

MATERIAL SAFETY DATA SHEET

SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Diethyl Ether

OTHER NAMES: Ethyl ether, ethyl oxide, diethyl oxide, ethyl ether inhibited.

MANUFACTURER: Industrias Monfel, SA de CV
San Luis Potosi, Mexico.

SELLER: Alcotrade, Inc.
16300 NE 19th Ave, Ste 253
North Miami Beach, FL 33162

24-HOUR EMERGENCY ASSISTANCE: (800)-424-9300

Call this number only in the event of chemical emergency involving a spill, leak, fire, exposure or accident involving chemicals.

FOR OTHER INFORMATION CALL: (305)-893-1824

Date prepared (or last reviewed): January 2005

General Use: solvent, chemical intermediate, starting fluid

SECTION 2 - COMPOSITION / INFORMATION ON INGREDIENTS

<u>Component(s)</u>	<u>CAS #</u>	<u>% by wt</u>	<u>OSHA TWA</u>
Diethyl Ether	60-29-7	95-99	400
Ethanol	64-17-5	1-5	1,000
BHT (as inhibitor)	128-37-0	0.001	10

The remaining components are trade secret.

SECTION 3 - HAZARDS IDENTIFICATION

Emergency Overview: Danger. Extremely flammable liquid and vapor. Vapor may cause flash fire. Forms explosive peroxides if material becomes uninhibited. High vapor concentrations may cause drowsiness and irritation of the eyes or respiratory tract. Prolonged or repeated skin contact may cause drying, cracking, or irritation. Could be harmful if inhaled or swallowed. Causes anesthetics effects. Do NOT use compressed air for filling, discharging or handling. For industrial use by trained personnel only!

Primary Entry Routes: Skin, eyes, inhalation and ingestion,

Target Organs: Eyes, skin, respiratory system, and nervous system.

Acute Effects

Inhalation: Inhalation of high concentrations may cause central nervous system effects characterized by headache, dizziness, unconsciousness and coma. May cause respiratory failure, possibly leading to death. May cause seizures and blood abnormalities.

Eye: Redness and possibly swelling of the conjunctivitis.

Skin: May cause irritation with discomfort and local redness.

Ingestion: May cause dizziness, faintness, drowsiness, lack of coordination, abdominal discomfort, nausea, vomiting, and diarrhea.

Carcinogenicity: IARC, NTP, and OSHA do not list Ethyl Ether as a carcinogen. This product contains no carcinogens in concentration of 0.1% or greater.

Medical Conditions Aggravated by Long-Term Exposure: Skin contact may aggravate an existing dermatitis. Inhalation of material may aggravate asthma and inflammatory or fibrotic pulmonary disease.

Chronic Effects: Prolonged or repeated skin contact may cause defatting and dermatitis. Prolonged or repeated exposure can cause psychic abnormalities such as anxiety, depression and excitability.

Other: Any pre – existing disorders or diseases may be aggravated by exposure.

SECTION 4 – FIRST AID MEASURES

Inhalation: Remove exposed person to fresh air. If breathing has stopped, give artificial respiration. Obtain medical attention.

Eye Contact: Gently lift the eyelids and flush immediately and continuously with flooding amounts of water until transported to an emergency medical facility. Do not rub eyes.

Skin Contact: Quickly remove contaminated clothing. Rinse with flooding amounts of water for at least 15 min. Wash exposed area with soap and water. Obtain medical attention.

Ingestion: Do not induce vomiting unless advised by physician or Poison Control Center. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately.

After first aid, get appropriate in-plant, paramedic, or community medical support.

SECTION 5 – FIRE-FIGHTING MEASURES

Flash Point: -45°C (-49°F)

Flash Point Method: Tag closed cup

Burning Rate: N/A

Autoignition Temperature: (ASTM D 2155): 165° C (356 °F)

LEL: 1.9 % (vol.)

UEL: 36 % (vol.)

Flammability Classification: Class 1A Flammable Liquid.

NFPA : Health Hazard: 2, Fire Hazard: 4, Reactivity Hazard: 1.

Extinguishing Media: water spray, dry chemical, carbon dioxide (CO₂), foam.

Unusual Fire or Explosion Hazards: Extremely flammable. Vapors may cause flash fire or ignite explosively. Vapors may travel considerable distance to a source of ignition and flash back. May also produce explosive peroxides during combustion.

Hazardous Combustion Products: Carbon dioxide, carbon monoxide, and peroxides.

Fire-Fighting Instruction: Use water spray to cool fire-exposed containers and structures. Use remote spray monitors or fight fire from behind shields. Use water spray to disperse vapors; re-ignition is possible. Always stay away from the ends of tanks. Fight from a maximum distance. USE WATER WITH CAUTION. Since this material is lighter than water and relatively insoluble, the fire could easily be spread by the use of water in an area where the water could not be contained.

Fire-Fighting Equipment: Wear self-contained breathing apparatus and protective clothing.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Spill/Leak Procedures: Shut off ignition sources; no flares, smoking or flames in hazard area. Stop leak if you can do it without risk. Use water spray, if requires, to reduce vapors. Wear suitable equipment.

Small Spills: Take up with sand or other noncombustible absorbent material and place into containers for later disposal.

Large Spills: Use water spray to disperse vapors and flush spill area. Prevent entry into sewers, waterways, basements or confined areas. Responders may need to be Hazwoper trained. Dike far ahead for later disposal.

Regulatory Requirements: Local, State and Federal authorities may need to be notified. Follow applicable OSHA regulations.

SECTION 7 – HANDLING AND STORAGE

Handling Precautions: Do not handle near sparks, flame or heat. No contact with hot surfaces. Use only with adequate ventilation and personal protection. Metal containers should be grounded and bonded. Containers of this material may be hazardous when emptied. Do NOT use compressed air for filling, discharging, or handling.

Storage Requirements: Keep away from sources of ignition. Store in a cool, dry place, ventilated, fire resistant area. Do not store in direct sunlight. Store in a tightly close container away from incompatible materials. Peroxides form in stored ethers. Avoid light, store under nitrogen blanketing and use inhibitors to minimize peroxides formation.

SECTION 8 – EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls: Institute a respiratory protection program that includes regular training, maintenance, inspection, and evaluation. Educate workers to Diethyl Ethers' specific hazards. Use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits.

Ventilation: Good general ventilation should be used. Ventilation rates should be matched to conditions.

Administrative Controls: Consider periodic medical exams of exposed workers that include a comprehensive medical history, physical examination, CBC, biochemistry panel, and urinalysis.

Respiratory Protection: If engineering controls do not maintain airborne concentrations below recommended exposure limits, an approved respirator must be worn. Respirator type: organic vapors.

Protective Clothing/Equipment: Wear chemically protective gloves, boots, aprons, and gauntlets to prevent prolonged or repeated skin contact. Wear protective eyeglasses or chemical safety goggles, per OSHA eye- and face-protection regulations.

Safety Stations: Make emergency eyewash stations, safety/quick-drench showers, and washing facilities available in work area.

Contaminated Equipment: Remove this material from your shoes and equipment. Launder contaminated clothing before wearing.

Comments: Never eat, drink, or smoke in work areas. Practice good personal hygiene after using ethyl ether, especially before eating, drinking, smoking, using the toilet, or applying cosmetics.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Liquid
Appearance and Odor: Transparent colorless.
Odor Threshold: 8.9 ppm
Vapor Pressure : 440 mm Hg @ 20°C
Vapor Density (air = 1) : 2.6
Molecular Weight: 74.12
Specific Gravity/Density: 0.7 kg/cm³
Water Solubility at 20°C (68 °F): 69 g/L
Boiling Point: 34.6°C @ 760.00mm Hg
Flash Point: -45°C
Auto-ignition temperature: 180°C
Explosive limits (vol % in air): 1.7 – 49
Freezing/Melting Point: -116°C
Viscosity at 20°C (68 °F): 0.23 cP

SECTION 10 – STABILITY AND REACTIVITY

Stability: Not stable during routine use and handling conditions. Prolonged exposure to air and sunlight may form unstable peroxides.

Polymerization: Hazardous polymerization does not occur.

Chemical Incompatibilities: Acetyl peroxide, air, bromoazide, chlorine, chlorine trifluoride, lithium aluminum hydride, ozone, perchloric acid.

Conditions to Avoid : Incompatible materials, light, ignition sources, exposure to air, strong acids, temperatures above 50°C, exposure to moist air or water, oxidizers .

Hazardous Decomposition Products: Carbon monoxide, carbon dioxide, peroxides.

SECTION 11 – TOXICOLOGICAL INFORMATION

Toxicity Data:

Acute Inhalation Effects: LD₅₀ (rat) = 1215 mg/kg.

Acute Oral Effects: LD-50 (rat): 1.70-3.56 ml/kg

Mutagenicity: dni-mus:emb 2850 mg/L

SECTION 12 – ECOLOGICAL INFORMATION

Ecotoxicity: Data for this material have been used to estimate its environmental impact. It has the following properties: a low biochemical oxygen demand and little potential to cause oxygen depletion in aqueous systems, a low potential to affect aquatic organisms, a low potential to bioconcentrate.

Environmental Fate: When diluted with a large amount of water, this material released directly or indirectly into the environment is not expected to have a significant impact.

SECTION 13- DISPOSAL CONSIDERATIONS

Disposal: Contact a licensed contractor for detailed recommendations. Follow applicable Federal, state, and local regulations. Empty containers may be hazardous and may contain product residue, recycle if possible.

SECTION 14 – TRANSPORT INFORMATION

DOT Transportation Data (49 CFR 172.101):

Shipping Name: Diethyl Ether

RQ: 100 lbs.

Hazard Class: 3

ID NO.:1155

Packing Group: I

Label: Flammable Liquid

SECTION 15 –REGULATORY INFORMATION

EPA Regulations:

RCRA Hazardous Waste (40 CFR 261.33): listed.

CERCLA Hazardous Substance – Section 103 (40 CFR 302.4): diethyl ether.

SARA Toxic Chemical - Section 313 (40 CFR 372.65): none.

SARA Extremely Hazardous Substance - Section 302/304 (40 CFR 355): none.

OSHA Regulations:

Listed as Hazardous chemical: Ethyl Ether (29 CFR 1910.1200)

DEA Regulations:

Listed as a Regulated List II Chemical.

SECTION 16 – OTHER INFORMATION

For industrial use only by trained personnel only!

Disclaimer: The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use and disposal of these materials, the safety and health of employees, and the protection of the environment.

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