Safety Data Sheet

Product and company identification

Trade Name

Ethyl acetate

Manufacturer, importer, supplier
Celanese Ltd.
222 W. Las Colinas Blvd., Suite 900N
Irving, TX 75039
United States
Phone: 972 443 4000
Internet: www.celanese.com

Celanese Operations México, S. de R.L. de C.V:
Freeway Coatzacoalcos-Villahermosa Km. 12.3 C.P. 96400
Coatzacoalcos, Ver
Mexico
Phone: (921) 211-5000/211-5048
Fax: (921) 211-5003***

Transportation emergency phone numbers:
In USA, call 800 424 9300
Outside USA, call 703 527 3887, collect calls accepted.
In Mexico, call (921) 211-5048, 211-5000

Identified uses
Solvent

Hazard Identification

GHS Classification

Hazards Category
Flammable liquid Category 2
Specific target organ systemic toxicity (single exposure) Category 3 Narcotic

Label elements

Signal Word
Danger***

Hazard Statements
Highly flammable liquid and vapor
May cause drowsiness or dizziness
Precautionary statements
Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
Keep container tightly closed.
Ground/bond container and receiving equipment.
Use explosion-proof electrical/ ventilating/ lighting/ equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
In case of fire:
Use foam, dry chemical, carbon dioxide (CO2) to extinguish.
Wear protective gloves/ eye protection/ face protection.
Avoid breathing dust/fume/gas/mist/vapors/spray.
Use only outdoors or in a well-ventilated area.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
Call a POISON CENTER or doctor if you feel unwell.
Store locked up.
Store in a well-ventilated place. Keep cool.
Dispose of contents/ container to an approved waste disposal plant.

3. Composition/information on ingredients

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No</th>
<th>Percent %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethyl acetate</td>
<td>141-78-6</td>
<td>min 99.7</td>
</tr>
</tbody>
</table>

4. First aid measures

General Information
Remove contaminated, soaked clothing immediately and dispose of safely. Pay attention to own protection. In any case show the physician the Safety Data Sheet.

Skin
Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. If symptoms persist, call a physician.

Eyes
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Call a physician immediately.

Inhalation
Keep at rest. Move to fresh air. Call a physician immediately.

Ingestion
Rinse with plenty of water. If swallowed, do not induce vomiting - seek medical advice.

5. Fire-fighting measures
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Suitable extinguishing media
Foam, Dry chemical, Carbon dioxide (CO2)

Extinguishing media which must not be used for safety reasons
Do not use a solid water stream as it may scatter and spread fire.

Special exposure hazards arising from the substance or preparation itself, its combustion products, or released gases
Under conditions giving incomplete combustion, hazardous gases produced may consist of Carbon monoxide, Carbon dioxide (CO2). Combustion gases of organic materials must in principle be graded as inhalation poisons. Vapors are heavier than air and may spread along floors.

Special protective equipment for fire-fighters
Self-contained breathing apparatus (EN 133).

Environmental precautions
Water used to fight fire runoff can cause environmental damage. Dike and collect water used to fight fire***

Other Information
Cool containers / tanks with water spray.

6. Accidental release measures

Personal precautions
Avoid contact with the skin and the eyes. Keep away from heat and sources of ignition. Provide adequate ventilation.

Isolation
Keep unnecessary people away; isolate hazard area and deny entry. Stay upwind; keep out of low areas. Isolate for 800 meters or 0.5 miles in all directions if tank, rail car, or tank truck is involved in fire. Evacuate downwind areas as conditions warrant to prevent exposure and to allow vapors or fumes to dissipate. Spills may expose downwind areas to toxic or flammable concentrations over considerable distances in some cases.

Environmental precautions
Prevent further leakage or spillage. Do not discharge into the drains/surface waters/groundwater.

Methods for cleaning up
Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal. Dispose of in accordance with local regulations.

Authority Notification
Within the United States, call the National Response Center (800-424-8802) and appropriate state and local authorities if the quantity released over 24 hours is equal to or greater than the reportable quantity listed below:

5000lb/2270kg

7. Handling and storage
7. Handling and storage
Advice on safe handling
Provide sufficient air exchange and/or exhaust in work rooms.

Protection - fire and explosion:
Keep away from sources of ignition - No smoking. Take necessary action to avoid static electricity discharge. Ground and bond containers when transferring material. In case of fire, emergency cooling with water spray should be available.

Technical measures/Storage conditions
Keep tightly closed in a dry, cool and well-ventilated place. Handle an open container with care.

Material storage
Store locked up.. Keep in a dry, cool and well-ventilated place***

Incompatible products
Keep away from:, peroxides, strong acids, oxidizing agents, amines

8. Exposure controls / personal protection

OSHA Exposure Limits

<table>
<thead>
<tr>
<th>Components</th>
<th>TWA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethyl acetate</td>
<td>400 PPM</td>
</tr>
</tbody>
</table>

ACGIH Exposure Limits

<table>
<thead>
<tr>
<th>Components</th>
<th>TWA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethyl acetate</td>
<td>400 PPM</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Components</th>
<th>2005 NIOSH IDLH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethyl acetate</td>
<td>10,000 PPM</td>
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</tbody>
</table>

Mexico National Exposure Limits

<table>
<thead>
<tr>
<th>Components</th>
<th>LMPE - PPT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethyl acetate</td>
<td>1400 mg/m³</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Components</th>
<th>Mexican Carcinogen Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethyl acetate</td>
<td>A4</td>
</tr>
</tbody>
</table>
Engineering measures
General or dilution ventilation is frequently insufficient as the sole means of controlling employee exposure. Local ventilation is usually preferred. Explosion-proof equipment (for example fans, switches, and grounded ducts) should be used in mechanical ventilation systems.

Protective equipment
A safety shower and eyewash should be readily available.

General advice
Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Use only in an area equipped with a safety shower. Hold eye wash fountain available.

Respiratory protection
Based on workplace contaminant level and working limits of the respirator, use a respirator approved by NIOSH. The following is the minimum recommended equipment for an occupational exposure level. To estimate an occupational exposure level see Section 8 and Section 11.

For concentrations > 1 and < 10 times the occupational exposure level: Use air-purifying respirator with full facepiece and organic vapor cartridge(s) or air-purifying full facepiece respirator with an organic vapor canister or a full facepiece powered air-purifying respirator fitted with organic vapor cartridge(s). The air purifying element must have an end of service life indicator, or a documented change out schedule must be established. Otherwise, use supplied air.

For concentrations more than 10 times the occupational exposure level and less than the lower of either 100 times the occupational exposure level or the IDLH: Use Type C full facepiece supplied-air respirator operated in positive-pressure or continuous-flow mode.

For concentrations > 100 times the occupational exposure level or greater than the IDLH level or unknown concentrations (such as in emergencies): Use self-contained breathing apparatus with full facepiece in positive-pressure mode or Type C positive-pressure full facepiece supplied-air respirator with an auxiliary positive-pressure self-contained breathing apparatus escape system.

For escape: Use self-contained breathing apparatus with full facepiece or any respirator specifically approved for escape.

Skin protection:
Wear impervious clothing and gloves to prevent contact. Butyl rubber is recommended. Other protective material may be used, depending on the situation, if adequate degradation and permeation data is available. If other chemicals are used in conjunction with this chemical, material selection should be based on protection for all chemicals present.

Eye/face protection:
Wear chemical goggles when there is a reasonable chance of eye contact..

9. Physical and chemical properties

Appearance
<table>
<thead>
<tr>
<th>Form</th>
<th>liquid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>colourless</td>
</tr>
<tr>
<td>Odor</td>
<td>fruity</td>
</tr>
<tr>
<td>Molecular Weight</td>
<td>88.11</td>
</tr>
<tr>
<td>Flash point</td>
<td>-4°C(25°F)</td>
</tr>
<tr>
<td>Method</td>
<td>closed cup</td>
</tr>
</tbody>
</table>
9. Physical and chemical properties

- **Ignition temperature**: 427°C (800°F)
- **Decomposition Temperature**: Not determined
- **Lower explosion limit**: 2.2 Vol. %
- **Upper explosion limit**: 11.5 Vol. % (-117°F)
- **Boiling point/range**: 77.1°C (171°F) @ 1013 hPa
- **Density**: 0.9003 g/ml @ 20°C
- **pH**: not determined
- **Viscosity**: 0.4508 mPa*s @ 20°C
- **Vapor pressure**: 98.3 hPa @ 20°C, 379 hPa @ 50°C (74 mmHg)
- **Vapor density**: 3.04 (Air=1)
- **Evaporation Rate**: 4.5 (n-Butyl acetate = 1)
- **Water solubility**: 80 g/l @ 25°C
- **Solubility in other solvents**: miscible with, Ethanol, Diethyl ether, very soluble in, Acetone, Benzene
- **Partition coefficient (n-octanol/water)**: 0.68 (measured)

10. Stability and reactivity

**Chemical stability**
Stable under normal conditions of handling, use and transportation.

**Conditions to avoid**
Avoid any source of ignition. Avoid contact with heat, sparks, open flame, and static discharge.***

**Incompatible Materials**
Keep away from:
- peroxides
- oxidizing agents
- strong acids
- amines

**Hazardous Combustion or Decomposition Products:**
Thermal decomposition products may include oxides of carbon.

**Possibility of hazardous reactions**
Hazardous polymerization does not occur.

11. Toxicological information

**Potential health effects**

**Routes of exposure**: Skin, eyes, inhalation.

**Immediate effects**
- **Skin**: Prolonged or repeated contact may dry skin and cause irritation.
### Eyes
Essentially non-irritating.

### Inhalation
Inhalation of vapors in high concentration may cause irritation of respiratory system. Symptoms of exposure may include: Nausea, headache and/or dizziness.

### Ingestion
Essentially non-toxic.

### Target organ effects
Overexposure (prolonged or repeated exposure) may cause:
- Central nervous system depression
- Drying of the skin
- Local irritation at the site of exposure

### Medical conditions which may be aggravated by exposure:
- Respiratory Tract
- Skin
- Eyes
- Central nervous system

### Ethyl acetate

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Acute oral toxicity</strong></td>
<td>LD50: 4934 mg/kg</td>
</tr>
<tr>
<td><strong>Acute dermal toxicity</strong></td>
<td>LD50: &gt; 20000 mg/kg</td>
</tr>
<tr>
<td><strong>Acute inhalation toxicity</strong></td>
<td>LC100 (6h): 22.5 ppm</td>
</tr>
<tr>
<td><strong>Skin corrosion/irritation</strong></td>
<td>No skin irritation</td>
</tr>
<tr>
<td>Species</td>
<td>rabbit</td>
</tr>
<tr>
<td>Method</td>
<td>OECD 404</td>
</tr>
<tr>
<td><strong>Skin Sensitization</strong></td>
<td>nonsensitizer</td>
</tr>
<tr>
<td>Species</td>
<td>guinea pig</td>
</tr>
<tr>
<td>Method</td>
<td>OECD 406</td>
</tr>
<tr>
<td><strong>Serious eye damage/eye irritation</strong></td>
<td>No eye irritation</td>
</tr>
<tr>
<td>Species</td>
<td>rabbit eye</td>
</tr>
<tr>
<td>Method</td>
<td>OECD 405</td>
</tr>
<tr>
<td><strong>Carcinogenic effects</strong></td>
<td>No evidence of carcinogenicity</td>
</tr>
<tr>
<td><strong>in vivo Mutagenicity</strong></td>
<td>Mammalian Erythrocyte Micronucleus Test in Chinese hamster and male mice: negative - Method: OECD 474</td>
</tr>
<tr>
<td><strong>Reproductive toxicity</strong></td>
<td>No effects on fertility (Reference substance: Ethanol)</td>
</tr>
<tr>
<td>Routes of exposure</td>
<td>oral gavage</td>
</tr>
<tr>
<td>Species</td>
<td>mouse</td>
</tr>
<tr>
<td>NOAEL: 26400 mg/kg bw/day (for Ethyl acetate on a molar basis)</td>
<td></td>
</tr>
<tr>
<td><strong>Developmental effects</strong></td>
<td>No teratogenetic, maternal or developmental effects (Reference substance: Ethanol)</td>
</tr>
</tbody>
</table>
### 12. Ecological Information

**Ethyl acetate**

- **Acute fish toxicity**
  - Species: _Pimephales promelas_ (Fathead minnow)
  - Method: EPA E03-05
  - LC50: 230 mg/l (96h)

- **Acute daphnia toxicity**
  - Species: _Daphnia magna_
  - Method: DIN 38412, Part 11
  - EC50: 3090 mg/l (24h)

- **Toxicity to aquatic plants**
  - Species: _Desmodesmus subspicatus_
  - Method: OECD 201
  - NOEC (72h): > 100 mg/l

- **Toxicity to bacteria**
  - Species: _Pseudomonas putida_
  - Method: DIN 38412 T.8
  - EC3 (16h): 650 mg/l

- **Biodegradation**
  - Method: BOD Standard Method
  - Readily biodegradable

- **Other potential hazards**
  - The substance does not meet the criteria for PBT / vPvB according to REACH, Annex XIII
## 13. Disposal considerations

### Disposal considerations

Dispose of spilled material in accordance with state and local regulations for hazardous waste. Recommended methods are incineration or biological treatment at a federally or state-permitted disposal facility. Note that this information applies to the material as manufactured; processing, use, or contamination may make this information inappropriate, inaccurate, or incomplete.

Note that this handling and disposal information may also apply to empty containers, liners and rinsate. State or local regulations or restrictions are complex and may differ from federal regulations. This information is intended as an aid to proper handling and disposal; the final responsibility for handling and disposal is with the owner of the waste.

**EPA Hazardous Waste Code(s):** U112

## 14. Transport information

### US Department of Transportation

<table>
<thead>
<tr>
<th>UN/NA Number</th>
<th>Ethyl acetate</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN NA Class</td>
<td>3</td>
</tr>
<tr>
<td>Packing Group</td>
<td>II</td>
</tr>
<tr>
<td>Reportable Quantity (RQ)</td>
<td>5000lb/2270kg</td>
</tr>
<tr>
<td>Emergency Resp. Guide</td>
<td>129</td>
</tr>
</tbody>
</table>

### TDG

<table>
<thead>
<tr>
<th>UN/NA Number</th>
<th>ETHYL ACETATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class</td>
<td>3</td>
</tr>
<tr>
<td>Packing Group</td>
<td>II</td>
</tr>
</tbody>
</table>

### Mexico Transport Information

<table>
<thead>
<tr>
<th>UN-No.</th>
<th>Ethyl acetate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazard Class</td>
<td>3</td>
</tr>
<tr>
<td>Packing Group</td>
<td>II</td>
</tr>
</tbody>
</table>

### ICAO/IATA

<table>
<thead>
<tr>
<th>UN-No.</th>
<th>Ethyl acetate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazard Class</td>
<td>3</td>
</tr>
<tr>
<td>Packing Group</td>
<td>II</td>
</tr>
</tbody>
</table>

### IMDG

<table>
<thead>
<tr>
<th>UN/ID No.</th>
<th>Ethyl acetate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazard Class</td>
<td>3</td>
</tr>
<tr>
<td>Packing Group</td>
<td>II</td>
</tr>
<tr>
<td>Marine pollutant</td>
<td>no</td>
</tr>
<tr>
<td>EmS Code</td>
<td>F-E, S-D</td>
</tr>
</tbody>
</table>
15. Regulatory Information

US State Regulations
Chemicals associated with the product which are subject to the state right-to-know regulations are listed along with the applicable state(s):

Ethyl acetate 141-78-6
Pennsylvania Listed
New York Listed
New Jersey Listed
Illinois Listed
Massachusetts Listed
Rhode Island Listed

U.S. FEDERAL REGULATIONS

TSCA Inventory:
We certify that all components are either on the TSCA inventory or qualify for an exemption.

Environmental Regulations:

Ethyl acetate 141-78-6
CERCLA Hazardous Substance Listed

SARA 311:
Acute health: Yes
Chronic health: No
Fire: Yes
Sudden release of pressure: No
Reactive: No

INTERNATIONAL REGULATIONS

International Inventories
Listed on the chemical inventories of the following countries or qualifies for an exemption:
Australia (AICS)
Canada (DSL)
China (IECSC)
Europe (EINECS)
Japan (ENCS)
Japan (ISHL)
Korea (KECI)
New Zealand (NZIoC)
Philippines (PICCS)
United States (TSCA)
16. Other information

NFPA: Health: 1 Flammability: 3 Instability: 0
HMIS: Health: 1 Flammability: 3 Physical Hazard: 0

Prepared By
Product Stewardship Department
Celanese

Sources of key data used to compile the datasheet
Information contained in this safety data sheet is based on Celanese owned data and public sources deemed valid or acceptable. The absence of data elements required by ANSI or 1907/2006/EC indicates that no data meeting these requirements is available.

Other Information:
Observe national and local legal requirements***
Changes against the previous version are marked by ***

Abbreviation and Acronym:
ADR = Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
CAS = Chemical Abstracts Service (division of the American Chemical Society)
CLP = Classification, Labelling and Packaging
DNEL = Derived No Effect Level
EINECS = European Inventory of Existing Commercial Chemical Substances
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
ICAO = International Civil Aviation Organization
IMDG = International Maritime Code for Dangerous Goods
LC50 = Lethal Concentration
LD50 = Lethal Dose
LOAEC = Low Observed Adverse Effect Concentration
LOAEL = Low Observed Adverse Effect Level
LOEL = Low Observed Effect Level
NOAEC = No Observed Adverse Effect Concentration
NOAEL = No Observed Adverse Effect Level
NOEC = No Observed Effect Concentration
NOEL = No Observed Effect Level
PBT = Persistent, Bioaccumulative and Toxic
PNEC = Predicted No Effect Concentration
RCR = Risk Characterization Ratio
RID = Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
STOT RE = Specific Target Organ Toxicity Repeated Exposure
STOT SE = Specific Target Organ Toxicity Single Exposure
STP = Sewage Treatment Plant
vPvB = very Persistent and very Bioaccumulative