

SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

ALTO STONE-EX 25 L.

Version 5.0

Print Date 10.08.2017

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SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1. Product identifier**

Trade name : ALTO STONE-EX 25 L.

1.2. Relevant identified uses of the substance or mixture and uses advised againstUse of the
Substance/Mixture : Decalcification agent

Uses advised against : At this moment we have not identified any uses advised against

1.3. Details of the supplier of the safety data sheetCompany : BCD Chemie GmbH
Schellerdamm 16
DE 21079 Hamburg
Telephone : +49 (0)69-40101-71
Telefax : +49 (0)69-40101-34
E-mail address : InfoSDB@bcd-chemie.de
Responsible/issuing
person : Umwelt / Sicherheit**1.4. Emergency telephone number**Emergency telephone
number : +49 (0)208-7828-0 Available 24h/7d**SECTION 2: Hazards identification****2.1. Classification of the substance or mixture**

Classification according to Regulation (EC) No 1272/2008

REGULATION (EC) No 1272/2008			
Hazard class	Hazard category	Target Organs	Hazard statements
Acute toxicity (Oral)	Category 4	---	H302
Acute toxicity (Inhalation)	Category 4	---	H332
Skin corrosion	Category 1B	---	H314


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For the full text of the H-Statements mentioned in this Section, see Section 16.

Most important adverse effects

Human Health : See section 11 for toxicological information.
Physical and chemical hazards : See section 9/10 for physicochemical information.
Potential environmental effects : See section 12 for environmental information.

2.2. Label elements**Labelling according to Regulation (EC) No 1272/2008**

Hazard symbols : 

Signal word : Danger

Hazard statements : H302 + H332 Harmful if swallowed or if inhaled
H314 Causes severe skin burns and eye damage.

Precautionary statements

Prevention : P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response : P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Additional Labelling:

EUH071 Corrosive to the respiratory tract.
EUH208 May produce an allergic reaction.

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Hazardous components which must be listed on the label:

II • formic acid

Other labelling information:

Sensitising components : methenamine
May produce an allergic reaction.

2.3. Other hazards

For Results of PBT and vPvB assessment see section 12.5.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Chemical nature : Aqueous mixture of substances listed below with non hazardous additions.

Hazardous components	Amount [%]	Classification (REGULATION (EC) No 1272/2008)	
		Hazard class / Hazard category	Hazard statements
formic acid			
Index-No. : 607-001-00-0	> 25 - <= 50	Flam. Liq.3	H226
CAS-No. : 64-18-6		Acute Tox.4	H302
EC-No. : 200-579-1		Acute Tox.3	H331
EU REACH-Reg. No. : 01-2119491174-37-xxxx		Skin Corr.1A	H314
methenamine			
Index-No. : 612-101-00-2	>= 0,1 - < 1	Flam. Sol.2	H228
CAS-No. : 100-97-0		Skin Sens.1	H317
EC-No. : 202-905-8			
EU REACH-Reg. No. : 01-2119474895-20-xxxx			

Remarks : The product does not contain any ingredients according the EU Detergent Regulation (EC/648/2004), Annex VII A.

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

General advice : First aider needs to protect himself. Move out of dangerous area. Take off all contaminated clothing immediately.

If inhaled : Remove to fresh air. Keep patient warm and at rest. Consult a

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	physician. If unconscious place in recovery position. In case of shortness of breath, give oxygen.
In case of skin contact	: Take off all contaminated clothing immediately. Wash off immediately with plenty of water for at least 15 minutes. Call a physician immediately.
In case of eye contact	: Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Protect unharmed eye. Call a physician immediately. Go to an ophthalmic hospital if possible.
If swallowed	: Rinse the mouth and spit the fluids out. Drink plenty of water. Do NOT induce vomiting. Call a physician immediately. If a person vomits when lying on his back, place him in the recovery position.

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

Symptoms	: corrosive effects, Cough, Shortness of breath, Headache, Allergic reactions
Effects	: Risk of blindness! If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the oesophagus and the stomach.

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

Treatment	: Treat symptomatically.
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SECTION 5: Firefighting measures**5.1. Extinguishing media**

Suitable extinguishing media	: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Unsuitable extinguishing media	: High volume water jet

5.2. Special hazards arising from the substance or mixture

Specific hazards during firefighting	: Hazardous decomposition products formed under fire conditions. Carbon dioxide (CO ₂), Carbon monoxide, Nitrogen oxides (NO _x), Vapors may produce explosive mixtures with air at temperatures over the flash point.
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5.3. Advice for firefighters

Special protective equipment for firefighters	: In the event of fire, wear self-contained breathing apparatus. Wear appropriate body protection (full protective suit)
Further advice	: Cool closed containers exposed to fire with water spray. Risk of closed containers bursting if strongly heated. Collect contaminated fire extinguishing water separately. This must

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not be discharged into drains.

SECTION 6: Accidental release measures**6.1. Personal precautions, protective equipment and emergency procedures**

Personal precautions : Use personal protective equipment. Keep away unprotected persons. Provide adequate ventilation. Keep away from heat and sources of ignition. Avoid contact with skin and eyes. Do not breathe gas/fumes/vapour/spray. For personal protection see section 8.

6.2. Environmental precautions

Environmental precautions : Do not flush into surface water or sanitary sewer system. Avoid subsoil penetration. Local authorities should be advised if significant spillages cannot be contained.

6.3. Methods and materials for containment and cleaning up

Methods and materials for containment and cleaning up : Ensure adequate ventilation. Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders). Clean contaminated surface thoroughly. Treat recovered material as described in the section "Disposal considerations".

6.4. Reference to other sections

See section 8 and 13.

SECTION 7: Handling and storage**7.1. Precautions for safe handling**

Advice on safe handling : Keep container tightly closed. Handle and open container with care. Avoid contact with skin, eyes and clothing. Do not breathe gas/fumes/vapour/spray. Emergency showers should be available in the immediate vicinity; Emergency eye wash fountains and emergency showers should be available in the immediate vicinity.

Hygiene measures : Take off all contaminated clothing immediately. Do not breathe gas/fumes/vapour/spray. Avoid contact with the skin and the eyes. Keep away from food, drink and animal feedingstuffs. Smoking, eating and drinking should be prohibited in the application area. Wash hands before breaks and at the end of workday.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Keep in an area equipped with acid resistant flooring. Suitable materials for containers: glass; Stainless steel; polyethylene containers; Unsuitable materials for containers: Iron; Zinc; pvc

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Advice on protection against fire and explosion	: The product is flammable but not readily ignited. Keep away from heat and sources of ignition. Possible formation of ignitable mixtures in air if heated above flash point and/or if sprayed (atomised). Handle only at temperatures at least 15°C below the flash point.
Further information on storage conditions	: Keep tightly closed in a dry and cool place. Keep in a well-ventilated place.
Advice on common storage	: Materials to avoid alkalis Oxidizing and spontaneously flammable products Flammable materials Incompatible with oxidizing agents.
German storage class	: 8A Combustible corrosive substances
Storage temperature	: < 30 °C

7.3. Specific end use(s)

Specific use(s) : No information available.

SECTION 8: Exposure controls/personal protection**8.1. Control parameters**

Component:	formic acid	CAS-No. 64-18-6
Other Occupational Exposure Limit Values		

EU. Indicative Exposure Limit Values in Directives 91/322/EEC, 2000/39/EC, 2006/15/EC, 2009/161/EU, Time Weighted Average (TWA):

5 ppm, 9 mg/m³
Indicative

Germany. TRGS 900, Occupational Exposure Limits (AGW), Exposure limit(s):

5 ppm, 9,5 mg/m³, (2)

If the AGW and BGW values are complied with, there should be no risk of reproductive damage (see Number 2.7).

8.2. Exposure controls**Appropriate engineering controls**

Refer to protective measures listed in sections 7 and 8.

Personal protective equipment

Respiratory protection

Advice : Required, if exposure limit is exceeded (e.g. OEL).
Required if vapours or aerosol are released.

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In case of insufficient ventilation, wear suitable respiratory equipment.

Breathing apparatus with filter.

Recommended Filter type:E

Hand protection

Advice : Wear suitable gloves.
The following materials are suitable:
Protective gloves should be replaced at first signs of wear.
Take note of the information given by the producer concerning permeability and break through times, and of special workplace conditions (mechanical strain, duration of contact).

Material : polychloroprene

Break through time : ≥ 8 h

Glove thickness : 0,5 mm

Eye protection

Advice : Tightly fitting safety goggles

Skin and body protection

Advice : Acid resistant protective clothing.

Environmental exposure controls

General advice : Do not flush into surface water or sanitary sewer system.
Avoid subsoil penetration.
Local authorities should be advised if significant spillages cannot be contained.

SECTION 9: Physical and chemical properties**9.1. Information on basic physical and chemical properties**

Form : liquid

Colour : white
to
yellowish

Odour : stinging

Odour Threshold : no data available

pH : ca. 2 (10 g/l ; 20 °C)

Melting point/range : not determined

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Boiling point/boiling range	: > 100 °C
Flash point	: > 61 °C
Evaporation rate	: no data available
Flammability (solid, gas)	: Not applicable
Upper explosion limit	: ca. 45,5 %(V)
Lower explosion limit	: ca. 10 %(V)
Vapour pressure	: ca. 42 hPa (20 °C)
Relative vapour density	: no data available
Density	: ca. 1,1 g/cm ³ (20 °C)
Water solubility	: completely miscible
Partition coefficient: n-octanol/water	: Not applicable
Auto-ignition temperature	: ca. 480 °C
Thermal decomposition	: no data available
Viscosity, dynamic	: no data available
Explosive properties	: EU legislation: Not explosive
Oxidizing properties	: none

9.2. Other information

No further information available.

SECTION 10: Stability and reactivity**10.1. Reactivity**

Advice : No decomposition if stored and applied as directed.

10.2. Chemical stability

Advice : Stable under normal conditions.

10.3. Possibility of hazardous reactions

Hazardous reactions : May be corrosive to metals. Gives off hydrogen by reaction with metals. Incompatible with oxidizing agents.

10.4. Conditions to avoid

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Conditions to avoid : Keep away from direct sunlight.Direct sources of heat.
 Thermal decomposition : no data available

10.5. Incompatible materials

Materials to avoid : alkalis, Oxidizing agents, Powdered metals, Aluminium

10.6. Hazardous decomposition products

Hazardous decomposition products : Under fire conditions: Carbon dioxide (CO₂), Carbon monoxide, Nitrogen oxides (NO_x)

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Data for the product

Acute toxicity

Oral

Acute toxicity estimate : 1789 mg/kg) (Calculation method)

Inhalation

Acute toxicity estimate : 19,24 mg/l (4 h; vapour) (Calculation method)

Dermal

For this mixture is no data available.
 Please find this information in the listing of the component/components below in this section.

Irritation

Skin

Result : Causes severe burns.

Eyes

Result : Causes serious eye damage.

Sensitisation

Result : May cause sensitisation of susceptible persons by skin contact.

CMR effects

CMR Properties

Carcinogenicity : It is not considered carcinogenic.
 Contains no ingredient listed as a carcinogen
 Mutagenicity : It is not considered mutagenic.

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Teratogenicity : Contains no ingredient listed as a mutagen
 : It is not considered teratogenic.
 Reproductive toxicity : It is not considered toxic for reproduction.
 : Contains no ingredient listed as toxic to reproduction

Specific Target Organ Toxicity

Single exposure

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

Repeated exposure

Remarks : The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Other toxic properties

Repeated dose toxicity

no data available

Aspiration hazard

No aspiration toxicity classification,

Further information

Other relevant toxicity information : If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the oesophagus and the stomach.
 Other dangerous properties can not be excluded.
 Handle in accordance with good industrial hygiene and safety practice.

Component: methenamine **CAS-No.** 100-97-0

Acute toxicity

Dermal

|| LD50 : > 2000 mg/kg (Rat, male and female) (OECD Test Guideline 402)

Component: formic acid **CAS-No.** 64-18-6

Acute toxicity

Dermal

|| Study scientifically not justified.

SECTION 12: Ecological information

12.1. Toxicity

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Component:	methenamine	CAS-No. 100-97-0
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Acute toxicity
Fish

EC50	:	49,8 g/l (Pimephales promelas (fathead minnow); 96 h) (flow-through test; OECD Test Guideline 203)
LC50	:	41 g/l (Lepomis macrochirus (Bluegill sunfish); 96 h) (static test; US-EPA)
LC50	:	49 g/l (Cyprinodon variegatus (sheepshead minnow); 96 h) (static test; OECD Test Guideline 203)

Toxicity to daphnia and other aquatic invertebrates

LC50	:	36 g/l (Daphnia magna (Water flea); 48 h) (static test; ASTM)
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algae

EC50	:	ca. 3 g/l (Pseudokirchneriella subcapitata (green algae); 14 d) (static test; End point: Growth rate; US-EPA)
NOEC	:	1,5 g/l (Pseudokirchneriella subcapitata (green algae); 14 d) (static test; End point: Growth rate; US-EPA)

Bacteria

EC50	:	> 5000 mg/l (Vibrio fisheri; 0,5 h) (static test; DIN 38412)
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Component:	formic acid	CAS-No. 64-18-6
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Acute toxicity
Fish

LC50	:	130 mg/l (Brachydanio rerio; 96 h) (static test; OECD Test Guideline 203)Data based on test results or data from a comparable product.
LC50	:	68 mg/l (Leuciscus idus (Golden orfe); 96 h) (static test; DIN 38412)

Toxicity to daphnia and other aquatic invertebrates

EC50	:	365 mg/l (Daphnia magna; 48 h) (static test; OECD Test Guideline 202)Data based on test results or data from a comparable product.
EC50	:	32,19 mg/l (Daphnia magna; 48 h) (static test)

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algae

EC50	:	1,240 mg/l (Scenedesmus capricornutum (fresh water algae); 72 h) (static test; OECD Test Guideline 201) Data based on test results or data from a comparable product.
EC50	:	32,64 mg/l (Scenedesmus subspicatus; 72 h) (static test; End point: Growth rate; DIN 38412)

Bacteria

EC50	:	46,7 mg/l (Pseudomonas putida; 17 h) (DIN 38412) aerobic
EC10	:	72 mg/l (activated sludge; 13 d) aerobic
EC20	:	> 1000 mg/l (activated sludge; 0,5 h) (ISO 8192) aerobic

12.2. Persistence and degradability

Component:	methenamine	CAS-No. 100-97-0
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Persistence and degradability

Persistence

Result	:	no data available
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Biodegradability

Result	:	35 % (aerobic; domestic sewage; Related to: O2 consumption; Exposure Time: 28 d)(OECD Test Guideline 301D) Not readily biodegradable.
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Component:	formic acid	CAS-No. 64-18-6
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Persistence and degradability

Persistence

Result	:	no data available
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Biodegradability

Result	:	100 % (aerobic; activated sludge; Related to: Dissolved organic carbon (DOC); Exposure Time: 9 d)(OECD Test Guideline 301E) Readily biodegradable.
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12.3. Bioaccumulative potential

Component:	methenamine	CAS-No. 100-97-0
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Bioaccumulation

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||| Result : log Kow -2,18 (20 °C; pH 7 - 9) (OECD Test Guideline 107)
: Bioaccumulation is not expected.

Component:	formic acid	CAS-No. 64-18-6
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Bioaccumulation

||| Result : log Kow -1,9 (23 °C; pH 5)
: Bioaccumulation is not expected.

12.4. Mobility in soil

Component:	methenamine	CAS-No. 100-97-0
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Mobility

||| Water : The product is water soluble.

Component:	formic acid	CAS-No. 64-18-6
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Mobility

||| Water : The substance will not evaporate into the atmosphere from the water surface.

||| Soil : Not expected to adsorb on soil.

12.5. Results of PBT and vPvB assessment**Data for the product****Results of PBT and vPvB assessment**

Result : 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. Other adverse effects**Data for the product****Additional ecological information**

Result : Harmful effects to aquatic organisms also due to pH-shift.
Do not flush into surface water or sanitary sewer system.
Avoid subsoil penetration.

SECTION 13: Disposal considerations**13.1. Waste treatment methods**

Product : Disposal together with normal waste is not allowed. Do not let

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product enter drains. Can be incinerated, when in compliance with local regulations.

Contaminated packaging : Empty remaining contents. Rinse with plenty of water. Offer rinsed packaging material to local recycling facilities. Packagings that cannot be cleaned are to be disposed of in the same manner as the product.

European Waste Catalogue Number : No waste code according to the European Waste Catalogue can be assigned for this product, as the intended use dictates the assignment. The waste code is established in consultation with the regional waste disposer.

SECTION 14: Transport information**14.1. UN number**

|| 3412

14.2. UN proper shipping name

|| ADR : FORMIC ACID SOLUTION
|| RID : FORMIC ACID SOLUTION
|| IMDG : FORMIC ACID SOLUTION

14.3. Transport hazard class(es)

|| ADR-Class : 8
(Labels; Classification Code; Hazard identification No; Tunnel restriction code)
8; C3; 80; (E)
|| RID-Class : 8
(Labels; Classification Code; Hazard identification No)
8; C3; 80
|| IMDG-Class : 8
(Labels; EmS)
8; F-A, S-B

14.4. Packaging group

|| ADR : II
|| RID : II
|| IMDG : II

14.5. Environmental hazards

|| Environmentally hazardous according to ADR : no
|| Environmentally hazardous according to RID : no
|| Marine Pollutant according to IMDG-Code : no

ALTO STONE-EX 25 L.**14.6. Special precautions for user**

Not applicable.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

IMDG : Not applicable.

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

- WGK (DE) : WGK 1: slightly water endangering; Self-classification according VwVwS of 17 May 1999, Annex 4
- German Störfallverordnung : Does not fall under the German StörfallV. -
- Other regulations : Occupational restrictions: Take note of Dir 92/85/EEC on the safety and health of pregnant workers at work and of Dir 94/33/EC on the protection of young people at work.

Component:	methenamine	CAS-No. 100-97-0
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|| EU. REACH, Annex XVII, : Point Nos.: , 40; Listed
Marketing and Use
Restrictions (Regulation
1907/2006/EC)

Component:	formic acid	CAS-No. 64-18-6
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|| EU. REACH, Annex XVII, : Point Nos.: , 3; Listed
Marketing and Use
Restrictions (Regulation
1907/2006/EC)

15.2. Chemical safety assessment

no data available

SECTION 16: Other information**Full text of H-Statements referred to under sections 2 and 3.**

H226 Flammable liquid and vapour.
H228 Flammable solid.

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H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H331	Toxic if inhaled.
H332	Harmful if inhaled.

Abbreviations and Acronyms

BCF	bioconcentration factor
BOD	biochemical oxygen demand
CAS	Chemical Abstracts Service
CLP	Classification, Labelling and Packaging
CMR	carcinogenic, mutagenic or toxic to reproduction
COD	chemical oxygen demand
DNEL	derived no-effect level
EINECS	European Inventory of Existing Commercial Chemical Substances
ELINCS	European List of Notified Chemical Substances
GHS	Globally Harmonized System of Classification and Labelling of Chemicals
LC50	median lethal concentration
LOAEC	lowest observed adverse effect concentration
LOAEL	lowest observed adverse effect level
LOEL	lowest observed effect level
NLP	no-longer polymer
NOAEC	no observed adverse effect concentration
NOAEL	no observed adverse effect level
NOEC	no observed effect concentration
NOEL	no observed effect level
OECD	Organisation for Economic Cooperation and Development
OEL	occupational exposure limit
PBT	persistent, bioaccumulative and toxic
PNEC	predicted no-effect concentration
STOT	specific target organ toxicity
SVHC	substance of very high concern
UVCB	substance of unknown or variable composition, complex reaction products or biological materials
vPvB	very persistent and very bioaccumulative

Further information

Key literature references and sources for data	:	Supplier information and data from the "Database of registered substances" of the European Chemicals Agency (ECHA) were used to create this safety data sheet.
Methods used for product classification	:	The classification for human health, physical and chemical hazards and environmental hazards were derived from a combination of calculation methods and if available test data.

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Hints for trainings : The workers have to be trained regularly on the safe handling of the products based on the information provided in the Safety Data Sheet and the local conditions of the workplace. National regulations for the training of workers in the handling of hazardous materials must be adhered to.

Other information : The information provided in this Safety Data Sheet is correct to our knowledge at the date of its revision. The information given only describes the products with regard to safety arrangements and is not to be considered as a warranty or quality specification and does not constitute a legal relationship.

The information contained in this Safety Data Sheet relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

|| Indicates updated section.