



MATERIAL SAFETY DATA SHEET

NFPA	HMIS	Personal Protective Equipment
3	Health Hazard2Fire Hazard3Reactivity0	See Section 8.
1. CHEMICAL PRODUCT A	ND COMPANY IDENTIFICAT	ON
Product code:	ET105	
Product Name:	ETHYL ACETATE, NF	
Chemical Name:	Acetic acid, ethyl ester	
Synonyms:	Acetic ether Acetidin Acetoxyethane Ethyl acetic ester Ethyl ethanoate Vinegar naphtha Ethyle (acetate d') (French) Acétate d'éthyle (French) Acétate éthylique (French) Acetato de etilo (Spanish)	
Recommended use: CAS #:	Solvent. Perfuming agent. In photographic films and plates.	
CAS #: Formula:	141-78-6 C4-H8-O2	
RTECS #	AH5425000	
CI#:	Not available	
Supplier:	Spectrum Chemicals and Laboratory Products, Inc. 14422 South San Pedro St. Gardena, CA 90248 (310) 516-8000	
Emergency Telephone Number:	CHEMTREC: 1-800-424-9300	
Contact Person:	Martin LaBenz (West Coast)	
Contact Person:	Chris Terpak (East Coast)	

2. HAZARDS IDENTIFICATION

	EMERGEN	CY OVERVIEW	
DANGER FLAMMABLE! . \	VARNING! IRRITANT. Irrita	ting to eyes. Irritating to respirator	y system. May cause skin
	irr	itation.	
Odor: Ether-like. Fruity.	Physical state: Liquid.	Appearance: No information available	Color: Clear. Colorless.

2. HAZARDS IDENTIFICATION

OSHA Regulatory Status

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)

POTENTIAL HEALTH EFFECTS

Principal Routes of Exposure:

Ingestion. Skin. Eyes. Inhalation.

Acute Potential Health Effects:

Skin Contact:

May cause skin irritation. It may be absorbed through the skin. If absorbed through skin it may cause systemic effects.

Eye Contact:

Causes eye irritation. Causes conjunctival irritation.

Inhalation:

Irritating to respiratory system. May affect respiration. May cause pulmonary edema. Inhalation of vapors may cause dizziness or suffocation. May cause central nervous system effects. It may affect the blood. May affect the liver. May affect the urinary system. May cause cardiovascular effects.

Ingestion:

May cause digestive (gastrointestinal) tract irritation. May cause nausea and vomiting. Aspiration hazard. Aspiration into the lungs may cause chemical pneumonitis. May cause central nervous system effects. May affect the liver. May cause metabolic acidosis. May affect the cardiovascular system.

Chronic Potential Health Effects:

Target Organs:	Skin. Central nervous system. Liver. Kidneys. Lungs. Respiratory system. Heart.	
Carcinogen Status:	No information available	
Mutagenic Effects:	May affect genetic material Experiments with bacteria and/or yeast have shown mutagenic effects Animal experiments showed mutagenic effects	
Teratogenic Effects:	No information available	
Aggravated Medical Conditions:	No information available	

See Section 11 for additional Toxicological Information

POTENTIAL ENVIRONMENTAL EFFECTS

No information available

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS-No.	Weight %
Ethyl Acetate	141-78-6	100

4. FIRST AID MEASURES

General Advice:

Poison information centres in each State capital city can provide additional assistance for scheduled poisons (13 1126).

Skin Contact:	Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Get medical attention if irritation develops.
Eye Contact:	Flush eye with water for 15 minutes. Get medical attention.
Inhalation:	Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention.
Ingestion:	Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Consult a physician if necessary.
Notes to Physician:	Treat symptomatically

5. FIRE-FIGHTING MEASURES

Flammable Properties

Flashpoint (°C/°F):	-4.4 °C/24 °F 7.2 °C/44.96°F	
Tested according to: Closed cup Open cup		
Lower Explosion Limit (%): Upper Explosion Limit (%):	2-2.2% 9-11.5%	
Autoignition Temperature (°C/°F)	426.6 °C/800 °F	
Suitable Extinguishing Media:		Carbon dioxide (CO2). Dry chemical. Alcohol-resistant foam. Water spray.
Unsuitable Extinguishing Media:		Do not use a solid (straight) water stream as it may scatter and spread fire.
Hazardous Combustion Products	:	carbon monoxide; carbon dioxide
Specific hazards:		Flammable. May be ignited by heat, sparks or flames. Container explosion may occur under fire conditions or when heated. Material can burn with invisible flame. Vapor may travel considerable distance to source of ignition and flash back. Vapors may form explosive mixtures with air. Most vapors are heavier than air. They will spread along the ground and collect in low or confined areas (sewers, basements, tanks). Fire may produce irritating, corrosive and/or toxic gases.
Special Protective Equipment for	Firefighters:	As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear
Specific Methods:		Water mist may be used to cool closed containers. For larger fires, use water spray or fog. Cool containers with flooding quantities of water until well after fire is out.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions:

Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Avoid contact with skin, eyes and clothing. Use personal protective equipment. Remove all sources of ignition. Pay attention to flashback. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use spark-proof tools and explosion-proof equipment. In case of large spill, water spray or vapor suppressing foam may be used to reduce vapors, but may not prevent ignition in closed spaces.

Environmental Precautions:

Prevent further leakage or spillage if safe to do so. Prevent entry into waterways, sewers, basements or confined areas. In case of large spill, dike if needed. Dike far ahead of liquid spill for later disposal.

Methods for Cleaning Up:

Absorb spill with inert material (e.g. vermiculite, dry sand or earth), then place in a suitable chemical waste container. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Handling

Technical Measures/Precautions:

Provide sufficient air exchange and/or exhaust in work rooms. Remove all sources of ignition. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded. Keep away from incompatible materials.

Safe Handling Advice:

Wear personal protective equipment. Use only in well-ventilated areas. Avoid contact with skin, eyes and clothing. Keep away from heat and sources of ignition. Do not breathe vapors or spray mist. Do not ingest. When using do not smoke. Handle in accordance with good industrial hygiene and safety practice.

Storage

Technical Measures/Storage Conditions:

Keep container tightly closed in a dry and well-ventilated place. Store at room temperature in the original container. Keep away from heat and sources of ignition. Store in a segrated and approved area. Store away from incompatible materials. Moisture sensitive.

Incompatible Products:

Oxidizing agents. Acids. Bases. Chlorosulfonic acid. Oleum. Potassium t-butoxide.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering measures to reduce exposure:

Ensure adequate ventilation. Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors and mist below their respective threshold limit value.

Personal Protective Equipment

Eye protection: Goggles. Safety glasses with side-shields.

- Skin and body protection: Chemical resistant apron. Long sleeved clothing. Gloves.
- **Respiratory protection:** Vapor respirator. Be sure to use an approved/certified respirator or equivalent.
- **Hygiene measures:** Avoid contact with skin, eyes and clothing. When using, do not eat, drink or smoke. Wash hands before breaks and immediately after handling the product.

National occupational exposure limits

United States

Components	OSHA	NIOSH	ACGIH	AIHA WHEEL
	400 ppm TWA	400 ppm TWA	400 ppm TWA	None
Ethyl Acetate - 141-78-6	1400 mg/m ³ TWA	1400 mg/m ³ TWA		

Canada

Components	Alberta	British Columbia	Quebec	Ontario
Ethyl Acetate	400 ppm TWA	150 ppm TWA	400 ppm TWAEV	400 ppm TWA
141-78-6	1440 mg/m³ TWA		1440 mg/m ³ TWAEV	

Australia and Mexico

Components	Australia	Mexico
Ethyl Acetate	400 ppm STEL	400 ppm TWA
141-78-6	1440 mg/m ³ STEL	1400 mg/m ³ TWA
	200 ppm TWA	
	720 mg/m ³ TWA	

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state: Liquid. Odor: Ether-like. Fruity.

Flash point (°C):

-4.4

Autoignition Temperature (°C/°F): 426.6 °C/800 °F

Melting point/range(°C/°F): -83 °C/-117.4 °F

Density (g/cm3): No information available

Vapor density: 3.04

Odor threshold (ppm): 1.0-4.0

Solubility: Soluble in Ether Soluble in alcohol

Soluble in Acetone Soluble in Benzene Very soluble in water Solubility in Water: 64-80 g/L @ 25 °C; 83.1 g/L @ 20 °C

Appearance: No information available

Taste Bittersweet. Wine-like. Burning.

Lower Explosion Limit (%): 2-2.2%

pH: No information available

Decomposition temperature(°C/°F): No information available

Bulk density: No information available

Evaporation rate: 6.2 (butyl acetate = 1)

Partition coefficient (n-octanol/water): 0.73 Color: Clear. Colorless.

Molecular/Formula weight: 88.11

Upper Explosion Limit (%): 9-11.5%

Boiling point/range(°C/°F): 77 °C/170.6 °F

Specific gravity: 9.02 @ 20 °C 0.894-0.898 @ 25 °C

Vapor pressure @ 20°C (kPa): 9.71-10.11 (12.4 kPa @ 25 °C)

VOC content (g/L): No information available

Miscibility: Miscible with Chloroform

10. STABILITY AND REACTIVITY

Stability:

Stable at normal conditions

Conditions to avoid: Heat. Incompatible materials. Moisture sensitive. Exposure to moist air. Slowly decomposed by moisture.

Materials to avoid:	Strong oxidising agents. Strong acids and strong bases. Chlorosulfonic acid. Potassium t-butoxide. Oleum.
Hazardous decomposition products:	Carbon monoxide. Carbon dioxide. When heated to decomposition it emits acrid smoke and irritating fumes.
Possibility of Hazardous Reactions:	It can react vigorously with Chlorosulfonic acid, Oleum, Potassium-tert-Butoxide Explosive reaction with lithium tetrahydroaluminate
Polymerization:	Hazardous polymerisation does not occur
Corrosivity:	No information available
Special Remarks on Corrosivity:	No information available

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Component Information

Ethyl Acetate - 141-78-6

LD50/oral/rat = 5620 mg/kg Oral LD50 Rat LD50/oral/mouse = 4100 mg/kg LD50/dermal/rabbit = > 18000 mg/kg Dermal LD50 Rabbit > 20 mL/kg Dermal LD50 Rabbit LD50/dermal/rat = No information available LC50/inhalation/rat = 16,000 ppm 6hr 4000 ppm 6hr 4000 ppm 4hr LC50/inhalation/mouse = 45000 mg/m³ 2hr 1500 ppm 4hr Other LD50 information = 4935 mg/kg LD50 Oral Rabbit 5500 mg/kg LD50 Oral Guinea Pig

Product Information

LC50/inhalation/rat = 16,000 ppm 6hr 4000 ppm 4hr LC50/Inhalation/mouse = 45000 mg/m³ 2hr 1500 ppm 4hr LD50/dermal/rabbit = > 18000 mg/kg > 20 mL/kg LD50/dermal/rat = No information available LD50/oral/rat = 5620 mg/kg LD50/oral/mouse = 4100 mg/kg

Local Effects	
Skin irritation:	May cause skin irritation.
Eye irritation:	Causes eye irritation. Causes conjunctival irritation.

Inhalation:	Irritating to respiratory system. Inhalation of high concentrations of vapor may cause anesthetic effects. Inhalation of high concentrations of vapors may cause dizziness or suffocation. May affect respiration (respiratory depression). May cause pulmonary edema. It may affect the liver. May affect the kidneys. Symptoms may include sore throat, shortness of breath, coughing, wheezing, inflammation of the nasal passages. May affect behavior/central nervous system (dizziness, loss of coordination, coma). May affect behavior/central nervous system (somnolence).
Ingestion:	Causes digestive (gastrointestinal) tract irritation. Ingestion may cause nausea, vomiting. May cause flushing and sweating. Aspiration hazard if swallowed. Aspiration into the lungs can cause chemical pneumonitis. May cause metabolic acidosis. May affect the cardiovascular system (tachycardia). May affect the cardiovascular system (tachycardia). May affect the cardiovascular system (somnolence, convulsions). May affect behavior/central nervous system (taxia). It may affect behavior/central nervous system (boastfulness, talkativeness, belligerency, irritability, slurred speech, diplopia, vertigo, drowsiness, coma).
Sensitization:	No information available
Chronic Toxicity	
Chronic Toxicity	Prolonged or repeated skin contact may cause dermatitis and defatting, dryness, and cracking of the skin. Prolonged or repeated ingestion may affect the liver. Prolonged or repeated inhalation may affect the kidneys. Prolonged or repeated inhalation may affect the liver. Prolonged or repeated inhalation may produce changes in pulmonary function and/or chronic bronchitis. Repeated exposure may cause bronchitis to develop with cough, phlegm, and /or shortness of breath. Prolonged or repeated inhalation may affect the blood (anemia, leukocytosis, reduced platelet count). Prolonged or repeated inhalation may affect the blood (changes in red blood cell count). Prolonged or repeated inhalation may cause central nervous system effects. Prolonged or repeated exposure may affect the heart. Prolonged or repeated inhalation may cause loss of appetite.

Carcinogenic effects:

Not considered carcinogenic

Components	NTP	IARC	OSHA HCS - Carcinogens	· · · · · · · · · · · · · · · · · · ·	Australia - Prohibited Carcinogenic Substances	Australia - Notifiable Carcinogenic Substances	
Ethyl Acetate	Not listed	Not listed	Not listed	Not listed	Not listed	Not listed	
Mutagenic Effects:		May affect genetic material . Experiments with bacteria and/or yeast have shown mutagenic effects. Animal experiments showed mutagenic effects.					
Reproductive Effects:May cause adverse reproductive effects based have shown reproductive toxicity effects (lower reduced number of spermatozoa) in male rats. reproduction in humans.		r testicular and pros	tate weights, and				
Teratogenic Effects: No informat		lo information available					
Target Organs:		Skin. Central nervous system. Liver. Kidneys. Lungs. Respiratory system. Heart.					

12. ECOLOGICAL INFORMATION

ECOTOXICITY

Toxicity to terrestrial and aquatic plants and animals:

Information given is based on data on the components and the ecotoxicology of similar products

Ecotoxicity effects:	Aquatic environment.
Aquatic toxicity:	
Ethyl Acetate - 141-78-6	
Freshwater Algae Data:	3300 mg/L EC50 Desmodesmus subspicatus 48 h
Freshwater Fish Species Data:	220-250 mg/L LC50 Pimephales promelas 96 h flow-through 1 352-500 mg/L LC50 Oncorhynchus mykiss 96 h semi-static 1 484 mg/L LC50 Oncorhynchus mykiss 96 h flow-through 1
Water Flea Data:	560 mg/L EC50 Daphnia magna 48 h
Mobility:	No information available
Persistence and degradability:	No information available
Bioaccumulative potential:	No information available

13. DISPOSAL CONSIDERATIONS

Waste from residues / unused products: Waste must be disposed of in accordance with Federal, State and Local regulation.

Contaminated packaging:

Empty containers should be taken for local recycling, recovery or waste disposal

Components	RCRA - F Series Wastes	RCRA - K Series Wastes	RCRA - P Series Wastes	RCRA - U Series Wastes
Ethyl Acetate	None	None	None	U112 Ignitable waste

14. TRANSPORT INFORMATION

DOT

UN-No: Proper Shipping Name: Hazard Class: Packing Group: Subsidiary Risk: Marine Pollutant	UN1173 Ethyl acetate 3 II Not applicable No data available
ERG No:	129
DOT RQ (lbs):	No information available
Symbol(s):	R5
TDG (Canada) Proper Shipping Name: UN-No: Hazard Class: Packing Group: Subsidiary Risk: Description:	Ethyl acetate UN1173 3 II No information available No information available
ADR Proper Shipping Name: UN-No: Hazard Class: Packing Group: Subsidiary Risk: Classification Code: Description:	Ethyl acetate UN1173 3 II No information available No information available No information available

CEFIC Tremcard No:

IMO / IMDG

Proper Shipping Name:	Ethyl acetate
UN-No:	UN1173
Hazard Class:	3
Subsidiary Risk:	No information available
Packing Group:	II
Description:	No information available
IMDG Page:	No information available
Marine Pollutant	No information available
EMS:	F-E
MFAG:	No information available
Maximum Quantity:	No information available

RID

Proper Shipping Name:	Ethyl acetate
UN-No:	UN1173
Hazard Class:	3
Packing Group:	II
Subsidiary Risk:	3
Classification Code:	No information available
Description:	No information available

ICAO

UN-No:	UN1173
Hazard Class:	3
Proper Shipping Name:	Ethyl acetate
Packing Group:	II
Subsidiary Risk:	No information available
Description:	No information available

ΙΑΤΑ

Proper Shipping Name:	Ethyl acetate
UN-No:	UN1173
Hazard Class:	3
Packing Group:	II
Subsidiary Risk:	No information available
ERG Code:	3L
Description:	No information available

15. REGULATORY INFORMATION

International Inventories

Components	U.S. TSCA	Philippines (PICCS)	KOREA KECL	Japan ENCS	CHINA	Australia (AICS)	EINECS-No.
Ethyl Acetate	Present	Present	KE-00047	2-726	Present	Present	205-500-4

U.S. Regulations

Ethyl Acetate

Massachusetts RTK: Present New Jersey RTK Hazardous Substance List: Present

New Jersey - Discharge Prevention - List of Hazardous Substances Present

Pennsylvania RTK: Environmental hazard

Pennsylvania RTK - Environmental Hazard List Present

RI RTK - Hazardous Substances List: Present

Minnesota - Hazardous Substance List: Present

Ethyl Acetate

New York Release Reporting - List of Hazardous Substances: 5000 lb RQ 1 lb RQ Louisana Reportable Quantity List for Pollutants: 5000lbfinal RQ 2270kgfinal RQ California Directors List of Hazardous Substances: Present

California Prop. 65: Safe Drinking Water and Toxic Enforcment Act of 1986.

Chemicals Known to the State of California to Cause Cancer:

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Chemicals Known to the State of California to Cause Reproductive Toxicity:

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Components	Carcinogen	Developmental Toxicity	Male Reproductive Toxicity	Female Reproductive Toxicity:
Ethyl Acetate	Not Listed	Not Listed	Not Listed	Not Listed

CERCLA/SARA

•	CERCLA - Hazardous Substances and their Reportable Quantities	Hazardous	Hazardous	Chemical Category	Section 313 - Reporting de minimis
, , , , , , , , , , , , , , , , , , , ,	5000 lb final RQ 2270 kg final RQ	None	None	None	None

U.S. TSCA

	TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)	TSCA 8(d) -Health and Safety Reporting
Ethyl Acetate	Not Applicable	Not Applicable

Canada

WHMIS hazard class:

B2 Flammable liquid

Ethyl Acetate

B2

Canada Controlled Products Regulation:

This product has been classified according to the hazard criteria of the CPR (Controlled Products Regulation) and the MSDS contains all of the information required by the CPR.

Components	WHMIS Ingredient Disclosure List -
Ethyl Acetate	1 %

Inventory

Components	Canada (DSL)	Canada (NDSL)
Ethyl Acetate	Present	Not Listed

Components	CEPA Schedule I - Toxic Substances	CEPA - 2010 Greenhouse Gases Subject to Manditory Reporting
Ethyl Acetate	Not listed	Not listed

EU Classification

R -phrase(s)

- R11 Highly flammable.
- R36 Irritating to eyes.
- R66 Repeated exposure may cause skin dryness or cracking.
- R67 Vapors may cause drowsiness and diziness.

S -phrase(s)

- S16 Keep away from sources of ignition No smoking.
- S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
- S33 Take precautionary measures against static discharges.

The product is classified in accordance with Annex VI to Directive 67/548/EEC

Indication of danger:

F - Highly flammable.

Xi - Irritant.



16. OTHER INFORMATION

The MSDS format complies with ANSI Z400.1-2004 standards.

Preparation Date	19-May-2011
Reason for revision:	Not applicable
Prepared by:	Sonia Owen
Literature reference:	No information available

All chemicals may pose unknown hazards and should be used with caution. This Material Safety Data Sheet (MSDS) 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 MSDS. The physical properties reported in this MSDS are obtained from the literature and do not constitute product specifications. Information contained herein does not constitute a warranty, whether expressed or implied, as to the safety, merchantability or fitness of the goods for a particular purpose. Spectrum Chemicals & Laboratory Products, Inc. assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied. 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 MSDS is based on technical data judged to be reliable, Spectrum assumes no responsibility for the completeness or accuracy of the information contained herein.