

MATERIAL SAFETY DATA SHEET (MSDS) –
Vinyl Acetate Monomer

1. CHEMICAL PRODUCT & MANUFACTURER'S DETAILS

PRODUCT NAME : Vinyl Acetate Monomer

COMPANY IDENTIFICATION

Supplier: Pure Chemicals Group.

CHENNAI, TAMILNADU, INDIA

24 Hour Health Emergency (91) 8939878447

(91) 9444038694

Transportation Emergency Phone (91) 8939768680

Company Name	Place	EMERGENCY TELEPHONE NUMBER
Pure Chemicals Group.	India	Day Emergency – 044-26161803-26161809

This (M)SDS is a generic document with no country specific information included.

2. CHEMICAL IDENTIFICATION

• <i>CHEMICAL NAME</i>	: Vinyl acetate monomer
• <i>SYNONYMS</i>	: VAM, Acetic acid vinyl ester, acetic acid-ethenyl ester
• <i>CHEMICAL CLASSIFICATION</i>	: Unsaturated ester
• <i>CHEMICAL FORMULA</i>	: C ₄ H ₆ O ₂
• <i>C.A.S. NO.</i>	: 108-05-4
• <i>EINECS</i>	: 203-545-4

3. HAZARD IDENTIFICATION & HEALTH HAZARD

- Highly flammable liquid and vapour
- Skin: Causes mild skin irritation. Prolonged exposure can can defat the skin and cause dermatitis.
- Eyes: Vapours above 10ppm can cause irritation. Liquid may cause severe irritation and transient corneal damage.
- Inhalation: Causes respiratory tract irritation. High doses may cause nausea, pulmonary oedema and non-specific discomfort such as headaches.
- Ingestion: This is normally unlikely. Swallowing may have the following effects: Irritating to mouth, throat and stomach. A large dose may have the following effects:- central nervous system depression drowsiness/fatigue, loss of

consciousness/coma.

- Carcinogenicity: Classified A3 (Proven for animals, with unknown relevance to humans) by ACGIH; classified 2B (Possible carcinogen for humans.) by IARC.

4. FIRST AID MEASURES

Eye:

Immediately flush eyes with water for at least 15 mins by separating eyelids with fingers. Get medical help immediately.

Skin:

Remove contaminated clothing and shoes. Flush skin with water for at least fifteen minutes. Wash contaminated clothing before reuse. Get medical assistance immediately.

Inhalation:

Remove the affected person(s) to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

Ingestion:

Wash out mouth with water if person is conscious. Avoid vomiting (risk of aspiration). Give plenty of milk. Never give anything by mouth to an unconscious person. Call a physician immediately.

5. FIRE FIGHTING MEASURES

FLASH POINT : -7.7°C (18 deg F), TOC; Autoignition temperature: 385°C

Extinguishing media:

Use water spray, dry chemical powder, carbon dioxide or chemical foam. Don't use water directly on fire.

Special fire fighting procedure:

Keep the containers cool by spraying water if exposed to heat or flame. Wear protective clothing, wear self contained breathing apparatus. Product may polymerise explosively when heated or involved in a fire. Consider evacuation and isolation in case of a tank or rail car fire to at least ½ mile in all directions.

Unusual fire and explosion hazard:

Vapours forms an explosive mixtures with air. Vapours are heavier than air & may travel to a source of ignition & flash back. Containers may explode in the heat of fire.

6. ACCIDENTAL RELEASE MEASURES

- Wear self-contained breathing apparatus, appropriate clothing, chemical safety goggles and heavy rubber gloves.
- Absorb with sand & collect in a closed container. Use a spark-proof tool.
- Avoid runoff into sewers & ditches.

7. HANDLING AND STORAGE

- Provide ventilation.
- Avoid ingestion & inhalation.
- Shut off all sources of ignition.
- Shut off leak if possible.
- Store in a cool, dry place away from incompatible substances but not for long periods.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

- Exposure limits: TLV(ACGIH): 10 ppm (35mg/m³) 8hr
STEL: 20 ppm (53mg/m³)
- Odour Threshold : 0.12 ppm
- Wash thoroughly after handling.
- Wear appropriate NIOSH/MSHA approved respirator, chemical resistant gloves/safety goggles and protective clothing.

9. PHYSIOCHEMICAL PROPERTIES & FIRE/ EXPLOSION HAZARD DATA

PHYSICAL STATE	:	Liquid
APPEARANCE	:	Colourless, watery
ODOUR	:	Pleasant fruity odour
BOILING POINT	:	73 °C
MELTING POINT	:	-100 °C
FLASH POINT	:	-7.7 °C
SPECIFIC GRAVITY (WATER=1)	:	0.934 at 20 °C
VAPOR DENSITY (air = 1)	:	3.0
EVAPORATION RATE : 8.9	:	
Log Pow	:	0.73 at 20 °C
SOLUBILITY IN WATER	:	Slightly soluble (2.4%w/w 20 °C)
LEL	:	2.6 %
UEL	:	13.4 %
AUTO IGNITION TEMPERATURE	:	385 °C
EXPLOSIVE SENSITIVITY TO IMPACTS	:	Stable
EXPLOSIVE SENSITIVITY TO STATIC ELECTRICITY	:	May explode
COMBUSTIBLE LIQUID	:	Yes
FLAMMABLE MATERIAL	:	Yes
EXPLOSIVE MATERIAL	:	No
OXIDISER	:	No
CORROSIVE MATERIAL	:	No

10. STABILITY AND REACTIVITY

- Stable under normal conditions. Inhibitor level should be checked every three months and maintained at original level. Usually inhibited with hydroquinone or diphenylamine to polymerization.

- Conditions to avoid: Incompatible materials, excess heat (above 36 deg.C), ignition sources oxidizers.
- Incompatibilities with other materials: 2-Aminoethanol, prevent chlorosulfonic acid, ethylene diamine, ethyleneimine, HCl, HF, HNO₃, oleum, peroxides, H₂SO₄. Inadvertent mixing with caustic solution (aqueous sodium hydroxide) may lead to an exothermic reaction.
- Hazardous decomposition products: Carbon monoxide, carbon dioxide.
- Hazardous Polymerization : May occur.

11. TOXICOLOGICAL INFORMATION

- Acute effects:

Eye and mucous membrane irritation and reversible corneal injury may occur. Olfactory fatigue develops with continued exposure.

- Target organs:

Chronic occupational exposure has been reported to cause CNS symptoms, chronic bronchitis, cardiovascular symptoms, liver function changes, and hepatic enzyme induction

- Toxicity:

RTECS # : AK0875000

ORAL RAT LD50 : 2920 mg/kg

SKIN RABBIT LD50 : 2335 mg/kg

INHALATION MOUSE LC50: 1550 ppm (4 Hour)

- Carcinogenicity:

Classified A3 (Proven for animals.) by ACGIH, 2B (Possible for humans.) by IARC. There is inadequate evidence in humans for the carcinogenicity of vinyl acetate.

There is limited evidence in experimental animals for the carcinogenicity of vinyl acetate.

Vinyl acetate was tested in one experiment in mice and in one experiment in rats by inhalation. No treatment-related increase in tumour incidence was observed in mice; in rats, an increased incidence of nasal cavity tumours was found in animals of each sex. No increase in tumour incidence was found in rats administered vinyl acetate in the drinking-water in utero and then for life.(IARC Vol63 1995).

12. ECOLOGICAL INFORMATION

- Ecotoxicity :

- *Lebistes reticulatis*, 96 hour : LC₅₀=31.1 mg/l. (fresh water fish)

- *Artemia Salina*, 48 hour : LC₅₀=10mg/l (Crustacea)

- Environmental fate: This product is readily biodegradable

- This product has low water solubility of: 2.4%w/w @ 20°C. If released to water, degradation by hydrolysis (half-life of 7.3 days at 25 deg C and pH 7) and by photochemically produced oxidants will occur.

- This product is likely to volatilise rapidly into the air because of its high vapour pressure.(EVAPORATION RATE (Butyl Acetate = 1): 8.9). Vapor-phase vinyl acetate is expected to be degraded in the atmosphere by reaction with photochemically-produced hydroxyl radicals; the half-life for this reaction in air is estimated to be 14.5 hours. Vapor-phase vinyl acetate may also be degraded in the atmosphere by reaction with ozone with an estimated half-life of 3.9 days.

- Koc value of 60 indicates significant leaching is possible but rapid concurrent

- hydrolysis decreases the importance of leaching.
- Bioaccumulation: This product does not bio-accumulate(Log Pow:0.73 at 20 °C.)

13. DISPOSAL CONSIDERATION

- Burn in a chemical incinerator equipped with an afterburner & scrubber.
- Observe extra care since it is a highly flammable and is a polymerizable material. A disposal consultant may need to be contacted.
- Observe all federal, state and local environmental regulations.

14. TRANSPORT INFORMATION

PROPER SHIPPING NAME	:	Vinyl Acetate, stabilised
UN/ID NUMBER	:	1301
UN HAZARD CLASS	:	3
UN PACKING GROUP	:	II

15. REGULATORY INFORMATION

European information

EC NO: 203-545-4

- R-11 Highly flammable
- S-16 Keep away from sources of ignition- no smoking
- S-23 Do not breathe fumes/ vapour/spray
- S -29 Do not empty into drains
- S-33 Take precautionary measures against static discharges

US information

- Is listed in EPA TSCA chemical inventory.
- None of the chemicals in this product are listed under TSCA section 12b
- This chemical has an RQ=5000 lbs under SARA Section 302 RQ
- This chemical has an TPQ= 1000 lbs under SARA Section 302 TPQ
- This chemical is reported under SARA Section 313
- This chemical doesn't contain any class1 & class2 ozone depleters , but listed as hazardous air pollutants under 'Clean Air Act'
- This chemical is listed as Hazardous substances or priority pollutants or Toxic substances list under 'Clean Water Act'

16. OTHER INFORMATION

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