

Safety Data Sheet

20760SS

Version number: 2.0

Revision: 2026-06-24

SECTION 1: Identification

1.1 Product identifier

Trade name **Molybdovanadate Reagent**

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

Relevant identified uses laboratory and analytical use

1.3 Details of the supplier of the safety data sheet

AquaPhoenix Scientific
860 Gitts Run Road
Hanover PA 17331
United States

Telephone: (866) 632-1291
e-mail: info@aquaphoenixsci.com
Website: <https://www.aquaphoenixsci.com/>

1.4 Emergency telephone number

Emergency information service ChemTel Inc.: 1-800-255-3924, +01-813-248-0585

SECTION 2: Hazard(s) identification

2.1 Classification of the substance or mixture

Classification acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200, Rev. 2024)

Hazard class	Category	Hazard class and category	Hazard statement
acute toxicity (inhal.)	3	Acute Tox. 3	H331
skin corrosion/irritation	1	Skin Corr. 1	H314
serious eye damage/eye irritation	1	Eye Dam. 1	H318
respiratory sensitization	1	Resp. Sens. 1	H334
skin sensitization	1	Skin Sens. 1	H317
carcinogenicity	1A	Carc. 1A	H350
specific target organ toxicity - repeated exposure	2	STOT RE 2	H373
hazardous to the aquatic environment - acute hazard	3	Aquatic Acute 3	H402
hazardous to the aquatic environment - chronic hazard	2	Aquatic Chronic 2	H411

For full text of abbreviations: see SECTION 16.

The most important adverse physicochemical, human health and environmental effects

Skin corrosion produces an irreversible damage to the skin; namely, visible necrosis through the epidermis and into the dermis. Delayed or immediate effects can be expected after short or long-term exposure. Spillage and fire water can cause pollution of watercourses.

2.2 Label elements

Labelling acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200, Rev. 2024)

- Signal word danger

Safety Data Sheet

20760SS

Version number: 2.0

Revision: 2026-06-24

- Pictograms

GHS05, GHS06, GHS08,
GHS09



- Hazard statements

H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H331	Toxic if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H350	May cause cancer.
H373	May cause damage to organs through prolonged or repeated exposure.
H402	Harmful to aquatic life.
H411	Toxic to aquatic life with long lasting effects.

- Precautionary statements

P203	Obtain, read and follow all safety instructions before use.
P260	Do not breathe dusts or mists.
P264+P265	Wash hands thoroughly after handling. Do not touch eyes.
P271	Use only outdoors or with adequate ventilation.
P272	Contaminated work clothing should not be allowed out of the workplace.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
P284	In case of inadequate ventilation wear respiratory protection.
P301+P330+P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P302+P352	IF ON SKIN: Wash with plenty of water.
P302+P361+P354	IF ON SKIN: Take off immediately all contaminated clothing. Immediately rinse with water for several minutes.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P354+P338	IF IN EYES: Immediately rinse with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P318	IF exposed or concerned, get medical advice.
P321	Specific treatment (see on this label).
P333+P317	If skin irritation or rash occurs: Get medical help.
P342+P316	If experiencing respiratory symptoms: Get emergency medical help immediately.
P362+P364	Take off contaminated clothing and wash it before reuse.
P363	Wash contaminated clothing before reuse.
P391	Collect spillage.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

- Hazardous ingredients for labelling

Sulfuric Acid, Ammonium Meta-Vanadate, Dipotassium Peroxodisulfate, Ammonium Molybdate Tetrahydrate

2.3 Other hazards

Results of PBT and vPvB assessment

Does not contain a PBT-/vPvB-substance at a concentration of $\geq 0.1\%$.

Endocrine disrupting properties

Does not contain an endocrine disruptor (ED) in a concentration of $\geq 0.1\%$.

Safety Data Sheet

20760SS

Version number: 2.0

Revision: 2026-06-24

SECTION 3: Composition/information on ingredients

3.1 Substances

Not relevant (mixture)

3.2 Mixtures

Description of the mixture

Name of substance	Identifier	Wt%	Classification acc. to GHS	Pictograms
Sulfuric Acid	CAS No 7664-93-9	50	Acute Tox. 3 / H331 Skin Corr. 1A / H314 Eye Dam. 1 / H318 Carc. 1A / H350 Aquatic Acute 3 / H402 Aquatic Chronic 2 / H411	
Water	CAS No 7732-18-5	38.9		
Ammonium Sulfate	CAS No 7783-20-2	5	Acute Tox. 5 / H303 Acute Tox. 5 / H313 Aquatic Acute 3 / H402	
Ammonium Molybdate Tetrahydrate	CAS No 12027-67-7	5	Acute Tox. 5 / H303 Acute Tox. 5 / H313 Acute Tox. 5 / H333 Aquatic Acute 3 / H402	
Ammonium Meta-Vanadate	CAS No 7803-55-6	1	Acute Tox. 3 / H301 Acute Tox. 5 / H313 Acute Tox. 1 / H330 Skin Irrit. 2 / H315 Eye Irrit. 2 / H319 Repr. 2 / H361 STOT SE 3 / H335 STOT RE 1 / H372 Aquatic Acute 1 / H400 Aquatic Chronic 2 / H411	
Dipotassium Peroxodisulfate	CAS No 7727-21-1	0.1	Ox. Sol. 3 / H272 Acute Tox. 4 / H302 Acute Tox. 5 / H313 Acute Tox. 4 / H332 Skin Irrit. 2 / H315 Eye Irrit. 2 / H319 Resp. Sens. 1 / H334 Skin Sens. 1 / H317 STOT SE 3 / H335 Aquatic Acute 3 / H402	

Remarks

For full text of abbreviations: see SECTION 16

SECTION 4: First-aid measures

4.1 Description of first-aid measures

General notes

Do not leave affected person unattended. Remove victim out of the danger area. Keep affected person warm, still and covered. Take off immediately all contaminated clothing. In all cases of doubt, or when symptoms persist, seek medical advice. In case of unconsciousness place person in the recovery position. Never give anything by mouth.

Following inhalation

Safety Data Sheet

20760SS

Version number: 2.0

Revision: 2026-06-24

If breathing is irregular or stopped, immediately seek medical assistance and start first aid actions. In case of respiratory tract irritation, consult a physician. Provide fresh air.

Following skin contact

Wash with plenty of soap and water.

Following eye contact

Remove contact lenses, if present and easy to do. Continue rinsing. Irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart.

Following ingestion

Rinse mouth with water (only if the person is conscious). Do NOT induce vomiting.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms and effects are not known to date.

4.3 Indication of any immediate medical attention and special treatment needed

Medical attention may be necessary if the product gets into the eyes or on the skin.

SECTION 5: Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media

Water spray, Alcohol resistant foam, BC-powder, Carbon dioxide (CO₂)

Unsuitable extinguishing media

Water jet

5.2 Special hazards arising from the substance or mixture

Hazardous combustion products

Nitrogen oxides (NO_x), Sulfur oxides (SO_x)

5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes. Coordinate firefighting measures to the fire surroundings. Do not allow firefighting water to enter drains or water courses. Collect contaminated firefighting water separately. Fight fire with normal precautions from a reasonable distance.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Remove persons to safety.

For emergency responders

Wear breathing apparatus if exposed to vapors/dust/aerosols/gases.

6.2 Environmental precautions

Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it. If substance has entered a water course or sewer, inform the responsible authority.

6.3 Methods and material for containment and cleaning up

Advice on how to contain a spill

Covering of drains

Advice on how to clean up a spill

Wipe up with absorbent material (e.g. cloth, fleece). Collect spillage: sawdust, kieselgur (diatomite), sand, universal binder

Appropriate containment techniques

Use of adsorbent materials.

Safety Data Sheet

20760SS

Version number: 2.0

Revision: 2026-06-24

Other information relating to spills and releases

Place in appropriate containers for disposal. Ventilate affected area.

6.4 Reference to other sections

Hazardous combustion products: see section 5. Personal protective equipment: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Recommendations

Wear impact- and splash-resistant eyewear.

- Measures to prevent fire as well as aerosol and dust generation

Use local and general ventilation. Use only in well-ventilated areas.

- Handling of incompatible substances or mixtures

Do not mix with alkali.

- Keep away from

Caustic solutions

Advice on general occupational hygiene

Wash hands after use. Do not eat, drink and smoke in work areas. Remove contaminated clothing and protective equipment before entering eating areas. Never keep food or drink in the vicinity of chemicals. Never place chemicals in containers that are normally used for food or drink. Keep away from food, drink and animal feedingstuffs.

7.2 Conditions for safe storage, including any incompatibilities

Control of the effects

Protect against external exposure, such as

heat, high temperatures, light, UV-radiation/sunlight

- Ventilation requirements

Keep any substance that emits harmful vapors or gases in a place that allows these to be permanently extracted.

- Packaging compatibilities

Only packagings which are approved (e.g. acc. to the Dangerous Goods Regulations) may be used.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limit values (Workplace Exposure Limits)											
Country	Name of agent	CAS No	Identifier	TWA [ppm]	TWA [mg/m³]	STEL [ppm]	STEL [mg/m³]	Ceiling-C [ppm]	Ceiling-C [mg/m³]	Notation	Source
US	sulfuric acid	7664-93-9	PEL (CA)		0.1		3				Cal/OSH A PEL
US	sulfuric acid	7664-93-9	REL		1 (10 h)						NIOSH REL
US	sulfuric acid	7664-93-9	PEL		1						29 CFR 1910.10 00
US	sulfuric acid	7664-93-9	TLV®		0.2					t	ACGIH® 2025
US	dipotassium perox-	7727-21-1	TLV®		0.1					pers.	ACGIH®

Safety Data Sheet

20760SS

Version number: 2.0

Revision: 2026-06-24

Occupational exposure limit values (Workplace Exposure Limits)

Country	Name of agent	CAS No	Identifier	TWA [ppm]	TWA [mg/m³]	STEL [ppm]	STEL [mg/m³]	Ceiling-C [ppm]	Ceiling-C [mg/m³]	Notation	Source
	odisulfate										2025

Notation

Ceiling-C	ceiling value is a limit value above which exposure should not occur
pers.	calculated as persulfate
STEL	short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15-minute period (unless otherwise specified)
t	thoracic fraction
TWA	time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 hours time-weighted average (unless otherwise specified)

Relevant DNELs of components

Name of substance	CAS No	Endpoint	Threshold level	Protection goal, route of exposure	Used in	Exposure time
Ammonium Molybdate Tetrahydrate	12027-67-7	DNEL	19.36 mg/m³	human, inhalatory	worker (industry)	chronic - systemic effects
Ammonium Sulfate	7783-20-2	DNEL	11.17 mg/m³	human, inhalatory	worker (industry)	chronic - systemic effects
Ammonium Sulfate	7783-20-2	DNEL	42.67 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects
Ammonium Meta-Vanadate	7803-55-6	DNEL	0.64 mg/m³	human, inhalatory	worker (industry)	chronic - systemic effects
Ammonium Meta-Vanadate	7803-55-6	DNEL	0.18 mg/m³	human, inhalatory	worker (industry)	chronic - local effects
Ammonium Meta-Vanadate	7803-55-6	DNEL	0.92 mg/m³	human, inhalatory	worker (industry)	acute - local effects
Dipotassium Peroxodisulfate	7727-21-1	DNEL	0.824 mg/m³	human, inhalatory	worker (industry)	chronic - local effects
Dipotassium Peroxodisulfate	7727-21-1	DNEL	12.7 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects

Relevant PNECs of components

Name of substance	CAS No	Endpoint	Threshold level	Organism	Environmental compartment	Exposure time
Ammonium Molybdate Tetrahydrate	12027-67-7	PNEC	21.9 mg/l	aquatic organisms	freshwater	short-term (single instance)
Ammonium Molybdate Tetrahydrate	12027-67-7	PNEC	4.2 mg/l	aquatic organisms	marine water	short-term (single instance)
Ammonium Molybdate Tetrahydrate	12027-67-7	PNEC	39.9 mg/l	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)
Ammonium Molybdate Tetrahydrate	12027-67-7	PNEC	39,000 mg/kg	aquatic organisms	freshwater sediment	short-term (single instance)
Ammonium Molybdate Tetrahydrate	12027-67-7	PNEC	4,360 mg/kg	aquatic organisms	marine sediment	short-term (single instance)
Ammonium Molybdate	12027-67-7	PNEC	18.2	terrestrial organ-	soil	short-term (single in-

Safety Data Sheet

20760SS

Version number: 2.0

Revision: 2026-06-24

Relevant PNECs of components						
Name of substance	CAS No	Endpoint	Threshold level	Organism	Environmental compartment	Exposure time
Tetrahydrate			mg/kg	isms		stance)
Ammonium Sulfate	7783-20-2	PNEC	0.312 mg/l	aquatic organisms	freshwater	short-term (single instance)
Ammonium Sulfate	7783-20-2	PNEC	0.031 mg/l	aquatic organisms	marine water	short-term (single instance)
Ammonium Sulfate	7783-20-2	PNEC	16.18 mg/l	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)
Ammonium Sulfate	7783-20-2	PNEC	0.063 mg/kg	aquatic organisms	freshwater sediment	short-term (single instance)
Ammonium Sulfate	7783-20-2	PNEC	62.6 mg/kg	terrestrial organisms	soil	short-term (single instance)
Ammonium Meta-Vanadate	7803-55-6	PNEC	7.6 µg/l	aquatic organisms	freshwater	short-term (single instance)
Ammonium Meta-Vanadate	7803-55-6	PNEC	2.5 µg/l	aquatic organisms	marine water	short-term (single instance)
Ammonium Meta-Vanadate	7803-55-6	PNEC	450 µg/l	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)
Ammonium Meta-Vanadate	7803-55-6	PNEC	240 mg/kg	aquatic organisms	freshwater sediment	short-term (single instance)
Ammonium Meta-Vanadate	7803-55-6	PNEC	79 mg/kg	aquatic organisms	marine sediment	short-term (single instance)
Ammonium Meta-Vanadate	7803-55-6	PNEC	7.2 mg/kg	terrestrial organisms	soil	short-term (single instance)
Dipotassium Peroxodisulfate	7727-21-1	PNEC	0.518 mg/l	aquatic organisms	freshwater	short-term (single instance)
Dipotassium Peroxodisulfate	7727-21-1	PNEC	0.052 mg/l	aquatic organisms	marine water	short-term (single instance)
Dipotassium Peroxodisulfate	7727-21-1	PNEC	3.6 mg/l	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)
Dipotassium Peroxodisulfate	7727-21-1	PNEC	2.03 mg/kg	aquatic organisms	freshwater sediment	short-term (single instance)
Dipotassium Peroxodisulfate	7727-21-1	PNEC	0.203 mg/kg	aquatic organisms	marine sediment	short-term (single instance)
Dipotassium Peroxodisulfate	7727-21-1	PNEC	0.1 mg/kg	terrestrial organisms	soil	short-term (single instance)

8.2 Exposure controls

Appropriate engineering controls

General ventilation.

Individual protection measures (personal protective equipment)

Eye/face protection

Wear eye/face protection.

Skin protection

- Hand protection

Safety Data Sheet

20760SS

Version number: 2.0

Revision: 2026-06-24

Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. Recommended: Disposable neoprene gloves, 0.1 - 0.2 mm thick, 15-120 minute breakthrough times. Check leak-tightness/impermeability prior to use. In the case of wanting to use the gloves again, clean them before taking off and air them well. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

- Other protection measures

Wash hands thoroughly after handling.

Respiratory protection

In case of inadequate ventilation wear respiratory protection.

Environmental exposure controls

Use appropriate container to avoid environmental contamination. Keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Product description: See website or catalog for details.

Physical state	liquid
Color	yellow
Odor	odorless
Melting point/freezing point	-33 °C
Boiling point or initial boiling point and boiling range	109 °C
Evaporation rate	not determined
Flammability	non-combustible
Lower and upper explosion limit	not determined
Flash point	not determined
Auto-ignition temperature	not determined
Decomposition temperature	not relevant
pH (value)	<0.5 (acid)
Kinematic viscosity	not determined

Solubility(ies)

Water solubility	miscible in any proportion
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Partition coefficient

Partition coefficient n-octanol/water (log value)	this information is not available
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Vapor pressure	23 hPa
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Safety Data Sheet

20760SS

Version number: 2.0

Revision: 2026-06-24

Density and/or relative density

Density	1.38 g/cm ³
Relative vapour density	information on this property is not available

Particle characteristics	not relevant (liquid)
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SECTION 10: Stability and reactivity

10.1 Reactivity

Concerning incompatibility: see below "Conditions to avoid" and "Incompatible materials".

10.2 Chemical stability

See below "Conditions to avoid".

10.3 Possibility of hazardous reactions

No known hazardous reactions.

10.4 Conditions to avoid

There are no specific conditions known which have to be avoided.

10.5 Incompatible materials

There is no additional information.

Release of flammable materials with:

Light metals (due to the release of hydrogen in an acid/alkaline medium)

10.6 Hazardous decomposition products

Reasonably anticipated hazardous decomposition products produced as a result of use, storage, spill and heating are not known. Hazardous combustion products: see section 5.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Test data are not available for the complete mixture.

Classification procedure

The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

Classification acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200, Rev. 2024)

Acute toxicity

Toxic if inhaled.

- Acute toxicity estimate (ATE)

Inhalation: vapor 6 mg/l/4h

Acute toxicity estimate (ATE) of components

Name of substance	CAS No	Exposure route	ATE
Sulfuric Acid	7664-93-9	inhalation: vapor	3 mg/l/4h
Sulfuric Acid	7664-93-9	inhalation: dust/mist	0.85 mg/l/4h
Ammonium Molybdate Tetrahydrate	12027-67-7	oral	4,233 mg/kg

Safety Data Sheet

20760SS

Version number: 2.0

Revision: 2026-06-24

Acute toxicity estimate (ATE) of components

Name of substance	CAS No	Exposure route	ATE
Ammonium Molybdate Tetrahydrate	12027-67-7	dermal	>2,000 mg/kg
Ammonium Molybdate Tetrahydrate	12027-67-7	inhalation: dust/mist	>5.1 mg/l/4h
Ammonium Sulfate	7783-20-2	oral	4,250 mg/kg
Ammonium Sulfate	7783-20-2	dermal	>2,000 mg/kg
Ammonium Meta-Vanadate	7803-55-6	oral	218.1 mg/kg
Ammonium Meta-Vanadate	7803-55-6	dermal	>2,500 mg/kg
Ammonium Meta-Vanadate	7803-55-6	inhalation: dust/mist	0.005 mg/l/4h
Dipotassium Peroxodisulfate	7727-21-1	oral	1,200 mg/kg
Dipotassium Peroxodisulfate	7727-21-1	dermal	>2,000 mg/kg
Dipotassium Peroxodisulfate	7727-21-1	inhalation: dust/mist	≥2.95 mg/l/4h

Skin corrosion/irritation

Causes severe skin burns and eye damage.

Serious eye damage/eye irritation

Causes serious eye damage.

Respiratory or skin sensitization

May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction.

Germ cell mutagenicity

Shall not be classified as germ cell mutagenic.

Carcinogenicity

May cause cancer.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans

Name of substance	CAS No	Classification	Number
Sulfuric Acid	7664-93-9	1	

Legend

1 Carcinogenic to humans

National Toxicology Program (United States): Report on Carcinogens

Name of substance	CAS No	Classification	Number
Sulfuric Acid	7664-93-9	Known to be a human carcinogen	9th Report on Carcinogens

Reproductive toxicity

Shall not be classified as a reproductive toxicant.

Specific target organ toxicity - single exposure

Shall not be classified as a specific target organ toxicant (single exposure).

Specific target organ toxicity - repeated exposure

May cause damage to organs through prolonged or repeated exposure.

Safety Data Sheet

20760SS

Version number: 2.0

Revision: 2026-06-24

Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

11.2 Information on other hazards

There is no additional information.

SECTION 12: Ecological information

12.1 Toxicity

Toxic to aquatic life with long lasting effects.

Aquatic toxicity (acute) of components

Name of substance	CAS No	Endpoint	Value	Species	Exposure time
Sulfuric Acid	7664-93-9	LC50	>16 – <28 mg/l	fish	96 h
Sulfuric Acid	7664-93-9	EC50	>100 mg/l	aquatic invertebrates	48 h
Sulfuric Acid	7664-93-9	ErC50	>100 mg/l	algae	72 h
Ammonium Molybdate Tetrahydrate	12027-67-7	LC50	420 mg/l	fish	96 h
Ammonium Molybdate Tetrahydrate	12027-67-7	EC50	79 mg/l	aquatic invertebrates	48 h
Ammonium Sulfate	7783-20-2	LC50	53 mg/l	fish	96 h
Ammonium Sulfate	7783-20-2	EC50	121.7 mg/l	aquatic invertebrates	48 h
Ammonium Meta-Vanadate	7803-55-6	LC50	9,005 µg/l	fish	24 h
Ammonium Meta-Vanadate	7803-55-6	ErC50	2,907 µg/l	algae	72 h
Ammonium Meta-Vanadate	7803-55-6	EC50	989.4 µg/l	algae	72 h
Dipotassium Peroxodi-sulfate	7727-21-1	LC50	76.3 mg/l	fish	96 h
Dipotassium Peroxodi-sulfate	7727-21-1	EC50	120 mg/l	aquatic invertebrates	48 h

Aquatic toxicity (chronic) of components

Name of substance	CAS No	Endpoint	Value	Species	Exposure time
Ammonium Molybdate Tetrahydrate	12027-67-7	EC50	1,100 mg/l	microorganisms	30 min
Ammonium Sulfate	7783-20-2	EC50	2,700 mg/l	algae	18 d
Ammonium Sulfate	7783-20-2	ErC50	1,605 mg/l	algae	5 d
Ammonium Meta-Vanadate	7803-55-6	EC50	>100 mg/l	microorganisms	3 h
Dipotassium Peroxodi-sulfate	7727-21-1	EC50	11 mg/l	aquatic invertebrates	5 d

12.2 Persistence and degradability

Data are not available.

Safety Data Sheet

20760SS

Version number: 2.0

Revision: 2026-06-24

12.3 Bioaccumulative potential

Data are not available.

Bioaccumulative potential of components

Name of substance	CAS No	BCF	Log KOW	BOD5/COD
Water	7732-18-5		-0.467 (pH value: 7, 20 °C)	
Ammonium Sulfate	7783-20-2		-6.1	

12.4 Mobility in soil

Data are not available.

12.5 Results of PBT and vPvB assessment

Does not contain a PBT-/vPvB-substance at a concentration of $\geq 0.1\%$.

12.6 Endocrine disrupting properties

Does not contain an endocrine disruptor (ED) in a concentration of $\geq 0.1\%$.

12.7 Other adverse effects

Data are not available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Please consider the relevant national or regional provisions.

SECTION 14: Transport information

14.1 UN number

DOT	UN 3264
IMDG-Code	UN 3264
ICAO-TI	UN 3264

14.2 UN proper shipping name

DOT	Corrosive liquid, acidic, inorganic, n.o.s.
IMDG-Code	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.
ICAO-TI	Corrosive liquid, acidic, inorganic, n.o.s.
Technical name (hazardous ingredients)	Sulfuric Acid, Ammonium Meta-Vanadate

14.3 Transport hazard class(es)

DOT	8
IMDG-Code	8
ICAO-TI	8

14.4 Packing group

DOT	II
IMDG-Code	II
ICAO-TI	II

Safety Data Sheet

20760SS

Version number: 2.0

Revision: 2026-06-24

14.5 Environmental hazards

hazardous to the aquatic environment

Environmentally hazardous substance (aquatic environment) Sulfuric Acid

14.6 Other relevant information

Shipping container markings and labels, received from AquaPhoenix, may vary from the above information. Products that are regulated for transport will be packaged by AquaPhoenix as Dangerous Goods in Excepted Quantities according to IATA, US DOT, and IMDG regulations. AquaPhoenix may also elect to ship certain products as UN 3316 Chemical Kit, Hazard Class 9, Packing Group II or III. In case of reshipment, it is the responsibility of the shipper to determine appropriate labels and markings in accordance with applicable transportation regulations.

14.7 Maritime transport in bulk according to IMO instruments

The cargo is not intended to be carried in bulk.

Information for each of the UN Model Regulations

Transport of dangerous goods by road or rail (49 CFR US DOT) - Additional information

Particulars in the shipper's declaration UN3264, Corrosive liquid, acidic, inorganic, n.o.s., (Sulfuric Acid, Ammonium Meta-Vanadate, mixture), 8, II, environmentally hazardous

Reportable quantity (RQ) 2,000 lbs (908 kg) (Sulfuric Acid) (Ammonium Meta-Vanadate)

Danger label(s) 8, fish and tree



Environmental hazards yes (hazardous to the aquatic environment)

Special provisions (SP) 386, B2, IB2, T11, TP2, TP27

ERG No 154

International Maritime Dangerous Goods Code (IMDG) - Additional information

Marine pollutant yes (hazardous to the aquatic environment) (Sulfuric Acid)

Danger label(s) 8, fish and tree



Special provisions (SP) 274

Excepted quantities (EQ) E2

Limited quantities (LQ) 1 L

EmS F-A, S-B

Stowage category B

Segregation group 1 - Acids

International Civil Aviation Organization (ICAO-IATA/DGR) - Additional information

Environmental hazards yes (hazardous to the aquatic environment)

Danger label(s) 8



Safety Data Sheet

20760SS

Version number: 2.0

Revision: 2026-06-24

Special provisions (SP)	A3
Excepted quantities (EQ)	E2
Limited quantities (LQ)	0,5 L

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations specific for the product in question

National regulations (United States)

Toxic Substances Control Act (TSCA)

all ingredients are listed (ACTIVE) or exempt from listing

Superfund Amendment and Reauthorization Act (SARA TITLE III)

- The List of Extremely Hazardous Substances and Their Threshold Planning Quantities (EPCRA Section 302, 304)

The List of Extremely Hazardous Substances and Their Threshold Planning Quantities

Name of substance	CAS No	Notes	Reportable quantity (pounds)	Threshold planning quantity (pounds)
Sulfuric Acid	7664-93-9		1,000	1000

- Specific Toxic Chemical Listings (EPCRA Section 313)

Toxics Release Inventory: Specific Toxic Chemical Listings

Name of substance	CAS No	Remarks	Effective date
Sulfuric Acid	7664-93-9	acid aerosols including mists, vapors, gas, fog, and other airborne forms of any particle size	1986-12-31
Ammonium Meta-Vanadate			1999-12-31

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

- List of Hazardous Substances and Reportable Quantities (CERCLA section 102a) (40 CFR 302.4)

Name of substance	CAS No	Remarks	Statutory code	Final RQ pounds (Kg)
Sulfuric Acid	7664-93-9		1	1000 (454)
Ammonium Meta-Vanadate	7803-55-6		4	1000 (454)

Legend

- 1 "1" indicates that the statutory source is section 311(b)(2) of the Clean Water Act
4 "4" indicates that the source is section 3001 of the Resource Conservation and Recovery Act (RCRA)

Clean Air Act

none of the ingredients are listed

Right to Know Hazardous Substance List

Safety Data Sheet

20760SS

Version number: 2.0

Revision: 2026-06-24

- Hazardous Substance List (NJ-RTK)

Name of substance	CAS No	Remarks	Classifications
Dipotassium Peroxodisulfate	7727-21-1		R1
Sulfuric Acid	7664-93-9		CA CO R2
Ammonium Meta-Vanadate	7803-55-6		

Legend

CA	Carcinogenic
CO	Corrosive
R1	Reactive - First Degree
R2	Reactive - Second Degree

California Environmental Protection Agency (Cal/EPA): Proposition 65 - Safe Drinking Water and Toxic Enforcement Act of 1987

none of the ingredients are listed

Industry or sector specific available guidance(s)

NPCA-HMIS® III

Hazardous Materials Identification System. American Coatings Association.

Category	Rating	Description
Chronic	*	chronic (long-term) health effects may result from repeated overexposure
Health	3	major injury likely unless prompt action is taken and medical treatment is given
Flammability	0	material that will not burn under typical fire conditions
Physical hazard	0	material that is normally stable, even under fire conditions, and will not react with water, polymerize, decompose, condense, or self-react. Non-explosive
Personal protection	-	

NFPA® 704

National Fire Protection Association: Standard System for the Identification of the Hazards of Materials for Emergency Response (United States).

Category	Degree of hazard	Description
Flammability	0	material that will not burn under typical fire conditions
Health	3	material that, under emergency conditions, can cause serious or permanent injury
Instability	0	material that is normally stable, even under fire conditions
Special hazard		

National inventories

Country	Inventory	Status
AU	AIIC	all ingredients are listed
CA	DSL	all ingredients are listed

Safety Data Sheet

20760SS

Version number: 2.0

Revision: 2026-06-24

Country	Inventory	Status
CN	IECSC	all ingredients are listed
EU	ECSI	all ingredients are listed
EU	REACH Reg.	not all ingredients are listed
JP	CSCL-ENCS	all ingredients are listed
JP	ISHA-ENCS	not all ingredients are listed
KR	KECI	all ingredients are listed
MX	INSQ	all ingredients are listed
NZ	NZIoC	all ingredients are listed
PH	PICCS	all ingredients are listed
TR	CICR	not all ingredients are listed
TW	TCSI	all ingredients are listed
US	TSCA	all ingredients are listed (ACTIVE)

Legend

AIIC	Australian Inventory of Industrial Chemicals
CICR	Chemical Inventory and Control Regulation
CSCL-ENCS	List of Existing and New Chemical Substances (CSCL-ENCS)
DSL	Domestic Substances List (DSL)
ECSI	EC Substance Inventory (EINECS, ELINCS, NLP)
IECSC	Inventory of Existing Chemical Substances Produced or Imported in China
INSQ	National Inventory of Chemical Substances
ISHA-ENCS	Inventory of Existing and New Chemical Substances (ISHA-ENCS)
KECI	Korea Existing Chemicals Inventory
NZIoC	New Zealand Inventory of Chemicals
PICCS	Philippine Inventory of Chemicals and Chemical Substances (PICCS)
REACH Reg.	REACH registered substances
TCSI	Taiwan Chemical Substance Inventory
TSCA	Toxic Substances Control Act

15.2 Chemical Safety Assessment

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

SECTION 16: Other information, including date of preparation or last revision

Abbreviations and acronyms

Abbr.	Descriptions of used abbreviations
29 CFR 1910.1000	29 CFR 1910.1000, Tables Z-1, Z-2, Z-3 - Occupational Safety and Health Standards: Toxic and Hazardous Substances (permissible exposure limits)
49 CFR US DOT	49 CFR U.S. Department of Transportation
ACGIH® 2025	From ACGIH®, 2025 TLVs® and BEIs® Book. Copyright 2025. Reprinted with permission. Information on the proper use of the TLVs® and BEIs®: http://www.acgih.org/tlv-bei-guidelines/policies-procedures-presentations/tlv-bei-position-statement
Acute Tox.	Acute toxicity
Aquatic Acute	Hazardous to the aquatic environment - acute hazard

Safety Data Sheet

20760SS

Version number: 2.0

Revision: 2026-06-24

Abbr.	Descriptions of used abbreviations
Aquatic Chronic	Hazardous to the aquatic environment - chronic hazard
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
BOD	Biochemical Oxygen Demand
Cal/OSHA PEL	California Division of Occupational Safety and Health (Cal/OSHA): Permissible Exposure Limits (PELs)
Carc.	Carcinogenicity
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
Ceiling-C	Ceiling value
COD	Chemical oxygen demand
DGR	Dangerous Goods Regulations (see IATA/DGR)
DNEL	Derived No-Effect Level
DOT	Department of Transportation (USA)
EC50	Effective Concentration 50 %. The EC50 corresponds to the concentration of a tested substance causing 50 % changes in response (e.g. on growth) during a specified time interval
ED	Endocrine disruptor
EINECS	European Inventory of Existing Commercial Chemical Substances
ELINCS	European List of Notified Chemical Substances
EmS	Emergency Schedule
ErC50	≡ EC50: in this method, that concentration of test substance which results in a 50 % reduction in either growth (EbC50) or growth rate (ErC50) relative to the control
ERG No	Emergency Response Guidebook - Number
Eye Dam.	Seriously damaging to the eye
Eye Irrit.	Irritant to the eye
GHS	"Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IATA/DGR	Dangerous Goods Regulations (DGR) for the air transport (IATA)
ICAO	International Civil Aviation Organization
ICAO-TI	Technical instructions for the safe transport of dangerous goods by air
IMDG	International Maritime Dangerous Goods Code
IMDG-Code	International Maritime Dangerous Goods Code
LC50	Lethal Concentration 50%: the LC50 corresponds to the concentration of a tested substance causing 50 % lethality during a specified time interval
log KOW	n-Octanol/water
NIOSH REL	National Institute for Occupational Safety and Health (NIOSH): Recommended Exposure Limits (RELs)
NLP	No-Longer Polymer
NPCA-HMIS® III	National Paint and Coatings Association: Hazardous Materials Identification System - HMIS® III, Third Edition
OSHA	Occupational Safety and Health Administration (United States)

Safety Data Sheet

20760SS

Version number: 2.0

Revision: 2026-06-24

Abbr.	Descriptions of used abbreviations
Ox. Sol.	Oxidizing solid
PBT	Persistent, Bioaccumulative and Toxic
PEL	Permissible exposure limit
PNEC	Predicted No-Effect Concentration
ppm	Parts per million
Repr.	Reproductive toxicity
Resp. Sens.	Respiratory sensitization
RTECS	Registry of Toxic Effects of Chemical Substances (database of NIOSH with toxicological information)
Skin Corr.	Corrosive to skin
Skin Irrit.	Irritant to skin
Skin Sens.	Skin sensitization
STEL	Short-term exposure limit
STOT RE	Specific target organ toxicity - repeated exposure
STOT SE	Specific target organ toxicity - single exposure
TLV®	Threshold Limit Values
TWA	Time-weighted average
vPvB	Very Persistent and very Bioaccumulative

Key literature references and sources for data

Globally Harmonized System of Classification and Labelling of Chemicals ("Purple book").
 Transport of dangerous goods by road or rail (49 CFR US DOT). International Maritime Dangerous Goods Code (IMDG).
 Dangerous Goods Regulations (DGR) for the air transport (IATA).

Classification procedure

Physical and chemical properties: The classification is based on tested mixture.
 Health hazards, Environmental hazards: The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

List of relevant phrases (code and full text as stated in section 2 and 3)

Code	Text
H272	May intensify fire; oxidizer.
H301	Toxic if swallowed.
H302	Harmful if swallowed.
H303	May be harmful if swallowed.
H313	May be harmful in contact with skin.
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.
H330	Fatal if inhaled.

Safety Data Sheet

20760SS

Version number: 2.0

Revision: 2026-06-24

Code	Text
H331	Toxic if inhaled.
H332	Harmful if inhaled.
H333	May be harmful if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335	May cause respiratory irritation.
H350	May cause cancer.
H361	Suspected of damaging fertility or the unborn child.
H372	Causes damage to organs through prolonged or repeated exposure.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H402	Harmful to aquatic life.
H411	Toxic to aquatic life with long lasting effects.

Disclaimer

This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.