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

### 1.1. Product identifier

Ethanol, rein 99,9% (entwässert)

### 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: | Schmitz-Metallographie GmbH | |
| Street: | Kaiserstraße 100 | |
| Place: | D-52134 Herzogenrath | |
| Telephone: | 02407 / 568296-0 | Telefax: 02407 / 568296-9 |
| E-mail: | info@schmitz-metallographie.de | |
| Contact person: | Herr Füllmann | |
| E-mail: | info@schmitz-metallographie.de | |
| Internet: | www.schmitz-metallographie.de | |

### 1.4. Emergency telephone number:

02407 / 568296-0 (Mo-Fr 9:00 - 16:00)

**Further Information**

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (amended by Regulation (EU) No 2020/878)

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

**Regulation (EC) No 1272/2008**

Flam. Liq. 2; H225
Eye Irrit. 2; H319

Full text of hazard statements: see SECTION 16.

### 2.2. Label elements

**Regulation (EC) No 1272/2008**

**Signal word:** Danger

**Pictograms:**

**Hazard statements**

| | |
|---|---|
| H225 | Highly flammable liquid and vapour. |
| H319 | Causes serious eye irritation. |

**Precautionary statements**

| | |
|---|---|
| P210 | Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. |
| P233 | Keep container tightly closed. |
| 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. |
| P403+P235 | Store in a well-ventilated place. Keep cool. |

P501 Dispose of contents/container to local/regional/national/international regulations.

### 2.3. Other hazards

Endocrine disrupting properties: butanone; ethyl methyl ketone.
In case of insufficient ventilation and/or through use, explosive/highly flammable mixtures may develop.
The substances in the mixture (> 0.1%) 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 (Regulation (EC) No 1272/2008) | | | |
| 64-17-5 | Ethanol, ethyl alcohol | | | 99 - < 100 % |
| | 200-578-6 | 603-002-00-5 | 01-2119457610-43 | |
| | Flam. Liq. 2, Eye Irrit. 2; H225 H319 | | | |
| 78-93-3 | butanone; ethyl methyl ketone | | | <1 % |
| | 201-159-0 | 606-002-00-3 | 01-2119457290-43 | |
| | Flam. Liq. 2, Eye Irrit. 2, STOT SE 3; H225 H319 H336 EUH066 | | | |

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 | | |
| 64-17-5 | 200-578-6 | Ethanol, ethyl alcohol | 99 - < 100 % |
| | inhalation: LC50 = 124,7 mg/l (vapours); oral: LD50 = >5000 mg/kg Eye Irrit. 2; H319: >= 50 - 100 | | |
| 78-93-3 | 201-159-0 | butanone; ethyl methyl ketone | <1 % |
| | dermal: LD50 = >2000 mg/kg; oral: LD50 = >2000 mg/kg | | |

**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 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 drunken in little sips (dilution effect). Seek medical advice.

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

Acute effects: Mucous membrane irritation after eye contact or inhalation.
Delayed effects: Impairment of inhibitory functions of the central nervous system, skin redness, nausea after ingestion of large amounts.

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

Treat symptomatically.
Percutaneously absorbed and inhaled substance causes next to irritation of affected mucous membranes only an indicated impairment of the inhibitory functions of the central nervous system, clinically recognizable as the beginning of a euphoric stage. At the same time face and skin redness is caused by dilation of peripheral blood vessels in the body.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

**Suitable extinguishing media**

Carbon dioxide (CO2). 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

In use, may form flammable/explosive vapour-air mixture.
Vapours are heavier than air and will spread at floor level.
Can be released in case of fire: Carbon monoxide (CO). Carbon dioxide (CO2).

### 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

**General advice**

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

**For non-emergency personnel**

Remove all sources of ignition. Ventilate affected area.
Special danger of slipping by leaking/spilling product.
Wear personal protection equipment. (refer to chapter 8)

**For emergency responders**

No special measures are necessary.

### 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

**For containment**

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.

**For cleaning up**

Clear contaminated areas thoroughly.

### 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**

Do not breathe gas/fumes/vapour/spray. Avoid contact with skin, eyes and clothes.
Wear personal protection equipment. (See section 8.)

**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.

**Advice on general occupational hygiene**

Always close containers tightly after the removal of product. When using do not eat, drink or smoke. Wash hands before breaks and after work. Take off contaminated clothing. Protect skin by using skin protective cream.

**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**

Recommended storage temperature: 5-25°C
Protect against: UV-radiation/sunlight. heat. Cold.

### 7.3. Specific end use(s)

See section 1.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

**Occupational exposure limits**

| CAS No | Substance | ppm | mg/m³ | fib/cm³ | Category | Origin |
|---|---|---|---|---|---|---|
| 64-17-5 | Ethanol | 1000 | - | | STEL (15 min) | |
| 78-93-3 | Methyl ethyl ketone (MEK) (Butan-2-one) | 200 | 600 | | TWA (8 h) | |
| | | 300 | 900 | | STEL (15 min) | |

**Biological limit values**

| CAS No | Substance | Parameter | Value | Test material | Sampling time |
|---|---|---|---|---|---|
| 78-93-3 | Butan-2-one | Butan-2-one | 70 µmol/L | Urine | Post shift |

**DNEL/DMEL values**

| CAS No | Substance | | | |
|---|---|---|---|---|
| DNEL type | | Exposure route | Effect | Value |
| 64-17-5 | Ethanol, ethyl alcohol | | | |
| Worker DNEL, acute | | inhalation | local | 1900 mg/m³ |
| Worker DNEL, long-term | | dermal | systemic | 343 mg/kg bw/day |
| Worker DNEL, long-term | | inhalation | systemic | 950 mg/m³ |
| Consumer DNEL, acute | | inhalation | local | 950 mg/m³ |
| Consumer DNEL, long-term | | dermal | systemic | 206 mg/kg bw/day |
| Consumer DNEL, long-term | | inhalation | systemic | 114 mg/m³ |
| Consumer DNEL, long-term | | oral | systemic | 87 mg/kg bw/day |
| 78-93-3 | butanone; ethyl methyl ketone | | | |
| Worker DNEL, long-term | | dermal | systemic | 1161 mg/kg bw/day |
| Worker DNEL, long-term | | inhalation | systemic | 600 mg/m³ |
| Consumer DNEL, long-term | | inhalation | systemic | 106 mg/m³ |
| Consumer DNEL, long-term | | dermal | systemic | 412 mg/kg bw/day |
| Consumer DNEL, long-term | | oral | systemic | 31 mg/kg bw/day |

**PNEC values**

| CAS No | Substance | |
|---|---|---|
| Environmental compartment | | Value |
| 64-17-5 | Ethanol, ethyl alcohol | |
| 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 |
| 78-93-3 | butanone; ethyl methyl ketone | |
| Freshwater | | 55,8 mg/l |
| Marine water | | 55,8 mg/l |
| Freshwater sediment | | 285 mg/kg |
| Marine sediment | | 284,7 mg/kg |
| Secondary poisoning | | 1000 mg/kg |
| Micro-organisms in sewage treatment plants (STP) | | 709 mg/l |
| Soil | | 22,5 mg/kg |

**8.2. Exposure controls**



**Appropriate engineering controls**

Technical measures and the application of suitable work processes have priority over personal protection equipment.
Provide adequate ventilation.
If local exhaust ventilation is not possible or not sufficient, the entire working area should be ventilated by technical means.

**Individual protection measures, such as personal protective equipment**

**Eye/face protection**

Tightly sealed safety glasses. EN 166

**Hand protection**

In case of prolonged or frequently repeated skin contact:
Tested protective gloves are to be worn:
Suitable material:
Butyl rubber.
Thickness of glove material: 0,5 mm
Breakthrough time >=480 min, Penetration time (maximum wearing period): 160 min)
FKM (fluororubber).
Thickness of glove material: 0,5 mm
Breakthrough time >=480 min, Penetration time (maximum wearing period): 160 min)
CR (polychloroprenes, Chloroprene rubber).
Thickness of glove material: 0,4 mm,
Breakthrough time >=120 min, Penetration time (maximum wearing period): 40 min)

For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.
The selected protective gloves have to satisfy the specifications of EU Directive EC/2016/425 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.)

**Respiratory protection**

With correct and proper use, and under normal conditions, breathing protection is not required.
Respiratory protection necessary at:
Insufficient ventilation
Exceeding exposure limit values
Generation/formation of aerosols
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.
Observe the wear time limits according GefStoffV in combination with the rules for using respiratory protection apparatus (BGR 190).

**Environmental exposure controls**

Do not allow to enter into surface water or drains.

## SECTION 9: Physical and chemical properties

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

| | |
|---|---|
| Physical state: | liquid |
| Colour: | colourless |
| Odour: | characteristic |
| Odour threshold: | not determined |
| Melting point/freezing point: | Ethanol: -114 °C |
| Boiling point or initial boiling point and boiling range: | Ethanol: 78 °C |
| Flammability: | not determined |
| Lower explosion limits: | 3,3 vol. % |
| Upper explosion limits: | 19 vol. % |
| Flash point: | 12 °C |
| Auto-ignition temperature: | not determined |
| Decomposition temperature: | not determined |
| pH-Value: | not determined |
| Viscosity / kinematic: | not determined |
| Water solubility: | completely miscible |
| Solubility in other solvents | |
| not determined | |
| Dissolution rate: | not relevant |
| Partition coefficient n-octanol/water: | SECTION 12: Ecological information |
| Dispersion stability: | not relevant |
| Vapour pressure: (at 20 °C) | 59 hPa |
| Vapour pressure: (at 50 °C) | 280 hPa |
| Density (at 20 °C): | 0,79 g/cm³ |
| Bulk density: | not relevant |
| Relative vapour density: | not determined |
| Particle characteristics: | not relevant |

### 9.2. Other information

**Information with regard to physical hazard classes**

Explosive properties

In use, may form flammable/explosive vapour-air mixture.

Self-ignition temperature

| | |
|---|---|
| Gas: | not determined |

Oxidizing properties

none

**Other safety characteristics**

| | |
|---|---|
| Evaporation rate: | not determined |
| Solvent separation test: | not determined |
| Solvent content: | 100% |
| Solid content: | not determined |
| Sublimation point: | not relevant |
| Softening point: | not relevant |
| Pour point: | not determined |
| Viscosity / dynamic: | not determined |
| Flow time: | not determined |

**Further Information**

No information available.

## 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. Protect against direct sunlight. Protect from moisture.
In use may form flammable/explosive vapour-air mixture.
Heating causes rise in pressure with risk of bursting. Recommended storage temperature: < 40 °C

### 10.5. Incompatible materials

Strong acid. Oxidizing agents. Alkali metals. Alkaline earth metals. Peroxides. phosphorus oxides. Nitrogen oxides (NOx). Hydrogenium peroxide. Nitric acid. hydrochloric acid. Sulfuric acid. Perchlorates. Chromium oxides. Acid chlorides.

### 10.6. Hazardous decomposition products

Does not decompose when used for intended uses.

## SECTION 11: Toxicological information

### 11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

**Toxicocinetics, metabolism and distribution**

Adsorption.
Ethanol has a low molecular weight and has a good water and fat solubility. Therefor it can be adsorbed well in the entire gastrointestinal tract, lungs and the skin. After swallowing approximately 90% is taken up via the gastrointestinal tract. When inhaled, this value is 61%. Because of the rapid evaporation of ethanol the dermal adsorption is very limited; theoretically 21% can be accommodated, however, the absorption rate of uncovered skin is only 1 to 2%.

Distribution:
Regardless of the exposure pathway ethanol is distributed via the bloodstream throughout the body, comparable to the distribution of water. Highly perfused organs (brain, lung and liver) are passed quickly. An equal distribution between tissue and blood is reached after 1 to 1.5 h.

metabolism:
Even before the absorption a small proportion of ethanol is enzymatically metabolized in the stomach (alcohol dehydrogenase). After absorption ethanol is preferably metabolized in the liver (92-95%) and partly in the kidneys and lungs. Metabolism occurs usually in three steps: 1. oxidation of ethanol to acetaldehyde; 2. oxidation of acetaldehyde to acetate; 3. oxidation of acetate to carbon dioxide and water

elimination:
The vast majority of ethanol is eliminated by metabolism, the excretion via breath, urine and sweat plays a minor role. The maximum elimination of ethanol is estimated on the 127 mg / kgbw / h.

**Acute toxicity**

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

**ATEmix calculated**

ATE (oral) > 2000 mg/kg; ATE (dermal) > 2000 mg/kg; ATE (inhalation vapour) > 20 mg/l; ATE (inhalation dust/mist) > 5 mg/l

| CAS No | Chemical name | | | | |
|---|---|---|---|---|---|
| | Exposure route | Dose | Species | Source | Method |
| 64-17-5 | Ethanol, ethyl alcohol | | | | |
| | oral | LD50 >5000 mg/kg | Rat | ECHA Dossier | |
| | inhalation (4 h) vapour | LC50 124,7 mg/l | Rat | ECHA Dossier | |
| 78-93-3 | butanone; ethyl methyl ketone | | | | |
| | oral | LD50 >2000 mg/kg | Rat | ECHA Dossier | |
| | dermal | LD50 >2000 mg/kg | Rabbit | ECHA Dossier | |

**Irritation and corrosivity**

Causes serious eye irritation.
Skin corrosion/irritation: Based on available data, the classification criteria are not met.

Ethanol.: Specific concentration limit (SCL): Eye Irrit. 2 > 50%

**Sensitising effects**

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

**Carcinogenic/mutagenic/toxic effects for reproduction**

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

Ethanol. (CAS-No.: 64-17-5):
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

butanone; ethyl methyl ketone (CAS-No.: 78-93-3):
In-vitro mutagenicity: Method: OECD Guideline 471 (Bacterial Reverse Mutation Assay); Result: negative.; Literature information: ECHA Dossier; Reproductive toxicity: (read-across); Method: OECD Guideline 416 (Two-Generation Reproduction Toxicity Study); Species: Rat.; Results: NOAEL = 1644 mg/kg; Literature information: ECHA Dossier; Developmental toxicity/teratogenicity: Method: OECD Guideline 414 (Prenatal Developmental Toxicity Study); Species: Rat.; Results: NOAEC = 1002 ppm; 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. (CAS-No.: 64-17-5):
Subchronic oral toxicity: Exposure time: 90d; Species: Sprague-Dawley Rat. Method: OECD Guideline 408; Result: NOAEL = 1280 mg/kg; Literature information: ECHA Dossier

butanone; ethyl methyl ketone (CAS-No.: 78-93-3):
Subchronic inhalation toxicity: Method: OECD Guideline 413 (Subchronic Inhalation Toxicity: 90-Day); Species: Rat. ; Exposure duration: 90 d. Result: NOAEC = 5014 ppm ; 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

## 11.2. Information on other hazards

**Endocrine disrupting properties**

Endocrine disrupting properties: butanone; ethyl methyl ketone.

**Other information**

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

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

Ethanol. (CAS-No.: 64-17-5):

Acute plant toxicity: EC50 (6d) = 11800 mg/l (Allium cepa, non-guideline study)

| CAS No | Chemical name | | | | | | |
|---|---|---|---|---|---|---|---|
| | Aquatic toxicity | Dose | | [h] \| [d] | Species | Source | Method |
| 64-17-5 | Ethanol, ethyl alcohol | | | | | | |
| | Acute fish toxicity | LC50 | 14200 mg/l | 96 h | Pimephales promelas | ECHA Dossier | |
| | Acute algae toxicity | ErC50 | 275 mg/l | 72 h | Chlorella vulgaris | ECHA Dossier | |
| | Acute crustacea toxicity | EC50 | 5012 mg/l | 48 h | Ceriodaphnia dubia | ECHA Dossier | |
| | Crustacea toxicity | NOEC | 9,6 mg/l | 9 d | Daphnia magna | ECHA Dossier | |
| 78-93-3 | butanone; ethyl methyl ketone | | | | | | |
| | Acute fish toxicity | LC50 | 1656 mg/l | 96 h | Pimephales promelas | ECHA Dossier | |
| | Acute algae toxicity | ErC50 | 1982 mg/l | 72 h | Pseudokirchnerella subcapitata | ECHA Dossier | |
| | Acute crustacea toxicity | EC50 | 308 mg/l | 48 h | Daphnia magna | ECHA Dossier | |
| | Acute bacteria toxicity | (EC50 | 1150 mg/l) | | Pseudomonas putida (16h) | ECHA Dossier | |

## 12.2. Persistence and degradability

Ethanol. (CAS-No.: 64-17-5):

Chemical Oyxgen Demand (COD): CSB = 1900 mg/g

Biochemical oxygen demand (BOD): BSB5 = 1000 mg/g

Abiotic degradation in water: Hydrolysis t 1/2 (20°C, pH 7) = >1 - <36 a.

Abiotic degradation in Air t 1/2 (Air.) = 38 d; 1/2 (Air. 100 ppm NO2) = 11,5 h

| CAS No | Chemical name | | | |
|---|---|---|---|---|
| | Method | Value | d | Source |
| | Evaluation | | | |
| 64-17-5 | Ethanol, ethyl alcohol | | | |
| | other guideline: - | 84% | 20 | ECHA Dossier |
| | Biodegradable. | | | |
| 78-93-3 | butanone; ethyl methyl ketone | | | |
| | OECD 301D/ EEC 92/69/V, C.4-E | 98% | 28 | ECHA Dossier |
| | Readily biodegradable (according to OECD criteria). | | | |

## 12.3. Bioaccumulative potential

No indication of bioaccumulation potential.

**Partition coefficient n-octanol/water**

| CAS No | Chemical name | Log Pow |
|---|---|---|
| 64-17-5 | Ethanol, ethyl alcohol | -0,35 |
| 78-93-3 | butanone; ethyl methyl ketone | 0,29 |

### 12.4. Mobility in soil

Ethanol. (CAS-No.: 64-17-5):
Volatility Henry constant: 3,3*10-6 atm. m3/mol;dimension less 1,28*10-4 (Calculation method.)
Distribution: Calculation according to: Mackay, EPIWIN: Air. 45,0%; Water. 33,1%; soil: 13,7%; sediment: 0,1%

### 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.
The aforementioned statement applies to substances contained in the product with a minimum content of 0.1%.

### 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.
The aforementioned statement applies to substances contained in the product with a minimum content of 0.1%.

### 12.7. 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

**Disposal recommendations**

Dispose of waste according to applicable legislation. Consult the local waste disposal expert about waste disposal. Non-contaminated packages may be recycled. According to (EWC) European Waste Catalogue, 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 (EWC) European Waste Catalogue:

**List of Wastes Code - 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

**List of Wastes Code - 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

**List of Wastes Code - 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)**

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


Marine pollutant: YES
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 or ID number:** UN 1170
**14.2. UN proper shipping name:** ETHYL ALCOHOL
**14.3. Transport hazard class(es):** 3
**14.4. Packing group:** II
Hazard label: 3

| | | |
|---|---|---|
| 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 chapter 6 - 8

### 14.7. Maritime transport in bulk according to IMO instruments

not relevant

## SECTION 15: Regulatory information

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

**EU regulatory information**

Restrictions on use (REACH, annex XVII):

Entry 3, Entry 40, Entry 75

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

**Additional information**

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (amended by Regulation (EU) No 2020/878)
The mixture is classified as hazardous according to regulation (EC) No 1272/2008 [CLP].
REACH 1907/2006 Appendix XVII, No (mixture): 3, 40

**National regulatory information**

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

### 15.2. Chemical safety assessment

For the following substances of this mixture a chemical safety assessment has been carried out:
Ethanol, ethyl alcohol
butanone; ethyl methyl ketone

## SECTION 16: Other information

**Changes**

09.10.2012 Rev.1,0, Neuerstellung
13.02.2015 Rev. 1,1, Änderungen in Kapitel: 2, 3, 4, 6, 8 - 16
06.03.2020 Rev. 2,0, Änderungen in Kapitel: 1 - 16.
31.05.2023 Rev. 3,0; Changes in chapter: 1 - 16.

**Abbreviations and acronyms**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
CAS: Chemical Abstracts Service
CLP: Classification, Labelling and Packaging of substances and mixtures
DNEL: Derived No Effect Level

d: day(s)
EINECS: European INventory of Existing Commercial chemical Substances
ELINCS: European LIst of Notified Chemical Substances
ECHA: European Chemicals Agency
EWC: European Waste Catalogue
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)
h: hour
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 concentration
NLP: No-Longer Polymers
N/A: not applicable
OECD: Organisation for Economic Co-operation and Development
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 )
REACH: Registration, Evaluation, Authorisation of Chemicals
SVHC: substance of very high concern
TRGS: Technische Regeln für Gefahrstoffe
UN: United Nations
VOC: Volatile Organic Compounds
WGK: Water Hazard Class (Germany)

**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 |
| Eye Irrit. 2; H319 | Calculation method |

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

| | |
|---|---|
| H225 | Highly flammable liquid and vapour. |
| H319 | Causes serious eye irritation. |
| H336 | May cause drowsiness or dizziness. |
| EUH066 | Repeated exposure may cause skin dryness or cracking. |

**Further Information**

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

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