

Product name: AEROXIDE® Alu C

SAFETY DATA SHEET

Classification (REGULATION (EC) No 1272/2008) as amended by GB-CLP Regulation, UK SI 2019/720, and UK SI 2020/1567

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1 Product identifier****Product name:**
AEROXIDE® Alu C**Additional identification**

Chemical name:	Aluminium oxide
Chemical formula:	Al ₂ O ₃
INDEX No.	-
CAS-No.	1344-28-1
EC No.	215-691-6
UK-REACH	-
Registration No.:	
REACH Registration No.:	01-2119529248-35

1.2 Relevant identified uses of the substance or mixture and uses advised against**Identified uses:**
Antiblocking agents
Paper**Uses advised against:** Not determined.**1.3 Details of the supplier of the safety data sheet****Company Name** : Evonik Operations GmbH
Rellinghauser Str. 1-11
45128 Essen
Germany**Telephone** : +49 6181 59 4787**E-mail** : sds-hu@evonik.com**1.4 Emergency telephone number:****24-Hour Health Emergency** : +49 7623 919191National Poison Information Service (NPIS)
England, Scotland and Wales: NHS: 111**SECTION 2: Hazards identification****2.1 Classification of the substance or mixture**

The product has not been classified as hazardous according to the legislation in force.

Product name: AEROXIDE® Alu C

Classification (REGULATION (EC) No 1272/2008) as amended by GB-CLP Regulation, UK SI 2019/720, and UK SI 2020/1567

Not classified

2.2 Label Elements

Not applicable

2.3 Other hazards

PBT/vPvB data

Not a PBT, vPvB substance as per the criteria of the REACH Regulation.

SECTION 3: Composition/information on ingredients

3.1 Substances

Chemical name: Aluminium oxide

INDEX No.:

CAS-No.: 1344-28-1

EC No.: 215-691-6

UK-REACH Registration No.: -

REACH Registration No.: 01-2119529248-35

Chemical name	Concentration	CAS-No.	EC No.	UK-REACH Registration No.	REACH Registration No.	M-Factor:	Notes
Aluminium oxide		1344-28-1	215-691-6	-	01-2119529248-35	No data available.	#

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

This substance has workplace exposure limit(s).

This substance is listed as SVHC.

Classification

Chemical name	Classification	Notes
Aluminium oxide	Classification: None known. Supplemental label information: None known.	Not applicable

SECTION 4: First aid measures

4.1 Description of first aid measures

Inhalation:

In case product dust is released: Possible discomfort: cough, sneezing If necessary: Provide with fresh air.

Skin Contact:

Wash off with plenty of water and soap.

Product name: AEROXIDE® Alu C

Eye contact:	Possible discomfort is due to foreign substance effect. Rinse thoroughly with plenty of water keeping eyelid open. In case of persistent discomfort: Consult an ophthalmologist.
Ingestion:	Have the mouth rinsed with water. After absorbing large amounts of substance / In case of discomfort: Supply with medical care.
Personal Protection for First-aid Responders:	No data available.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms:	No data available.
Hazards:	None known.

4.3 Indication of immediate medical attention and special treatment needed

Treatment:	After absorbing large amounts of substance: administration of activated charcoal. Acceleration of gastrointestinal passage
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SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media:	Water spray, foam, CO2, dry powder. Adapt fire-extinguishing measures to surroundings
Unsuitable extinguishing media:	Do not use a solid water stream as it may scatter and spread fire.

5.2 Special hazards arising from the substance or mixture:	None known.
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5.3 Advice for firefighters

Special fire fighting procedures:	Water used to extinguish fire should not enter drainage systems, soil or stretches of water. Ensure there are sufficient retaining facilities for water used to extinguish fire. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
Special protective equipment for fire-fighters:	In the event of fire, wear self-contained breathing apparatus.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures:	Use personal protective equipment.
6.1.1 For non-emergency personnel:	No data available.
6.1.2 For emergency responders:	No data available.
6.2 Environmental Precautions:	Do not allow entrance in sewage water, soil stretches of water, groundwater, drainage systems.

Product name: AEROXIDE® Alu C

- 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:** For personal protection see section 8. For disposal considerations see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

- Technical measures:** Ensure suitable suction/aeration at the work place and with operational machinery. Local ventilation if necessary.
- Local/Total ventilation:** No data available.
- Safe handling advice:** If necessary: Local ventilation. Handle in accordance with good industrial hygiene and safety practice. If there is the possibility of skin/eye contact, the indicated hand/eye/body protection should be used. If workplace exposure limits are exceeded and/or larger amounts are released (leakage, spilling, dust) the indicated respiratory protection should be used.
- Contact avoidance measures:** No data available.

7.2 Conditions for safe storage, including any incompatibilities

- Safe storage conditions:** Take precautionary measures against static discharges. Keep in a dry, cool place.
- Safe packaging materials:** No data available.

- 7.3 Specific end use(s):** Applications; see Section 1. No further information available

SECTION 8: Exposure controls/personal protection

8.1 Control Parameters

Occupational Exposure Limits

Chemical name	Type	Form of exposure	Exposure Limit Values		Source
Aluminium oxide	TWA	Inhalable dust.		10 mg/m ³	EH40 WEL (12 2011)
	TWA	Respirable dust.		4 mg/m ³	EH40 WEL (12 2011)

Please refer to the latest edition of the appropriate source text and consult an industrial hygienist or similar professional, or local agencies, for further information.

Biological Limit Values

No biological exposure limits noted for the ingredient(s).

DNEL-Values

Critical component	Type	Route of Exposure	Health Warnings	Remarks
Aluminium oxide	General population	Inhalation	Local, long-term; 0.75 mg/m ³	Repeated dose toxicity
	General population	Inhalation	Systemic, long-term; 0.75 mg/m ³	Repeated dose toxicity
	Workers	Eyes	Local effect;	No hazard identified
	General population	Oral	Systemic, long-term; 1.32 mg/kg	Neurotoxicity

Product name: AEROXIDE® Alu C

	General population	Eyes	Local effect;	No hazard identified
	Workers	Inhalation	Local, long-term; 3 mg/m ³	Repeated dose toxicity
	Workers	Inhalation	Systemic, long-term; 3 mg/m ³	Repeated dose toxicity
	Workers	Dermal	Systemic, long-term; 0.84 mg/kg	Neurotoxicity
	General population	Dermal	Systemic, long-term; 0.3 mg/kg	Neurotoxicity

PNEC-Values

Critical component	Environmental compartment	PNEC-Values	Remarks
Aluminium oxide	Sewage treatment plant	20 mg/l	
	Aquatic	74.9 µg/l	No data: aquatic toxicity unlikely.

8.2 Exposure controls
Appropriate Engineering Controls:

Ensure suitable suction/aeration at the work place and with operational machinery. Local ventilation if necessary. see also section 7.

Individual protection measures, such as personal protective equipment
Eye/face protection:

Safety glasses with side shields If dust occurs: basket-shaped glasses

Hand Protection:

 Additional Information: Protective gloves, nitrile rubber (NBR), butyl rubber, PVC
 Additional Information: The data about break through time/strength of material is not valid for undissolved solids/dust.

Skin and Body Protection:

No special protective equipment required.

Respiratory Protection:

No special protective equipment required. If dust occurs: Dust mask with P2 particle filter

Hygiene measures:

When using, do not eat, drink or smoke. Wash face and/or hands before break and end of work. Avoid clothing from being contaminated with the product. Wash contaminated clothing after use. To ensure ideal skin protection: use super fatted soaps and skin cream for skin care.

Environmental Controls:

see section 6.

SECTION 9: Physical and chemical properties
9.1 Information on basic physical and chemical properties
Appearance
Physical state:

solid

Form:

Powder

Color:

White

Odor:

Odorless

Odor Threshold:

Not applicable

Melting Point:

 Approximate
 2,050 °C

Boiling Point:

No data available.

Product name: AEROXIDE® Alu C

Flammability:	Not applicable
Upper/lower limit on flammability or explosive limits	
Explosive limit - upper:	Not applicable
Explosive limit - lower:	Not applicable
Flash Point:	Not applicable (solid)
Auto-ignition temperature:	Not applicable
Decomposition Temperature:	> 2,000 °C
pH:	4 - 6 at 20 °C Method: DIN / ISO 787 / 9 Concentration: 40 g/l Suspension
Viscosity	
Dynamic viscosity:	Not applicable (solid)
Kinematic viscosity:	Not applicable (solid)
Solubility(ies)	
Solubility in Water:	hardly soluble
Partition coefficient (n-octanol/water):	Not applicable
Vapor pressure:	Not applicable
Relative density:	No data available.
Density:	Approximate 3.27 g/cm ³ at 20 °C
Vapor density (air=1):	No data available.

9.2 Other information

Explosive properties:	Not to be expected in view of the structure
Oxidizing properties:	Not to be expected in view of the structure
Self-ignition:	Not applicable
Peroxides:	Not applicable
Dust explosion properties:	Not dust explosive
Evaporation Rate:	Not applicable
Minimum ignition energy:	Not applicable

SECTION 10: Stability and reactivity

10.1 Reactivity:	No dangerous reaction known under conditions of normal use.
10.2 Chemical Stability:	Stable under recommended storage conditions.
10.3 Possibility of hazardous reactions:	No hazardous reactions are known if properly handled and stored.
10.4 Conditions to avoid:	Avoid dust formation.
10.5 Incompatible Materials:	Strong acids and strong bases

Product name: AEROXIDE® Alu C

10.6 Hazardous Decomposition Products:	None known. Stable under normal conditions. Product will not undergo hazardous polymerization.
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SECTION 11: Toxicological information

General information:	If the recommended workplace concentration of the product is exceeded the respiratory tract may be mechanically overcharged as with other fine dusts.
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11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Information on likely routes of exposure

Inhalation:	Information on effects are given below.
Skin Contact:	Information on effects are given below.
Eye contact:	Information on effects are given below.
Ingestion:	Information on effects are given below.

Acute toxicity (list all possible routes of exposure)

Oral

Product:	LD 50, Rat, Female, Male, > 10,000 mg/kg, OECD 401 Based on available data, the classification criteria are not met.
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Components:

Aluminium oxide	LD 50, Rat, Female, Male, > 10,000 mg/kg, OECD 401
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Dermal

Product:	Not classified for acute toxicity based on available data.
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Components:

Aluminium oxide	Not toxic after single exposure, Not classified for acute toxicity based on available data.
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Inhalation

Product:	Not classified for acute toxicity based on available data.
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Components:

Aluminium oxide	Dust and mist, Not toxic after single exposure, No classification Vapour, Not toxic after single exposure, Not applicable
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Repeated dose toxicity

Product:	NOAEL Rat, Female, Male, Oral, 90 d, daily, 1,000 mg/kg, LOAEL Rat, Female, Male, Oral, 90 d, daily, 1,000 mg/kg, (analogy) NOAEC, Rat, Inhalation - dust and mist, 90 d, 5 days/weeks, 6 hours/day, 70 mg/m ³ , Target Organ(s): lungs / sediments in the lungs, lungs / no evidence of fibrosis, no pathological changes
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Components:

Aluminium oxide	NOAEL Rat, Female, Male, Oral, 90 d, daily, 1,000 mg/kg, LOAEL Rat, Female, Male, Oral, 90 d, daily, 1,000 mg/kg, (analogy) NOAEC, Rat, Inhalation - dust and mist, 90 d, 5 days/weeks, 6 hours/day, 70 mg/m ³ , Target Organ(s): lungs / sediments in the lungs, lungs / no evidence of fibrosis, no pathological changes
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Skin Corrosion/Irritation

Product:	Not irritant, OECD 404, (Rabbit), Based on available data, the classification criteria are not met.
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Components:

Aluminium oxide	Not irritating, OECD 404, Rabbit
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Product name: AEROXIDE® Alu C

Serious Eye Damage/Eye Irritation

Product: Not irritant, OECD 405, Rabbit, Based on available data, the classification criteria are not met.

Components:
 Aluminium oxide Not irritating, OECD 405, Rabbit

Respiratory or Skin Sensitization

Product: Maximization Test, OECD 406, Guinea Pig
 Draize-test, Guinea Pig, Based on available data, the classification criteria are not met.

Components:
 Aluminium oxide Draize-test, Guinea Pig, Not a skin sensitizer.
 Maximization Test, OECD 406, Guinea Pig, Not a skin sensitizer.

Carcinogenicity

Product: No evidence that cancer may be caused.

Components:
 Aluminium oxide No evidence that cancer may be caused.

Germ Cell Mutagenicity

no evidence of mutagenic effects

In vitro

Product: gene mutation test, OECD 471: , negative
 gene mutation test, OECD 476: , negative, (analogy)

Components:
 Aluminium oxide gene mutation test, OECD 471: , negative
 gene mutation test, OECD 476: , negative, (analogy)

In vivo

Product: Micronucleus test, OECD 474, Oral, Rat, Male, negative, (analogy)

Components:
 Aluminium oxide Micronucleus test, OECD 474, Oral, Rat, Male, negative, (analogy)

Reproductive toxicity

Product: no evidence of reproductiontoxic properties

Components:
 Aluminium oxide no evidence of reproductiontoxic properties

Specific Target Organ Toxicity - Single Exposure

Product: no evidence for hazardous properties

Components:
 Aluminium oxide no evidence for hazardous properties

Specific Target Organ Toxicity - Repeated Exposure

Product: no evidence for hazardous properties

Components:
 Aluminium oxide no evidence for hazardous properties

Aspiration Hazard

Product: Not applicable

Components:

Product name: AEROXIDE® Alu C

Aluminium oxide Not applicable

11.2 Information on other hazards

Other information

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

SECTION 12: Ecological information

12.1 Toxicity:

Acute hazards to the aquatic environment:

Fish

Product: LC 50, Salmo trutta, 96 h, > 100 mg/l, Literature

Components:
 Aluminium oxide LC 50, Salmo trutta, 96 h, > 100 mg/l, Literature

Aquatic Invertebrates

Product: EC 50, Daphnia magna, 48 h, > 100 mg/l, Literature

Components:
 Aluminium oxide EC 50, Daphnia magna, 48 h, > 100 mg/l, Literature

Toxicity to Aquatic Plants

Product: EC 50 (Algae (Pseudokirchneriella subcapitata), 72 h): > 100 mg/l Literature

Components:
 Aluminium oxide EC 50 (Algae (Pseudokirchneriella subcapitata), 72 h): > 100 mg/l Literature

Toxicity to microorganisms

Product: EC 10, activated sludge, 3 h, 1,000 mg/l, OECD 209, (analogy)
 EC 10, activated sludge, 3 h, > 200 mg/l, OECD 209

Components:
 Aluminium oxide EC 10, activated sludge, 3 h, 1,000 mg/l, OECD 209, (analogy)
 EC 10, activated sludge, 3 h, > 200 mg/l, OECD 209

Chronic hazards to the aquatic environment:

Fish

Product: No data available.

Components:
 Aluminium oxide No data available.

Aquatic Invertebrates

Product: No data available.

Components:
 Aluminium oxide No data available.

Toxicity to Aquatic Plants

Product: No data available.

Components:
 Aluminium oxide No data available.

Toxicity to microorganisms

Product: EC 10, activated sludge, 3 h, 1,000 mg/l, OECD 209, (analogy)

Product name: AEROXIDE® Alu C

Components:	EC 10, activated sludge, 3 h, > 200 mg/l, OECD 209
Aluminium oxide	EC 10, activated sludge, 3 h, 1,000 mg/l, OECD 209, (analogy) EC 10, activated sludge, 3 h, > 200 mg/l, OECD 209

12.2 Persistence and Degradability

Biodegradation

Product:	The methods for determining biodegradability are not applicable to inorganic substances.
Components:	
Aluminium oxide	The methods for determining biodegradability are not applicable to inorganic substances.

12.3 Bioaccumulative potential

Bioconcentration Factor (BCF)

Product:	Not to be expected.
Components:	
Aluminium oxide	Not to be expected.

Partition Coefficient n-octanol / water (log Kow)

Product:	Not applicable
Components:	
Aluminium oxide	, Not applicable

12.4 Mobility in soil:

Product	No remarkable mobility in soil is to be expected.
Components:	
Aluminium oxide	No remarkable mobility in soil is to be expected.

12.5 Results of PBT and vPvB assessment:

Product	Not a PBT, vPvB substance as per the criteria of the REACH Regulation.
Components:	
Aluminium oxide	No data available.

12.6 Other adverse effects:

Other hazards

Product:	The data we have at our disposal do not necessitate identification concerning environmental hazard.
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SECTION 13: Disposal considerations

13.1 Waste treatment methods

General information:	No data available.
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Product name: AEROXIDE® Alu C**Disposal methods:**

Review all local, state and federal regulations concerning health and pollution for appropriate disposal procedures. No waste key number as per the European Waste Types List can be assigned to this product, since such classification is based on the (as yet undetermined) use to which the product is put by the consumer. The waste key number must be determined as per the European Waste Types List (decision on EU Waste Types List 2000/532/EC) in cooperation with the disposal firm / producing firm / official authority.

Contaminated Packaging:

Offer rinsed packaging material to local recycling facilities. Other countries: observe the national regulations.

SECTION 14: Transport information**14.1 UN/ID No.**

Not regulated as a dangerous good

14.2 UN proper shipping name

Not regulated as a dangerous good

14.3 Transport hazard class(es)

Not regulated as a dangerous good

14.4 Packing group

Not regulated as a dangerous good

14.5 Environmental hazards

Not regulated as a dangerous good

14.6 Special precautions for user

Not applicable

14.7 Maritime transport in bulk according to IMO instruments

Not applicable for product as supplied.

SECTION 15: Regulatory information**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture:****EU Regulations**

EU. REACH Annex XIV, Substances Subject to Authorization: None present or none present in regulated quantities (on the basis of current knowledge of the product composition).

EU. REACH Candidate List of Substances of Very High Concern for Authorization (SVHC): None present or none present in regulated quantities (on the basis of current knowledge of the product composition).

EU. Regulation 2019/1021/EU on persistent organic pollutants (POPs) (recast), as amended: None present or none present in regulated quantities (on the basis of current knowledge of the product composition).

Regulation 1005/2009/EC on substances that deplete the ozone layer, Annex I, Controlled Substances: None present or none present in regulated quantities (on the basis of current knowledge of the product composition).

Product name: AEROXIDE® Alu C

Regulation 1005/2009/EC on substances that deplete the ozone layer, Annex II, New Substances:
None present or none present in regulated quantities (on the basis of current knowledge of the product composition).

UK EXP1: UK. GB PIC List, Regulation (EU) 649/2012 as amended by EU Exit Regulations S.I. 2019/720 and S.I. 2020/1567, as amended: None present or none present in regulated quantities (on the basis of current knowledge of the product composition).

UK EXP2: UK. GB PIC List, Regulation (EU) 649/2012 as amended by EU Exit Regulations S.I. 2019/720 and S.I. 2020/1567, as amended: None present or none present in regulated quantities (on the basis of current knowledge of the product composition).

UK EXP3: UK. GB PIC List, Regulation (EU) 649/2012 as amended by EU Exit Regulations S.I. 2019/720 and S.I. 2020/1567, as amended: None present or none present in regulated quantities (on the basis of current knowledge of the product composition).

UK BAN: UK. GB PIC List, Regulation (EU) 649/2012 as amended by EU Exit Regulations S.I. 2019/720 and S.I. 2020/1567, as amended: None present or none present in regulated quantities (on the basis of current knowledge of the product composition).

EU. Directive 2012/18/EU (SEVESO III) on major accident hazards involving dangerous substances, Annex I: Not applicable

15.2 Chemical safety assessment: No Chemical Safety Assessment has been carried out.

International regulations

Montreal protocol

Not applicable

Stockholm convention

Not applicable

Rotterdam convention

Not applicable

Kyoto protocol

Not applicable

SECTION 16: Other information

Abbreviations and acronyms:

EH40 WEL: UK. EH40 Workplace Exposure Limits (WELs), as amended
EH40 WEL / TWA: Time Weighted Average (TWA):

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; Regulation (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; EIGA - European Industrial Gases Association; 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

Product name: AEROXIDE® Alu C

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

Notes:

Not applicable	Not applicable
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Key literature references and sources for data: No data available.

Training information: No data available.

Revision Information

Changes since the last version are highlighted in the margin. This version replaces all previous versions.

Disclaimer:

This information and all further technical advice is based on our present knowledge and experience. However, it implies no liability or other legal responsibility on our part, including with regard to existing third party intellectual property rights, especially patent rights. In particular, no warranty, whether express or implied, or guarantee of product properties in the legal sense is intended or implied. We reserve the right to make any changes according to technological progress or further developments. The customer is not released from the obligation to conduct careful inspection and testing of incoming goods. Performance of the product described herein should be verified by testing, which should be carried out only by qualified experts in the sole responsibility of a customer. Reference to trade names used by other companies is neither a recommendation, nor does it imply that similar products could not be used.