

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Version 6.5

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GENERIC EU MSDS - NO COUNTRY SPECIFIC DATA - NO OEL DATA

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

### 1.1 Product identifiers

Product name : Ethyl acetate

Product Number : PHR1481

Brand : Sigma-Aldrich

Index-No. : 607-022-00-5

REACH No. : 01-2119475103-46-XXXX

CAS-No. : 141-78-6

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

Identified uses : Laboratory chemicals, Manufacture of substances

### 1.3

CHEMIKART

### 1.4 Emergency telephone

Emergency Phone # : 000 800 1007 141 (CHEMTREC)

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

Flammable liquids, (Category 2) H225: Highly flammable liquid and vapor.

Eye irritation, (Category 2) H319: Causes serious eye irritation.

Specific target organ toxicity -  
single exposure, (Category 3),  
Central nervous system H336: May cause drowsiness or dizziness.

## 2.2 Label elements

### Labelling according Regulation (EC) No 1272/2008

#### Pictogram

|                                      |                                                                                                                                  |
|--------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| Signal Word                          | Danger                                                                                                                           |
| Hazard Statements                    |                                                                                                                                  |
| H225                                 | Highly flammable liquid and vapor.                                                                                               |
| H319                                 | Causes serious eye irritation.                                                                                                   |
| H336                                 | May cause drowsiness or dizziness.                                                                                               |
| Precautionary Statements             |                                                                                                                                  |
| P210                                 | Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.                                   |
| P233                                 | Keep container tightly closed.                                                                                                   |
| P240                                 | Ground and bond container and receiving equipment.                                                                               |
| P241                                 | Use explosion-proof electrical/ ventilating/ lighting/ equipment.                                                                |
| P242                                 | Use non-sparking tools.                                                                                                          |
| P305 + P351 + P338                   | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| Supplemental Hazard information (EU) |                                                                                                                                  |
| EUH066                               | Repeated exposure may cause skin dryness or cracking.                                                                            |

### Reduced Labeling (<= 125 ml)

#### Pictogram

|                                      |                                                       |
|--------------------------------------|-------------------------------------------------------|
| Signal Word                          | Danger                                                |
| Hazard Statements                    | none                                                  |
| Precautionary Statements             | none                                                  |
| Supplemental Hazard information (EU) |                                                       |
| EUH066                               | Repeated exposure may cause skin dryness or cracking. |

## 2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

#### Ecological information:

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

#### Toxicological information:

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

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## SECTION 3: Composition/information on ingredients

### 3.1 Substances

Formula : C<sub>4</sub>H<sub>8</sub>O<sub>2</sub>  
Molecular weight : 88,11 g/mol  
CAS-No. : 141-78-6  
EC-No. : 205-500-4  
Index-No. : 607-022-00-5

| Component            |              | Classification                                                                                                   | Concentration |
|----------------------|--------------|------------------------------------------------------------------------------------------------------------------|---------------|
| <b>ethyl acetate</b> |              |                                                                                                                  |               |
| CAS-No.              | 141-78-6     | Flam. Liq. 2; Eye Irrit. 2;<br>STOT SE 3; H225, H319,<br>H336<br>Concentration limits:<br>20 %: STOT SE 3, H336; | <= 100 %      |
| EC-No.               | 205-500-4    |                                                                                                                  |               |
| Index-No.            | 607-022-00-5 |                                                                                                                  |               |

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

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## SECTION 4: First aid measures

### 4.1 Description of first-aid measures

#### General advice

Show this material safety data sheet to the doctor in attendance.

#### If inhaled

After inhalation: fresh air. Call in physician.

#### In case of skin contact

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

#### In case of eye contact

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

#### If swallowed

After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

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

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

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

No data available

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## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

#### Suitable extinguishing media

Carbon dioxide (CO<sub>2</sub>) Foam 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**

Carbon oxides

Combustible.

Pay attention to flashback.

Vapors are heavier than air and may spread along floors.

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

Forms explosive mixtures with air at ambient temperatures.

**5.3 Advice for firefighters**

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

**5.4 Further information**

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

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**SECTION 6: Accidental release measures****6.1 Personal precautions, protective equipment and emergency procedures**

Advice for non-emergency personnel: Do not breathe vapors, 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.

For personal protection 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. Chemisorb® ).

Dispose of properly. Clean up affected area.

**6.4 Reference to other sections**

For disposal see section 13.

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**SECTION 7: Handling and storage****7.1 Precautions for safe handling****Advice on safe handling**

Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols.

**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. Preventive skin protection recommended. Wash hands after working with substance.

For precautions see section 2.2.

## 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.

Store at Room Temperature.

### Storage class

Storage class (TRGS 510): 3: Flammable liquids

## 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

#### Ingredients with workplace control parameters

##### Derived No Effect Level (DNEL)

| Application Area | Routes of exposure | Health effect                               | Value                  |
|------------------|--------------------|---------------------------------------------|------------------------|
| Workers          | Inhalation         | Acute systemic effects                      | 1468 mg/m <sup>3</sup> |
| Workers          | Inhalation         | Acute local effects                         | 1468 mg/m <sup>3</sup> |
| Workers          | Skin contact       | Long-term systemic effects                  | 63mg/kg BW/d           |
| Workers          | Inhalation         | Long-term systemic effects                  | 734 mg/m <sup>3</sup>  |
| Workers          | Inhalation         | Long-term local effects                     | 734 mg/m <sup>3</sup>  |
| Consumers        | Inhalation         | Acute local effects, Acute systemic effects | 734 mg/m <sup>3</sup>  |
| Consumers        | Skin contact       | Long-term systemic effects                  | 37mg/kg BW/d           |
| Consumers        | Inhalation         | Long-term systemic effects                  | 367 mg/m <sup>3</sup>  |
| Consumers        | Ingestion          | Long-term systemic effects                  | 4,5mg/kg BW/d          |
| Consumers        | Inhalation         | Long-term local effects                     | 367 mg/m <sup>3</sup>  |

##### Predicted No Effect Concentration (PNEC)

| Compartment          | Value       |
|----------------------|-------------|
| Soil                 | 0,24 mg/kg  |
| Sea water            | 0,026 mg/l  |
| Fresh water          | 0,26 mg/l   |
| Sea sediment         | 0,125 mg/kg |
| Fresh water sediment | 1,25 mg/kg  |

### 8.2 Exposure controls

#### Personal protective equipment

##### Eye/face protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses

**Skin protection**

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 EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

Splash contact

Material: butyl-rubber

Minimum layer thickness: 0,7 mm

Break through time: 120 min

Material tested: Butoject® (KCL 898)

**Body Protection**

Flame retardant antistatic protective clothing.

**Respiratory protection**

Recommended Filter type: Filter A (acc. to DIN 3181) for vapours of organic compounds

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.

**Control of environmental exposure**

Do not let product enter drains. Risk of explosion.

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

- |                                                 |                                                                     |
|-------------------------------------------------|---------------------------------------------------------------------|
| a) Physical state                               | clear, liquid                                                       |
| b) Color                                        | colorless                                                           |
| c) Odor                                         | fruity                                                              |
| d) Melting point/freezing point                 | Melting point/freezing point: -83 °C                                |
| e) Initial boiling point and boiling range      | 77,1 °C at 1.013 hPa                                                |
| f) Flammability (solid, gas)                    | No data available                                                   |
| g) Upper/lower flammability or explosive limits | Upper explosion limit: 11,5 %(V)<br>Lower explosion limit: 2,1 %(V) |
| h) Flash point                                  | -4 °C - closed cup                                                  |
| i) Autoignition temperature                     | No data available                                                   |
| j) Decomposition temperature                    | Distillable in an undecomposed state at normal pressure.            |
| k) pH                                           | No data available                                                   |

|                                              |                                                                                  |
|----------------------------------------------|----------------------------------------------------------------------------------|
| l) Viscosity                                 | Viscosity, kinematic: No data available<br>Viscosity, dynamic: No data available |
| m) Water solubility                          | No data available                                                                |
| n) Partition coefficient:<br>n-octanol/water | log Pow: 0,73 - Bioaccumulation is not expected., (Lit.)                         |
| o) Vapor pressure                            | No data available                                                                |
| p) Density                                   | 0,90 g/cm <sup>3</sup> at 20 °C                                                  |
| Relative density                             | No data available                                                                |
| q) Relative vapor<br>density                 | No data available                                                                |
| r) Particle<br>characteristics               | No data available                                                                |
| s) Explosive properties                      | No data available                                                                |
| t) Oxidizing properties                      | none                                                                             |

## 9.2 Other safety information

|                           |      |
|---------------------------|------|
| Relative vapor<br>density | 3,04 |
|---------------------------|------|

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## SECTION 10: Stability and reactivity

### 10.1 Reactivity

Vapors may form explosive mixture with air.

### 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:

Exothermic reaction with:

Fluorine

chlorosulfonic acid

Strong oxidizing agents

fuming sulfuric acid

Risk of explosion with:

lithium aluminium hydride

Alkali metals

hydrides

Alkaline earth metals

Violent reactions possible with:

Strong acids and strong bases

### 10.4 Conditions to avoid

Warming.

## 10.5 Incompatible materials

No data available

## 10.6 Hazardous decomposition products

In the event of fire: see section 5

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## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### Acute toxicity

LD50 Oral - Rat - 5.620 mg/kg

Remarks: (RTECS)

Inhalation: No data available

LD50 Dermal - Rabbit - male - > 20.000 mg/kg

Remarks: (ECHA)

#### Skin corrosion/irritation

Skin - Rabbit

Result: No skin irritation

Remarks: (IUCLID)

#### Serious eye damage/eye irritation

Remarks: Causes serious eye irritation.

Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

#### Respiratory or skin sensitization

Maximization Test - Guinea pig

Result: negative

(OECD Test Guideline 406)

#### Germ cell mutagenicity

Test Type: UDS (Unscheduled DNA synthesis assay)

Test system: Escherichia coli

Metabolic activation: with and without metabolic activation

Method: US-EPA

Result: negative

Test Type: Ames test

Test system: Salmonella typhimurium

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 471

Result: negative

Test Type: Chromosome aberration test in vitro

Test system: Chinese hamster ovary cells

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 473

Result: negative

Test Type: Micronucleus test

Species: Chinese hamster

Cell type: Red blood cells (erythrocytes)

Application Route: Oral

Method: OECD Test Guideline 474

Result: negative

**Carcinogenicity**

This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

**Reproductive toxicity**

No data available

**Specific target organ toxicity - single exposure**

May cause drowsiness or dizziness. - Central nervous system

Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

**Specific target organ toxicity - repeated exposure**

No data available

**Aspiration hazard**

No data available

**11.2 Additional Information****Endocrine disrupting properties****Product:**

Assessment

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Repeated dose toxicity - Rat - male and female - Oral - 92 Days - NOAEL (No observed adverse effect level) - 900 mg/kg - LOAEL (Lowest observed adverse effect level) - 3.600 mg/kg

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Inhalation of high concentrations may cause:, Headache, Drowsiness, Dizziness, Vomiting, narcosis, anemia, Central nervous system depression

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Kidney - Irregularities - Based on Human Evidence

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

|                      |                                                                                                        |
|----------------------|--------------------------------------------------------------------------------------------------------|
| Toxicity to fish     | flow-through test LC50 - Pimephales promelas (fathead minnow) - 230 mg/l - 96 h (US-EPA)               |
| Toxicity to algae    | static test NOEC - Desmodesmus subspicatus (green algae) - > 100 mg/l - 72 h (OECD Test Guideline 201) |
| Toxicity to bacteria | Remarks: (IUCLID)                                                                                      |

(ethyl acetate)

Toxicity to daphnia and other aquatic invertebrates(Chronic toxicity) semi-static test NOEC - Daphnia magna (Water flea) - 2,4 mg/l - 21 d (OECD Test Guideline 211)

## 12.2 Persistence and degradability

Biodegradability aerobic - Exposure time 20 d  
Result: ca.69 % - Readily biodegradable.  
Remarks: (ECHA)

Theoretical oxygen demand 1.820 mg/g  
Remarks: (Lit.)

## 12.3 Bioaccumulative potential

Bioaccumulation Leuciscus idus melanotus - 3 Days  
at 22,5 °C(ethyl acetate)

Bioconcentration factor (BCF): 30

## 12.4 Mobility in soil

No data available

## 12.5 Results of PBT and vPvB assessment

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

## 12.6 Endocrine disrupting properties

### Product:

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

## 12.7 Other adverse effects

No data available

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## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

No data available

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**SECTION 14: Transport information****14.1 UN number**

ADR/RID: 1173

IMDG: 1173

IATA: 1173

**14.2 UN proper shipping name**

ADR/RID: ETHYL ACETATE

IMDG: ETHYL ACETATE

IATA: Ethyl acetate

**14.3 Transport hazard class(es)**

ADR/RID: 3

IMDG: 3

IATA: 3

**14.4 Packaging group**

ADR/RID: II

IMDG: II

IATA: II

**14.5 Environmental hazards**

ADR/RID: no

IMDG Marine pollutant: no

IATA: no

**14.6 Special precautions for user**

Tunnel restriction code : (D/E)

Further information : No data available

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**SECTION 15: Regulatory information****15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.

**Authorisations and/or restrictions on use****National legislation**

Seveso III: Directive 2012/18/EU of the P5c FLAMMABLE LIQUIDS  
European Parliament and of the Council  
on the control of major-accident hazards  
involving dangerous substances.

**Other regulations**

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

**15.2 Chemical Safety Assessment**

A Chemical Safety Assessment has been carried out for this substance.

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**SECTION 16: Other information****Full text of H-Statements**

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

## Full text of other abbreviations

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

## Further information

The information is believed to be correct but is not exhaustive and will be used solely as a guideline, which is based on current knowledge of the chemical substance or mixture and is applicable to appropriate safety precautions for the product. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See [www.sigma-aldrich.com](http://www.sigma-aldrich.com) and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

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