

Safety Data Sheet

according to UK REACH Regulation

Multielement-Standardlösung Spuren Salz

Revision date: 05.07.2022

Product code: 30280

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P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

Special labelling of certain mixtures

EUH071 Corrosive to the respiratory tract.

2.3. Other hazards

No information available.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Hazardous components

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification (GB CLP Regulation)			
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			
7782-61-8	Iron(III) nitrate nonahydrate			1 - < 5 %
	233-899-5			
	Ox. Sol. 3, Skin Irrit. 2, Eye Irrit. 2; H272 H315 H319			
10043-35-3	boric acid			< 1 %
	233-139-2	005-007-00-2	01-2119486683-25	
	Repr. 1B; H360FD			

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		
7782-61-8	233-899-5	Iron(III) nitrate nonahydrate	1 - < 5 %
	dermal: LD50 = > 2000 mg/kg; oral: LD50 = > 2000 mg/kg		
10043-35-3	233-139-2	boric acid	< 1 %
	inhalation: LC50 = > 2,12 mg/l (dusts or mists); dermal: LD50 = > 2000 mg/kg; oral: LD50 = 3450 mg/kg		

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.

After inhalation

Provide fresh air. Medical treatment necessary.

After contact with skin

After contact with skin, wash immediately with polyethylene glycol, followed by plenty of water. Take off immediately all contaminated clothing and wash it before reuse. If skin irritation occurs: Get medical advice/attention.

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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.

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

No information available.

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

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

5.2. Special hazards arising from the substance or mixture

Non-flammable.

5.3. Advice for firefighters

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

Additional information

Suppress gases/vapours/mists with water spray jet.

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

No special environmental measures are necessary. Clean contaminated articles and floor according to the environmental legislation.

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.

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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. Do not breathe gas/fumes/vapour/spray.

Advice on protection against fire and explosion

No special fire protection measures are necessary.

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.

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. Unsuitable container/equipment material: Metal.

Hints on joint storage

No special measures are necessary.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limits (EH40)

CAS No	Substance	ppm	mg/m ³	fibres/ml	Category	Origin
7697-37-2	Nitric acid	1	2.6		STEL (15 min)	WEL

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DNEL/DMEL values

CAS No	Substance		
DNEL type	Exposure route	Effect	Value
7782-61-8	Iron(III) nitrate nonahydrate		
Worker DNEL, long-term	inhalation	systemic	12 mg/m ³
Worker DNEL, long-term	dermal	systemic	17 mg/kg bw/day
Consumer DNEL, long-term	inhalation	systemic	3 mg/m ³
Consumer DNEL, long-term	dermal	systemic	8,6 mg/kg bw/day
Consumer DNEL, long-term	oral	systemic	1,2 mg/kg bw/day
10043-35-3	boric acid		
Worker DNEL, long-term	inhalation	systemic	8,3 mg/m ³
Worker DNEL, long-term	dermal	systemic	392 mg/kg bw/day
Consumer DNEL, long-term	inhalation	systemic	4,15 mg/m ³
Consumer DNEL, long-term	dermal	systemic	196 mg/kg bw/day
Consumer DNEL, long-term	oral	systemic	0,98 mg/kg bw/day
Consumer DNEL, acute	oral	systemic	0,98 mg/kg bw/day

PNEC values

CAS No	Substance	
Environmental compartment	Value	
7782-61-8	Iron(III) nitrate nonahydrate	
Freshwater	0,024 mg/l	
Freshwater (intermittent releases)	0,24 mg/l	
Marine water	0,002 mg/l	
Freshwater sediment	0,2 mg/kg	
Marine sediment	0,02 mg/kg	
Micro-organisms in sewage treatment plants (STP)	500 mg/l	
Soil	0,026 mg/kg	
10043-35-3	boric acid	
Freshwater	2,9 mg/l	
Freshwater (intermittent releases)	13,7 mg/l	
Marine water	2,9 mg/l	
Micro-organisms in sewage treatment plants (STP)	10 mg/l	
Soil	5,7 mg/kg	

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.

Individual protection measures, such as personal protective equipment

Eye/face protection

Suitable eye protection: goggles.

Hand protection

When handling with chemical substances, protective gloves must be worn with the CE-label including the four

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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.

Skin protection

Wear suitable protective clothing.

Respiratory protection

In case of inadequate ventilation wear respiratory protection.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state: Liquid
 Colour: colourless
 Odour: odourless

Changes in the physical state

Melting point/freezing point: not determined
 Boiling point or initial boiling point and boiling range: ?
 Flash point: ?

Flammability

Solid/liquid: not applicable
 Gas: not applicable
 Lower explosion limits: not determined
 Upper explosion limits: not determined

Self-ignition temperature

Solid: not applicable
 Gas: not applicable
 Decomposition temperature: not determined
 pH-Value: <1

Solubility in other solvents

not determined
 Partition coefficient n-octanol/water: not determined
 Vapour pressure: <=1100 hPa
 (at 50 °C)
 Density: 1,2742 g/cm³
 Relative vapour density: not determined

9.2. Other information

Information with regard to physical hazard classes

Oxidizing properties
 Not oxidising.

Other safety characteristics

Solid content: not determined
 Evaporation rate: not determined

SECTION 10: Stability and reactivity

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10.1. Reactivity

Corrosive to metals.

10.2. Chemical stability

The product is stable under storage at normal ambient temperatures.

10.3. Possibility of hazardous reactions

No known hazardous reactions.

10.4. Conditions to avoid

none

10.5. Incompatible materials

Keep away from: Metal.

10.6. Hazardous decomposition products

No known hazardous decomposition products.

SECTION 11: Toxicological information

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

Acute toxicity

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

CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
7697-37-2	nitric acid				
	inhalation vapour	ATE 2,65 mg/kg			
7782-61-8	Iron(III) nitrate nonahydrate				
	oral	LD50 > 2000 mg/kg	Rat	Study report (2002)	OECD Guideline 401
	dermal	LD50 > 2000 mg/kg	Rat	Study report (2004)	OECD Guideline 402
10043-35-3	boric acid				
	oral	LD50 3450 mg/kg	Rat	Toxicology and Applied Pharmacology 23:	other: No data
	dermal	LD50 > 2000 mg/kg	Rabbit	Study report (1982)	other: FIFRA
	inhalation (4 h) dust/mist	LC50 > 2,12 mg/l	Rat	Study report (1997)	OECD Guideline 403

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.

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Aspiration hazard

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

SECTION 12: Ecological information

12.1. Toxicity

The product is not: Ecotoxic.

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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 1559 mg/l	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 > 419 mg/l	10 d	several benthic diatoms; see results	Marine Biology 43:307-315 (1977)	Ten cultures of benthic diatoms were iso
	Acute bacteria toxicity	(EC50 > 1000 mg/l)	3 h	Activated sludge	Study report (2008)	OECD Guideline 209
7782-61-8	Iron(III) nitrate nonahydrate					
	Acute fish toxicity	LC50 1010 mg/l	96 h	Pimephales promelas	Scott, G. & Crunkilton, R. (2000). Acute	The study was not carried out to any spe
	Acute algae toxicity	ErC50 130 mg/l	72 h	Pseudokirchneriella subcapitata	Study report (2002)	OECD Guideline 201
	Acute crustacea toxicity	EC50 611 mg/l	48 h	Daphnia magna	Scott, G. & Crunkilton, R. (2000). Acute	The study was not carried out to any spe
	Fish toxicity	NOEC 1,6 mg/l	146 d	Salvelinus namaycush	McGurk, M., Landry, F., Tang, A. & Hanks	No specific guideline followed. However,
	Crustacea toxicity	NOEC 8,1 mg/l	21 d	Daphnia magna	Study report (2002)	OECD Guideline 211
10043-35-3	boric acid					
	Acute fish toxicity	LC50 79,7 mg/l	96 h	Pimephales promelas	Study report (2010)	other: ASTM E729-95 Standard Guide for C
	Acute algae toxicity	ErC50 66 mg/l	72 h	Phaeodactylum tricornutum	Study report (2011)	ISO 10253
	Acute crustacea toxicity	EC50 109 mg/l	48 h	Ceriodaphnia dubia	Study report (2010)	other: ASTM E729-95 Standard Guide for C
	Fish toxicity	NOEC 11,2 mg/l	32 d	Pimephales promelas	Study report (2010)	other: ASTM E1241-05 Standard Guide for
	Algae toxicity	NOEC 17,5 mg/l	3 d	Pseudokirchneriella subcapitata	Study report (2000)	OECD Guideline 201
	Crustacea toxicity	NOEC 25,9 mg/l	42 d	other aquatic crustacea: Hyalella azteca	Study report (2010)	other: US EPA 2000 Methods for assessing
	Acute bacteria toxicity	(EC50 > 10000 mg/l)	3 h	activated sludge of a predominantly domestic sewage	Study report (2001)	OECD Guideline 209

12.2. Persistence and degradability

The product has not been tested.

12.3. Bioaccumulative potential

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The product has not been tested.

Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
10043-35-3	boric acid	-1,09

BCF

CAS No	Chemical name	BCF	Species	Source
10043-35-3	boric acid	0,558	Oncorhynchus nerka	Water Research Vol.

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.

The product has not been tested.

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

No information available.

Further information

Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal recommendations

Do not allow to enter into surface water or drains. Dispose of waste according to applicable legislation.

Contaminated packaging

Wash with plenty of water. Completely emptied packages can be recycled.

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

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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
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: 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

Authorisations (REACH, annex XIV):
 Substances of very high concern, SVHC (REACH, article 59):
 boric acid

Restrictions on use (REACH, annex XVII):
 Entry 3, Entry 30, Entry 75

National regulatory information

Employment restrictions: Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC).
 Water hazard class (D): 1 - slightly hazardous to water

15.2. Chemical safety assessment

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

SECTION 16: Other information

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Changes

This data sheet contains changes from the previous version in section(s): 1,9,11.

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%

Relevant H and EUH statements (number and full text)

H272	May intensify fire; oxidiser.
H290	May be corrosive to metals.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H331	Toxic if inhaled.
H360FD	May damage fertility. May damage the unborn child.
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.)