



## Safety Data Sheet

acc. to OSHA HCS

Printing date 10/08/2021

Revision date 10/08/2021

### 1 Identification

- **Product identifier**
- **Trade name:** 8(Z)-Eicosenoic Acid methyl ester
- **Article number:** 35428
- **CAS Number:**  
64-17-5
- **EC number:**  
200-578-6
- **Index number:**  
603-002-00-5
- **Application of the substance / the mixture**  
This product is for research use - Not for human or veterinary diagnostic or therapeutic use. It is the responsibility of the purchaser to determine suitability for other applications.
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
Cayman Chemical Co.  
1180 E. Ellsworth Rd.  
Ann Arbor, MI 48108  
USA
- **Information department:** Product safety department
- **Emergency telephone number:**  
During normal opening times: +1 (734) 971-3335  
US/CANADA: 800-424-9300  
Outside US/CANADA: 703-741-5970

### 2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS02 Flame

Flam. Liq. 2 H225 Highly flammable liquid and vapor.



GHS08 Health hazard

Carc. 1A H350 May cause cancer.

- **Label elements**
- **GHS label elements**

The substance is classified and labeled according to the Globally Harmonized System (GHS).

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- **Hazard pictograms**



GHS02 GHS08

- **Signal word** Danger

- **Hazard-determining components of labeling:**

ethanol

- **Hazard statements**

H225 Highly flammable liquid and vapor.

H350 May cause cancer.

- **Precautionary statements**

- P201 Obtain special instructions before use.  
 P202 Do not handle until all safety precautions have been read and understood.  
 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.  
 P280 Wear protective gloves/protective clothing/eye protection/face protection.  
 P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.  
 P308+P313 IF exposed or concerned: Get medical advice/attention.  
 P370+P378 In case of fire: Use CO2, powder or water spray to extinguish.  
 P403+P235 Store in a well-ventilated place. Keep cool.  
 P405 Store locked up.  
 P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

- **Classification system:**

- **NFPA ratings (scale 0 - 4)**



Health = 0  
 Fire = 3  
 Reactivity = 0

- **HMIS-ratings (scale 0 - 4)**



Health = \*0  
 Fire = 3  
 Reactivity = 0

- **Other hazards**

- **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.

- **vPvB:** Not applicable.

## 3 Composition/information on ingredients

- **Chemical characterization: Substances**

- **CAS No. Description**

64-17-5 ethanol

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- **Identification number(s)**
- **EC number:** 200-578-6
- **Index number:** 603-002-00-5

## 4 First-aid measures

- **Description of first aid measures**
- **General information:** Immediately remove any clothing soiled by the product.
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:** Immediately rinse with water.
- **After eye contact:** Rinse opened eye for several minutes under running water.
- **After swallowing:** If symptoms persist consult doctor.
- **Information for doctor:**
- **Most important symptoms and effects, both acute and delayed**  
May cause anemia, cough, CNS depression, drowsiness, headache, heart damage, lassitude (weakness, exhaustion), liver damage, narcosis, reproductive effects, teratogenic effects.
- **Indication of any immediate medical attention and special treatment needed**  
No further relevant information available.

## 5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**  
CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** No special measures required.

## 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**  
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:**  
Dilute with plenty of water.  
Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
Dispose contaminated material as waste according to item 13.  
Ensure adequate ventilation.
- **Reference to other sections**  
See Section 7 for information on safe handling.  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.
- **Protective Action Criteria for Chemicals**

|                 |           |
|-----------------|-----------|
| <b>· PAC-1:</b> |           |
|                 | 1,800 ppm |

|                 |           |
|-----------------|-----------|
| <b>· PAC-2:</b> |           |
|                 | 3300* ppm |

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· PAC-3:

15000\* ppm

## 7 Handling and storage

- **Handling:**
- **Precautions for safe handling**  
Ensure good ventilation/exhaustion at the workplace.  
Open and handle receptacle with care.
- **Information about protection against explosions and fires:**  
Keep ignition sources away - Do not smoke.  
Protect against electrostatic charges.  
Keep respiratory protective device available.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** Store in a cool location.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**  
Keep receptacle tightly sealed.  
Store in cool, dry conditions in well sealed receptacles.
- **Specific end use(s)** No further relevant information available.

## 8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
- **Control parameters**

· **Components with limit values that require monitoring at the workplace:**

### 64-17-5 ethanol

|     |  |
|-----|--|
| PEL | Long-term value: 1900 mg/m <sup>3</sup> , 1000 ppm |
| REL | Long-term value: 1900 mg/m <sup>3</sup> , 1000 ppm |
| TLV | Short-term value: 1000 ppm                         |
| A3  |  |

- **Additional information:** The lists that were valid during the creation were used as basis.
- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**  
Keep away from foodstuffs, beverages and feed.  
Immediately remove all soiled and contaminated clothing.  
Wash hands before breaks and at the end of work.  
Store protective clothing separately.
- **Breathing equipment:**  
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.
- **Protection of hands:**



Protective gloves

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The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

- **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

- **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

- **Eye protection:**



Tightly sealed goggles

## 9 Physical and chemical properties

- **Information on basic physical and chemical properties**

- **General Information**

- **Appearance:**

|                           |  |
|---------------------------|--|
| <b>Form:</b>              | Fluid  |
| <b>Color:</b>             | Colorless                                      |
| <b>Odor:</b>              | Alcohol-like                                   |
| <b>Structural Formula</b> | C <sub>21</sub> H <sub>40</sub> O <sub>2</sub> |
| <b>Molecular Weight</b>   | 324.5 g/mol                                    |
| <b>Odor threshold:</b>    | Not determined.                                |
| <b>Formulation</b>        | Solution in EtOH                               |

- **pH-value:** Not determined.

- **Change in condition**

|                                     |                       |
|-------------------------------------|-----------------------|
| <b>Melting point/Melting range:</b> | -114.5 °C (-174.1 °F) |
| <b>Boiling point/Boiling range:</b> | 78 °C (172.4 °F)      |

- **Flash point:** 13 °C (55.4 °F)

- **Flammability (solid, gaseous):** Not applicable.

- **Ignition temperature:** 425 °C (797 °F)

- **Decomposition temperature:** Not determined.

- **Auto igniting:** Not determined.

- **Danger of explosion:** Product is not explosive. However, formation of explosive air/vapor mixtures are possible.

- **Explosion limits:**

|               |           |
|---------------|-----------|
| <b>Lower:</b> | 3.5 Vol % |
| <b>Upper:</b> | 15 Vol %  |

- **Vapor pressure at 20 °C (68 °F):** 59 hPa (44.3 mm Hg)

- **Density at 20 °C (68 °F):** 0.79 g/cm<sup>3</sup> (6.59255 lbs/gal)

- **Relative density** Not determined.

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|   |  |
|---|--|
| · Vapor density   | Not determined.                            |
| · Evaporation rate  | Not determined.                            |
| · Solubility in / Miscibility with<br>Water at 20 °C (68 °F): | 1,000 g/l                                  |
| · Partition coefficient (n-octanol/water):                    | Not determined.                            |
| · Viscosity:  |  |
| Dynamic at 20 °C (68 °F):                                     | 1.2 mPas                                   |
| Kinematic:  | Not determined.                            |
| <b>SOLUBILITY</b>   | 10 mg/ml EtOH                              |
| Organic solvents:   | 100.0 %                                    |
| VOC content:  | 100.00 %                                   |
|   | 790.0 g/l / 6.59 lb/gal                    |
| Solids content:   | 0.0 %                                      |
| · Other information   | No further relevant information available. |

## 10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:**  
No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** Strong oxidizing agents
- **Hazardous decomposition products:** Carbon oxides

## 11 Toxicological information

- Information on toxicological effects
- Acute toxicity:

- LD/LC50 values that are relevant for classification:

### 64-17-5 ethanol

|                    |                      |                                       |
|--------------------|----------------------|---------------------------------------|
| Oral               | TDLO                 | 1.14 ml/kg (man)                      |
|                    | LD50                 | 7,060 mg/kg (rat)                     |
| Dermal             | TDLO                 | 650 (man)                             |
|                    | LD50                 | 40,000 mg/kg (rat)                    |
| Inhalative         | LC50/4 h             | 5,900 mg/m <sup>3</sup> (rat)         |
|                    | LC50                 | 20,000 mg/m <sup>3</sup> /10h (rat)   |
|                    | TCLO                 | 1,800 mg/m <sup>3</sup> /30m (hmn)    |
|                    | LCLO                 | 29,300 mg/m <sup>3</sup> /7h (mouse)  |
|                    | TCLO                 | 1,800 (hmn)                           |
|                    | LC50                 | 10 h - 20,000 mg/m <sup>3</sup> (rat) |
|                    | LD50 Inhalation TCLO | 1,800 mg/m <sup>3</sup> /30m (hmn)    |
|                    | LC50/4 h             | 20,000 mg/l (rat)                     |
| Irritation of skin | Irritation           | 20 mg/24h (rabbit)                    |

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|                    |                      |                     |
|--------------------|----------------------|---------------------|
| Irritation of eyes | TDLO                 | 1,800 mg/kg (wmn)   |
|                    | Irritation           | 500 mg/24h (rabbit) |
|                    | Intraperitoneal LD50 | 280 mg/kg (rat)     |
|                    | Data                 | 500 mg/24h (rabbit) |

- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** No irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**
- **Carcinogenic categories**

- **IARC (International Agency for Research on Cancer)**

1

- **NTP (National Toxicology Program)**

Substance is not listed.

- **OSHA-Ca (Occupational Safety & Health Administration)**

Substance is not listed.

## 12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behavior in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**  
Water hazard class 1 (Assessment by list): slightly hazardous for water  
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

## 13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**  
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

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## 14 Transport information

|  |   |
|--|---|
| <ul style="list-style-type: none"> <li>· UN-Number</li> <li>· DOT, IMDG, IATA</li> </ul>   | UN1170  |
| <ul style="list-style-type: none"> <li>· UN proper shipping name</li> <li>· DOT, IATA</li> <li>· IMDG</li> </ul>   | Ethanol<br>ETHANOL (ETHYL ALCOHOL)  |
| <ul style="list-style-type: none"> <li>· Transport hazard class(es)</li> <li>· DOT</li> </ul>  | <div style="text-align: center;">  <p>3</p> </div> |
| <ul style="list-style-type: none"> <li>· Class</li> <li>· Label</li> </ul>   | 3 Flammable liquids<br>3  |
| <ul style="list-style-type: none"> <li>· IMDG, IATA</li> </ul>   | <div style="text-align: center;">  <p>3</p> </div> |
| <ul style="list-style-type: none"> <li>· Class</li> <li>· Label</li> </ul>   | 3 Flammable liquids<br>3  |
| <ul style="list-style-type: none"> <li>· Packing group</li> <li>· DOT, IMDG, IATA</li> </ul>   | II  |
| <ul style="list-style-type: none"> <li>· Environmental hazards:</li> </ul>   | Not applicable.   |
| <ul style="list-style-type: none"> <li>· Special precautions for user</li> <li>· Hazard identification number (Kemler code):</li> <li>· EMS Number:</li> <li>· Stowage Category</li> </ul> | Warning: Flammable liquids<br>33<br>F-E,S-D<br>A  |
| <ul style="list-style-type: none"> <li>· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</li> </ul>  | Not applicable.   |
| <ul style="list-style-type: none"> <li>· Transport/Additional information:</li> <li>· DOT</li> <li>· Quantity limitations</li> </ul>   | On passenger aircraft/rail: 5 L<br>On cargo aircraft only: 60 L   |
| <ul style="list-style-type: none"> <li>· IMDG</li> <li>· Limited quantities (LQ)</li> <li>· Excepted quantities (EQ)</li> </ul>  | 1L<br>Code: E2<br>Maximum net quantity per inner packaging: 30 ml<br>Maximum net quantity per outer packaging: 500 ml               |
| <ul style="list-style-type: none"> <li>· IATA</li> </ul>   |   |

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- |                                 |   |
|---------------------------------|---|
| <b>· Remarks:</b>               | When sold in quantities of less than or equal to 1 mL, or 1 g, with an Excepted Quantity Code of E1, E2, E4, or E5, this item meets the De Minimis Quantities exemption, per IATA 2.6.10. Therefore packaging does not have to be labeled as Dangerous Goods/Excepted Quantity. |
| <b>· UN "Model Regulation":</b> | UN 1170 ETHANOL (ETHYL ALCOHOL), 3, II  |

## 15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture
- Sara

|  |
|--|
| <b>· Section 355 (extremely hazardous substances):</b> |
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|                          |
|--------------------------|
| Substance is not listed. |
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|--|
| <b>· Section 313 (Specific toxic chemical listings):</b> |
|--|

|                          |
|--------------------------|
| Substance is not listed. |
|--------------------------|

|   |
|---|
| <b>· TSCA (Toxic Substances Control Act):</b> |
|---|

|        |
|--------|
| ACTIVE |
|--------|

|                                   |
|-----------------------------------|
| <b>· Hazardous Air Pollutants</b> |
|-----------------------------------|

|                          |
|--------------------------|
| Substance is not listed. |
|--------------------------|

|                         |
|-------------------------|
| <b>· Proposition 65</b> |
|-------------------------|

|   |
|---|
| <b>· Chemicals known to cause cancer:</b> |
|---|

|                          |
|--------------------------|
| Substance is not listed. |
|--------------------------|

|  |
|--|
| <b>· Chemicals known to cause reproductive toxicity for females:</b> |
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|                          |
|--------------------------|
| Substance is not listed. |
|--------------------------|

|  |
|--|
| <b>· Chemicals known to cause reproductive toxicity for males:</b> |
|--|

|                          |
|--------------------------|
| Substance is not listed. |
|--------------------------|

|   |
|---|
| <b>· Chemicals known to cause developmental toxicity:</b> |
|---|

|                      |
|----------------------|
| Substance is listed. |
|----------------------|

|                                  |
|----------------------------------|
| <b>· Carcinogenic categories</b> |
|----------------------------------|

|  |
|--|
| <b>· EPA (Environmental Protection Agency)</b> |
|--|

|                          |
|--------------------------|
| Substance is not listed. |
|--------------------------|

|                                      |
|--------------------------------------|
| <b>· TLV (Threshold Limit Value)</b> |
|--------------------------------------|

|    |
|----|
| A3 |
|----|

|   |
|---|
| <b>· NIOSH-Ca (National Institute for Occupational Safety and Health)</b> |
|---|

|                          |
|--------------------------|
| Substance is not listed. |
|--------------------------|

|                                |
|--------------------------------|
| <b>· National regulations:</b> |
|--------------------------------|

|   |
|---|
| <b>· Information about limitation of use:</b> |
|---|

|   |
|---|
| Workers are not allowed to be exposed to this hazardous material. Exceptions can be made by the authorities in certain cases. |
|---|

- |   |
|---|
| <b>· Chemical safety assessment:</b> A Chemical Safety Assessment has not been carried out. |
|---|

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## 16 Other information

All chemicals may pose unknown hazards and should be used with caution. This SDS applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. Cayman Chemical Company assumes no responsibility for incidental or consequential damages, including lost profits, arising from the use of these data. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Cayman Chemical Company assumes no responsibility for the completeness or accuracy of the information contained herein.

- **Department issuing SDS:** Environment protection department.
- **Contact:** -
- **Date of preparation / last revision** 10/08/2021 / -

- **Abbreviations and acronyms:**

IMDG: International Maritime Code for Dangerous Goods  
DOT: US Department of Transportation  
IATA: International Air Transport Association  
EINECS: European Inventory of Existing Commercial Chemical Substances  
CAS: Chemical Abstracts Service (division of the American Chemical Society)  
NFPA: National Fire Protection Association (USA)  
HMIS: Hazardous Materials Identification System (USA)  
VOC: Volatile Organic Compounds (USA, EU)  
LC50: Lethal concentration, 50 percent  
LD50: Lethal dose, 50 percent  
PBT: Persistent, Bioaccumulative and Toxic  
vPvB: very Persistent and very Bioaccumulative  
NIOSH: National Institute for Occupational Safety  
OSHA: Occupational Safety & Health  
TLV: Threshold Limit Value  
PEL: Permissible Exposure Limit  
REL: Recommended Exposure Limit  
Flam. Liq. 2: Flammable liquids – Category 2  
Carc. 1A: Carcinogenicity – Category 1A