

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

FINO KALK-EX Decalcifier

**REF** 46093

Product group: Sulfonsäuren, aliphatisch

UFI: **P9N3-H49Y-S00C-TRDS****1.2. Relevant identified uses of the substance or mixture and uses advised against****Use of the substance/mixture**

Cleaning agent

**Uses advised against**

for professional use only

**1.3. Details of the supplier of the safety data sheet**

Company name:	FINO GmbH	
Street:	Mangelsfeld 18	
Place:	D-97708 Bad Bocklet	
Telephone:	+49-97 08-90 94 20	Telefax: +49-97 08-90 94 21
e-mail:	info@fino.com	Internet: www.fino.com
Contact person:	Joachim Mahlmeister	Telephone: +49-97 08-90 94 20
e-mail:	info@fino.com	
Responsible Department:	This number can only be reached during our office hours, Monday to Friday from 8 a.m. to 5 p.m.	

**1.4. Emergency telephone number:** +49-89-1 92 40  
POISON CENTER München  
24 hour(s) 7 day(s)

**SECTION 2: Hazards identification****2.1. Classification of the substance or mixture****GB CLP Regulation**

Met. Corr. 1; H290  
Acute Tox. 4; H302  
Skin Corr. 1; H314  
Eye Dam. 1; H318  
STOT SE 3; H335

Full text of hazard statements: see SECTION 16.

**2.2. Label elements****GB CLP Regulation**

**Hazard components for labelling**  
methanesulphonic acid

Signal word: Danger

Pictograms:

**Hazard statements**

H290	May be corrosive to metals.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.

H318 Causes serious eye damage.  
H335 May cause respiratory irritation.

**Precautionary statements**

P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.  
P271 Use only outdoors or in a well-ventilated area.  
P264 Wash hands thoroughly after handling.  
P234 Keep only in original packaging.  
P270 Do not eat, drink or smoke when using this product.  
P260 Do not breathe dust/fume/gas/mist/vapours/spray.  
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.  
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.  
P390 Absorb spillage to prevent material damage.  
P363 Wash contaminated clothing before reuse.  
P330 Rinse mouth.  
P310 Immediately call a POISON CENTER/doctor.  
P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.  
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
P403+P233 Store in a well-ventilated place. Keep container tightly closed.  
P406 Store in a corrosion-resistant container with a resistant inner liner.  
P405 Store locked up.  
P501 Dispose of contents/container to an appropriate recycling or disposal facility.

**Additional advice on labelling**

The product is classified and labelled according to EC directives or corresponding national laws.  
Classification according to Regulation (EC) No 1272/2008 [CLP]

**2.3. Other hazards**

Narcotic effects  
Results of PBT and vPvB assessment not applicable  
In compliance with the conditions described in the annex to this safety data sheet.

**SECTION 3: Composition/information on ingredients**
**3.2. Mixtures**
**Chemical characterization**

Organic acids, tensides, non-ionogenic corrosion inhibitor, dispersants. Watery solution

**Hazardous components**

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification (GB CLP Regulation)			
75-75-2	methanesulphonic acid			30-~50 %
	200-898-6		01-2119491166-34	
	Met. Corr. 1, Acute Tox. 4, Skin Corr. 1B, Eye Dam. 1, STOT SE 3; H290 H302 H314 H318 H335			

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

**Specific Conc. Limits, M-factors and ATE**

CAS No	EC No	Chemical name	Quantity
		Specific Conc. Limits, M-factors and ATE	
75-75-2	200-898-6	methanesulphonic acid	30-~50 %
		dermal: LD50 = > 1.000 - 2.000 mg/kg; oral: LD50 = 649 mg/kg	

**SECTION 4: First aid measures****4.1. Description of first aid measures****General information**

Self-protection of the first aider

If unconscious but breathing normally, place in recovery position and seek medical advice. Remove affected person from the danger area and lay down. Put victim at rest, cover with a blanket and keep warm.

Immediately remove any contaminated clothing, shoes or stockings. No administration in cases of unconsciousness or cramps. Symptoms of poisoning may develop several hours following exposure. Victim should be under medical observation for at least 48 hours after exposure.

**After inhalation**

Seek medical advice immediately. Remove casualty to fresh air and keep warm and at rest. If breathing is irregular or stopped, administer artificial respiration.

**After contact with skin**

Immediately wash with water and soap and rinse thoroughly. Take off immediately all contaminated clothing and wash it before reuse. Seek medical advice immediately.

**After contact with eyes**

In case of contact with eyes, rinse immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician immediately.

**After ingestion**

Call a physician immediately. Do NOT induce vomiting. Rinse mouth thoroughly with water. Put victim at rest, cover with a blanket and keep warm.

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

Symptoms No information available.

Effects Harmful if swallowed. Causes severe skin burns and eye damage. May cause respiratory irritation.

If swallowed danger of perforation of the esophagus and the stomach (strong corrosive effects).

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

Treat symptomatically. Call a POISON CENTER.

**SECTION 5: Firefighting measures****5.1. Extinguishing media****Suitable extinguishing media**

Carbon dioxide (CO<sub>2</sub>) alcohol resistant foam Extinguishing powder Water spray jet

**Unsuitable extinguishing media**

Full water jet

**5.2. Special hazards arising from the substance or mixture**

Formation of toxic gases is possible during heating or in case of fire.

Carbon monoxide Crack gases, carbon oxides.

**5.3. Advice for firefighters**

In case of fire: Wear self-contained breathing apparatus.

**Additional information**

Cool containers at risk with water spray. Residues of burned materials and fire water must be disposed in accordance with magisterial regulations. The product itself does not burn. Co-ordinate fire-fighting measures to the fire surroundings. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

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

Use personal protection equipment. Do not breathe vapour. Keep away from sources of ignition. Ensure good

ventilation / exhaust at the workplace. Safe handling: see section 7 Personal protection equipment: see section 8

**For non-emergency personnel**

Emergency procedures

Remove victim out of the danger area. Remove persons to safety. The danger areas must be delimited and identified using relevant warning and safety signs.

**For emergency responders**

Wear personal protection equipment (refer to section 8).

**6.2. Environmental precautions**

Do not allow to enter sewers/surface or ground water.

Do not allow to enter into soil/subsoil.

In case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities.

**6.3. Methods and material for containment and cleaning up****For containment**

Isolate spilled material with non-combustible absorbents (e.g. sand, soil, kieselguhr).

Dispose of contents/container in accordance with local/regional/national/international regulations. Ensure good ventilation / exhaust at the workplace.

**For cleaning up**

Provide adequate ventilation.

Isolate spilled material with non-combustible absorbents (e.g. sand, soil, kieselguhr). Take up mechanically, placing in appropriate containers for disposal.

**6.4. Reference to other sections**

Treat the recovered material as prescribed in the section on waste disposal. Disposal: see section 13 See protective measures under point 7 and 8.

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

Ensure good ventilation / exhaust at the workplace. If local exhaust ventilation is not possible or not sufficient, the entire working area must be ventilated by technical means. To avoid risks to human health and the environment, comply with the instructions for use.

**Advice on protection against fire and explosion**

Usual measures for fire prevention. Co-ordinate fire-fighting measures to the fire surroundings. The product itself does not burn.

**Advice on general occupational hygiene**

Remove contaminated, saturated clothing immediately.

Keep away from food, drink and animal feedingstuffs.

Wash hands before breaks and after work. Avoid contact with eyes and skin.

Do not breathe vapour/aerosol.

**Further information on handling**

No special handling advices are necessary.

**7.2. Conditions for safe storage, including any incompatibilities****Requirements for storage rooms and vessels**

Keep container tightly closed and in a well-ventilated place.

Keep/Store only in original container.

Store in a place accessible by authorized persons only.

Protect from heat and direct sunlight.

Protect against frost.

**Hints on joint storage**

non-compatible with Bases

**Further information on storage conditions**

storage temperature 0-40 °C

Maximum storage period (time) &gt; 1 year

### 7.3. Specific end use(s)

Methods for cleaning up

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

#### DNEL/DMEL values

CAS No	Substance			
DNEL type		Exposure route	Effect	Value
75-75-2	methanesulphonic acid			
Worker DNEL, long-term		inhalation	systemic	6,76 mg/m <sup>3</sup>
Worker DNEL, long-term		inhalation	local	2,89 mg/m <sup>3</sup>
Worker DNEL, long-term		dermal	systemic	19,44 mg/kg bw/day

#### PNEC values

CAS No	Substance		
Environmental compartment			Value
75-75-2	methanesulphonic acid		
Freshwater			0,012 mg/l
Marine water			0,0012 mg/l
Freshwater sediment			0,0251 mg/kg
Micro-organisms in sewage treatment plants (STP)			10 mg/l
Soil			0,00183 mg/kg

#### Additional advice on limit values

Provide adequate ventilation as well as local exhaust at critical locations.

### 8.2. Exposure controls



#### Appropriate engineering controls

Provide adequate ventilation. If local exhaust ventilation is not possible or not sufficient, the entire working area should be ventilated by technical means.

#### Individual protection measures, such as personal protective equipment

##### Eye/face protection

Wear eye/face protection. EN 166

Tightly sealed safety glasses.

Rinse immediately carefully and thoroughly with eye-bath or water.

##### Hand protection

Suitable gloves type Use chemicals-resistant protective gloves made from neoprene. EN ISO 374 Wear protective gloves. Breakthrough times and swelling properties of the material must be taken into consideration. The required protective gloves have to be specified by the glove material and the penetration time of the glove material depending on strength and duration of dermal exposition.

##### Skin protection

When handling with chemical substances, protective clothing with CE-labels including the four control digits must be worn. EN 13034 type 6 limited splash-tight

**Respiratory protection**

In case of insufficient ventilation, wear suitable respiratory equipment. Recommended respiratory protection articles Filter types: A, B, E, K. Class 1: Maximum permitted contaminant concentration in inhaled air = 1000 mL/m<sup>3</sup> (0.1 % by vol.); class 2: maximum permitted contaminant concentration in inhaled air = 5000 mL/m<sup>3</sup> (0.5 % by vol.); class 3: maximum permitted contaminant concentration in inhaled air = 10000 mL/m<sup>3</sup> (1.0 % by vol.)

**Environmental exposure controls**

Do not allow to enter into surface water or drains.

Do not allow to enter into soil/subsoil.

In case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities.

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

Physical state:	liquid:
Colour:	colourless
Odour threshold:	not determined

**Test method**
**Changes in the physical state**

Melting point/freezing point:	not applicable
Sublimation point:	not applicable
Softening point:	not applicable
Pour point:	No data available

**Flammability**

Solid/liquid:	not applicable
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**Explosive properties**

not explosive according to EU A.14

Auto-ignition temperature:	not applicable
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**Self-ignition temperature**

Solid:	Product is not selfigniting.
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Decomposition temperature:	not determined
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pH-Value (at 20 °C):	1,0
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Viscosity / dynamic: (at 20 °C)	6 mPa·s	ASTM D 2196
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Viscosity / kinematic:	ASTM D 445
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Flow time:	There are no data available on the mixture itself.	3 DIN EN ISO 2431
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Water solubility:	miscible
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Vapour pressure: (at 20 °C)	1 hPa
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Density (at 20 °C):	1,165 g/cm <sup>3</sup>	DIN 51757
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Bulk density:	not determined
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Relative vapour density:	not determined
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**9.2. Other information**
**Information with regard to physical hazard classes**

Sustaining combustion:	No data available
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**Oxidizing properties**

Not oxidising.

**Other safety characteristics**

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Solvent content:

Organic solvents: not determined  
Maximum VOC content: not determined

Solid content:

not applicable

**Further Information**

May be corrosive to metals.

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

No hazardous reaction when handled and stored according to provisions.  
Corrosive to metals

**10.2. Chemical stability**

The product is chemically stable under recommended conditions of storage, use and temperature.

**10.3. Possibility of hazardous reactions**

Reactions with metals under the formation of hydrogen.  
Exothermic reaction with: Bases

**10.4. Conditions to avoid**

Protect from direct sunlight. Avoid contact with metals.  
Protect against frost. Do not freeze.

**10.5. Incompatible materials**

Bases  
May cause strong formation of hydrogen by contact with amphoteric metals (e.g. alumina, lead, zinc) - danger of explosion.

**10.6. Hazardous decomposition products**

Not to expect if stored according to specifications.  
At high temperatures, hazardous decomposition products may be released such as:  
Carbon monoxide/dioxide as well as other toxic gases and vapours.

**SECTION 11: Toxicological information**
**11.1. Information on hazard classes as defined in GB CLP Regulation**
**Acute toxicity**

Harmful if swallowed.

**ATEmix calculated**

ATE (oral) 1622,5 mg/kg

CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
75-75-2	methanesulphonic acid				
	oral	LD50 649 mg/kg	Rat		
	dermal	LD50 > 1.000 - 2.000 mg/kg	Rabbit		

**Irritation and corrosivity**

Causes severe skin burns and eye damage. (On basis of test data)  
Causes serious eye damage. (On basis of test data)

**Sensitising effects**

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

**Carcinogenic/mutagenic/toxic effects for reproduction**

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

**STOT-single exposure**

May cause respiratory irritation. (methanesulphonic acid)

**STOT-repeated exposure**

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

**Aspiration hazard**

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

**Specific effects in experiment on an animal**

For this substance the summation method is not applicable when classification of respective mixtures is calculated.

**Additional information on tests**

none

**Practical experience**

No special references.

**11.2. Information on other hazards**
**Other information**

Acute effects If swallowed danger of perforation of the esophagus and the stomach (strong corrosive effects).

**SECTION 12: Ecological information**
**12.1. Toxicity**

Environmental and ecotoxicological analyses of the product are not available.

CAS No	Chemical name					
	Aquatic toxicity	Dose	[h]   [d]	Species	Source	Method
75-75-2	methanesulphonic acid					
	Acute fish toxicity	LC50 73 mg/l	96 h	Oncorhynchus mykiss (Rainbow trout)	OECD 203	
	Acute algae toxicity	ErC50 mg/l 12 - 24	72 h	Selenastrum capricornutum	OECD 201	
	Acute crustacea toxicity	EC50 - 70 mg/l	48 h	Daphnia magna (Big water flea)	OECD 202	
	Acute bacteria toxicity	(EC50 mg/l) > 1.000	0,5 h	Activated sludge	OECD 209	

**12.2. Persistence and degradability**

The surfactants contained in this mixture comply with the biodegradability criteria as laid down in Regulation (EC) No.648/2004 on detergents. Data to support this assertion are held at the disposal of the competent authorities of the Member States and will be made available to them, at their direct request or at the request of a detergent manufacturer.

CAS No	Chemical name			
	Method	Value	d	Source
	Evaluation			
75-75-2	methanesulphonic acid			
	Chemical oxygen demand (COD)	90 - 100	28	

**12.3. Bioaccumulative potential**

On the basis of existing data about the elimination/degradation and bioaccumulation potential longer term damage to the environment is unlikely.

**12.4. Mobility in soil**

No information available.

**12.5. Results of PBT and vPvB assessment**

The substances in the mixture do not meet the PBT/vPvB criteria according to UK REACH.  
This mixture does not contain any substances presenting a health or environmental hazard within the means of Regulation (EC) No. 1272/2008, assigned a Community workplace exposure limit, classified as PBT/vPvB or included in the Candidate List.

#### 12.6. Endocrine disrupting properties

This product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms as no components meets the criteria.  
No further relevant information available.

#### 12.7. Other adverse effects

The substance has no ozone depleting potential. Regulation (EC) No. 1005/2009 on substances that lead to the depletion of the ozone layer

### SECTION 13: Disposal considerations

#### 13.1. Waste treatment methods

##### Disposal recommendations

Dispose according to legislation.

##### Contaminated packaging

Handle contaminated packages in the same way as the substance itself.  
Consult the appropriate authorities about waste disposal.

### SECTION 14: Transport information

#### Land transport (ADR/RID)

**14.1. UN number or ID number:** UN 3265  
**14.2. UN proper shipping name:** CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S.  
**14.3. Transport hazard class(es):** 8  
**14.4. Packing group:** II  
Hazard label: 8



Classification code: C3  
Special Provisions: 274  
Limited quantity: 1 L  
Excepted quantity: E2  
Transport category: 2  
Hazard No: 80  
Tunnel restriction code: E

#### Inland waterways transport (ADN)

**14.1. UN number or ID number:** UN 3265  
**14.2. UN proper shipping name:** CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S.  
**14.3. Transport hazard class(es):** 8  
**14.4. Packing group:** II  
Hazard label: 8



Classification code: C3  
Special Provisions: 274  
Limited quantity: 1 L  
Excepted quantity: E2

#### Marine transport (IMDG)

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**14.1. UN number or ID number:** UN 3265  
**14.2. UN proper shipping name:** CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S.  
**14.3. Transport hazard class(es):** 8  
**14.4. Packing group:** II  
Hazard label: 8



Special Provisions: 274  
Limited quantity: 1 L  
Excepted quantity: E2  
EmS: F-A, S-B  
Segregation group: 1 - acids

**Air transport (ICAO-TI/IATA-DGR)**

**14.1. UN number or ID number:** UN 3265  
**14.2. UN proper shipping name:** CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S.  
**14.3. Transport hazard class(es):** 8  
**14.4. Packing group:** II  
Hazard label: 8



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**

Warning Non-combustible corrosive substances

**14.7. Maritime transport in bulk according to IMO instruments**

No special precautionary measures.

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

Restrictions on use (REACH, annex XVII):

Entry 3

2004/42/EC (VOC): no classification  
Information according to 2012/18/EU (SEVESO III): H2 ACUTE TOXIC  
Additional information: H2

**Additional information**

The product is classified and labelled according to EC directives or corresponding national laws.  
Labelling according to Regulation (EC) No. 1272/2008 [CLP]

**National regulatory information**

Employment restrictions:

Observe restrictions to employment for juveniles 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 hazard class (D):

1 - slightly hazardous to water

**Additional information**

"ZH 1/105 „Information on Protective Clothing""

**15.2. Chemical safety assessment**

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

**SECTION 16: Other information**
**Changes**

\* Data changed compared with the previous version.

**Abbreviations and acronyms**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road) ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways ATE: Acute toxicity estimates. CAO: Cargo Aircraft Only CAS: Chemical Abstracts Service (division of the American Chemical Society) CLP: Classification, Labelling and Packaging DNEL: Derived No-Effect Level (REACH) EC50: Median effective concentration EN: European standards. EEC: European Economic Community IARC: International Agency for Research into Cancer IATA: International Air Transport Association IBC-Code: International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk. IMDG: International Maritime Code for Dangerous Goods ISO: International organization for standardization. STEL: Limit value for short-term exposure LC50: Lethal concentration, 50 percent LD50: Lethal dose, 50 percent MAK: Maximum workplace concentration NOEC: No Observed Effect Concentration OEL: Occupational Exposure Limit OECD: Organization for economic cooperation and development PBT: Persistent, Bioaccumulative and Toxic PNEC: Predicted No-Effect Concentration (REACH) PPM: Parts per million RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail) TWA: Time Weighted Average vPvB: very Persistent and very Bioaccumulative

Acute Tox. 4: Acute toxicity, Hazard Category 4

Skin Corr. 1B: Skin corrosion/irritation, Hazard Category 1B

STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3

Met. Corr. 1: Corrosive to metal, hazard category 1

Eye Dam. 1: Serious eye damage/eye irritation, Hazard Category 1

OECD: Organization for economic cooperation and development

**Classification for mixtures and used evaluation method according to GB CLP Regulation**

Classification	Classification procedure
Met. Corr. 1; H290	
Acute Tox. 4; H302	Calculation method
Skin Corr. 1; H314	On basis of test data
Eye Dam. 1; H318	On basis of test data
STOT SE 3; H335	Calculation method

**Relevant H and EUH statements (number and full text)**

H290 May be corrosive to metals.  
H302 Harmful if swallowed.  
H314 Causes severe skin burns and eye damage.  
H318 Causes serious eye damage.  
H335 May cause respiratory irritation.

**Further Information**

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product

named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material. The information is based on the present level of our knowledge. It does not, however, give assurance of product properties and establishes no contract legal rights.

**Identified uses**

No	Short title	LCS	SU	PC	PROC	ERC	AC	TF	Specification
1	Cleaning agent	C	20	21	15	2, 6a, 6b	0	26	2682-20-4

LCS: Life cycle stages

SU: Sectors of use

PC: Product categories

PROC: Process categories

ERC: Environmental release categories

AC: Article categories

TF: Technical functions

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