

Safety Data Sheet

according to Regulation (EC) No 1907/2006

AAS standard vanadium 1.000 g V/I NH₄VO₃ in nitric acid 1 mol/l traceable to NIST

Revision date: 20.04.2022

Product code: 03384

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

1.1. Product identifier

AAS standard vanadium 1.000 g V/I NH₄VO₃ in nitric acid 1 mol/l traceable to NIST

UFI: YJC9-X0GD-T00Q-9CFH

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:	Fa. Bernd Kraft GmbH	
Street:	Stempelstraße 6	
Place:	D-47167 Duisburg	
Telephone:	0203/5194-0	Telefax: 0203/5194-290
e-mail:	info@berndkraft.de	
Contact person:	Abteilung Produktsicherheit	Telephone: 0203/5194-107/117
e-mail:	produktsicherheit@berndkraft.de	
Internet:	www.berndkraft.de	
Responsible Department:	Abteilung Produktsicherheit	

1.4. Emergency telephone number:

For Hazardous Materials [or Dangerous Goods] Incidents Spill, Leak, Fire, 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

Skin Corr. 1B; 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

nitric acid

Signal word: Danger

Pictograms:



Hazard statements

H290

May be corrosive to metals.

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H314 Causes severe skin burns and eye damage.

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.

Special labelling of certain mixtures

EUH071 Corrosive to the respiratory tract.

2.3. Other hazards

No data 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 (Regulation (EC) No 1272/2008)			
7697-37-2	nitric acid			5 - < 10 %
	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			
7803-55-6	ammonium trioxovanadate			< 1 %
	232-261-3			
	Repr. 2, Acute Tox. 3, Acute Tox. 4, Eye Irrit. 2, STOT RE 1, Aquatic Chronic 2; H361d H301 H332 H319 H372 H411			

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		
7697-37-2	231-714-2	nitric acid	5 - < 10 %
	inhalation: ATE 2,65 mg/kg (vapours) Ox. Liq. 3; H272: >= 65 - 100 Skin Corr. 1A; H314: >= 20 - 100 Skin Corr. 1B; H314: >= 5 - < 20		
7803-55-6	232-261-3	ammonium trioxovanadate	< 1 %
	inhalation: ATE = 11 mg/l (vapours); inhalation: LC50 = 2,61 mg/l (dusts or mists); dermal: LD50 = > 2500 mg/kg; oral: LD50 = 218,1 mg/kg		

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!

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After inhalation

Provide fresh air.
If breathing is irregular or stopped, administer artificial respiration.
Call a physician immediately.

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.

After ingestion

Rinse mouth immediately and drink plenty of water. Do NOT induce vomiting. Adverse human health effects and symptoms: Gastric perforation. Call a physician immediately. Do not allow a neutralisation agent to be drunk.

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

Irritant — skin irritation and eye damage
Causes burns.
Cough
Dyspnoea
Risk of serious damage to eyes.
Vomiting
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

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 (NO_x)

5.3. Advice for firefighters

Wear a self-contained breathing apparatus and chemical protective clothing. Full protection suit.
Do not inhale explosion and combustion gases.
Avoid contact with skin, eyes and clothes.

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

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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
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

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

Material, oxygen-rich, Oxidising

Advice on general occupational hygiene

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.

7.2. Conditions for safe storage, including any incompatibilities

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Requirements for storage rooms and vessels

- Keep container tightly closed.
- Provide adequate ventilation as well as local exhaust at critical locations.
- Keep in a cool place.

Further information on storage conditions

Unsuitable container/equipment material: Metal, Light metal

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/m ³	fib/cm ³	Category	Origin
7697-37-2	Nitric acid	1	2.6		STEL (15 min)	

DNEL/DMEL values

CAS No	Substance	Exposure route	Effect	Value
7803-55-6	ammonium trioxovanadate			
Worker DNEL, long-term		inhalation	systemic	0,64 mg/m ³
Worker DNEL, long-term		inhalation	local	0,18 mg/m ³
Worker DNEL, acute		inhalation	local	0,92 mg/m ³
Consumer DNEL, long-term		inhalation	systemic	0,18 mg/m ³
Consumer DNEL, long-term		inhalation	local	0,11 mg/m ³
Consumer DNEL, acute		inhalation	local	0,57 mg/m ³
Consumer DNEL, long-term		oral	systemic	0,18 mg/kg bw/day
Consumer DNEL, acute		oral	systemic	0,92 mg/kg bw/day

PNEC values

CAS No	Substance	Value
7803-55-6	ammonium trioxovanadate	
Freshwater		0,0076 mg/l
Freshwater (intermittent releases)		0,00693 mg/l
Marine water		0,0025 mg/l
Freshwater sediment		240 mg/kg
Marine sediment		79 mg/kg
Secondary poisoning		0,167 mg/kg
Micro-organisms in sewage treatment plants (STP)		0,45 mg/l
Soil		7,2 mg/kg

8.2. Exposure controls

Appropriate engineering controls

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

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

Individual protection measures, such as personal protective equipment

Eye/face protection

Face protection shield
goggles.

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.

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 741 Dermatril® L
Recommended material: NBR (Nitrile rubber) 0,11 mm
Wearing 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.

Respiratory protection

Respiratory protection necessary at: aerosol or mist formation

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:	yellow
Odour:	stinging
Odour threshold:	No data available

Changes in the physical state

Melting point/freezing point:	No data available
Boiling point or initial boiling point and boiling range:	No data available
Sublimation point:	No data available
Softening point:	No data available

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Pour point: No data available

No data available:

Flash point: X

Flammability

Solid/liquid: No data available

Gas: No data available

Explosive properties

No data available

Lower explosion limits: No data available

Upper explosion limits: No data available

Auto-ignition temperature: No data available

Self-ignition temperature

Solid: No data available

Gas: No data available

Decomposition temperature: No data available

pH-Value: <1

Viscosity / dynamic: No data available

Viscosity / kinematic: No data available

Flow time: No data available

Water solubility: very soluble

Solubility in other solvents

not determined

Dissolution rate: No data available

Partition coefficient n-octanol/water: No data available

Dispersion stability: No data available

Vapour pressure: No data available

Vapour pressure: No data available

Density: No data available

Relative density: No data available

Bulk density: No data available

Relative vapour density: No data available

Particle characteristics: No data available

9.2. Other information

Information with regard to physical hazard classes

Sustaining combustion: No data available

Oxidizing properties

Oxidising agent, strong

Other safety characteristics

Solvent separation test: No data available

Solvent content: No data available

Solid content: No data available

Evaporation rate: No data available

Further Information

Corrosive to metals.

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SECTION 10: Stability and reactivity

10.1. Reactivity

Corrosive to metals.
Oxidising agent, strong

10.2. Chemical stability

The product is stable under storage at normal ambient temperatures.

10.3. Possibility of hazardous reactions

Danger of explosion:

Acetone, Alcohol, Aniline, Substance, organic, Benzene, Aniline, Amines, Hydrocarbons, halogenated, Diethyl ether, Hydrazine, Dioxane, Acetic acid, Acetic anhydride, Ethanol, Fluorine, Formaldehyde, Rubber articles, Hydrocarbons, Copper, Powdered metals, Methanol, Phosphorus trichloride, Hydrogen phosphides, Gasoline, Reducing agent, titanium, Toluene, Hydrogen peroxide, tin, Xylene, Dichloromethane, carbon black, Potassium chlorate, permanganates, e.g. potassium permanganate

Ignition hazard:

Amines, Ammonia (NH₃), Combustible substance, aldehydes, Hydrogen iodide (HI), White/yellow phosphor, Hydrogen sulphide (H₂S), Alkali metals, Alkaline earth metal

Violent reaction with:

Nitriles, antimony, arsenic, boron, Alkali (lye), , Formic acid, sulphuric acid, sulphuric acid, sulphuric acid, selenium

10.4. Conditions to avoid

Heat

10.5. Incompatible materials

Cellulose, Metal

Keep away from: Metal.

Keep away from combustible material.

The product develops hydrogen in an aqueous solution in contact with metals. / Nitrogen oxides (NO_x)

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 Regulation (EC) No 1272/2008

Toxicokinetics, metabolism and distribution

There are no data available on the mixture itself.

Acute toxicity

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

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

Pulmonary oedema

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CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
7697-37-2	nitric acid				
	inhalation vapour	ATE 2,65 mg/kg			
7803-55-6	ammonium trioxovanadate				
	oral	LD50 218,1 mg/kg	Rat	Study report (1992)	OECD Guideline 401
	dermal	LD50 > 2500 mg/kg	Rat	Study report (1992)	OECD Guideline 402
	inhalation vapour	ATE 11 mg/l			
	inhalation (4 h) dust/mist	LC50 2,61 mg/l	Rat	Study report (1992)	OECD Guideline 403

Irritation and corrosivity

Causes severe skin burns and eye damage.
Causes serious eye damage.
Risk of serious damage to eyes.

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.

Information on likely routes of exposure

There are no data available on the mixture itself.

Specific effects in experiment on an animal

There are no data available on the mixture itself.

Additional information on tests

There are no data available on the mixture itself.

Practical experience

There are no data available on the mixture itself.

11.2. Information on other hazards

Endocrine disrupting properties

There are no data available on the mixture itself.

Other information

There are no data available on the mixture itself.

Further information

Irritant — skin irritation and eye damage
Causes burns.
Cough
Dyspnoea
Risk of serious damage to eyes.
Vomiting
Methaemoglobinaemia

SECTION 12: Ecological information

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12.1. Toxicity

There are no data available on the mixture itself.

CAS No	Chemical name		Dose	[h] [d]	Species	Source	Method
7697-37-2	nitric acid						
	Aquatic toxicity						
	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
7803-55-6	ammonium trioxovanadate						
	Acute fish toxicity	LC50 mg/l	3,17	96 h	Gasterosteus aculeatus	Environmental Toxicology 20:18-22. (2005)	EPA OPPTS 850.1075
	Acute algae toxicity	ErC50 mg/l	2,907	72 h	Desmodesmus subspicatus	Study report (1999)	OECD Guideline 201
	Acute crustacea toxicity	EC50 mg/l	1,52	48 h	Daphnia magna	Study report (1978)	48h mortality test with daphnids
	Fish toxicity	NOEC mg/l	>= 0,48	28 d	Jordanella floridae	Water Research 13:905-910. (1979)	Different groups of fish were continuous
	Crustacea toxicity	NOEC mg/l	1,344	23 d	Daphnia magna	Bulletin of Environmental Contamination	other: 84/449/EEC: given by the Commissi
	Acute bacteria toxicity	(EC50 mg/l)	> 100	3 h	activated sludge of a predominantly domestic sewage	Study report (2010)	OECD Guideline 209

12.2. Persistence and degradability

The methods for determining the biological degradability are not applicable to inorganic substances.

12.3. Bioaccumulative potential

There are no data available on the mixture itself.

BCF

CAS No	Chemical name	BCF	Species	Source
7803-55-6	ammonium trioxovanadate	< 0,036	Lactuca sativa	Study report (2003)

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.

The substance in the mixture does 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.

There are no data available on the mixture itself.

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12.7. Other adverse effects

Discharge into the environment must be avoided.

Further information

Do not empty into 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.

Do not mix with other wastes.

Contaminated packaging

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 2031
14.2. UN proper shipping name:	NITRIC ACID
14.3. Transport hazard class(es):	8
14.4. Packing group:	II
Hazard label:	8
Classification code:	C1
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 2031
14.2. UN proper shipping name:	NITRIC ACID
14.3. Transport hazard class(es):	8
14.4. Packing group:	II
Hazard label:	8
Classification code:	C1
Limited quantity:	1 L
Excepted quantity:	E2

Marine transport (IMDG)

14.1. UN number or ID number:	UN 2031
14.2. UN proper shipping name:	NITRIC ACID
14.3. Transport hazard class(es):	8
14.4. Packing group:	II
Hazard label:	8
Special Provisions:	-
Limited quantity:	1 L
Excepted quantity:	E2
EmS:	F-A, S-B

Air transport (ICAO-TI/IATA-DGR)

14.1. UN number or ID number:	UN 2031
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14.2. UN proper shipping name:	NITRIC ACID	
14.3. Transport hazard class(es):	8	
14.4. Packing group:	II	
Hazard label:	8	
Special Provisions:	A212	
Limited quantity Passenger:	Forbidden	
Passenger LQ:	Forbidden	
Excepted quantity:	E0	
IATA-packing instructions - Passenger:	Forbidden	
IATA-max. quantity - Passenger:	Forbidden	
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: Oxidising substances. 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 65

Information according to 2012/18/EU (SEVESO III): Not subject to 2012/18/EU (SEVESO III)

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): 2 - obviously hazardous to water

SECTION 16: Other information

Changes

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

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%

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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
Skin Corr. 1B; H314	Calculation method
Eye Dam. 1; H318	Calculation method

Relevant H and EUH statements (number and full text)

H272	May intensify fire; oxidiser.
H290	May be corrosive to metals.
H301	Toxic if swallowed.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H331	Toxic if inhaled.
H332	Harmful if inhaled.
H361d	Suspected of damaging the unborn child.
H372	Causes damage to organs through prolonged or repeated exposure.
H411	Toxic 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.)