

**ETHYL ACETATE
 LOCAL SALES SPECIFICATION**

SPECIFICATION			
PROPERTIES	UNITS	LIMITS	TEST METHOD
Ethyl Acetate content	Mass %	99.0 min	GC
Water content	Mass %	0.04 max	ASTM D1364

OTHER PHYSICAL PROPERTIES					
PROPERTY	UNITS	LIMITS	RESULTS	TEST METHOD	
				ASTM	SECUNDA
Appearance	Clear colourless and free from matter in suspension		Pass	VISUAL	
Colour	Hazen	-10 max	<2.5	D1209	
Density at 20°C	Kg/l	Report	0.9002	D4052 D1298	
Distillation, corrected to 101.325 kPa Initial Boiling Point Dry Point	°C	Report	76.7	D1078	
	°C	Report	76.9		
Water Content	Mg/kg	200 max	20	D1364	
Residue on evaporation	Mass %	0.002 max	<0.001	D1353	
Acidity as CH ₃ COOH	Mass %	0.003 max	<0.001	D1613	
Ethyl acetate content (dry basis)	Mass %	99.80 min	99.99		GC
Iso-propyl acetate content (dry basis)	Mass %	0.20 max	0.01		GC

Ethanol content (dry basis)	Mg/kg	200 max	<1		GC
Ethyl vinyl ether content (dry basis)	Mg/kg	Report	<1		GC
Acetals content (dry basis)	Mg/kg	Report	<1		GC
Crotonaldehydes content (dry basis)	Mg/kg	50 max	<1		GC
Butyrealdehyde content (dry basis)	Mg/kg	Report	43		GC
Total aldehydes (dry basis)	Mg/kg	100 max	43		GC
MEK content (dry basis)	Mg/kg	50 max	<1		GC

Trade / Commercial Name Synonyms Material Uses	Ethyl Acetate Acetidin, Acetic Acid Ethyl Ester, Ethyl Acetic Ester, Ethyl Ethanoate Coatings: Solvent Industrial applications: organic syntheses. Solvent. Polyurethane systems. Pharmaceutical industry: Pharmaceuticals. Nitrocellulose resins and other natural and synthetic resins, adhesives, herbicides and plastics.
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Composition and Information on Ingredients			
Name	CAS #	% by weight	Exposure Limits
1) Ethyl acetate	141-78-6	99.0 (min.)	TWA: 1440 (mg/m ³) from ACGIH (TLV) [United States] TWA: 400 (ppm) from ACGIH (TLV) [United States] TWA: 1400 (ppm) from OSHA (PEL) [United States] TWA: 1400 (mg/m ³) from OSHA (PEL) [United States]

HEALTH HAZARD INFORMATION

Physical state and appearance: Liquid. (Clear, colourless liquid)
 Emergency overview: Flammable liquid and vapour. May cause eye irritation.
 May cause skin irritation.
 Medical conditions aggravated by exposure: pre-existing chronic lung, skin, blood, liver or kidney diseases. Persons undergoing ANTAUSE treatment, tobacco smoking, simultaneous exposure to ethanol or acetaldehyde.

Causes	Symptoms	Emergency and first aid procedures
Inhalation (Breathing)	Hazardous in case of inhalation. Can irritate nose, mouth and throat causing coughing and wheezing. Exposure to high concentrations can cause headache, nausea, vomiting, dizziness and death.	Evacuate the victim to a safe area. Loosen tight clothing. If breathing difficult, administer oxygen. If victim not breathing, give mouth to mouth resuscitation.
Skin Contact / Absorption	Hazardous in case of skin contact (irritant, permeator). Skin inflammation is characterized by itching, scaling, reddening or occasionally blistering. May cause dryness and cracking of the skin.	Remove and isolate contaminated clothing and shoes. Avoid spreading material on unaffected skin. Wash well with soap and water. Seek medical attention.
Eye Contact	Hazardous in case of eye contact. (Irritant) Can irritate the eyes and cause blurred vision and/or blindness.	Flush thoroughly with water for at least 15 minutes, within 1 minute of contact. Hold eyelids open while washing. Do not use an eye ointment. Seek medical attention.
Ingestion (Swallow)	Hazardous in case of ingestion. A latency period of 12-18 hours, symptoms include initial inebriation, headache, weakness, fatigue, leg cramps, nausea, vomiting, diarrhoea, violent abdominal pain, back /leg pain, delirium progressing rapidly to coma, dilated pupils, bilateral blindness (usually permanent).	Do not induce vomiting. Loosen tight clothing. If victim is not breathing, perform mouth to mouth resuscitation. Seek medical assistance.

Potential Chronic Health Effects	<p>CARCINOGENIC EFFECTS: Classified A5 (Not classifiable for human) by ACGIH. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. Ethyl acetate MAY DECREASE FERTILITY IN MALES.</p>
Overexposure / Signs/ Symptoms	<p>Ethyl acetate is a primary irritant. It can affect you if breathed in or by passing through the skin. Inhalation exposure can cause irritation of eye, nose, throat and upper respiratory tract. It can produce mild Central Nervous System depression, with symptoms such as lightheadedness, dizziness and to pass out. Repeated contact can cause cracking of the skin.</p>

FIRE FIGHTING MEASURES

Flammability of the product:	Flammable.
Auto-ignition Temperature:	427°C (800.6°F)
Flash Points:	<p>CLOSED CUP: -4.4°C (24.1°F). OPEN CUP: 4°C (39.2°F). (Cleveland)</p>
Flammable Limits:	LOWER: 2.2% UPPER 11.5%
Products of Combustion:	These products are carbon oxides (CO, CO2)
Fire Hazards in Presence of Various Substances	Highly flammable in presence of open flames and sparks, of heat of moisture.
Explosion Hazards in Presence of Various Substances	<p>Risks of explosion of the product in presence of mechanical Impact : not available. Risks of explosion of the product in presence of static discharge: Possible. Vapours may form explosive mixtures with air. Poses a moderate explosion hazard when exposed to flame. Ethyl acetate forms potentially explosive reactions with lithium tetrahydroaluminate. Ignites on contact with tert-butoxide. Forms a violent reaction with chlorosulfonic acid and oleum.</p>
Fire Fighting Media and Instructions.	<p>Flammable liquid, soluble or dispersed in water. Moisture reactive material. SMALL FIRE: Obtain advice on use of water. Use DRY chemicals, soda ash or lime.</p>

LARGE FIRE: Use alcohol foam, water spray or fog. **DO NOT** use water jet. Cool containing vessels with water jet in order to prevent pressure build-up, auto ignition or explosion.

Protective clothing (Fire)	Wear MSHA/NIOSH approved self-contained breathing apparatus or equivalent and full protective gear.
Special remarks on Fire Hazards	Vapour may travel considerable distance to source of ignition and flash back. When heated to decomposition it emits acrid smoke and irritating fumes. Cool containers with flooding quantities of water until well after fire is out.
Special remarks on Explosion Hazards	Vapour explosion hazard indoors, outdoors or in sewers. Containers may explode when heated. Vapours may form explosive mixtures with air. Most vapours are heavier than air, they will spread along the ground and collect in low or confined areas (sewers, basements, tanks).

HANDLING AND STORAGE

Handling	Keep locked up. Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe gas/fumes/vapour/spray. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or label. Avoid contact with skin and eyes. Keep away from incompatibles such as oxidizing agents, acids, alkalis, moisture.
Storage	Flammable materials should be stored in a separate safety storage area. Keep away from heat. Keep away from sources of ignition or direct sunlight. Keep container tightly closed. Keep in a cool, well-ventilated place. Ground all equipment containing material. A refrigerated room would be preferable for materials with a flash point lower than 37.8°C (100°F).

ACCIDENTAL RELEASE MEASURES

Small spill or leak	Dilute with water and mop up, or absorb with an inert DRY material and place in an appropriate waste disposal container.
Large spill or leak	Flammable liquid. Keep away from heat. Keep away from sources of ignition. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. DO NOT touch spilled material. Prevent entry into sewers, basements or confined areas; dike if needed. Eliminate all sources of ignition. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

EXPOSURE CONTROLS / PERSONAL PROTECTION:

Engineering Controls	Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapours below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.
Personal Protection	Eyes: Splash goggles Body: Chemical resistant protective suit Respiratory: Vapour respirator. Be sure to use a MSHA/NIOSH approved respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Hands: Butyl rubber gloves. Feet: Chemical resistant safety boots.
Personal Protection in Case of a Large Spill	Splash goggles. Full suit. Vapour respirator. Boots. Gloves. A self-contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Product Name

Exposure Limits

1) Ethyl acetate	TWA: 1440 (mg/m ³) from ACGIH (TLV) [United States] TWA: 400 (ppm) from ACGIH (TLV) [United States] TWA: 1400 (ppm) from OSHA (PEL) [United States] TWA: 1400 (mg/m ³) from OSHA (PEL) [United States]
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Consult local authorities for acceptable exposure limits.

PHYSICAL & CHEMICAL PROPERTIES

Physical state and appearance	Liquid. (Clear colorless liquid)
Molecular weight	88.12g/mole
Molecular formula	C ₄ -H ₈ -O ₂
PH (1% Soln/Water)	7 [Neutral]
Boiling/Condensation point	77°C (170.6°F)
Melting/Freezing point	-83.6°C (-118.5°F)
Critical temperature	250°C (482°F)
Specific gravity	0.902 (Water = 1)
Vapour Pressure	76 mm of Hg (@ 20°C)
Vapour Density	3.04 (Air = 1)
Volatility	100% (v/v)
Odor Threshold	18 ppm
Evaporation Rate	6.2 [solvent]
VOC	Not available.
Viscosity	0.44 cP

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Reg. No. 80/09849/07
Email: bandr@icon.co.za
Web: www.bandr.co.za

LogKow	The product is more soluble in oil; log (oil/water) = 0.7
Ionicity (In water)	Not available
Dispersion properties	See solubility in water, methanol, diethyl ether.
Solubility	Soluble in cold water, methanol, diethyl ether. Partially soluble in hot water.
Physical chemical comments	No additional remark.
Odour	Ether-like, fragrance, fruity, pineapple-like odour.
Taste	Pleasant, bitter-sweet, wine-like burning taste.
Colour	Clear, colourless liquid with a fruity odour.

STABILITY AND REACTIVITY

Stability and Reactivity	The product is stable
Conditions of Instability	Overheating, flames, sources of ignition or direct sunlight. Must not come in contact with oxidizing agents, perchlorates, peroxides, chromic and nitric acids.
Incompatibility with Various Substances	Reactive with oxidizing agents, acids, alkalis, moisture.
Hazardous Decomposition Products	When heated ethyl acetate emits acrid smoke and irritating fumes.
Hazardous Polymerization	Will not occur

TOXICOLOGICAL INFORMATION

Toxicity to Animals	WARNING: THE LC 50 VALUES HEREUNDER ARE ESTMINATED ON THE BASIS OF A 4-HOUR EXPOSURE. Acute oral toxicity (LD50): 5620 mg/kg [Rat] Acute toxicity of the vapour (LC50): 19596 ppm 4 hour(s) [Rat]
Chronic Effects on Humans	CARCINOGENIC EFFECTS: Classified A5 (Not suspected for human) by ACGIH
Other Toxic Effects On Humans	Hazardous in case of skin contact (irritant, permeator), of eye contact (irritant), of inhalation. Slightly hazardous in case of ingestion.
Special remarks on Toxicity to Animals	No additional remark
Special Remarks on Chronic Effects on Humans	No additional remark.

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Special Remarks on
Other Toxic Effects
On Humans

Exposure can cause nausea, headache, vomiting. Material is irritating to
mucous membranes and upper respiratory tract.

ECOLOGICAL INFORMATION

Ecotoxicity LC50 = 1540 ppmg/24 hrs [Brine Shrimp].
BOD5 and COD 36 – 68% in 5 days.
Biodegradable/OECD Biodegradable

ECOLOGICAL INFORMATION CONTINUED

Mobility Not available
Will NOT bioaccumulate.

Toxicity of the Products
Of Biodegradation The products of degradation are less toxic than the product itself.

Special Remarks on
The Products of
Biodegradation No additional remark.

DISPOSAL CONSIDERATIONS

Waste Information Waste must be disposed of in accordance with federal, state and local environmental
control regulations.

Waste Stream Not available.

Consult your local or regional authorities.

TRANSPORT INFORMATION

DOT Classification DOT CLASS 3: Flammable liquid.
ETHYL ACETATE
UN1173
II

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Marine Pollutant	Not a marine pollutant.
Hazardous Substances Reportable Quantity	2270 kg.
Special Provision for Transport	No additional remark.
TDC Classification	TDG CLASS 3: Flammable liquid.
ADR/RID Classification	ADR CLASS: Flammable liquid A. Flammable liquid with a flash point lower than 21 °C (70 °F).
INO/IMDG Classification	IMDG CLASS 3: Flammable liquid.
ICAQ/IATA Classification	IATA CLASS 3: Flammable liquid.

REGULATORY INFORMATION

HCS Classification	HCS CLASS: Flammable liquid having a flash point lower than 37.8°C (100°F)
U.S. Federal Regulations	TSCA inventory: Ethyl acetate Clean Water Act (CWA) 307: No products were found. Clean Water Act (CWA) 311: No products were found. Clean Water (CAA) 112 accidental release prevention: No products were found. Clean Water (CAA) 112 regulated flammable substances: No products were found. Clean Water (CAA) 112 regulated toxic substances: No products were found.
International Regulations WIIMIS (Canada)	WHMIS CLASS B-2: Flammable liquid with a flash point lower than 37.8°C (100°F). CEPA DSL: Ethyl acetate
EINECS DSCL (EEC)	205-500-4. R11 – Highly flammable. R36 – Irritating to eyes. R66 – Repeated exposure may cause skin dryness or cracking. R67 – Vapors may cause drowsiness and dizziness.
International Lists	No products were found.
State Regulations	Pennsylvania RTK: Ethyl acetate

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Florida: Ethyl acetate
Massachusetts RTK: Ethyl acetate

California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer, birth defects or other reproductive harm, which would require a warning under the statute: No products were found.

OTHER INFORMATION

Label Requirements HIGHLY FLAMMABLE LIQUID AND VAPO, VAPOR MAY CAUSE FLASH FIRE. MAY CAUSE EYE IRRITATION. MAY CAUSE SKIN IRRITATION.

References -LOLI Database: The regulated Chemicals List of Lists.
 -CHEMINFO: Canadian Centre for Occupational Health and Safety, Issue: 97-3 (August 1997).
 -BDH; Hazard Data Disk, Version 3
 -CESARS: Chemical Evaluation and Retrieval System, Produced by: Ontario Ministry of Toxicology, Occupational Medicine & Environmental Series: Incorporating:- MEDITEX, HAZARDTEXT, 1st medical response protocols, INFOTEXT, HSDB, CHRIS, OHM/TADS, IRIS, NIOSH pocket guide, RTECS, NJ Fact Sheets, North American Emergency Response Guides, REPROTEXT, REPROTOX, TERIS, Shepard's Catalog of Teratogenic Agents.

Manufacturers Note:

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