



MATHESON

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Safety Data Sheet

Material Name ETHYL CHLORIDE

SDS ID: MAT08880

Section 1 - IDENTIFICATION

Product Identifier: ETHYL CHLORIDE

Trade Names/Synonyms

MTG MSDS 32; CHLOROETHANE; MONOCHLOROETHANE; MURIATIC ETHER; KELENE; HYDROCHLORIC ETHER; ETHER HYDROCHLORIC; ETHER MURIATIC; NARCOTILE; AETHYLIS; CHELEN; CHLORETHYL; CHLORIDUM; CHLORYL; CHLORYL ANESTHETIC; ETHER CHLORATUS; AETHYLIS CHLORIDUM; UN 1037; C2H5Cl

Chemical Family

halogenated, aliphatic

Recommended Use

industrial

Restrictions on Use

None known.

Manufacturer Information

MATHESON TRI-GAS, INC.
150 Allen Road, Suite 302
Basking Ridge, NJ 07920

General Information: 1-800-416-2505
Emergency #: 1-800-424-9300 (CHEMTREC)
Outside the US: 703-527-3887 (Call collect)

Section 2 - HAZARDS IDENTIFICATION

Classification in accordance with 29 CFR 1910.1200

Flammable Gases, Category 1
Gas under pressure, Liquefied gas
Eye Damage / Irritation, Category 2A
Skin sensitizer, Category 1
Carcinogenicity, Category 2
Toxic to Reproduction, Category 2
Specific Target Organ Toxicity - Single Exposure, Category 2 (kidneys, liver, and respiratory system)
Specific Target Organ Toxicity - Single Exposure, Category 3 (central nervous system)
Specific Target Organ Toxicity - Repeated Exposure, Category 1 (liver and nervous system)
Specific Target Organ Toxicity - Repeated Exposure, Category 2 (respiratory system)
Hazardous to the Aquatic Environment - Acute Hazard, Category 3
Hazardous to the Aquatic Environment - Chronic Hazard, Category 3

GHS LABEL ELEMENTS

Symbol(s)



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Signal Word

DANGER

Hazard Statement(s)

Extremely flammable gas
Contains gas under pressure; may explode if heated
Causes serious eye irritation
May cause an allergic skin reaction
Suspected of causing cancer
Suspected of damaging fertility or the unborn child
May cause damage to kidneys, liver, and respiratory system.
May cause drowsiness and dizziness
Causes damage to liver and nervous system through prolonged or repeated exposure.
May cause damage to respiratory system through prolonged or repeated exposure.
Harmful to aquatic life with long lasting effects

Precautionary Statement(s)

Prevention

Keep away from heat, sparks, open flame, and hot surfaces - No smoking. Do not breathe gas. Use only outdoors or in a well-ventilated area. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves/clothing and eye/face protection. Use personal protective equipment as required. Contaminated work clothing should not be allowed out of the workplace. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Avoid release to the environment.

Response

Leaking gas fire: Do not extinguish, unless leak can be stopped safely. Eliminate all ignition sources if safe to do so. IF exposed or concerned: Get medical advice/attention. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell. IF ON SKIN: Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before reuse. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

Storage

Store in a well-ventilated place. Protect from sunlight. Keep container tightly closed. Store locked up.

Disposal

Dispose of in accordance with applicable regulations.

Hazard(s) Not Otherwise Classified

May cause frostbite upon sudden release of liquefied gas.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

CAS	Component	Percent
75-00-3	ETHYL CHLORIDE	100

Section 4 - FIRST AID MEASURES

Description of Necessary Measures

Inhalation

If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention.

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Skin

If frostbite or freezing occur, immediately flush with plenty of lukewarm water (105-115 F; 41-46 C). DO NOT USE HOT WATER. If warm water is not available, gently wrap affected parts in blankets. Get immediate medical attention.

Eyes

Flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Then get immediate medical attention.

Ingestion

If swallowed, get medical attention.

Most Important Symptoms/Effects

Acute

frostbite, eye irritation, allergic skin reaction, central nervous system depression, kidney damage, liver damage, respiratory system damage

Delayed

allergic skin reaction, reproductive effects, liver damage, nervous system damage, respiratory system damage, cancer

Indication of Immediate Medical Attention and Special Treatment

For inhalation, consider oxygen.

Section 5 - FIRE FIGHTING MEASURES

Suitable Extinguishing Media

Use regular dry chemical and/or carbon dioxide.
Large fires: Use water spray or fog.

Unsuitable Extinguishing Media

None known.

Specific Hazards Arising from the Chemical

Severe fire hazard. Severe explosion hazard. Vapor/air mixtures are explosive. The vapor is heavier than air. Vapors or gases may ignite at distant ignition sources and flash back. Heating of cylinder beyond pressure relief, may cause cylinder to rupture or explode.

Hazardous Combustion Products

Combustion: acid halides, phosgene, oxides of carbon, hydrogen chloride gas

Fire Fighting Measures

Move container from fire area if it can be done without risk. Do not direct water at source of leak or safety devices; icing may occur. Cool containers with water spray until well after the fire is out. Stay away from the ends of tanks. For fires in cargo or storage area: Cool containers with water from unmanned hose holder or monitor nozzles until well after fire is out. If this is impossible then take the following precautions: Keep unnecessary people away, isolate hazard area and deny entry. Let the fire burn. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire. For tank, rail car or tank truck: Evacuation radius: 800 meters (1/2 mile). Water may be ineffective.

Special Protective Equipment and Precautions for Firefighters

Wear full protective fire fighting gear including self contained breathing apparatus (SCBA) for protection against possible exposure.

Section 6 - ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

Wear personal protective clothing and equipment, see Section 8. Avoid release to the environment.

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Methods and Materials for Containment and Cleaning Up

Avoid heat, flames, sparks and other sources of ignition. Stop leak if possible without personal risk. Eliminate all ignition sources if safe to do so. All equipment used when handling the product must be grounded. Do not touch or walk through spilled material. If possible, turn leaking containers so that gas escapes rather than liquid. Use water spray to reduce vapors or divert vapor cloud drift. Avoid allowing water runoff to contact spilled material. Do not direct water at spill or source of leak. Reduce vapors with water spray. Isolate area until gas has dispersed. Leaking gas fire: Do not extinguish, unless leak can be stopped safely. **Small spills:** Absorb with sand or other non-combustible material. Collect spilled material in appropriate container for disposal. **Large spills:** Dike for later disposal. Keep unnecessary people away, isolate hazard area and deny entry. Notify Local Emergency Planning Committee and State Emergency Response Commission for release greater than or equal to RQ (U.S. SARA Section 304). If release occurs in the U.S. and is reportable under CERCLA Section 103, notify the National Response Center at (800)424-8802 (USA) or (202)426-2675 (USA).

Section 7 - HANDLING AND STORAGE

Precautions for Safe Handling

Keep away from heat, sparks, open flame, and hot surfaces - No smoking. Do not breathe gas. Use only outdoors or in a well-ventilated area. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves and eye/face protection. Use personal protective equipment as required. Contaminated work clothing should not be allowed out of the workplace. Wash thoroughly after handling. Do not eat, drink, or smoke when using this product. Avoid release to the environment.

Conditions for Safe Storage, including any Incompatibilities

Store and handle in accordance with all current regulations and standards. Store in a well-ventilated place. Protect from sunlight. Keep container tightly closed. Store locked up. Grounding and bonding required. Protect from physical damage. Store outside or in a detached building. Store with flammable liquids. Keep separated from incompatible substances. Avoid contact with light. Store in a cool, dry place. Keep separated from incompatible substances. Subject to storage regulations: U.S. OSHA 29 CFR 1910.101.

Incompatibilities metals, oxidizing materials

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Component Exposure Limits

ETHYL CHLORIDE (75-00-3)

ACGIH: 100 ppm TWA

Skin - potential significant contribution to overall exposure by the cutaneous route

Europe: 100 ppm TWA; 268 mg/m³ TWA

OSHA (Final): 1000 ppm TWA; 2600 mg/m³ TWA

OSHA (Vacated): 1000 ppm TWA; 2600 mg/m³ TWA

Component Biological Limit Values

There are no biological limit values for any of this product's components.

IDLH

3800 ppm

Appropriate Engineering Controls

Ventilation equipment should be explosion-resistant if explosive concentrations of material are present. Provide local exhaust or process enclosure ventilation system. Ensure compliance with applicable exposure limits.

Individual Protection Measures, such as Personal Protective Equipment

Eyes/Face Protection

Wear splash resistant safety goggles with a faceshield. Contact lenses should not be worn. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

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Skin Protection

For the gas: Protective clothing is not required. For the liquid: Wear appropriate protective, cold insulating clothing.

Glove Recommendations

Wear insulated gloves.

Respiratory Protection

The following respirators and maximum use concentrations are drawn from NIOSH and/or OSHA.
3800 ppm

Any supplied-air respirator.

Any self-contained breathing apparatus with a full facepiece.

Emergency or planned entry into unknown concentrations or IDLH conditions -

Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode.

Any supplied-air respirator with a full facepiece that is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained breathing apparatus operated in pressure-demand or other positive-pressure mode.

Escape -

Any air-purifying full-facepiece respirator (gas mask) with a chin-style, front-mounted or back-mounted organic vapor canister.

Any appropriate escape-type, self-contained breathing apparatus.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Gas	Appearance:	colorless gas
Color:	colorless	Physical Form:	gas
Odor:	pungent odor, ethereal odor	Odor Threshold:	Not available
Taste:	burning taste	pH:	Not available
Melting/Freezing Point:	-136 °C	Boiling Point:	12 °C
Flash Point:	-50 °C (CC)	Decomposition:	Not available
Evaporation Rate:	Not available	LEL:	3.8 %
UEL:	15.4 %	Vapor Pressure:	1000 mmHg @ 20 °C
Henry's Law Constant:	1.11x10 ⁻² atm-cu m/mole	Vapor Density (air = 1):	2.2
Specific Gravity (water=1):	0.9	Water Solubility:	0.6 %
Log KOW:	1.43	KOC:	24 (estimated)
Auto Ignition:	519 °C	Viscosity:	0.279 cP @10°C
Molecular Weight:	64.52	Molecular Formula:	C2-H5-Cl

Other Property Information

No information available.

Solvent Solubility

Soluble: alcohol, ether, organic solvents

Section 10 - STABILITY AND REACTIVITY

Reactivity

No reactivity hazard is expected.

Chemical Stability

Stable at normal temperatures and pressure.

Possibility of Hazardous Reactions

Will not polymerize.

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Conditions to Avoid

Avoid heat, flames, sparks and other sources of ignition. Containers may rupture or explode if exposed to heat.
Keep out of water supplies and sewers.

Incompatible Materials

metals, oxidizing materials

Hazardous Decomposition

Combustion: acid halides, phosgene, oxides of carbon, hydrogen chloride gas

Section 11 - TOXICOLOGICAL INFORMATION

Acute and Chronic Toxicity

Component Analysis - LD50/LC50

The components of this material have been reviewed in various sources and the following selected endpoints are published:

ETHYL CHLORIDE (75-00-3)

Inhalation LC50 Rat 152 g/m3 2 h

RTECS Acute Toxicity (selected)

The components of this material have been reviewed, and RTECS publishes the following endpoints:

ETHYL CHLORIDE (75-00-3)

Inhalation: 121300 mg/m3/2 hour Inhalation Mouse LC50
152 gm/m3/10 minute(s) Inhalation Rat LC50; 150000 mg/m3/2 hour Inhalation Rat LC50; 152 gm/m3/2 hour Inhalation Rat LC50

Acute Toxicity Level

ETHYL CHLORIDE (75-00-3)

Slightly Toxic: inhalation

Information on Likely Routes of Exposure

Inhalation

irritation, nausea, vomiting, irregular heartbeat, headache, drowsiness, dizziness, loss of coordination, disorientation, kidney damage, liver damage

Ingestion

irritation, blurred vision, frostbite, nausea, vomiting, irregular heartbeat, headache, drowsiness, dizziness, loss of coordination, disorientation, kidney damage, liver damage, sore throat

Skin Contact

irritation, blisters

Eye Contact

irritation, blurred vision

Immediate Effects

frostbite, eye irritation, allergic skin reaction, kidney damage, liver damage, central nervous system depression, respiratory system damage

Delayed Effects

allergic skin reaction, cancer, reproductive effects, liver damage, kidney damage, respiratory system damage

Medical Conditions Aggravated by Exposure

heart or respiratory disorders, kidney disorders, liver disorders

Irritation/Corrosivity Data

eye irritation

RTECS Irritation

The components of this material have been reviewed and RTECS publishes no data as of the date on this document.

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Local Effects

ETHYL CHLORIDE (75-00-3)

Irritant: eye

Target Organs

ETHYL CHLORIDE (75-00-3)

central nervous system

Respiratory Sensitization

No data available.

Dermal Sensitization

Component data indicate the substance is sensitizing.

Carcinogenicity

Component Carcinogenicity

ETHYL CHLORIDE (75-00-3)

ACGIH: A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans

IARC: Monograph 71 [1999]; Monograph 52 [1991] (Group 3 (not classifiable))

DFG: Category 3B (could be carcinogenic for man)

RTECS Mutagenic

The components of this material have been reviewed, and RTECS publishes data for one or more components.

Reproductive Effects Data

Available data characterizes this substance as a reproductive hazard.

RTECS Reproductive Effects

The components of this material have been reviewed, and RTECS publishes the following endpoints:

ETHYL CHLORIDE (75-00-3)

60 mg/m3 Inhalation Rat TCLo (4 hour, 26 week)

RTECS Tumorigenic

The components of this material have been reviewed, and RTECS publishes data for one or more components.

Additional Data

May be excreted in breast milk. Alcohol may enhance the toxic effects. Stimulants such as epinephrine may induce ventricular fibrillation.

Specific Target Organ Toxicity - Single Exposure

kidneys, liver, central nervous system, respiratory system

Specific Target Organ Toxicity - Repeated Exposure

liver, nervous system, respiratory system

Aspiration Hazard

Not applicable.

Section 12 - ECOLOGICAL INFORMATION

Ecotoxicity

Harmful to aquatic life with long lasting effects.

Component Analysis - Aquatic Toxicity

ETHYL CHLORIDE (75-00-3)

Algae: 72 Hr EC50 Desmodesmus subspicatus: 39 mg/L

Invertebrate: 48 Hr EC50 Daphnia magna: 58 mg/L

Persistence and Degradability

Not expected to undergo hydrolysis in the environment. Is expected to volatilize rapidly from water and both moist and dry soil.

Bioaccumulative Potential

Bioconcentration potential in aquatic organisms is low based on a BCF value of 2.5.

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Mobility

Expected to have high mobility in soil.

Section 13 - DISPOSAL CONSIDERATIONS

Disposal Methods

Dispose in accordance with all applicable regulations. Subject to disposal regulations: U.S. EPA 40 CFR 262.

Hazardous Waste Number(s): D001.

Component Waste Numbers

The U.S. EPA has not published waste numbers for this product's components.

Section 14 - TRANSPORT INFORMATION

US DOT Information

Shipping Name: Ethyl chloride

UN/NA #: UN1037 Hazard Class: 2.1

Required Label(s): 2.1

IMDG Information

Shipping Name: Ethyl chloride

UN #: UN1037 Hazard Class: 2.1

Required Label(s): 2.1

Section 15 - REGULATORY INFORMATION

Component Analysis

U.S. Federal Regulations

This material contains one or more of the following chemicals required to be identified under SARA Section 302/304 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4), TSCA 12(b), and/or require an OSHA process safety plan.

ETHYL CHLORIDE (75-00-3)

SARA 313: 1.0 % de minimis concentration

CERCLA: 100 lb final RQ; 45.4 kg final RQ

SARA 311/312 Hazardous Categories

Acute Health: Yes Chronic Health: Yes Fire: Yes Pressure: Yes Reactive: Yes

U.S. State Regulations

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS	CA	MA	MN	NJ	PA
ETHYL CHLORIDE	75-00-3	Yes	Yes	Yes	Yes	Yes

The following statement(s) are provided under the California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65):

WARNING! This product contains a chemical known to the state of California to cause cancer.

Component Analysis - Inventory

Component	CAS	US	CA	EU	AU	PH	JP	KR	CN	NZ
ETHYL CHLORIDE	75-00-3	Yes	DSL	EIN	Yes	Yes	Yes	Yes	Yes	Yes

Section 16 - OTHER INFORMATION

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NFPA Ratings: Health: 2 Fire: 4 Reactivity: 0

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

Key / Legend

ACGIH - American Conference of Governmental Industrial Hygienists; ADR - European Road Transport; AU - Australia; BOD - Biochemical Oxygen Demand; C - Celsius; CA - Canada; CAS - Chemical Abstracts Service; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CN - China; CPR - Controlled Products Regulations; DFG - Deutsche Forschungsgemeinschaft; DOT - Department of Transportation; DSL - Domestic Substances List; EEC - European Economic Community; EINECS - European Inventory of Existing Commercial Chemical Substances; EPA - Environmental Protection Agency; EU - European Union; F - Fahrenheit; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; ICAO - International Civil Aviation Organization; IDL - Ingredient Disclosure List; IDLH - Immediately Dangerous to Life and Health; IMDG - International Maritime Dangerous Goods; JP - Japan; Kow - Octanol/water partition coefficient; KR - Korea; LEL - Lower Explosive Limit; LOLI - List Of Lists™ - ChemADVISOR's Regulatory Database; MAK - Maximum Concentration Value in the Workplace; MEL - Maximum Exposure Limits; NFPA - National Fire Protection Agency; NIOSH - National Institute for Occupational Safety and Health; NJTSR - New Jersey Trade Secret Registry; NTP - National Toxicology Program; NZ - New Zealand; OSHA - Occupational Safety and Health Administration; PH - Philippines; RCRA - Resource Conservation and Recovery Act; RID - European Rail Transport; RTECS - Registry of Toxic Effects of Chemical Substances®; SARA - Superfund Amendments and Reauthorization Act; STEL - Short-term Exposure Limit; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act; TWA - Time Weighted Average; UEL - Upper Explosive Limit; US - United States

Other Information

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End of Sheet MAT08880