

# **Safety Data Sheet**

according to Regulation (EC) No 1907/2006

# Schwefelsäure-/Flusssäure-Gemisch "TLB Etching mixture" enthält 990 g H2SO4 + 43 g HF/l

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

### 1.1. Product identifier

Schwefelsäure-/Flusssäure-Gemisch "TLB Etching mixture" enthält 990 g H2SO4 + 43 g HF/I

UFI: D2Y0-D33F-N00E-43E7

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

#### Use of the substance/mixture

Laboratory chemicals

Industrial uses: Uses of substances as such or in preparations at industrial sites

Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

#### Uses advised against

Do not use for private purposes (household).

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

Company name: AnalytiChem GmbH Street: Stempelstraße 6 Place: D-47167 Duisburg

Telephone: 0203/5194-0 Telefax: 0203/5194-290

E-mail: info@analytichem.de

Contact person: Abteilung Produktsicherheit Telephone: 0203/5194-107/117

E-mail: produktsicherheit@analytichem.de

Internet: www.analytichem.de

Responsible Department: Abteilung Produktsicherheit

<u>1.4. Emergency telephone</u> For Hazardous Materials [or Dangerous Goods] Incidents Spill, Leak, Fire,

<u>number:</u> Exposure, or Accident Call CHEMTREC Day or Night Within USA and Canada:

1-800-424-9300 Outside USA and Canada: +1 703-741-5970 (collect calls

accepted)

### **Further Information**

This product is a mixture. REACH Registration Number see section 3.

## **SECTION 2: Hazards identification**

# 2.1. Classification of the substance or mixture

## Regulation (EC) No 1272/2008

Met. Corr. 1; H290 Acute Tox. 2; H310 Acute Tox. 3; H301 Acute Tox. 4; H332 Skin Corr. 1A; H314 Eye Dam. 1; H318

Full text of hazard statements: see SECTION 16.

#### 2.2. Label elements

### Regulation (EC) No 1272/2008

# Hazard components for labelling

sulphuric acid 70 % hydrofluoric acid 3 %

Signal word: Danger



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## Pictograms:





#### **Hazard statements**

H290 May be corrosive to metals.

H301 Toxic if swallowed.
H310 Fatal in contact with skin.

H314 Causes severe skin burns and eye damage.

H332 Harmful if inhaled.

### **Precautionary statements**

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing

protection.

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with

water or shower.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if

present and easy to do. Continue rinsing.

P310 Immediately call a POISON CENTER/doctor.

### Additional advice on labelling

No information available.

#### 2.3. Other hazards

No data available

# **SECTION 3: Composition/information on ingredients**

### 3.2. Mixtures

## **Chemical characterization**

Mixtures in aqueous solution

# Relevant ingredients

CAS No	Chemical name				
	EC No	Index No	REACH No		
	Classification (Regulation (EC) N	o 1272/2008)	•		
7664-93-9	sulphuric acid				
	231-639-5	016-020-00-8	01-2119458838-20		
	Met. Corr. 1, Skin Corr. 1A, Eye Dam. 1; H290 H314 H318				
7664-39-3	Hydrofluoric acid %				
	231-634-8	009-003-00-1	01-2119458860-33		
	Acute Tox. 1, Acute Tox. 2, Acute Tox. 2, Skin Corr. 1A; H310 H330 H300 H314				

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



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Specific Conc. Limits, M-factors and ATE

CAS No	EC No	Chemical name	Quantity			
	Specific Conc. L	imits, M-factors and ATE				
7664-93-9	231-639-5	231-639-5 sulphuric acid				
	oral: LD50 = 2140 mg/kg Skin Corr. 1A; H314: >= 15 - 100 Skin Irrit. 2; H315: >= 5 - < 15 Eye Irrit. 2; H319: >= 5 - < 15					
7664-39-3	231-634-8	Hydrofluoric acid %	1 - < 5 %			
	inhalation: ATE = 0,5 mg/l (vapours); inhalation: ATE = 0,05 mg/l (dusts or mists); inhalation: LC50 = 1610 ppm (gases); dermal: ATE = 5 mg/kg; oral: ATE = 5 mg/kg  Skin Corr. 1A; H314: >= 7 - 100  Skin Corr. 1B; H314: >= 1 - < 7  Eye Irrit. 2; H319: >= 0,1 - < 1					

#### **Further Information**

This product does not contain substances of very high concern according to Regulation (EC) No 1907/2006 (REACH), Article 57 above the respective regulatory concentration limit of = 0.1 % (w/w).

### **SECTION 4: First aid measures**

## 4.1. Description of first aid measures

#### **General information**

First aider: Pay attention to self-protection! Remove affected person from the danger area and lay down. Call a physician immediately.

### After inhalation

Provide fresh air.

If breathing is irregular or stopped, administer artificial respiration.

Call a physician immediately.

## After contact with skin

Rinse with plenty of water for at least 10 minutes. Immediately remove contaminated clothes. Apply calcium gluconate gel (preparation: boil 5 g of calcium gluconate in 85 ml of hot distilled water, add 10 g glycerol. Allow 5 g of Carmellose-sodium to swell in the hot solution. Stable for 6 months, store in a cool place) and massage into the skin until the pain subsides, in between rinse with water and apply fresh gel. Continue gel therapy for another 15 minutes after the pain has subsided. If no calcium gluconate gel is available, apply several dressings thoroughly moistened with 20 % calcium gluconate solution. Medical advice absolutely required!

### After contact with eyes

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist.

Remove contact lenses, if present and easy to do. Continue rinsing. Protect uninjured eye.

### After ingestion

Never give anything by mouth to an unconscious person or a person with cramps.

Rinse mouth immediately and drink plenty of water.

Adverse human health effects and symptoms:

Gastric perforation

Remove casualty to fresh air and keep warm and at rest.

Call a physician immediately.

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

Irritant

Causes burns.

Cough

Dyspnoea

Risk of serious damage to eyes.

Gastric perforation

Circulatory collapse

Pulmonary oedema

Vomitina

seizures



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Pneumonia

# **SECTION 5: Firefighting measures**

## 5.1. Extinguishing media

## Suitable extinguishing media

Co-ordinate fire-fighting measures to the fire surroundings.

### Unsuitable extinguishing media

no restriction

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

Non-combustible liquids

Hazardous combustion products

In case of fire may be liberated: Hydrogen fluoride, Sulphur oxides

## 5.3. Advice for firefighters

Wear a self-contained breathing apparatus and chemical protective clothing. Full protection suit.

In case of fire and/or explosion do not breathe fumes. Use water spray jet to protect personnel and to cool endangered containers.

### **Additional information**

Suppress gases/vapours/mists with water spray jet.

Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water. Move undamaged containers from immediate hazard area if it can be done safely.

# **SECTION 6: Accidental release measures**

## 6.1. Personal precautions, protective equipment and emergency procedures

#### General advice

Do not breathe vapour/aerosol.

### For non-emergency personnel

Provide adequate ventilation.

Use personal protection equipment.

Avoid contact with skin, eyes and clothes.

Remove persons to safety.

Emergency procedures

Do not breathe dust/fume/gas/mist/vapours/spray.

#### For emergency responders

Precautionary statements For emergency responders: Personal protection equipment: see section 8

### 6.2. Environmental precautions

Do not allow to enter into surface water or drains.

#### 6.3. Methods and material for containment and cleaning up

#### For containment

Cover drains.

Prevent spread over a wide area (e.g. by containment or oil barriers).

Collect in closed and suitable containers for disposal.

Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents).

# For cleaning up

Clean contaminated articles and floor according to the environmental legislation.

#### Other information

Provide adequate ventilation.

Do not breathe dust/fume/gas/mist/vapours/spray.

Wear breathing apparatus if exposed to vapours/dusts/aerosols.

## 6.4. Reference to other sections

Safe handling: see section 7



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Personal protection equipment: see section 8

Disposal: see section 13

## **SECTION 7: Handling and storage**

#### 7.1. Precautions for safe handling

### Advice on safe handling

Avoid exposure - obtain special instructions before use.

Read label before use. Handle and open container with care.

When using do not eat, drink, smoke, sniff, Keep container tightly closed.

Use personal protection equipment. Use extractor hood (laboratory).

Provide adequate ventilation.

Avoid contact with skin, eyes and clothes.

## Advice on protection against fire and explosion

Usual measures for fire prevention.

#### Advice on general occupational hygiene

Keep away from food, drink and animal feedingstuffs. Make available sufficient washing facilities

Remove contaminated, saturated clothing immediately. Draw up and observe skin protection programme.

Wash hands and face before breaks and after work and take a shower if necessary. When using do not eat or drink.

### Further information on handling

Draw up and observe skin protection programme.

Wash hands and face before breaks and after work and take a shower if necessary.

Take off immediately all contaminated clothing and wash it before reuse.

If handled uncovered, arrangements with local exhaust ventilation have to be used.

### 7.2. Conditions for safe storage, including any incompatibilities

#### Requirements for storage rooms and vessels

Keep container tightly closed. Keep locked up. Store in a place accessible by authorized persons only. Provide adequate ventilation as well as local exhaustion at critical locations.

storage temperature +5°C - +30°C

### Further information on storage conditions

Store in a dry place.

Suitable container/equipment material: plastic

Unsuitable container/equipment material: Metal, Glass

### 7.3. Specific end use(s)

Laboratory chemicals

# **SECTION 8: Exposure controls/personal protection**

## 8.1. Control parameters

## Occupational exposure limits

CAS No	Substance	ppm	mg/m³	fib/cm³	Category	Origin
7664-39-3	Hydrogen fluoride (as F)	1.8	1.5		TWA (8 h)	
		3	2.5		STEL (15 min)	
7664-93-9	Sulphuric acid	-	0.05		TWA (8 h)	

### **Biological limit values**

CAS No	Substance	Parameter	Value	Test material	Sampling time
7664-39-3	Hydrogen fluoride	Fluoride	3 mg/L	Urine	End of shift



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#### **DNEL/DMEL values**

CAS No	Substance						
DNEL type		Exposure route	Effect	Value			
7664-93-9	sulphuric acid						
Worker DNEL, long-term		inhalation	local	0,05 mg/m³			
Worker DNEL, acute		inhalation	local	0,1 mg/m³			

#### **PNEC** values

CAS No	Substance				
Environmental	Environmental compartment				
7664-93-9 sulphuric acid					
Freshwater	0,003 mg/l				
Marine water		0 mg/l			
Freshwater sediment		0,002 mg/kg			
Marine sediment		0,002 mg/kg			
Micro-organisms in sewage treatment plants (STP)  8,8 mg					

#### 8.2. Exposure controls

### Appropriate engineering controls

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fumes/vapour/spray.

Technical measures and the application of suitable work processes have priority over personal protection equipment.

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

# Eye/face protection

Suitable eye protection:

goggles

Face protection umbrella

### Hand protection

Protective gloves are recommended Company KCL GmbH, D-36124 Eichenzell, email: vertrieb@kcl.de With specification (test according to EN374):

By long-term hand contact

Trade name/designation: KCL 890 Vitoject® Recommended material: FKM (fluoro rubber) Thickness of the glove material 0,7 mm

Wearing time with permanent contact > 480 min

By short-term hand contact

Trade name/designation: KCL 720 Camapren®

Recommended material:: CR (polychloroprene, chloroprene rubber)

Thickness of the glove material 0,65 mm

Wearing time with occasional contact (splashes): > 60 min

The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types. This recommendation applies only to the product stated in the safety data sheet<(>,<)> supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

## Skin protection

Wear suitable protective clothing.



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Take off immediately all contaminated clothing. Wash hands before breaks and after work.

### Respiratory protection

Respiratory protection necessary at: aerosol or mist formation

#### Thermal hazards

No data available

# **Environmental exposure controls**

Do not allow to enter into surface water or drains.

### **SECTION 9: Physical and chemical properties**

## 9.1. Information on basic physical and chemical properties

Physical state: Liquid
Colour: colourless
Odour: stinging

Odour threshold: No data available

Melting point/freezing point:

Boiling point or initial boiling point and

No data available

No data available

boiling range:

Flammability: not applicable
Lower explosion limits: not determined
Upper explosion limits: not determined
Flash point: X
Auto-ignition temperature: No data available
Decomposition temperature: not determined
pH-Value: <1
Viscosity / kinematic: not determined

Solubility in other solvents

not determined

Water solubility:

Dissolution rate: No data available Partition coefficient n-octanol/water: not determined Dispersion stability: No data available Vapour pressure: not determined Vapour pressure: not determined Density: No data available Relative density: No data available Bulk density: No data available Relative vapour density: not determined Particle characteristics: No data available

#### 9.2. Other information

## Information with regard to physical hazard classes

Explosive properties

No data available

Sustaining combustion: Not sustaining combustion

Self-ignition temperature

Solid: not applicable
Gas: not applicable

Oxidizing properties

No data available

### Other safety characteristics

Evaporation rate: not determined

Soluble in: Water



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Solvent separation test:

Solvent content:

No data available

No data available:

Viscosity / dynamic: not determined Flow time: not determined

Further Information
No data available

## **SECTION 10: Stability and reactivity**

## 10.1. Reactivity

Corrosive to metals, Glass

#### 10.2. Chemical stability

The product is stable under storage at normal ambient temperatures.

### 10.3. Possibility of hazardous reactions

Alkali metals

Fluorine

permanganates, e.g. potassium permanganate

Alkali (lye)

Metal

Nitric acid

Acetic anhydride

Ammonia (NH3)

sulphuric acid

Sodium and potassium hydroxide

### 10.4. Conditions to avoid

Radiant heat.

### 10.5. Incompatible materials

Metal

Glass

The product develops hydrogen in an aqueous solution in contact with metals.

## 10.6. Hazardous decomposition products

In case of fire:

**SECTION 5: Firefighting measures** 

## **Further information**

No data available

# **SECTION 11: Toxicological information**

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

# Toxicocinetics, metabolism and distribution

Avoid exposure - obtain special instructions before use.

## **Acute toxicity**



according to Regulation (EC) No 1907/2006

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Fatal in contact with skin.

Toxic if swallowed.

Harmful if inhaled.

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

Causes poorly healing wounds.

Irritant

Causes burns.

Cough

Dyspnoea

Risk of serious damage to eyes.

Gastric perforation

Circulatory collapse

Pulmonary oedema

Vomiting

seizures

Pneumonia

#### **ATEmix** calculated

ATE (oral) 170,6 mg/kg; ATE (dermal) 170,6 mg/kg; ATE (inhalation vapour) 17,06 mg/l; ATE (inhalation dust/mist) 1,706 mg/l

CAS No	Chemical name							
	Exposure route	Dose		Species	Source	Method		
7664-93-9	sulphuric acid							
	oral	LD50 mg/kg	2140	Rat	Am Ind Hyg Assoc J. 1969 Sep-Oct; 30(5):	The study was performed as part of a ser		
7664-39-3	Hydrofluoric acid %							
	oral	ATE	5 mg/kg					
	dermal	ATE	5 mg/kg					
	inhalation vapour	ATE	0,5 mg/l					
	inhalation dust/mist	ATE	0,05 mg/l					
	inhalation (1 h) gas	LC50 ppm	1610	Rat				

# Irritation and corrosivity

Causes severe skin burns and eye damage.

Causes serious eye damage.

#### 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

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

### 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.

No data available

### Information on likely routes of exposure

No data available

## Specific effects in experiment on an animal

No data available



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#### Additional information on tests

No data available

#### **Practical experience**

No data available

### 11.2. Information on other hazards

## **Endocrine disrupting properties**

No data available

#### Other information

No data available

#### **Further information**

Following ingestion gastric perforation

Liver and kidney damage

Risk of serious damage to eyes.

## **SECTION 12: Ecological information**

### 12.1. Toxicity

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

CAS No	Chemical name						
	Aquatic toxicity	Dose		[h]   [d]	Species	Source	Method
7664-93-9	-93-9 sulphuric acid						
	Acute algae toxicity	ErC50 mg/l	> 100		Desmodesmus subspicatus	Study report (2009)	OECD Guideline 201
	Acute crustacea toxicity	EC50 mg/l	> 100	48 h	Daphnia magna	Study report (2009)	OECD Guideline 202
	Fish toxicity	NOEC mg/l	0,025	65 d	Jordanella floridae		Groups of sexually mature flagfish

# 12.2. Persistence and degradability

There are no data available on the mixture itself.

### 12.3. Bioaccumulative potential

There are no data available on the mixture itself.

# 12.4. Mobility in soil

There are no data available on the mixture itself.

## 12.5. Results of PBT and vPvB assessment

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

### 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.

## 12.7. Other adverse effects

There are no data available on the mixture itself.

# **Further information**

Avoid release to the environment.

Do not allow to enter into surface water or drains.

Do not allow to enter into soil/subsoil.

## **SECTION 13: Disposal considerations**

## 13.1. Waste treatment methods



according to Regulation (EC) No 1907/2006

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### **Disposal recommendations**

Waste disposal according to directive 2008/98/EC, covering waste and dangerous waste.

Send to a hazardous waste incinerator facility under observation of official regulations.

Do not allow to enter into surface water or drains.

### Contaminated packaging

This material and its container must be disposed of as hazardous waste.

Handle contaminated packages in the same way as the substance itself.

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

# **SECTION 14: Transport information**

#### Land transport (ADR/RID)

14.1. UN number or ID number: UN 2922

14.2. UN proper shipping name: CORROSIVE LIQUID, TOXIC, N.O.S. (Hydrofluoric acid, sulphuric acid)

14.3. Transport hazard class(es): 14.4. Packing group: Ш Hazard label: 8+6.1 Classification code: CT1 **Special Provisions:** 274 Limited quantity: 1 L Excepted quantity: E2 Transport category: 2 Hazard No: 86 Tunnel restriction code: F

## Inland waterways transport (ADN)

14.1. UN number or ID number: UN 2922

14.2. UN proper shipping name: CORROSIVE LIQUID, TOXIC, N.O.S. (Hydrofluoric acid, sulphuric acid)

14.3. Transport hazard class(es):814.4. Packing group:IIHazard label:8+6.1Classification code:CT1Special Provisions:274 802Limited quantity:1 LExcepted quantity:E2

# Marine transport (IMDG)

14.1. UN number or ID number: UN 2922

14.2. UN proper shipping name: CORROSIVE LIQUID, TOXIC, N.O.S. (Hydrofluoric acid, sulphuric acid)

14.3. Transport hazard class(es):814.4. Packing group:IIHazard label:8+6.1Special Provisions:274Limited quantity:1 LExcepted quantity:E2EmS:F-A, S-B

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

14.1. UN number or ID number: UN 2922

14.2. UN proper shipping name: CORROSIVE LIQUID, TOXIC, N.O.S. (Hydrofluoric acid, sulphuric acid)

14.3. Transport hazard class(es):814.4. Packing group:IIHazard label:8+6.1Special Provisions:A3 A803Limited quantity Passenger:0.5 L



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Passenger LQ: Y840 Excepted quantity: E2

IATA-packing instructions - Passenger:851IATA-max. quantity - Passenger:1 LIATA-packing instructions - Cargo:855IATA-max. quantity - Cargo:30 L

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: No

14.6. Special precautions for user

Warning: Toxic. strongly corrosive.

14.7. Maritime transport in bulk according to IMO instruments

not applicable

### **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, Entry 75

Information according to Directive

2012/18/EU (SEVESO III):

H2 ACUTE TOXIC

Marketing and use of explosives precursors (Regulation (EU) 2019/1148):

Acquisition, introduction, possession or use of this product by the general public is restricted by Regulation (EU) 2019/1148. All suspicious transactions, and significant disappearances and thefts should be reported to the relevant national contact point.

#### **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

Skin resorption/Sensitization: Permeates easily through outer skin and causes poisoning.

## 15.2. Chemical safety assessment

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

### **SECTION 16: Other information**

## Changes

This data sheet contains changes from the previous version in section(s): 9,12.



according to Regulation (EC) No 1907/2006

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## Abbreviations and acronyms

Met. Corr: Substance or mixture corrosive to metals

Acute Tox: Acute toxicity Skin Corr: Skin corrosion Eye Dam: Eye damage

ADR: Accord européen sur le transport des marchandises dangereuses par Route

(European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonized System of Classification and Labelling of Chemicals EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service LC50: Lethal concentration, 50% LD50: Lethal dose, 50%

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

Classification	Classification procedure
Met. Corr. 1; H290	On basis of test data
Acute Tox. 2; H310	Calculation method
Acute Tox. 3; H301	Calculation method
Acute Tox. 4; H332	Calculation method
Skin Corr. 1A; H314	Calculation method
Eye Dam. 1; H318	Calculation method

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

H290	May be corrosive to metals.
H300	Fatal if swallowed.
H301	Toxic if swallowed.
H310	Fatal in contact with skin.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H330	Fatal if inhaled.

Harmful if inhaled.

#### **Further Information**

H332

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.

The receiver of our product is singularly responsible for adhering to existing laws and regulations.

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