

Updated: December  
2019



## International Vinyl Acetate Company

### Safety Data Sheet

According to Regulation (EC) No. 1272/2008, Regulation (EC) 1907/2006

#### 1. Identification of the substance/mixture and of the responsible company

1.1. Product Identifier: Vinyl Acetate Monomer (CH<sub>3</sub>COOCH=CH<sub>2</sub>)

Other names/synonyms: Acetic acid vinyl ester; Vinyl acetate; Vinyl A monomer; VyAc; 1-Acetoxyethylene; CH<sub>3</sub>CO<sub>2</sub>CH=CH<sub>2</sub>; Ethenyl acetate; Ethenyl ethanoate; Acetate de vinyle; Ethanoic acid, ethenyl ester; Octan winylu; Vinile (acetate di); Vinyl acetate h.q.; Vinyl ethanoate; Vinylacetaat; Vinylacetat; Vinyle (acetate de); Zeset T; Acetic acid, ethylene ether; UN 1301; VAC; Vinile; Vinyle; Vinylester kyseliny octove; Vinyl ester of acetic acid

1.2. Relevant identified uses of the substance or mixture and uses advised against:

Identified uses: Chemical for synthesis; used in polyvinyl acetate, adhesives, floor tiling, water-based emulsion paints and elastomers

1.3. Details of the supplier of the safety data sheet:

**International Vinyl Acetate Company (IVC)**  
PO Box 12021  
Post Coe 31961 Jubail Industrial City  
Kingdom of Saudi Arabia  
Website: <https://www.sipchem.com/en/>

1.4. Emergency telephone number: 00966-359 9985 (24 hours)

#### 2. Hazards Identification

Vinyl Acetate Monomer CAS 108-05-04 Purity: 99.90%

minimum Hydroquinone CAS 123-31-9, as a stabilizer; 3-17 ppm

Trace Impurities: Acetaldehyde 100 ppm Max., Acetic acid: 50ppm Max, water 400ppm Max

2.1. Classification of the substance or mixture:

Classification of Labeling in accordance with the CLP Regulations:

Index No	International Chemical Identification	EC No	CAS No	Classification		Labeling			Specific Conc. Limits, M-factors	Notes
				Hazard Class and Category Code(s)	Hazard statement Code(s)	Pictogram Signal Word Code(s)	Hazard Statement Code(s)	Suppl. Hazard statement Code(s)		
607-023-00-0	Vinyl Acetate	203-545-4	108-05-4	Carc. 2 Flam. Liq. 2 (currently in annex VI) Acute Tox. 4 STOT SE 3	H351 H225 H332 H335	GHS02 GHS07 GHS08 Dgr	H351 H225 H332 H335		D (currently in Annex VI)	

Updated: December  
2019

### Classification & Labeling in accordance with Directive 67/548/EEC:

Index No	International Chemical Identification	EC No	CAS No	Classification	Labeling	Concentration Limits	Notes
607-023-00-0	Vinyl acetate	203-545-4	108-05-4	Carc. Cat. 3; R40 F; R11	F; Xn R: 11-20-37-40 S: (2-) 36/37-46		D (currently in Annex VI)

### Classification according to Regulation 1272/2008/EC (CLP)

**Basis for Classification** This substance is classified based on Directive 1272/2008/EC and its amendments (CLP Regulation,GHS)

#### GHS Classification

##### Hazards

Flammable liquid

Acute inhalation toxicity

Carcinogenicity

Specific target organ systemic toxicity (single exposure)

##### Category

Category 2

Category 4

Category 2

Category 3

#### Symbols



**Signal Word:** Danger

#### Hazard Statements

**H225** - Highly flammable liquid and vapor

**H332** - Harmful if inhaled

**H335** - May cause respiratory irritation

**H351** - Suspected of causing cancer

#### Precautionary Statements

**P201** - Obtain special instructions before use

**P202** - Do not handle until all safety precautions have been read and understood

**P210** - Keep away from heat/sparks/open flames/hot surfaces. - No smoking

**P235** - Keep cool

**P240** - Ground/bond container and receiving equipment

**P241** - Use explosion-proof electrical/ ventilating/ lighting/ equipment

**P242** - Use only non-sparking tools

**P243** - Take precautionary measures against static discharge

**P261** - Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray

**P271** - Use only outdoors or in a well-ventilated area

**P281** - Use personal protective equipment as required

Updated: December  
2019

- P303 + P361 + P353** - IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower  
**P304 + P340** - IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing  
**P308 + P313** - IF exposed or concerned: Get medical advice/ attention  
**P312** - Call a POISON CENTER or doctor/ physician if you feel unwell  
**P370 + P378** - In case of fire: Use water spray for extinction  
**P403 + P233** - Store in a well-ventilated place. Keep container tightly closed  
**P405** - Store locked up  
**P501** - Dispose of contents/container in accordance with local regulations

#### Other Hazards

The substance does not meet the criteria for PBT / vPvB according to REACH, Annex XIII

#### SAFETY DATA SHEET

**Emergency overview:** DANGER! EXTREMELY FLAMMABLE LIQUID AND VAPOR. FLAMMABLE. VAPOR MAY CAUSE FLASH FIRE. CAUSES RESPIRATORY TRACT AND EYE IRRITATION. MAY CAUSE SKIN IRRITATION. MAY CAUSE TARGET ORGAN DAMAGE BASED ON ANIMAL DATA. POSSIBLE CANCER HAZARD – MAY CAUSE CANCER, BASED ON ANIMAL DATA.

#### Potential chronic health effects:

<b>CARCINOGENIC EFFECTS</b>	:	Classified A3 (proven for animals) by ACGIH 2B (possible for humans) by IARC Risk of Cancer depends on duration and level of exposure.
<b>MUTAGENIC EFFECTS</b>	:	No known significant effects or critical hazards.
<b>REPRODUCTION TOXICITY</b>	:	No known significant effects or critical hazards.

2.2. Label: See table above.

2.3. Other hazards: None known.

### 3. Composition/information on ingredients

Formula	C4H6O2
CAS-No.	108-05-4
Index-No.	607-023-00-0
EC-No.	203-545-4

### 4. First Aid Measures

4.1. Description of first aid measures

#### Eye Contact:

Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.

#### Skin Contact:

Updated: December  
2019

In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.

**Inhalation:**

Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

**Ingestion:**

Wash out mouth and water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.

4.2. Most important symptoms and effects, both acute and delayed:

Dizziness, Gastrointestinal disturbance, and drowsiness. Drying-out effect resulting in rough and chapped skin.

4.3. Indication of immediate medical attention and special treatment needed:

No additional information available.

## 5. Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Use dry chemical, CO2, water spray (fog) or foam

Unsuitable extinguishing media : Do not use a water jet.

5.2. Special hazards arising from the substance or mixture:

Extremely flammable liquid. In a fire or if heated, a pressure increase will occur and the contain may burst, with risk of subsequent explosion. The vapor/gas is heavier than air and will spread along the ground. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Runoff to sewer may create fire or explosion hazard.

5.3. Advice for fire fighters:

Special protective equipment for fire fighters: Fire fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Further information: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving an personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool. Do not allow fire extinguishing water to contaminate surface or groundwater systems.

## 6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures:

Advice for non-emergency personnel: Evacuate the danger zone; follow emergency precautions. Secure emergency assistance immediately. Avoid contact with the material; do not breath vapors or aerosol. If possible, provide additional ventilation.

Advice for emergency responders: Do not take action without proper training and emergency equipment. See Section 8 for additional information. Evacuate surrounding areas. Eliminate all ignition sources including flares and all open flames. Avoid all contact with spiller material. Maintain adequate ventilation and wear appropriate respiratory protection.

6.2. Environmental precautions:

Updated: December  
2019

Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

#### 6.3. Methods and materials for containment:

Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, surface waters, basements or confined areas. Wash spillage into effluent treatment plant. Contain and collect spillage using appropriate personal protective equipment. Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products or if a risk assessment indicates this is necessary. Collect and contain spillage with non-combustible, absorbent material (e.g. sand, earth, vermiculite or diatomaceous earth) and place in a container for disposal according to local regulations. Use spark-proof tools and explosion proof equipment. Contaminated absorbent material may pose the same hazard(s) as the spilled product.

#### 6.4. Reference to other sections:

See disposal instruction 13 and exposure controls Section 8.

## 7. Handling and storage

#### 7.1. Precautions for safe handling:

Observe all label precautions. Use appropriate personal protective equipment (see section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use non-sparking tools. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on protection against fire and explosion: Keep away from flames and sources of ignition – including static.

#### 7.2. Conditions for safe storage, including any incompatibilities:

Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

#### 7.3. Specific end uses:

No other additional special end uses are anticipated.

## 8. Exposure controls/personal protection

#### 8.1. Control parameters:

Personal, workplace or environmental monitoring may be necessary to ensure exposures are below recommended and legal limits.

Updated: December  
2019

Exposure limits:

**ACGIH TLV (United States, 1/2009)**

STEL: 53 mg/m<sup>3</sup> 15 minute(s)

STEL: 15 ppm 15 minute(s)

TWA: 35 mg/m<sup>3</sup> 8 hour(s)

TWA: 10 ppm 8 hour(s)

**NIOSH REL (United States, 6/2009)**

CEIL: 15 mg/m<sup>3</sup> 15 minute(s)

CEIL: 4 ppm 15 minute(s)

**OSHA PEL 1989 (United States, 3/1989)**

STEL: 60 mg/m<sup>3</sup> 15 minute(s)

STEL: 20 ppm 15 minute(s)

TWA: 30 mg/m<sup>3</sup> 8 hour(s)

TWA: 10 ppm 8 hour(s)

**EC Exposure Limit Values**

EU TWA: 17.6 mg/m<sup>3</sup> (5 ppm) 8 hour(s)

EU STEL: 35.5 mg/m<sup>3</sup> 10 ppm 15 minute(s)

Germany has a national OEL of 18 mg/m<sup>3</sup> (5 ppm). The maximum allowable concentration (MAC's) for Australia, Belgium, Finland, the Netherlands, Sweden and Switzerland for vinyl acetate is 30 mg/m<sup>3</sup> (10 ppm). The MAC in the USSR, Poland, and Yugoslavia is 10 mg/m<sup>3</sup> (2.8 ppm) The Romanian limits consist of avg. and max concentration of 50 and 100 mg/m<sup>3</sup> (14 and 28 ppm).

8.2. Exposure controls:

Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Engineering measures: Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Individual protection measures:

**Hygiene measures:** Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Discard contaminated clothing or wash thoroughly before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

**Eye/face protection:** Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.

**Hand protection:** Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is required.

**Splash contact:**

**Glove material:** butyl rubber Glove thickness: 0.7 mm or thicker Break through time: > 240 minutes

**Other protective equipment:** Flame retardant antistatic protective clothing

Updated: December  
2019

**Respiratory protection:** A properly fitted air purifying respirator or air supply respirator should be worn if a risk assessment indicates that respiratory protection is necessary. Respirator selection must be based upon known or measured levels of exposure.

**Environmental exposure controls:** Ventilation and engineering controls to protect workers and ventilate work area to at or below recommended employee exposure levels. Technical measures are preferred over use of personal protective equipment. Environmental controls, such as scrubber or thermal oxidizer may be required to prevent process releases to the atmosphere. Do not empty into drains—risk of explosion.

## 9. Physical and chemical properties

### 9.1. Information on basic physical and chemical properties:

**Physical State:** Liquid

**Color:** Colorless

**Odor:** Pleasant fruity odor

**Melting point:** -93°C

**Boiling point:** 71-73°C (at 1.013hPa, Method: DIN 51755)

**Flash point:** -8°C

**Lower explosion limit:** 2.6% (V)

**Upper explosion limit:** 13.4% (V)

**Critical temperature:** 252° C

**Relative density:** 0.93 g/cm<sup>3</sup> at 20° C

**Water solubility:** 20 g/l at 20° C

**Partition coefficient:** n-octanol/water: log Pow 0.73 (bioaccumulation not expected)

**Viscosity:** 0.43 mPa s at 20° C

**VOC content:** 100% (w/w)

## 10. Stability and reactivity

### 10.1. Reactivity:

Vinyl acetate monomer reacts with polymerization initiators: hydrogen peroxide, oxygen and peroxy compounds. Maintain hydroquinone inhibitors during storage and handling to prevent exothermic reactions.

### 10.2. Chemical stability:

The product will react with heat, moisture and light (light sensitive). Hydroquinone is added as a stabilizer to prevent polymerization or hazardous reactions.

### 10.3. Possibility of hazardous reactions:

Vinyl acetate monomer reacts exothermically with aldehydes, aluminum oxide, strong alkalis, toluene, water and acids.

### 10.4. Conditions to avoid:

Avoid heat, exposure to light, and warming product in storage to near product flash point.

### 10.5. Incompatible materials:

Unstabilized product is highly reactive with oxidizing materials, acids, alkalis and moisture.

### 10.6. Hazardous decomposition products:

Under normal conditions of storage and use, hazardous decomposition products should not be produced. Peroxides may be produced under uncontrolled fire conditions.

Updated: December  
2019

## 11. Toxicological information

### 11.1. Information on toxicological effects:

<u>Acute oral toxicity LD50 rat:</u>	2900 mg/kg (RTECS)
<u>Acute inhalation toxicity:</u>	13.1 mg/kg 4 hours (IUCLID)
<u>Acute dermal toxicity LD50 rabbit:</u>	2.335 mg/kg (RTECS)
<u>Skin irritation:</u>	Drying of skin noted
<u>Genotoxicity in vitro:</u>	
Ames test:	negative (OECD Test Guideline 471)
Mutagenicity (mammal cell test):	positive (IUCLID)
<u>Specific target organ toxicity - single exposure:</u>	The substance is not classified as a specific target organ toxicant, single exposure.
<u>Specific target organ toxicity - repeated exposure:</u>	The substance is not classified as a target organ toxicant, repeated exposure. No information available
<u>Aspiration hazard:</u>	

### 11.2. Additional information:

After uptake of large quantities:

Systemic effects : Dizziness, drowsiness; absorption can result in damage to liver and kidney.

Effect potentiated by : Ethanol

Further data : Handle using good occupational and environmental health practices.

## 12. Ecological information

### 12.1. Toxicity

<u>Toxicity in fish LC50:</u>	14 mg/l (ECOTOX: 96 hour, fathead minnow)
<u>Toxicity to daphnia and other aquatic invertebrates:</u>	330 mg/; (IUCLID: 24 hour, water fleas)

### 12.2. Persistence and degradability:

Readily biodegradable 82% (OECD Test Guideline 301C, 14 day)

### 12.3. Bio accumulative potential:

Not expected (experimental log Pow: 0.73)

### 12.4. Mobility in soil:

No information available.

### 12.5. Results of PBT and vPvB assessment:

Assessment not available.

### 12.6. Other adverse effects:

No additional environmental adverse effects are known.

### 12.7. Additional ecological information:

Do not allow product to enter surface waters, wastewater or soil.



Updated: December

## 2019 13. Disposal considerations

**Waste treatment methods:** The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

## 14. Transport Information

The transport regulations are cited according to international and/or harmonized transport regulations. Possible national deviations and country specific requirements are not considered.

### U.S. DOT

**Shipping Name:** Vinyl acetate, stabilized

**Hazard Class:** 3

**UN/NA #:** UN1301

**Packing Group:** II

**Required Label(s):** 3

### TDG Information

**Shipping Name:** Vinyl acetate, stabilized

**Hazard Class:** 3

**UN #:** UN1301

**Packing Group:** II

**Required Label(s):** 3

### ADR Information

**Shipping Name:** Vinyl acetate, stabilized

**Hazard Class:** 3

**UN #:** UN1301

**Packing Group:** II

**Required Label(s):** 3

### ADR Tunnel Code Restrictions

This list contains tunnel restriction codes for those substances and/or chemically related entries which are found in chapter 3.2 of the ADR regulations.

**VINYL ACETATE (108-05-4) Restriction(s):** D/E [UN1301] (II)

### RID Information

**Shipping Name:** Vinyl acetate, stabilized

**Hazard Class:** 3

**UN #:** UN1301

**Packing Group:** II

**Required Label(s):** 3

Updated: December  
2019

**IATA Information**

**Shipping Name:** Vinyl acetate, stabilized

**Hazard Class:** 3

**UN #:** UN1301

**Packing Group:** II

**Required Label(s):** 3

**ICAO Information**

**Shipping Name:** Vinyl acetate, stabilized

**Hazard Class:** 3

**UN #:** UN1301

**Packing Group:** II

**Required Label(s):** 3

**IMDG Information**

**Shipping Name:** Vinyl acetate, stabilized

**Hazard Class:** 3

**UN #:** UN1301

**Packing Group:** II

## 15. Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture:

### 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 311/312 (40 CFR 370.21), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4), TSCA

12(b), and/or require an OSHA process safety plan.

<b>VINYL ACETATE (108-05-4) SARA 302</b>	: 1000 lb. TPQ
<b>SARA 313</b>	: 0.1 % de minimis concentration
<b>CERCLA</b>	: 5000 lb final RQ; 2270 kg final RQ
<b>SARA 304</b>	: 5000 lb EPCRA RQ

### SARA Section 311/312 (40 CFR 370 Subparts B and C)

**Acute Health:** Yes **Chronic Health:** Yes **Fire:** Yes **Pressure:** No **Reactive:** Yes

### U.S. State Regulations

The following components appear on one or more of the following state hazardous substances lists:

Updated: December  
2019

Component	CAS	CA	MA	MN	NJ	PA
VINYL ACETATE	108-05-4	Yes	Yes	Yes	Yes	Yes

Not listed under California Proposition 65

#### Canadian WHMIS Ingredient Disclosure List (IDL)

Components of this material have been checked against the Canadian WHMIS Ingredients Disclosure List. The List is composed of chemicals which must be identified on MSDSs if they are included in products which meet WHMIS criteria specified in the Controlled Products Regulations and are present above the threshold limits listed on the IDL.

**VINYL ACETATE (108-05-4)** 1 %

#### Germany Water Classification VINYL ACETATE (108-05-4)

ID Number 203, hazard class 2 - hazard to waters

#### Symbol(s)

F Highly Flammable

#### Risk Phrases

R11 Highly flammable.

#### Safety Phrases

S2 Keep out of the reach of children.

S16 Keep away from sources of ignition - No smoking.

S23 Do not breathe gas, fumes, vapor, or spray.

S29 Do not empty into drains.

S33 Take precautionary measures against static discharges.

#### Component Analysis - Inventory

Component	CAS	US	CA	EU	AU	PH	JP	KR	CN	NZ
VINYL ACETATE	108-05-4	Yes	DSL	EIN	Yes	Yes	Yes	Yes	Yes	Yes

#### Globally Harmonized System of Classification and Labelling (GHS)

The listed component(s) of this material have been checked for country-specific published classifications according to the Globally Harmonized

Updated: December  
2019

System of Classification and Labelling (GHS). The results of the queries are displayed below. Please see the individual country listings, as additional interpretations or reference information may be available.

#### Australia GHS Classifications

No published information available. This material may be hazardous according to published criteria for classification.

#### European Union GHS Classifications

Classifications below according to Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures (CLP).

#### VINYL ACETATE (108-05-4)

Flammable liquids - Category 2 **H225** Highly flammable liquid and vapour.

#### European Union GHS Labelling Information

Labelling information below is according to Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures (CLP).

#### VINYL ACETATE (108-05-4)

Symbol(s):



Signal Word: Danger

#### Hazard(s):

**H225:** Highly flammable liquid and vapour

#### Prevention:

**P233:** Keep container tightly closed.

**P210:** Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

**P240:** Ground/Bond container and receiving equipment.

**P241:** Use explosion-proof electrical/ventilating/lighting/.../equipment.

**P242:** Use only non-sparking tools.

**P243:** Take precautionary measures against static discharge.

**P280:** Wear protective gloves/protective clothing/eye protection/face protection.

#### Response:

**P303+P361+P353:** IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

**P370+P378:** In case of fire: Use ... for extinction.

Updated: December  
2019

**Storage:**

**P403+P235:** Store in a well-ventilated place. Keep cool.

**Disposal:**

**P501:** Dispose of contents/container to ...

**Japan GHS Classifications**

Classifications below published under Japan's Chemicals Classification Program according to the Globally Harmonized System of Classification Labelling of Chemicals (GHS).

**VINYL ACETATE (108-05-4)**

Flammable liquids -	Category 2	<b>H225</b> Highly flammable liquid and vapour. Self-reactive substances and mixtures - Type G
Acute toxicity - Inhalation - Vapour -	Category 4	<b>H332</b> Harmful if inhaled.
Skin corrosion/irritation -	Category 2	<b>H315</b> Causes skin irritation.
Serious eye damage/eye Irritation -	Category 2A	<b>H319</b> Causes serious eye irritation.
Germ cell mutagenicity -	Category 2	<b>H341</b> Suspected of causing genetic defects.
Carcinogenicity -	Category 2	<b>H351</b> Suspected of causing cancer.
Specific target organ toxicity - Single exposure -	Category 3	<b>H335</b> May cause respiratory irritation.
Specific target organ toxicity - Single exposure -	Category 3	<b>H336</b> May cause drowsiness or dizziness.
Specific target organ toxicity - Repeated exposure -	Category 2	<b>H373</b> May cause damage to respiratory system through prolonged or repeated exposure.
Hazardous to aquatic environment - acute hazard	Category 2	<b>H401</b> Toxic to aquatic life.

**Japan GHS Labelling Information**

Labelling information below according to classifications published by Japan's Chemicals Classification Program according to the Globally Harmonized System of Classification and Labelling of Chemicals (GHS).

**VINYL ACETATE (108-05-4)**

**Symbol(s):**



**Signal Word:** Danger

**Hazard(s):**

**H225:** Highly flammable liquid and vapour

**H332:** Harmful if inhaled

Updated: December  
2019

- H315:** Causes skin irritation  
**H319:** Causes serious eye irritation  
**H341:** Suspected of causing genetic defects  
**H351:** Suspected of causing cancer  
**H335:** May cause respiratory irritation  
**H336:** May cause drowsiness or dizziness  
**H373:** May cause damage to organs through prolonged or repeated exposure  
**H401:** Toxic to aquatic life

**Prevention:**

- P233:** Keep container tightly closed.  
**P210:** Keep away from heat/sparks/open flames/hot surfaces. - No smoking.  
**P240:** Ground/Bond container and receiving equipment.  
**P241:** Use explosion-proof electrical/ventilating/lighting/.../equipment.  
**P242:** Use only non-sparking tools.  
**P243:** Take precautionary measures against static discharge.  
**P271:** Use only outdoors or in a well-ventilated area.  
**P280:** Wear protective gloves/protective clothing/eye protection/face protection.  
**P260:** Do not breathe dust/fume/gas/mist/vapours/spray.  
**P264:** Wash ... thoroughly after handling.  
**P201:** Obtain special instructions before use.  
**P202:** Do not handle until all safety precautions have been read and understood.  
**P273:** Avoid release to the environment.

**Response:**

- P308+P313:** IF exposed or concerned: Get medical advice/attention.  
**P304+P340:** IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
**P312:** Call a POISON CENTER or doctor/physician if you feel unwell.  
**P305+P351+P338:** IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
**P337+P313:** If eye irritation persists: Get medical advice/attention.  
**P302+P352:** IF ON SKIN: Wash with plenty of soap and water.  
**P303+P361+P353:** IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.  
**P362+P364:** Take off contaminated clothing and wash it before reuse.  
**P332+P313:** If skin irritation occurs: Get medical advice/attention.  
**P312:** Call a POISON CENTER or doctor/physician if you feel unwell.  
**P321:** Specific treatment (see ... on this label).  
**P370+P378:** In case of fire: Use ... for extinction.

**Storage:**

- P403+P233:** Store in a well-ventilated place. Keep container tightly closed.  
**P403+P235:** Store in a well-ventilated place. Keep cool.

Updated: December  
2019

**P405:** Store locked up.

**Disposal:**

**P501:** Dispose of contents/container to ...

**Korea GHS Classifications (SV)**

Classifications below published by Korea's Ministry of Environment (MOE), Ministry of Employment and Labor (MOEL) or Office of National Emergency Management (NEMA, physical hazards only).

**VINYL ACETATE (108-05-4)**

**MOEL:**

Flammable liquids -	Category 2	<b>H225</b> Highly flammable liquid and vapour.
Acute toxicity - Inhalation - Vapour -	Category 4	<b>H332</b> Harmful if inhaled.
Serious eye damage/eye Irritation -	Category 2A	<b>H319</b> Causes serious eye irritation.
Skin sensitizers -	Category 1	<b>H317</b> May cause allergic skin reaction.
Germ cell mutagenicity -	Category 2	<b>H341</b> Suspected of causing genetic defects.
Carcinogenicity -	Category 2	<b>H351</b> Suspected of causing cancer.
Specific target organ toxicity - Single exposure -	Category 3	<b>H335</b> May cause respiratory irritation.
Specific target organ toxicity - Repeated exposure -	Category 2	<b>H373</b> May cause damage to respiratory system through prolonged or repeated exposure.

**NEMA:**

Flammable liquids -	Category 2	<b>H225</b> Highly flammable liquid and vapour.
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**Korea GHS Labelling Information**

Labelling information below according to classifications published by Korea's Ministry of Environment (MOE), Ministry of Employment and Labor (MOEL) or Office of National Emergency Management (NEMA, physical hazards only).

**VINYL ACETATE (108-05-4)**

**Symbol(s):**



**Signal Word:** Danger

**Hazard(s):**

**H225:** Highly flammable liquid and vapour

**H332:** Harmful if inhaled

Updated: December  
2019

- H319:** Causes serious eye irritation
- H317:** May cause allergic skin reaction
- H341:** Suspected of causing genetic defects
- H351:** Suspected of causing cancer
- H335:** May cause respiratory irritation
- H373:** May cause damage to organs through prolonged or repeated exposure

**Prevention:**

- P233:** Keep container tightly closed.
- P210:** Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
- P240:** Ground/Bond container and receiving equipment.
- P241:** Use explosion-proof electrical/ventilating/lighting/.../equipment.
- P242:** Use only non-sparking tools.
- P243:** Take precautionary measures against static discharge.
- P271:** Use only outdoors or in a well-ventilated area.
- P272:** Contaminated work clothing should not be allowed out of the workplace.
- P280:** Wear protective gloves/protective clothing/eye protection/face protection.
- P260:** Do not breathe dust/fume/gas/mist/vapours/spray.
- P264:** Wash ... thoroughly after handling.
- P201:** Obtain special instructions before use.
- P202:** Do not handle until all safety precautions have been read and understood.

**Response:**

- P308+P313:** IF exposed or concerned: Get medical advice/attention.
- P304+P340:** IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- P312:** Call a POISON CENTER or doctor/physician if you feel unwell.
- P305+P351+P338:** IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P337+P313:** If eye irritation persists: Get medical advice/attention.
- P302+P352:** IF ON SKIN: Wash with plenty of soap and water.
- P303+P361+P353:** IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
- P362+P364:** Take off contaminated clothing and wash it before reuse.
- P333+P313:** If skin irritation or rash occurs: Get medical advice/attention.
- P312:** Call a POISON CENTER or doctor/physician if you feel unwell.
- P321:** Specific treatment (see ... on this label).
- P370+P378:** In case of fire: Use ... for extinction.

**Storage:**

- P403+P233:** Store in a well-ventilated place. Keep container tightly closed.
- P403+P235:** Store in a well-ventilated place. Keep cool.
- P405:** Store locked up.



Updated: December  
2019

**Disposal:**

P501: Dispose of contents/container to ...

**Symbol(s):**



**Signal Word:** Danger

**Hazard(s):**

H225: Highly flammable liquid and vapour

**Prevention:**

P233: Keep container tightly closed.

P210: Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

P240: Ground/Bond container and receiving equipment.

P241: Use explosion-proof electrical/ventilating/lighting/.../equipment.

P242: Use only non-sparking tools.

P243: Take precautionary measures against static discharge.

P280: Wear protective gloves/protective clothing/eye protection/face protection.

**Response:**

P303+P361+P353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

P370+P378: In case of fire: Use ... for extinction.

**Storage:**

P403+P235: Store in a well-ventilated place. Keep cool.

**Disposal:**

P501: Dispose of contents/container to ...

**New Zealand GHS Classifications**

Classifications below according to the Environmental Risk Management Authority's (ERMA) Hazardous Substances and New Organisms (HSNO) Act, as amended.

Updated: December  
2019

**VINYL ACETATE (108-05-4)**

Approval: HSR001235

Flammable liquids -	Category 2	<b>H225</b> Highly flammable liquid and vapour.
Acute toxicity - Oral -	Category 4	<b>H302</b> Harmful if swallowed.
Acute toxicity - Dermal -	Category 4	<b>H312</b> Harmful in contact with skin.
Acute toxicity - Inhalation -	Category 3	<b>H331</b> Toxic if inhaled.
Skin corrosion/irritation -	Category 2	<b>H315</b> Causes skin irritation.
Serious eye damage/eye Irritation -	Category 2A	<b>H319</b> Causes serious eye irritation.
Germ cell mutagenicity -	Category 1	<b>H340</b> May cause genetic defects.
Carcinogenicity -	Category 2	<b>H351</b> Suspected of causing cancer.
Reproductive Toxicity -	Category 2	<b>H361</b> Suspected of damaging fertility of the unborn child.
Specific target organ toxicity - Repeated exposure – Inhalation -	Category 2	<b>H373</b> May cause damage to respiratory tract through prolonged or repeated exposure if inhaled.
Hazardous to aquatic environment - acute hazard -	Category 2	<b>H401</b> Toxic to aquatic life.
Hazardous to aquatic environment - acute hazard - Terrestrial Vertebrate Ecotoxicity -	Category 3	<b>H402</b> Harmful to aquatic life.
	Category 3	<b>H433</b> Harmful to terrestrial vertebrates.

**New Zealand GHS Labelling Information**

Labelling information below according to classifications published by New Zealand's Environmental Risk Management Authority's (ERMA) Hazardous Substances and New Organisms (HSNO) Act, as amended.

**VINYL ACETATE (108-05-4)**

Symbol(s):



Signal Word: Danger

**Hazard(s):**

- H225:** Highly flammable liquid and vapour
- H302:** Harmful if swallowed
- H312:** Harmful in contact with skin
- H331:** Toxic if inhaled
- H315:** Causes skin irritation
- H319:** Causes serious eye irritation
- H340:** May cause genetic defects
- H351:** Suspected of causing cancer

Updated: December  
2019

- H361:** Suspected of damaging fertility or the unborn child  
**H373:** May cause damage to organs through prolonged or repeated exposure  
**H401:** Toxic to aquatic life  
**H402:** Harmful to aquatic life  
**H433:** Harmful to terrestrial vertebrates

**Prevention:**

- P233:** Keep container tightly closed.  
**P210:** Keep away from heat/sparks/open flames/hot surfaces. - No smoking.  
**P240:** Ground/Bond container and receiving equipment.  
**P241:** Use explosion-proof electrical/ventilating/lighting/.../equipment.  
**P242:** Use only non-sparking tools.  
**P243:** Take precautionary measures against static discharge.  
**P271:** Use only outdoors or in a well-ventilated area.  
**P280:** Wear protective gloves/protective clothing/eye protection/face protection.  
**P260:** Do not breathe dust/fume/gas/mist/vapours/spray.  
**P264:** Wash ... thoroughly after handling.  
**P201:** Obtain special instructions before use.  
**P202:** Do not handle until all safety precautions have been read and understood.  
**P270:** Do not eat, drink or smoke when using this product.  
**P273:** Avoid release to the environment.

**Response:**

- P308+P313:** IF exposed or concerned: Get medical advice/attention.  
**P304+P340:** IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
**P311:** Call a POISON CENTER or doctor/physician.  
**P305+P351+P338:** IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
**P337+P313:** If eye irritation persists: Get medical advice/attention.  
**P302+P352:** IF ON SKIN: Wash with plenty of soap and water.  
**P312:** Call a POISON CENTER or doctor/physician if you feel unwell.  
**P303+P361+P353:** IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.  
**P362+P364:** Take off contaminated clothing and wash it before reuse.  
**P332+P313:** If skin irritation occurs: Get medical advice/attention.  
**P301+P312:** IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.  
**P321:** Specific treatment (see ... on this label).  
**P330:** Rinse mouth.  
**P370+P378:** In case of fire: Use ... for extinction.

**Storage:**

- P403+P233:** Store in a well-ventilated place. Keep container tightly closed.  
**P403+P235:** Store in a well-ventilated place. Keep cool.

Updated: December  
2019

**P405:** Store locked up.

**Disposal:**

**P501:** Dispose of contents/container to ...

### South Africa GHS Classifications

Information below presented according to the South African Bureau of Standards (SANS 10234:2008 - Globally Harmonized System (GHS) of Classification and Labelling of Chemicals). The information below identifies substances with recommended GHS classifications by CAS or RR numbers and chemical names; the data field contains the word "Present" along with any clarifying information in parenthesis.

#### VINYL ACETATE (108-05-4)

**Listing:** Present

### Taiwan GHS Classifications

Information below presented according to Taiwan's Bureau of Standards, Metrology and Inspection (BSMI) of the Ministry of Economic Affairs. This agency has published a series of standards (CNS 15030 1-27 Chemical Classification and Labelling) which provide guidance on classification and labelling of chemicals according to GHS.

#### VINYL ACETATE (108-05-4)

##### Taiwan:

Flammable liquids -	Category 2	<b>H225</b> Highly flammable liquid and vapour.
Acute toxicity - Oral -	Category 5	<b>H303</b> May be harmful if swallowed.
Acute toxicity - Inhalation -	Category 4	<b>H332</b> Harmful if inhaled.
Skin corrosion/irritation -	Category 3	<b>H316</b> Causes mild skin irritation.
Serious eye damage/eye Irritation -	Category 2A	<b>H319</b> Causes serious eye irritation.
Carcinogenicity -	Category 2	<b>H351</b> Suspected of causing cancer.
Specific target organ toxicity - Repeated exposure -	Category 2	<b>H373</b> May cause damage to organs through prolonged or repeated exposure.
Hazardous to aquatic environment - acute hazard -	Category 3	<b>H402</b> Harmful to aquatic life.

### Taiwan GHS Labelling Information

Labelling information below according to classifications published by Taiwan's Bureau of Standards, Metrology and Inspection (BSMI) of the Ministry of Economic Affairs. This agency has published a series of standards (CNS 15030 1-27 Chemical Classification and Labelling) which provide guidance on classification and labelling of chemicals according to GHS.

Updated: December  
2019

**VINYL ACETATE (108-05-4)**

**Symbol(s):**



**Signal Word:** Danger

**Hazard(s):**

- H225:** Highly flammable liquid and vapour
- H303:** May be harmful if swallowed
- H332:** Harmful if inhaled
- H316:** Causes mild skin irritation
- H319:** Causes serious eye irritation
- H351:** Suspected of causing cancer
- H373:** May cause damage to organs through prolonged or repeated exposure
- H402:** Harmful to aquatic life

**Prevention:**

- P233:** Keep container tightly closed.
- P210:** Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
- P240:** Ground/Bond container and receiving equipment.
- P241:** Use explosion-proof electrical/ventilating/lighting/.../equipment.
- P242:** Use only non-sparking tools.
- P243:** Take precautionary measures against static discharge.
- P271:** Use only outdoors or in a well-ventilated area.
- P280:** Wear protective gloves/protective clothing/eye protection/face protection.
- P260:** Do not breathe dust/fume/gas/mist/vapours/spray.
- P264:** Wash ... thoroughly after handling.
- P201:** Obtain special instructions before use.
- P202:** Do not handle until all safety precautions have been read and understood.
- P273:** Avoid release to the environment.

**Response:**

- P308+P313:** IF exposed or concerned: Get medical advice/attention.
- P304+P340:** IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- P312:** Call a POISON CENTER or doctor/physician if you feel unwell.
- P305+P351+P338:** IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P337+P313:** If eye irritation persists: Get medical advice/attention.

Updated: December  
2019

**P303+P361+P353:** IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

**P332+P313:** If skin irritation occurs: Get medical advice/attention.

**P312:** Call a POISON CENTER or doctor/physician if you feel unwell.

**P370+P378:** In case of fire: Use ... for extinction.

**Storage:**

**P403+P235:** Store in a well-ventilated place. Keep cool.

**P405:** Store locked up.

**Disposal:**

**P501:** Dispose of contents/container to ...

15.2. Chemical Safety Assessment:

Sipchem has not conducted a chemical safety assessment for this product.  
Refer to ECHA Committee for Risk Assessment vinyl acetate opinion, adopted 10 June 2011.

## 16. Other information

16.1. Training Advice:

Provide safety information, instruction and training to operators handling vinyl acetate monomer.

The information and recommendations herein are taken from data contained in independent, industry recognized references. Although reasonable care has been taken in the preparation of the information herein, Sipchem and International Vinyl Acetate Company. make no guarantee, warranty (express or implied) or other representation and assume no responsibility as to the accuracy or suitability of such information for application of the information, since conditions of its use are beyond control of these companies. Sipchem and International Vinyl Acetate Company shall not bear any liability whatsoever for any loss or damage incurred in connection with the use of this substance.

Updated: December  
2019

## Appendix 1 – Exposure Scenarios

### 1. Occupational Exposure

Vinyl acetate is a monomer, and as such is solely used to manufacture vinyl acetate polymers (or copolymers). Apart from the manufacture of homopolymers, the monomer is combined with other monomers, such as ethylene, vinyl chloride and acrylic acid esters to form copolymers. Polymers manufactured from vinyl acetate, are used in a broad spectrum of products, including water-based paints, printing inks, ceramics, adhesives, paper finishing and protective colloids for various materials.

Vinyl acetate (VAM) occurs as residual monomer in all polymeric products, and the residual content is typically in the region of 1-3000 ppm.

### 2. Exposure Scenarios

The data presented below is freely available within the public domain.

The relevant occupational Exposure Scenarios are to be expected in the following areas:

- Production of vinyl acetate and polymerization in downstream industries (Scenario 1)
- Manufacturing of formulations and products (Scenario 2)
- Use of formulations and products containing residual vinyl acetate monomer (Scenario 3)

The exposure assessment is based upon both measured and estimated data according to the EASE model (Estimation and Assessment of Substance Exposure), and the exposure levels should be considered as worst-case estimates for highly exposed workers.

For large scale VAM manufacture, it is assumed that the production and polymerization of VAM is performed in closed systems with high levels of protection. Exposure occurs if the closed systems are breached for certain activities e.g. cleaning, sampling.

#### 2.1 Risk Characterization

Occupational Exposure Limits for VAM are typically set at 20-35 mg/m<sup>3</sup> (Regional Variation). Table 1 below summarizes the route-specific and total internal body burdens. Risk assessment for combined exposure requires the calculation of a total internal body burden – in this case route specific percentages for absorption are used (15% for inhalation, 90% for dermal exposure).

Updated: December  
2019

**Table 1 – Occupational Exposure Levels and Internal Burden on VAM**

Exposure Scenario	Inhalation (shift average)	Dermal Contact) shift average)	Internal body burden of workers after repeated exposure		
			Inhalation	Dermal	Combined
	mg/m <sup>3</sup>	mg/kg/d	mg/kg/d		
1. Production and polymerization	3	0.6	0.064	0.54	0.6
2. Manufacture of formulations and products (a) Polymerization (b) Formulation	14.6	6 0.02	0.31	5.4 0.018	5.71 0.33
3. Use of formulations and products containing residual VAM	2.6	0.18	0.056	0.16	0.22

### Toxicological Endpoints

The Toxicological endpoint conclusions shown below in Table 2 refer to the following conclusions:

- There is at present no need for further information and/or testing and no need for risk reduction measures beyond which are typically already applied.
- There is need to minimize the risk – risk reduction measures which are already being applied to be taken into account.

**Table 2**

Toxicological Endpoints	General Conclusion	Exposure Scenarios
Acute Toxicity	Inhalation	(i)
	Dermal	(i)
	Combined	(i)
Irritation/corrosivity	Dermal	(i)
	Eye	(i)
	Acute respiratory tract	(i)
Sensitization	Skin	(i)
	Respiratory	(i)
Repeated dose toxicity	Inhalation, local	(ii) 2
	Inhalation, systemic	(ii) 2
	Dermal, local	(i)
	Dermal, systemic	(i)



Updated: December

2019	Combined, systemic	(iii)	2
<b>Mutagenicity</b>			
<b>Carcinogenicity</b>	Inhalation	(ii)	2
	Dermal	(ii)	2(a)
	Combined	(ii)	2
<b>Reproductive toxicity</b>	Inhalation	(i)	
	Dermal	(i)	
	Combined	(i)	

(a) Skin contact should always be minimized