

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Revision Date 08.08.2018

Version 10.1

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

Catalogue No. 114764
Product name Nitrate Cell Test Method: photometric, DMP 1.0 - 50.0 mg/l NO₃-N
4 - 221 mg/l NO₃⁻ Spectroquant®
NO₃⁻

REACH Registration Number This product is a mixture. REACH Registration Number see section 3.

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses Reagent for analysis
For additional information on uses please refer to the Merck Chemicals portal (www.merckgroup.com).

1.3 Details of the supplier of the safety data sheet

Company Merck KGaA * 64271 Darmstadt * Germany * Phone:+49 6151 72-0
Responsible Department LS-QHC * e-mail: prodsafe@merckgroup.com

1.4 Emergency telephone number Please contact the regional company representation in your country.

SECTION 2. Hazards identification**2.1 Classification of the substance or mixture****Classification (REGULATION (EC) No 1272/2008)**

Corrosive to metals, Category 1, H290

Skin corrosion, Category 1A, H314

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 Label elements**Labelling.(REGULATION (EC) No 1272/2008)***Hazard pictograms*

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Product name Nitrate Cell Test Method: photometric, DMP 1.0 - 50.0 mg/l NO₃-N
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NO₃⁻

Signal word

Danger

Hazard statements

H290 May be corrosive to metals.

H314 Causes severe skin burns and eye damage.

Precautionary statements

Prevention

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response

P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P308 + P310 IF exposed or concerned: immediately call a POISON CENTER or doctor/ physician.

Reduced labelling (≤125 ml)

Hazard pictograms



Signal word

Danger

Hazard statements

H314 Causes severe skin burns and eye damage.

Precautionary statements

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P308 + P310 IF exposed or concerned: immediately call a POISON CENTER or doctor/ physician.

2.3 Other hazards

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None known.

SECTION 3. Composition/information on ingredients

Chemical nature Mixture of acids.

3.1 Substance

Not applicable

3.2 Mixture

Hazardous components (REGULATION (EC) No 1272/2008)

Chemical name (Concentration)

| CAS-No. | Registration number | Classification |
|---------|---------------------|----------------|
|---------|---------------------|----------------|

| | | |
|------------------------------------|--|--|
| sulphuric acid (>= 25 % - < 50 %) | | |
|------------------------------------|--|--|

Substance does not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII.

| | | |
|-----------|-----------------------|--|
| 7664-93-9 | 01-2119458838-20-XXXX | Corrosive to metals, Category 1, H290 Skin corrosion, Category 1A, H314 |
|-----------|-----------------------|--|

phosphoric acid (>= 25 % - < 50 %)

PBT/vPvB: Not applicable for inorganic substances

| | | |
|-----------|-----------------------|--|
| 7664-38-2 | 01-2119485924-24-XXXX | Corrosive to metals, Category 1, H290 Skin corrosion, Category 1B, H314 |
|-----------|-----------------------|--|

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4. First aid measures

4.1 Description of first aid measures

General advice

First aider needs to protect himself.

After inhalation: fresh air. Call in physician.

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In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/shower. Call a physician immediately.

After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist. Remove contact lenses.

After swallowing: make victim drink water (two glasses at most), avoid vomiting (risk of perforation). Call a physician immediately. Do not attempt to neutralise.

4.2 Most important symptoms and effects, both acute and delayed

Irritation and corrosion, Cough, Shortness of breath, Nausea, Vomiting, Diarrhoea
Risk of blindness!

4.3 Indication of any immediate medical attention and special treatment needed

No information available.

SECTION 5. Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

5.2 Special hazards arising from the substance or mixture

Not combustible.

Ambient fire may liberate hazardous vapours.

Fire may cause evolution of:

Sulphur oxides, Oxides of phosphorus

5.3 Advice for firefighters

Special protective equipment for firefighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

Further information

Suppress (knock down) gases/vapours/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Do not breathe vapours, aerosols. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders:

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Protective equipment see section 8.

6.2 Environmental precautions

Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.

6.4 Reference to other sections

Indications about waste treatment see section 13.

SECTION 7. Handling and storage

7.1 Precautions for safe handling

Advice on safe handling

Observe label precautions.

Hygiene measures

Change contaminated clothing and immerse in water. Preventive skin protection Wash hands and face after working with substance.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers

No metal containers.

Storage conditions

Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition.

Recommended storage temperature see product label.

The data applies to the entire pack.

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

SECTION 8. Exposure controls/personal protection

8.1 Control parameters

Derived No Effect Level (DNEL)

sulphuric acid (7664-93-9)

| | | | |
|--------------------|---------------|------------|-----------------------|
| Worker DNEL, acute | Local effects | inhalation | 0,1 mg/m ³ |
|--------------------|---------------|------------|-----------------------|

| | | | |
|-----------------------|---------------|------------|------------------------|
| Worker DNEL, longterm | Local effects | inhalation | 0,05 mg/m ³ |
|-----------------------|---------------|------------|------------------------|

phosphoric acid (7664-38-2)

| | | | |
|--------------------|---------------|------------|---------------------|
| Worker DNEL, acute | Local effects | inhalation | 2 mg/m ³ |
|--------------------|---------------|------------|---------------------|

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| | | | |
|----------------------------|---------------|------------|------------------------|
| Worker DNEL, longterm | Local effects | inhalation | 1 mg/m ³ |
| Consumer DNEL, longterm | Local effects | inhalation | 0,73 mg/m ³ |

Predicted No Effect Concentration (PNEC)

sulphuric acid (7664-93-9)

| | |
|-----------------------------|--------------|
| PNEC Fresh water | 0,0025 mg/l |
| PNEC Fresh water sediment | 0,002 mg/kg |
| PNEC Marine water | 0,00025 mg/l |
| PNEC Marine sediment | 0,002 mg/kg |
| PNEC Sewage treatment plant | 8,8 mg/l |

phosphoric acid (7664-38-2)

PNEC no data available

8.2 Exposure controls

Engineering measures

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

See section 7.1.

Individual protection measures

Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of the hazardous substances handled. The chemical resistance of the protective equipment should be enquired at the respective supplier.

Eye/face protection

Tightly fitting safety goggles

Hand protection

full contact:

| | |
|---------------------|---------------|
| Glove material: | natural latex |
| Glove thickness: | 0,6 mm |
| Break through time: | 480 min |

splash contact:

| | |
|---------------------|---------------|
| Glove material: | natural latex |
| Glove thickness: | 0,6 mm |
| Break through time: | 480 min |

The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374, for example KCL 706 Lapren® (full contact), KCL 706 Lapren® (splash contact).

The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types.

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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).

Other protective equipment

Acid-resistant protective clothing

Respiratory protection

required when vapours/aerosols are generated.

Recommended Filter type: Filter P 2 (acc. to DIN 3181) for solid and liquid particles of harmful substances

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 let product enter drains.

SECTION 9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

| | |
|---------------------------|---------------------------|
| Form | liquid |
| Colour | colourless |
| Odour | odourless |
| Odour Threshold | Not applicable |
| pH | at 20 °C strongly acid |
| Melting point | No information available. |
| Boiling point | No information available. |
| Flash point | Not applicable |
| Evaporation rate | No information available. |
| Flammability (solid, gas) | No information available. |
| Lower explosion limit | Not applicable |
| Upper explosion limit | Not applicable |
| Vapour pressure | No information available. |

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| | |
|--|--|
| Relative vapour density | No information available. |
| Density | ca. 1,73 g/cm ³ at 20 °C |
| Relative density | No information available. |
| Water solubility | at 25 °C soluble |
| Partition coefficient: n-octanol/water | No information available. |
| Auto-ignition temperature | No information available. |
| Decomposition temperature | No information available. |
| Viscosity, dynamic | No information available. |
| Explosive properties | Not classified as explosive. |
| Oxidizing properties | Oxidizing potential |

9.2 Other data

| | |
|-----------|-----------------------------|
| Corrosion | May be corrosive to metals. |
|-----------|-----------------------------|

SECTION 10. Stability and reactivity

10.1 Reactivity

See section 10.3

10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

10.3 Possibility of hazardous reactions

Violent reactions possible with:

Water, Alkali metals, alkali compounds, Ammonia, Aldehydes, acetonitrile, Alkaline earth metals, alkalines, Acids, alkaline earth compounds, Metals, metal alloys, hydrides, halogen-halogen compounds, oxyhalogenic compounds, permanganates, nitrates, carbides, combustible substances, organic solvent, acetylidene, Nitriles, organic nitro compounds, anilines, Peroxides, picrates, nitrides, lithium silicide, iron(III) compounds, bromates, chlorates, Amines, perchlorates, hydrogen peroxide, bases, metallic oxides

10.4 Conditions to avoid

no information available

10.5 Incompatible materials

animal/vegetable tissues, Metals

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Gives off hydrogen by reaction with metals.

10.6 Hazardous decomposition products

in the event of fire: See section 5.

SECTION 11. Toxicological information

11.1 Information on toxicological effects

Mixture

Acute oral toxicity

Symptoms: If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the oesophagus and the stomach.

Acute inhalation toxicity

Symptoms: mucosal irritations, Cough, Shortness of breath, Possible damages:, damage of respiratory tract

Acute dermal toxicity

This information is not available.

Skin irritation

Mixture causes severe burns.

Eye irritation

Mixture causes serious eye damage. Risk of blindness!

Sensitisation

This information is not available.

Germ cell mutagenicity

This information is not available.

Carcinogenicity

This information is not available.

Reproductive toxicity

This information is not available.

Teratogenicity

This information is not available.

Specific target organ toxicity - single exposure

This information is not available.

Specific target organ toxicity - repeated exposure

This information is not available.

Aspiration hazard

This information is not available.

11.2 Further information

After inhalation of aerosols: damage to the affected mucous membranes. After skin contact: severe burns with formation of scabs. After eye contact: burns, corneal lesions. After swallowing: severe pain (risk of perforation!), nausea, vomiting and diarrhoea. After a latency period of several weeks possibly pyloric stenosis.

Systemic effects:

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Convulsions, shock
Other dangerous properties can not be excluded.
Handle in accordance with good industrial hygiene and safety practice.

Components

sulphuric acid

Germ cell mutagenicity

Genotoxicity in vitro

Ames test

Salmonella typhimurium

Result: negative

(HSDB)

phosphoric acid

Acute oral toxicity

LD50 Rat: ca. 2.600 mg/kg

OECD Test Guideline 423

Acute dermal toxicity

LD50 Rabbit: 2.740 mg/kg (IUCLID)

Skin irritation

Rabbit

Result: Causes burns.

US-EPA

Eye irritation

Rabbit

Result: Causes burns.

(IUCLID)

Sensitisation

Patch test: human

Result: negative

(IUCLID)

Germ cell mutagenicity

Genotoxicity in vitro

Ames test

Escherichia coli/Salmonella typhimurium

Result: negative

Method: OECD Test Guideline 471

In vitro mammalian cell gene mutation test

Result: negative

Method: OECD Test Guideline 473

In vitro mammalian cell gene mutation test

Mouse lymphoma test

Result: negative

Method: OECD Test Guideline 476

SECTION 12. Ecological information

Mixture

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12.1 Toxicity

No information available.

12.2 Persistence and degradability

No information available.

12.3 Bioaccumulative potential

No information available.

12.4 Mobility in soil

No information available.

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.

12.6 Other adverse effects

Additional ecological information

Harmful effect due to pH shift. Forms corrosive mixtures with water even if diluted. Endangers drinking-water supplies if allowed to enter soil or water. Neutralisation possible in waste water treatment plants. Does not cause biological oxygen deficit. Depending on the concentration, phosphorus compounds may contribute to the eutrophication of water supplies. Discharge into the environment must be avoided.

Components

sulphuric acid

Toxicity to fish

static test LC50 *Lepomis macrochirus* (Bluegill sunfish): > 16 - < 28 mg/l; 96 h
Analytical monitoring: yes(ECHA)

Toxicity to daphnia and other aquatic invertebrates

static test EC50 *Daphnia magna* (Water flea): > 100 mg/l; 48 h
Analytical monitoring: yes
OECD Test Guideline 202

Toxicity to algae

static test EC50 *Desmodesmus subspicatus* (green algae): > 100 mg/l; 72 h
Analytical monitoring: yes
OECD Test Guideline 201

Toxicity to fish (Chronic toxicity)

flow-through test NOEC *Cyprinodon* sp. (minnow): 0,025 mg/l; 65 d

Analytical monitoring: yes(ECHA)

Substance does not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII.

phosphoric acid

Toxicity to fish

LC50 *Gambusia affinis* (Mosquito fish): 138 mg/l; 96 h (External MSDS)

Toxicity to daphnia and other aquatic invertebrates

static test EC50 *Daphnia magna* (Water flea): > 100 mg/l; 48 h
Analytical monitoring: yes
OECD Test Guideline 202

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NO₃⁻

Toxicity to algae

static test ErC50 *Desmodesmus subspicatus* (green algae): > 100 mg/l; 72 h

Analytical monitoring: yes

OECD Test Guideline 201

Toxicity to bacteria

EC50 activated sludge: 270 mg/l(IUCLID)

Biodegradability

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

Partition coefficient: n-octanol/water

log Pow: -0,77

(calculated)

(Lit.) Bioaccumulation is not expected.

PBT/vPvB: Not applicable for inorganic substances

SECTION 13. Disposal considerations

Waste treatment methods

See www.retrologistik.com for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

SECTION 14. Transport information

Land transport (ADR/RID)

14.1 UN number UN 3316
14.2 Proper shipping name CHEMICAL KIT
14.3 Class 9
14.4 Packing group II
14.5 Environmentally hazardous --
14.6 Special precautions for user yes
Tunnel restriction code E

Inland waterway transport (ADN)

Not relevant

Air transport (IATA)

14.1 UN number UN 3316
14.2 Proper shipping name CHEMICAL KIT
14.3 Class 9
14.4 Packing group II
14.5 Environmentally hazardous --

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14.6 Special precautions for user no

Sea transport (IMDG)

14.1 UN number UN 3316
14.2 Proper shipping name CHEMICAL KIT
14.3 Class 9
14.4 Packing group II
14.5 Environmentally hazardous --
14.6 Special precautions for user yes
EmS F-A S-P

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not relevant

THIS TRANSPORT DATA APPLIES TO THE ENTIRE PACK!

SECTION 15. Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

EU regulations

Major Accident Hazard 96/82/EC
Legislation Directive 96/82/EC does not apply
SEVESO III
Not applicable

Occupational restrictions Take note of Dir 94/33/EC on the protection of young people at work.

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer not regulated

Regulation (EC) No 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC not regulated

Substances of very high concern (SVHC) 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).

National legislation

Storage class 3
The data applies to the entire pack.

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15.2 Chemical safety assessment

For this product a chemical safety assessment was not carried out.

SECTION 16. Other information

Full text of H-Statements referred to under sections 2 and 3.

H290 May be corrosive to metals.
H314 Causes severe skin burns and eye damage.

Training advice

Provide adequate information, instruction and training for operators.

Labelling

Hazard pictograms



Signal word

Danger

Hazard statements

H290 May be corrosive to metals.
H314 Causes severe skin burns and eye damage.

Precautionary statements

Prevention

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response

P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P308 + P310 IF exposed or concerned: immediately call a POISON CENTER or doctor/ physician.

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Key or legend to abbreviations and acronyms used in the safety data sheet

Used abbreviations and acronyms can be looked up at www.wikipedia.org.

Regional representation

This information is given on the authorised Safety Data Sheet for your country.

The information contained herein is based on the present state of our knowledge. It characterises the product with regard to the appropriate safety precautions. It does not represent a guarantee of any properties of the product.

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Revision Date 08.08.2018

Version 10.1

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

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Product name Nitrate Cell Test Method: photometric, DMP 1.0 - 50.0 mg/l NO₃-N
4 - 221 mg/l NO₃⁻ Spectroquant®
NO₃-1K

REACH Registration Number This product is a mixture. REACH Registration Number see section 3.

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses Reagent for analysis
For additional information on uses please refer to the Merck Chemicals portal (www.merckgroup.com).

1.3 Details of the supplier of the safety data sheet

Company Merck KGaA * 64271 Darmstadt * Germany * Phone:+49 6151 72-0
Responsible Department LS-QHC * e-mail: prodsafe@merckgroup.com

1.4 Emergency telephone number Please contact the regional company representation in your country.

SECTION 2. Hazards identification**2.1 Classification of the substance or mixture****Classification (REGULATION (EC) No 1272/2008)**

Flammable liquid, Category 3, H226

Eye irritation, Category 2, H319

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 Label elements**Labelling.(REGULATION (EC) No 1272/2008)***Hazard pictograms*

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NO₃-1K

Signal word

Warning

Hazard statements

H226 Flammable liquid and vapour.

H319 Causes serious eye irritation.

Precautionary statements

Prevention

P210 Keep away from heat.

Response

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Reduced labelling (≤125 ml)

Hazard pictograms



Signal word

Warning

2.3 Other hazards

None known.

SECTION 3. Composition/information on ingredients

Chemical nature Aqueous propanolic solution.

3.1 Substance

Not applicable

3.2 Mixture

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NO₃-1K

Hazardous components (REGULATION (EC) No 1272/2008)

Chemical name (Concentration)

CAS-No. Registration number Classification

2-Propanol ($\geq 15\%$ - $< 20\%$)

Substance does not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII.

| | | |
|---------|-----------------------|--|
| 67-63-0 | 01-2119457558-25-XXXX | Flammable liquid, Category 2, H225 Eye irritation, Category 2, H319 Specific target organ toxicity - single exposure, Category 3, H336 |
|---------|-----------------------|--|

Xylenol ($\geq 0,25\%$ - $< 1\%$)

| | | |
|----------|----|---|
| 576-26-1 | *) | Acute toxicity, Category 3, H301 Acute toxicity, Category 3, H311 Skin corrosion, Category 1B, H314 Chronic aquatic toxicity, Category 2, H411 |
|----------|----|---|

*) A registration number is not available for this substance as the substance or its use are exempted from registration according to Article 2 REACH Regulation (EC) No 1907/2006, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4. First aid measures

4.1 Description of first aid measures

After inhalation: fresh air.

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/shower.

After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.

After swallowing: caution if victim vomits. Risk of aspiration! Keep airways free. Pulmonary failure possible after aspiration of vomit. Call a physician immediately.

4.2 Most important symptoms and effects, both acute and delayed

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

| | |
|---------------|---|
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irritant effects, respiratory paralysis, Drowsiness, Dizziness, Unconsciousness, narcosis, inebriation, Headache, somnolence, Coma
Drying-out effect resulting in rough and chapped skin.

4.3 Indication of any immediate medical attention and special treatment needed

No information available.

SECTION 5. Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Water, Foam, Carbon dioxide (CO₂), Dry powder

Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

5.2 Special hazards arising from the substance or mixture

Combustible.

Vapours are heavier than air and may spread along floors.

Forms explosive mixtures with air at elevated temperatures.

Development of hazardous combustion gases or vapours possible in the event of fire.

Pay attention to flashback.

5.3 Advice for firefighters

Special protective equipment for firefighters

In the event of fire, wear self-contained breathing apparatus.

Further information

Remove container from danger zone and cool with water. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Do not breathe vapours, aerosols. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders:

Protective equipment see section 8.

6.2 Environmental precautions

Do not let product enter drains. Risk of explosion.

6.3 Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.

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6.4 Reference to other sections

Indications about waste treatment see section 13.

SECTION 7. Handling and storage

7.1 Precautions for safe handling

Advice on safe handling

Observe label precautions.

Advice on protection against fire and explosion

Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

Hygiene measures

Change contaminated clothing. Wash hands after working with substance.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions

Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition.

Recommended storage temperature see product label.

The data applies to the entire pack.

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

SECTION 8. Exposure controls/personal protection

8.1 Control parameters

Derived No Effect Level (DNEL)

2-Propanol (67-63-0)

| | | | |
|-------------------------|------------------|------------|-----------------------|
| Worker DNEL, longterm | Systemic effects | inhalation | 500 mg/m ³ |
| Worker DNEL, longterm | Systemic effects | dermal | 888 mg/kg Body weight |
| Consumer DNEL, longterm | Systemic effects | inhalation | 89 mg/m ³ |
| Consumer DNEL, longterm | Systemic effects | dermal | 319 mg/kg Body weight |
| Consumer DNEL, longterm | Systemic effects | oral | 26 mg/kg Body weight |

Predicted No Effect Concentration (PNEC)

2-Propanol (67-63-0)

| | |
|---------------------------|------------|
| PNEC Fresh water | 140,9 mg/l |
| PNEC Fresh water sediment | 552 mg/kg |
| PNEC Marine water | 140,9 mg/l |

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PNEC Marine sediment 552 mg/kg
PNEC Soil 28 mg/kg

8.2 Exposure controls

Engineering measures

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

See section 7.1.

Individual protection measures

Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of the hazardous substances handled. The chemical resistance of the protective equipment should be enquired at the respective supplier.

Eye/face protection

Safety glasses

Hand protection

full contact:

Glove material: butyl-rubber
Glove thickness: 0,7 mm
Break through time: 480 min

splash contact:

Glove material: butyl-rubber
Glove thickness: 0,7 mm
Break through time: 480 min

The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374, for example KCL 898 Butoject® (full contact), KCL 898 Butoject® (splash contact).

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).

Other protective equipment

Flame retardant antistatic protective clothing.

Respiratory protection

required when vapours/aerosols are generated.

Recommended Filter type: ABEK-filter

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.

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Environmental exposure controls

Do not let product enter drains.
Risk of explosion.

SECTION 9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

| | |
|--|--------------------------------------|
| Form | liquid |
| Colour | light yellow |
| Odour | of solvents |
| Odour Threshold | No information available. |
| pH | 5,0 - 5,5 at 25 °C (undiluted) |
| Melting point | No information available. |
| Boiling point | No information available. |
| Flash point | 29 °C Method: DIN 51755 Part 1 |
| Evaporation rate | No information available. |
| Flammability (solid, gas) | No information available. |
| Lower explosion limit | No information available. |
| Upper explosion limit | No information available. |
| Vapour pressure | No information available. |
| Relative vapour density | No information available. |
| Density | 0,97 g/cm ³ at 20 °C |
| Relative density | No information available. |
| Water solubility | at 20 °C soluble |
| Partition coefficient: n-octanol/water | No information available. |

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| | |
|---------------------------|------------------------------|
| Auto-ignition temperature | No information available. |
| Decomposition temperature | No information available. |
| Viscosity, dynamic | No information available. |
| Explosive properties | Not classified as explosive. |
| Oxidizing properties | none |

9.2 Other data

none

SECTION 10. Stability and reactivity

10.1 Reactivity

Vapour/air-mixtures are explosive at intense warming.

10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

10.3 Possibility of hazardous reactions

Risk of ignition or formation of inflammable gases or vapours with:

Alkali metals, Alkaline earth metals, chromium(VI) oxide

Exothermic reaction with:

Oxidizing agents, Nitric acid, Aldehydes, Amines, fuming sulfuric acid, Iron, Aluminium, Chlorine, PHOSPHORUS TRICHLORIDE, Strong acids

Risk of explosion with:

chlorates, Phosgene, organic nitro compounds, hydrogen peroxide, nitrogen oxides, perchlorates

10.4 Conditions to avoid

Heating.

10.5 Incompatible materials

rubber, various plastics, oils

10.6 Hazardous decomposition products

no information available

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SECTION 11. Toxicological information

11.1 Information on toxicological effects

Mixture

Acute oral toxicity

Acute toxicity estimate: > 2.000 mg/kg

Calculation method

Symptoms: Risk of aspiration upon vomiting., Pulmonary failure possible after aspiration of vomit.

Acute inhalation toxicity

Symptoms: Possible symptoms:., mucosal irritations

Acute dermal toxicity

Acute toxicity estimate : > 2.000 mg/kg

Calculation method

Skin irritation

Drying-out effect resulting in rough and chapped skin.

Eye irritation

Mixture causes serious eye irritation.

Sensitisation

This information is not available.

Germ cell mutagenicity

This information is not available.

Carcinogenicity

This information is not available.

Reproductive toxicity

This information is not available.

Teratogenicity

This information is not available.

Specific target organ toxicity - single exposure

This information is not available.

Specific target organ toxicity - repeated exposure

This information is not available.

Aspiration hazard

This information is not available.

11.2 Further information

After absorption:

Headache, Dizziness, inebriation, Unconsciousness, narcosis

After uptake of large quantities:

respiratory paralysis, Coma

Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.

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Components

2-Propanol

Acute oral toxicity

LD50 Rat: 5.045 mg/kg (RTECS)

Acute inhalation toxicity

LC50 Rat: 37,5 mg/l; 4 h ; vapour

OECD Test Guideline 403

Acute dermal toxicity

LD50 Rabbit: 12.800 mg/kg (RTECS)

Skin irritation

Rabbit

Result: No skin irritation

OECD Test Guideline 404

Eye irritation

Rabbit

Result: Eye irritation

OECD Test Guideline 405

Sensitisation

Buehler Test Guinea pig

Result: negative

Method: OECD Test Guideline 406

Germ cell mutagenicity

Genotoxicity in vivo

In vivo micronucleus test

Mouse

male and female

Intraperitoneal injection

Result: negative

Method: OECD Test Guideline 474

Genotoxicity in vitro

Ames test

Salmonella typhimurium

Result: negative

Method: OECD Test Guideline 471

In vitro mammalian cell gene mutation test

Result: negative

Method: OECD Test Guideline 476

Carcinogenicity

Method: OECD Test Guideline 451

Did not show carcinogenic effects in animal experiments.

Reproductive toxicity

No impairment of reproductive performance in animal experiments. (IUCLID)

Teratogenicity

Did not show teratogenic effects in animal experiments. (IUCLID)

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Xylenol

Acute oral toxicity

LD50 Rat: 296 mg/kg (IUCLID)

Acute dermal toxicity

LD50 Rabbit: 1.000 mg/kg (IUCLID)

Eye irritation

Rabbit

Result: Causes burns.

(Lit.)

Germ cell mutagenicity

Genotoxicity in vitro

Ames test

Result: negative

(IUCLID)

SECTION 12. Ecological information

Mixture

12.1 Toxicity

No information available.

12.2 Persistence and degradability

No information available.

12.3 Bioaccumulative potential

No information available.

12.4 Mobility in soil

No information available.

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.

12.6 Other adverse effects

Additional ecological information

Discharge into the environment must be avoided.

Components

2-Propanol

Toxicity to fish

flow-through test LC50 Pimephales promelas (fathead minnow): 9.640 mg/l; 96 h
US-EPA

Toxicity to daphnia and other aquatic invertebrates

EC50 Daphnia magna (Water flea): 13.299 mg/l; 48 h (IUCLID)

Toxicity to algae

IC50 Desmodesmus subspicatus (green algae): > 1.000 mg/l; 72 h (IUCLID)

Toxicity to bacteria

EC5 Pseudomonas putida: 1.050 mg/l; 16 h (Lit.)

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Biodegradability

95 %; 21 d; aerobic
OECD Test Guideline 301E
Readily biodegradable

Theoretical oxygen demand (ThOD)

2.400 mg/g
(Lit.)

Ratio BOD/ThBOD

BOD5 49 %
(IUCLID)

Ratio COD/ThBOD

96 %
(Lit.)

Partition coefficient: n-octanol/water

log Pow: 0,05
OECD Test Guideline 107
Bioaccumulation is not expected.

Substance does not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII.

Xylenol

Toxicity to fish

LC50 Pimephales promelas (fathead minnow): 22 mg/l; 96 h (Hommel)

Toxicity to daphnia and other aquatic invertebrates

EC50 Daphnia magna (Water flea): 11,2 mg/l; 48 h (IUCLID)

EC100 Tetrahymen pyriformis: 325 mg/l; 24 h (IUCLID)

Biodegradability

2 %; 28 d
MITI test
Not readily biodegradable.

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SECTION 13. Disposal considerations

Waste treatment methods

See www.retrologistik.com for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

SECTION 14. Transport information

Land transport (ADR/RID)

| | |
|-----------------------------------|--------------|
| 14.1 UN number | UN 3316 |
| 14.2 Proper shipping name | CHEMICAL KIT |
| 14.3 Class | 9 |
| 14.4 Packing group | II |
| 14.5 Environmentally hazardous | -- |
| 14.6 Special precautions for user | yes |
| Tunnel restriction code | E |

Inland waterway transport (ADN)

Not relevant

Air transport (IATA)

| | |
|-----------------------------------|--------------|
| 14.1 UN number | UN 3316 |
| 14.2 Proper shipping name | CHEMICAL KIT |
| 14.3 Class | 9 |
| 14.4 Packing group | II |
| 14.5 Environmentally hazardous | -- |
| 14.6 Special precautions for user | no |

Sea transport (IMDG)

| | |
|-----------------------------------|--------------|
| 14.1 UN number | UN 3316 |
| 14.2 Proper shipping name | CHEMICAL KIT |
| 14.3 Class | 9 |
| 14.4 Packing group | II |
| 14.5 Environmentally hazardous | -- |
| 14.6 Special precautions for user | yes |
| EmS | F-A S-P |

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not relevant

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THIS TRANSPORT DATA APPLIES TO THE ENTIRE PACK!

SECTION 15. Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

EU regulations

Major Accident Hazard 96/82/EC
Legislation Flammable.
6
Quantity 1: 5.000 t
Quantity 2: 50.000 t

SEVESO III
FLAMMABLE LIQUIDS
P5c
Quantity 1: 5.000 t
Quantity 2: 50.000 t

Occupational restrictions Take note of Dir 94/33/EC on the protection of young people at work.

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer not regulated

Regulation (EC) No 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC not regulated

Substances of very high concern (SVHC) 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).

National legislation

Storage class 3
The data applies to the entire pack.

15.2 Chemical safety assessment

For this product a chemical safety assessment was not carried out.

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SECTION 16. Other information

Full text of H-Statements referred to under sections 2 and 3.

| | |
|------|--|
| H225 | Highly flammable liquid and vapour. |
| H226 | Flammable liquid and vapour. |
| H301 | Toxic if swallowed. |
| H311 | Toxic in contact with skin. |
| H314 | Causes severe skin burns and eye damage. |
| H319 | Causes serious eye irritation. |
| H336 | May cause drowsiness or dizziness. |
| H411 | Toxic to aquatic life with long lasting effects. |

Training advice

Provide adequate information, instruction and training for operators.

Labelling

Hazard pictograms



Signal word

Warning

Hazard statements

H226 Flammable liquid and vapour.

H319 Causes serious eye irritation.

Precautionary statements

Prevention

P210 Keep away from heat.

Response

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P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Key or legend to abbreviations and acronyms used in the safety data sheet

Used abbreviations and acronyms can be looked up at www.wikipedia.org.

Regional representation

This information is given on the authorised Safety Data Sheet for your country.

The information contained herein is based on the present state of our knowledge. It characterises the product with regard to the appropriate safety precautions. It does not represent a guarantee of any properties of the product.