazard	Yes
Fire hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Chemical name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Cadmium 7440-43-9	-	X	X	-
Copper, [propanedioato(2-)-O,O]- 7268-92-0	-	X	-	-

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

Chemical name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Cadmium 7440-43-9	10 lb	-	RQ 10 lb final RQ RQ 4.54 kg final RQ

US State Regulations

California Proposition 65

This product contains the following Proposition 65 chemicals

Chemical name	California Proposition 65
Cadmium (CAS #: 7440-43-9)	Carcinogen Developmental Male Reproductive



WARNING: This product can expose you to chemicals including Cadmium, which is known to the State of California to cause cancer and birth defects or other reproductive harm.
For more information, go to <http://www.P65Warnings.ca.gov>

IMERC: Not applicable

U.S. State Right-to-Know Regulations

This product may contain substances regulated by state right-to-know regulations.

Chemical name	New Jersey	Massachusetts	Pennsylvania
Cadmium 7440-43-9	X	X	X
Copper, [propanedioato(2-)-O,O]-	X	-	X

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7268-92-0			
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U.S. EPA Label Information

Chemical name	FIFRA	FDA
Magnesium sulfate	-	21 CFR 184.1443

16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OF THE LAST REVISION

Special Comments

None

Additional information

Global Automotive Declarable Substance List (GADSL)

Chemical name	Global Automotive Declarable Substance List Classifications	Global Automotive Declarable Substance List Thresholds
Magnesium sulfate 7487-88-9	Declarable Substance (FI)	1 % 0.1 %
Cadmium 7440-43-9	Declarable Substance (LR) Prohibited Substance (LR)	0.002 % 0.01 %

NFPA and HMIS Classifications

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

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

ACGIH	ACGIH (American Conference of Governmental Industrial Hygienists)
ATSDR	ATSDR (Agency for Toxic Substances and Disease Registry)
CCRIS	CCRIS (Chemical Carcinogenesis Research Information System)
CDC	CDC (Center for Disease Control)
CEPA	CEPA (Canadian Environmental Protection Agency)
CICAD	CICAD (Concise International Chemical Assessment Documents)
ECHA	ECHA (The European Chemicals Agency)
EEA	EEA (European Environment Agency)
EPA	Environmental Protection Agency
ERMA	ERMA (New Zealands Environmental Risk Management Authority)
ECOSARS	Estimation through ECOSARS v1.11 part of the Estimation Programs Interface (EPI) Suite™
FDA	FDA (Food & Drug Administration)
GESTIS	GESTIS (Information System on Hazardous Substances of the German Social Accident Insurance)
HSDB	HSDB (Hazardous Substances Data Bank)
INERIS	INERIS (The National Industrial Environment and Risks Institute)
IPCS INCHEM	IPCS INCHEM (International Programme on Chemical Safety)
IUCLID	IUCLID (The International Uniform Chemical Information Database)
NITE	Japan National Institute of Technology and Evaluation (NITE)
NIH	NIH (National Institutes of Health)
NIOSH	NIOSH (National Institute for Occupational Safety and Health)
LOLI	LOLI (List of Lists - An International Chemical Regulatory Database)
NDF	no data
NICNAS	Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)

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NIOSH IDLH	Immediately Dangerous to Life or Health
OSHA	Occupational Safety and Health Administration of the US Department of Labor
PEEN	PEEN (Pan European Ecological Network)
RTECS	RTECS (Registry of Toxic Effects of Chemical Substances)
SIDS	SIDS (Screening Information Dataset) for High Volume Chemicals
SYKE	The Finnish Environment Institute (SYKE)
USDA	USDA (United States Department of Agriculture)
USDC	USDC (United States Department of Commerce)
WHO	WHO (World Health Organization)

Legend - Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
MAC	Maximum Allowable Concentration	Ceiling	Ceiling Limit Value
X	Listed	Vacated	These values have no official status. The only binding levels of contaminants are those listed in the final OSHA PEL. These lists are for reference purposes only. Please note that some reference state regulations of these "liberated" exposure limits in their state regulations.
SKN*	Skin designation	SKN+	Skin sensitization
RSP+	Respiratory sensitization	**	Hazard Designation
C	Carcinogen	R	Reproductive toxicant
M	mutagen		

Prepared By Hach Product Compliance Department

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Revision Note SDS sections updated
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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.

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End of Safety Data Sheet