



MERCOFRAMES OPTICAL CORP

5555 Nw 74 Ave. Miami, Fl. 33166

Tel. 305-882-0120

ale@mercoframes.com

ETHYL ALCOHOL (DENATURED)

Section I - IDENTIFICATION

PRODUCT: Ethyl alcohol (denatured)

SYNONYMS: Denatured ethanol

CHEMICAL FORMULA: C₂H₅OH

CHEMICAL ABSTRACT NO.: Mixture

PRODUCT CODE NO.: 12902

Section II - HAZARDOUS INGREDIENTS

<u>COMPOSITION</u>	<u>%</u>	<u>CAS #</u>	<u>TLV</u>	<u>HAZARD</u>
Ethyl alcohol	82.9	000064175	1000 ppm	Flammable
Ethyl acetate	0.2	141-78-6	400 ppm	Flammable
Methyl alcohol	16.4	000067561	200 ppm	Flammable, poisonous
Methyl ethyl ketone	0.5	000078933	200 ppm	Flammable

Section III - HEALTH & FIRST AID INFORMATION

INHALATION: Irritating to upper respiratory tract. Remove patient to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Seek medical attention immediately

INGESTION: Poisonous, may damage central nervous system and internal organs and cause blindness. DO NOT induce vomiting. Have conscious person drink several glasses of water or milk. Never give anything by mouth to an unconscious person. Lower the head so that vomit will not re-enter the mouth and throat. Seek medical attention immediately.

EYE CONTACT: Irritating, can cause color blindness. Check for and remove any contact lenses. Rinse eyes for at least 20 minutes with cold water. See medical attention immediately.

SKIN CONTACT: Only hazardous with prolonged contact. Wash immediately with plenty of water for at least 20 minutes. Thoroughly clean contaminated clothing and shoes before re-use. Seek medical attention.

OTHER HEALTH INFORMATION:

Potential Acute health effects: Very hazardous in case of eye contact (irritant), ingestion or inhalation. hazardous in case of skin contact (permeator). Slightly hazardous in case of skin contact (irritant). Severe over-exposure can result in death. Inflammation of the eye is characterized by redness, watering and itching.

Potential Chronic health effects:

Carcinogenic effects: Classified A4 by ACGIH (for ethyl alcohol) - (Not Classifiable for human or animal)

Mutagenic effects: Not available

Teratogenic effects: Not available

Developmental toxicity: Not available

This substance is toxic to the liver. Repeated or prolonged exposure can produce target organs damage.

Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many organs.

LC₅₀/LD₅₀:

Ethyl Alcohol	LD ₅₀ Acute	Oral	7060 mg/kg	Rat
			3450 mg/kg	Mouse
		Dermal	20000 mg/kg	Rabbit
Methanol	LD ₅₀ Acute	Oral	5628 mg/kg	Rat
			7300 mg/kg	Mouse
		Dermal	15800 mg/kg	Rabbit
	LC ₅₀ Acute	Vapour	64000 ppm-4 hours	Rat
Methyl ethyl ketone	LD ₅₀ Acute	Oral	2737 mg/kg	Rat
			4050 mg/kg	Mouse
		Dermal	6480 mg/kg	Rabbit (RTECS)
			13000 mg/kg	Rabbit
	LC ₅₀ Acute	Vapour	23500 mg/m ³ -8 hours	Rat
Ethyl acetate	LD ₅₀ Acute	Oral	5620 mg/kg	Rat
			4100 mg/kg	Mouse
	LC ₅₀ Acute	Vapour	22627 ppm-4 hours	Rate

OTHER TOXICOLOGICAL INFORMATION:

Routes of entry: Dermal, Eye, Inhalation, Ingestion

Toxicity to Animals: Ethyl alcohol LD50 3450 mg/kg acute oral (Mouse)

Methanol LD50 15800 mg/kg acute dermal (Rabbit)

Remarks: Repeated or prolonged exposure may lead to dermatitis, erythema and scaling. Long term repeated exposure to ethanol may result in development of progressive liver injury with fibrosis.

Section IV - PHYSICAL DATA

BOILING POINT: 75°C (167°F)

VAPOUR DENSITY (AIR=1): Ethyl alcohol: 1.6; Methyl alcohol: 1.1. Weighted average 1.51

SOLUBILITY IN WATER: partially to completely miscible

APPEARANCE AND COLOUR: colourless liquid, alcohol with an alcohol-like odour

SPECIFIC GRAVITY (WATER=1): 0.79

VAPOUR PRESSURE (@20°C): 12.9 kPa

ODOUR THRESHOLD: Highest known value is 2000 ppm (methanol). Weighted average = 413.8 ppm

Section V - FIRE AND EXPLOSION HAZARDS

FLASH POINT & METHODS USED: 12°C (53.6°F) - closed cup

FLAMMABLE LIMITS IN AIR; % BY VOL. LOWER: Ethyl alcohol: 4.3%; Methyl alcohol: 6%

FLAMMABLE LIMITS IN AIR; % BY VOL. UPPER: Ethyl alcohol: 19%; Methyl alcohol: 36.5%

SPECIAL FIRE FIGHTING PROCEDURES & PRECAUTIONS: Flammable liquid soluble or dispersed in water. For Small Fire - use dry chemical powder. For Large Fire - use alcohol foam, water spray or foam. Cool containing vessels with water jet in order to prevent pressure build-up, auto ignition or explosion. Vapours from this product may travel or be moved by air currents and ignited by pilot lights or other flames, sparks, heaters, electrical equipment, static discharges or other ignition sources.

FIRE HAZARD: Flammable in presence of open flames and sparks. Slightly flammable to flammable in the presence of oxidizing materials.

EXPLOSION HAZARDS: Explosive in presence of open flames and sparks.

UNUSUAL FIRE & EXPLOSION HAZARDS: none

AUTO-IGNITION TEMPERATURE: Lowest known value is 363°C (685.4°F) - Ethyl alcohol

Section VI - REACTIVITY

STABILITY: stable

HAZARDOUS POLYMERIZATION: will not occur

CONDITIONS & MATERIALS TO AVOID: heat, sparks, other sources of ignition

HAZARDOUS DECOMPOSITION PRODUCTS: Carbon dioxide

Section VII - EMPLOYEE PROTECTION

CONTROL MEASURES: In case of spill, shut off all sources of ignition. Small spills may be run to waste with plenty of water. Large spills should be transferred to a salvage container. Seek the advice of a professional chemical disposal service. Contact local authorities if spill has entered surface drains or sewers.

RESPIRATORY PROTECTION: Use organic vapour cartridge or self contained breathing apparatus if handling large quantities (use self contained breathing apparatus if concentration is above 1000 ppm).

PROTECTIVE CLOTHING: Wear protective gloves (neoprene, rubber or butyl gloves are recommended).

EYE PROTECTION: Wear approved safety goggles if splashing is likely. Ensure that eyewash station and safety showers are available.

EXPOSURE LIMITS:

Ethyl Acetate	TWA 400 ppm from ACGIH (TLV) (US) TWA 1440 ppm from ACGIH (TLV) (US)
Ethyl Alcohol	TWA 1000 ppm from ACGIH (TLV) (US) TWA 1000 ppm from OSHA (PEL) (US) TWA 1900 mg/m ³ from ACGIH (TLV) (US) TWA 1880 mg/m ³ from OSHA (PEL) (US)
Methanol	TWA 200 ppm from ACGIH (TLV) (US) SKIN TWA 260 ppm from ACGIH (TLV) (US) SKIN
Methyl Ethyl Ketone	TWA 590 STEL 885 mg/m ³ from ACGIH (TLV) (US) TWA 200 STEL 300 ppm from ACGIH (TLV) (US)

Consult local authorities for acceptable exposure limits.

Section VIII - ENVIRONMENTAL PROTECTION

ENVIRONMENTAL PRECAUTIONS: Use with adequate ventilation, local exhaust is acceptable. When transferring between metal containers, ground both vessels.

SPILL OR LEAK PRECAUTIONS: Shut off all possible sources of ignition. Wear protective gloves, use respirator if large quantities are involved or if working in a poorly ventilated area

WASTE DISPOSAL: Small amounts can be run to waste with plenty of water. Large amounts should be disposed of in an incineration facility equipped with an afterburner and scrubber. Consult local, provincial and federal regulations.

Section IX - REGULATORY CONTROLS

DEPT. OF TRANSPORTATION: Regulated under Transport of Dangerous Goods

DOT CLASSIFICATION: Class 3.2 (6.1) UN: 1986

DOT PROPER SHIPPING NAME: Alcohols, Toxic NOS (Ethanol solutions)

OTHER DOT INFORMATION: Packing group II

WHMIS CLASSIFICATION: B2, D1A, D2B

OTHER REGULATORY REQUIREMENT: none

Section X - PRECAUTIONS: HANDLING, STORAGE & USAGE

Store in a cool place away from any possible source of ignition, use only in adequately ventilated areas and ensure against static electricity.

PREPARED BY: MSDS Department

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