



**Tel: 514-956-7503**  
**Fax: 514-956-7504**  
**Internet: www.megs.ca**  
**Email : support@megs.ca**

<b>Montreal</b>	St-Laurent	Tel : 514-956-7503	Fax : 514-956-7504
<b>Ottawa</b>	Nepean	Tel : 613-226-4228	Fax : 613-226-4229
<b>Quebec</b>	Quebec	Tel : 418-834-7447	Fax : 418-834-3774

## **VINYL CHLORIDE- MATERIAL SAFETY DATA SHEET**

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### **24 Hour EMERGENCY CONTACT**

**U.S- CHEMTREC 1-800-424-9300**

**CANADA- CANUTEC 613-996-6666**

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## **1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION**

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### **Matheson Tri-Gas, Inc.**

*The telephone numbers listed below are emergency numbers, please contact your local branch for routine inquiries.*

#### **USA**

959 Route 46 East  
Parsippany, New Jersey  
07054-0624 USA  
**Phone: 973-257-1100**

#### **CANADA**

530 Watson Street  
Whitby, Ontario  
L1N 5R9 Canada  
**Phone: 905-668-3570**

**SUBSTANCE: VINYL CHLORIDE**

**SYMBOL:** C<sub>2</sub>H<sub>3</sub>Cl

**TRADE NAMES/SYNONYMS:**

CHLOROETHYLENE; CHLOROETHENE; CHLORETHENE; TROVIDUR; ETHYLENE MONOCHLORIDE; MONOCHLOROETHYLENE; EXON 470; MONOCHLORO ETHENE; VINYL CHLORIDE MONOMER; VINYL CHLORIDE, INHIBITED; STCC 4905792; RCRA U043; UN 1086; C<sub>2</sub>H<sub>3</sub>CL; MAT24940; RTECS KU9625000

**CHEMICAL FAMILY:** halogenated, aliphatic

**CREATION DATE:** Jan 24 1989

**REVISION DATE:** Mar 16 1999

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**2. COMPOSITION, INFORMATION ON INGREDIENTS**

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**COMPONENT:** VINYL CHLORIDE

**CAS NUMBER:** 75-01-4

**EC NUMBER (EINECS):** 200-831-0

**PERCENTAGE:** >99.9

**COMPONENT:** PHENOL

**CAS NUMBER:** 108-95-2

**EC NUMBER (EINECS):** 203-632-7

**PERCENTAGE:** <0.1

**COMPONENT:** INHIBITORS

**CAS NUMBER:** Not assigned.

**EC NUMBER:** Not assigned.

**PERCENTAGE:** <0.1

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**3. HAZARDS IDENTIFICATION**

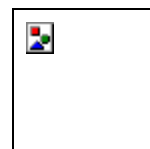
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**NFPA RATINGS (SCALE 0-4):** HEALTH=2 FIRE=4 REACTIVITY=1

**WHMIS CLASSIFICATION:** ABD2

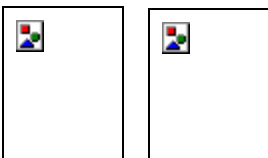
**EC CLASSIFICATION (ASSIGNED):**



F+ Extremely Flammable  
Carcinogen Category 1

R 12-45

EC Classification may be inconsistent with independently-researched data.



#### EMERGENCY OVERVIEW:

**Color:** colorless

**Physical Form:** gas

**Odor:** faint odor, sweet odor

**Major Health Hazards:** harmful if swallowed, skin irritation, eye irritation, central nervous system depression, cancer hazard (in humans)

**Physical Hazards:** Flammable gas. May cause flash fire. May polymerize. Containers may rupture or explode.

#### POTENTIAL HEALTH EFFECTS:

##### INHALATION:

**Short Term Exposure:** irritation, nausea, difficulty breathing, irregular heartbeat, headache, drowsiness, symptoms of drunkenness, disorientation, joint pain, hearing loss, lung congestion

**Long Term Exposure:** impotence, bluish skin color, blood disorders, liver damage, cancer

##### SKIN CONTACT:

**Short Term Exposure:** irritation, blisters

**Long Term Exposure:** same as effects reported in short term exposure

##### EYE CONTACT:

**Short Term Exposure:** irritation, eye damage

**Long Term Exposure:** same as effects reported in short term exposure

##### INGESTION:

**Short Term Exposure:** frostbite

**Long Term Exposure:** cancer

#### CARCINOGEN STATUS:

OSHA: Y

NTP: Y

IARC: Y

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## 4. FIRST AID MEASURES

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**INHALATION:**

When safe to enter area, remove from exposure. Use a bag valve mask or similar device to perform artificial respiration (rescue breathing) if needed. Keep warm and at rest. Get medical attention immediately.

**SKIN CONTACT:**

Wash if needed. If frostbite, freezing, or cryogenic burns occur, warm affected area in warm water. If this is not available, gently wrap affected parts in blankets. Allow circulation to return naturally. Get medical attention immediately.

**EYE CONTACT:**

Wash eyes immediately with large amounts of water, occasionally lifting upper and lower lids, until no evidence of chemical remains. Get medical attention immediately.

**INGESTION:**

If vomiting occurs, keep head lower than hips to help prevent aspiration. Get medical attention, if needed.

**NOTE TO PHYSICIAN:**

For inhalation, consider oxygen.

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**5. FIRE FIGHTING MEASURES**

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**FIRE AND EXPLOSION HAZARDS:**

Severe fire hazard. Severe explosion hazard. The vapor is heavier than air. Vapors or gases may ignite at distant ignition sources and flash back. Vapor/air mixtures are explosive. Electrostatic discharges may be generated by flow or agitation resulting in ignition or explosion.

**EXTINGUISHING MEDIA:**

carbon dioxide, regular dry chemical

Large fires: Use regular foam or flood with fine water spray.

**FIRE FIGHTING:**

Move container from fire area if it can be done without risk. 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: Stop leak if possible without personal risk. Let burn unless leak can be stopped immediately. For smaller tanks or cylinders, extinguish and isolate from other flammables. Evacuation radius: 800 meters (1/2 mile). Stop flow of gas.

**FLASH POINT:**

-108 F (-78 C)

**LOWER FLAMMABLE LIMIT:**

3.6%

**UPPER FLAMMABLE LIMIT:**

33%

**AUTOIGNITION:**

882 F (472 C)

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## 6. ACCIDENTAL RELEASE MEASURES

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### **WATER RELEASE:**

Subject to California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65). Keep out of water supplies and sewers.

### **OCCUPATIONAL RELEASE:**

Avoid heat, flames, sparks and other sources of ignition. Stop leak if possible without personal risk. Reduce vapors with water spray. Keep unnecessary people away, isolate hazard area and deny entry. Remove sources of ignition. Ventilate closed spaces before entering. Reportable Quantity (RQ): 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).

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## 7. HANDLING AND STORAGE

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Store and handle in accordance with all current regulations and standards. Subject to storage regulations: U.S. OSHA 29 CFR 1910.101. Protect from physical damage. Store outside or in a detached building. Inside storage: Store in a cool, dry place. Store in a well-ventilated area. Avoid heat, flames, sparks and other sources of ignition. Keep separated from incompatible substances. Grounding and bonding required. Keep separated from incompatible substances.

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## 8. EXPOSURE CONTROLS, PERSONAL PROTECTION

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### **EXPOSURE LIMITS:**

#### **VINYL CHLORIDE:**

1.0 ppm OSHA TWA  
5 ppm OSHA ceiling 15 minute(s)  
0.5 ppm OSHA action level  
5 ppm (13 mg/m<sup>3</sup>) ACGIH TWA

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

**EYE PROTECTION:** Wear splash resistant safety goggles with a faceshield. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

**CLOTHING:** Wear appropriate chemical resistant clothing.

**GLOVES:** For the gas: Wear appropriate chemical resistant gloves. For the liquid: Wear insulated gloves. OSHA REGULATED SUBSTANCES: U.S. OSHA 29 CFR 1910.1017.

**RESPIRATOR:** The following respirators and maximum use concentrations are drawn from NIOSH and/or OSHA.

#### **10 p/m**

Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply.  
Any supplied-air respirator with a full facepiece that is operated in a pressure-demand or other

positive-pressure mode.

Any chemical cartridge respirator with cartridge(s) providing protection against this substance.

**25 p/m**

Any powered, air-purifying respirator with a full facepiece and cartridge(s) providing protection against this substance.

Any air-purifying respirator with a full facepiece, a canister providing protection against this substance and a high-efficiency particulate filter.

**100 p/m**

Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply.

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.

**1000 p/m**

Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply.

Any supplied-air respirator operated in a continuous-flow mode.

Any supplied-air respirator with a full facepiece.

Any supplied-air respirator operated in a continuous-flow mode.

**3600 p/m**

Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply.

**For Unknown Concentrations or Immediately Dangerous to Life or Health -**

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

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

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**PHYSICAL STATE:** gas

**COLOR:** colorless

**ODOR:** faint odor, sweet odor

**MOLECULAR WEIGHT:** 62.50

**MOLECULAR FORMULA:** C-H<sub>2</sub>-C-H-CL

**BOILING POINT:** 9 F (-13 C)

**FREEZING POINT:** -245 F (-154 C)

**VAPOR PRESSURE:** 2515.6 mmHg @ 21.1 C

**VAPOR DENSITY (air=1):** 2.2

**SPECIFIC GRAVITY (water=1):** 0.9106

**WATER SOLUBILITY:** 0.25%

**PH:** Not applicable

**VOLATILITY:** Not applicable

**ODOR THRESHOLD:** 260 ppm

**EVAPORATION RATE:** Not applicable

**VISCOSITY:** 0.01072 cP @ 20 C

**COEFFICIENT OF WATER/OIL DISTRIBUTION:** Not applicable

**SOLVENT SOLUBILITY:**

**Soluble:** alcohol, ether, carbon tetrachloride, benzene

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## **10. STABILITY AND REACTIVITY**

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**REACTIVITY:**

May polymerize. Avoid contact with light or storage and use above room temperature.

**CONDITIONS TO AVOID:**

Avoid heat, flames, sparks and other sources of ignition. Containers may rupture or explode if exposed to heat.

**INCOMPATIBILITIES:**

metal carbide, metals, oxidizing materials, peroxides

**HAZARDOUS DECOMPOSITION:**

Thermal decomposition products: phosgene, halogenated compounds, oxides of carbon

**POLYMERIZATION:**

May polymerize. Avoid contact with heat, light, air, water or incompatible materials. Closed containers may rupture violently.

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## **11. TOXICOLOGICAL INFORMATION**

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**VINYL CHLORIDE:**

**TOXICITY DATA:**

18 pph/15 minute(s) inhalation-rat LC50; 500 mg/kg oral-rat LD50

**CARCINOGEN STATUS:**

OSHA: Carcinogen; NTP: Known Human Carcinogen; IARC: Human Sufficient Evidence, Animal Sufficient Evidence, Group 1; ACGIH: A1 -Confirmed Human Carcinogen; EC: Category 1

**LOCAL EFFECTS:**

Irritant: skin, eye

**ACUTE TOXICITY LEVEL:**

Toxic: ingestion

Relatively Non-toxic: inhalation

**TARGET ORGANS:**

central nervous system

**TUMORIGENIC DATA:**

Available.

**MUTAGENIC DATA:**

Available.

**REPRODUCTIVE EFFECTS DATA:**

Available.

**ADDITIONAL DATA:**

Stimulants such as epinephrine may induce ventricular fibrillation.

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**12. ECOLOGICAL INFORMATION**[Up to Table of Contents](#)**ECOTOXICITY DATA:**

**FISH TOXICITY:** 388000 ug/L 10 month(s) LETH (Mortality) Northern pike (Esox lucius)

**INVERTEBRATE TOXICITY:** 41.74 ug/L 72 day(s) (Residue) Mosquito (Culex pipiens quinquefasciata)

**ALGAL TOXICITY:** 41.74 ug/L 72 day(s) (Residue) Green algae (Oedogonium cardiacum)

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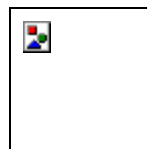
**13. DISPOSAL CONSIDERATIONS**[Up to Table of Contents](#)

Subject to disposal regulations: U.S. EPA 40 CFR 262. Hazardous Waste Number(s): U043. Hazardous Waste Number(s): D043. Dispose of in accordance with U.S. EPA 40 CFR 262 for concentrations at or above the Regulatory level. Regulatory level- 0.2 mg/L. Dispose in accordance with all applicable regulations.

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**14. TRANSPORT INFORMATION**[Up to Table of Contents](#)**U.S. DOT 49 CFR 172.101. SHIPPING NAME-UN NUMBER; HAZARD CLASS; PACKING GROUP; LABEL:**

Vinyl chloride, inhibited or Vinyl chloride, stabilized-UN1086; 2.1; Flammable gas



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**15. REGULATORY INFORMATION**[Up to Table of Contents](#)**U.S. REGULATIONS:**

**TSCA INVENTORY STATUS:** Y

**TSCA 12(b) EXPORT NOTIFICATION:** Not listed.

**CERCLA SECTION 103 (40CFR302.4):** Y

**Vinyl chloride:** 1 LBS RQ

**Phenol:** 1000 LBS RQ

**SARA SECTION 302 (40CFR355.30):** Y

**Phenol:** 500/10000 LBS TPQ

**SARA SECTION 304 (40CFR355.40):** Y

**Phenol:** 1000 LBS RQ



**SARA SECTION 313 (40CFR372.65): Y**  
Vinyl chloride

**SARA HAZARD CATEGORIES, SARA SECTIONS 311/312 (40CFR370.21):**

**ACUTE: Y**  
**CHRONIC: Y**  
**FIRE: Y**  
**REACTIVE: Y**  
**SUDDEN RELEASE: Y**

**OSHA PROCESS SAFETY (29CFR1910.119): N**

**STATE REGULATIONS:**

**California Proposition 65:Y**

Known to the state of California to cause the following:

**Vinyl chloride**  
Cancer (Feb 27, 1987)

**EUROPEAN REGULATIONS:**

**EC NUMBER (EINECS): 200-831-0**

**EC RISK AND SAFETY PHRASES:**

R 12	Extremely flammable.
R 45	May cause cancer.
S 45	In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
S 53	Avoid exposure - obtain special instructions before use.

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## **16. OTHER INFORMATION**

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