



MATHESON

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Safety Data Sheet

Material Name: METHYL CHLOROFORM

SDS ID: MAT14370

Section 1 - PRODUCT AND COMPANY IDENTIFICATION

Material Name

METHYL CHLOROFORM

Synonyms

MTG MSDS 219; 1,1,1-TRICHLOROETHANE; ALPHA-TRICHLOROETHANE; AEROTHENE TT; METHYLTRICHLOROMETHANE; METHYLCHLOROFORM; TRICHLOROMETHYLMETHANE; TRICHLOROETHANE; ETHANE, 1,1,1-TRICHLOROETHANE; CHLORTEN; 1,1,1-TRICHLOROETHANE; UN 2831; C₂H₃Cl₃

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.

Acute Toxicity - Inhalation - Dust/Mist - Category 4

Skin Corrosion/Irritation - Category 2

Serious Eye Damage/Eye Irritation - Category 2A

Carcinogenicity - Category 2

Reproductive Toxicity - Category 2

Specific target organ toxicity - Single exposure - Category 1

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 2

Hazardous to the Aquatic Environment - Chronic - Category 2

Hazardous to the Ozone Layer - Category 1

GHS Label Elements

Symbol(s)



Signal Word

Danger

Hazard Statement(s)

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Harmful if inhaled.
Causes skin irritation.
Causes serious eye irritation.
Suspected of damaging fertility or the unborn child.
Causes damage to organs. (central nervous system , heart)
May cause respiratory tract irritation.
Causes damage to organs through prolonged or repeated exposure. (central nervous system , heart , liver)
May cause damage to organs through prolonged or repeated exposure. (brain , lungs , nervous system)
Toxic to aquatic life with long lasting effects.
Harms public health and the environment by destroying ozone in the upper atmosphere.

Precautionary Statement(s)**Prevention**

Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Use Personal Protective equipment as required.
Do not breathe vapor or mist.
Use only outdoors or in a well-ventilated area.
Wear protective gloves and eye/face protection.
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Avoid release to the environment.

Response

IF exposed.
Call a POISON CENTER or doctor/physician.
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 occurs: Get medical advice/attention.
Take off contaminated clothing and wash 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.
Collect spillage.

Storage

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

Disposal

Dispose in accordance with all applicable regulations.
Refer to manufacturer/supplier for information on recovery/recycling.

Statement(s) of Unknown Acute Toxicity

Inhalation 0% of the mixture consists of ingredient(s) of unknown acute toxicity.

Statement(s) of Unknown Aquatic Toxicity

0% of the mixture consists of ingredient(s) of unknown acute aquatic toxicity.
0% of the mixture consists of ingredient(s) of unknown chronic aquatic toxicity.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

CAS	Component Name	Percent
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71-55-6

METHYL CHLOROFORM

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

Wash skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention, if needed. Thoroughly clean and dry contaminated clothing and shoes before reuse.

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 vomiting occurs, keep head lower than hips to help prevent aspiration. If person is unconscious, turn head to side. Get medical attention immediately.

Most Important Symptoms/Effects**Acute**

respiratory tract irritation, skin irritation, eye irritation, central nervous system depression, central nervous system damage, heart damage

Delayed

central nervous system damage, heart damage, liver damage, Reproductive Effects, lung damage, brain damage, nervous system damage

Note to Physicians

For inhalation, consider oxygen.

Section 5 - FIRE FIGHTING MEASURES

Extinguishing Media**Suitable Extinguishing Media**

carbon dioxide, regular dry chemical, water spray, Large fires: Use dry chemical, carbon dioxide, alcohol-resistant foam or water spray.

Unsuitable Extinguishing Media

Do not scatter spilled material with high-pressure water streams.

Special Hazards Arising from the Chemical

Slight fire hazard.

Hazardous Combustion Products

hydrogen chloride, Phosgene, Oxides of carbon

Fire Fighting Measures

Move container from fire area if it can be done without risk. Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Cool containers with water spray until well after the fire is out. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire. Stay away from the ends of tanks. For tank, rail car or tank truck, evacuation radius: 800 meters (1/2 mile).

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



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Avoid heat, flames, sparks and other sources of ignition. Eliminate all ignition sources if safe to do so. Stop leak if possible without personal risk. Absorb with sand or other non-combustible material. Collect spilled material in appropriate container for disposal. Dike for later disposal. Remove sources of ignition. 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**

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use Personal Protective equipment as required. Do not breathe vapor or mist. Use only outdoors or in a well-ventilated area. Wear protective gloves/eye protection/face protection. 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.

Keep container tightly closed.

Store locked up.

Store and handle in accordance with all current regulations and standards. Store in a well-ventilated area. Keep container tightly closed. Keep locked up. Store in a cool, dry place. Keep separated from incompatible substances.

Incompatible Materials

combustible materials, bases, metals, oxidizing materials

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION**Component Exposure Limits**

METHYL CHLOROFORM	71-55-6
ACGIH:	350 ppm TWA
	450 ppm STEL
NIOSH:	350 ppm Ceiling 15 min ; 1900 mg/m3 Ceiling 15 min
	700 ppm IDLH
Europe:	100 ppm TWA ; 555 mg/m3 TWA
	200 ppm STEL ; 1110 mg/m3 STEL
OSHA (US):	350 ppm TWA ; 1900 mg/m3 TWA
Mexico:	350 ppm TWA VLE-PPT ; 1900 mg/m3 TWA VLE-PPT
	450 ppm STEL [PPT-CT] ; 2460 mg/m3 STEL [PPT-CT]

ACGIH - Threshold Limit Values - Biological Exposure Indices (BEI)**METHYL CHLOROFORM (71-55-6)**

40 ppm Medium: end-exhaled air Time: prior to last shift of workweek Parameter: Methyl chloroform ; 10 mg/l



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Medium: urine Time: end of workweek Parameter: Trichloroacetic acid (nonspecific, semi-quantitative); 30 mg/l
Medium: urine Time: end of shift at end of workweek Parameter: Total trichloroethanol (nonspecific, semi-quantitative); 1 mg/l
Medium: blood Time: end of shift at end of workweek Parameter: Total trichloroethanol (nonspecific)

Engineering Controls

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. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

Skin Protection

Wear appropriate chemical resistant clothing.

Respiratory Protection

The following respirators and maximum use concentrations are drawn from NIOSH and/or OSHA. 700 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 appropriate chemical resistant gloves.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance	clear Colorless liquid	Physical State	liquid
Odor	sweet odor	Color	colorless
Odor Threshold	44 - 100 ppm	pH	Not available
Melting Point	-32 °C (-26 °F)	Boiling Point	74 °C (165 °F)
Boiling Point Range	Not available	Freezing point	Not available
Evaporation Rate	5 (Butyl acetate = 1)	Flammability (solid, gas)	Not available
Autoignition Temperature	537 °C (999 °F)	Flash Point	>93.3 °C (>200 °F)
Lower Explosive Limit	7.5 %	Decomposition temperature	Not available
Upper Explosive Limit	12.5 %	Vapor Pressure	100 mmHg @ 20 °C
Vapor Density (air=1)	4.55	Specific Gravity (water=1)	1.339



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Water Solubility	0.078 % (@ 25 °C)	Partition coefficient: n-octanol/water	Not available
Viscosity	0.858 cp	Kinematic viscosity	Not available
Solubility (Other)	Not available	Density	Not available
Henry's Law Constant	0.072 atm-m3/mole at 25 °C	KOC	17823.79 (estimated from water solubility)
Log KOW	2.49	Physical Form	volatile liquid
Volatility	100 %	Molecular Formula	C-H3-C-Cl3
Molecular Weight	133.4		

Solvent Solubility**Soluble**

acetone, Benzene, chloroform, methanol, ethanol, carbon disulfide, ether, carbon tetrachloride, heptane

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.

Incompatible Materials

combustible materials, bases, metals, oxidizing materials

Hazardous decomposition products

hydrogen chloride, Phosgene, Oxides of carbon

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

irritation, changes in blood pressure, nausea, vomiting, diarrhea, difficulty breathing, irregular heartbeat, headache, drowsiness, dizziness, mood swings, loss of coordination, blood disorders, heart disorders, kidney damage, liver damage, convulsions, Unconsciousness, coma, heart damage, Reproductive Effects

Skin Contact

irritation (possibly severe)

Eye Contact

irritation

Ingestion

irritation, nausea, vomiting, diarrhea, stomach pain, irregular heartbeat, headache, drowsiness, dizziness, Disorientation, loss of coordination, kidney damage, liver damage, convulsions, Unconsciousness, coma, Reproductive Effects

Acute and Chronic Toxicity**Component Analysis - LD50/LC50**



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

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Oral LD50 Rat 9600 mg/kg

Dermal LD50 Rabbit >15800 mg/kg

Inhalation LC50 Rat 18000 ppm 4 h

Product Toxicity Data**Acute Toxicity Estimate**

Dermal	> 2000 mg/kg
Inhalation - Vapor	> 20 mg/L
Oral	> 2000 mg/kg

Immediate Effects

respiratory tract irritation, skin irritation, eye irritation, central nervous system depression, central nervous system damage, heart damage

Delayed Effects

central nervous system damage, heart damage, liver damage, Reproductive Effects, brain damage, lung damage, nervous system damage

Irritation/Corrosivity Data

respiratory tract irritation, skin irritation, eye irritation

Respiratory Sensitization

No data available.

Dermal Sensitization

No data available.

Component Carcinogenicity

METHYL CHLOROFORM	71-55-6
ACGIH:	A4 - Not Classifiable as a Human Carcinogen
IARC:	Monograph 71 [1999] ; Supplement 7 [1987] ; Monograph 20 [1979] (Group 3 (not classifiable))

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

central nervous system, heart, Respiratory system

Specific Target Organ Toxicity - Repeated Exposure

central nervous system, heart, liver, brain, lungs, nervous system

Aspiration hazard

Not expected to be an aspiration hazard.

Medical Conditions Aggravated by Exposure

heart or cardiovascular disorders, kidney disorders, liver disorders, skin disorders and allergies



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Material Name: METHYL CHLOROFORM**SDS ID: MAT14370****Additional Data**

Alcohol may enhance the toxic effects. Stimulants such as epinephrine may induce ventricular fibrillation.

Section 12 - ECOLOGICAL INFORMATION**Ecotoxicity**

Toxic to aquatic life with long lasting effects.

Component Analysis - Aquatic Toxicity

METHYL CHLOROFORM	71-55-6
Fish:	LC50 96 h Pimephales promelas 35.2 - 50.7 mg/L [flow-through]; LC50 96 h Lepomis macrochirus 57 - 90 mg/L [static] (juvenile); LC50 96 h Cyprinus carpio 56 mg/L [flow-through]; LC50 96 h Poecilia reticulata 52.9 mg/L [flow-through]; LC50 96 h Poecilia reticulata 69.7 mg/L [static]; LC50 96 h Pimephales promelas 91 - 126 mg/L [static]; LC50 96 h Oncorhynchus mykiss 46 - 59 mg/L [static]
Algae:	EC50 96 h Pseudokirchneriella subcapitata >500 mg/L EPA
Invertebrate:	LC50 48 h Daphnia magna >530 mg/L IUCLID ; EC50 48 h Daphnia magna 2384 mg/L IUCLID ; EC50 48 h Daphnia magna 9.7 - 12.8 mg/L [Static] EPA

Persistence and Degradability

This material may biodegrade in soil and water.

Bioaccumulative Potential

Bioconcentration potential in aquatic organisms is low based on a BCF value of 0.7-4.9.

Mobility

Expected to have high mobility in soil.

Section 13 - DISPOSAL CONSIDERATIONS**Disposal Methods**

Dispose in accordance with all applicable regulations.

Component Waste Numbers

METHYL CHLOROFORM	waste number U226
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Section 14 - TRANSPORT INFORMATION**US DOT Information:**

Shipping Name: 1,1,1-TRICHLOROETHANE

Hazard Class: 6.1

UN/NA #: UN2831

Packing Group: III

Required Label(s): 6.1

Marine pollutant

IMDG Information:

Shipping Name: 1,1,1-TRICHLOROETHANE

Hazard Class: 6.1

UN#: UN2831

Packing Group: III



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Material Name: METHYL CHLOROFORM**SDS ID: MAT14370****Required Label(s):** 6.1

Marine pollutant

International Bulk Chemical Code

This material contains one or more of the following chemicals required by the IBC Code to be identified as dangerous chemicals in bulk.

METHYL CHLOROFORM	71-55-6
IBC Code:	Category Y

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

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.

METHYL CHLOROFORM	71-55-6
SARA 313:	1 % de minimis concentration
CERCLA:	1000 lb final RQ ; 454 kg final RQ

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

Carcinogenicity; Acute toxicity; Reproductive Toxicity; Skin Corrosion/Irritation; 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
METHYL CHLOROFORM	71-55-6	Yes	Yes	Yes	Yes	Yes

Not listed under California Proposition 65**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

METHYL CHLOROFORM	71-55-6
	0.1 %

WHMIS Classification

BD2

Component Analysis - Inventory**METHYL CHLOROFORM (71-55-6)**

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 - NCI (Draft)
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Yes	DSL	EIN	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes	No
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Section 16 - OTHER INFORMATION

NFPA Ratings

Health: 2 Fire: 1 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; 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; NDSL - Non-Domestic Substance List (Canada); 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; 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; 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 NCI (Draft) - Vietnam National Chemicals Inventory (NCI) (Draft); WHMIS - Workplace Hazardous Materials Information System (Canada) .

Other Information**Disclaimer:**

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