

**Safety Data Sheet**

according to Regulation (EC) No 1907/2006

**Cartridge**

Revision date: 04.12.2019

Product code: 10040, 10046, 10050, 10064, 10074, 10076, 10078

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

Cartridge

**Further trade names**

This MSDS covers the following products in all container sizes:

- Unyvero HPN Cartridge # 10046
- Unyvero ITI Cartridge # 10040
- Unyvero BCU Cartridge # 10050
- Unyvero IAI Cartridge #10064-
- Unyvero HPN Cartridge # 10074
- Unyvero BCU Cartridge # 10076
- Unyvero UTI Cartridge #10078

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

Use as laboratory reagent.

**Uses advised against**

Any non-intended use.

**1.3. Details of the supplier of the safety data sheet**

|                         |                       |                                |
|-------------------------|-----------------------|--------------------------------|
| Company name:           | Curetis GmbH          |                                |
| Street:                 | Max-Eyth-Str. 42      |                                |
| Place:                  | D 71088 Holzgerlingen |                                |
| Telephone:              | +49-(0)7031 -49195-55 | Telefax: +49-(0)7031 - 4919519 |
| Responsible Department: | Dr. Gans-Eichler      | e-mail: info@tge-consult.de    |
|                         | Chemieberatung GmbH   | Tel.: +49(0)251/394868-69      |
|                         | Raesfeldstr. 22       |                                |
|                         | 48149 Muenster        |                                |

**1.4. Emergency telephone number:**

Poison Information Center Mainz, Germany, Tel: +49(0)6131/19240

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

Hazard categories:

Flammable liquid: Flam. Liq. 2

Acute toxicity: Acute Tox. 4

Skin corrosion/irritation: Skin Irrit. 2

Serious eye damage/eye irritation: Eye Irrit. 2

Hazard Statements:

Highly flammable liquid and vapour.

Harmful if swallowed.

Causes skin irritation.

Causes serious eye irritation.

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

guanidinium chloride; guanadine hydrochloride

**Signal word:** Danger

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#### Pictograms:



#### Hazard statements

|      |                                     |
|------|-------------------------------------|
| H225 | Highly flammable liquid and vapour. |
| H302 | Harmful if swallowed.               |
| H315 | Causes skin irritation.             |
| H319 | Causes serious eye irritation.      |

#### Precautionary statements

|                |  |
|----------------|--|
| P210           | Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.                                   |
| P280           | Wear protective gloves/protective clothing/eye protection/face protection.   |
| P305+P351+P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |

#### 2.3. Other hazards

In case of insufficient ventilation and/or through use, explosive/highly flammable mixtures may develop. The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

### SECTION 3: Composition/information on ingredients

#### 3.2. Mixtures

##### Hazardous components

| CAS No  | Chemical name   |              |                  | Quantity |
|---------|---|--------------|------------------|----------|
|         | EC No   | Index No     | REACH No         |          |
|         | Classification according to Regulation (EC) No. 1272/2008 [CLP] |              |                  |          |
| 64-17-5 | ethanol, ethyl alcohol  |              |                  | > 60 %   |
|         | 200-578-6   | 603-002-00-5 | 01-2119457610-43 |          |
|         | Flam. Liq. 2, Eye Irrit. 2; H225 H319                           |              |                  |          |
| 50-01-1 | guanidinium chloride; guanadine hydrochloride                   |              |                  | >50 %    |
|         | 200-002-3   | 607-148-00-0 |                  |          |
|         | Acute Tox. 4, Eye Irrit. 2, Skin Irrit. 2; H302 H319 H315       |              |                  |          |

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

#### Further Information

Product does not contain listed SVHC substances > 0,1 % according to Regulation (EC) No. 1907/2006 Article 59 (REACH)

### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

##### General information

Remove affected person from the danger area and lay down. In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

##### After inhalation

In case of accident by inhalation: remove casualty to fresh air and keep at rest. If unconscious place in recovery position and seek medical advice. In case of allergic symptoms, especially in the breathing area, seek medical advice immediately.

##### After contact with skin

After contact with skin, wash immediately with plenty of water and soap. In case of skin irritation, seek medical

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treatment.

#### **After contact with eyes**

Rinse immediately carefully and thoroughly with eye-bath or water. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

#### **After ingestion**

Rinse mouth thoroughly with water. Let water be drunk in little sips (dilution effect). Seek medical advice.

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

No information available.

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

Treat symptomatically.

### SECTION 5: Firefighting measures

#### **5.1. Extinguishing media**

##### **Suitable extinguishing media**

Carbon dioxide (CO<sub>2</sub>). Dry extinguishing powder. alcohol resistant foam. Atomized water.

##### **Unsuitable extinguishing media**

High power water jet.

#### **5.2. Special hazards arising from the substance or mixture**

Can be released in case of fire: Carbon monoxide Carbon dioxide (CO<sub>2</sub>). Nitrogen oxides (NO<sub>x</sub>). Hydrogen chloride (HCl).

#### **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.

#### **Additional information**

Use water spray jet to protect personnel and to cool endangered containers. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

### SECTION 6: Accidental release measures

#### **6.1. Personal precautions, protective equipment and emergency procedures**

Remove all sources of ignition. Ventilate affected area.

Do not breathe gas/fumes/vapour/spray. Avoid contact with skin, eyes and clothes.

Special danger of slipping by leaking/spilling product.

Wear personal protection equipment. (refer to chapter 8)

#### **6.2. Environmental precautions**

Do not allow to enter into surface water or drains. Due to danger of explosion, prevent leakage of vapours into cellars, flues and ditches. Prevent spread over a wide area (e.g. by containment or oil barriers). In case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities.

#### **6.3. Methods and material for containment and cleaning up**

Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents). Ventilate affected area.

Treat the recovered material as prescribed in the section on waste disposal.

Clear contaminated areas thoroughly.

#### **6.4. Reference to other sections**

See protective measures under point 7 and 8.

### SECTION 7: Handling and storage

#### **7.1. Precautions for safe handling**

##### **Advice on safe handling**

Do not breathe gas/fumes/vapour/spray. Avoid contact with skin, eyes and clothes.

Wear personal protection equipment. (See section 8.)

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#### Advice on protection against fire and explosion

Keep away from sources of ignition. - No smoking. Take precautionary measures against static discharges. Flammable vapours can accumulate in head space of closed systems. In use, may form flammable/explosive vapour-air mixture. Heating causes rise in pressure with risk of bursting.

#### Further information on handling

General protection and hygiene measures: refer to chapter 8

#### 7.2. Conditions for safe storage, including any incompatibilities

##### Requirements for storage rooms and vessels

Keep/Store only in original container. Keep container tightly closed in a cool, well-ventilated place. Protect against direct sunlight.

Ensure adequate ventilation of the storage area. Concentrated vapours are heavier than air.

Suitable material for Container: Stainless steel. (1.4301 (V2), 1.4401 (V4)); iron. solvent resistant plastics.

Unsuitable materials for Container: Aluminium. Rubber. various plastics.

##### Hints on joint storage

Do not store together with: Gas. Explosives. Flammable solids. Pyrophoric liquids and solids. Self-heating substances and mixtures. Substances and mixtures which, in contact with water, emit flammable gases. Oxidizing liquids. Oxidizing solids. ammonium nitrate. Self-reactive substances and mixtures. Organic peroxides.

Non-combustible toxic substances. Radioactive substances. Infectious substances.

##### Further information on storage conditions

Protect against: heat and cold.

Store small packages in a suitable, robust cabinet.

Storage temperature: 15-25°C, keep dry

#### 7.3. Specific end use(s)

Laboratory chemicals

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

##### Exposure limits (EH40)

| CAS No  | Substance | ppm  | mg/m <sup>3</sup> | fibres/ml | Category  | Origin |
|---------|-----------|------|-------------------|-----------|-----------|--------|
| 64-17-5 | Ethanol   | 1000 | 1920              |           | TWA (8 h) | WEL    |

##### DNEL/DMEL values

| CAS No  | Substance                | Exposure route | Effect   | Value                  |
|---------|--------------------------|----------------|----------|------------------------|
| 64-17-5 | ethanol, ethyl alcohol   |                |          |                        |
|         | Worker DNEL, acute       | inhalation     | local    | 1900 mg/m <sup>3</sup> |
|         | Worker DNEL, long-term   | dermal         | systemic | 343 mg/kg bw/day       |
|         | Worker DNEL, long-term   | inhalation     | systemic | 950 mg/m <sup>3</sup>  |
|         | Consumer DNEL, acute     | inhalation     | local    | 950 mg/m <sup>3</sup>  |
|         | Consumer DNEL, long-term | dermal         | systemic | 206 mg/kg bw/day       |
|         | Consumer DNEL, long-term | inhalation     | systemic | 114 mg/m <sup>3</sup>  |
|         | Consumer DNEL, long-term | oral           | systemic | 87 mg/kg bw/day        |

##### PNEC values

| CAS No  | Substance              | Value |
|---------|------------------------|-------|
| 64-17-5 | ethanol, ethyl alcohol |       |

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|  |            |
|--|------------|
| Freshwater                                       | 0,96 mg/l  |
| Freshwater (intermittent releases)               | 2,75 mg/l  |
| Marine water                                     | 0,79 mg/l  |
| Marine water (intermittent releases)             | 2,75 mg/l  |
| Freshwater sediment                              | 3,6 mg/kg  |
| Marine sediment                                  | 2,9 mg/kg  |
| Secondary poisoning                              | 0,72 mg/kg |
| Micro-organisms in sewage treatment plants (STP) | 580 mg/l   |
| Soil   | 0,63 mg/kg |

### 8.2. Exposure controls



#### Appropriate engineering controls

Use extractor hood (laboratory).

#### Protective and hygiene measures

Keep away from food, drink and animal feedingstuffs. Remove contaminated, saturated clothing immediately. Wash hands before breaks and after work. Avoid contact with eyes and skin.

#### Eye/face protection

Tightly sealed safety glasses. DIN EN 166

#### Hand protection

In case of prolonged or frequently repeated skin contact:

Wear suitable gloves.

Suitable material:

Breakthrough time > 8 h

Butyl rubber.

FKM (fluororubber).

Breakthrough time  $\geq$  2 h):

CR (polychloroprenes, Chloroprene rubber).

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Before using check leak tightness / impermeability. In the case of wanting to use the gloves again, clean them before taking off and air them well.

#### Skin protection

Protective clothing. (fire retardant.)

Minimum standard for preventive measures while handling with working materials are specified in the TRGS 500.

#### Respiratory protection

With correct and proper use, and under normal conditions, breathing protection is not required.

Respiratory protection necessary at:

exceeding exposure limit values

Insufficient ventilation.

Generation/formation of mist

Suitable respiratory protective equipment: gas filtering equipment (EN 141).

Type: A

The filter class must be suitable for the maximum contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If the concentration is exceeded, self-contained breathing apparatus must be used.

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#### Environmental exposure controls

This material and its container must be disposed of in a safe way.

### SECTION 9: Physical and chemical properties

#### 9.1. Information on basic physical and chemical properties

|                 |                       |
|-----------------|-----------------------|
| Physical state: | liquid (Ethanol.)     |
| Colour:         | colourless (Ethanol.) |
| Odour:          | Ethanol.              |
| pH-Value:       | not determined        |

#### Changes in the physical state

|  |                     |
|--|---------------------|
| Melting point:                           | -144 (Ethanol.) °C  |
| Initial boiling point and boiling range: | 78-80 (Ethanol.) °C |
| Sublimation point:                       | not determined      |
| Softening point:                         | not determined      |
| Pour point:                              | not determined      |
| Flash point:                             | >14°C (Ethanol.) °C |
| Sustaining combustion:                   | No data available   |

#### Explosive properties

not determined

|                         |                       |
|-------------------------|-----------------------|
| Lower explosion limits: | 3,3 (Ethanol.) vol. % |
| Upper explosion limits: | 19 (Ethanol.) vol. %  |
| Ignition temperature:   | 400 (Ethanol.) °C     |

#### Auto-ignition temperature

Gas: 363 °C (Ethanol.)

Decomposition temperature: not determined

#### Oxidizing properties

not determined

Vapour pressure: (Ethanol.) 59,5 hPa  
(at 20 °C)

Vapour pressure: (Ethanol.) 280 hPa  
(at 50 °C)

Density (at 20/25 °C): 0,79 (Ethanol) /1,18 (guanidine hydrochloride)  
g/cm<sup>3</sup>

Water solubility: 573 (guanidine hydrochloride) g/L  
(at 20 °C)

#### Solubility in other solvents

not determined

Viscosity / dynamic: not determined

Viscosity / kinematic: not determined

Flow time: not determined

Vapour density: not determined

Evaporation rate: not determined

Solvent separation test: not determined

Solvent content: not determined

#### 9.2. Other information

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Solid content:

not determined

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

No information available.

### 10.2. Chemical stability

The product is stable under storage at normal ambient temperatures.

### 10.3. Possibility of hazardous reactions

Explosion risk in contact with: Oxidizing agents, strong. nitric acid. Hydrogenium peroxide.

Exothermic reactions with: Alkali metals. Alkaline earth metals. Reducing agents, strong.

### 10.4. Conditions to avoid

Keep away from heat.

In case of warming: Ignition hazard.

### 10.5. Incompatible materials

Materials to avoid: Substances and mixtures which, in contact with water, emit flammable gases Organic peroxides. Oxidizing substances. Alkali metals.

### 10.6. Hazardous decomposition products

Can be released in case of fire: Carbon monoxide Carbon dioxide (CO<sub>2</sub>). Nitrogen oxides (NO<sub>x</sub>). Hydrogen chloride (HCl).

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

#### Toxicokinetics, metabolism and distribution

No information available.

#### Acute toxicity

Harmful if swallowed.

#### ATEmix calculated

ATE (oral) 950,0 mg/kg

| CAS No  | Chemical name                                 |               |            |        |              |
|---------|---|---------------|------------|--------|--------------|
|         | Exposure route                                | Dose          | Species    | Source | Method       |
| 64-17-5 | ethanol, ethyl alcohol                        |               |            |        |              |
|         | oral  | LD50<br>mg/kg | >5000      | Rat    | ECHA Dossier |
|         | inhalation (4 h) vapour                       | LC50          | 124,7 mg/l | Rat    | ECHA Dossier |
| 50-01-1 | guanidinium chloride; guanadine hydrochloride |               |            |        |              |
|         | oral  | LD50          | 475 mg/kg  | Rat    |              |
|         | inhalation (4 h) vapour                       | LC50          | 5,3 mg/l   | Rat    |              |

#### Irritation and corrosivity

Causes skin irritation.

Causes serious eye irritation.

Ethanol.:

Irritant effect on the eye: Specific concentration limit (SCL): Eye Irrit. 2 > 50%

guanidine hydrochloride (50-01-1):

Irritant effect on the skin: Irritant.

Irritant effect on the eye: Irritant.

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#### Sensitising effects

Based on available data, the classification criteria are not met.  
 guanidine hydrochloride (50-01-1):  
 No evidence for: Respiratory or skin sensitisation (Buehler-Test)

#### Carcinogenic/mutagenic/toxic effects for reproduction

Based on available data, the classification criteria are not met.  
 guanidine hydrochloride (50-01-1):  
 No evidence for: Carcinogenicity  
 No evidence for: In-vitro mutagenicity (Ames-Test)

Ethanol:

In-vitro mutagenicity: No experimental indications of mutagenicity in-vitro exist. Reproductive toxicity: Exposure time: 18 weeks Species: CD-1 Mouse. Method: OECD Guideline 416  
 Result: NOAEL = 20700 mg/kg/day Developmental toxicity/teratogenicity: Exposure time: 19d Species: Sprague-Dawley Rat. Method: OECD Guideline 414 Result: NOAEL = 16000 ppm (maternal toxicity) Result: NOAEL >= 20000 ppm (teratogenicity) Literature information: ECHA Dossier

#### 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.

Ethanol:

Subchronic oral toxicity:

Exposure time: 90d; Species: Sprague-Dawley Rat.

Method: OECD Guideline 408; Result: NOAEL = 1280 mg/kg; Literature information: ECHA Dossier

#### Aspiration hazard

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

#### Specific effects in experiment on an animal

No data available

#### Practical experience

#### Other observations

Depending on the ingested quantity the following symptoms can be induced: a reduction of inhibitions, euphoria but also dysphoria, aggressiveness, impaired motoric skills, impaired responsiveness, blurred vision and fatigue.

## SECTION 12: Ecological information

### 12.1. Toxicity

| CAS No  | Chemical name                                 |              |            |         |                     |              |
|---------|---|--------------|------------|---------|---------------------|--------------|
|         | Aquatic toxicity                              | Dose         | [h]   [d]  | Species | Source              | Method       |
| 64-17-5 | ethanol, ethyl alcohol                        |              |            |         |                     |              |
|         | Acute fish toxicity                           | LC50<br>mg/l | 14200      | 96 h    | Pimephales promelas | ECHA Dossier |
|         | Acute algae toxicity                          | ErC50        | 275 mg/l   | 72 h    | Chlorella vulgaris  | ECHA Dossier |
|         | Acute crustacea toxicity                      | EC50<br>mg/l | 5012       | 48 h    | Ceriodaphnia dubia  | ECHA Dossier |
|         | Crustacea toxicity                            | NOEC         | (9,6) mg/l | 9 d     | Daphnia magna       | ECHA Dossier |
| 50-01-1 | guanidinium chloride; guanadine hydrochloride |              |            |         |                     |              |
|         | Acute fish toxicity                           | LC50<br>mg/l | 1758       | 96 h    | Leucisus idus       |              |

### 12.2. Persistence and degradability



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| CAS No  | Chemical name   |       |    |              |
|---------|---|-------|----|--------------|
|         | Method  | Value | d  | Source       |
|         | Evaluation  |       |    |              |
| 64-17-5 | ethanol, ethyl alcohol                                  |       |    |              |
|         | other guideline   | 84%   | 20 | ECHA Dossier |
|         | Biodegradable.  |       |    |              |
| 50-01-1 | guanidinium chloride; guanadine hydrochloride           |       |    |              |
|         | OECD 301C / ISO 9408 / EEC 92/69 annex V, C.4-F         | 0     | 56 | ECHA Dossier |
|         | Not easily bio-degradable (according to OECD-criteria). |       |    |              |

### 12.3. Bioaccumulative potential

#### Partition coefficient n-octanol/water

| CAS No  | Chemical name                                 | Log Pow |
|---------|---|---------|
| 64-17-5 | ethanol, ethyl alcohol                        | -0,31   |
| 50-01-1 | guanidinium chloride; guanadine hydrochloride | -1,7    |

### 12.4. Mobility in soil

No information available.

### 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. Other adverse effects

No data available

### Further information

Do not allow to enter into surface water or drains.

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

#### Advice on disposal

Dispose of waste according to applicable legislation. Consult the local waste disposal expert about waste disposal. Non-contaminated packages may be recycled. According to EAKV, allocation of waste identity numbers/waste descriptions must be carried out in a specific way for every industry and process. Control report for waste code/ waste marking according to EAKV:

#### Waste disposal number of waste from residues/unused products

160506 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; gases in pressure containers and discarded chemicals; laboratory chemicals, consisting of or containing hazardous substances, including mixtures of laboratory chemicals; hazardous waste

#### Waste disposal number of used product

160506 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; gases in pressure containers and discarded chemicals; laboratory chemicals, consisting of or containing hazardous substances, including mixtures of laboratory chemicals; hazardous waste

#### Waste disposal number of contaminated packaging

150110 WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED; packaging (including separately collected municipal packaging waste); packaging containing residues of or contaminated by hazardous substances; hazardous waste

#### Contaminated packaging

Handle contaminated packages in the same way as the substance itself.

## SECTION 14: Transport information

### Land transport (ADR/RID)

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**14.1. UN number:** UN 1170  
**14.2. UN proper shipping name:** ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION)  
**14.3. Transport hazard class(es):** 3  
**14.4. Packing group:** II  
 Hazard label: 3



Classification code: F1  
 Special Provisions: 144 601  
 Limited quantity: 1 L  
 Excepted quantity: E2  
 Transport category: 2  
 Hazard No: 33  
 Tunnel restriction code: D/E

#### Inland waterways transport (ADN)

**14.1. UN number:** UN 1170  
**14.2. UN proper shipping name:** ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION)  
**14.3. Transport hazard class(es):** 3  
**14.4. Packing group:** II  
 Hazard label: 3



Classification code: F1  
 Special Provisions: 144 601  
 Limited quantity: 1 L  
 Excepted quantity: E2

#### Marine transport (IMDG)

**14.1. UN number:** UN 1170  
**14.2. UN proper shipping name:** ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION)  
**14.3. Transport hazard class(es):** 3  
**14.4. Packing group:** II  
 Hazard label: 3



Marine pollutant: NO  
 Special Provisions: 144  
 Limited quantity: 1 L  
 Excepted quantity: E2  
 EmS: F-E, S-D

#### Air transport (ICAO-TI/IATA-DGR)

**14.1. UN number:** UN 1170  
**14.2. UN proper shipping name:** ETHANOL SOLUTION  
**14.3. Transport hazard class(es):** 3  
**14.4. Packing group:** II  
 Hazard label: 3

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| Special Provisions:                    | A3 A58 A180 |
| Limited quantity Passenger:            | 1 L         |
| Passenger LQ:                          | Y341        |
| Excepted quantity:                     | E2          |
| IATA-packing instructions - Passenger: | 353         |
| IATA-max. quantity - Passenger:        | 5 L         |
| IATA-packing instructions - Cargo:     | 364         |
| IATA-max. quantity - Cargo:            | 60 L        |

#### 14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: no

#### 14.6. Special precautions for user

Refer to section 6-8

#### 14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

not relevant

### SECTION 15: Regulatory information

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

##### EU regulatory information

|   |                       |
|---|-----------------------|
| 2010/75/EU (VOC):                                 | Ethanol.: 100%        |
| 2004/42/EC (VOC):                                 | Ethanol.: 790 g/L     |
| Information according to 2012/18/EU (SEVESO III): | P5c FLAMMABLE LIQUIDS |

##### Additional information

The mixture is classified as hazardous according to regulation (EC) No 1272/2008 [CLP].  
REACH 1907/2006 Appendix XVII, No (mixture): 3

##### National regulatory information

Employment restrictions: Observe restrictions to employment for juvenils 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 contaminating class (D): 1 - slightly water contaminating

#### 15.2. Chemical safety assessment

For the following substances of this mixture a chemical safety assessment has been carried out:  
ethanol, ethyl alcohol

### SECTION 16: Other information

#### Changes

- Rev. 1,00 New creation: 24.03.2014
- Rev. 5,00 Changes chapter: 2, 3,7,8,9,10,11,12,13,15,16: 18.01.2016
- Rev. 6,00; 10.04.2017
- Rev. 7,00; 11.04.2018
- Rev. 8,00 Changes chapters: 1-16, 19.11.2018
- Rev 9,00: Addition article #10074;#10076
- Rev 10,00 Adaptation of dangerous goods transport classification from UN3316 to UN 1170
- Rev 11,00 Changes chapter 7.2 storage condition

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#### Abbreviations and acronyms

ADR: Accord européen sur le transport des marchandises dangereuses par Route  
 AwSV: Verordnung über Anlagen zum Umgang mit wassergefährdenden Stoffen  
 CAS Chemical Abstracts Service  
 DNEL: Derived No Effect Level  
 IARC: INTERNATIONAL AGENCY FOR RESEARCH ON CANCER  
 IMDG: International Maritime Code for Dangerous Goods  
 IATA: International Air Transport Association  
 IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)  
 ICAO: International Civil Aviation Organization  
 ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)  
 GHS: Globally Harmonized System of Classification and Labelling of Chemicals  
 GefStoffV: Gefahrstoffverordnung (Ordinance on Hazardous Substances, Germany)  
 LOAEL: Lowest observed adverse effect level  
 LOAEC: Lowest observed adverse effect concentration  
 LC50: Lethal concentration, 50 percent  
 LD50: Lethal dose, 50 percent  
 NOAEL: No observed adverse effect level  
 NOAEC: No observed adverse effect level  
 NTP: National Toxicology Program  
 N/A: not applicable  
 OSHA: Occupational Safety and Health Administration  
 PNEC: predicted no effect concentration  
 PBT: Persistent bioaccumulative toxic  
 RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail )  
 SARA: Superfund Amendments and Reauthorization Act  
 SVHC: substance of very high concern  
 TRGS Technische Regeln fuerGefahrstoffe  
 TSCA: Toxic Substances Control Act  
 VOC: Volatile Organic Compounds  
 VwVwS: Verwaltungsvorschrift wassergefaehrdender Stoffe  
 WGK: Wassergefaehrdungsklasse

#### Classification for mixtures and used evaluation method according to Regulation (EC) No. 1272/2008 [CLP]

| Classification      | Classification procedure                                      |
|---------------------|---|
| Flam. Liq. 2; H225  | On basis of test data and / or calculated and / or estimated. |
| Acute Tox. 4; H302  | Calculation method  |
| Skin Irrit. 2; H315 | Calculation method  |
| Eye Irrit. 2; H319  | Calculation method  |

#### Relevant H and EUH statements (number and full text)

H225 Highly flammable liquid and vapour.  
 H302 Harmful if swallowed.  
 H315 Causes skin irritation.  
 H319 Causes serious eye irritation.

#### Further Information

Classification according EC regulation 1272/2008 (CLP): - Classification procedure:  
 Health hazards: Calculation method.  
 Environmental hazards: Calculation method.  
 Physical hazards: On basis of test data and / or calculated and / or estimated.

## Safety Data Sheet

according to Regulation (EC) No 1907/2006

### Cartridge

Revision date: 04.12.2019

Product code: 10040, 10046, 10050, 10064, 10074, 10076, 10078

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