

Safety Data Sheet

according to Regulation (EC) No 1907/2006

Multielement-Standardlösung in Salpetersäure 1 mol/l mit Spuren Flusssäure ca. 0,02%

Revision date: 19.04.2024

Product code: 18223

Page 1 of 15

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

1.1. Product identifier

Multielement-Standardlösung in Salpetersäure 1 mol/l mit Spuren Flusssäure ca. 0,02%

UFI: 8JFM-G1R4-T009-42HV

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
ACD
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

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.

Safety Data Sheet

according to Regulation (EC) No 1907/2006

Multielement-Standardlösung in Salpetersäure 1 mol/l mit Spuren Flusssäure ca. 0,02%

Revision date: 19.04.2024

Product code: 18223

Page 2 of 15

H314 Causes severe skin burns and eye damage.

Precautionary statements

- P260 Do not breathe dust/fume/gas/mist/vapours/spray.
- P280 Wear protective gloves and eye protection/face 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.
- EUH208 Contains nickel dinitrate. May produce an allergic reaction.

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 | | | 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 | | | |
| 7664-39-3 | hydrogen fluoride | | | < 0.1 % |
| | 231-634-8 | 009-002-00-6 | | |
| | Acute Tox. 1, Acute Tox. 2, Acute Tox. 2, Skin Corr. 1A; H310 H330 H300 H314 | | | |
| 13138-45-9 | nickel dinitrate | | | < 0.01 % |
| | 236-068-5 | 028-012-00-1 | 01-2119492333-38 | |
| | Ox. Sol. 2, Carc. 1A, Muta. 2, Repr. 1B, Acute Tox. 4, Acute Tox. 4, Skin Irrit. 2, Eye Dam. 1, Resp. Sens. 1, Skin Sens. 1, STOT RE 1, Aquatic Acute 1, Aquatic Chronic 1; H272 H350i H341 H360D H332 H302 H315 H318 H334 H317 H372 H400 H410 | | | |

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

Safety Data Sheet

according to Regulation (EC) No 1907/2006

Multielement-Standardlösung in Salpetersäure 1 mol/l mit Spuren Flusssäure ca. 0,02%

Revision date: 19.04.2024

Product code: 18223

Page 3 of 15

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/l (vapours) Ox. Liq. 3; H272: >= 65 - 100 Skin Corr. 1A; H314: >= 20 - 100 Skin Corr. 1B; H314: >= 5 - < 20 | |
| 7664-39-3 | 231-634-8 | hydrogen fluoride | < 0.1 % |
| | | inhalation: ATE = 0,5 mg/l (vapours); inhalation: ATE = 0,05 mg/l (dusts or mists); inhalation: LC50 = 2240 ppm (gases); dermal: ATE = 5 mg/kg; oral: ATE = 5 mg/kg | |
| 13138-45-9 | 236-068-5 | nickel dinitrate | < 0.01 % |
| | | inhalation: ATE = 11 mg/l (vapours); inhalation: ATE = 1,5 mg/l (dusts or mists); oral: LD50 = 361,9 mg/kg Skin Irrit. 2; H315: >= 20 - 100 Skin Sens. 1; H317: >= 0,01 - 100 STOT RE 1; H372: >= 1 - 100 STOT RE 2; H373: >= 0,1 - < 1 Aquatic Acute 1; H400: M=1 Aquatic Chronic 1; H410: M=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!

After inhalation

Provide fresh air.
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.
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

Causes burns.
Irritant
Cough
Dyspnoea
Vomiting
Methaemoglobinaemia
Risk of serious damage to eyes.
Allergic reactions

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

No data available

Safety Data Sheet

according to Regulation (EC) No 1907/2006

Multielement-Standardlösung in Salpetersäure 1 mol/l mit Spuren Flusssäure ca. 0,02%

Revision date: 19.04.2024

Product code: 18223

Page 4 of 15

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

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

In case of fire and/or explosion do not breathe fumes.

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

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.

Safety Data Sheet

according to Regulation (EC) No 1907/2006

Multielement-Standardlösung in Salpetersäure 1 mol/l mit Spuren Flusssäure ca. 0,02%

Revision date: 19.04.2024

Product code: 18223

Page 5 of 15

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. Handle and open container with care.
When using do not eat, drink, smoke, sniff. Use personal protection equipment.
Provide adequate ventilation. Avoid contact with skin, eyes and clothes.
Do not breathe vapour/aerosol. Use extractor hood (laboratory).

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

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

Occupational exposure limits

| CAS No | Substance | ppm | mg/m ³ | fib/cm ³ | Category | Origin |
|-----------|---------------------------------------|-----|-------------------|---------------------|---------------|--------|
| 7429-90-5 | Aluminium metal (Respirable Fraction) | - | 1 | | TWA (8 h) | |
| 7440-36-0 | Antimony | - | 0.5 | | TWA (8 h) | |
| 7664-39-3 | Hydrogen fluoride (as F) | 1.8 | 1.5 | | TWA (8 h) | |
| | | 3 | 2.5 | | STEL (15 min) | |
| 7697-37-2 | Nitric acid | 1 | 2.6 | | STEL (15 min) | |
| 7440-31-5 | Tin (Metal) | - | 2 | | TWA (8 h) | |

Safety Data Sheet

according to Regulation (EC) No 1907/2006

Multielement-Standardlösung in Salpetersäure 1 mol/l mit Spuren Flusssäure ca. 0,02%

Revision date: 19.04.2024

Product code: 18223

Page 6 of 15

Biological limit values

| CAS No | Substance | Parameter | Value | Test material | Sampling time |
|-----------|-------------------|-----------|--------|---------------|----------------|
| 7664-39-3 | Hydrogen fluoride | Fluoride | 2 mg/L | Urine | Prior to shift |

DNEL/DMEL values

| CAS No | Substance | Exposure route | Effect | Value |
|--------------------------|-------------------|----------------|----------|------------------------|
| 7440-31-5 | tin | | | |
| Worker DNEL, long-term | | inhalation | systemic | 71 mg/m ³ |
| Worker DNEL, long-term | | dermal | systemic | 10 mg/kg bw/day |
| Consumer DNEL, long-term | | inhalation | systemic | 17 mg/m ³ |
| Consumer DNEL, long-term | | dermal | systemic | 80 mg/kg bw/day |
| Consumer DNEL, long-term | | oral | systemic | 5 mg/kg bw/day |
| 7664-39-3 | hydrogen fluoride | | | |
| Worker DNEL, long-term | | inhalation | systemic | 1,5 mg/m ³ |
| Worker DNEL, acute | | inhalation | systemic | 2,5 mg/m ³ |
| Worker DNEL, long-term | | inhalation | local | 1,5 mg/m ³ |
| Worker DNEL, acute | | inhalation | local | 2,5 mg/m ³ |
| Consumer DNEL, long-term | | inhalation | systemic | 0,03 mg/m ³ |
| Consumer DNEL, acute | | inhalation | systemic | 0,03 mg/m ³ |
| Consumer DNEL, long-term | | inhalation | local | 0,2 mg/m ³ |
| Consumer DNEL, acute | | inhalation | local | 1,25 mg/m ³ |
| Consumer DNEL, long-term | | oral | systemic | 0,01 mg/kg bw/day |
| Consumer DNEL, acute | | oral | systemic | 0,01 mg/kg bw/day |
| 13138-45-9 | nickel dinitrate | | | |
| Consumer DNEL, acute | | oral | systemic | 0,012 mg/kg bw/day |
| Consumer DNEL, long-term | | oral | systemic | 0,02 mg/kg bw/day |
| Worker DNEL, acute | | inhalation | systemic | 104 mg/m ³ |
| Worker DNEL, acute | | inhalation | local | 1,6 mg/m ³ |
| Consumer DNEL, acute | | inhalation | systemic | 8,8 mg/m ³ |
| Consumer DNEL, acute | | inhalation | local | 0,1 mg/m ³ |

Safety Data Sheet

according to Regulation (EC) No 1907/2006

Multielement-Standardlösung in Salpetersäure 1 mol/l mit Spuren Flusssäure ca. 0,02%

Revision date: 19.04.2024

Product code: 18223

Page 7 of 15

PNEC values

| CAS No | Substance | Value |
|--|-------------------|-------------|
| Environmental compartment | | |
| 7664-39-3 | hydrogen fluoride | |
| Freshwater | | 0,89 mg/l |
| Marine water | | 0,089 mg/l |
| Freshwater sediment | | 3,38 mg/kg |
| Marine sediment | | 0,338 mg/kg |
| Micro-organisms in sewage treatment plants (STP) | | 51 mg/l |
| Soil | | 10,6 mg/kg |
| 13138-45-9 | nickel dinitrate | |
| Freshwater | | 0,0071 mg/l |
| Freshwater (intermittent releases) | | 0 mg/l |
| Marine water | | 0,0086 mg/l |
| Freshwater sediment | | 109 mg/kg |
| Marine sediment | | 109 mg/kg |
| Secondary poisoning | | 0,12 mg/kg |
| Micro-organisms in sewage treatment plants (STP) | | 0,33 mg/l |
| Soil | | 29,9 mg/kg |

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

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

Recommended glove articles: KCL 741 Dermatril® L

Recommended material: NBR (Nitrile rubber) 0,11 mm

Wearing time with permanent contact: > 480 min

By short-term hand contact

Recommended glove articles: KCL 741 Dermatril® L

Recommended material: NBR (Nitrile rubber) 0,11mm

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).

Safety Data Sheet

according to Regulation (EC) No 1907/2006

Multiement-Standardlösung in Salpetersäure 1 mol/l mit Spuren Flusssäure ca. 0,02%

Revision date: 19.04.2024

Product code: 18223

Page 8 of 15

Skin protection

Wear suitable protective clothing. Take off immediately all contaminated clothing.

Wash hands before breaks and after work.

The choice of body protection depends on the concentration and quantity of hazardous substances. The chemical resistance of protective agents must be clarified with their suppliers.

Respiratory protection

Respiratory protection necessary at: aerosol or mist formation

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

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: | like: Nitric acid | |
| Odour threshold: | No data available | |
| Melting point/freezing point: | | No data available |
| Boiling point or initial boiling point and boiling range: | | No data available |
| Flammability: | | No data available |
| Lower explosion limits: | | No data available |
| Upper explosion limits: | | No data available |
| Flash point: | | No data available |
| Auto-ignition temperature: | | No data available |
| Decomposition temperature: | | No data available |
| pH-Value: | | <1 |
| Viscosity / kinematic: | | No data available |
| Water solubility: | | completely miscible |
| Solubility in other solvents | | |
| No data available | | |
| Partition coefficient n-octanol/water: | | No data available |
| Vapour pressure: | | No data available |
| Vapour pressure: | | No data available |
| Density: | | No data available |
| Bulk density: | | No data available |
| Relative vapour density: | | No data available |

9.2. Other information

Information with regard to physical hazard classes

Explosive properties

No data available

Sustaining combustion:

No data available

Self-ignition temperature

Solid:

No data available

Gas:

No data available

Oxidizing properties

Oxidizing

Other safety characteristics

Evaporation rate:

No data available

Solvent separation test:

No data available

Safety Data Sheet

according to Regulation (EC) No 1907/2006

Multiement-Standardlösung in Salpetersäure 1 mol/l mit Spuren Flusssäure ca. 0,02%

Revision date: 19.04.2024

Product code: 18223

Page 9 of 15

| | |
|----------------------|-------------------|
| Solvent content: | 0 |
| Solid content: | 0 |
| Sublimation point: | No data available |
| Softening point: | No data available |
| Pour point: | No data available |
| No data available: | |
| Viscosity / dynamic: | No data available |
| Flow time: | No data available |

Further Information

Corrosive to metals.

SECTION 10: Stability and reactivity

10.1. Reactivity

Corrosive to metals.
Oxidising agent

10.2. Chemical stability

The product is stable under storage at normal ambient temperatures.

10.3. Possibility of hazardous reactions

Alkali (lye)
The product develops hydrogen in an aqueous solution in contact with metals.
Amines, Ammonia, Alcohols, Alkali metals, Hydrogen peroxide
Copper, Combustible solids, Solvent, Alkaline earth metal, mercury (Hg).

10.4. Conditions to avoid

No data available

10.5. Incompatible materials

Cellulose
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 Regulation (EC) No 1272/2008

Toxicokinetics, metabolism and distribution

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

Acute toxicity

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

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

Safety Data Sheet

according to Regulation (EC) No 1907/2006

Multielement-Standardlösung in Salpetersäure 1 mol/l mit Spuren Flusssäure ca. 0,02%

Revision date: 19.04.2024

Product code: 18223

Page 10 of 15

| CAS No | Chemical name | | | | |
|------------|----------------------|------------------|---------|--|--------------------|
| | Exposure route | Dose | Species | Source | Method |
| 7697-37-2 | nitric acid | | | | |
| | inhalation vapour | ATE 2,65 mg/l | | | |
| 7664-39-3 | hydrogen fluoride | | | | |
| | 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 2240 ppm | Rat | Study report (1990) | OECD Guideline 403 |
| 13138-45-9 | nickel dinitrate | | | | |
| | oral | LD50 361,9 mg/kg | Rat | Regul Toxicol and Pharmacol (doi.org/10. | OECD Guideline 425 |
| | inhalation vapour | ATE 11 mg/l | | | |
| | inhalation dust/mist | ATE 1,5 mg/l | | | |

Irritation and corrosivity

Skin corrosion/irritation: Causes severe skin burns and eye damage.
 Serious eye damage/eye irritation: Causes serious eye damage.
 Corrosive to the respiratory tract.
 Following ingestion Gastric perforation
 Irritating to respiratory system.
 Pulmonary oedema
 see also Section 4

Sensitising effects

Based on available data, the classification criteria are not met.
 Contains nickel dinitrate. May produce an allergic reaction.

Carcinogenic/mutagenic/toxic effects for reproduction

Germ cell mutagenicity: Based on available data, the classification criteria are not met.
 Carcinogenicity: Based on available data, the classification criteria are not met.
 Reproductive toxicity: 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.

Safety Data Sheet

according to Regulation (EC) No 1907/2006

Multielement-Standardlösung in Salpetersäure 1 mol/l mit Spuren Flusssäure ca. 0,02%

Revision date: 19.04.2024

Product code: 18223

Page 11 of 15

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 |
| 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 |
| 7664-39-3 | hydrogen fluoride | | | | | |
| | Acute fish toxicity | LC50 | 299 mg/l | 96 h | Salmo trutta | REACH Registration Dossier other: U.S Environmental Protection Agen |
| | Acute algae toxicity | ErC50 | 43 mg/l | 96 h | various algae species | REACH Registration Dossier Methods not detailed in the review. |
| | Crustacea toxicity | NOEC | 3,7 mg/l | 21 d | Daphnia magna | REACH Registration Dossier The publication is a review article of v |
| | Acute bacteria toxicity | EC50 mg/l () | 2930 | 3 h | Activated sludge | REACH Registration Dossier ISO 8192 |
| 13138-45-9 | nickel dinitrate | | | | | |
| | Acute fish toxicity | LC50 mg/l | 15,3 | 96 h | Oncorhynchus mykiss | Aquatic Toxicology 63 (2003) 65-82 (2003) other: not reported |
| | Acute algae toxicity | ErC50 mg/l | 0,237 | 72 h | Ankistrodesmus falcatus | Publication (2009) OECD Guideline 201 |
| | Acute crustacea toxicity | EC50 mg/l | 0,2663 | 48 h | Ceriodaphnia dubia | Study report (2004) other: American society of testing and m |
| | Fish toxicity | NOEC mg/l | 0,057 | 32 d | Pimephales promelas | Water Resources Research Institute. Kent other: ASTM 1980, E-729 |
| | Algae toxicity | NOEC | 0,6 mg/l | 14 d | Anabaena cylindrica | Environ. Pollut. (Series A). 25(4):241-2 other: not reported |
| | Crustacea toxicity | NOEC mg/l | 0,04 | 42 d | Daphnia magna | Wat. Res. 24(7):845-852 (1990) Chronic exposure to sublethal concentrat |
| | Acute bacteria toxicity | EC50 () | 33 mg/l () | 0,5 h | Activated sludge | Journal of Hazardous Materials. B139:332 ISO 8192 |

Safety Data Sheet

according to Regulation (EC) No 1907/2006

Multielement-Standardlösung in Salpetersäure 1 mol/l mit Spuren Flusssäure ca. 0,02%

Revision date: 19.04.2024

Product code: 18223

Page 12 of 15

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 |
|------------|-------------------|---------|---------------------|----------------------|
| 7664-39-3 | hydrogen fluoride | 53 - 58 | not specified | REACH Registration D |
| 13138-45-9 | nickel dinitrate | 23 | Spirodela polyrhiza | Ecotoxicology and en |

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

Discharge into the environment must be avoided.

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

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 |

Safety Data Sheet

according to Regulation (EC) No 1907/2006

Multielement-Standardlösung in Salpetersäure 1 mol/l mit Spuren Flusssäure ca. 0,02%

Revision date: 19.04.2024

Product code: 18223

Page 13 of 15

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
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

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 27, Entry 75

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).
 Water hazard class (D): 1 - slightly hazardous to water

SECTION 16: Other information

Changes

This data sheet contains changes from the previous version in section(s): 1,9,12.

Safety Data Sheet

according to Regulation (EC) No 1907/2006

Multielement-Standardlösung in Salpetersäure 1 mol/l mit Spuren Flusssäure ca. 0,02%

Revision date: 19.04.2024

Product code: 18223

Page 14 of 15

Abbreviations and acronyms

Pyr. Sol: Pyrophoric solid
 Water-react: Substance and mixture which, in contact with water, emits flammable gas
 Ox. Liq: Oxidising liquid
 Ox. Sol: Oxidising solid
 Met. Corr: Substance or mixture corrosive to metals
 Flam. Sol: Flammable solid
 Acute Tox: Acute toxicity
 Skin Corr: Skin corrosion
 Skin Irrit: Skin irritation
 Eye Dam: Eye damage
 Resp. Sens: Respiratory sensitisation
 Skin Sens: Skin sensitisation
 Muta: Germ cell mutagenicity
 Carc: Carcinogenicity
 Repr: Reproductive toxicity
 STOT RE: Specific target organ toxicity - repeated exposure
 Aquatic Acute: Acute aquatic hazard
 Aquatic Chronic: Chronic aquatic hazard

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.
 H300 Fatal if swallowed.
 H302 Harmful if swallowed.
 H310 Fatal in contact with skin.
 H314 Causes severe skin burns and eye damage.
 H315 Causes skin irritation.
 H317 May cause an allergic skin reaction.
 H318 Causes serious eye damage.
 H330 Fatal if inhaled.
 H331 Toxic if inhaled.
 H332 Harmful if inhaled.
 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
 H341 Suspected of causing genetic defects.
 H350i May cause cancer by inhalation.
 H360D May damage the unborn child.
 H372 Causes damage to organs through prolonged or repeated exposure.
 H400 Very toxic to aquatic life.
 H410 Very toxic to aquatic life with long lasting effects.
 EUH071 Corrosive to the respiratory tract.
 EUH208 Contains nickel dinitrate. May produce an allergic reaction.

Further Information

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material. The information is based on the present level of our knowledge. It does not, however, give assurance of

Safety Data Sheet

according to Regulation (EC) No 1907/2006

Multielement-Standardlösung in Salpetersäure 1 mol/l mit Spuren Flusssäure ca. 0,02%

Revision date: 19.04.2024

Product code: 18223

Page 15 of 15

product properties and establishes no contract legal rights.
The receiver of our product is singularly responsible for adhering to existing laws and regulations.
Provide appropriate information, instructions and training to users

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