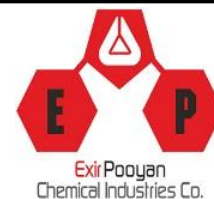


MATERIAL SAFETY DATA SHEET (MSDS)



ETHYL ACETATE

1. PRODUCT IDENTIFICATION:

Synonyms: Acetic acid ethyl ester; Acetic ether; Acetoxyethane; Ethyl Acetic Ester; Ethyl ethanoate

CAS No.: 141-78-6

Molecular Weight: 88

Chemical Formula: $\text{CH}_3\text{COOC}_2\text{H}_5$

COMPANY IDENTIFICATION:

Central Office: No 202, Shahid Beheshti Ave., Tehran-Iran

Post Code: 1577836331

Tel: +982188524300 (10 Lines)

Fax: +982188170565

Factory: Arghavan 3 Ave., No.2 Industrial Zone, Arak-Iran

Post Code: 3833151743

Tel: +988633573306 (10 Lines)

Fax: +988633573236

Web: www.Exirpooyan.com

Email: info@exirpooyan.com

2. HAZARDS IDENTIFICATION:

OSHA/GHS:	Flammable liquids	Category 2
Hazards:	Eye irritation	Category 2A
	Specific target organ toxicity single exposure	Category 3 (Narcotic effects)

LABEL ELEMENTS

Hazard symbols:



Signal word: Danger

Hazard statements:

H225	Highly flammable liquid and vapor.
H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.

Precautionary statements:

Prevention:

P210	Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P233	Keep container tightly closed.
P240	Ground/bond container and receiving equipment.
P241	Use explosion-proof electrical/ ventilating/ lighting equipment.
P242	Use only non-sparking tools.
P243	Take precautionary measures against static discharge.
P280	Wear protective gloves/ eye protection/ face protection.
P264	Wash skin thoroughly after handling.
P261	Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.
P271	Use only outdoors or in a well-ventilated area.

Response:

P303 + P361 + P353	IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P370 + P378	IN CASE OF FIRE: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide for extinction.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313	IF EYE IRRITATION PERSISTS: Get medical advice/ attention.
P304 + P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P312	Call a POISON CENTER/doctor if you feel unwell.

Storage:

P403 + P405 + P235	Store locked up in a well-ventilated place. Keep cool.
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3. COMPOSITION/INFORMATION ON INGREDIENTS:

Components	CAS-No.	Percent
Ethyl Acetate	141-78-6	99-100%

4. FIRST AID MEASURES:

Eye contact	Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
Skin contact	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. When symptoms persist or in all cases of doubt seek medical advice. Wash contaminated clothing before re-use.
Inhalation	Remove to fresh air. If breathing is irregular or stopped, administer artificial respiration. In case of shortness of breath, give oxygen. Call a physician immediately.
Ingestion	If swallowed, call a poison control center or doctor immediately. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person.

5. FIRE FIGHTING MEASURES:**FLAMMABLE PROPERTIES:**

Fire/explosion	Vapors may form explosive mixture with air. Flash back possible over considerable distance. Use water spray to disperse the vapors. NFPA Class 1B flammable liquid.
Suitable extinguishing media	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Protective equipment and precautions for firefighters	In the event of fire, wear self-contained breathing apparatus.
Further information	Keep containers and surroundings cool with water spray. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.

6. ACCIDENTAL RELEASE MEASURES:

Methods and materials for containment and cleaning up	Evacuate personnel to safe areas. Remove all sources of ignition. Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). Do not flush into surface water or sanitary sewer system.
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7. HANDLING AND STORAGE:

Safe handling advice	Ensure all equipment is electrically grounded before beginning transfer operations. Keep away from heat and sources of ignition.
Storage/Transport pressure	Ambient
Load/Unload temperature	Ambient

8. EXPOSURE CONTROLS/ PERSONAL PROTECTION:

ENGINEERING MEASURES:

Air contaminant levels should be controlled below the PEL or TLV for this product (see Exposure Guidelines). Ensure adequate ventilation, especially in confined areas. Use explosion-proof equipment.

PERSONAL PROTECTIVE EQUIPMENT:

Eyes	Chemical resistant goggles must be worn., Face-shield
Skin	Wear suitable protective clothing, gloves and eye/face protection.
Inhalation	Respiratory protection is normally not required except in emergencies or when conditions cause excessive airborne levels of mists or vapors. Use NIOSH approved respiratory protection.

EXPOSURE GUIDELINES:

Components	Exposure limit(s)
Ethyl Acetate	ACGIH TLV (8-hour) 400 ppm 1,400 mg/m ³ OSHA PEL (Permissible Exposure Limit) 400 ppm 1,400 mg/m ³

PEL= Permissible Exposure Limits	TWA= Time Weighted Average (8 hr.)
TLV= Threshold Limit Value	STEL= Short Term Exposure Limit (15 min.)
EL= Excursion Limit	WEEL= Workplace Environmental Exposure Level

9. PHYSICAL AND CHEMICAL PROPERTIES:

Appearance	liquid
Color	Clear, colorless
Form	liquid
Odor	ester-like
Odor Threshold	No data available
Flash point	-4 °C, 25 °F
Flammability	Upper explosion limit: 11.5 %(V) Lower explosion limit: 2.1 %(V)
Boiling point/boiling range	77 °C, 170 °F
Melting point/range	-84 °C, -119 °F
Auto-ignition temperature	426 °C, 799 °F
Decomposition temperature	No data available
Flammability (solid, gas)	No data available
Vapor pressure	97 hPa @ 20 °C, 68 °F
Vapor density	1.2
Density	0.90 g/cm ³ @ 20 °C, 68 °F
Relative density	No data available
Water solubility	completely miscible
Viscosity	No data available
Viscosity, dynamic	0.45 mPa.s @ 20 °C, 68 °F
pH	Not applicable
Evaporation rate	No data available
Partition coefficient: n-octanol/water	log Pow: 0.68; @ 25 °C, 77 °F;

10. STABILITY AND REACTIVITY

Stability:

Stable under ordinary conditions of use and storage. Heat will contribute to instability. Slowly decomposed by moisture.

Hazardous Decomposition Products:

Carbon dioxide and carbon monoxide may form when heated to decomposition.

Hazardous Polymerization:

Will not occur.

Incompatibilities:

Avoid heat, flame and other sources of ignition. Contact with nitrates, strong oxidizers, strong alkalis, or strong acids may cause fire and explosions. Will attack some forms of plastic, rubber, and coatings. Can react vigorously with chlorosulfonic acid ($\text{LiAlH}_2 + 2\text{-chloromethyl furan}$), oleum, K-tert-butoxide.

Conditions to Avoid:

No information found.

11. TOXICOLOGICAL INFORMATION:

Inhalation rat LC50: 200 gm/m³; oral rat LD50: 5620 mg/kg; Skin rabbit LD50: > 20 ml/kg.
Investigated as a mutagen.

12. ECOLOGICAL INFORMATION:

Environmental Fate:

When released into the soil, this material may leach into groundwater. When released into the soil, this material may evaporate to a moderate extent. When released into water, this material may biodegrade to a moderate extent. When released to water, this material is expected to quickly evaporate. When released into the water, this material is expected to have a half-life of less than 1 day. This material has a log octanol-water partition coefficient of less than 3.0. This material is not expected to significantly bio accumulate. When released into the air, this material is expected to be readily degraded by reaction with photo chemically produced hydroxyl radicals. When released into the air, this material may be moderately degraded by photolysis. When released into the air, this material is expected to have a half-life between 1 and 10 days.

Environmental Toxicity:

This material is not expected to be toxic to aquatic life.

13. DISPOSAL CONSIDERATIONS:

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. TRANSPORT INFORMATION:

DOT	UN 1173, Ethyl Acetate, 3, II When shipped in quantities greater than 5,000 lbs, RQ must be added to the shipping description.
IATA	UN 1173, Ethyl Acetate, 3, II When shipped in quantities greater than 5,000 lbs, RQ must be added to the shipping description.
IMDG	UN 1173, Ethyl Acetate, 3, II When shipped in quantities greater than 5,000 lbs, RQ must be added to the shipping description.

15. OTERE INFORMATION:

NFPA Ratings: Health: 1 Flammability: 3 Reactivity: 0

Label Hazard Warning:

WARNING! FLAMMABLE LIQUID AND VAPOR. HARMFUL IF SWALLOWED OR INHALED. AFFECTS CENTRAL NERVOUS SYSTEM. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT.

Label Precautions:

Keep away from heat, sparks and flame.

Avoid breathing vapor.

Keep container closed.

Use only with adequate ventilation.

Avoid contact with eyes, skin and clothing. Wash thoroughly after handling.

Label First Aid:

In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes.

Remove contaminated clothing and shoes. Wash clothing before reuse. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. If swallowed, give large amounts of water to drink. Never give anything by mouth to an unconscious person. In all cases, get medical attention.

