1. PRODUCT AND COMPANY IDENTIFICATION

Product Name          Ethyl acetate  
Cat No.               BP1125-1; BP1125-4; E124-4; E124-20; E124RS-200; E145-1; E145-4;  
                      E145-4LC; E145-20; E145-200; E145-500; E145FB-19; E145FB-50;  
                      E145FB-115; E145FB-200; E145POP-50; E145POPB-50; E145RB-19;  
                      E145RB-50; E145RB-115; E145RB-200; E145RS-28; E145RS-50; E145RS-  
                      115; E145S-4; E145SK-4; E145SK-4LC; E145SS-28; E145SS-50; E145SS-  
                      115; E145SS-200; E145SS-1350; E189-4; E191-4; E195-4; E195N1-19;  
                      E195N2-19; E195RS-50; E195RS-115; E195RS-200; E195SK-1; E195SK-4;  
                      E195SS-19; E195SS-50; E195SS-115; E196-4; E196-4LC; E196RS-28;  
                      E196RS-115; E196SK-4; E196SS-28; E196SS-50; E196SS-115; E196SS-  
                      200  
Synonyms              Acetic acid ethyl ester (Sequencing/NF/Certified ACS/Spectranalyzed/Pesticide/HPLC/Optima)  
Recommended Use      Laboratory chemicals  
Company               Fisher Scientific  
                      One Reagent Lane  
                      Fair Lawn, NJ 07410  
                      Tel: (201) 796-7100
Emergency Telephone Number  
                      CHEMTREC®, Inside the USA: 800-424-9300  
                      CHEMTREC®, Outside the USA: 703-527-3687

2. HAZARDS IDENTIFICATION

DANGER!

Emergency Overview  
Flammable liquid and vapor. Irritating to eyes. May cause central nervous system effects. May cause skin and respiratory tract irritation. Repeated exposure may cause skin dryness or cracking.

Appearance Colorless  
Physical State Liquid  
odor sweet

Target Organs  
Skin, Respiratory system, Eyes, Central nervous system (CNS), Blood, Liver

Potential Health Effects

Acute Effects

Principle Routes of Exposure
Eyes
Irritating to eyes.

Skin
May cause irritation. May be harmful in contact with skin. Repeated exposure may cause skin dryness or cracking.

Inhalation
Inhalation may cause central nervous system effects. May cause irritation of respiratory tract. May be harmful if inhaled.

Ingestion
May be harmful if swallowed. May cause central nervous system effects. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Chronic Effects
Repeated exposure may cause skin dryness or cracking. May cause adverse liver effects.

See Section 11 for additional Toxicological Information.

Aggravated Medical Conditions
Preexisting eye disorders. Skin disorders.

---

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethylacetate</td>
<td>141-78-6</td>
<td>&gt;95</td>
</tr>
</tbody>
</table>

---

### 4. FIRST AID MEASURES

Eye Contact
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention.

Skin Contact
Wash off immediately with plenty of water for at least 15 minutes. Get medical attention immediately if symptoms occur.

Inhalation
Move to fresh air. If breathing is difficult, give oxygen. Get medical attention immediately if symptoms occur.

Ingestion
Do not induce vomiting. Obtain medical attention.

Notes to Physician
Treat symptomatically.

---

### 5. FIRE-FIGHTING MEASURES

Flash Point
-4°C / 24.8°F

Method
No information available.

Autoignition Temperature
427°C / 800.6°F

Explosion Limits
Upper 11.5 vol %
Lower 2.0 vol %

Suitable Extinguishing Media
CO₂, dry chemical, dry sand, alcohol-resistant foam. Cool closed containers exposed to fire with water spray.

Unsuitable Extinguishing Media
Water may be ineffective

Hazardous Combustion Products
No information available.

Sensitivity to mechanical impact
No information available.

Sensitivity to static discharge
No information available.
Specific Hazards Arising from the Chemical
flammable. Risk of ignition. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back. Containers may explode when heated.

Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

<table>
<thead>
<tr>
<th>NFPA</th>
<th>Health</th>
<th>Flammability</th>
<th>Instability</th>
<th>Physical hazards</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>3</td>
<td>0</td>
<td>N/A</td>
</tr>
</tbody>
</table>

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions
Use personal protective equipment. Remove all sources of ignition. Take precautionary measures against static discharges.

Environmental Precautions
Should not be released into the environment.

Methods for Containment and Clean Up
Soak up with inert absorbent material. Keep in suitable and closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.

7. HANDLING AND STORAGE

Handling
Use only under a chemical fume hood. Use explosion-proof equipment. Wear personal protective equipment. Do not breathe vapors or spray mist. Do not get in eyes, on skin, or on clothing. Keep away from open flames, hot surfaces and sources of ignition. Use only non-sparking tools. Take precautionary measures against static discharges.

Storage
Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat and sources of ignition. Flammables area.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Measures
Use only under a chemical fume hood. Ensure adequate ventilation, especially in confined areas. Use explosion-proof electrical/ventilating/lighting/equipment. Ensure that eyewash stations and safety showers are close to the workstation location.

Exposure Guidelines

<table>
<thead>
<tr>
<th>Component</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>NICOSH IDLH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethylacetate</td>
<td>TWA: 400 ppm</td>
<td>(Vacated) TWA: 400 ppm (Vacated) TWA: 1400 mg/m³ TWA: 400 ppm TWA: 1400 mg/m³</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA: 1400 mg/m³</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Component</th>
<th>Quebec</th>
<th>Mexico OEL (TWA)</th>
<th>Ontario TWAEV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethylacetate</td>
<td>TWA: 1440 mg/m³</td>
<td>TWA: 1400 mg/m³</td>
<td>TWA: 1440 mg/m³</td>
</tr>
<tr>
<td></td>
<td>TWA: 400 ppm</td>
<td>TWA: 400 ppm</td>
<td>TWA: 400 ppm</td>
</tr>
</tbody>
</table>
NIOSH IDLH: Immediately Dangerous to Life or Health

Personal Protective Equipment
Eye/face Protection
Skin and body protection
Respiratory Protection
Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.
Wear appropriate protective gloves and clothing to prevent skin exposure.
Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Physical State</th>
<th>Liquid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Colorless</td>
</tr>
<tr>
<td>odor</td>
<td>sweet</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>No information available.</td>
</tr>
<tr>
<td>pH</td>
<td>No Information Available.</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>103 mbar @ 20°C</td>
</tr>
<tr>
<td>Vapor Density</td>
<td>3.04 (Air = 1.0)</td>
</tr>
<tr>
<td>Viscosity</td>
<td>0.45 cP @ 20°C</td>
</tr>
<tr>
<td>Boiling Point/Range</td>
<td>75 - 78°C / 167 - 171.5°F</td>
</tr>
<tr>
<td>Melting Point/Range</td>
<td>-83.5°C / -118.3°F</td>
</tr>
<tr>
<td>Decomposition Temperature</td>
<td>No Information Available.</td>
</tr>
<tr>
<td>Flash Point</td>
<td>-4°C / 24.8°F</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>(Butyl Acetate = 1.0)</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>0.902</td>
</tr>
<tr>
<td>Solubility</td>
<td>Slightly soluble in water</td>
</tr>
<tr>
<td>Log Pow</td>
<td>No data available</td>
</tr>
<tr>
<td>Molecular Weight</td>
<td>88.11</td>
</tr>
<tr>
<td>Molecular Formula</td>
<td>C4 H8 O2</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

Stability
Stable under normal conditions.

Conditions to Avoid
Incompatible products. Heat, flames and sparks. Exposure to moist air or water. Exposure to light. Exposure to air.

Incompatible Materials
Strong oxidizing agents, Strong acids, Strong bases

Hazardous Decomposition Products
Carbon monoxide (CO), Carbon dioxide (CO2)

Hazardous Polymerization
Hazardous polymerization does not occur.

Hazardous Reactions
None under normal processing.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Product Information
See actual entry in RTECS for complete information.
Component Information

<table>
<thead>
<tr>
<th>Component</th>
<th>LD50 Oral</th>
<th>LD50 Dermal</th>
<th>LC50 Inhalation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethylacetate</td>
<td>5620 mg/kg (Rat)</td>
<td>18000 mg/kg (Rabbit)</td>
<td>Not listed</td>
</tr>
<tr>
<td></td>
<td>20 mL/kg (Rabbit)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Irritation
Irritating to eyes

Toxicologically Synergistic Products
No information available.

Chronic Toxicity

Carcinogenicity
There are no known carcinogenic chemicals in this product.

Sensitization
No information available.

Mutagenic Effects
Mutagenic effects have occurred in experimental animals.

Reproductive Effects
No information available.

Developmental Effects
No information available.

Teratogenicity
No information available.

Other Adverse Effects
See actual entry in RTECS for complete information.

Endocrine Disruptor Information
No information available.

12. ECOLOGICAL INFORMATION

Ecotoxicity
Do not empty into drains.

<table>
<thead>
<tr>
<th>Component</th>
<th>Freshwater Algae</th>
<th>Freshwater Fish</th>
<th>Microtox</th>
<th>Water Flea</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethylacetate</td>
<td>EC50 = 3300 mg/L/48h</td>
<td>Gold orfe: LC50: 270 mg/L/48h</td>
<td>EC50 = 1160 mg/L/5 min, EC50 = 1600 mg/L/15 min, EC50 = 5670 mg/L/15 min, EC50 = 7400 mg/L/2 h</td>
<td>EC50 = 717 mg/L/48h</td>
</tr>
</tbody>
</table>

Persistence and Degradability
Readily biodegradable.

Bioaccumulation/ Accumulation
No information available.

Mobility

<table>
<thead>
<tr>
<th>Component</th>
<th>log Pow</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethylacetate</td>
<td>0.6</td>
</tr>
</tbody>
</table>

13. DISPOSAL CONSIDERATIONS
13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

<table>
<thead>
<tr>
<th>Component</th>
<th>RCRA - U Series Wastes</th>
<th>RCRA - P Series Wastes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethyl acetate</td>
<td>U112</td>
<td>-</td>
</tr>
</tbody>
</table>

14. TRANSPORT INFORMATION

DOT

UN-No: UN1173  
Proper Shipping Name: ETHYL ACETATE  
Hazard Class: 3  
Packing Group: II

TDG

UN-No: UN1173  
Proper Shipping Name: ETHYL ACETATE  
Hazard Class: 3  
Packing Group: II

IATA

UN-No: UN1173  
Proper Shipping Name: ETHYL ACETATE  
Hazard Class: 3  
Packing Group: II

IMDG/IMO

UN-No: UN1173  
Proper Shipping Name: ETHYL ACETATE  
Hazard Class: 3  
Packing Group: II

15. REGULATORY INFORMATION

International Inventories

<table>
<thead>
<tr>
<th>Component</th>
<th>TSCA</th>
<th>DSL</th>
<th>NDSL</th>
<th>EINECS</th>
<th>ELINCS</th>
<th>NLP</th>
<th>PICCS</th>
<th>ENCS</th>
<th>AICS</th>
<th>CHINA</th>
<th>KECL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethyl acetate</td>
<td>T</td>
<td>X</td>
<td>-</td>
<td>205-500-4</td>
<td>-</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>KE-00047</td>
<td></td>
</tr>
</tbody>
</table>

Legend:
X - Listed  
E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.
F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.
N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.
P - Indicates a commenced PMN substance
R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.
S - Indicates a substance that is identified in a proposed or final Significant New Use Rule
T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.
XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base
Production and Site Reports (40 CFR 710(b)).
Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.
Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

U.S. Federal Regulations

TSCA 12(b)  Not applicable

SARA 313
Not applicable

SARA 311/312 Hazardous Categorization

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Health Hazard</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chronic Health Hazard</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fire Hazard</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sudden Release of Pressure Hazard</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reactive Hazard</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Clean Water Act
Not applicable

Clean Air Act
Not applicable

OSHA
Not applicable

CERCLA
This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

<table>
<thead>
<tr>
<th>Component</th>
<th>Hazardous Substances RQs</th>
<th>CERCLA EHS RQs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethylacetate</td>
<td>5000 lb</td>
<td>-</td>
</tr>
</tbody>
</table>

California Proposition 65
This product does not contain any Proposition 65 chemicals.

State Right-to-Know

<table>
<thead>
<tr>
<th>Component</th>
<th>Massachusetts</th>
<th>New Jersey</th>
<th>Pennsylvania</th>
<th>Illinois</th>
<th>Rhode Island</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethylacetate</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

U.S. Department of Transportation

Reportable Quantity (RQ): Y
DOT Marine Pollutant  N
DOT Severe Marine Pollutant  N
U.S. Department of Homeland Security
This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade
Serious risk, Grade 3

Canada
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

WHMIS Hazard Class
B2 Flammable Liquid

16. OTHER INFORMATION

Prepared By
Regulatory Affairs
Thermo Fisher Scientific
Tel: (412) 490-8929

Creation Date
13-Oct-2009

Print Date
13-Oct-2009

Revision Summary
****, and red text indicates revision

Disclaimer
The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of MSDS