Material Safety Data Sheet

Vinyl acetate monomer

Section 1 - Chemical Product

MSDS Name: Vinyl acetate monomer
Synonyms: Ethenyl acetate; Ethenyl ethanoate; Vinyl A monomer; Vinyl ethanoate; 1-Acetoxyethylene.

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
108-05-4	Vinyl acetate	99	203-545-4

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: clear, colorless liquid. Flash Point: -8 deg C.
Danger! Possible cancer hazard. May cause cancer based on animal data. Risk of cancer depends on duration and level of exposure. Extremely flammable liquid and vapor. Vapor may cause flash fire. Causes eye and skin irritation and possible burns. May cause allergic skin reaction. May cause respiratory tract irritation. This material has been reported to be susceptible to autoxidation and therefore should be classified as peroxidizable. Light sensitive. Hazardous due to peroxide initiation of polymerization.
Target Organs: Central nervous system, liver, eyes, skin.

Potential Health Effects
Eye: Contact with eyes may cause severe irritation, and possible eye burns.
Skin: May cause mild skin irritation. May be absorbed through the skin in harmful amounts. Material evaporates quickly from open skin. However, it may cause burns if trapped under clothing. May cause an allergic reaction in certain individuals.
Ingestion: Aspiration hazard. May cause gastrointestinal irritation with nausea, vomiting and diarrhea.
Inhalation: Harmful if inhaled. May cause irritation of the respiratory tract with burning pain in the nose and throat, coughing, wheezing, shortness of breath and pulmonary edema. Vapors may cause dizziness or suffocation.
Chronic: Possible cancer hazard based on tests with laboratory animals. Chronic

ingestion may cause liver damage. Prolonged or repeated skin contact may cause sensitization dermatitis and possible destruction and/or ulceration. Repeated inhalation may cause chronic bronchitis. Prolonged exposure may produce a narcotic effect. Repeated exposure may cause central nervous system damage.

Section 4 - First Aid Measures

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.
Skin: Get medical aid. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.
Ingestion: Do not induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid.
Inhalation: Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.
Notes to Physician: Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Vapors can travel to a source of ignition and flash back. Use water spray to keep fire-exposed containers cool. Containers may explode in the heat of a fire. Vapors may be heavier than air. They can spread along the ground and collect in low or confined areas. May accumulate static electrical charges, and may cause ignition of its own vapors. Polymerizes readily if not inhibited; heat can initiate reaction. Extremely flammable liquid and vapor. Vapor may cause flash fire.
Extinguishing Media: For small fires, use dry chemical, carbon dioxide, water spray or alcohol-resistant foam. For large fires, use water spray, fog, or alcohol-resistant foam. Do NOT use water directly on fire. Use water spray to cool fire-exposed containers. Water may be ineffective. Do NOT use straight streams of water. Use water only in flooding quantities as fog.
Flash Point: -8 deg C (17.60 deg F)
Autoignition Temperature: 426 deg C (798.80 deg F)
Explosion Limits, Lower:2.6
Upper: 14.0
NFPA Rating: (estimated) Health: 2; Flammability: 3; Instability: 2

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.
Spills/Leaks: Clean up spills immediately, observing precautions in the Protective Equipment section. Remove all sources of ignition. Use a spark-proof tool. Provide ventilation. A vapor suppressing foam may be used to reduce vapors.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use with adequate ventilation. Ground and bond containers when transferring material. Use spark-proof tools and explosion proof equipment. Do not get in eyes, on skin, or on clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep away from heat, sparks and flame. Avoid ingestion and inhalation. Store protected from light. Wash clothing before reuse. Discard contaminated shoes. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames.
Storage: Keep away from sources of ignition. Refrigerator/flammables. Keep away from polymerization catalysts. Store protected from light. Vinyl acetate inhibited with hydroquinone should be stored at temperatures not exceeding 86°F (30°C), and for periods not exceeding 6 months. Refrigeration is recommended.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits. Ventilation fans and other electrical service must be non-sparking and have an explosion-proof design.
Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Vinyl acetate	10 ppm TWA; 15 ppm STEL	none listed	none listed

OSHA Vacated PELs: Vinyl acetate: 10 ppm TWA; 30 mg/m3 TWA
Personal Protective Equipment
Eyes: Wear chemical splash goggles.
Skin: Wear appropriate protective gloves to prevent skin exposure.
Clothing: Wear appropriate protective clothing to prevent skin exposure.
Respirators: A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.

Section 9 - Physical and Chemical Properties

Physical State: Liquid
Appearance: clear, colorless
Odor: sweetish odor - sharp odor
pH: Not available.
Vapor Pressure: 85 mm Hg @ 20 deg C
Vapor Density: 3.0

Evaporation Rate: Not available.
Viscosity: 0.43 cPús@20 deg C
Boiling Point: 72 - 73 deg C
Freezing/Melting Point:-93 deg C
Decomposition Temperature: Not available.
Solubility: Insoluble.
Specific Gravity/Density:.9340
Molecular Formula:C4H6O2
Molecular Weight:86.0408

Section 10 - Stability and Reactivity

Chemical Stability: Peroxide formation may occur in containers that have been opened and remain in storage. May form explosive peroxides. May polymerize violently or explosively if contaminated or overheated. Uncontrolled polymerization can cause rapid evolution of heat and increased pressure which can result in violent rupture of storage vessels or containers.
Conditions to Avoid: Incompatible materials, light, ignition sources, excess heat, oxidizers.
Incompatibilities with Other Materials: Nonoxidizing mineral acids, ammonia, aliphatic amines, ethylene diamine, ethyleneimine, ozone, oleum, peroxides, strong acids, alkanolamines, hydrochloric acid, hydrofluoric acid, nitric acid, sulfuric acid, polymerizing initiators, oxygen.
Hazardous Decomposition Products: Carbon monoxide, carbon dioxide.
Hazardous Polymerization: May occur.

Section 11 - Toxicological Information

RTECS#:
CAS# 108-05-4: AK0875000
LD50/LC50:
CAS# 108-05-4:
Inhalation, mouse: LC50 = 1550 ppm/4H;
Inhalation, rabbit: LC50 = 2500 ppm/4H;
Inhalation, rat: LC50 = 11400 mg/m3/4H;
Oral, mouse: LD50 = 1600 mg/kg;
Oral, rat: LD50 = 2900 mg/kg;
Skin, rabbit: LD50 = 2335 mg/kg;
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Carcinogenicity:
CAS# 108-05-4:

- **ACGIH:** A3 - Confirmed animal carcinogen with unknown relevance to humans
- **California:** Not listed.
- **NTP:** Not listed.
- **IARC:** Group 2B carcinogen

Epidemiology: No information found
Teratogenicity: No information found
Reproductive Effects: No data available.
Mutagenicity: No data available.
Neurotoxicity: No information found
Other Studies:

Section 12 - Ecological Information

Ecotoxicity: Fish: Fathead Minnow: LC50 = 31.0 mg/L; 96 Hr.; UnspecifiedFish: Bluegill/Sunfish: LC50 = 31.0 mg/L; 96 Hr.; UnspecifiedFish: Goldfish: LC50 = 31.0 mg/L; 96 Hr.; UnspecifiedWater flea EC50 = 52.0 mg/L; 24 Hr.; Unspecified No data available.
Environmental: Under aerobic conditions, Vinyl acetate readily biodegrades. BOD (5-day) values are in the range of 42-62% of COD. Biodegradation also occurs under anaerobic conditions.
Physical: No information available.
Other: No information available.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.
RCRA P-Series: None listed.
RCRA U-Series: None listed.

Section 14 - Transport Information

	US DOT	Canada TDG
Shipping Name:	VINYL ACETATE, STABILIZED	VINYL ACETATE STABILIZED
Hazard Class:	3	3
UN Number:	UN1301	UN1301
Packing Group:	II	II
Additional Info:		FLASHPOINT -8 C

Section 15 - Regulatory Information

US FEDERAL

TSCA
CAS# 108-05-4 is listed on the TSCA inventory.
Health & Safety Reporting List
CAS# 108-05-4: Effective 2/10/86, Sunset 2/10/96
Chemical Test Rules
None of the chemicals in this product are under a Chemical Test Rule.
Section 12b
None of the chemicals are listed under TSCA Section 12b.
TSCA Significant New Use Rule
None of the chemicals in this material have a SNUR under TSCA.
CERCLA Hazardous Substances and corresponding RQs
CAS# 108-05-4: 5000 lb final RQ; 2270 kg final RQ
SARA Section 302 Extremely Hazardous Substances
CAS# 108-05-4: 1000 lb TPQ
SARA Codes
CAS # 108-05-4: immediate, fire, reactive.
Section 313
This material contains Vinyl acetate (CAS# 108-05-4, 99%),which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.
Clean Air Act:
CAS# 108-05-4 is listed as a hazardous air pollutant (HAP).
This material does not contain any Class 1 Ozone depletors.
This material does not contain any Class 2 Ozone depletors.
Clean Water Act:
CAS# 108-05-4 is listed as a Hazardous Substance under the CWA.
None of the chemicals in this product are listed as Priority Pollutants under the CWA.
None of the chemicals in this product are listed as Toxic Pollutants under the CWA.
OSHA:
None of the chemicals in this product are considered highly hazardous by OSHA.
STATE
CAS# 108-05-4 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.

California Prop 65

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations

European Labeling in Accordance with EC Directives
Hazard Symbols:
XN F
Risk Phrases:
R 11 Highly flammable.
R 40 Limited evidence of a carcinogenic effect.

Safety Phrases:
S 16 Keep away from sources of ignition - No smoking.
S 23 Do not inhale gas/fumes/vapour/spray.
S 29 Do not empty into drains.
S 33 Take precautionary measures against static discharges.

WGK (Water Danger/Protection)
CAS# 108-05-4: 2

Canada - DSL/NDSL

CAS# 108-05-4 is listed on Canada's DSL List.

Canada - WHMIS

This product has a WHMIS classification of B2, D2A, F.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

Canadian Ingredient Disclosure List

CAS# 108-05-4 is listed on the Canadian Ingredient Disclosure List.