

## SAFETY DATA SHEET

Version 6.13  
Revision Date 04/10/2023  
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**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1 Product identifiers**

Product name : Ethyl acetate

Product Number : 319902  
Brand : SIGALD  
Index-No. : 607-022-00-5  
CAS-No. : 141-78-6

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

Identified uses : Laboratory chemicals, Synthesis of substances

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

Company : Sigma-Aldrich Inc.  
3050 SPRUCE ST  
ST. LOUIS MO 63103  
UNITED STATES

Telephone : +1 314 771-5765  
Fax : +1 800 325-5052

**1.4 Emergency telephone**

Emergency Phone # : 800-424-9300 CHEMTREC (USA) +1-703-  
527-3887 CHEMTREC (International) 24  
Hours/day; 7 Days/week

**SECTION 2: Hazards identification****2.1 Classification of the substance or mixture****GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)**

Flammable liquids (Category 2), H225

Eye irritation (Category 2A), H319

Specific target organ toxicity - single exposure (Category 3), Central nervous system, H336

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

**2.2 GHS Label elements, including precautionary statements**

Pictogram



Signal Word

Danger

|                            |  |
|----------------------------|--|
| Hazard statement(s)        |  |
| H225                       | Highly flammable liquid and vapor.   |
| H319                       | Causes serious eye irritation.   |
| H336                       | May cause drowsiness or dizziness.   |
| Precautionary statement(s) |  |
| P210                       | Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking.  |
| P233                       | Keep container tightly closed.   |
| P240                       | Ground/bond container and receiving equipment.   |
| P241                       | Use explosion-proof electrical/ ventilating/ lighting/ equipment.  |
| P242                       | Use only non-sparking tools.   |
| P243                       | Take precautionary measures against static discharge.  |
| P261                       | Avoid breathing mist or vapors.  |
| P264                       | Wash skin thoroughly after handling.   |
| P271                       | Use only outdoors or in a well-ventilated area.  |
| P280                       | Wear protective gloves/ eye protection/ face protection.   |
| P303 + P361 + P353         | IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.                             |
| P304 + P340 + P312         | IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.      |
| P305 + P351 + P338         | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| P337 + P313                | If eye irritation persists: Get medical advice/ attention.   |
| P370 + P378                | In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.   |
| P403 + P233                | Store in a well-ventilated place. Keep container tightly closed.   |
| P403 + P235                | Store in a well-ventilated place. Keep cool.   |
| P405                       | Store locked up.   |
| P501                       | Dispose of contents/ container to an approved waste disposal plant.  |

### 2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

Repeated exposure may cause skin dryness or cracking.

## 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> |   |               |
|                      | Flam. Liq. 2; Eye Irrit. 2A; STOT SE 3; H225, H319, H336<br>Concentration limits:<br>20 %: STOT SE 3, H336; | <= 100 %      |

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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.

#### **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

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## **SECTION 8: Exposure controls/personal protection**

### **8.1 Control parameters**

#### **Ingredients with workplace control parameters**

| Component     | CAS-No.  | Value | Control parameters                 | Basis   |
|---------------|----------|-------|------------------------------------|---|
| ethyl acetate | 141-78-6 | TWA   | 400 ppm                            | USA. ACGIH Threshold Limit Values (TLV)   |
|               |          | TWA   | 400 ppm<br>1,400 mg/m <sup>3</sup> | USA. NIOSH Recommended Exposure Limits  |
|               |          | TWA   | 400 ppm<br>1,400 mg/m <sup>3</sup> | USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants        |
|               |          | PEL   | 400 ppm<br>1,400 mg/m <sup>3</sup> | California permissible exposure limits for chemical contaminants (Title 8, Article 107) |

#### 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

### Appropriate engineering controls

Change contaminated clothing. Preventive skin protection recommended. Wash hands after working with substance.

### 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 EN374 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**

required when vapours/aerosols are generated. Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

#### **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) Appearance                                   | Form: clear, liquid<br>Color: colorless                             |
| b) Odor   | fruity  |
| c) Odor Threshold                               | 0.1 ppm   |
| d) pH   | No data available   |
| e) Melting point/freezing point                 | Melting point/freezing point: -83 °C (-117 °F)                      |
| f) Initial boiling point and boiling range      | 77.1 °C 170.8 °F at 1,013 hPa                                       |
| g) Flash point                                  | -4 °C (25 °F) - closed cup  |
| h) Evaporation rate                             | No data available   |
| i) Flammability (solid, gas)                    | No data available   |
| j) Upper/lower flammability or explosive limits | Upper explosion limit: 11.5 %(V)<br>Lower explosion limit: 2.1 %(V) |
| k) Vapor pressure                               | No data available   |
| l) Vapor density                                | 3.04  |
| m) Density                                      | 0.90 g/cm <sup>3</sup> at 20 °C (68 °F)                             |
| Relative density                                | No data available   |
| n) Water solubility                             | No data available   |
| o) Partition coefficient: n-octanol/water       | log Pow: 0.73 - Bioaccumulation is not expected., (Lit.)            |
| p) Autoignition temperature                     | No data available   |

- |                              |  |
|------------------------------|--|
| q) Decomposition temperature | Distillable in an undecomposed state at normal pressure. |
| r) Viscosity                 | No data available  |
| s) Explosive properties      | No data available  |
| t) Oxidizing properties      | none   |

## 9.2 Other safety information

|                        |      |
|------------------------|------|
| Relative vapor 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)

No data available

#### **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.

IARC: No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

#### **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**

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

RTECS: AH5425000

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

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)

#### 12.4 Mobility in soil

No data available

#### 12.5 Results of PBT and vPvB assessment

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

#### 12.6 Endocrine disrupting properties

No data available

#### 12.7 Other adverse effects

No data available

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### SECTION 13: Disposal considerations

#### 13.1 Waste treatment methods

##### Product

Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself. See [www.retrologistik.com](http://www.retrologistik.com) for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

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### SECTION 14: Transport information

#### DOT (US)

UN number: 1173    Class: 3    Packing group: II  
Proper shipping name: Ethyl acetate  
Reportable Quantity (RQ): 5000 lbs  
Poison Inhalation Hazard: No

#### IMDG

UN number: 1173    Class: 3    Packing group: II    EMS-No: F-E, S-D  
Proper shipping name: ETHYL ACETATE

#### IATA

UN number: 1173    Class: 3    Packing group: II  
Proper shipping name: Ethyl acetate

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### SECTION 15: Regulatory information

#### SARA 302 Components

This material does not contain any components with a section 302 EHS TPQ.

#### SARA 313 Components

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

#### SARA 311/312 Hazards

Fire Hazard, Acute Health Hazard, Chronic Health Hazard

## Massachusetts Right To Know Components

|               |                     |                             |
|---------------|---------------------|-----------------------------|
| ethyl acetate | CAS-No.<br>141-78-6 | Revision Date<br>1993-02-16 |
|---------------|---------------------|-----------------------------|

## Pennsylvania Right To Know Components

|               |                     |                             |
|---------------|---------------------|-----------------------------|
| ethyl acetate | CAS-No.<br>141-78-6 | Revision Date<br>1993-02-16 |
|---------------|---------------------|-----------------------------|

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## SECTION 16: Other information

### Further information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. 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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