Safety Data Sheet

Material Name: VINYL CHLORIDE **SDS ID: 00233342**

* * * Section 1 - PRODUCT AND COMPANY IDENTIFICATION * * *

Material Name: VINYL CHLORIDE

Manufacturer Information

ADVANCED GAS TECHNOLOGIES
1401 Stauffer Road
Palm, PA 18070-0035
Mfg Contact: Outside the US: 703-572-3887 (Collect Calls Accepted)

Phone: 1-800-416-2505

Emergency # 1-800-424-9300 (CHEMTREC

Chemical Family

halogenated, aliphatic

Synonyms

Mtg msds 97; 1-Chloroethylene; 1-Chloroethene; Chloroethylene; Chloroethene; Chlorethene; Chlorethylene; Ethylene monochloride; Monochloroethylene; Monochloro ethene; Monochloroethene; Vinyl chloride monomer; Vinyl chloride, inhibited; Vinyl C monomer; RCRA U043; UN 1086; C2H3Cl; RTECS: KU9625000

* * * Section 2 - HAZARDS IDENTIFICATION * * *

EMERGENCY OVERVIEW

Color: colorless
Physical Form: gas
Odor: faint odor, sweet odor
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: irritation, nausea, difficulty breathing, irregular heartbeat, headache, drowsiness, dizziness, disorientation, joint pain, loss of coordination, hearing loss, lung congestion
Long Term: impotence, bluish skin color, blood disorders, liver damage, cancer

Skin

Short Term: irritation, blisters
Long Term: irritation, blisters

Eye

Short Term: irritation, eye damage
Long Term: irritation, eye damage

Ingestion

Short Term: frostbite
Long Term: cancer

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

CAS	Component	Percent
75-01-4	Vinyl chloride	>99.9
Not Available	Inhibitors	<0.1
108-95-2	Phenol	<0.1

* * * 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

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 a large amount is swallowed, get medical attention.

Note to Physicians

For inhalation, consider oxygen.

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

See Section 9 for Flammability Properties

NFPA Ratings: Health: 2 **Fire:** 4 **Reactivity:** 1

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

Flammable Properties

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 Measures

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). 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.

* * * Section 6 - ACCIDENTAL RELEASE MEASURES * * *

Water Release

Subject to 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).

* * * Section 7 - HANDLING AND STORAGE * * *

Storage Procedures

Store and handle 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.

* * * Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION * * *

Component Analysis

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

Ventilation

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.

PERSONAL PROTECTIVE EQUIPMENT

Eyes/Face

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

Protective Clothing

Wear appropriate chemical resistant clothing.

Glove Recommendations

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

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, 29 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 full-facepiece 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.

* * * Section 9 - PHYSICAL AND CHEMICAL PROPERTIES * * *

Physical State:	Gas	**Appearance:**	Not available
Color:	colorless	**Physical Form:**	gas
Odor:	faint odor, sweet odor	**Odor Threshold:**	260 ppm
Melting Point:	-154 °C	**Boiling Point:**	-13 °C
Flash Point:	-78 °C (CC)	**LEL:**	3.6 %
UEL:	33 %	**Vapor Pressure:**	2515.6 mmHg @ 21.1 °C
Vapor Density (air = 1):	2.2	**Specific Gravity (water = 1):**	0.9106
Water Solubility:	0.25 %	**Auto Ignition:**	472 °C
Viscosity:	0.01072 cP @ 20 °C	**Molecular Weight:**	62.50
Molecular Formula:	C-H2-C-H-Cl		

Solvent Solubility

Soluble: alcohol, ether, carbon tetrachloride, benzene

* * * Section 10 - STABILITY AND REACTIVITY * * *

Chemical Stability

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.

Materials to Avoid

metal carbide, metals, oxidizing materials, peroxides.

Decomposition Products

halogenated compounds oxides of carbon phosgene

Possibility of Hazardous Reactions

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

* * * Section 11 - TOXICOLOGICAL INFORMATION * * *

Component Analysis - LD50/LC50

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/m3/4H

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 for man)

Local Effects

Vinyl chloride (75-01-4)

Irritant: skin, eye.

Phenol (108-95-2)

Corrosive: inhalation, skin, eye, ingestion.

Target Organs

Vinyl chloride (75-01-4)

central nervous system.

Phenol (108-95-2)

central nervous system.

Additional Data

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

* * * Section 12 - ECOLOGICAL INFORMATION * * *

Component Analysis - Aquatic Toxicity

Vinyl chloride (75-01-4)

Fish: 96 Hr LC50 Brachydanio rerio: 210 mg/L

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

* * * Section 13 - DISPOSAL CONSIDERATIONS * * *

Disposal Methods

Dispose in accordance with all applicable regulations. 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. U043.

Component Waste Numbers

Vinyl chloride (75-01-4)

RCRA: waste_number U043
0.2 mg/L regulatory level

Phenol (108-95-2)

RCRA: waste_number U188

* * * Section 14 - TRANSPORT INFORMATION * * *

US DOT Information

Shipping Name: Vinyl chloride, stabilized
UN/NA #: UN1086 **Hazard Class:** 2.1
Required Label(s): 2.1

TDG Information

Shipping Name: Vinyl chloride, stabilized
UN #: UN1086 **Hazard Class:** 2.1
Required Label(s): 2.1

* * * 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.

Vinyl chloride (75-01-4)

1 lb final RQ; 0.454 kg final RQ

Vinyl chloride (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 Health: Yes **Chronic Health:** Yes **Fire:** Yes **Pressure:** Yes **Reactive:** 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 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.

Canada WHMIS

The following components are identified under the Canadian Hazardous Products Act Ingredient Disclosure List:

Vinyl chloride (75-01-4)

0.1 %

Component Analysis - Inventory

Component	CAS	US	CA	EU	AU	PH	JP	KR	CN	NZ
Vinyl chloride	75-01-4	Yes	DSL	EIN	Yes	Yes	Yes	Yes	Yes	Yes
Phenol	108-95-2	Yes	DSL	EIN	Yes	Yes	Yes	Yes	Yes	Yes

* * * Section 16 - OTHER INFORMATION * * *

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 Communicty; EINECS - European Inventory of Existing Commercial Chemical Substances; EPA - Environmental Protection Agency; EU - European Union; F - Farenheit; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; ICAO - International Civil Aviation Organization; IDL - Ingredient Disclosure List; 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

End of Sheet 00233342