SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

20760-53 Molybdovanadate Reagent

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

Use of the substance/mixture

Water analysis

1.3. Details of the supplier of the safety data sheet

Company name:	HACH LANGE GmbH
Street:	Willstätterstr. 11
Place:	D-40549 Düsseldorf
Telephone:	+49 (0)211 5288-383
e-mail:	SDS@hach.com
Internet:	www.de.hach.com
Responsible Department:	HACH LANGE Ltd. 5, Pacific Way Salford Manchester M50 1DL - United Kingdom Tel. +44 (0) 161 872 1487 * Fax +44 (0) 161 848 7324 e-Mail: info-uk@hach.com HACH LANGE Ltd. Unit 1, Chestnut Road Western Industrial Estate IRL-Dublin 12 Tel. +353 (0)1 4602522 e-Mail: info-ie@hach.com

1.4. Emergency telephone number:

Poison Control Center Mainz: Tel: +49 (0) 6131 19240 - 24 hour emergency service -

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No. 1272/2008

Hazard categories:
Substance or mixture corrosive to metals: Met. Corr. 1
Acute toxicity: Acute Tox. 4
Skin corrosion/irritation: Skin Corr. 1A
Serious eye damage/eye irritation: Eye Dam. 1
Specific target organ toxicity - repeated exposure: STOT RE 1
Hazard Statements:
May be corrosive to metals.
Harmful if inhaled.
Causes severe skin burns and eye damage.
Causes serious eye damage.
Causes damage to organs through prolonged or repeated exposure.

2.2. Label elements

Regulation (EC) No. 1272/2008

Hazard components for labelling

sulphuric acid ... %
Molybdic acid
Ammonium monovanadate

Signal word: Danger

Pictograms:

Hazard statements

H290	May be corrosive to metals.
H332	Harmful if inhaled.
H314	Causes severe skin burns and eye damage.
H372	Causes damage to organs through prolonged or repeated exposure.

Precautionary statements

P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P270	Do not eat, drink or smoke when using this product.
P304+P340	IF INHALED: Remove person to fresh air and keep 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.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
P301+P330+P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P310	Immediately call a POISON CENTER/doctor.

Additional advice on labelling

The product is classified as dangerous in accordance with Regulation (EC) No. 1272/2008.

2.3. Other hazards

None known.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Hazardous components

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	GHS Classification			
7732-18-5	Water			50-60 %
	231-791-2			
7664-93-9	sulphuric acid ... %			40-50 %
	231-639-5	016-020-00-8		
	Skin Corr. 1A; H314			
12027-67-7	Ammonium heptamolydate			1-5 %
	234-722-4			
	Acute Tox. 4, Eye Irrit. 2; H302 H319			
7782-91-4	Molybdic acid			1-5 %
	231-970-5			
	Eye Irrit. 2, STOT SE 3, STOT RE 1; H319 H335 H372			
7803-55-6	Ammonium monovanadate			< 0,5 %
	232-261-3			
	Muta. 2, Acute Tox. 1, Acute Tox. 3, Skin Irrit. 2, Eye Irrit. 2, STOT SE 3, Aquatic Chronic 2; H341 H330 H301 H315 H319 H335 H411			

Full text of H and EUH statements: see section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

Take off contaminated clothing and shoes immediately. Show this safety data sheet to the doctor in attendance.

After inhalation

Move to fresh air. Consult a physician.

After contact with skin

Wash off immediately with plenty of water for at least 15 minutes. Call a physician immediately. Immediate medical treatment is necessary as untreated wounds from corrosion of the skin heal slowly and with difficulty.

After contact with eyes

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

After ingestion

Drink 1 or 2 glasses of water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Call a physician immediately.

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

Irritation and corrosion

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Carbon dioxide (CO2), Dry chemical

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

Unsuitable extinguishing media

Water

5.2. Special hazards arising from the substance or mixture

The following may develop in event of fire: sulfur oxides., nitrogen oxides (NOx), Ammonia

5.3. Advice for firefighters

In the event of fire, wear self-contained breathing apparatus. In order to avoid contact with skin, keep a safety distance and wear suitable protective clothing.

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

Use personal protective equipment.

6.2. Environmental precautions

Avoid subsoil penetration.

6.3. Methods and material for containment and cleaning up

Sweep up or vacuum up spillage and collect in suitable container for disposal.

6.4. Reference to other sections

13. Disposal considerations

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

Avoid contact with skin and eyes. Avoid contact with clothing. Do not breathe vapours or spray mist.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep at temperatures between 10 and 25 °C.

Hints on joint storage

Do not store together with Oxidizing agents, Solvent, Metals

7.3. Specific end use(s)

Reagent for analysis

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limits (EH40)

CAS No	Substance	ppm	mg/m³	fibres/ml	Category	Origin
7664-93-9	Sulphuric acid (mist)	-	0.05		TWA (8 h)	WEL

Additional advice on limit values

None known.

8.2. Exposure controls

Appropriate engineering controls

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

Protective and hygiene measures

The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
Wash hands before breaks and at the end of workday.

Eye/face protection

Safety glasses with side-shields

Hand protection

Use barrier skin cream.
Chemical resistant gloves made of butyl rubber or nitrile rubber category III according to EN 374. In full contact: Gloves material: Viton, Layer thickness: 0.70 mm, Breakthrough time: >480 min. In splash contact: Glove material: nitrile rubber, Layer thickness 0,20 mm, Breakthrough time: > 30 min

Skin protection

Avoid contact with skin, eyes and clothing.

Respiratory protection

Ensure adequate ventilation, especially in confined areas.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state:	liquid
Colour:	colourless, light yellow
Odour:	odourless
pH-Value (at 20 °C):	<0,5

Changes in the physical state

Melting point:	no data available
Initial boiling point and boiling range:	100 °C
Sublimation point:	not applicable
Softening point:	not applicable
Pour point:	not applicable
Flash point:	not applicable

Flammability

Solid:	not applicable
Gas:	not applicable

Explosive properties

not applicable

Lower explosion limits:	not applicable
Upper explosion limits:	not applicable
Ignition temperature:	not applicable

Auto-ignition temperature

Solid:	not applicable
Gas:	not applicable
Decomposition temperature:	not applicable

Oxidizing properties

not applicable

Vapour pressure:	no data available
Density (at 20 °C):	1,375 g/cm³
Bulk density:	not applicable
Water solubility: (at 20 °C)	soluble

Solubility in other solvents

Acids : soluble

Partition coefficient:	no data available
Viscosity / dynamic:	no data available
Viscosity / kinematic:	no data available
Flow time:	no data available
Vapour density:	no data available
Evaporation rate:	no data available
Solvent separation test:	no data available
Solvent content:	no data available

9.2. Other information

Solid content:	not applicable

Corrosive in contact with metals
Mild steel: 286,33 mm/a

SECTION 10: Stability and reactivity

10.1. Reactivity

Corrosive to metals

10.2. Chemical stability

Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions

Reacts with the following substances: Oxidizing agents

10.4. Conditions to avoid

To avoid thermal decomposition, do not overheat.

10.5. Incompatible materials

Incompatible with oxidizing agents. Gives off hydrogen by reaction with metals.

10.6. Hazardous decomposition products

Sulphur oxides, nitrogen oxides (NOx), Ammonia

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Toxicocinetics, metabolism and distribution

No toxicology information is available.

Acute toxicity

Harmful by inhalation.

ATEmix calculated

ATE (inhalation aerosol) 3,636 mg/l

CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
12027-67-7	Ammonium heptamolydate				
	oral	LD50 333 mg/kg	rat		
7803-55-6	Ammonium monovanadate				
	oral	LD50 58,1 mg/kg	Ratte		
	dermal	LD50 2100 mg/kg	Ratte		
	inhalation vapour	ATE 0,05 mg/l			
	inhalation (4 h) aerosol	LC50 0,008 mg/l	Ratte		

Irritation and corrosivity

Causes skin and eye burns.

Sensitising effects

No known effect.

Carcinogenic/mutagenic/toxic effects for reproduction

Contains no ingredient listed as a carcinogen

STOT-single exposure

The substance or mixture is not classified as specific target organ toxicant, single exposure.

STOT-repeated exposure

The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 1.

Aspiration hazard

No aspiration toxicity classification

Specific effects in experiment on an animal

No toxicology information is available.

Additional information on tests

None known.

Further information

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

SECTION 12: Ecological information

12.1. Toxicity

No data is available on the product itself.

CAS No	Chemical name						
	Aquatic toxicity	Dose		[h] | [d]	Species	Source	Method
12027-67-7	Ammonium heptamolydate						
	Acute fish toxicity	LC50	2,6 mg/l	96 h			
7803-55-6	Ammonium monovanadate						
	Acute fish toxicity	LC50	2,6 mg/l	96 h	Ictalurus catus		

12.2. Persistence and degradability

No data is available on the product itself.

12.3. Bioaccumulative potential

No data is available on the product itself.

12.4. Mobility in soil

no data available

12.5. Results of PBT and vPvB assessment

no data available

12.6. Other adverse effects

No known effect.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Advice on disposal

In accordance with local and national regulations.

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

Waste disposal number of contaminated packaging

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

SECTION 14: Transport information

Land transport (ADR/RID)

14.1. UN number: UN 2922

14.2. UN proper shipping name: CORROSIVE LIQUID, TOXIC, N.O.S. Sulphuric acid, Ammonium monovanadate)

14.3. Transport hazard class(es): 8

14.4. Packing group: II

Hazard label: 8+6.1

Classification code: CT1
Special Provisions: 274
Limited quantity: 1 L
Excepted quantity: E2
Transport category: 2
Hazard No: 86
Tunnel restriction code: E

Inland waterways transport (ADN)

Other applicable information (inland waterways transport)

Not tested

Marine transport (IMDG)

14.1. UN number: UN 2922

14.2. UN proper shipping name: CORROSIVE LIQUID, TOXIC, N.O.S. (Sulfuric acid, Ammonium vanadate)

14.3. Transport hazard class(es): 8

14.4. Packing group: II

Hazard label: 8+6.1

Marine pollutant: -
Special Provisions: 274
Limited quantity: 1 L
Excepted quantity: E2
EmS: F-A, S-B

Air transport (ICAO-TI/IATA-DGR)

14.1. UN number: UN 2922

14.2. UN proper shipping name: CORROSIVE LIQUID, TOXIC, N.O.S. (Sulfuric acid, Ammonium vanadate)

14.3. Transport hazard class(es): 8

14.4. Packing group: II

Hazard label: 8+6.1

Special Provisions: A3 A803
Limited quantity Passenger: 0.5 L
Passenger LQ: Y840
Excepted quantity: E2
IATA-packing instructions - Passenger: 851
IATA-max. quantity - Passenger: 1 L
IATA-packing instructions - Cargo: 855
IATA-max. quantity - Cargo: 30 L

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: no

14.6. Special precautions for user

no data available

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not relevant

Other applicable information

Additional Information:This product may be shipped as part of a chemical kit composed of various compatible dangerous goods for analytical or testing purposes. This kit would have the following classification: Proper Shipping Name: Chemical Kit, Hazard Class: 9, UN Number3316, Package group II, EMS Code: F-A, S-P These transport data apply to the entire pack

SECTION 15: Regulatory information

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

National regulatory information

Employment restrictions: Observe restrictions to employment for juvenils according to the 'juvenile work protection guideline' (94/33/EC). Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

Water contaminating class (D): 2 - clearly water contaminating

15.2. Chemical safety assessment

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

SECTION 16: Other information

Changes

Revision: 30.04.2019
Safety datasheet sections which have been updated: 14, 15
Revision: 26.04.2017
Safety datasheet sections which have been updated: 2, 3, 7, 8, 9, 10, 11
Revision: 18.05.2015
Safety datasheet sections which have been updated: 2, 4, 11

Classification for mixtures and used evaluation method according to Regulation (EC) No. 1272/2008 [CLP]

Classification	Classification procedure
Met. Corr. 1; H290	On basis of test data
Acute Tox. 4; H332	Calculation method
Skin Corr. 1A; H314	Calculation method
Eye Dam. 1; H318	Calculation method
STOT RE 1; H372	

Relevant H and EUH statements (number and full text)

H290 May be corrosive to metals.
H301 Toxic if swallowed.
H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.
H315 Causes skin irritation.
H318 Causes serious eye damage.
H319 Causes serious eye irritation.
H330 Fatal if inhaled.
H332 Harmful if inhaled.
H335 May cause respiratory irritation.
H341 Suspected of causing genetic defects.

H372	Causes damage to organs through prolonged or repeated exposure.
H411	Toxic to aquatic life with long lasting effects.

Further Information

The information is based on present level of our knowledge. It does not, however, give assurances of product properties and establishes no contract legal rights.

(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)