



Be Right™

SAFETY DATA SHEET

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH)

Issue Date 28-Feb-2019

Revision Date 14-Feb-2023

Version 3.3

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

1.1. Product identifier

Product Code(s) 2076026
Product Name Molybdovanadate Reagent
Unique Formula Identifier (UFI) Q0A3-SD3W-T00X-QR2J
Molecular weight Not applicable

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

Recommended Use Indicator for phosphate.
Uses advised against Consumer use

1.3. Details of the supplier of the safety data sheet

Supplier

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
Little Island
IRL-Co. Cork
T45 H681
Tel. +353 (0)146 02 522
info-ie@hach.com

1.4. Emergency telephone number

UK: Poison Control Center Mainz: Tel: +49 (0) 6131 19240 - 24 hour emergency service
IE: National Poisons Information Centre (NPIC) 01 809 2566 (24/7)

Section 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008

Corrosive to metals	Category 1 - (H290)
Acute toxicity - Inhalation (Dusts/Mists)	Category 4 - (H332)
Skin corrosion/irritation	Category 1 Sub-category A - (H314)

Serious eye damage/eye irritation	Category 1 - (H318)
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2.2. Label elements

Contains Molybdate (Mo7O246-), hexaammonium, Ammonium vanadate, Dipotassium peroxodisulphate, Sulfuric acid 40%

**Signal word**

Danger

Hazard statements

H290 - May be corrosive to metals

H314 - Causes severe skin burns and eye damage

H332 - Harmful if inhaled

Precautionary Statements - EU (§28, 1272/2008)

P260 - Do not breathe dust/fume/gas/mist/vapours/spray

P280 - Wear protective gloves/protective clothing and eye/face protection

P310 - Immediately call a POISON CENTER or doctor

P301 + P330 + P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting

P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]

P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

2.3. Other hazards

No information available.

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)

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)
Sulfuric acid	7664-93-9 (016-020-00-8) 231-639-5 016-020-00-8	40 - 50%	Skin Corr. 1A - H314	Eye Irrit. 2 :: 5%≤C<15% Skin Corr. 1A :: C≥15% Skin Irrit. 2 ::	-	-

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)
				5%≤C<15%		
Molybdate (Mo7O246-), hexaammonium	12027-67-7 234-722-4 -	1 - 5%	Acute Tox. 4 - H302 Eye Irrit. 2 - H319	-	-	-
Dipotassium peroxodisulphate	7727-21-1 231-781-8 016-061-00-1	<0.1%	Ox. Sol. 3 - H272 Acute Tox. 4 - H302 Skin Irrit. 2 - H315 Skin Sens. 1 - H317 Eye Irrit. 2 - H319 Resp. Sens. 1 - H334 STOT SE 3 - H335	-	-	-

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

Acute Toxicity Estimate No information available

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
Molybdate (Mo7O246-), hexaammonium 12027-67-7	333 mg/kg	None reported	None reported	None reported	None reported
Dipotassium peroxodisulphate 7727-21-1	802 mg/kg	None reported	None reported	None reported	None reported

Section 4: FIRST AID MEASURES

4.1. Description of first aid measures

General advice	Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.
Inhalation	Remove to fresh air. If breathing has stopped, give artificial respiration. Get medical attention immediately. If breathing is difficult, (trained personnel should) give oxygen. Get immediate medical attention.
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 immediate medical attention.
Skin contact	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get immediate medical attention.
Ingestion	Rinse mouth. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Get immediate 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 direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Avoid breathing vapours or mists. Use personal protective equipment as

required. See section 8 for more information.

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

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

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

Note to doctors 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 The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating gases and vapours.

Hazardous combustion products Ammonia. nitrogen oxides. Sulphur oxides.

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 protection 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. Attention! Corrosive material. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Avoid breathing vapours or mists.

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. Should not be released into the environment. Do not allow to enter into soil/subsoil. Prevent product from entering drains.

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 Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). 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. In case of insufficient ventilation, wear suitable respiratory equipment. Handle product only in closed system or provide appropriate exhaust ventilation. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash it before reuse. Avoid breathing vapours or mists. Ensure adequate ventilation. Avoid breathing dust/fume/gas/mist/vapours/spray.

General hygiene considerations Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Regular cleaning of equipment, work area and clothing is recommended. Avoid contact with skin, eyes or clothing. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Contaminated work clothing should not be allowed out of the workplace. Wash hands before breaks and after work. Barrier creams may help to protect the exposed areas of skin.

7.2. Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from moisture. Keep out of the reach of children. Store away from other materials. Keep at temperatures between 10 and 25 °C.

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
Sulfuric acid 7664-93-9	TWA: 0.05 mg/m ³	TWA: 0.05 mg/m ³ STEL: 0.15 mg/m ³	TWA: 0.05 ppm STEL: 0.15 ppm
Molybdate (Mo7O246-), hexaammonium 12027-67-7	-	TWA: 5 mg/m ³ STEL: 10 mg/m ³	TWA: 10 mg/m ³ TWA: 0.5 mg/m ³ STEL: 30 mg/m ³ STEL: 1.5 mg/m ³
Dipotassium peroxodisulphate 7727-21-1	-	-	TWA: 0.1 mg/m ³ STEL: 0.3 mg/m ³ Sens+

Derived No Effect Level (DNEL) No information available.

Predicted No Effect Concentration (PNEC) No information available.

Additional information No information available.

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

Wear suitable gloves. 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 acco.

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

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.

General hygiene considerations

Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Regular cleaning of equipment, work area and clothing is recommended. Avoid contact with skin, eyes or clothing. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Contaminated work clothing should not be allowed out of the workplace. Wash hands before breaks and after work. Barrier creams may help to protect the exposed areas of skin.

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 Liquid

Colour light yellow

Odour Odourless

Odour threshold Not applicable

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
Molecular weight	Not applicable	
pH	< 0.5	@ 20 °C
Melting point / freezing point	~ -33 °C / -27.4 °F	
Initial boiling point and boiling range	~ 109 °C / 228.2 °F	

Evaporation rate	0.06 (water = 1)	
Vapour pressure	21.827 mm Hg / 2.91 kPa at 25 °C / 77 °F	
Relative vapor density	0.62	
Specific Gravity	1.375	
Partition coefficient	No data available	
Soil Organic Carbon-Water Partition Coefficient	No data available	
Autoignition temperature	No data available	
Decomposition temperature	No data available	
Dynamic viscosity	No data available	
Kinematic viscosity	No data available	
Relative density	1.375 g/mL	@ 20 °C

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

Metal Corrosivity

Classified as corrosive to metal according to CLP criteria

Steel Corrosion Rate

286.33 mm/yr / 11.27 in/yr

Aluminum Corrosion Rate

No data available

Explosive properties**Upper explosion limit**

No data available

Lower explosion limit

No data available

Flammable properties**Flash point**

No data available

Flammability**Upper flammability limit:**

No data available

Lower flammability limit

No data available

Oxidising properties

No data available.

Bulk density

Not applicable

9.2. Other information

No information available.

Section 10: STABILITY AND REACTIVITY

10.1. Reactivity

Reactivity Corrosive to metal.

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 Exposure to air or moisture over prolonged periods. To avoid thermal decomposition, do not overheat.

10.5. Incompatible materials

Incompatible materials Oxidising agent. Contact with metals (aluminium, zinc, tin) may release hydrogen gas.

10.6. Hazardous decomposition products

Hazardous Decomposition Products Thermal decomposition can lead to release of irritating and toxic gases and vapours.

Section 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

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
Molybdate (Mo7O246-), hexaammonium	Rat LD ₅₀	333 mg/kg	None reported	None reported	Vendor SDS
Diammonium sulfate	Rat LD ₅₀	2840 mg/kg	None reported	None reported	GESTIS
Ammonium vanadate	Rat LD ₅₀	58.1 mg/kg	None reported	Behavioral Somnolence (general depressed activity) Gastrointestinal Hypermotility Diarrhoea Nutritional and Gross Metabolic Body temperature decrease	ChemADVISOR
Dipotassium	Rat	802 mg/kg	None reported	None reported	IUCLID

peroxodisulphate	LD ₅₀				
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Dermal Exposure Route:

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Ammonium vanadate	Rat LD ₅₀	2102 mg/kg	None reported	Behavioral Somnolence (general depressed activity) Gastrointestinal Hypermotility Diarrhoea Nutritional and Gross Metabolic Body temperature decrease	HSDB

Inhalation (Dust/Mist) Exposure Route:

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Ammonium vanadate	Rat LC ₅₀	0.0078 mg/L	4 hours	None reported	LOLI

Acute Toxicity Estimate (ATE)

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

ATEmix (oral)	7,121.30 mg/kg
ATEmix (inhalation-dust/mist)	3.57 mg/l

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 (vapour)
- 0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)

Skin corrosion/irritation

Causes severe burns.

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
Sulfuric acid	Existing human experience	Human	None reported	None reported	Corrosive to skin	HSDB
Diammonium sulfate	Draize Test	Rabbit	800 mg	20 hours	Not corrosive or irritating to skin	ECHA

Serious eye damage/eye irritation

Classification based on data available for ingredients. Causes burns. Risk of serious damage to eyes.

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
Sulfuric acid	Existing human experience	Human	None reported	None reported	Corrosive to eyes	HSDB
Diammonium sulfate	Draize Test	Rabbit	0.050 mL	None reported	Not corrosive or irritating to eyes	ECHA

Respiratory or skin sensitisation

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

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
Dipotassium peroxodisulphate	Local Lymph Node Assay	Mouse	Confirmed to be a skin sensitizer	ECHA

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
Diammonium sulfate	Man TD _{Lo}	1500 mg/kg	None reported	Gastrointestinal Gas	RTECS

Inhalation (Vapor) Exposure Route:

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Sulfuric acid	Human TD _{Lo}	0.144 mg/L	5 minutes	Lungs, Thorax, or Respiration Dyspnea	RTECS

STOT - repeated 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
Ammonium vanadate	Rat TD _{Lo}	4630 mg/kg	90 days	Behavioral Food intake Blood Pigmented or nucleated red	RTECS

				blood cells Changes in erythrocyte (RBC) count	
Dipotassium peroxodisulphate	Rat NOAEL	131.5 mg/kg	28 days	No toxicological effects observed	ECHA

Dermal Exposure Route:

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Dipotassium peroxodisulphate	Rat NOAEL	91 mg/kg	90 days	No toxicological effects observed	ECHA

Inhalation (Dust/Mist) Exposure Route:

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Ammonium vanadate	Rat TC _{Lo}	4.59 mg/m ³	4 days	Lungs, Thorax, or Respiration Other changes Immunological Including Allergic Decrease in cellular immune response	RTECS
Dipotassium peroxodisulphate	Rat NOAEC	10.3 mg/m ³	90 days	No toxicological effects observed	ECHA

Inhalation (Vapor) Exposure Route:

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Sulfuric acid	Human TC _{Lo}	0.003 mg/L	168 days	Musculoskeletal Changes in teeth and supporting structures	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
Sulfuric acid	Cytogenetic analysis	Hamster ovary	4 mmol/L	None reported	Positive test result for mutagenicity	No information available
Ammonium vanadate	DNA damage	Human lymphocyte	0.2 mmol/L	None reported	Positive test result for mutagenicity	RTECS
Dipotassium peroxodisulphate	Mutation in microorganisms	<i>Salmonella typhimurium</i>	10 mg/plate	None reported	Negative	ECHA

Mixture invivo **Data** No data available.

Substance invivo **Data** Test data reported below.

Oral Exposure Route:

Chemical name	Test	Species	Reported	Exposure	Results	Key literature
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			dose	time		references and sources for data
Ammonium vanadate	Micronucleus test	Mouse	50 mg/kg	None reported	Positive test result for mutagenicity	RTECS

Carcinogenicity

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

Mixture No data available.

Substance No data available.

Reproductive toxicity

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
Ammonium vanadate	Rat	20 mg/kg	70 days	Death Post-implantation mortality (e.g. dead and/or resorbed implants per total number of implants) Female fertility index (e.g. Male fertility index (e.g.	No information available
Dipotassium peroxodisulphate	Rat NOAEL	>= 250 mg/kg	Single generation	No reproductive or developmental toxic effects observed	ECHA

Inhalation (Vapor) Exposure Route:

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Sulfuric acid	Rabbit TC _{Lo}	0.02 mg/L	7 hours	Specific Developmental Abnormalities Musculoskeletal system	No information available

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

Endocrine disrupting properties No information available.

11.2.2. Other information

Other adverse effects No information available.

Section 12: ECOLOGICAL INFORMATION**12.1. Toxicity****Ecotoxicity**

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

Unknown aquatic toxicity

Contains 0 % 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
Molybdate (Mo7O246-), hexaammonium	96 hours	<i>Oncorhynchus mykiss</i>	LC ₅₀	320 mg/L	Vendor SDS
Diammonium sulfate	96 hours	<i>Oncorhynchus mykiss</i>	LC ₅₀	36.7 mg/L	GESTIS
Ammonium vanadate	96 hours	None reported	LC ₅₀	2.6 mg/L	EPA
Dipotassium peroxodisulphate	96 hours	None reported	LC ₅₀	>= 76.3 mg/L	FIFRA

Crustacea:

Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Molybdate (Mo7O246-), hexaammonium	48 Hours	<i>Daphnia magna</i>	EC ₅₀	140 mg/L	Vendor SDS
Diammonium sulfate	48 Hours	None reported	LC ₅₀	14 mg/L	GESTIS
Dipotassium peroxodisulphate	48 Hours	<i>Daphnia magna</i>	EC ₅₀	92 mg/L	EPA

Algae:

Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Molybdate (Mo7O246-), hexaammonium	72 Hours	<i>Desmodesmus subspicatus</i>	EC ₅₀	41 mg/L	Vendor SDS

Aquatic Chronic Toxicity: No data available.**12.2. Persistence and degradability****Mixture** No data available.**12.3. Bioaccumulative potential****Mixture:** No data available.

Partition coefficient No data available

12.4. Mobility in soil

Soil Organic Carbon-Water Partition Coefficient No data available

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
Sulfuric acid	The substance is not PBT / vPvB
Molybdate (Mo7O246-), hexaammonium	The substance is not PBT / vPvB
Dipotassium peroxodisulphate	The substance is not PBT / vPvB

12.6. Endocrine disrupting properties

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

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.

Waste disposal number of waste from 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 of 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

IMDG

14.1 UN number or ID number UN3264
 14.2 Proper shipping name Corrosive Liquid, Acidic, Inorganic, N.O.S.
 14.3 Transport hazard class(es) 8
 14.4 Packing Group II
 Description UN3264, CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Sulfuric acid), 8, II
 14.5 Marine pollutant Not applicable
 14.6 Special precautions for user 274
 EmS-No F-A, S-B
 14.7 Transport in bulk according to Annex II of MARPOL and the IBC Not applicable

Code**ADR**

14.1 UN number or ID number	UN3264
14.2 Proper shipping name	Corrosive Liquid, Acidic, Inorganic, N.O.S.
14.3 Transport hazard class(es)	8
Labels	8
14.4 Packing Group	II
Description	UN3264, Corrosive liquid, acidic, inorganic, n.o.s. (Sulfuric acid), 8, II
14.5 Environmental hazards	Not applicable
14.6 Special precautions for user	274
Classification code	C1
Tunnel restriction code	(E)

IATA

14.1 UN number or ID number	UN3264
14.2 Proper shipping name	Corrosive Liquid, Acidic, Inorganic, N.O.S.
14.3 Transport hazard class(es)	8
14.4 Packing group	II
Description	UN3264, Corrosive liquid, acidic, inorganic, n.o.s. (Sulfuric acid), 8, II
14.5 Environmental hazards	Not applicable
14.6 Special precautions for user	A3, A803
ERG Code	8P

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.

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

Authorisations and/or restrictions on use:

This product does not contain substances subject to authorisation (Regulation (EC) No. 1907/2006 (REACH), Annex XIV) This product does not contain substances 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
Sulfuric acid - 7664-93-9	75.	
Molybdate (Mo7O246-), hexaammonium - 12027-67-7	65.	
Dipotassium peroxodisulphate - 7727-21-1	75.	

Persistent Organic Pollutants Not applicable

Dangerous substance category per Seveso Directive (2012/18/EU)

• Non-controlled

Ozone-depleting substances (ODS) regulation (EC) 1005/2009

Not applicable

Germany**Water hazard class (WGK)** obviously hazardous to water (WGK 2)**France****Occupational Illnesses (R-463-3, France)**

Chemical name	French RG number	Title
Sulfuric acid 7664-93-9	RG 5, RG 14, RG 15, RG 15bis, RG 20bis RG 14, RG 20bis, RG 65	-
Dipotassium peroxodisulphate 7727-21-1	RG 65, RG 66	-

International Inventories

EINECS/ELINCS	Complies
TSCA	Complies
DSL/NDSL	Complies
ENCS	Complies
IECSC	Complies
KECL - Existing substances	Complies
PICCS	Complies
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	28-Feb-2019
Revision Date	14-Feb-2023
Revision Note	New SDS, SDS sections updated, 3, 9, 11, 12.

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 Organization
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	NOAEL (No observed adverse effect level)
NOAEC	No observed adverse effect concentration
OSHA	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]
RID	Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
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
Acute aquatic toxicity	Calculation method
Chronic aquatic toxicity	Calculation method
Aspiration toxicity	Calculation method
Ozone	Calculation method
Corrosive to metals	Calculation method

Full text of H-Statements referred to under section 3

H272 - May intensify fire; oxidiser

H302 - Harmful if swallowed

H314 - Causes severe skin burns and eye damage

H315 - Causes skin irritation

H317 - May cause an allergic skin reaction

H318 - Causes serious eye damage

H319 - Causes serious eye irritation

H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled

H335 - May cause respiratory irritation

H290 - May be corrosive to metals

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

Restrictions on use

For Laboratory Use Only.

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006

End of Safety Data Sheet