

Safety Data Sheet

according to Regulation (EC) No 1907/2006

Multielement-Standard 23 Elemente in Salpetersäure 1 mol/l

Revision: 21.11.2023

Product code: 34635

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SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1. Product identifier**

Multielement-Standard 23 Elemente in Salpetersäure 1 mol/l

UFI: 6KW2-63QA-K009-GS7Q

1.2. Relevant identified uses of the substance or mixture and uses advised against**Use of the substance/mixture**

Reagents and laboratory chemicals

Only for laboratory and analysis purposes.

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

Carc. 1B; H350i

Skin Corr. 1B; H314

Eye Dam. 1; H318

Skin Sens. 1; H317

Aquatic Chronic 3; H412

Full text of hazard statements: see SECTION 16.

2.2. Label elements**Regulation (EC) No 1272/2008****Hazard components for labelling**

nitric acid

nickel dinitrate

cobalt dinitrate

Signal word: Danger

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Pictograms:



Hazard statements

| | |
|-------|--|
| H290 | May be corrosive to metals. |
| H314 | Causes severe skin burns and eye damage. |
| H317 | May cause an allergic skin reaction. |
| H350i | May cause cancer by inhalation. |
| H412 | Harmful to aquatic life with long lasting effects. |

Precautionary statements

| | |
|----------------|--|
| P260 | Do not breathe dust/fume/gas/mist/vapours/spray. |
| P280 | Wear protective gloves/protective clothing 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. Restricted to professional users. |
|--------|--|

2.3. Other hazards

No data available

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Chemical characterization

Mixtures in aqueous solution

according to Regulation (EC) No 1907/2006

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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, Eye Dam. 1; H272 H290 H331 H314 H318 EUH071 | | | |
| 10043-35-3 | boric acid | | | < 1 % |
| | 233-139-2 | 005-007-00-2 | 01-2119486683-25 | |
| | Repr. 1B; H360FD | | | |
| 13138-45-9 | nickel dinitrate | | | < 0.1 % |
| | 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 | | | |
| 10141-05-6 | cobalt dinitrate | | | < 0.1 % |
| | 233-402-1 | 027-009-00-2 | | |
| | Carc. 1B, Muta. 2, Repr. 1B, Resp. Sens. 1, Skin Sens. 1, Aquatic Acute 1, Aquatic Chronic 1; H350i H341 H360F H334 H317 H400 H410 | | | |

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/l (vapours) Ox. Liq. 3; H272: >= 65 - 100 Skin Corr. 1A; H314: >= 20 - 100 Skin Corr. 1B; H314: >= 5 - < 20 | | |
| 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 | | |
| 13138-45-9 | 236-068-5 | nickel dinitrate | < 0.1 % |
| | 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 | | |
| 10141-05-6 | 233-402-1 | cobalt dinitrate | < 0.1 % |
| | Carc. 1B; H350i: >= 0,01 - 100 Aquatic Acute 1; H400: M=10 Aquatic Chronic 1; H410: M=10 | | |

Further Information

No data available

SECTION 4: First aid measures**4.1. Description of first aid measures****General information**

First aider: Pay attention to self-protection!

Do not breathe vapour.

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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

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

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6.1. Personal precautions, protective equipment and emergency procedures**General advice**

Do not breathe vapour/aerosol. 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).

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

Collect in closed and suitable containers for disposal.

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. 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.

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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.

Hints on joint storage

national regulations

Further information on storage conditions

Keep container tightly closed.

Store in a place accessible by authorized persons only.

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 |
|------------|--|-----|-------------------|---------------------|---------------|--------|
| 10043-35-3 | Borate compounds inorganic: boric acid | - | 2 | | TWA (8 h) | |
| 7697-37-2 | Nitric acid | 1 | 2.6 | | STEL (15 min) | |

DNEL/DMEL values

| CAS No | Substance | | | |
|--------------------------|------------------|----------------|----------|--------------------|
| DNEL type | | Exposure route | Effect | Value |
| 10043-35-3 | boric acid | | | |
| Worker DNEL, long-term | | inhalation | systemic | 8,3 mg/m³ |
| Worker DNEL, long-term | | dermal | systemic | 392 mg/kg bw/day |
| Consumer DNEL, long-term | | inhalation | systemic | 4,15 mg/m³ |
| 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 |
| 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/m³ |
| Worker DNEL, acute | | inhalation | local | 1,6 mg/m³ |
| Consumer DNEL, acute | | inhalation | systemic | 8,8 mg/m³ |
| Consumer DNEL, acute | | inhalation | local | 0,1 mg/m³ |

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PNEC values

| CAS No | Substance | |
|--|------------------|-------------|
| Environmental compartment | | Value |
| 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 |
| 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).

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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.

Thermal hazards

No data available

Environmental exposure controls

Do not allow to enter into surface water or drains.

SECTION 9: Physical and chemical properties**9.1. Information on basic physical and chemical properties**

| | | |
|---|-------------------|---------------------|
| Physical state: | Liquid | |
| Colour: | clear | |
| 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: | | acidic |
| Viscosity / kinematic: | | No data available |
| Water solubility: | | completely miscible |
| Solubility in other solvents | | |
| No data available | | |
| 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**

Explosive properties

No data available

Sustained combustibility:

No data available

Self-ignition temperature

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Solid:

No data available

Gas:

No data available

Oxidizing properties

Oxidising agent

Other safety characteristics

Evaporation rate:

No data available

Solvent separation test:

No data available

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 mixture itself.

Acute toxicity

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

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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

| CAS No | Chemical name | | | | |
|------------|----------------------------|-------------------|---------|--|--------------------|
| | Exposure route | Dose | Species | Source | Method |
| 7697-37-2 | nitric acid | | | | |
| | inhalation vapour | ATE 2,65 mg/l | | | |
| 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 |
| 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

Mucous membrane irritation in the mouth, throat, esophagus and gastrointestinal tract.

Irritating to respiratory system.

Pulmonary oedema

see also Section 4

Sensitising effects

May cause an allergic skin reaction. (nickel dinitrate; cobalt dinitrate)

Carcinogenic/mutagenic/toxic effects for reproduction

May cause cancer by inhalation. (nickel dinitrate; cobalt dinitrate)

Germ cell mutagenicity: 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.

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.

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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

There are no data available on the mixture itself.

SECTION 12: Ecological information**12.1. Toxicity**

Harmful to aquatic life with long lasting effects.

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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 |
| 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 |
| 13138-45-9 | nickel dinitrate | | | | | |
| | Acute fish toxicity | LC50 15,3 mg/l | 96 h | Oncorhynchus mykiss | Aquatic Toxicology 63 (2003) 65-82 (2003) | other: not reported |
| | Acute algae toxicity | ErC50 0,237 mg/l | 72 h | Ankistrodesmus falcatus | Publication (2009) | OECD Guideline 201 |
| | Acute crustacea toxicity | EC50 0,2663 mg/l | 48 h | Ceriodaphnia dubia | Study report (2004) | other: American society of testing and m |
| | Fish toxicity | NOEC 0,057 mg/l | 32 d | Pimephales promelas | Water Resources Research Institute. Kent | other: ASTM 1980, E-729 |

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| | | | | | | |
|--|-------------------------|------------------|-------|---------------------|--|---|
| | 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 0,04 mg/l | 42 d | Daphnia magna | Wat. Res. 24(7):845-852 (1990) | Chronic exposure to sublethal concentration |
| | Acute bacteria toxicity | EC50 33 mg/l () | 0,5 h | Activated sludge | Journal of Hazardous Materials. B139:332 | ISO 8192 |

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.

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. |
| 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.

Harmful effect due to pH shift.

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

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

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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 |
| Segregation group: | 1 - acids |

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 |
|----------------------------|----|

SECTION 15: Regulatory information

Multielement-Standard 23 Elemente in Salpetersäure 1 mol/l

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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; cobalt dinitrate

Restrictions on use (REACH, annex XVII):

Entry 3, Entry 27, Entry 28, Entry 30, 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). Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

Water hazard class (D):

1 - slightly hazardous to water

SECTION 16: Other information**Abbreviations and acronyms**

Ox. Liq. 3: Oxidising liquids, hazard category 3

Ox. Sol. 2: Oxidising solids, hazard category 2

Met. Corr. 1: Corrosive to metals, hazard category 1

Acute Tox. 3: Acute toxicity, hazard category 3

Skin Corr. 1A: Skin corrosion, sub-category 1A

Skin Irrit. 2: Skin irritation, hazard category 2

Eye Dam. 1: Serious eye damage, hazard category 1

Resp. Sens. 1: Respiratory sensitisation, hazard category 1

Skin Sens. 1: Skin sensitisation, hazard category 1

Muta. 2: Germ cell mutagenicity, hazard category 2

Carc. 1A: Carcinogenicity, hazard category 1A

Repr. 1B: Reproductive toxicity, hazard category 1B

STOT RE 1: Specific target organ toxicity - repeated exposure, hazard category 1

Aquatic Acute 1: Hazardous to the aquatic environment, hazard category: Acute 1

Aquatic Chronic 1: Hazardous to the aquatic environment, long-term hazard category: Chronic 1

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 |
| Carc. 1B; H350i | Calculation method |
| Skin Corr. 1B; H314 | Calculation method |
| Eye Dam. 1; H318 | Calculation method |
| Skin Sens. 1; H317 | Calculation method |
| Aquatic Chronic 3; H412 | Calculation method |

Relevant H and EUH statements (number and full text)

| | |
|------|--|
| H272 | May intensify fire; oxidiser. |
| H290 | May be corrosive to metals. |
| H302 | Harmful if swallowed. |
| H314 | Causes severe skin burns and eye damage. |
| H315 | Causes skin irritation. |

Safety Data Sheet

according to Regulation (EC) No 1907/2006

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| | |
|--------|--|
| H317 | May cause an allergic skin reaction. |
| H318 | Causes serious eye damage. |
| 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. |
| H360F | May damage fertility. |
| H360FD | May damage fertility. 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. |
| 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 information is based on the present level of our knowledge. It does not, however, give assurance of product properties and establishes no contract legal rights. The receiver of our product is singularly responsible for adhering to existing laws and regulations. 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.)