BFGoodrich
Geon Vinyl Division

MATERIAL SAFETY DATA SHEET

Vinyl Chloride Monomer

Product No.: 06611 B00 0000
Issue: S91
Issued: January 1992
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Written by: M. Hross

SECTION I

The B.F.Goodrich Company
Geon Vinyl Division
6100 Oak Tree Blvd.
Cleveland, Ohio 44131

Telephone No.: 1-(800) 438-4366
Transportation Emergency No.:
CHEMTREC: 1-(800) 424-9300
Medical Emergency No.:
POISON CENTER: (216) 379-8562

The B. F.Goodrich Company
195 Columbia Street West
Waterloo, Ontario N2J 4N9

Telephone No.: (519) 888-4318
Transportation Emergency No.:
CANUTEC: (613) 996-6666

Chemical Family: Vinyl Halide
Chemical Name/Synonyms: Vinyl Chloride, Chlorethene, Chloroethene, Chloroethylene
Trade Mark: None
Formula: CH_2=CHCl
C.A.S. Registry No.: 75-01-4
TSCA Inventory Status: All ingredients are found on the USEPA's TSCA inventory
Canadian Domestic Substances List Status: All ingredients have been nominated for inclusion
Workplace Hazardous Materials Information System (WHMIS) Classification: A, B1, D1A
Product Use: Manufacture of polyvinyl chloride (PVC) plastics and vinyl chloride copolymers

SECTION II - Hazardous Ingredients

Hazard Summary Statement: CAUTION! Inhalation of the material can cause dizziness, euphoria, nervousness, drowsiness, headache, blurred vision. Extremely high concentrations may cause unconsciousness and death. Vinyl chloride is a confirmed human carcinogen Read entire Material Safety Data Sheet (MSDS). WARNING! Flammable Gas.

Material	C.A.S. Number	Amount in Product	ACGIH TLV-TWA	OSHA PEL-TWA
Vinyl Chloride Monomer[1,2,3,4,5,6]	75-01-4	>99.9%	5 ppm	1 ppm (5 ppm TWA for any 15 minute period)

Vinyl Chloride Monomer LD_{50} *(rat, inhalation) - 18 pph/15M*
Vinyl Chloride Monomer LC_{50} *- N.E.*

N.A. - Not Applicable **N.E. - Not Established**

Vinyl chloride monomer is shown as an OSHA cancer suspect agent (29 CFR 1910.1017), an American Conference of Governmental Industrial Hygienists (ACGIH) confirmed human carcinogen, and a National Toxicology Program (NTP) and an International Agency for Research on Cancer (IARC) human carcinogen.

Legislative Footnotes

[1] Ingredient listed on SARA Section 313 List of Toxic Chemicals

[2] Ingredient listed on the *Pennsylvania Hazardous Substances List*

[3] Ingredient listed on the California listing of *Chemicals Known to the State to Cause Cancer or Reproductive Toxicity*

[4] Ingredient listed on the *Massachusetts Substance List*

[5] *Workplace Hazardous Materials Information System* ingredient found on the Ingredient Disclosure List - Canada

[6] Ingredient listed on the *New Jersey Right to Know Hazardous Substance List*

Notes: *TLV-TWA* -- Threshold Limit Value - Time Weighted Average for concentration of the chemical substance in the ambient workplace air. American Conference of Governmental Industrial Hygienists (ACGIH).

OSHA PEL -- OSHA Permissible Exposure Limit, 8-hour TWA. 29 CFR1910.1000 1989.

SECTION III - Physical Data

Appearance: Colorless gas
Odor: Mild, sweet odor
Percent Volatiles: 100%
Solubility in Water: 0.11 g/100 g @ 25°C
Physical State: gas (under normal temperatures)

Specific Gravity: 0.97 @ -13°C (9°F) - liquid
Melting Point: -154°C (-245°F)
Molecular Weight: 62.5
Vapor Density: 2.2 (air = 1)

SECTION IV - Fire and Explosion Hazard Data

Flash Point: -78°C (-108°F)

Lower Explosive Limit (LEL): 3.6%

Upper Explosive Limit (UEL): 33%

Self-Ignition Temperature: 472°C (882°F)

Notes: *Flash-Ignition Temperature* -- The lowest initial temperature of air passing around the specimen at which sufficient combustible gas is evolved to be ignited by a small external pilot flame.

Self-Ignition Temperature -- The lowest initial temperature of air passing around the specimen at which, in absence of an ignition source, ignition occurs of itself, as indicated by an explosion, flame or sustained glow.

Extinguishing Media: ABC dry chemical and halons

Special Firefighting Procedures: Firefighters should wear a self-contained breathing apparatus (SCBA) under positive pressure and full protective gear to prevent all body contact.

Stopping the flow of gas rather than extinguishing the fire is usually the best procedure to follow when escaping gas is burning. It may be dangerous to extinguish the flame and allow the gas to continue to flow as an explosive mixture may be formed with air which, if ignited, may cause far greater damage than if the original fire had been permitted to burn. Extinguishing the flame by dry chemical may be desirable where necessary to permit immediate access to shut off the supply.

Unusual Fire and Explosion Hazards: Vapors are heavier than air and may travel along the ground or may be moved by ventilation and ignited by flame, sparks, heaters or other ignition sources at distant locations. Vapors can form flammable mixtures in air.

SECTION V - Reactivity

Stability: Stable (hazardous peroxide can form by oxidation with atmospheric oxygen when stored for prolonged periods in the presence of a variety of contaminants.

Hazardous Polymerization: Will occur. (Polymerizes in the presence of air, sunlight or heat.)

Hazardous Decomposition Products: Hydrogen chloride gas, carbon monoxide, carbon dioxide, and possibly trace amounts of phosgene and other gases.

Incompatibility (Materials to Avoid): Avoid contact with strong oxidizers. Can cause violent polymerization increasing risks of fire and explosion. Metals such as copper, aluminum and certain catalytic impurities can initiate a violent polymerization.

SECTION VI - Health Hazard Data

Threshold Limit Value: 5 ppm Permissible Exposure Limit: 1 ppm

Primary Routes of Exposure: Inhalation, skin and eye contact

Effects of Overexposure: Overexposure to vinyl chloride vapors can produce dizziness, lightheadedness, euphoria, nervousness, drowsiness, headache, blurred vision, impaired hearing and confusion. Extremely high concentrations (>70,000 ppm) may cause unconsciousness and death. Vapor is moderately irritating to the eyes, nose and throat. Liquid vinyl chloride can produce immediate pain and severe irritation and may cause permanent damage to the eyes. Frostbite may cause permanent damage to the skin. Prolonged exposure to high concentrations may cause degeneration of the ends of the finger bones.

Vinyl chloride causes angiosarcoma of the liver, a rare form of liver cancer in humans. Vinyl chloride does not accumulate in the body and is readily eliminated.

Emergency and First Aid Procedures:

Inhalation (of process emissions): Remove affected individual to fresh air while insuring the rescuers utilize appropriate protective equipment. If breathing has ceased, administer artificial respiration. If no pulse is found administer cardio-pulmonary resuscitation immediately. Avoid mouth to mouth contact. Obtain medical attention immediately..

Eye Contact: Immediately flush eyes with lukewarm water for at least 20 minutes while lifting upper and lower eyelids. Seek medical attention immediately.

Skin Contact: Immediately flush contaminated area with lukewarm water for at least 20 minutes. Carefully cut around clothing that sticks to damaged skin and remove rest of garment. Obtain immediate medical attention.

Ingestion: Not an anticipated hazard.

SECTION VII - Spill and Leak Procedure

Steps to be taken in case material is released or spilled: Restrict access to area until completion of clean-up. Insure clean-up is conducted by trained personnel. Wear appropriate personal protection and ventilate area. Extinguish or remove all ignition sources and remove or isolate flammable and combustible materials. Notify governmental authorities as required. Do not

touch spilled material. Prevent material from entering sewers or confined spaces. Stop or reduce leak if safe to do so. Keep materials which can burn away from spilled material. Permit small spills to evaporate. For large spills, dike or flush to ground and allow it to evaporate. Remove contaminated soil and dispose of as hazardous waste.

Waste disposal method: Dispose of waste in accordance with all federal, state and local regulations. If burned, incinerator should be equipped with a hydrogen chloride scrubber. Contaminated soil and containers must be managed as a hazardous waste (U043).

SECTION VIII - Special Protection Information

Ventilation: Effective exhaust ventilation should always be provided to draw fumes or vapors away from workers to prevent routine inhalation. Ventilation should be adequate to maintain the ambient workplace atmosphere below the legislated levels listed in Section II.

Respiratory Protection: Utilize a NIOSH/MSHA-approved respirator under the provisions of 30 CFR Part 11. Read 29 CFR 1910.1017(g)4 for complete details for selection of respirators for vinyl chloride: Unknown atmospheric concentration of vinyl chloride or above 3,600 ppm - open-circuit, self-contained breathing apparatus, pressure demand type with full face piece is required; not over 1,000 ppm - Type C supplied air respirator, continuous flow type, with full or half face piece (helmet or hood) is required.

Protective Equipment: Wear impervious gloves, coveralls, boots and/or other resistent protective clothing. Wear chemical safety goggles and face shield. Have a safety shower/eye-wash station readily available in the immediate work area. An impervious full-body encapsulating suit and respiratory protection may be required in some operations. (Remove contaminated clothing promptly and keep contaminated clothing in a closed container. Discard or launder contaminated clothing before reuse. Inform laundry personnel of contaminants hazards.)

Do not smoke or consume food or beverages in the work area. Wash thoroughly after handling the product.

SECTION IX - Special Precautions

Material Handling: Handle under well-ventilated conditions. Keep product away from sparks, flames and other ignition sources. Sources of ignition, such as static discharge, should be addressed by the user to prevent the ignition and sudden release of energy. Post "NO SMOKING OR OPEN FLAMES" signs in the areas of use or storage. Bond and ground all containers. Label containers according to OSHA standards (29 CFR 1910.1017(l).. All wiring and equipment in storage or use areas must be suitable for Class I, Group D.

Storage: Store in a cool, dry, well-ventilated area, out of direct sunlight and away from incompatible materials. Store away from heat and ignition sources. Store in suitable, labeled containers. Containers should be tightly closed when not in use and when empty protect from damage. Emptied containers may contain residual liquid or vapors which may ignite or explode. Use non-sparking ventilation systems and electrical equipment.

SECTION X - Hazard Codes

NFPA 704 (1980) (National Fire Protection Association)		HMIS (Hazardous Materials Identification System - National Paint and Coatings Association)	
Health:	2	Health:	3
Flammability:	4	Flammability:	4
Reactivity:	1	Reactivity:	2
Special:		Personal Protection:	See MSDS

Section VIII

Key: 0 = Insignificant
1 = Slight
2 = Moderate
3 = High
4 = Extreme

User's Responsibility

This bulletin cannot cover all possible situations which the user may experience during processing. Each aspect of the user's operation should be examined to determine if, or where, additional precautions may be necessary. All health and safety information contained within this bulletin should be provided to the user's employees or customers. We must rely upon the user to utilize this information to develop appropriate work practice guidelines and employee instructional programs for his or her operation.

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PRODUCT LABELING INFORMATION

Product: **Vinyl Chloride Monomer**

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READ MATERIAL SAFETY DATA SHEET (MSDS) BEFORE USE

Vinyl Chloride
Contains Vinyl Chloride
Vinyl Chloride is a Cancer-Suspect Agent

NFPA

HMIS

Health	3
Flammability	4
Reactivity	2
Personal Protection	*

* See MSDS Section VIII

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First Aid:

Inhalation of process emissions: Remove affected individual to fresh air. Contact a physician immediately

Eye contact: Flush eyes with water for at least 15 minutes while lifting upper and lower eyelids. Seek medical attention immediately.

Skin contact: Immediately flush area with luke warm water for 20 minumtes.

Contains:

Vinyl Chloride Monomer
(CAS No. 75-01-4) 100%

Ingredients List Required by the New Jersey Right-To-Know:

Vinyl Chloride CAS No. 75-01-4

CMA 112335

Shipping Information

IDENTIFICATION - DOMESTIC TRANSPORTATION

Proper Shipping Name (172.10(c)): Vinyl Chloride, Inhibited
(Technical Names(s)) (172.203(k)): N.A.
Hazard Class (172.101(d)): Flammable Gas
UN/NA# (172.101(e)): UN 1086
Haz. Substance (171.8): Vinyl Chloride Reportable Quantity: 1 lb.
Inhalation Hazard (172.2a(b)): N.A.

PACKAGING (Part 173)

- Packaging Sections (172.101(g)) - Col. 5(a): 173.306 Col.5(b): 173.304, 173.314, 173.315
- General Packaging Sections - General 173.24 Hazard Class: Flammable

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DANGEROUS GOODS DETERMINATION (2.1) - INTERNATIONAL TRANSPORT

Proper Shipping Name (Col. B): Vinyl Chloride, Inhibited
Class/Division (Col. C): 2 Subsidiary Risk (Co. D): 3
UN/ID# (Col. A): UN 1086
U.S. Haz. Substance (US 1): Other/Inhalation Haz. (US 34):
Variations (1.8): States (Governments): Carrier (Table 1.8B): N.A.

PACKAGING

- Max. Qty. Per PKg.(Cols. H/J) - Passenger: Forbidden Cargo: 150 Kg.
- Packaging Instructions (Cols. G/I) - Passenger: Forbidden Cargo: 200

MARKING

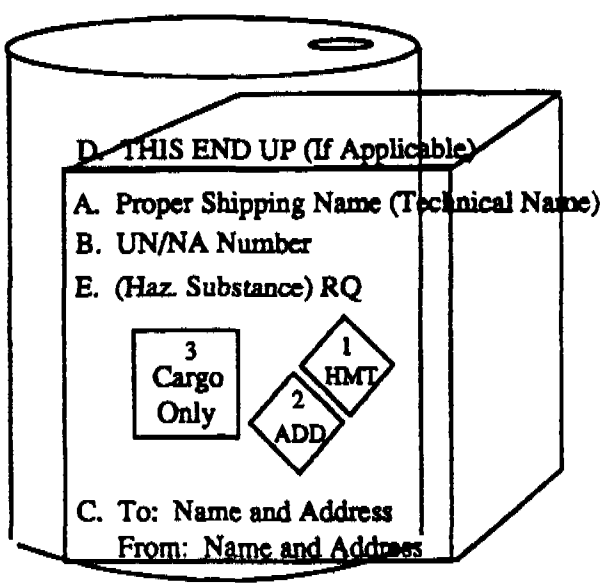
A. Proper Shipping Name (172.301(a))
(Technical Name(s))(172.301(c))
B. UN/NA Number (172.301(a))
C. Name and Address (172.306(a))
D. THIS END UP 9(172.312(a))
E. Haz. Substance RQ (Name)(172.324)
- ORM Designation (172.316(a))
- Inhalation Hazard (172.301(a))

DOMESTIC LABELING

1. HMT LABELS (172.400)
2. Additional Hazard (172.402(a))

INTERNATIONAL LABELING

1. Primary Hazard
2. Subsidiary Risk (If Appropriate)
3. Cargo Aircraft (If Appropriate)



CMA 112336