

### 1. PRODUCT AND COMPANY IDENTIFICATION

#### 1.1 Product identifiers

Product name : Ethyl acetate

Product Number : 319902  
Brand : Sigma-Aldrich  
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  
3050 Spruce Street  
SAINT LOUIS MO 63103  
USA

Telephone : +1 800-325-5832  
Fax : +1 800-325-5052

#### 1.4 Emergency telephone number

Emergency Phone # : +1-703-527-3887 (CHEMTREC)

### 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 vapour.  
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 dust/ fume/ gas/ mist/ vapours/ spray.   |
| 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.<br>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.

## 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                                 |
| Registration number | : 01-2119475103-46-XXXX                        |

#### Hazardous components

| Component            | Classification   | Concentration |
|----------------------|--|---------------|
| <b>Ethyl acetate</b> |  |               |
|                      | Flam. Liq. 2; Eye Irrit. 2A;<br>STOT SE 3; H225, H319,<br>H336 | <= 100 %      |

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

## 4. FIRST AID MEASURES

### 4.1 Description of first aid measures

#### General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

#### If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

#### In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

#### In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

#### If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. 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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### 5. FIREFIGHTING MEASURES

#### 5.1 Extinguishing media

##### Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

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

No data available

#### 5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

#### 5.4 Further information

Use water spray to cool unopened containers.

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### 6. ACCIDENTAL RELEASE MEASURES

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

Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

For personal protection see section 8.

#### 6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

#### 6.3 Methods and materials for containment and cleaning up

Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

#### 6.4 Reference to other sections

For disposal see section 13.

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### 7. HANDLING AND STORAGE

#### 7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

Use explosion-proof equipment. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

For precautions see section 2.2.

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

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

#### 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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### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### 8.1 Control parameters

##### Components with workplace control parameters

| Component     | CAS-No.  | Value  | Control parameters | Basis                                   |
|---------------|----------|--|--------------------|---|
| Ethyl acetate | 141-78-6 | TWA  | 400.000000 ppm     | USA. ACGIH Threshold Limit Values (TLV) |
|               | Remarks  | Upper Respiratory Tract irritation<br>Eye irritation |                    |   |

|  |  |  |                                      |   |
|--|--|--|--------------------------------------|---|
|  |  | TWA  | 400.000000 ppm<br>1,400.000000 mg/m3 | USA. NIOSH Recommended Exposure Limits  |
|  |  | TWA  | 400.000000 ppm<br>1,400.000000 mg/m3 | USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants        |
|  |  | The value in mg/m3 is approximate.                   |                                      |   |
|  |  | TWA  | 400 ppm                              | USA. ACGIH Threshold Limit Values (TLV)   |
|  |  | Upper Respiratory Tract irritation<br>Eye irritation |                                      |   |
|  |  | TWA  | 400 ppm<br>1,400 mg/m3               | USA. NIOSH Recommended Exposure Limits  |
|  |  | TWA  | 400 ppm<br>1,400 mg/m3               | USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants        |
|  |  | The value in mg/m3 is approximate.                   |                                      |   |
|  |  | PEL  | 400 ppm<br>1,400 mg/m3               | California permissible exposure limits for chemical contaminants (Title 8, Article 107) |

### Derived No Effect Level (DNEL)

| Application Area | Exposure routes | Health effect                               | Value         |
|------------------|-----------------|---|---------------|
| Workers          | Inhalation      | Acute systemic effects                      | 1468 mg/m3    |
| Workers          | Inhalation      | Acute local effects                         | 1468 mg/m3    |
| Workers          | Skin contact    | Long-term systemic effects                  | 63mg/kg BW/d  |
| Workers          | Inhalation      | Long-term systemic effects                  | 734 mg/m3     |
| Workers          | Inhalation      | Long-term local effects                     | 734 mg/m3     |
| Consumers        | Inhalation      | Acute local effects, Acute systemic effects | 734 mg/m3     |
| Consumers        | Skin contact    | Long-term systemic effects                  | 37mg/kg BW/d  |
| Consumers        | Inhalation      | Long-term systemic effects                  | 367 mg/m3     |
| Consumers        | Ingestion       | Long-term systemic effects                  | 4.5mg/kg BW/d |
| Consumers        | Inhalation      | Long-term local effects                     | 367 mg/m3     |

### Predicted No Effect Concentration (PNEC)

| Compartment          | Value       |
|----------------------|-------------|
| Soil                 | 0.24 mg/kg  |
| Marine water         | 0.026 mg/l  |
| Fresh water          | 0.26 mg/l   |
| Marine sediment      | 0.125 mg/kg |
| Fresh water sediment | 1.25 mg/kg  |

## 8.2 Exposure controls

### Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

### Personal protective equipment

#### Eye/face protection

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

### Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Splash contact

Material: butyl-rubber

Minimum layer thickness: 0.3 mm

Break through time: 113 min

Material tested: Butoject® (KCL 897 / Aldrich Z677647, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

### Body Protection

Impervious clothing, Flame retardant antistatic protective clothing., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

### Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

### Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

- |   |   |
|---|---|
| a) Appearance                                   | Form: clear, liquid<br>Colour: colourless                           |
| b) Odour  | No data available   |
| c) Odour Threshold                              | No data available   |
| d) pH   | No data available   |
| e) Melting point/freezing point                 | Melting point/range: 84 °C (183 °F) - lit.                          |
| f) Initial boiling point and boiling range      | 76.5 - 77.5 °C (169.7 - 171.5 °F) - lit.                            |
| g) Flash point                                  | -3.0 °C (26.6 °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: 2.2 %(V) |
| k) Vapour pressure                              | 97.3 hPa (73.0 mmHg) at 20.0 °C (68.0 °F)                           |
| l) Vapour density                               | No data available   |
| m) Relative density                             | 0.90 g/cm <sup>3</sup> at 20 °C (68 °F)                             |
| n) Water solubility                             | soluble   |
| o) Partition coefficient: n-octanol/water       | log Pow: 0.73   |
| p) Auto-ignition                                | 427.0 °C (800.6 °F)   |

- temperature
- q) Decomposition temperature No data available
- r) Viscosity No data available
- s) Explosive properties No data available
- t) Oxidizing properties No data available

## 9.2 Other safety information

Surface tension 24.0 mN/m at 20.0 °C (68.0 °F)

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## 10. STABILITY AND REACTIVITY

### 10.1 Reactivity

No data available

### 10.2 Chemical stability

Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

Vapours may form explosive mixture with air.

### 10.4 Conditions to avoid

Heat, flames and sparks.

### 10.5 Incompatible materials

Strong oxidizing agents

### 10.6 Hazardous decomposition products

Other decomposition products - No data available

Hazardous decomposition products formed under fire conditions. - Carbon oxides

In the event of fire: see section 5

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## 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

#### Acute toxicity

LD50 Oral - Rat - 5,620 mg/kg

LC50 Inhalation - Mouse - 2 h - 45,000 mg/m<sup>3</sup>

LD50 Dermal - Rabbit - > 18,000 mg/kg

No data available

#### Skin corrosion/irritation

Skin - Rabbit

Result: Mild skin irritation

(OECD Test Guideline 404)

#### Serious eye damage/eye irritation

#### Respiratory or skin sensitisation

No data available

#### Germ cell mutagenicity

No data available

#### 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 component 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 component 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 identified as a carcinogen or potential carcinogen by OSHA.

**Reproductive toxicity**

No data available

No data available

**Specific target organ toxicity - single exposure**

May cause drowsiness or dizziness.

**Specific target organ toxicity - repeated exposure**

No data available

**Aspiration hazard**

No data available

**Additional Information**

RTECS: AH5425000

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

Kidney - Irregularities - Based on Human Evidence

Kidney - Irregularities - Based on Human Evidence

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**12. ECOLOGICAL INFORMATION**

**12.1 Toxicity**

Toxicity to fish LC50 - Oncorhynchus mykiss (rainbow trout) - 350.00 - 600.00 mg/l - 96 h

LC50 - Pimephales promelas (fathead minnow) - 220.00 - 250.00 mg/l - 96 h

Toxicity to daphnia and other aquatic invertebrates EC50 - Daphnia magna (Water flea) - 2,300.00 - 3,090.00 mg/l - 24 h

LC50 - Daphnia magna (Water flea) - 560 mg/l - 48 h

Toxicity to algae EC50 - Algae - 4,300.00 mg/l - 24 h

EC50 - SELENASTRUM - 1,800.00 - 3,200.00 mg/l - 72 h

**12.2 Persistence and degradability**

Biodegradability Result: 79 % - Readily biodegradable (OECD Test Guideline 301D)

**12.3 Bioaccumulative potential**

Bioaccumulation - 3 d

Bioconcentration factor (BCF): 30

**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 Other adverse effects**

No data available

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## 13. DISPOSAL CONSIDERATIONS

### 13.1 Waste treatment methods

#### Product

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

#### Contaminated packaging

Dispose of as unused product.

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## 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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## 15. REGULATORY INFORMATION

### SARA 302 Components

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

### 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

|               | CAS-No.  | Revision Date |
|---------------|----------|---------------|
| Ethyl acetate | 141-78-6 | 1993-04-24    |

### Pennsylvania Right To Know Components

|               | CAS-No.  | Revision Date |
|---------------|----------|---------------|
| Ethyl acetate | 141-78-6 | 1993-04-24    |

### New Jersey Right To Know Components

|               | CAS-No.  | Revision Date |
|---------------|----------|---------------|
| Ethyl acetate | 141-78-6 | 1993-04-24    |

### California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

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## 16. OTHER INFORMATION

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

|            |                   |
|------------|-------------------|
| Eye Irrit. | Eye irritation    |
| Flam. Liq. | Flammable liquids |



H225 Highly flammable liquid and vapour.  
H319 Causes serious eye irritation.  
H336 May cause drowsiness or dizziness.  
STOT SE Specific target organ toxicity - single exposure

**HMIS Rating**

Health hazard: 2  
Chronic Health Hazard: \*  
Flammability: 3  
Physical Hazard 0

**NFPA Rating**

Health hazard: 2  
Fire Hazard: 3  
Reactivity Hazard: 0

**Further information**

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**Preparation Information**

Sigma-Aldrich Corporation  
Product Safety – Americas Region  
1-800-521-8956

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