



Material Safety Data Sheet

1. Product and Company Identification

Product name : **Vinyl Chloride**

Chemical formula : C-H₂-C-H-Cl

Synonyms : 1-Chloroethylene; 1-Chloroethene; Chloroetheylene; Chloroethene; Chlorethene; Chlorethylene; Ethylene Monochloride; Monochloroethylene; Monochloro ethene; Monochloroethene; Vinyl chloride monomer; Vinyl chloride, Inhibited; Vinyl C Monomer; UN 1086

Company : Med Tech Gases, Inc.
20 Hall Street
Medford, MA 02155

Telephone : 800-FINE-GAS

Emergency : 800-424-9300

2. Composition/Information on Ingredients

Components	CAS Number	% Volume
Vinyl Chloride	75-01-4	99+%
Phenol	108-95-2	< 0.1%
Inhibitors	Not assigned	< 0.1%

3. Hazards Identification

Emergency Overview

Harmful if swallowed, skin irritation, eye irritation, central nervous system depression, cancer hazard (in humans).

Flammable gas. May cause flash fire. May polymerize. Containers may rupture or explode.

Potential Health Effects

Inhalation : Irritation, nausea, difficulty breathing, irregular heartbeat, headache, drowsiness, dizziness, disorientation, joint pain, loss of coordination, hearing loss, lung congestion. May cause impotence, bluish skin color, blood disorders, liver damage, cancer in long term exposure.

Eye contact : Irritation, eye damage.

Skin contact : Irritation, blisters.

Ingestion : Frostbite. May cause cancer in long term exposure.

Chronic Health Hazard : None known.

4. First Aid Measures

General advice : None.

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting upper and lower eyelids, until no evidence of chemical remains. Then get medical attention

- immediately.
- Skin contact : 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.
- Ingestion : If a large amount is swallowed, get medical attention.
- 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.
- Note to physicians : For inhalation, consider oxygen.

5. Fire-Fighting Measures

- Suitable extinguishing media : Carbon dioxide, regular dry chemical.
Large fires: Use regular foam or flood with fine water spray.
- Specific 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.
- 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 the 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 fire 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). Do not attempt to extinguish fire unless flow of material can be stopped first. Flood with fine water spray. Cool containers with water spray until well after the fire is out. Apply water from a protected location or from a safe distance. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas. Evacuate if fire gets out of control or containers are directly exposed to fire. Evacuation radius: 500 meters (1/3 mile). Consider downwind evacuation if material is leaking.

6. Accidental Release Measures

- Water Release : Subject o California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65). Keep out of water supplies and sewers.
- Occupational spill/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. 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).
- Additional advice : None.

7. Handling and Storage

Handling

Secure cylinder when using to protect from falling. Use suitable hand truck to move cylinders.

Storage

Store in accordance with all current regulations and standards. 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. Grounding and bonding required. Subject to storage regulations: U.S. OSHA 29 CFR 1910.101. See original container for storage recommendations. Keep separated from incompatible substances.

8. Exposure Controls / Personal Protection

Exposure limits

Vinyl Chloride (75-01-4)

ACGIH : 1 ppm TWA
OSHA (final) : 5 ppm STEL (see 29 CFR 1910.1017)
1 ppm TWA

Phenol (108-95-2)

ACGIH : 5 ppm TWA
Skin – potential significant contribution to overall exposure by the cutaneous route
OSHA (final) : 5 ppm TWA; 19 mg/m³ TWA
Prevent or reduce skin absorption
OSHA (vacated) : 5 ppm TWA; 19 mg/m³ TWA
Prevent or reduce skin absorption
NIOSH : 5 ppm TWA; 19 mg/m³ TWA
15.6 ppm Ceiling 15 min; 60 mg/m³ Ceiling 15 min
Potential for dermal absorption

Engineering measures/Ventilation

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

Personal protective equipment

Respiratory protection : The following respirators and maximum use concentrations are drawn from NIOSH and/or OSHA.
OSHA Standard – Respirator selection should comply with 29 CFR 1910.134, CFR 1910.1017, and the final rule published in the Federal Register on August 24, 2006.
NIOSH Recommendations – At any detectable concentration – 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 respirator (gas mask) with a chin-style, front-mounted or back-mounted canister providing protection against the compound of concern.
Any appropriate escape-type, self-contained breathing apparatus.

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

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.

Skin and body protection : Wear appropriate chemical resistant clothing.

9. Physical and Chemical Properties

Form	: Gas.
Color	: Colorless.
Odor	: Faint odor, sweet odor.
Molecular weight	: 62.50
Vapor pressure	: 2515.6 mmHg @ 21.1°C
Vapor density	: 2.2 (air = 1)
Specific gravity	: 0.9106 (water = 1)
Boiling point	: -13°C
Melting point	: -154°C
Water solubility	: 0.25%
Evaporation rate	: Not applicable.
Solvent solubility	: Soluble: alcohol, ether, carbon tetrachloride, benzene

10. Stability and Reactivity

Stability	: May polymerize. Avoid contact with light or storage and use above room temperatures.
Conditions to avoid	: Avoid heat, flames, sparks and other sources of ignition. Containers may rupture or explode if exposed to heat.
Materials to avoid	: Metal carbide, metals, oxidizing materials, peroxides.
Hazardous decomposition products	: Thermal decomposition products: halogenated compounds, oxides of carbon, phosgene.

11. Toxicological Information

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

VINYL CHLORIDE (75-01-4)	: Oral LD50 Rat: 500 mg/kg
PHENOL (108-95-2)	: Oral LD50 Rat: 317 mg/kg; Dermal LD50 Rat: 525 mg/kg; Dermal LD50 Rabbit: 630 mg/kg; Inhalation LC50 Rat: 316 mg/m ³ /4H

Acute Toxicity Level

VINYL CHLORIDE (75-01-4)	: Toxic: ingestion Non toxic: inhalation
PHENOL (108-95-2)	: Highly toxic: inhalation Toxic: dermal absorption, ingestion

Component Carcinogenicity

VINYL CHLORIDE (75-01-4)	
ACGIH	: A1 – Confirmed Human Carcinogen
IARC	: Monograph 97 [2008]; Supplement 7 [1987]; Monograph 19 [1979] (Group 1 (carcinogenic to humans))
DFG	: Category 1 (causes cancer in man) Present Known Human Carcinogen
PHENOL (108-95-2)	
ACGIH	: A4 – Not classifiable as a Human Carcinogen
IARC	: Monograph 71 [1999]; Monograph 47 [1989] (Group 3 (not classifiable))
DFG	: Category 3B (could be carcinogenic to man)

Local Effects

VINYL CHLORIDE : Irritant: skin, eye
(75-01-4)
PHENOL (108-95-2) : Corrosive: inhalation, skin, eye, ingestion

Target Organs

VINYL CHLORIDE : Central nervous system
(75-01-4)
PHENOL (108-95-2) : Central nervous system

Additional Data

Stimulants such as epinephrine may induce ventricular fibrillation. May cause birth defects.

12. Ecological Information

Aquatic Toxicity

VINYL CHLORIDE : Fish: 96 Hr LC50 Brachydanio rerio: 210 mg/L
(75-01-4) Algae: 48 Hr EC50 Chilomonas paramecium: 943 mg/L
PHENOL (108-95-2) : Fish: 96 Hr LC50 Pimephales promelas: 11.9 – 50.5 mg/L [flow-through]; 96 Hr LC50 Pimephales promelas: 20.5 – 25.6 mg/L [static]; 96 Hr LC50 Pimephales promelas: 32 mg/L; 96 Hr LC50 Oncorhynchus mykiss: 5.449 – 6.789 mg/L [flow-through]; 96 Hr LC50 Oncorhynchus mykiss: 7.5 – 14 mg/L [static]; 96 Hr LC50 Oncorhynchus mykiss: 4.23 – 7.49 mg/L [semi-static]; 96 Hr LC50 Oncorhynchus mykiss: 5.0 – 12.0 mg/L; 96 Hr LC50 Lepomis macrochirus: 13.5 mg/L [static]; 96 Hr LC50 Lepomis macrochirus: 11.9 – 25.3 mg/L [flow-through]; 96 Hr LC50 Lepomis macrochirus: 11.5 mg/L [semi-static]; 96 Hr LC50 Poecilia reticulata: 34.09 – 47.64 mg/L [static]; 96 Hr LC50 Poecilia reticulata: 31 mg/L [semi-static]; 96 Hr LC50 Brachydanio rerio: 27.8 mg/L; 96 Hr LC50 Cyprinus carpio: 0.00175 mg/L [semi-static]; 96 Hr LC50 Oryzias latipes: 33.9 – 43.3 mg/L [flow-through]; 96 Hr LC50 Oryzias latipes: 23.4 – 36.6 mg/L [static] Algae: 96 Hr EC50 Pseudokirchneriella subcapitata: 46.42 mg/L; 96 Hr EC50 Pseudokirchneriella subcapitata: 0.0188 – 0.1044 mg/L [static]; 72 Hr EC50 Desmodesmus subspicatus: 187 – 279 mg/L [static] Invertebrate: 48 Hr EC50 Daphnia magna: 4.24 – 10.7 mg/L [static]; 48 Hr EC50 Daphnia magna: 10.2 – 15.5 mg/L

13. Disposal Considerations

Waste from residues : Dispose in accordance with all applicable regulations. Hazardous Waste
/ unused products 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. U043.

Contaminated : Return cylinder to supplier.
packaging

Component Waste : Vinyl Chloride (75-01-4) – RCRA: waste_number U043
Numbers 0.2 mg/L regulatory level
Phenol (108-95-2) – RCRA: waste_number U188

14. Transport Information

DOT (US only)

Proper shipping : Vinyl chloride, stabilized
name
Class : 2.1
UN/ID No. : UN1086
Labeling : Flammable Gas

15. Regulatory Information

U.S. Federal Regulations

This material contains one or more of the following chemicals required to be identified under SARA Section 302/304 (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.

VINYL CHLORIDE : 1 lb final RQ; 0.454 kg final RQ
(75-01-4) SARA 313: 0.1 % de minimis concentration
CERCLA: 1 lb final RQ; 0.454 kg final RQ

PHENOL (108-95-2) : SARA 302: 500 lb lower threshold TPQ; 10000 lb upper threshold TPQ
1000 lb final RQ; 454 kg final RQ
SARA 313: 1.0% de minimis concentration
CERCLA: 1000 lb final RQ; 454 kg final RQ

SARA 311/312

Acute: Yes
Chronic: Yes
Fire: Yes
Reactive: Yes
Pressure: 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	RI
VINYL CHLORIDE	75-01-4	Yes	Yes	Yes	Yes	Yes	Yes
PHENOL	108-95-2	Yes	Yes	Yes	Yes	Yes	Yes

The following statement(s) are provided under 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.