SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878

Issue Date 27-Nov-2006 **Revision Date** 23-Mar-2026 **Print Date** 23-Mar-2026 **Version** 5.2

Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Product Code(s) 1403599

Product Name NitraVer® 5 Nitrate Reagent

Unique Formula Identifier (UFI) K6YN-7FYY-M00S-4S91

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Laboratory Reagent. Determination of nitrate.

Uses advised against No information available

1.3. Details of the supplier of the safety data sheet

Supplier
HACH LANGE GmbH
Willstätterstr. 11
D-40549 Düsseldorf
Tel: +49 (0)211 5288-383
sds@hach.com

Responsible country contact:

HACH UK
Laser House
Ground Floor, Suite B
Waterfront Quay, Salford Quays
GB - Manchester, M50 3XW
Tel. +44 (0) 161 872 1487
info-uk@hach.com

HACH Ireland
Unit 34 GB Business Park
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T45 H681
Tel. +353 (0)146 02 522
info-ie@hach.com

E-mail address info-uk@hach.com

info-ie@hach.com

1.4. Emergency telephone number

UK: Chemtrec: +44 20 3807 3798
IE: National Poisons Information Centre (NPIC) 01 809 2566 (24/7)

Section 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Acute toxicity - Inhalation (Dusts/Mists)	Category 4 - (H332)
Skin corrosion/irritation	Category 2 - (H315)
Serious eye damage/eye irritation	Category 2 - (H319)
Skin sensitisation	Category 1 - (H317)
Germ cell mutagenicity	Category 2 - (H341)
Carcinogenicity	Category 1B - (H350)
Reproductive toxicity	Category 2 - (H361fd)
Specific target organ toxicity (repeated exposure)	Category 2 - (H373)
Chronic aquatic toxicity	Category 2 - (H411)

2.2. Label elements

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Contains Benzenesulfonic acid, 4-amino-; Cadmium



Signal word
Danger

Hazard statements
H315 - Causes skin irritation
H317 - May cause an allergic skin reaction
H319 - Causes serious eye irritation
H332 - Harmful if inhaled
H341 - Suspected of causing genetic defects
H350 - May cause cancer
H361fd - Suspected of damaging fertility. Suspected of damaging the unborn child
H373 - May cause damage to organs through prolonged or repeated exposure
H411 - Toxic to aquatic life with long lasting effects

Precautionary statements
P260 - Do not breathe dust/fume/gas/mist/vapours/spray
P273 - Avoid release to the environment
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P308 + P313 - IF exposed or concerned: Get medical advice/attention
P391 - Collect spillage

2.3. Other hazards

May be harmful if swallowed. Toxic to aquatic life.

PBT & vPvB
This mixture contains no substance considered to be persistent, bioaccumulating or toxic (PBT)
This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB)

Endocrine Disruptor Information
This product does not contain any known or suspected endocrine disruptors.

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Not applicable

3.2 Mixtures

Chemical name	CAS No. EC No. Index No.	Weight-%	Classification according to Regulation (EC) No. 1272/2008 [CLP]	Specific concentration limit (SCL)	M-Factor	M-Factor (long-term)
Benzenesulfonic acid, 4-amino-	121-57-3 204-482-5 612-014-00-X	10 - 20%	Skin Irrit. 2 - H315 Skin Sens. 1 - H317 Eye Irrit. 2 - H319 Aquatic Chronic 3 - H412		-	-
Benzoic acid, 2,5-dihydroxy-	490-79-9 207-718-5 -	10 - 20%	Acute Tox. 4 - H302		-	-
Cadmium	7440-43-9 231-152-8 048-002-00-0	1 - 5%	Acute Tox. 3 - H301 Acute Tox. 2 - H330 Muta. 2 - H341 Carc. 1B - H350 Repr. 2 - H361fd STOT RE 1 - H372 Aquatic Acute 1 - H400 Aquatic Chronic 1 - H410		-	-
2-Propenamide, homopolymer	9003-05-8 - -	<0.1%	Aquatic Acute 1 - H400 Aquatic Chronic 1 - H410		-	-

Full text of H- and EUH-phrases: see section 16

Acute Toxicity Estimate

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50 - 4 hour - dust/mist - mg/L	Inhalation LC50 - 4 hour - vapour - mg/L	Inhalation LC50 - 4 hour - gas - ppm
Benzoic acid, 2,5-dihydroxy- 490-79-9	800 mg/kg	None reported	None reported	None reported	None reported

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50 - 4 hour - dust/mist - mg/L	Inhalation LC50 - 4 hour - vapour - mg/L	Inhalation LC50 - 4 hour - gas - ppm
Benzenesulfonic acid, 4-amino- 121-57-3	12300 mg/kg	None reported	None reported	None reported	None reported
Cadmium 7440-43-9	225 mg/kg	None reported	0.025 mg/L	None reported	None reported

This product contains one or more candidate substance(s) of very high concern (Regulation (EC) No. 1907/2006 (REACH), Article 59)

Chemical name	CAS No.	SVHC candidates
Cadmium	7440-43-9	X

Section 4: FIRST AID MEASURES

4.1. 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 doctor.

Eye contact 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. Get medical attention if irritation develops and persists.

Skin contact May cause an allergic skin reaction. In the case of skin irritation or allergic reactions see a doctor. Wash off immediately with soap and plenty of water for at least 15 minutes.

Ingestion Rinse mouth. 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/vapours/spray. Use personal protective equipment as required. See section 8 for more information.

4.2. Most important symptoms and effects, both acute and delayed

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

4.3. Indication of any immediate medical attention and special treatment needed

Note to doctors May cause sensitisation in susceptible persons. Treat symptomatically.

Section 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

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

Unsuitable extinguishing media No information available.

5.2. Special hazards arising from the substance or mixture

Specific hazards arising from the chemical Product is or contains a sensitiser. May cause sensitisation by skin contact.

Hazardous combustion products cadmium oxide. Phosphorus oxides. Sulphur oxides. carbon monoxide, carbon dioxide.

5.3. Advice for firefighters

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

Additional information Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Section 6: ACCIDENTAL RELEASE MEASURES

6.1. 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.

For emergency responders Use personal protection recommended in Section 8.

6.2. Environmental precautions

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

6.3. 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 Avoid creating dust. Take up mechanically, placing in appropriate containers for disposal.

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

6.4. Reference to other sections

Reference to other sections See section 8 for more information. See section 13 for more information.

Section 7: HANDLING AND STORAGE

7.1. 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. Ensure adequate ventilation. 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 it before reuse. Remove contaminated clothing and shoes. Avoid breathing dust/fume/gas/mist/vapours/spray. Avoid generation of dust.

General hygiene considerations Avoid creating dust. 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. Avoid breathing dust/fume/gas/mist/vapours/spray.

7.2. 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. Accessible only for authorized persons.

7.3. Specific end use(s)

Specific use(s) Analytical reagent.

Risk Management Methods (RMM) The information required is contained in this Safety Data Sheet.

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Exposure Limits

Chemical name	European Union	United Kingdom	Ireland
Cadmium 7440-43-9	TWA: 0.001 mg/m³; TWA: 0.004 mg/m³;	TWA: 0.025 mg/m³ STEL: 0.075 mg/m³	TWA: 0.001 mg/m³ TWA: 0.004 mg/m³ STEL: 0.003 mg/m³ STEL: 0.012 mg/m³ STEL: 0.03 mg/m³

Biological occupational exposure limits

Chemical name	European Union	United Kingdom	Ireland
Cadmium 7440-43-9	-	-	2 µg/g Creatinine (urine - not critical) 2 µg/g Creatinine (urine - Cadmium not critical)

Derived No Effect Level (DNEL) - Workers

Chemical name	Oral	Dermal	Inhalation
Sodium sulfate 7757-82-6	-	-	20 mg/m³ [4] [6] 20 mg/m³ [5] [6]
Phosphoric acid, potassium salt (1:1) 7778-77-0	-	-	14.82 mg/m³ [4] [6]
Benzenesulfonic acid, 4-amino- 121-57-3	-	3.33 mg/kg bw/day [4] [6]	13.33 mg/m³ [4] [6]
Cadmium 7440-43-9	-	-	4 µg/m³ [5] [6]

Notes
[4] Systemic health effects
[5] Local health effects
[6] Long term

Predicted No Effect Concentration (PNEC)

Chemical name	Freshwater	Freshwater (intermittent release)	Marine water	Marine water (intermittent release)	Air
Sodium sulfate 7757-82-6	11.09 mg/L	17.66 mg/L	1.109 mg/L	-	-
Benzenesulfonic acid,	0.023 mg/L	0.23 mg/L	0.0023 mg/L	-	-

Chemical name	Freshwater	Freshwater (intermittent release)	Marine water	Marine water (intermittent release)	Air
4-amino- 121-57-3					
Magnesium sulfate 7487-88-9	0.68 mg/L	6.8 mg/L	0.068 mg/L	-	-
Cadmium 7440-43-9	0.16 mg/kg food 0.19 µg/L	-	0.16 mg/kg food 1.14 µg/L	-	-

Chemical name	Freshwater sediment	Marine sediment	Sewage treatment	Soil	Food chain
Sodium sulfate 7757-82-6	40.2 mg/kg sediment dw	4.02 mg/kg sediment dw	800 mg/L	1.54 mg/kg soil dw	-
Benzenesulfonic acid, 4-amino- 121-57-3	-	-	100 mg/L	-	-
Magnesium sulfate 7487-88-9	-	-	10 mg/L	-	-
Cadmium 7440-43-9	1.8 mg/kg sediment dw	0.64 mg/kg sediment dw	20 µg/L	0.9 mg/kg soil dw	-

8.2. Exposure controls

Engineering controls

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Personal protective equipment

Eye/face protection

Wear safety glasses with side shields (or goggles).

Hand protection

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 374-1:2016 derived from it. Chemical resistant gloves made of butyl rubber or nitrile rubber category III according to EN 374-1:2016. Wear suitable gloves. Impervious gloves.

Gloves			
Duration of contact	PPE - Glove material	Glove thickness	Break through time
Long term (repeated)	Wear protective Viton™ gloves	0,70 mm	>480 minutes
Short term	Wear protective nitrile rubber gloves	0,20 mm	>30 minutes

Skin and body protection

Wash contaminated clothing before reuse. Wear suitable protective clothing. Long sleeved clothing.

Respiratory protection

Ensure adequate ventilation. No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required. Wear breathing apparatus if exposed to vapours/dusts/aerosols.

Recommended filter type:

ABEK-P3.

General hygiene considerations

Avoid creating dust. 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. Avoid breathing dust/fume/gas/mist/vapours/spray.

Environmental exposure controls Do not allow into any sewer, on the ground or into any body of water.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state Solid
Colour Grey
Odour Odourless.

Property	Values	Remarks • Method
Melting point / freezing point	175 °C	
Initial boiling point and boiling range	No data available	
Flammability	No data available	
Upper flammability or explosive limits	No data available	
Lower flammability or explosive limits	No data available	
Flash point	No data available	
Autoignition temperature	No data available	
Decomposition temperature	No data available	
pH	2.7	5% @ 20°C
Kinematic viscosity	No data available	
Dynamic viscosity	No data available	
Partition coefficient	-0.91	
Vapour pressure		
Relative density	2.13	

Relative vapor density No data available
Particle characteristics
Particle Size No information available
Particle Size Distribution No information available

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

9.2. Other information

9.2.1. Information with regards to physical hazard classes

Corrosive to metals
Steel Corrosion Rate 1.02 mm/yr / 0.04 in/yr
Aluminum Corrosion Rate 0.28 mm/yr / 0.01 in/yr

9.2.2. Other safety characteristics No information available

Section 10: STABILITY AND REACTIVITY

10.1. Reactivity

Reactivity No information available.

10.2. Chemical stability

Stability Stable under normal conditions.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions None under normal processing.

Hazardous polymerisation Hazardous polymerisation does not occur.

10.4. Conditions to avoid

Conditions to avoid Excessive heat.

10.5. Incompatible materials

Incompatible materials Strong acids. Strong bases. Strong oxidising agents.

10.6. Hazardous decomposition products

Hazardous Decomposition Products cadmium oxide. Carbon dioxide. Phosphorus oxides. Carbon monoxide. Sulphur oxides.

Section 11: TOXICOLOGICAL INFORMATION

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity
Harmful if inhaled

Mixture No data available.

Substance Test data reported below.

Oral Exposure Route:

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Benzoic acid, 2,5-dihydroxy-	Rat LD_{50}	800 mg/kg	None reported	None reported	RTECS
Benzenesulfonic acid, 4-amino-	Rat LD_{50}	12300 mg/kg	None reported	None reported	IUCLID
Cadmium	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	Rat LC_{50}	0.025 mg/L	None reported	None reported	LOLI

Acute Toxicity Estimate (ATE) Not applicable

ATEmix (oral)	2,199.10 mg/kg
ATEmix (inhalation-dust/mist)	1.04 mg/L

Unknown acute toxicity
1E-05 % of the mixture consists of ingredient(s) of unknown toxicity.

1E-05 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

Skin corrosion/irritation
Classification based on data available for ingredients. Causes skin irritation.

Mixture No data available.

Substance 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-	Draize Test	Rabbit	500 mg	24 hours	Mild skin irritant	RTECS

Serious eye damage/eye irritation
Classification based on data available for ingredients. Causes serious eye irritation.

Mixture No data available.

Substance 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-	Draize Test	Rabbit	100 mg	24 hours	Eye irritant	RTECS

Respiratory or skin sensitisation
May cause an allergic skin reaction.

Mixture No data available.

Substance 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-	OECD Test No. 406: Skin Sensitisation	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.

Substance 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	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	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
May cause damage to organs through prolonged or repeated exposure.

Mixture No data available.

Substance 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	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	Man TD_{Lo}	0.000088 mg/L	8.6 years	**Kidney, Ureter, or Bladder** Proteinuria	RTECS

Germ cell mutagenicity
Contains a known or suspected mutagen. Classification based on data available for ingredients. Suspected of causing genetic defects.

The table below indicates ingredients above the cut-off threshold considered as relevant which are listed as mutagenic

Chemical name	European Union
Cadmium	Muta. 2

***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
Benzoic acid, 2,5-dihydroxy-	DNA inhibition	Human lymphocyte	1 mmol/L	None reported	Positive test result for	RTECS

					mutagenicity	
Benzenesulfonic acid, 4-amino-	Mutation in microorganisms	*Salmonella typhimurium*	None reported	None reported	Negative	IUCLID
Cadmium	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.

Carcinogenicity
Contains a known or suspected carcinogen. Classification based on data available for ingredients. May cause cancer.

The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical name	European Union
Cadmium	Carc. 1B

Mixture No data available.

Substance Test data reported below.

Inhalation (Dust/Mist) Exposure Route:

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Cadmium	Human	0.129 mg/L	20 years	**Lungs, Thorax, or Respiration** Tumors	RTECS

Reproductive toxicity
Contains a known or suspected reproductive toxin. Classification based on data available for ingredients. Suspected of damaging fertility or the unborn child.

The table below indicates ingredients above the cut-off threshold considered as relevant which are listed as reproductive toxins.

Chemical name	European Union
Cadmium	Repr. 2

Mixture No data available.

Substance 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	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.

11.2. Information on other hazards

Other dangerous properties can not be excluded. Handle in accordance with good industrial hygiene and safety practice.

11.2.1. Endocrine disrupting properties
This product does not contain any known or suspected endocrine disruptors.

11.2.2. Other information

Other adverse effects No information available.

Section 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecotoxicity Toxic to aquatic life with long lasting effects.

Unknown aquatic toxicity Contains 1E-05 % of components with unknown hazards to the aquatic environment.

Mixture

Acute aquatic toxicity: No data available.

Aquatic Chronic Toxicity: No data available.

Substance

Acute aquatic toxicity: Test data reported below.

Fish:

Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Benzoic acid, 2,5-dihydroxy-	96 hours	None reported	LC_{50}	1140 mg/L	ECOSARS
Benzenesulfonic acid, 4-amino-	96 hours	*Pimephales promelas*	LC_{50}	100.4 mg/L	IUCLID
Cadmium	96 hours	*Morone saxatilis*	LC_{50}	0.019 mg/L	PEEN

Crustacea:

Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Benzoic acid, 2,5-dihydroxy-	48 Hours	None reported	EC_{50}	9811 mg/L	ECOSARS
Benzenesulfonic acid, 4-amino-	48 Hours	*Daphnia magna*	EC_{50}	85.66 mg/L	IUCLID
Cadmium	48 Hours	None reported	EC_{50}	0.58 mg/L	PEEN
2-Propenamide, homopolymer	48 Hours	*Daphnia pulex*	LC_{50}	0.08 mg/L	CEPA

Algae:

Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Benzoic acid, 2,5-dihydroxy-	96 hours	None reported	EC_{50}	388 mg/L	ECOSARS
Benzenesulfonic acid, 4-amino-	72 Hours	*Scenedesmus subspicatus*	EC_{50}	91 mg/L	IUCLID
Cadmium	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	7 days	*Epinephelus coioides*	NOEC	0.03333 mg/L	ECHA

Crustacea:

Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Cadmium	21 days	*Ctenodrilus serratus*	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 days	*Chaetoceros compressum*	EC_{10}	0.00183 mg/L	ECHA

12.2. Persistence and degradability

Mixture No data available.

12.3. Bioaccumulative potential

Mixture: No data available.

Partition coefficient log K_{ow} ~ -0.91

12.4. Mobility in soil

Soil Organic Carbon-Water Partition Coefficient log K_{oc} ~ -0.36

12.5. Results of PBT and vPvB assessment

The components in this formulation do not meet the criteria for classification as PBT or vPvB.

Chemical name	PBT and vPvB assessment
Benzenesulfonic acid, 4-amino-	Not PBT/vPvB
Cadmium	PBT assessment does not apply

12.6. Endocrine disrupting properties

Endocrine Disruptor Information: This product does not contain any known or suspected endocrine disruptors
Endocrine Disruptor Information:

Chemical name	EU - Endocrine Disruptors Candidate List	EU - Endocrine Disruptors - Evaluated Substances	Endocrine disrupting potential
Benzoic acid, 2,5-dihydroxy-	Group III Chemical	-	-

12.7. Other adverse effects

No information available.

Ozone: Not applicable

Ozone depletion potential (ODP): No information available

Section 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Advice on Disposal

Waste from residues/unused products	Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation. Our local agencies will accept used cuvettes to ensure their proper disposal.

Waste disposal number (residues/unused products)

160506*	WASTES NOT OTHERWISE SPECIFIED IN THE LIST; gases in pressure containers and discarded chemicals; laboratory chemicals, consisting of or containing hazardous substances, including mixtures of laboratory chemicals; hazardous waste.

Waste disposal number (used product)

160506*	WASTES NOT OTHERWISE SPECIFIED IN THE LIST; gases in pressure containers and discarded chemicals; laboratory chemicals, consisting of or containing hazardous substances, including mixtures of laboratory chemicals; hazardous waste.
Contaminated packaging	Dispose of contents/containers in accordance with local regulations.
Other Information	Waste codes should be assigned by the user based on the application for which the product was used.

Section 14: TRANSPORT INFORMATION

ADR

14.1 UN number or ID number	3077
14.2 UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCES, SOLID, N.O.S. (Cadmium)
14.3 Transport hazard class(es)	9
14.4 Packing Group	III
14.5 Environmental hazards	Yes
14.6 Special precautions for user	
Special Provisions	274, 335, 601, 375
Classification code	M7
Tunnel restriction code	(-)

IATA

14.1 UN number or ID number	UN3077
14.2 UN proper shipping name	Environmentally hazardous substance, solid, n.o.s. (Cadmium)
14.3 Transport hazard class(es)	9
14.4 Packing group	III
14.5 Environmental hazards	Yes
14.6 Special precautions for user	
Special Provisions	None

IMDG

14.1 UN number or ID number	UN3077
14.2 UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (SODIUM SULFATE, BENZENESULFONIC ACID, 4-AMINO-)
14.3 Transport hazard class(es)	9
14.4 Packing Group	III
14.5 Environmental hazards	Yes
14.6 Special precautions for user	
Special Provisions	274, 335, 966, 967, 969
EmS-No	F-A, S-F
14.7 Maritime transport in bulk according to IMO instruments	No information available

Additional information

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.

Section 15: REGULATORY INFORMATION

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

National regulations

European Union

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

Take note of Directive 94/33/EC on the protection of young people at work

Take note of Directive 92/85/EC on the protection of pregnant and breastfeeding women at work

Authorisations and/or restrictions on use:
This product contains one or more substance(s) subject to restriction (Regulation (EC) No. 1907/2006 (REACH), Annex XVII)

Chemical name	Restricted substance per REACH Annex XVII	Substance subject to authorisation per REACH Annex XIV
Benzenesulfonic acid, 4-amino- - 121-57-3	75	
Cadmium - 7440-43-9	72 23 28 75	

Persistent Organic Pollutants Not applicable

Export Notification requirements This product contains substances which are regulated pursuant to Regulation (EC) No. 649/2012 of the European parliament and of the council concerning the export and import of dangerous chemicals

Chemical name	European Export/Import Restrictions per (EC) 649/2012 - Annex Number
Cadmium - 7440-43-9	I.1 I.2

Dangerous substance category per Seveso Directive (2012/18/EU) E2 - Hazardous to the Aquatic Environment in Category Chronic 2

Ozone-depleting substances (ODS) regulation (EC) 1005/2009 Not applicable

Germany
Water hazard class (WGK) strongly hazardous to water (WGK 3)

France
Occupational Illnesses (R-463-3, France)

Chemical name	French RG number	Title
Cadmium 7440-43-9	RG 61,RG 61bis	-

10. Rozporządzenie Komisji (UE) 2020/878 z dnia 18 czerwca 2020 r. zmieniające załącznik II dorozporządzenia (WE) nr1907/2006 Parlamentu Europejskiego i Rady w sprawie rejestracji, oceny, udzielaniazezwoleń i stosowanych ograniczeń wzakresie chemikaliów (REACH).

International Inventories

EINECS/ELINCS	Complies
TSCA	Complies
DSL/NDSL	Complies
ENCS	Complies
IECSC	Complies
KECI	Complies
PICCS	Does not comply
AICS	Complies

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
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

15.2. Chemical safety assessment

Chemical Safety Report Chemical safety assessments for substances in this mixture were not carried out.

Section 16: OTHER INFORMATION

Issue Date 27-Nov-2006

Revision Date 23-Mar-2026

Revision Note updated SDS sections:
2

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

Legend

**	Hazard Designation
ADN	Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieure
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute Toxicity Estimate
CAS	Chemical Abstracts Service Number
Ceiling	Maximum limit value
CLP	Classification, Labelling and Packaging of substances and mixtures [Regulation (EC) No. 1272/2008]
DNEL	Derived No Effect Level (DNEL)
EC	European Community
ECHA	ECHA (The European Chemicals Agency)
EC50	Effective Concentration to 50% of a test population
EEC	European Economic Community
EN	European Standard
IMDG	International Maritime Dangerous Goods (IMDG)
IATA	International Air Transport Association (IATA)
IATA-DGR	International Air Transport Association - Dangerous Goods Regulations
ICAO	International Civil Aviation Organisation

ICAO-TI	International Civil Aviation Organization - Technical Instructions
IUCLID	IUCLID (The International Uniform Chemical Information Database)
GHS	Globally Harmonized System of Classification and Labelling of Chemicals
LOAEL	Lowest observed adverse effect level
LOAEC	Lowest observed adverse effect concentration
LC50	Lethal Concentration to 50% of a test population
LD50	Lethal Dose to 50% of a test population (Median Lethal Dose)
LOLI	LOLI (List of Lists - An International Chemical Regulatory Database)
MAK	Maximale Arbeitsplatz-Konzentration, a German expression corresponding to threshold limit value, which relates to safe daily exposure levels to chemical substances
NOAEL	No Observed Adverse Effect Level
NOAEC	No observed adverse effect concentration
OSHA	Occupational Safety and Health Administration of the US Department of Labour
PEC	Predicted Effect Concentration
PNEC	Predicted No Effect Concentration (PNEC)
PBT	Persistent, Bioaccumulative, and Toxic (PBT) Chemicals
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals [Regulation (EC) No. 1907/2006])
RTECS	RTECS (Registry of Toxic Effects of Chemical Substances)
TWA	TWA (time-weighted average)
SKN*	Skin designation
SKN+	Skin sensitisation
STEL	STEL (Short Term Exposure Limit)
STOT	Specific Target Organ Toxicity
STOT RE	Specific target organ toxicity (repeated exposure)
STOT SE	Specific target organ toxicity (single exposure)
SVHC	Substances of Very High Concern
TLV	Threshold Limit Value
TRGS	Technical rules for hazardous substances, Germany
TSCA	Toxic Substances Control Act
UN	United Nations
vPvB	very persistent and very bioaccumulative
VOC	Volatile organic compounds
AwSV	Administrative regulation of water polluting substances, Germany

Key literature references and sources for data
See Section 11: TOXICOLOGICAL INFORMATION
See Section 12: ECOLOGICAL INFORMATION

Classification procedure

Classification according to Regulation (EC) No. 1272/2008 [CLP]	**Method Used**
Acute oral toxicity	Calculation method
Acute dermal toxicity	Calculation method
Acute inhalation toxicity - gas	Calculation method
Acute inhalation toxicity - Vapour	Calculation method
Acute inhalation toxicity - dust/mist	Calculation method
Skin corrosion/irritation	Calculation method
Serious eye damage/eye irritation	Calculation method
Respiratory sensitisation	Calculation method
Skin sensitisation	Calculation method
Mutagenicity	Calculation method
Carcinogenicity	Calculation method
Reproductive toxicity	Calculation method
STOT - single exposure	Calculation method
STOT - repeated exposure	Calculation method
Chronic aquatic toxicity	Calculation method
Acute aquatic toxicity	Calculation method
Aspiration toxicity	Calculation method
Ozone	Calculation method

Full text of H-Statements referred to under section 3
H315 - Causes skin irritation
H317 - May cause an allergic skin reaction
H319 - Causes serious eye irritation
H330 - Fatal if inhaled
H341 - Suspected of causing genetic defects
H350 - May cause cancer
H361fd - Suspected of damaging fertility. Suspected of damaging the unborn child
H372 - Causes damage to organs through prolonged or repeated exposure
H400 - Very toxic to aquatic life
H410 - Very toxic to aquatic life with long lasting effects

Training Advice	Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work
Prepared By	Hach Product Compliance Department
Restrictions on use	None

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006
Regulation (EC) No. 1907/2006 as amended by Regulation (EU) No. 2020/878, and Regulation (EC) No. 1272/2008

End of Safety Data Sheet