

Multielement-Stan	Multielement-Standardlösung 2 4 Elemente je 100 mg/l in Salpetersäure 2 % mit Spuren Flusssäure						
Revision date: 28.08.2023	Product code: 3008	8	Page 1 of 13				
SECTION 1: Identification of the	ne substance/mixture and of the com	pany/undertaking					
<u>1.1. Product identifier</u> Multielement-Standardlösur	ng 2 4 Elemente je 100 mg/l in Salpetersäu	re 2 % mit Spuren Flusssäure					
UFI:	A6AP-T288-W002-PHKC						
1.2. Relevant identified uses of th	e substance or mixture and uses advised	l against					
	stances as such or in preparations at indus omain (administration, education, entertainr						
Uses advised against							
Do not use for private purpo	oses (household).						
1.3. Details of the supplier of the	<u>safety data sheet</u>						
Company name: Street: Place:	AnalytiChem GmbH Stempelstraße 6 D-47167 Duisburg						
Telephone: E-mail:	0203/5194-0 info@analytichem.de	Telefax: 0203/5194-290					
Contact person: E-mail: Internet: Responsible Department:	Abteilung Produktsicherheit produktsicherheit@analytichem.de www.analytichem.de Abteilung Produktsicherheit	Telephone: 0203/5194-107/117					
1.4. Emergency telephone number:	Exposure, or Accident Call CHEMTR	ous Goods] Incidents Spill, Leak, Fire, EC Day or Night Within USA and Canada anada: +1 703-741-5970 (collect calls	a:				
Further Information inapplicable, this product is	a mixture REACH registration number see	section 3					
SECTION 2: Hazards identification	ation						
2.1. Classification of the substan GB CLP Regulation	ce or mixture						

Met. Corr. 1; H290 Acute Tox. 4; H302 Acute Tox. 4; H312 Acute Tox. 4; H312 Skin Irrit. 2; H315 Eye Irrit. 2; H319 Aquatic Chronic 3; H412

Full text of hazard statements: see SECTION 16.

2.2. Label elements

GB CLP Regulation

Hazard components for labelling nitric acid Hydrofluoric acid Signal word: Warning

Revision No: 1,02 - Replaces version: 1,01



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Hazard statements

Pictograms:

H290	May be corrosive to metals.
H302+H312+H332	Harmful if swallowed, in contact with skin or if inhaled.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H412	Harmful to aquatic life with long lasting effects.

Precautionary statements

ecautionaly statement	13
P273	Avoid release to the environment.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P280	Wear protective gloves and eye/face protection.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

2.3. Other hazards

No information available.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Chemical characterization Mixtures in aqueous solution

Hazardous components

CAS No	Chemical name	Quantity		
	EC No	Index No	REACH No	
	Classification (GB CLP Regulation	on)		
7697-37-2	nitric acid			1 - < 5 %
	231-714-2	007-030-00-3	01-2119487297-23	
	Ox. Liq. 3, Met. Corr. 1, Acute Tox. 3, Skin Corr. 1A; H272 H290 H331 H314 EUH071			
7664-39-3	hydrofluoric acid %		< 1 %	
	231-634-8	009-003-00-1		
	Acute Tox. 1, Acute Tox. 2, Acut	300 H314		
7761-88-8	silver nitrate		< 0.1 %	
	231-853-9	01-2119513705-43		
	Ox. Sol. 2, Met. Corr. 1, Skin Co H290 H314 H318 H400 H410			

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. Limits, M-factors and ATE				
7697-37-2	231-714-2	nitric acid	1 - < 5 %		
		E 2,65 mg/l (vapours) Ox. Liq. 3; H272: >= 65 - 100 Skin Corr. 1A; H314: >= 20 orr. 1B; H314: >= 5 - < 20			
7664-39-3	4-39-3 231-634-8 hydrofluoric acid %				
	LC50 = 1610 p	E = 0,5 mg/l (vapours); inhalation: ATE = 0,05 mg/l (dusts or mists); inhalation: opm (gases); dermal: ATE = 5 mg/kg; oral: ATE = 5 mg/kg_Skin Corr. 1A; H314: kin Corr. 1B; H314: >= 1 - < 7 Eye Irrit. 2; H319: >= 0,1 - < 1			
7761-88-8	231-853-9	silver nitrate	< 0.1 %		
		= > 348 mg/kg; oral: LD50 = > 2000 mg/kg Aquatic Acute 1; H400: M=1000 ic 1; H410: M=100			

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

No data available

After inhalation

Provide fresh air. Call a doctor if you feel unwell.

After contact with skin

Wash immediately with: Water Take off immediately all contaminated clothing and wash it before reuse. Call a physician immediately.

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

Rinse mouth immediately and drink plenty of water. Do NOT induce vomiting. Do not allow a neutralisation agent to be drunk. Call a physician immediately.

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

Irritant

Methaemoglobinaemia

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

No data available

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



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5.2. Special hazards arising from the substance or mixture

Non-combustible liquids Hazardous combustion products In case of fire may be liberated: Nitrogen oxides (NOx)

5.3. Advice for firefighters

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

Additional information

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. Use water spray jet to protect personnel and to cool endangered containers.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General advice

Corrosive to metals.

For non-emergency personnel

Provide adequate ventilation. Use personal protection equipment. Avoid contact with skin, eyes and clothes. Remove persons to safety. Emergency procedures Consult an expert 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 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

Read label before use.





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When using do not eat, drink, smoke, sniff. Handle and open container with care. Use personal protection equipment. Provide adequate ventilation. Do not breathe vapour/aerosol.

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. 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. Avoid: aerosol or mist formation Do not breathe vapour/aerosol.

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.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Corrosive to metals. Unsuitable container/equipment material: Metal, Glass The product develops hydrogen in an aqueous solution in contact with metals.

Hints on joint storage

national regulations

Further information on storage conditions

Keep container tightly closed.

7.3. Specific end use(s)

Laboratory chemicals

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limits (EH40)

CAS No	Substance	ppm	mg/m³	fibres/ml	Category	Origin
7664-39-3	Hydrogen fluoride (as F)	1.8	1.5		TWA (8 h)	WEL
		3	2.5		STEL (15 min)	WEL
7697-37-2	Nitric acid	1	2.6		STEL (15 min)	WEL

DNEL/DMEL values

CAS No	Substance	-	_	
DNEL type		Exposure route	Effect	Value
7761-88-8	silver nitrate			
Consumer DNE	EL, long-term	oral		0,02 mg/kg bw/day
Worker DNEL, long-term		inhalation	systemic	0,016 mg/m³
Consumer DNE	EL, long-term	inhalation	systemic	0,006 mg/m³



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PNEC values

CAS No	Substance				
Environment	Value				
7761-88-8 silver nitrate					
Freshwater	0,00004 mg/l				
Marine water		0,00086 mg/l			
Freshwater s	ediment	438,13 mg/kg			
Marine sedim	nent	438,13 mg/kg			
Micro-organisms in sewage treatment plants (STP)					
Soil					

8.2. Exposure controls

Appropriate engineering controls

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

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

Individual protection measures, such as personal protective equipment

Eye/face protection

goggles

Wear eye/face protection.

Hand protection

When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

Suitable examples are gloves of KCL GmbH, D-36124 Eichenzell, e-mail: vertrieb@kcl.de with the following specification (test according to EN 374):

By long-term hand contactTrade name/designation:KCL 741 Dermatril® LRecommended material:NBR (Nitrile rubber) 0,11 mmWearing time with permanent contact:> 480 min

By short-term hand contact Trade name/designation: KCL 741 Dermatril® L Recommended material: NBR (Nitrile rubber) 0,11 mm Wearing time with occasional contact (splashes): > 480 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. Take off immediately all contaminated clothing. Wash hands before breaks and after work.



according to UK REACH Regulation

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Respiratory protection			
Respiratory protection necessary at	aerosol or mist formation		
Environmental exposure controls			
Do not allow to enter into surface wa	ater or drains		
SECTION 9: Physical and chemical p	roperties		
9.1. Information on basic physical and ch	emical properties		
Physical state:	Liquid		
Colour:	colourless		
Odour:	odourless		
Odour threshold:	No data available		
Melting point/freezing point:		not determined	
Boiling point or initial boiling point and		?	
boiling range:		-	
Flammability:		not applicable	
· ····································		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:		No data available	
Solubility in other solvents			
not determined			
Partition coefficient n-octanol/water:		not determined	
Vapour pressure:		No data available	
Vapour pressure:		No data available	
Density:		1,0072 g/cm³ No data available	
Bulk density:			
Relative vapour density:		not determined	
9.2. Other information			
Information with regard to physical has Explosive properties	izard classes		
No data available			
Sustaining combustion:		No data available	
-		no data avaliable	
Self-ignition temperature Solid:		not appliable	
Gas:		not applicable	
-		not applicable	
Oxidizing properties Not oxidising.			
Other safety characteristics			
Evaporation rate:		not determined	
-		No data available	
Solvent separation test:			
Solvent content:		0	
Solid content:		0 No data available	
Sublimation point:		No data available	
Softening point:		No data available	
Pour point:		No data available	
No data available:			



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No data available

No data available

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Viscosity / dynamic: Flow time:

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Further Information

Corrosive to metals.

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 (lye)

10.4. Conditions to avoid

none

10.5. Incompatible materials

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

10.6. Hazardous decomposition products

In case of fire may be liberated: SECTION 5: Firefighting measures

Further information

No data available

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in GB CLP Regulation

Toxicocinetics, metabolism and distribution

There are no data available on the preparation/mixture itself.

Acute toxicity

Harmful if swallowed. Harmful in contact with skin. Harmful if inhaled.

ATEmix calculated

ATE (oral) > 2000 mg/kg; ATE (dermal) > 2000 mg/kg; ATE (inhalation vapour) > 20 mg/l; ATE (inhalation dust/mist) > 5 mg/l



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CAS No	Chemical name	Chemical name						
	Exposure route	Dose		Species	Source	Method		
7697-37-2	nitric acid							
	inhalation vapour	ATE 2,6	5 mg/l					
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				
7761-88-8	silver nitrate							
	oral	LD50 mg/kg	> 2000	Rat	Study report (1993)	OECD Guideline 401		
	dermal	LD50 mg/kg	> 348	Guinea pig	J. Vet. Med. Sci.73: 1417 - 1423. (2011)	OECD Guideline 434		

Irritation and corrosivity

Causes skin irritation.

Causes serious eye irritation.

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.

Specific effects in experiment on an animal

There are no data available on the preparation/mixture itself.

Additional information on tests

There are no data available on the preparation/mixture itself.

Practical experience

There are no data available on the preparation/mixture itself.

11.2. Information on other hazards

Other information

There are no data available on the preparation/mixture itself.

Further information

There are no data available on the preparation/mixture itself.

SECTION 12: Ecological information

12.1. Toxicity

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.



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CAS No	Chemical name								
	Aquatic toxicity	Dose		[h] [d]	Species	Source	Method		
7697-37-2	nitric acid								
	Acute fish toxicity	LC50 mg/l	1559	96 h	Topeka shiner	Environmental Toxicology and Chemistry,	other: ASTM E729-26		
	Fish toxicity	NOEC	268 mg/l	30 d	juvenile Topeka shiner and with juvenile Fathead m	Study report (2009)	Growth tests estimated the test chemical		
	Algae toxicity	NOEC mg/l	> 419	10 d	several benthic diatoms; see results	Marine Biology 43:307-315 (1977)	Ten cultures of benthic diatoms were iso		
	Acute bacteria toxicity	(EC50 mg/l)	> 1000	3 h	Activated sludge	Study report (2008)	OECD Guideline 209		
7761-88-8	silver nitrate								
	Acute fish toxicity	LC50 mg/l	0,0012	96 h	Pimephales promelas	Environmental Toxicology and Chemistry.	A guideline was not specified. The test		
	Acute algae toxicity	ErC50 mg/l	0,0099	96 h	Pseudokirchneriella subcapitata	Environmental Science and Technology. 44	eline: U.S. Environmental Protection Age		
	Acute crustacea toxicity	EC50 mg/l	0,00022	48 h	Daphnia magna	Environmental Toxicology and Chemistry.	The protective effect of reactive sulphi		
	Fish toxicity	NOEC 0,00125 m	> g/l	73 d	Oncorhynchus mykiss	Environmental Toxicology and Chemistry 2	other: ASTM 1241-98		
	Algae toxicity	NOEC mg/l	0,0012	14 d	Champia parvula	in Bishop WE, Cardwell RD Heidolph BB (E	The toxicity tests lasted 11 days for th		
	Crustacea toxicity	NOEC mg/l	0,00031	20 d	Isonychia bicolour	Environmental Toxicology and Chemistry.	20 day sublethal effects on representati		

12.2. Persistence and degradability

The product has not been tested.

12.3. Bioaccumulative potential

The product has not been tested.

BCF

CAS No	Chemical name	BCF	Species	Source
7761-88-8	silver nitrate	70	Cyprinus carpio	Water, Air and Soil

12.4. Mobility in soil

The product has not been tested.

12.5. Results of PBT and vPvB assessment

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

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

Discharge into the environment must be avoided. Harmful effect due to pH shift.



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Forms corrosive mixtures with water even if diluted.

Further information

Do not allow to enter into surface water or drains.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal recommendations

Waste disposal according to directive 2008/98/EC, covering waste and dangerous waste. Send to a physico-chemical treatment facility under observation of official regulations. Do not empty into drains.

Contaminated packaging

Non-contaminated packages may be recycled. Handle contaminated packages in the same way as the substance itself.

SECTION 14: Transport information

Land transport (ADR/RID)	
14.1. UN number or ID number:	UN 3264
14.2. UN proper shipping name:	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (nitric acid, Hydrofluoric acid)
14.3. Transport hazard class(es):	8
14.4. Packing group:	III
Hazard label:	8
Classification code:	C1
Special Provisions:	274
Limited quantity:	5 L
Excepted quantity:	E1
Transport category:	3
Hazard No:	80
Tunnel restriction code:	E
Inland waterways transport (ADN)	
14.1. UN number or ID number:	UN 3264
14.2. UN proper shipping name:	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (nitric acid, Hydrofluoric acid)
14.3. Transport hazard class(es):	8
14.4. Packing group:	III
Hazard label:	8
Classification code:	C1
Special Provisions:	274
Limited quantity:	5 L
Excepted quantity:	E1
Marine transport (IMDG)	
14.1. UN number or ID number:	UN 3264
14.2. UN proper shipping name:	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (nitric acid,
	Hydrofluoric acid)
<u>14.3. Transport hazard class(es):</u>	8
14.4. Packing group:	III
Hazard label:	8
Special Provisions:	223, 274
Limited quantity:	5 L
Excepted quantity:	E1



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EmS:	F-A, S-B			
Segregation group:	1 - acids			
Air transport (ICAO-TI/IATA-DGR)				
14.1. UN number or ID number:	UN 3264			
14.2. UN proper shipping name:	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (nitric acid,			
	Hydrofluoric acid)			
14.3. Transport hazard class(es):	8			
14.4. Packing group:				
Hazard label:	8 A3 A803			
Special Provisions: Limited quantity Passenger:	1 L			
Passenger LQ:	Y841			
Excepted quantity:	E1			
IATA-packing instructions - Passenger:	852			
IATA-max. quantity - Passenger:	5 L			
IATA-packing instructions - Cargo:	856			
IATA-max. quantity - Cargo:	60 L			
14.5. Environmental hazards				
ENVIRONMENTALLY HAZARDOUS:	No			
14.6. Special precautions for user				
Warning: strongly corrosive.				
14.7. Maritime transport in bulk according t	to IMO instruments			
not applicable				
SECTION 15: Regulatory information				
15.1. Safety, health and environmental regu	ulations/legislation specific for the substance or mixture			
EU regulatory information				
Restrictions on use (REACH, annex XVII) Entry 3, Entry 75	:			
Marketing and use of explosives precurso This product is regulated by Regulatio	rs (Regulation (EU) 2019/1148): n (EU) 2019/1148: all suspicious transactions, and significant reported to the relevant national contact point.			
National regulatory information				
Employment restrictions:	Observe restrictions to employment for juveniles according to the 'juv work protection guideline' (94/33/EC). Observe employment restriction under the Maternity Protection Directive (92/85/EEC) for expectant on nursing mothers.	ons		
Water hazard class (D):	3 - highly 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.





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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) 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% Ox. Liq: Oxidising liquids Ox. Sol: Oxidising solids Met. Corr: Corrosive to metals Acute Tox: Acute toxicity Skin Corr: Skin corrosion Skin Irrit: Skin irritation Eye Dam: Eye damage Eye Irrit: Eye irritation Aquatic Acute: Acute aquatic hazard Aquatic Chronic: Chronic aquatic hazard

Relevant H and EUH statements (number and full text)

H272	May intensify fire; oxidiser.
H290	May be corrosive to metals.
H300	Fatal if swallowed.
H302	Harmful if swallowed.
H302+H312+H332	Harmful if swallowed, in contact with skin or if inhaled.
H310	Fatal in contact with skin.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H330	Fatal if inhaled.
H331	Toxic if inhaled.
H332	Harmful if inhaled.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.
EUH071	Corrosive to the respiratory tract.

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