Section 1 - Product and Company Information

Product Name                      ETHYL ACRYLATE, 99%
Product Number                     E9706
Brand                              ALDRICH
Company                            Sigma-Aldrich
Street Address                     3050 Spruce Street
City, State, Zip, Country          SAINT LOUIS MO 63103 US
Technical Phone:                   314 771 5765
Emergency Phone:                   414 273 3850 Ext. 5996
Fax:                               800 325 5052

Section 2 - Composition/Information on Ingredient

Substance Name                      CAS #          SARA 313
ETHYL ACRYLATE                     140-88-5       Yes

Formula         C5H8O2
Synonyms        Acrylate d'ethyle (French) *
Acrylsaeureaethylester (German) * Aethylacrylat (German) * Akrylanem etylu (Polish) * Carboet 511 * Ethoxycarbonylethylene * Ethylacrylaat (Dutch) * Ethyl acrylate (ACGIH:OSHA) *
Ethylakrylat (Czech) * Ethylester kyseliny akrylove (Czech) * Ethyl propenoate * Ethyl 2-propenoate * Etil acrilato (Italian) *
Etilacrilatului (Romanian) * NCI-C50384 *
2-Propenoic acid, ethyl ester * RCRA waste number U113
RTECS Number:   AT0700000

Section 3 - Hazards Identification

EMERGENCY OVERVIEW
Flammable (USA) Highly Flammable (EU).
Harmful by inhalation, in contact with skin and if swallowed.
Irritating to eyes, respiratory system and skin. May cause sensitization by skin contact.

HMIS RATING
HEALTH: 3*
FLAMMABILITY: 3
REACTIVITY: 0

NFPA RATING
HEALTH: 3
FLAMMABILITY: 3
REACTIVITY: 0

*additional chronic hazards present.
For additional information on toxicity, please refer to Section 11.

Section 4 - First Aid Measures

ORAL EXPOSURE
If swallowed, wash out mouth with water provided person is conscious. Call a physician.

INHALATION EXPOSURE
If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

DERMAL EXPOSURE
In case of contact, immediately wash skin with soap and copious amounts of water.

EYE EXPOSURE
In case of contact, immediately flush eyes with copious amounts of water for at least 15 minutes.

Section 5 - Fire Fighting Measures

FLAMMABLE HAZARDS
Flammable Hazards: Yes

EXPLOSION HAZARDS
Container explosion may occur under fire conditions. Forms explosive mixtures in air.

FLASH POINT
46.4 °F  8 °C   Method: closed cup

EXPLOSION LIMITS
Lower: 1.8 %   Upper: 12.1 %

AUTOIGNITION TEMPERATURE
383 °C

FLAMMABILITY
N/A

EXTINGUISHING MEDIA
Suitable: Carbon dioxide, dry chemical powder, or appropriate foam.

FIREFIGHTING
Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes. Specific Hazard(s): Flammable liquid. Emits toxic fumes under fire conditions. Vapor may travel considerable distance to source of ignition and flash back.

Section 6 - Accidental Release Measures

PROCEDURE TO BE FOLLOWED IN CASE OF LEAK OR SPILL
Evacuate area. Shut off all sources of ignition. Use nonsparking tools.

PROCEDURE(S) OF PERSONAL PRECAUTION(S)
Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.
METHODS FOR CLEANING UP
Cover with dry-lime, sand, or soda ash. Place in covered containers using non-sparking tools and transport outdoors. Ventilate area and wash spill site after material pickup is complete.

Section 7 - Handling and Storage

HANDLING
User Exposure: Do not breathe vapor. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure.

STORAGE
Suitable: Keep tightly closed. Keep away from heat, sparks, and open flame. Store at 2-8°C

Section 8 - Exposure Controls / PPE

ENGINEERING CONTROLS
Safety shower and eye bath. Use nonsparking tools. Mechanical exhaust required.

PERSONAL PROTECTIVE EQUIPMENT

GENERAL HYGIENE MEASURES
Remove and wash contaminated clothing promptly. Wash thoroughly after handling.

EXPOSURE LIMITS, RTECS

<table>
<thead>
<tr>
<th>Country</th>
<th>Source</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA</td>
<td>ACGIH</td>
<td>STEL</td>
<td>15 PPM</td>
</tr>
<tr>
<td>USA</td>
<td>ACGIH</td>
<td>TWA</td>
<td>5 PPM</td>
</tr>
<tr>
<td>USA</td>
<td>MSHA Standard-air TWA</td>
<td>25 PPM (100 MG/M3) (SKIN)</td>
<td></td>
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<tr>
<td>USA</td>
<td>OSHA.</td>
<td>PEL</td>
<td>8H TWA 25 PPM (100 MG/M3) (SKIN)</td>
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<tr>
<td>New Zealand</td>
<td>OEL</td>
<td>Remarks: check ACGIH TLV</td>
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</tbody>
</table>

EXPOSURE LIMITS

<table>
<thead>
<tr>
<th>Country</th>
<th>Source</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poland</td>
<td>NDS</td>
<td></td>
<td>20 MG/M3</td>
</tr>
<tr>
<td>Poland</td>
<td>NDSCh</td>
<td></td>
<td>80 MG/M3</td>
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<tr>
<td>Poland</td>
<td>NDSP</td>
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Section 9 - Physical/Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
<th>At Temperature or Pressure</th>
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</thead>
<tbody>
<tr>
<td>Molecular Weight</td>
<td>100.12 AMU</td>
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<tr>
<td>pH</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>BP/BP Range</td>
<td>98 - 100 °C</td>
<td></td>
</tr>
<tr>
<td>MP/MP Range</td>
<td>-71 °C</td>
<td></td>
</tr>
<tr>
<td>Freezing Point</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>31 mmHg</td>
<td>20 °C</td>
</tr>
</tbody>
</table>
Vapor Density           3.5 g/l  
Saturated Vapor Conc.   N/A  
SG/Density              0.921 g/cm³  
Bulk Density            N/A  
Odor Threshold          N/A  
Volatile%               N/A  
VOC Content             N/A  
Water Content           N/A  
Solvent Content         N/A  
Evaporation Rate        N/A  
Viscosity               N/A  
Surface Tension         N/A  
Partition Coefficient   N/A  
Decomposition Temp.     N/A  
Flash Point             46.4 °F 8 °C  Method: closed cup  
Explosion Limits        Lower: 1.8 %  
                        Upper: 12.1 %  
Flammability            N/A  
Autoignition Temp       383 °C  
Refractive Index        1.406  
Optical Rotation        N/A  
Miscellaneous Data      N/A  
Solubility              N/A  

N/A = not available

Section 10 - Stability and Reactivity

STABILITY
Stable: Stable.
Conditions to Avoid: Heat. May polymerize on exposure to light.
Materials to Avoid: Oxidizing agents, Peroxides.

HAZARDOUS DECOMPOSITION PRODUCTS
Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide.

HAZARDOUS POLYMERIZATION
Hazardous Polymerization: Will not occur

Section 11 - Toxicological Information

ROUTE OF EXPOSURE
Skin Contact: Causes skin irritation.
Skin Absorption: Harmful if absorbed through skin.
Eye Contact: Causes eye irritation. Lachrymator.
Inhalation: Harmful if inhaled. Material is irritating to mucous membranes and upper respiratory tract.
Ingestion: Harmful if swallowed.

SENSITIZATION
Skin: May cause allergic skin reaction.

TARGET ORGAN(S) OR SYSTEM(S)
Liver. Kidneys.

SIGNS AND SYMPTOMS OF EXPOSURE
Exposure can cause: Nausea. Headache. Drowsiness. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

TOXICITY DATA
Oral Rat 800 mg/kg LD50

Inhalation Rat 1,414 ppm LC50

Intraperitoneal Rat 450 MG/KG LD50

Oral Mouse 1799 mg/kg LD50

Inhalation Mouse 16,200 mg/m3 LC50

Skin Mouse 2997 mg/kg LD50

Intraperitoneal Mouse 599 MG/KG LD50

Oral Rabbit 370 mg/kg LD50
Remarks: Gastrointestinal: Alteration in gastric secretion.

Skin Rabbit 500 UL/KG LD50
Remarks: Lungs, Thorax, or Respiration: Acute pulmonary edema. Liver: Other changes. Skin and Appendages: Skin: After systemic exposure: Dermatitis, other

IRRITATION DATA

Eyes Rat 1,204 ppm 14H 1

Eyes
Monkey
1,204 ppm
15H
I

Skin
Rabbit
500 mg
Remarks: Open irritation test

Skin
Rabbit
10 mg
24H
Remarks: Mild irritation effect

Eyes
Rabbit
45 mg
Remarks: Mild irritation effect

Eyes
Rabbit
1,204 ppm
7H

Eyes
Guinea pig
1,204 ppm
7H

CHRONIC EXPOSURE - CARCINOGEN
Result: This product is or contains a component that has been reported to be possibly carcinogenic based on its IARC, ACGIH, NTP, or EPA classification.

Species: Rat
Route of Application: Oral
Dose: 51500 MG/KG
Exposure Time: 2Y
Frequency: I
Result: Tumorigenic:Carcinogenic by RTECS criteria.
Gastrointestinal:Tumors.

Species: Mouse
Route of Application: Oral
Dose: 103 GM/KG
Exposure Time: 2Y
Frequency: I
Result: Tumorigenic:Carcinogenic by RTECS criteria.
Gastrointestinal:Tumors.

IARC CARCINOGEN LIST
Rating: Group 2B

NTP CARCINOGEN LIST
Rating: Clear evidence.
Species: Mouse/rat
Route: Gavage
ACGIH CARCINOGEN LIST

Rating: A4

CHRONIC EXPOSURE - MUTAGEN

Result: Laboratory experiments have shown mutagenic effects.

Species: Mouse
Route: Intraperitoneal
Dose: 225 MG/KG
Mutation test: Micronucleus test

Species: Mouse
Dose: 20 MG/L (+S9)
Cell Type: lymphocyte
Mutation test: Mutation in microorganisms

Species: Mouse
Dose: 20 MG/L
Cell Type: lymphocyte
Mutation test: Cytogenetic analysis

Species: Mouse
Dose: 20 MG/L
Cell Type: lymphocyte
Mutation test: Mutation in mammalian somatic cells.

Species: Hamster
Dose: 299 MG/L
Cell Type: ovary
Mutation test: Cytogenetic analysis

Species: Hamster
Dose: 9800 UG/L
Cell Type: lung
Mutation test: Cytogenetic analysis

Species: Hamster
Dose: 150 MG/L
Cell Type: ovary
Mutation test: Sister chromatid exchange

CHRONIC EXPOSURE - REPRODUCTIVE HAZARD

Species: Rat
Dose: 8 GM/KG
Route of Application: Oral
Exposure Time: (0-19D PREG)
Result: Maternal Effects: Other effects.

Section 12 - Ecological Information

Section 13 - Disposal Considerations

APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION

Contact a licensed professional waste disposal service to dispose of this material. Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Observe all federal, state, and local environmental regulations.
Section 14 - Transport Information

DOT
Proper Shipping Name: Ethyl acrylate, inhibited
UN#: 1917
Class: 3
Packing Group: Packing Group II
Hazard Label: Flammable liquid
PIH: Not PIH

IATA
Proper Shipping Name: Ethyl acrylate, stabilized
IATA UN Number: 1917
Hazard Class: 3
Packing Group: II

Section 15 - Regulatory Information

EU DIRECTIVES CLASSIFICATION
Symbol of Danger: F Xn
R: 11 20/21/22 36/37/38 43
Risk Statements: Highly flammable. Harmful by inhalation, in contact with skin and if swallowed. Irritating to eyes, respiratory system and skin. May cause sensitization by skin contact.
S: 9 16 33 36/37
Safety Statements: Keep container in a well-ventilated place. Keep away from sources of ignition - no smoking. Take precautionary measures against static discharges. Wear suitable protective clothing and gloves.

US CLASSIFICATION AND LABEL TEXT
Indication of Danger: Flammable (USA) Highly Flammable (EU).
Risk Statements: Harmful by inhalation, in contact with skin and if swallowed. Irritating to eyes, respiratory system and skin. May cause sensitization by skin contact.
Safety Statements: Keep container in a well-ventilated place. Keep away from sources of ignition - no smoking. Take precautionary measures against static discharges. Wear suitable protective clothing and gloves.

UNITED STATES REGULATORY INFORMATION
SARA LISTED: Yes
DEMINIMIS: 0.1%
NOTES: This product is subject to SARA section 313 reporting requirements.
TSCA INVENTORY ITEM: Yes

UNITED STATES - STATE REGULATORY INFORMATION
CALIFORNIA PROP - 65
California Prop - 65: This product is or contains chemical(s) known to the state of California to cause cancer.

CANADA REGULATORY INFORMATION
WHMIS Classification: This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.
Section 16 - Other Information

DISCLAIMER
For R&D use only. Not for drug, household or other uses.

WARRANTY
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 Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2004 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.