

**Common Name: VINYL CHLORIDE**

Synonyms: Chloroethylene; Monochloroethylene; VCM

CAS No: 75-01-4

Molecular Formula: CH<sub>2</sub> = CHCl

RTK Substance No: 2001

Description: Colorless gas, with a sweet odor at high concentrations, that is usually handled as a liquid under pressure

### HAZARD DATA

Hazard Rating	Firefighting	Reactivity
<p><b>4 - Health</b></p> <p><b>4 - Fire</b></p> <p><b>2 - Reactivity</b></p> <p><b>DOT#:</b> UN 1086</p> <p><b>ERG Guide #:</b> 116P</p> <p><b>Hazard Class:</b> 2.1 (Flammable Gas)</p>	<p>FLAMMABLE AND REACTIVE GAS that can EXPLOSIVELY POLYMERIZE if not inhibited.</p> <p>DO NOT attempt to extinguish fire unless flow can be stopped. Shut off supply or let burn.</p> <p>Use dry chemical or CO<sub>2</sub> for small fires.</p> <p>POISONOUS GASES ARE PRODUCED IN FIRE, including <i>Hydrogen Chloride</i> and <i>Phosgene</i>.</p> <p>CONTAINERS MAY EXPLODE IN FIRE.</p> <p>Use water spray to reduce vapors and to keep containers cool.</p> <p>Vapor is heavier than air and may travel a distance to cause a fire or explosion far from the source or flash back.</p> <p>Flow or agitation may generate electrostatic charges.</p> <p><b>Vinyl Chloride</b> may form an ignitable vapor/air mixture in closed tanks or containers.</p>	<p><b>Vinyl Chloride</b> can polymerize rapidly or explosively when exposed to elevated temperatures (over 125°F (52°C)), or when exposed to AIR or LIGHT in the presence of a CATALYST.</p> <p><b>Vinyl Chloride</b> reacts violently with OXIDIZING AGENTS (such as PERCHLORATES, PEROXIDES, PERMANGANATES, CHLORATES, NITRATES, CHLORINE, BROMINE and FLUORINE).</p> <p><b>Vinyl Chloride</b> is not compatible with WATER; METALS (such as COPPER, ALUMINUM, IRON and STEEL); METAL CARBIDES; and METAL ALLOYS as fires and/or explosions may occur.</p> <p><i>Phenol</i> should be used as an inhibitor to prevent violent polymerization of <b>Vinyl Chloride</b>.</p> <p><b>Vinyl Chloride</b> may accumulate static electricity.</p>

### SPILL/LEAKS

**Isolation Distance:**  
 Spill: 100 meters (330 feet)  
 Fire: 800 meters (1/2 mile)

Stop flow of gas. If source of leak is a cylinder and the leak cannot be stopped in place, remove the leaking cylinder to a safe place in the open air, and repair leak or allow cylinder to empty.

Absorb liquids in dry sand, earth, or a similar material and place into sealed containers for disposal.

Keep **Vinyl Chloride** out of confined spaces, such as sewers, because of the possibility of an explosion.

Turn leaking cylinder with leak up to prevent escape of gas in liquid state.

Use nonsparking tools and ground and bond containers when transferring **Vinyl Chloride**.

**Vinyl Chloride** is hazardous to the environment.

### PHYSICAL PROPERTIES

**Odor Threshold:** >3,000 ppm

**Flash Point:** -108°F (-78°C)

**LEL:** 3.6%

**UEL:** 33%

**Auto Ignition Temp:** 882°F (472°C)

**Vapor Density:** 2.2 (air = 1)

**Vapor Pressure:** 2,524 mm Hg at 68°F (20°C)

**Specific Gravity:** 0.9 (water = 1)

**Water Solubility:** Very slightly soluble

**Boiling Point:** 17°F (-8.3°C)

**Freezing Point:** -245° to -256°F (-154° to -160°C)

**Ionization Potential:** 9.99 eV

**Critical Temperature:** 306° to 317.3°F (152° to 158.5°C)

**Molecular Weight:** 62.5

### EXPOSURE LIMITS

**OSHA:** 1 ppm, 8-hr TWA; 5 ppm, Ceiling

**NIOSH:** Lowest feasible concentration

**ACGIH:** 1 ppm, 8-hr TWA

The Protective Action Criteria values are:  
 PAC-1 = 250 ppm    PAC-2 = 1,200 ppm  
 PAC-3 = 4,800 ppm

### PROTECTIVE EQUIPMENT

**Gloves:** Insulated Viton, Viton/Butyl, Silver Shield®/4H® and Barrier® (>8-hr breakthrough)

**Coveralls:** Tychem® BR, CSM and TK; Trelchem HPS and VPS (8-hr breakthrough)  
>10% of the LEL wear flash protection or turnout gear

**Respirator:** SCBA

### HEALTH EFFECTS

**Eyes:** Irritation and burns, contact with *liquid* or *gas* may cause frostbite

**Skin:** Irritation and burns, contact with *liquid* or *gas* may cause frostbite

**Inhalation:** Nose, throat and lung irritation with coughing, wheezing and shortness of breath  
Headache, dizziness, lightheadedness and passing out

**Chronic:** Cancer (liver, brain, and lung) in humans

### FIRST AID AND DECONTAMINATION

**Remove** the person from exposure.

**Flush** eyes with large amounts of water for at least 30 minutes. Remove contact lenses if worn. Seek medical attention.

**Immerse** affected part in warm water. Seek medical attention.

**Begin** artificial respiration if breathing has stopped and CPR if necessary.

**Transfer** promptly to a medical facility.