Section 1: Product and Company Identification

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
+86-532-83889090 (NRCC)

Identified uses
Monomer

Section 2: Hazard Identification

Emergency Overview
Extremely flammable liquid and vapor. Vapor may cause flash fire. Vapours are heavier than air and may spread along floors. May cause respiratory tract irritation. May polymerize violently or explosively if contaminated or overheated. Material creates a special hazard because it floats on water. Possible cancer hazard. Contains material which may cause cancer based on animal data. Risk of cancer depends on duration and level of exposure.

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</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>
Product Name: Vinyl acetate
MSDS number: 80094
Revision Number: 10.02
Revision Date: Mar. 13, 2018
Issuing date: Feb. 13, 2019

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

Prevention:
- 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
- P271 - Use only outdoors or in a well-ventilated area
- P281 - Use personal protective equipment as required
- P233 - Keep container tightly closed
- P240 - Ground/Bond container and receiving equipment
- P242 - Use only non-sparking tools
- P243 - Take precautionary measures against static discharge
- P273 - Avoid release to the environment

Response:
- P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
- P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
- P312 - Call a POISON PHYSICIAN/doctor/physician if you feel unwell.
- P308 + P313 - IF exposed or concerned: Get medical attention/advice
- P370 + P378 - In case of fire, use water/water spray/water jet/chemical resistant foam/chemical powder for extinction

Storage:
- P402 - Store in a dry place
- P405 - Store locked up

Disposal:
- P501 - Dispose of contents/container in accordance with local regulations.

Physical and chemical hazards:
Extremely flammable liquid and vapor. Vapor may cause flash fire. May polymerize violently or explosively if contaminated or overheated.
Potential health effects

Routes of exposure
Skin, eyes, inhalation.

Immediate effects

<table>
<thead>
<tr>
<th>Skin</th>
<th>May cause slight skin irritation.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eyes</td>
<td>Essentially non-irritating.</td>
</tr>
<tr>
<td>Inhalation</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. May cause gastrointestinal irritation.</td>
</tr>
</tbody>
</table>

Ingestion

Delayed / long-term effects
No information available

Target organ effects
Overexposure (prolonged or repeated exposure) may cause:
Local irritation at the site of exposure

Environmental hazards
Refer to Section 12

Section 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>

Section 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.

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

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.

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

Main symptoms
Vapours may cause irritation to the eyes, respiratory system and the skin, Inhalation of high vapour concentrations can cause CNS-depression and narcosis.

Special hazard
respiratory disorder.
Treatment
Treat symptomatically. In case of lung irritation first treatment with dexametason aerosol (spray). In case of ingestion: administration of activated charcoal and a saline laxative agent. In the case of absorption of large volumes, use gastroscopy with suction cleaning.

Section 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.

Section 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

Additional information
Consult trained personnel. Consider the information for "Personal Protection" in chapter 8 of this Safety Data Sheet.

Section 7: Handling and storage

Advice on safe handling
Provide sufficient air exchange and/or exhaust in work rooms
SAFETY DATA SHEET (GB/T 16483 and GB/T17519)

Product Name: Vinyl acetate

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

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.

Temperature class
T2

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

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.

Incompatible products
Oxidizing agents radical initiators Strong acids Amines

German storage class
3A: Flammable liquids.

Section 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>

China National Exposure Limits

China National Standard:

<table>
<thead>
<tr>
<th>Components</th>
<th>TWA:</th>
<th>STEL:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vinyl acetate</td>
<td>10 mg/m³</td>
<td>15 mg/m³</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

Section 9: Physical and Chemical Properties

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)

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

Self-Accelerating polymerization temperature (SAPT)  
> 50 °C

### Section 10: Stability and reactivity

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

**Possibility of hazardous reactions**
Polymerization can occur, 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**
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.

### Section 11: Toxicological information

**Vinyl acetate**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute oral toxicity</td>
<td>LD50: 3500 mg/kg</td>
</tr>
<tr>
<td>Species</td>
<td>rat</td>
</tr>
<tr>
<td>Acute dermal toxicity</td>
<td>LD50: 7440 mg/kg</td>
</tr>
<tr>
<td>Species</td>
<td>rabbit, male</td>
</tr>
<tr>
<td>Method</td>
<td>Standard Acute Method</td>
</tr>
<tr>
<td>Acute inhalation toxicity</td>
<td>LC50 (4h): 15810 mg/m³</td>
</tr>
<tr>
<td>Species</td>
<td>rat</td>
</tr>
<tr>
<td>Method</td>
<td>Standard Acute Method</td>
</tr>
<tr>
<td>Skin corrosion/irritation</td>
<td>Not irritating</td>
</tr>
<tr>
<td>Species</td>
<td>rabbit</td>
</tr>
<tr>
<td>Method</td>
<td>OECD 404</td>
</tr>
<tr>
<td>Serious eye damage/eye irritation</td>
<td>Not irritating</td>
</tr>
<tr>
<td>Species</td>
<td>rabbit eye</td>
</tr>
<tr>
<td>Method</td>
<td>OECD 405</td>
</tr>
<tr>
<td>Skin Sensitization</td>
<td>nonsensitizer</td>
</tr>
<tr>
<td>Species</td>
<td>mouse, female</td>
</tr>
</tbody>
</table>
Section 11: Toxicological information

**Product Name**: Vinyl acetate

**MSDS number**: 80094

**Revision Number**: 10.02

**Revision Date**: Mar.13.2018

**Issuing date**: Feb.13.2019

<table>
<thead>
<tr>
<th>Method</th>
<th>Ames Test: negative - with and without metabolic activation - Method: OECD 471</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Chromosome aberrations in cultured human lymphocytes: positive - with and without metabolic activation - Method: OECD 473</td>
</tr>
<tr>
<td></td>
<td>Cytotoxicity and micronucleus assay in human lymphoblastoid cells (TK6): positive - Method: OECD 487</td>
</tr>
</tbody>
</table>

**in vitro Mutagenicity**

<table>
<thead>
<tr>
<th>Study</th>
<th>104-week inhalation study</th>
</tr>
</thead>
</table>

**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

<table>
<thead>
<tr>
<th>Species</th>
<th>rats and mice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Study</td>
<td>104-week oral gavage study</td>
</tr>
</tbody>
</table>

**Carcinogenic Effects**

Has been shown to cause cancer in lifetime rat and mouse drinking water studies at the site of contact at non-physiologically relevant doses

<table>
<thead>
<tr>
<th>Species</th>
<th>rats and mice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Study</td>
<td>104-week oral gavage study</td>
</tr>
</tbody>
</table>

**Reproductive toxicity**

No toxicity to reproduction

<table>
<thead>
<tr>
<th>Species</th>
<th>oral drinking water</th>
</tr>
</thead>
<tbody>
<tr>
<td>Method</td>
<td>OECD 416</td>
</tr>
<tr>
<td>NOAEL</td>
<td>1000 ppm</td>
</tr>
</tbody>
</table>

**Developmental effects**

No adverse developmental effects

<table>
<thead>
<tr>
<th>Species</th>
<th>oral drinking water and Inhalation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Method</td>
<td>OECD 414</td>
</tr>
</tbody>
</table>

**Repeated exposure**

No adverse effects

<table>
<thead>
<tr>
<th>Routes of exposure</th>
<th>oral gavage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Species</td>
<td>rats and mice</td>
</tr>
<tr>
<td>Method</td>
<td>OECD 408</td>
</tr>
<tr>
<td>NOAEL</td>
<td>281 mg/kg bw/day</td>
</tr>
</tbody>
</table>

**Repeated Exposure**

No adverse effects

<table>
<thead>
<tr>
<th>Routes of exposure</th>
<th>Inhalation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Species</td>
<td>rats and mice</td>
</tr>
<tr>
<td>Method</td>
<td>OECD 453</td>
</tr>
<tr>
<td>NOAEC</td>
<td>176 mg/m³</td>
</tr>
</tbody>
</table>

| Type of study       | 104-weeks inhalation study |
Section 12: Ecological information

Vinyl acetate

Chronic fish toxicity
Species: Pimephales promelas (Fathead minnow)
Method: OECD 210

Acute daphnia toxicity
Species: Daphnia magna
Method: OECD 202

Toxicity to aquatic plants
Species: Pseudokirchneriella subcapitata
Method: OECD 201

Toxicity to bacteria
Species: Pseudomonas putida
Method: OECD 301 C

Biodegradation
Readily biodegradable

Bioaccumulation
Does not bioaccumulate

Mobility in soil
Only a low potential to adsorb to soils or sediments

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

Section 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.

Section 14: Transport information

ADR/RID
UN/ID No.: UN 1301
Proper Shipping Name: Vinyl Acetate, stabilized
Hazard Class: 3
Packing group: II
Tunnel Restriction Code: (D/E)
Hazard Number: 339

ADN
UN/ID No.: UN 1301
Proper Shipping Name: Vinyl Acetate, stabilized
Hazard Class: 3
Packing group: II
Section 14: Transport information

ICAO/IATA

<table>
<thead>
<tr>
<th>UN-No.</th>
<th>Proper Shipping Name</th>
<th>Hazard Class</th>
<th>Packing group</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN 1301</td>
<td>Vinyl Acetate, stabilized</td>
<td>3</td>
<td>II</td>
</tr>
</tbody>
</table>

IMDG

<table>
<thead>
<tr>
<th>UN/ID No.</th>
<th>Proper Shipping Name</th>
<th>Hazard Class</th>
<th>Packing group</th>
<th>Marine pollutant</th>
<th>EmS Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN 1301</td>
<td>Vinyl Acetate, stabilized</td>
<td>3</td>
<td>II</td>
<td>no</td>
<td>F-E, S-D</td>
</tr>
</tbody>
</table>

Remarks
Special provision 386 taken into account.

Section 15. Regulatory information

The following laws, regulations, rules and standards provide appropriate provisions of the management of the chemical:

Occupational Disease Prevention Law:
Catalog of classification of occupational hazards: unlisted
Occupational disease catalog: unlisted

Regulations on Safe Management of Hazardous Chemicals:
Catalogue of Hazardous Chemicals: Vinyl acetate is listed (32131) - 3.2 middle flash point flammable liquid GB 18218-2009 "major hazard identification of hazardous chemicals ": Vinyl acetate is extremely flammable liquid, flash point < 23°C, critical volume (т): 1000
List of first batch of hazardous chemicals under priority management: listed
The Measures for Environmental Administration Registration of Hazardous Chemicals (Trial)

Labor protection regulations for use of toxic substances in workplaces:
Catalog of highly toxic goods: Not Listed

Provisions on the First Import of Chemicals and the Import and Export of Toxic Chemicals:
List of Toxic Chemicals Restricted to be Imported/Exported: Not listed

List of Dangerous Goods (GB12268-2012):
Listed. Hazard Class 3, Flammable liquid
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)

Remarks
Downstream users shall comply with local regulations concerning the chemicals

Section 16: Other information

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).
Abbreviation and Acronym:
ADR = Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
CAS = Chemical Abstracts Service (division of the American Chemical Society)
CLP = Classification, Labelling and Packaging
DNEL = Derived No Effect Level
EINECS = European Inventory of Existing Commercial Chemical Substances
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC Code = International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IMO)
ICAO = International Civil Aviation Organization
IMDG = International Maritime Code for Dangerous Goods
LC50 = Lethal Concentration
LD50 = Lethal Dose
LOAEC = Low Observed Adverse Effect Concentration
LOAEL = Low Observed Adverse Effect Level
LOEL = Low Observed Effect Level
MEST = Mouse Ear Swelling Test
NOAEC = No Observed Adverse Effect Concentration
NOAEL = No Observed Adverse Effect Level
NOEC = No Observed Effect Concentration
NOEL = No Observed Effect Level
PBT = Persistent, Bioaccumulative and Toxic
PNEC = Predicted No Effect Concentration
RCR = Risk Characterization Ratio
RID = Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
R-Phrases = Risk Phrases
S-Phrases = Safety Phrases
STOT RE = Specific Target Organ Toxicity Repeated Exposure
STOT SE = Specific Target Organ Toxicity Single Exposure
STP = Sewage Treatment Plant
vPvB = very Persistent and very Bioaccumulative