



Safety Data Sheet

Material Name: ETHYL CHLORIDE**SDS ID: MAT08880****Section 1 - PRODUCT AND COMPANY IDENTIFICATION****Material Name**

ETHYL CHLORIDE

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

Product Use

industrial.

Restrictions on Use

None known.

Details of the supplier of the safety data sheet

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 paragraph (d) of 29 CFR 1910.1200.**

Flammable Gases - Category 1

Gases Under Pressure - Liquefied gas

Serious Eye Damage/Eye Irritation - Category 2A

Skin Sensitization - Category 1

Carcinogenicity - Category 2

Reproductive Toxicity - Category 2

Specific target organ toxicity - Single exposure - Category 2

Specific target organ toxicity - Single exposure - Category 3

Specific target organ toxicity - Repeated exposure - Category 1

Specific target organ toxicity - Repeated exposure - Category 2

Hazardous to the Aquatic Environment - Acute - Category 3

Hazardous to the Aquatic Environment - Chronic - Category 3

GHS Label Elements**Symbol(s)****Signal Word**

Danger

Hazard Statement(s)



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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 organs. (kidneys , liver , respiratory system)
May cause drowsiness and dizziness.
Causes damage to organs through prolonged or repeated exposure. (liver , nervous system)
May cause damage to organs through prolonged or repeated exposure. (respiratory system)
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/protective clothing/eye protection/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 in accordance with all applicable regulations.

Other Hazards

May cause frostbite upon sudden release of liquefied gas.



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Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

CAS	Component Name	Percent
75-00-3	ETHYL CHLORIDE	100

Section 4 - FIRST AID 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.

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, May cause allergic skin reactions, central nervous system depression, kidney damage, liver damage, respiratory system damage

Delayed

May cause allergic skin reactions, Reproductive Effects, liver damage, nervous system damage, respiratory system damage, cancer

Note to Physicians

For inhalation, consider oxygen.

Section 5 - FIRE FIGHTING MEASURES**Extinguishing Media****Suitable Extinguishing Media**

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

Unsuitable Extinguishing Media

None known.

Special 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

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.



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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.

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. Absorb with sand or other non-combustible material. Collect spilled material in appropriate container for disposal. 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).

Environmental Precautions

Avoid release to the environment.

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/eye protection/face protection. Use Personal Protective equipment as required. Contaminated work clothing should not be allowed out of the workplace. Wash hands 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 in a well-ventilated place.

Protect from sunlight.

Keep container tightly closed.

Store locked up.

Store and handle in accordance with all current regulations and standards. Store in a well-ventilated area. Protect from sunlight. Keep container tightly closed. Keep 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.

Incompatible Materials

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



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NIOSH:	3800 ppm IDLH (10% LEL)
Europe:	100 ppm TWA ; 268 mg/m3 TWA
OSHA (US):	1000 ppm TWA ; 2600 mg/m3 TWA
Mexico:	1000 ppm TWA VLE-PPT ; 2600 mg/m3 TWA VLE-PPT
	1250 ppm STEL [PPT-CT] ; 3250 mg/m3 STEL [PPT-CT]
	Skin - potential for cutaneous absorption

ACGIH - Threshold Limit Values - Biological Exposure Indices (BEI)

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

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**Eye/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.

Skin Protection

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

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.

Glove Recommendations

Wear insulated gloves.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance	colorless gas	Physical State	gas
Odor	pungent odor ,ethereal odor	Color	colorless
Odor Threshold	Not available	pH	Not available
Melting Point	-136 °C (-213 °F)	Boiling Point	12 °C (54 °F)
Boiling Point Range	Not available	Freezing point	Not available
Evaporation Rate	Not available	Flammability (solid, gas)	Not available

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Autoignition Temperature	519 °C (966 °F)	Flash Point	-50 °C Closed Cup (-58 °F)
Lower Explosive Limit	3.8 %	Decomposition temperature	Not available
Upper Explosive Limit	15.4 %	Vapor Pressure	1000 mmHg @ 20 °C
Vapor Density (air=1)	2.2	Specific Gravity (water=1)	0.9
Water Solubility	0.6 %	Partition coefficient: n-octanol/water	Not available
Viscosity	0.279 cp	Kinematic viscosity	Not available
Solubility (Other)	Not available	Density	Not available
Henry's Law Constant	0.0111 atm-m ³ /mole	KOC	24 (Estimated)
Log KOW	1.43	Physical Form	gas
Taste	burning taste	Molecular Formula	C ₂ H ₅ Cl
Molecular Weight	64.52		

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.

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 products

acid halides, Phosgene, Oxides of carbon, hydrogen chloride gas

Section 11 - TOXICOLOGICAL INFORMATION**Information on Likely Routes of Exposure****Inhalation**

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

Skin Contact

irritation, blisters



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Eye Contact

irritation, blurred vision

Ingestion

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

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

Product Toxicity Data

Acute Toxicity Estimate

Inhalation - Gas	> 20000 ppm
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Immediate Effects

frostbite, eye irritation, May cause allergic skin reactions, kidney damage, liver damage, central nervous system depression, respiratory system damage

Delayed Effects

May cause allergic skin reactions, cancer, Reproductive Effects, liver damage, kidney damage, respiratory system damage

Irritation/Corrosivity Data

eye irritation

Respiratory Sensitization

No data available.

Dermal Sensitization

Component data indicate the substance is sensitizing.

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)

Germ Cell Mutagenicity

No data available.

Tumorigenic Data

No data available

Reproductive Toxicity

Available data characterizes components of this product as reproductive hazards.

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.

Medical Conditions Aggravated by Exposure



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heart or respiratory disorders, kidney disorders, liver disorders

Additional Data

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

Section 12 - ECOLOGICAL INFORMATION**Ecotoxicity**

Harmful to aquatic life with long lasting effects.

Component Analysis - Aquatic Toxicity

ETHYL CHLORIDE	75-00-3
Algae:	EC50 72 h Desmodesmus subspicatus 39 mg/L IUCLID
Invertebrate:	EC50 48 h Daphnia magna 58 mg/L IUCLID

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.

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**Hazard Class:** 2.1**UN/NA #:** UN1037**Required Label(s):** 2.1**IMDG Information:****Shipping Name:** ETHYL CHLORIDE**Hazard Class:** 2.1**UN#:** UN1037**Required Label(s):** 2.1**International Bulk Chemical Code**

This material does not contain any chemicals required by the IBC Code to be identified as dangerous chemicals in bulk.

Section 15 - REGULATORY INFORMATION**U.S. Federal Regulations**



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This material contains one or more of the following chemicals required to be identified under SARA Section 302 (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 % de minimis concentration
CERCLA:	100 lb final RQ ; 45.4 kg final RQ

SARA Section 311/312 (40 CFR 370 Subparts B and C) reporting categories

Flammable; Gas Under Pressure; Carcinogenicity; Reproductive Toxicity; Respiratory/Skin Sensitization; Serious Eye Damage/Eye Irritation; Specific Target Organ Toxicity

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

ETHYL CHLORIDE	75-00-3
Carc:	carcinogen , 7/1/1990

Canada Regulations

Canadian WHMIS Ingredient Disclosure List (IDL)

Components of this material have been checked against the Canadian WHMIS Ingredients Disclosure List. The List is composed of chemicals which must be identified on MSDSs if they are included in products which meet WHMIS criteria specified in the Controlled Products Regulations and are present above the threshold limits listed on the IDL

ETHYL CHLORIDE	75-00-3
	1 %

WHMIS Classification

AB

Component Analysis - Inventory

ETHYL CHLORIDE (75-00-3)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR KECI - Annex 1	KR KECI - Annex 2	KR - REACH CCA	CN	NZ	MX	TW	VN (Draft)
Yes	DSL	EIN	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No

Section 16 - OTHER INFORMATION

NFPA Ratings



MATHESON

ask. . .The Gas Professionals™

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Health: 2 Fire: 4 Reactivity: 0

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

Summary of Changes

Updated: 05/01/2015

Key / Legend

ACGIH - American Conference of Governmental Industrial Hygienists; ADR - European Road Transport; AU - Australia; BOD - Biochemical Oxygen Demand; C - Celsius; CA - Canada; CA/MA/MN/NJ/PA - California/Massachusetts/Minnesota/New Jersey/Pennsylvania*; CAS - Chemical Abstracts Service; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CFR - Code of Federal Regulations (US); CLP - Classification, Labelling, and Packaging; CN - China; CPR - Controlled Products Regulations; DFG - Deutsche Forschungsgemeinschaft; DOT - Department of Transportation; DSD - Dangerous Substance Directive; DSL - Domestic Substances List; EC - European Commission; EEC - European Economic Community; EIN - European Inventory of (Existing Commercial Chemical Substances); EINECS - European Inventory of Existing Commercial Chemical Substances; ENCS - Japan Existing and New Chemical Substance Inventory; EPA - Environmental Protection Agency; EU - European Union; F - Fahrenheit; F - Background (for Venezuela Biological Exposure Indices); 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; ISHL - Japan Industrial Safety and Health Law; IUCLID - International Uniform Chemical Information Database; JP - Japan; Kow - Octanol/water partition coefficient; KR KECI Annex 1 - Korea Existing Chemicals Inventory (KECI) / Korea Existing Chemicals List (KECL); KR KECI Annex 2 - Korea Existing Chemicals Inventory (KECI) / Korea Existing Chemicals List (KECL) , KR - Korea; LD50/LC50 - Lethal Dose/ Lethal Concentration; LEL - Lower Explosive Limit; LLV - Level Limit Value; LOLI - List Of Lists™ - ChemADVISOR's Regulatory Database; MAK - Maximum Concentration Value in the Workplace; MEL - Maximum Exposure Limits; MX - Mexico; Ne - Non-specific; NFPA - National Fire Protection Agency; NIOSH - National Institute for Occupational Safety and Health; NJTSR - New Jersey Trade Secret Registry; Nq - Non-quantitative; NSL - Non-Domestic Substance List (Canada); NTP - National Toxicology Program; NZ - New Zealand; OSHA - Occupational Safety and Health Administration; PEL - Permissible Exposure Limit; PH - Philippines; RCRA - Resource Conservation and Recovery Act; REACH - Registration, Evaluation, Authorisation, and restriction of Chemicals; RID - European Rail Transport; SARA - Superfund Amendments and Reauthorization Act; Sc - Semi-quantitative; STEL - Short-term Exposure Limit; TCCA - Korea Toxic Chemicals Control Act; TDG - Transportation of Dangerous Goods; TLV - Threshold Limit Value; TSCA - Toxic Substances Control Act; TW - Taiwan; TWA - Time Weighted Average; UEL - Upper Explosive Limit; UN/NA - United Nations /North American; US - United States; VLE - Exposure Limit Value (Mexico); VN (Draft) - Vietnam (Draft); WHMIS - Workplace Hazardous Materials Information System (Canada).

Other Information

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