Material Name: METHYL CHLOROFORM  
SDS ID: MAT14370

**Section 1 - IDENTIFICATION**

Product Identifier: METHYL CHLOROFORM

Trade Names/Synonyms
- MTG MSDS 219; 1,1,1-TRICHLOROETHANE; ALPHA-TRICHLOROETHANE; AEROTHENE TT;
- METHYLTRICHLOROMETHANE; METHYLCHLOROFORM; TRICHLOROMETHYL METHANE;
- TRICHLOROETHANE; ETHANE, 1,1,1-TRICHLOROETHANE; CHLORTEN; 1,1,1-TRICHLORETHANE; UN 2831; C2H3Cl3

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

**Section 2 - HAZARDS IDENTIFICATION**

Classification in accordance with 29 CFR 1910.1200
- Acute Toxicity (Inhalation), Category 4
- Skin Corrosion / Irritation, Category 2
- Eye Damage / Irritation, Category 2A
- Toxic to Reproduction, Category 2
- Specific Target Organ Toxicity - Single Exposure, Category 1 (central nervous system and heart)
- Specific Target Organ Toxicity - Single Exposure, Category 3 (respiratory system)
- Specific Target Organ Toxicity - Repeated Exposure, Category 1 (central nervous system, heart, and liver)
- Specific Target Organ Toxicity - Repeated Exposure, Category 2 (brain, lungs, and nervous system)
- Hazardous to the Aquatic Environment - Acute Hazard, Category 2
- Hazardous to the Aquatic Environment - Chronic Hazard, Category 2
- Hazardous for the ozone layer, Category 1

GHS LABEL ELEMENTS

Symbol(s)

Signal Word
DANGER
Safety Data Sheet

Material Name METHYL CHLOROFORM  
SDS ID: MAT14370

Hazard Statement(s)

Harmful if inhaled
Causes skin irritation
Causes serious eye irritation
Suspected of damaging fertility or the unborn child
Causes damage to central nervous system and heart.
May cause respiratory tract irritation.
Causes damage to central nervous system, heart, and liver through prolonged or repeated exposure.
May cause damage to brain, lungs, nervous system through prolonged or repeated exposure.
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 of in accordance with applicable regulations.
Refer to manufacturer/supplier for information on recovery/recycling.

***Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS***

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<th>CAS</th>
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<tbody>
<tr>
<td>71-55-6</td>
<td>METHYL CHLOROFORM</td>
<td>100</td>
</tr>
</tbody>
</table>

Component Related Regulatory Information
This product may be regulated, have exposure limits or other information identified as the following:
Trichloroethane (25323-89-1).

***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.

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

Indication of Immediate Medical Attention and Special Treatment
For inhalation, consider oxygen.

** *Section 5 - FIRE FIGHTING MEASURES* **

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.

Specific Hazards Arising from the Chemical
Slight fire hazard.

Hazardous Combustion Products
Combustion: 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. Avoid release to the environment.

Methods and Materials for Containment and Cleaning Up
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. Small spills: Absorb with sand or other non-combustible material. Collect spilled material in appropriate container for disposal. Large spills: 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).
**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 and eye/face protection. 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. Keep container tightly closed. Store locked up. Store in a cool, dry place. Keep separated from incompatible substances.

**Incompatibilities** 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

**Europe:**
- 100 ppm TWA; 555 mg/m3 TWA
- 200 ppm STEL; 1110 mg/m3 STEL

**OSHA (Final):**
- 350 ppm TWA; 1900 mg/m3 TWA

**OSHA (Vacated):**
- 350 ppm TWA; 1900 mg/m3 TWA
- 450 ppm STEL; 2450 mg/m3 STEL

**NIOSH:**
- 350 ppm Ceiling (15 min); 1900 mg/m3 Ceiling (15 min)

Component Biological Limit Values
**METHYL CHLOROFORM (71-55-6)**

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

**IDLH**
- 700 ppm

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

**Skin Protection**
- Wear appropriate chemical resistant clothing.

**Glove Recommendations**
- Wear appropriate chemical resistant gloves.

**Respiratory Protection**
- The following respirators and maximum use concentrations are drawn from NIOSH and/or OSHA.
  - 700 ppm
  - Any supplied-air respirator.
**Section 9 - PHYSICAL AND CHEMICAL PROPERTIES**

- **Physical State:** Liquid
- **Color:** colorless
- **Odor:** sweet odor
- **pH:** Not available
- **Boiling Point:** 74 °C
- **Decomposition:** Not available
- **LEL:** 7.5 %
- **Vapor Pressure:** 100 mmHg @ 20 °C
- **Vapor Density (air = 1):** 4.55
- **Water Solubility:** 0.078 % @ 25 °C
- **KOC:** 17823.79 estimated from water solubility
- **Viscosity:** 0.858 cP @20 °C
- **Molecular Weight:** 133.40
- **Appearance:** clear, colorless liquid
- **Physical Form:** volatile liquid
- **Odor Threshold:** 44 - 100 ppm
- **Melting/Freezing Point:** -32 °C
- **Flash Point:** >93.3 °C
- **Evaporation Rate:** 5.0 (butyl acetate=1)
- **UEL:** 12.5 %
- **Henry's Law Constant:** 0.072 atm-cu m/mole @ 25°C
- **Specific Gravity (water=1):** 1.3390
- **Log KOW:** 2.49
- **Auto Ignition:** 537 °C
- **Volatility:** 100%
- **Molecular Formula:** C-H3-C-Cl3

Other Property Information

No additional information is available.

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

Combustion: hydrogen chloride, phosgene, oxides of carbon
**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:

**METHYL CHLOROFORM (71-55-6)**

- Dermal LD50 Rabbit: >15800 mg/kg
- Inhalation LC50 Rat: 18000 ppm 4 h
- Oral LD50 Rat: >2000 mg/kg

**RTECS Acute Toxicity (selected)**

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

**METHYL CHLOROFORM (71-55-6)**

- **Inhalation:**
  - 24400 mg/m3 Inhalation Cat LC50
  - 29492 ppm/10 minute(s) Inhalation Mouse LC50
  - 3911 ppm/2 hour Inhalation Mouse LC50
  - 20000 ppm/2 hour Inhalation Rat LC50
  - 14250 ppm/7 hour Inhalation Rat LC50
  - 17000 ppm/4 hour Inhalation Rat LC50

### Acute Toxicity Level

**METHYL CHLOROFORM (71-55-6)**

- Slightly Toxic: inhalation, dermal absorption, ingestion

### 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

**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

**Skin Contact**

- irritation (possibly severe)

**Eye Contact**

- irritation

### 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

### Medical Conditions Aggravated by Exposure

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

### Irritation/Corrosivity Data

- respiratory tract irritation, skin irritation, eye irritation

**RTECS Irritation**

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

**METHYL CHLOROFORM (71-55-6)**

- 450 ppm/8 hour Eyes Man; 100 mg Eyes Rabbit mild; 2 mg/24 hour Eyes Rabbit severe; 5 gm/12 day(s) intermittent Skin Rabbit mild; 20 mg/24 hour Skin Rabbit moderate
Local Effects
METHYL CHLOROFORM (71-55-6)
Irritant: inhalation, skin, eye

Target Organs
METHYL CHLOROFORM (71-55-6)
central nervous system

Respiratory Sensitization
No data available.

Dermal Sensitization
No data available.

Carcinogenicity
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))

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:

METHYL CHLOROFORM (71-55-6)
2100 ppm Inhalation Rat TCLo (6 hour, pregnant 1-20 day(s)); 7000 ppm Inhalation Rat TCLo (3 hour, pregnant 13-19 day(s)); 43 mg/kg Oral Rat TDLo (pregnant 1-22 day(s), 21 day(s))

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

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

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.

Ecotoxicity
Toxic to aquatic life with long lasting effects.
Component Analysis - Aquatic Toxicity

**METHYL CHLOROFORM (71-55-6)**

**Fish:**
- 96 Hr LC50 Pimephales promelas: 35.2 - 50.7 mg/L [flow-through]; 96 Hr LC50 Lepomis macrochirus: 57 - 90 mg/L [static (juvenile)]; 96 Hr LC50 Cyprinus carpio: 56 mg/L [flow-through]; 96 Hr LC50 Poecilia reticulata: 52.9 mg/L [flow-through]; 96 Hr LC50 Poecilia reticulata: 69.7 mg/L [static]; 96 Hr LC50 Pimephales promelas: 91 - 126 mg/L [static]; 96 Hr LC50 Oncorhynchus mykiss: 46 - 59 mg/L [static]

**Algae:**
- 96 Hr EC50 Pseudokirchneriella subcapitata: >500 mg/L

**Invertebrate:**
- 48 Hr LC50 Daphnia magna: >530 mg/L; 48 Hr EC50 Daphnia magna: 2384 mg/L; 48 Hr EC50 Daphnia magna: 9.7 - 12.8 mg/L [Static]

Persistence and Degradability

This material may biodegrade in soil and water.

Bioaccumulative Potential

Bioconcentration potential in aquatic organisms is low based on 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 (71-55-6)**

RCRA: waste number U226

**Section 14 - TRANSPORT INFORMATION**

US DOT Information

Shipping Name: 1,1,1-Trichloroethane

UN/NA #: UN2831  Hazard Class: 6.1  Packing Group: III

Required Label(s): 6.1

IMDG Information

Shipping Name: 1,1,1-Trichloroethane

UN #: UN2831  Hazard Class: 6.1  Packing Group: III

Required Label(s): 6.1

**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.

**METHYL CHLOROFORM (71-55-6)**

SARA 313: 1.0 % de minimis concentration

CERCLA: 1000 lb final RQ; 454 kg final RQ

SARA 311/312 Hazardous Categories

Acute Health: Yes  Chronic Health: Yes  Fire: No  Pressure: No  Reactive: No
Safety Data Sheet

Material Name METHYL CHLOROFORM
SDS ID: MAT14370

U.S. State Regulations

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

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<th>CAS</th>
<th>CA</th>
<th>MA</th>
<th>MN</th>
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<td>71-55-6</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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Not regulated under California Proposition 65

Component Analysis - Inventory

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<th>CAS</th>
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<td>Yes</td>
<td>DSL</td>
<td>EIN</td>
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<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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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

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 MAT14370