1. Identification of the substance/preparation and the company/undertaking

Product Name
Vinyl acetate

Manufacturer or supplier's details

Celanese (Shanghai) International Trading Co., Ltd.
Room 239, Xinmao Building
South Taizhong Road
Waigaoqiao Free Trade Zone
Shanghai, China

Celanese Pte Ltd
60 Anson Road
Maple Tree Anson #13-02
Singapore 079914

Product Information
HazCom@celanese.com

Emergency telephone number
+(65) 62656917 (Operations Room direct dial)
or fax request to +(65) 62664696 (Facsimile to Operations Room)
or email to posh.er@paccoffshore.com.sg

In China Emergency Number: 86-532-83889090 (NRCC)

Identified uses
Monomer

2. Hazards identification

GHS Classification

<table>
<thead>
<tr>
<th>Hazards</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flammable liquid</td>
<td>Category 2</td>
</tr>
<tr>
<td>Acute oral toxicity</td>
<td>Category 5</td>
</tr>
<tr>
<td>Acute inhalation toxicity</td>
<td>Category 4</td>
</tr>
<tr>
<td>Specific target organ systemic toxicity (single exposure)</td>
<td>Category 3</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>Category 2</td>
</tr>
<tr>
<td>Acute aquatic toxicity</td>
<td>Category 3</td>
</tr>
</tbody>
</table>

Labeling
Signal Word: Danger

Hazard Statements:
- H225 - Highly flammable liquid and vapor
- H303 - May be harmful if swallowed
- H332 - Harmful if inhaled
- H335 - May cause respiratory irritation
- H351 - Suspected of causing cancer
- H402 - Harmful to aquatic life

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
- P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
- P281 - Use personal protective equipment as required
- P308 + P313 - IF exposed or concerned: Get medical attention/advice
- P273 - Avoid release to the environment

3. Composition/Information on ingredients

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No</th>
<th>Percent %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vinyl acetate</td>
<td>108-05-4</td>
<td>min 99.9</td>
</tr>
</tbody>
</table>

4. First aid measures

General Information
Remove contaminated, soaked clothing immediately and dispose of safely. Pay attention to own protection. In any case show the physician the Safety Data Sheet.

Skin
Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. If symptoms persist, call a physician.

Eyes
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Call a physician immediately.

Inhalation
Keep at rest. Move to fresh air. Call a physician immediately.

Ingestion
Rinse with plenty of water. If conscious, drink plenty of water. If swallowed, do not induce vomiting - seek medical advice.
5. Fire-fighting measures

Suitable extinguishing media
Foam, Dry chemical, Carbon dioxide (CO2)

Extinguishing media which must not be used for safety reasons
Do not use a solid water stream as it may scatter and spread fire.

Special exposure hazards arising from the substance or preparation itself, its combustion products, or released gases
Under conditions giving incomplete combustion, hazardous gases produced may consist of
Carbon monoxide
Carbon dioxide (CO2)
Combustion gases of organic materials must in principle be graded as inhalation poisons
Vapors are heavier than air and may spread along floors
Vapors may cause flash fire or explosion

Special protective equipment for fire-fighters
self-contained breathing apparatus (EN 133).

Environmental precautions
Water used to fight fire runoff can cause environmental damage. Dike and collect water used to fight fire.

Other Information
Cool containers / tanks with water spray.

6. Accidental release measures

Personal precautions
Avoid contact with the skin and the eyes. Keep away from heat and sources of ignition. Provide adequate ventilation.

Environmental precautions
Prevent further leakage or spillage. Do not discharge into the drains/surface waters/groundwater. Material creates a special hazard because it floats on water. Caution: Spontaneous polymerization can occur if material is released or mixed with incompatibles.

Methods for cleaning up
Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal. Dispose of in accordance with local regulations.

7. Handling and storage

Advice on safe handling
Provide sufficient air exchange and/or exhaust in work rooms.

Incompatible products
Oxidizing agents, radical initiators, Strong acids, Amines
Protection - fire and explosion:
Keep away from sources of ignition - No smoking. Take necessary action to avoid static electricity discharge. Ground and bond containers when transferring material. In case of fire, emergency cooling with water spray should be available. Blanketing vinyl acetate under an inert atmosphere eliminates flammable vapor in the head space and contamination with atmospheric moisture. Bulk storage of vinyl acetate at ambient temperatures is an acceptable practice when there is a routine turnover of the tank contents every 60 days or less. Inhibitor levels should be monitored if a stability problem is suspected.

Material storage
Store locked up. Keep in a dry, cool and well-ventilated place.

Incompatible products
Oxidizing agents, radical initiators, Strong acids, Amines

Technical measures/Storage conditions
Keep tightly closed in a dry, cool and well-ventilated place. Handle an open container with care. Recommended storage temperature 30 °C / 85 °F. Store at temperatures not exceeding max 38 °C/ max 100.4 °F.

8. Exposure controls / personal protection

ACGIH Exposure Limits

<table>
<thead>
<tr>
<th>Components</th>
<th>TWA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vinyl acetate</td>
<td>10 PPM</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Components</th>
<th>STEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vinyl acetate</td>
<td>15 PPM</td>
</tr>
</tbody>
</table>

OSHA Exposure Limits

<table>
<thead>
<tr>
<th>Components</th>
<th>STEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vinyl acetate</td>
<td>20 PPM</td>
</tr>
</tbody>
</table>

Exposure controls

Engineering measures
General or dilution ventilation is frequently insufficient as the sole means of controlling employee exposure. Local ventilation is usually preferred. Explosion-proof equipment (for example fans, switches, and grounded ducts) should be used in mechanical ventilation systems.

Personal protective equipment

General advice
Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Use only in an area equipped with a safety shower. Hold eye wash fountain available.
Hygiene measures
When using, do not eat, drink or smoke. Take off all contaminated clothing immediately. Wash hands before breaks and immediately after handling the product.

Respiratory protection
respirator with A filter.

Eye protection
Tightly fitting safety goggles. In addition to goggles, wear a face shield if there is a reasonable chance for splash to the face. Equipment should conform to EN 166.

Skin protection
impervious clothing

Hand protection
Chemicals resistant gloves
Suitable material
Butyl-rubber
Type
Butoject (Company KCL) or comparable article; or refer to glove manufacturer's recommendation
Evaluation
according to EN 374: level 5
Material thickness
Approx. 0.7 mm
Break through time
approx. 240 min

9. Physical and chemical properties

Appearance
Form
liquid
Color
colourless
Odor
sweet, fruity

Odor Threshold
0.12 ppm (gas in air)
Molecular Weight
86.09 g/mol
Flash point
-8°C
Method
closed cup
Ignition temperature
402°C
Decomposition
Not determined
Temperature
Lower explosion limit
2.6 Vol. %
Upper explosion limit
13.4 Vol. %
Flammability (solids)
not applicable
Melting point/range
-93.2°C
Boiling point/range
72.7°C @ 1013 hPa
Density
0.932 g/ml @ 20°C
pH
neutral
Viscosity
0.42 - 0.43 mPa*s @ 20°C
Vapor pressure
113 hPa @ 20°C
445 hPa @ 50°C
Vapor density
3.0 (Air=1)
Evaporation Rate
8.9 (n-Butyl acetate = 1)
Water solubility
20 g/l @ 20°C
Solubility in other solvents
miscible with, Ethanol, soluble in, Diethyl ether, Acetone, Benzene, Chloroform
Partition coefficient
0.73 (measured)
(n-octanol/water)
Explosive Properties
not applicable based on consideration of the structure
Oxidizing Properties
not applicable based on consideration of the structure
Surface Tension
23.95 mN/m @ 20°C
Dissociation constant
not applicable based on consideration of the structure
9. Physical and chemical properties
   Self-Accelerating polymerization temperature (SAPT) > 50 °C

10. Stability and reactivity

   Reactivity
   Stable under normal conditions of handling, use and transportation.

   Conditions to avoid
   Avoid any source of ignition. Avoid contact with heat, sparks, open flame, and static discharge. Avoid temperatures above 30 °C / 86 °F.

   Incompatible Materials
   Keep away from: Oxidizing agents, radical initiators, Strong acids, Amines

   Hazardous Combustion or Decomposition Products:
   Thermal decomposition products may include oxides of carbon.
### 11. Toxicological information

#### Potential health effects

**Routes of exposure**

Skin, eyes, inhalation.

**Immediate effects**

<table>
<thead>
<tr>
<th>Route</th>
<th>Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Skin</strong></td>
<td>May cause slight skin irritation.</td>
</tr>
<tr>
<td><strong>Eyes</strong></td>
<td>Essentially non-irritating.</td>
</tr>
<tr>
<td><strong>Inhalation</strong></td>
<td>May cause irritation of respiratory tract. Symptoms of exposure may include: Nasal discharge, hoarseness, coughing, chest pain and breathing difficulty. Accumulation of fluid in the lungs (pulmonary edema); symptoms can be delayed for several hours.</td>
</tr>
<tr>
<td><strong>Ingestion</strong></td>
<td>May cause gastrointestinal irritation.</td>
</tr>
<tr>
<td><strong>Other</strong></td>
<td>Vinyl Acetate is listed as an IARC 2B, possible human carcinogen based on animal data.</td>
</tr>
</tbody>
</table>

**Target organ effects**

Overexposure (prolonged or repeated exposure) may cause:

Local irritation at the site of exposure

**Medical conditions which may be aggravated by exposure:**

- Respiratory Tract
- Skin
- Eyes

#### Vinyl acetate

- **Acute oral toxicity**
  - LD50: 3500 mg/kg
- **Acute dermal toxicity**
  - LD50: 7440 mg/kg
- **Acute inhalation toxicity**
  - LC50 (4h): 15810 mg/m³
  - Standard Acute Method
- **Skin corrosion/irritation**
  - Not irritating
    - Species: rabbit
    - Method: OECD 404
- **Skin Sensitization**
  - Nonsensitizer
    - Species: mouse female
    - Method: OECD 429
- **Serious eye damage/eye irritation**
  - Not irritating
    - Species: rabbit eye
    - Method: OECD 405
- **Carcinogenic effects**
  - Has been shown to cause cancer in lifetime rat and mouse inhalation studies at the site of contact at non-physiologically relevant doses
  - Species: rats and mice
  - Study: 104-week inhalation study
Carcinogenic Effects
Species: rats and mice
Study: 104-week oral gavage study
LOAEL: 31 mg/kg bw/day

in vitro Mutagenicity

in vivo Mutagenicity
Mammalian Erythrocyte Micronucleus Test in mice: ambiguous - Method: OECD 474 Effects on sperm morphology and meiotic micronuclei in mice: negative

Reproductive toxicity
Routes of exposure: oral drinking water
Species: rat
NOAEL: 1000 ppm

Developmental effects
Routes of exposure: oral drinking water and Inhalation
Species: rat
No adverse developmental effects

Repeated exposure
Routes of exposure: oral gavage
Species: rats and mice
Method: OECD 408
NOAEL: 281 mg/kg bw/day

Repeated Exposure
Routes of exposure: Inhalation
Species: rats and mice
Method: OECD 453
NOAEC: 176 mg/m³

12. Ecological Information

Vinyl acetate

Chronic fish toxicity
Species: Pimephales promelas (Fathead minnow)
Method: OECD 210
NOEC (34d): 0.16 mg/l

Acute daphnia toxicity
Species: Daphnia magna
Method: OECD 202
EC50: 12.6 mg/l (48h)

Toxicity to aquatic plants
Species: Pseudokirchneriella subcapitata
Method: OECD 201
EC50: 12.7 mg/l (72h)

Toxicity to bacteria
Species: Pseudomonas putida
Method: OECD 201
EC3 (16h): 6 mg/l
12. Ecological Information

<table>
<thead>
<tr>
<th>Biodegradation</th>
<th>Readily biodegradable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Species:</td>
<td>activated sludge</td>
</tr>
<tr>
<td>Method</td>
<td>OECD 301 C</td>
</tr>
<tr>
<td>Bioaccumulation</td>
<td>Does not bioaccumulate</td>
</tr>
<tr>
<td>Mobility in soil</td>
<td>Only a low potential to adsorb to soils or sediments</td>
</tr>
<tr>
<td>Other potential hazards</td>
<td>The substance does not meet the criteria for PBT / vPvB according to REACH, Annex XIII</td>
</tr>
</tbody>
</table>

13. Disposal considerations

Product information
Disposal required in compliance with all waste management related state and local regulations. The choice of the appropriate method of disposal depends on the product composition by the time of disposal as well as the local statutes and possibilities for disposal.

Uncleaned empty packaging
Contaminated packaging should be emptied as far as possible and after appropriate cleansing may be taken for reuse.

14. Transport information

US Department of Transportation
- UN/NA Number: UN 1301
- Proper Shipping Name: Vinyl Acetate, stabilized
- Hazard class: 3
- Packing Group: II
- Reportable Quantity (RQ): 5000 lb/2270kg

ADR/RID
- UN/ID No.: UN 1301
- Proper Shipping Name: Vinyl Acetate, stabilized
- Hazard Class: 3
- Classification Code: F1
- Packing group: II
- Environmentally hazardous: no
- Tunnel Restriction Code: (D/E)
- Hazard Label(s): 3
- Hazard Number: 339

ADN
- UN/ID No.: UN 1301
- Proper Shipping Name: Vinyl Acetate, stabilized
- Hazard Class: 3
- Classification Code: F1
- Packing group: II
- Environmentally hazardous: no
14. Transport information

Hazard Labels 3

ICAO/IATA

UN-No. UN 1301
Proper Shipping Name Vinyl Acetate, stabilized
Hazard Class 3
Packing group II
Environmentally hazardous no
Hazard Labels 3

IMDG

UN/ID No. UN 1301
Proper Shipping Name Vinyl Acetate, stabilized
Hazard Class 3
Packing group II
Marine pollutant no
Hazard Labels 3
EmS Code F-E, S-D

Remarks
Special provision 386 taken into account.

15. Regulatory information

INTERNATIONAL REGULATIONS
This substance is classified as dangerous according to Chinese legislation

International Inventories
Listed on the chemical inventories of the following countries or qualifies for an exemption:
Australia (AICS)
Canada (DSL)
China (IECSC)
Europe (EINECS)
Japan (ENCS)
Japan (ISHL)
Korea (KECI)
New Zealand (NZIoC)
Philippines (PICCS)
United States (TSCA)

16. Other information
16. Other information

Observe national and local legal requirements.

Changes against the previous version are marked by ***

Sources of key data used to compile the datasheet
Information contained in this safety data sheet is based on Celanese owned data and public sources deemed valid or acceptable. The absence of data elements required by ANSI or 1907/2006/EC indicates that no data meeting these requirements is available.

Further information
This information is based on our present state of knowledge. It shall describe our products regarding safety requirements and shall not be construed as a guarantee or statement of condition and/or quality For more information, other material safety data sheets or technical data sheets please consult the Celanese homepage (www.celanese.com)