RHODUNA® 271 ready for use

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

Product identifier	:	RHODUNA® 271 ready for use
Product code	:	300000002557
Unique Formula Identifier (UFI)	:	7HR1-H0U1-C00Y-VMXV
Material number	:	000000574197100211

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

Use of the Substance/Mixture	:	Electroplating.

1.3 Details of the supplier of the safety data sheet

Company	:	Umicore Galvanotechnik GmbH Klarenbergstraße 53-79 73525 Schwäbisch Gmünd Germany
Telephone	:	+49 (0)7171 607-01
Telefax	:	+497171607316
E-mail address of person responsible for the SDS	:	galvano@eu.umicore.com

1.4 Emergency telephone number

Poison Center

Telephone	:	+49 30 192 40
Hours of operation	:	24HRS

Supplier

Emergency telephone number	:	For transport in Europe, Central- and South America, Israel and Africa (Non-Arabic speaking countries): (+32) 3 213 15 70 For transport in the Middle East (Israel excluded) & Arabic speaking Africa: (+32) 3 213 33 79 For transport in the USA and Canada: (+1)-877 986 4267 For transport in Asian and the Pacific (China excluded): (+65) 62 64 78 36 For transport in China: (+86) 0532 8388 9090
Hours of operation	:	This telephone number is available 24 hours per day, 7 days per week.

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Corrosive to metals, Category 1	H290: May be corrosive to metals.
Skin corrosion, Category 1	H314: Causes severe skin burns and eye damage.
Serious eye damage, Category 1	H318: Causes serious eye damage.
Germ cell mutagenicity, Category 2	H341: Suspected of causing genetic defects.
Long-term (chronic) aquatic hazard, Category 2	H411: Toxic to aquatic life with long lasting effects.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :

Signal word : Danger

Hazard statements :
H290 May be corrosive to metals.
H314 Causes severe skin burns and eye damage.
H341 Suspected of causing genetic defects.
H411 Toxic to aquatic life with long lasting effects.

Precautionary statements :

Prevention:

P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection.

Response:

P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.
P391 Collect spillage.

Hazardous components which must be listed on the label:

sulphuric acid

dirhodium trisulphate

Additional Labelling

The following percentage of the mixture consists of ingredient(s) with unknown acute dermal toxicity: 15,5 %

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Ecological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Toxicological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
sulphuric acid	7664-93-9 231-639-5 016-020-00-8 01-2119458838-20	Met. Corr. 1; H290 Skin Corr. 1A; H314 Eye Dam. 1; H318 ——————— specific concentration limit Skin Corr. 1A; H314 >= 15 % Skin Irrit. 2; H315 5 - < 15 % Eye Irrit. 2; H319 5 - < 15 %	<= 11
dirhodium trisulphate	10489-46-0 234-014-5 01-2120760608-47	Met. Corr. 1; H290 Skin Corr. 1B; H314 Eye Dam. 1; H318 Muta. 2; H341 Aquatic Acute 1; H400 Aquatic Chronic 1; H410 EUH071 ——————— M-Factor (Acute aquatic toxicity): 1	<= 4,5

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice : Move out of dangerous area.
Consult a physician.
Show this safety data sheet to the doctor in attendance.
Do not leave the victim unattended.

If inhaled : If unconscious, place in recovery position and get medical attention immediately.

In case of skin contact : If on skin, rinse well with water.
If on clothes, remove clothes.
Immediate medical treatment is necessary as untreated wounds from corrosion of the skin heal slowly and with difficulty.
Wash contaminated clothing before reuse.

In case of eye contact : Small amounts splashed into eyes can cause irreversible tissue damage and blindness.
Remove contact lenses.
In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Continue rinsing eyes during transport to hospital.
Protect unharmed eye.
Keep eye wide open while rinsing.

If swallowed : Clean mouth with water and drink afterwards plenty of water.
Keep respiratory tract clear.
Do NOT induce vomiting.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms : Skin contact may provoke the following symptoms:
Burn
corrosive effects
Redness
In case of eye contact
Excessive lachrymation

4.3 Indication of any immediate medical attention and special treatment needed

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	:	High volume water jet

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire-fighting	:	Cool closed containers exposed to fire with water spray. In the presence of fire, note caustic and corrosive effect. Do not allow run-off from fire fighting to enter drains or water courses.
Hazardous combustion products	:	Sulphur oxides Metal oxides Sulphuric acid Hazardous decomposition products due to incomplete combustion

5.3 Advice for firefighters

Special protective equipment for firefighters	:	Wear self-contained breathing apparatus for firefighting if necessary.
Further information	:	Collect contaminated fire extinguishing water separately. This must not be discharged into drains. 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	:	Use personal protective equipment. Evacuate personnel to safe areas.

6.2 Environmental precautions

Environmental precautions	:	Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up	:	Neutralize with chalk, alkali solution or ammonia. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).

6.4 Reference to other sections

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling	:	Do not breathe vapours/dust.

Avoid exposure - obtain special instructions before use.
Avoid contact with skin and eyes.
For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the application area.

Advice on protection against fire and explosion : Normal measures for preventive fire protection.

Hygiene measures : Avoid contact with skin, eyes and clothing. General industrial hygiene practice. Wash hands before breaks and immediately after handling the product.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Electrical installations / working materials must comply with the technological safety standards. To maintain product quality, do not store in heat or direct sunlight.

Advice on common storage : Keep away from strong bases.
Keep away from metals.

Storage class (TRGS 510) : 8B, Non-combustible, corrosive hazardous materials

Further information on storage stability : Keep in a dry place.
No decomposition if stored and applied as directed.

7.3 Specific end use(s)

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
sulphuric acid	7664-93-9	AGW (Inhalable fraction)	0,1 mg/m3	DE TRGS 900
	Peak-limit: excursion factor (category): 1;(I)			
	Further information: When there is compliance with the OEL and biological tolerance values, there is no risk of harming the unborn child			
		TWA (Mist)	0,05 mg/m3	2009/161/EU
	Further information: Indicative			
		TWA (Thoracic particulate matter)	0,2 mg/m3	ACGIH

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

Substance name	End Use	Exposure routes	Potential health effects	Value

sulphuric acid	Workers	Inhalation	Acute local effects	0,1 mg/m3
	Workers	Inhalation	Long-term local effects	0,05 mg/m3

Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:

Substance name	Environmental Compartment	Value
sulphuric acid	Fresh water	0,0025 mg/l
	Sediment	0,002 mg/l
	Marine water	0,00025 mg/l
	Marine sediment	0,002 mg/l
	Sewage treatment plant	8,8 mg/l

8.2 Exposure controls

Engineering measures

Handle only in a place equipped with local exhaust (or other appropriate exhaust).

Personal protective equipment

Eye/face protection : Wear face-shield and protective suit for abnormal processing problems.
Wear safety glasses with side shields or goggles.

Hand protection
- Material : Nitrile rubber
- Break through time : > 30 min
- Glove thickness : 0,40 mm

Skin and body protection : Impervious clothing
Footwear protecting against chemicals

Respiratory protection : In the case of vapour formation use a respirator with an approved filter.
When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state : liquid

Colour : brown

Odour : odourless

Melting point/freezing point : No data available

Boiling point/boiling range : No data available

Flash point : does not flash

Auto-ignition temperature : not determined

pH : ca. 0,5
Concentration: 100 %

Viscosity		
Viscosity, kinematic	:	No data available
Solubility(ies)		
Water solubility	:	completely miscible
Partition coefficient: n-octanol/water	:	No data available
Vapour pressure	:	not determined
Density	:	ca. 1,09 g/cm3

9.2 Other information

Flammability (liquids)	:	Does not sustain combustion.
Metal corrosion rate	:	Corrosive to metals

SECTION 10: Stability and reactivity

10.1 Reactivity

Stable at normal ambient temperature and pressure.

10.2 Chemical stability

No decomposition if stored and applied as directed.

10.3 Possibility of hazardous reactions

Hazardous reactions	:	Stable under recommended storage conditions.

10.4 Conditions to avoid

Conditions to avoid	:	Extremes of temperature and direct sunlight.

10.5 Incompatible materials

Materials to avoid	:	Strong bases Alkali metals Alkaline earth metals Metals

10.6 Hazardous decomposition products

No decomposition if stored and applied as directed.

SECTION 11: Toxicological information

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

Acute toxicity

Components:

sulphuric acid:

Acute oral toxicity	:	LD50 (Rat, male and female): > 5.000 mg/kg GLP: no
Acute inhalation toxicity	:	LC50 (Rat, male and female): 0,375 mg/l Test atmosphere: dust/mist Method: OECD Test Guideline 403 GLP: no
Acute dermal toxicity	:	Assessment: No data available Remarks: data waiving in REACH dossier

dirhodium trisulphate:

Acute oral toxicity	:	Assessment: The substance or mixture has no acute oral toxicity Remarks: data waiving in REACH dossier
Acute inhalation toxicity	:	Assessment: The substance or mixture has no acute inhalation toxicity Remarks: data waiving in REACH dossier Assessment: Corrosive to the respiratory tract.
Acute dermal toxicity	:	Assessment: No data available Remarks: data waiving in REACH dossier

Skin corrosion/irritation

Components:

sulphuric acid:

Result	:	Corrosive after 3 minutes or less of exposure
Remarks	:	data waiving in REACH dossier

dirhodium trisulphate:

Species	:	in vitro membrane barrier
Exposure time	:	1 h
Assessment	:	Causes burns.
Method	:	OECD Test Guideline 435
Result	:	Corrosive after 3 minutes to 1 hour of exposure
GLP	:	yes

Serious eye damage/eye irritation

Components:

sulphuric acid:

Remarks : data waiving in REACH dossier
Not classified due to data which are conclusive although insufficient for classification.

dirhodium trisulphate:

Assessment : Corrosive
Remarks : data waiving in REACH dossier

Respiratory or skin sensitisation

Product:

Remarks : No data available

Components:

sulphuric acid:

Exposure routes : Skin contact
Remarks : data waiving in REACH dossier

Exposure routes : Inhalation
Remarks : data waiving in REACH dossier

dirhodium trisulphate:

Remarks : No data available

Germ cell mutagenicity

Product:

Genotoxicity in vitro : Remarks: No data available

Components:

sulphuric acid:

Genotoxicity in vitro : Test Type: Ames test
Test system: Salmonella typhimurium TA98, TA100, TA1535, TA1537
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative
GLP: yes
Remarks: Based on read across from structural related substance

Test Type: Ames test
Test system: Salmonella typhimurium TA97, TA98, TA100, TA102, TA 1535

Metabolic activation: with and without metabolic activation
Method: No guideline followed
Result: negative
GLP: no

Genotoxicity in vivo : Remarks: data waiving in REACH dossier

dirhodium trisulphate:

Genotoxicity in vitro : Test Type: reverse mutation assay
Test system: Salmonella typhimurium TA98, TA100, TA102, TA 1535, TA1537
Concentration: 160,300,625,1250,2500,5000µg/p
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: positive
GLP: yes

Genotoxicity in vivo : Test Type: Micronucleus test
Species: Mouse (male and female)
Strain: NMRI
Cell type: Bone marrow
Application Route: Intraperitoneal injection
Method: OECD Test Guideline 474
Result: positive
GLP: yes

Germ cell mutagenicity- Assessment : In vitro tests showed mutagenic effects
Remarks: Based on read across from structural related substance
Rhodium(III)-chloride hydrate.

Carcinogenicity

Product:

Remarks : No data available

Components:

dirhodium trisulphate:

Remarks : No data available

Carcinogenicity - Assessment :
Remarks: Based on read across from structural related substance
Rhodium(III)-chloride hydrate.

Reproductive toxicity

Product:

Effects on fertility : Remarks: No data available

Components:

sulphuric acid:

Effects on fertility	:	Remarks: data waiving in REACH dossier
Effects on foetal development	:	Test Type: Developmental toxicity study Species: Rabbit Strain: NZW Application Route: inhalation (aerosol) Dose: 0, 5, 20 mg/m³ Duration of Single Treatment: 12 d General Toxicity Maternal: NOAEC: 5,7 mg/m³ Developmental Toxicity: NOAEC: 19,3 mg/m³ Method: OECD Test Guideline 414 GLP: no Test Type: Developmental toxicity study Species: Mouse Strain: CF1 Application Route: inhalation (aerosol) Dose: 0, 5, 20 mg/m³ Duration of Single Treatment: 9 d General Toxicity Maternal: NOAEC: 5,7 mg/m³ Developmental Toxicity: NOAEC: 19,3 mg/m³ Method: OECD Test Guideline 414 GLP: no

dirhodium trisulphate:

Effects on fertility	:	Remarks: No data available
Effects on foetal development	:	Remarks: No data available
Reproductive toxicity - Assessment	:	Remarks: Based on read across from structural related substance Rhodium(III)-chloride hydrate.

STOT - single exposure

Product:

Remarks	:	No data available

Components:

sulphuric acid:

Exposure routes	:	Inhalation, Ingestion, Skin contact

dirhodium trisulphate:

Remarks	:	No data available

STOT - repeated exposure

Product:

Remarks : No data available

Components:

sulphuric acid:

Exposure routes : Inhalation

dirhodium trisulphate:

Remarks : No data available

Repeated dose toxicity

Components:

sulphuric acid:

Species	:	Rat, female
	:	0,3 mg/m³
Application Route	:	inhalation (aerosol)
Exposure time	:	28 d
Number of exposures	:	5 d/w
Dose	:	0, 0.2, 1.0, 5.0 mg/m3
Method	:	OECD Test Guideline 412
GLP	:	yes

dirhodium trisulphate:

Remarks : No data available

Aspiration toxicity

Components:

sulphuric acid:

Not classified due to data which are conclusive although insufficient for classification.

11.2 Information on other hazards

Endocrine disrupting properties

Product:

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Further information

Product:

Remarks : No data available

SECTION 12: Ecological information

12.1 Toxicity

Components:

sulphuric acid:

Toxicity to fish : LC50 (Lepomis macrochirus (Bluegill sunfish)): > 16 mg/l
Exposure time: 96 h
Test Type: static test
GLP: no
Remarks: Fresh water

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 100 mg/l
Exposure time: 48 h
Test Type: static test
Method: OECD Test Guideline 202
GLP: yes
Remarks: Fresh water

Toxicity to algae/aquatic plants : EC50 (Desmodesmus subspicatus (green algae)): > 100 mg/l
Exposure time: 72 h
Test Type: static test
Analytical monitoring: yes
Method: OECD Test Guideline 201
GLP: yes
Remarks: Fresh water

Toxicity to microorganisms : NOEC (activated sludge): 26.000 mg/l
Exposure time: 37 d
Method: No data available
GLP: no
Remarks: Based on data from similar materials

Toxicity to fish (Chronic toxicity) : NOEC: 0,025 mg/l
Exposure time: 65 days
Species: Jordanella floridae (flagfish)
GLP: no
Remarks: Fresh water

dirhodium trisulphate:

Toxicity to fish : LC50 (Leuciscus idus (Golden orfe)): 310 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203
GLP: yes
Remarks: No data available
Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 0,29 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202

GLP: no
Remarks: Based on data from similar materials

Toxicity to algae/aquatic plants	:	EC50 (Pseudokirchneriella subcapitata (green algae)): 0,656 mg/l Exposure time: 72 h Method: OECD Test Guideline 201 GLP: yes Remarks: Based on data from similar materials EC10 (Pseudokirchneriella subcapitata (green algae)): 0,046 mg/l Exposure time: 72 h Method: OECD Test Guideline 201 GLP: yes Remarks: Based on data from similar materials
M-Factor (Acute aquatic toxicity)	:	1
Toxicity to microorganisms	:	Remarks: No data available
Toxicity to fish (Chronic toxicity)	:	Remarks: No data available
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	Remarks: No data available

Ecotoxicology Assessment

Acute aquatic toxicity	:	Very toxic to aquatic life.
Chronic aquatic toxicity	:	Very toxic to aquatic life with long lasting effects.

12.2 Persistence and degradability

Components:

sulphuric acid:

Biodegradability	:	Remarks: data waiving in REACH dossier

dirhodium trisulphate:

Biodegradability	:	Result: Readily biodegradable.

12.3 Bioaccumulative potential

Components:

sulphuric acid:

Bioaccumulation	:	Remarks: Not applicable
Partition coefficient: n-	:	Remarks: data waiving in REACH dossier

octanol/water

dirhodium trisulphate:

Bioaccumulation	:	Remarks: No data available
Partition coefficient: n-octanol/water	:	Remarks: Not applicable

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

Product:

Assessment	:	This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Endocrine disrupting properties

Product:

Assessment	:	The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

12.7 Other adverse effects

Product:

Additional ecological information	:	Toxic to aquatic life with long lasting effects.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product	:	Dispose of in accordance with the European Directives on waste and hazardous waste. According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user, preferably in discussion with the waste disposal authorities. The product should not be allowed to enter drains, water courses or the soil. Do not contaminate ponds, waterways or ditches with chemical or used container. Send to a licensed waste management company. Dispose of as hazardous waste in compliance with local and national regulations.

Contaminated packaging	:	Empty remaining contents. Dispose of contaminated packaging as if unused product. Do not re-use empty containers.

SECTION 14: Transport information

14.1 UN number

ADN	:	UN 3264
ADR	:	UN 3264
RID	:	UN 3264
IMDG	:	UN 3264
IATA	:	UN 3264

14.2 UN proper shipping name

ADN	:	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Sulphuric acid, dirhodium trisulfate)
ADR	:	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Sulphuric acid, dirhodium trisulfate)
RID	:	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Sulphuric acid, dirhodium trisulfate)
IMDG	:	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Sulphuric acid, dirhodium trisulfate)
IATA	:	Corrosive liquid, acidic, inorganic, n.o.s. (Sulphuric acid, dirhodium trisulfate)

14.3 Transport hazard class(es)

ADN : 8

ADR : 8

RID : 8

IMDG : 8

IATA : 8

14.4 Packing group

ADN

Packing group	:	II
Classification Code	:	C1
Hazard Identification Number	:	80
Labels	:	8

ADR

Packing group	:	II
Classification Code	:	C1
Hazard Identification Number	:	80
Labels	:	8
Tunnel restriction code	:	(E)
Limited quantity	:	1,00 L

RID

Packing group	:	II
Classification Code	:	C1
Hazard Identification Number	:	80
Labels	:	8

IMDG

Packing group	:	II
Labels	:	8
EmS Code	:	F-A, S-B
IMDG segregationcode	:	Acids

IATA (Cargo)

Packing instruction (cargo aircraft)	:	855
Maximum quantity	:	30,00 L
Packing instruction (LQ)	:	Y840
Packing group	:	II
Labels	:	Corrosive

IATA (Passenger)

Packing instruction (passenger aircraft)	:	851
Maximum quantity	:	1,00 L
Packing instruction (LQ)	:	Y840
Packing group	:	II
Labels	:	Corrosive

14.5 Environmental hazards

ADN

Environmentally hazardous : yes

ADR
Environmentally hazardous : yes

RID
Environmentally hazardous : yes

IMDG
Marine pollutant : yes

IATA (Passenger)
Environmentally hazardous : yes

IATA (Cargo)
Environmentally hazardous : yes

14.6 Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

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

Not applicable for product as supplied.

SECTION 15: Regulatory information

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

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII)	:	Conditions of restriction for the following entries should be considered: Number on list 3
REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59).	:	Not applicable
Regulation (EC) No 1005/2009 on substances that deplete the ozone layer	:	Not applicable
Regulation (EU) 2019/1021 on persistent organic pollutants (recast)	:	Not applicable
Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals	:	Not applicable
REACH - List of substances subject to authorisation (Annex XIV)	:	Not applicable

Regulation (EU) 2019/1148 on the marketing and use of explosives precursors

This product is regulated by Regulation (EU) 2019/1148: all suspicious transactions, and significant disappearances and thefts should be reported to the relevant national contact point.	sulphuric acid (ANNEX I)

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.	E2	ENVIRONMENTAL HAZARDS

Water hazard class (Germany) : WGK 3 highly hazardous to water
Classification according to AwSV, Annex 1 (5.2)

TA Luft List (Germany) :
5.2.1: Total dust:
Not applicable
5.2.2: Inorganic substances in powdered form:
Not applicable
5.2.4: Inorganic substances in gaseous form:
Not applicable
5.2.5: Organic Substances:
Not applicable
5.2.7.1.1: Carcinogenic substance:
Not applicable
5.2.7.1.1: Quartz fine dust PM4:
Not applicable
5.2.7.1.1: Formaldehyde:
Not applicable
5.2.7.1.1: fibres:
Not applicable
5.2.7.1.2: Germ cell mutagens:
Not applicable
5.2.7.1.3: Substances toxic to reproduction:
Not applicable
5.2.7.2: Poorly degradable, easily enrichable and highly toxic organic substances:
Not applicable

Volatile organic compounds : Directive 2010/75/EU of 24 November 2010 on industrial emissions (integrated pollution prevention and control)
Not applicable

Other regulations:

Take note of Law on the protection of mothers at work, in education and in studies (Maternity Protection Act - MuSchG).

Take note of Directive 94/33/EC on the protection of young people at work or stricter national regulations, where applicable.

The components of this product are reported in the following inventories:

TSCA : All substances listed as active on the TSCA inventory

AIIC : On the inventory, or in compliance with the inventory

DSL : All components of this product are on the Canadian DSL

ENCS	:	On the inventory, or in compliance with the inventory
ISHL	:	On the inventory, or in compliance with the inventory
KECI	:	On the inventory, or in compliance with the inventory
PICCS	:	On the inventory, or in compliance with the inventory
IECSC	:	On the inventory, or in compliance with the inventory
NZIoC	:	Not in compliance with the inventory
CH INV	:	On the inventory, or in compliance with the inventory
TCSI	:	On the inventory, or in compliance with the inventory
TECI	:	On the inventory, or in compliance with the inventory

15.2 Chemical safety assessment

SECTION 16: Other information

Full text of H-Statements

H290	:	May be corrosive to metals.
H314	:	Causes severe skin burns and eye damage.
H318	:	Causes serious eye damage.
H341	:	Suspected of causing genetic defects.
H400	:	Very toxic to aquatic life.
H410	:	Very toxic to aquatic life with long lasting effects.
EUH071	:	Corrosive to the respiratory tract.

Full text of other abbreviations

Aquatic Acute	:	Short-term (acute) aquatic hazard
Aquatic Chronic	:	Long-term (chronic) aquatic hazard
Eye Dam.	:	Serious eye damage
Met. Corr.	:	Corrosive to metals
Muta.	:	Germ cell mutagenicity
Skin Corr.	:	Skin corrosion
2009/161/EU	:	Europe. COMMISSION DIRECTIVE 2009/161/EU establishing a third list of indicative occupational exposure limit values in implementation of Council Directive 98/24/EC and amending Commission Directive 2000/39/EC
ACGIH	:	USA. ACGIH Threshold Limit Values (TLV)
DE TRGS 900	:	Germany. TRGS 900 - Occupational exposure limit values.
2009/161/EU / TWA	:	Limit Value - eight hours
ACGIH / TWA	:	8-hour, time-weighted average
DE TRGS 900 / AGW	:	Time Weighted Average

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regula-

tion (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Further information

Classification of the mixture:		**Classification procedure:**
Met. Corr. 1	H290	Based on product data or assessment
Skin Corr. 1	H314	Based on product data or assessment
Eye Dam. 1	H318	Based on product data or assessment
Muta. 2	H341	Calculation method
Aquatic Chronic 2	H411	Calculation method

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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