

## Material Safety Data Sheet

Date Printed: 16/DEC/2004

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Version 1.5

According to 91/155/EEC

## 1 - Product and Company Information

Product Name ETHYL ACETATE, 99.5+%, A.C.S. REAGENT  
(POLY-COATED BOTTLE)  
Product Number 437549  
Company Sigma-Aldrich Pte Ltd  
#08-01 Citilink Warehouse  
Singapore 118529  
Singapore  
Technical Phone # 65 271 1089  
Fax 65 271 1571

## 2 - Composition/Information on Ingredients

Product Name	CAS #	EC no	Annex I Index Number
ETHYL ACETATE	141-78-6	205-500-4	607-022-00-5

Formula C4H8O2  
Molecular Weight 88.11 AMU  
Synonyms Acetic ether \* Acetidin \* Acetoxyethane \*  
Aethylacetat (German) \* Essigester (German) \*  
Ethylacetaat (Dutch) \* Ethyl acetate  
(ACGIH:OSHA) \* Ethyl acetic ester \* Ethyle  
(acetate d') (French) \* Ethylester kyseliny  
octove (Czech) \* Ethyl ethanoate \* Etile  
(acetato di) (Italian) \* Octan etylu (Polish) \*  
RCRA waste number U112 \* Vinegar naphtha

## 3 - Hazards Identification

## SPECIAL INDICATION OF HAZARDS TO HUMANS AND THE ENVIRONMENT

Highly flammable. Irritating to eyes. Repeated exposure may cause skin dryness or cracking. Vapors may cause drowsiness and dizziness.

## 4 - First Aid Measures

## AFTER INHALATION

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

## AFTER SKIN CONTACT

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

## AFTER EYE CONTACT

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

## AFTER INGESTION

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

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## 5 - Fire Fighting Measures

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### EXTINGUISHING MEDIA

Suitable: Water spray. Carbon dioxide, dry chemical powder, or appropriate foam.

### SPECIAL RISKS

Specific Hazard(s): Flammable liquid. Emits toxic fumes under fire conditions.

Explosion Hazards: Vapor may travel considerable distance to source of ignition and flash back. Container explosion may occur under fire conditions. Forms explosive mixtures in air.

### SPECIAL PROTECTIVE EQUIPMENT FOR FIREFIGHTERS

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

### SPECIFIC METHOD(S) OF FIRE FIGHTING

Use water spray to cool fire-exposed containers.

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## 6 - Accidental Release Measures

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### PERSONAL PRECAUTION PROCEDURES 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.

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## 7 - Handling and Storage

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### HANDLING

Directions for Safe Handling: Do not breathe vapor. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure.

### STORAGE

Conditions of Storage: Keep tightly closed. Keep away from heat, sparks, and open flame.

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## 8 - Exposure Controls / Personal Protection

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### ENGINEERING CONTROLS

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

### GENERAL HYGIENE MEASURES

Remove and wash contaminated clothing promptly. Wash thoroughly after handling.

### EXPOSURE LIMITS

Country	Source	Type	Value
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Poland	NDS	200 MG/M3
Poland	NDSch	600 MG/M3
Poland	NDSP	-

#### EXPOSURE LIMITS - DENMARK

Source	Type	Value
OEL	TWA	540 mg/m3 150 ppm

#### EXPOSURE LIMITS - GERMANY

Source	Type	Value
TRGS 900	OEL	1,400 mg/m3 400 ppm

Remarks: =1=

#### EXPOSURE LIMITS - NORWAY

Source	Type	Value
	OEL	550 mg/m3 150 ppm

#### EXPOSURE LIMITS - SWEDEN

Source	Type	Value
	LLV (Level	500 mg/m3 150 ppm

#### EXPOSURE LIMITS - SWITZERLAND

Source	Type	Value
OEL	OEL	1,400 mg/m3 400 ppm

Remarks: C

#### EXPOSURE LIMITS - UNITED KINGDOM

Source	Type	Value
OEL	OEL	200 ppm
OEL	STEL	400 ppm

Remarks: Entry revised from year before

#### PERSONAL PROTECTIVE EQUIPMENT

Respiratory Protection: Government approved respirator.

Hand Protection: Compatible chemical-resistant gloves.

Eye Protection: Chemical safety goggles.

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### 9 - Physical and Chemical Properties

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Appearance	Physical State: Liquid	
Property	Value	At Temperature or Pressure
pH	N/A	
BP/BP Range	76.5 - 77.50 °C	760 mmHg
MP/MP Range	-84 °C	
Flash Point	-3 °C	Method: closed cup
Flammability	N/A	
Autoignition Temp	427 °C	
Oxidizing Properties	N/A	
Explosive Properties	N/A	
Explosion Limits	Lower: 2.2 % Upper: 11.5 %	
Vapor Pressure	73 mmHg	20 °C
SG/Density	0.9 g/cm3	
Partition Coefficient	Log Kow: 0.73	
Viscosity	0.44 Pas	25 °C

Vapor Density	3 g/l	
Saturated Vapor Conc.	N/A	
Evaporation Rate	N/A	
Bulk Density	N/A	
Decomposition Temp.	N/A	
Solvent Content	N/A	
Water Content	< 0.05 %	
Surface Tension	24 mN/m	20 °C
Conductivity	N/A	
Miscellaneous Data	N/A	
Solubility	Solubility in Water:Soluble. Other Solvents: SOLUBLE IN ALCOHOL, ETHER, ACETONE, BENZENE MISCIBLE	

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## 10 - Stability and Reactivity

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### STABILITY

Stable: Stable.

Conditions to Avoid: Moisture.

Materials to Avoid: Strong oxidizing agents.

### HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide.

### HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

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## 11 - Toxicological Information

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RTECS NUMBER: AH5425000

### ACUTE TOXICITY

LD50

Oral

Rat

5620 mg/kg

LC50

Inhalation

Rat

200,000 mg/m<sup>3</sup>

Remarks: Behavioral:Somnolence (general depressed activity).

Lungs, Thorax, or Respiration:Acute pulmonary edema.

Gastrointestinal:Changes in structure or function of salivary glands.

LD50

Oral

Mouse

4100 mg/kg

Remarks: Behavioral:Somnolence (general depressed activity).

Behavioral:Change in motor activity (specific assay).

Behavioral:Coma.

LC50

Inhalation

Mouse

45,000 mg/m<sup>3</sup>

2H

LD50

Intraperitoneal  
Mouse  
709 MG/KG

LD50  
Subcutaneous  
Cat

3 GM/KG

Remarks: Behavioral:Somnolence (general depressed activity).  
Gastrointestinal:Nausea or vomiting. Blood:Other changes.

LD50  
Oral  
Rabbit  
4935 mg/kg

LD50  
Skin  
Rabbit  
>20 ML/KG

LD50  
Oral  
Guinea pig  
5500 mg/kg  
Remarks: Behavioral:Somnolence (general depressed activity).  
Behavioral:Change in motor activity (specific assay).  
Behavioral:Coma.

LD50  
Subcutaneous  
Guinea pig  
3 GM/KG  
Remarks: Behavioral:Somnolence (general depressed activity).

#### IRRITATION DATA

Eyes  
Human  
400 ppm

#### SIGNS AND SYMPTOMS OF EXPOSURE

Can cause CNS depression. Exposure can cause: Drowsiness.  
Narcotic effect. Anemia.

#### ROUTE OF EXPOSURE

Skin Contact: Causes skin irritation.  
Skin Absorption: May be harmful if absorbed through the skin.  
Eye Contact: Causes eye irritation.  
Inhalation: Material is irritating to mucous membranes and upper  
respiratory tract. May be harmful if inhaled.  
Ingestion: May be harmful if swallowed.

#### TARGET ORGAN INFORMATION

Central nervous system. Liver. Kidneys. Blood.

#### CHRONIC EXPOSURE - CARCINOGEN

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

#### CHRONIC EXPOSURE - MUTAGEN

Hamster  
9 GM/L  
Cell Type: fibroblast  
Cytogenetic analysis

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## 12 - Ecological Information

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### ECOTOXICOLOGICAL EFFECTS

Test Type: EC50 Algae  
Time: 24 h  
Value: 4,300 mg/l

Test Type: EC50 Algae  
Species: SELENASTRUM  
Time: 72 h  
Value: 1,800 - 3,200 mg/l

Test Type: EC50 Daphnia  
Species: Daphnia magna  
Time: 24 h  
Value: 2,300 - 3,090 mg/l

Test Type: LC50 Fish  
Species: Onchorhynchus mykiss (Rainbow trout)  
Time: 96 h  
Value: 350 - 600 mg/l

Test Type: LC50 Fish  
Species: Pimephales promelas (Fathead minnow)  
Time: 96 h  
Value: 220 - 250 mg/l

### ADDITIONAL ECOLOGICAL INFORMATION

BOD5: 26.6 - 57.1 %

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## 13 - Disposal Considerations

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### SUBSTANCE DISPOSAL

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.

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## 14 - Transport Information

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### RID/ADR

UN#: 1173  
Class: 3  
PG: II  
Proper Shipping Name: Ethyl acetate

### IMDG

UN#: 1173  
Class: 3  
PG: II  
Proper Shipping Name: Ethyl acetate  
Marine Pollutant: No  
Severe Marine Pollutant: No

## IATA

UN#: 1173  
Class: 3  
PG: II  
Proper Shipping Name: Ethyl acetate  
Inhalation Packing Group I: No

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## 15 - Regulatory Information

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### CLASSIFICATION AND LABELING ACCORDING TO EU DIRECTIVES

ANNEX I INDEX NUMBER: 607-022-00-5

NOTA: 6

INDICATION OF DANGER: F Xi

Highly Flammable. Irritant.

R-PHRASES: 11 36 66 67

Highly flammable. Irritating to eyes. Repeated exposure may cause skin dryness or cracking. Vapors may cause drowsiness and dizziness.

S-PHRASES: 16 26 33

Keep away from sources of ignition - no smoking. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Take precautionary measures against static discharges.

### COUNTRY SPECIFIC INFORMATION

#### Germany

WGK: 1

#### SWITZERLAND

SWISS POISON CLASS: 5

#### NORWAY

Labelling for organic solvents where the package is 1liter or more.

YL-tall m3/l: 2265

YL-group: 4

Risk phrases: 20

Harmful by inhalation.

Safety phrases: 38 42 210

In case of insufficient ventilation, wear suitable respiratory equipment. During fumigation/spraying wear suitable respiratory equipment. Use compressed air- or fresh air line breathing apparatus in confined spaces.

Declaration Number: 7386

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## 16 - Other Information

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### 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.

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