1. Product and company identification

Trade Name

Vinyl acetate

Manufacturer, importer, supplier
Celanese Ltd.
222 W. Las Colinas Blvd., Suite 900N
Irving, TX  75039
United States
Phone:  972 443 4000
Internet:  www.celanese.com

Transportation emergency phone numbers:
For Chemical Emergency:  Spill Leak Fire Exposure or Accident
Call CHEMTREC Day or Night
DOMESTIC NORTH AMERICA:  800-424-9300
INTERNATIONAL, CALL +1 703-527-3887 (collect calls accepted)

Identified uses
Monomer

2. Hazard 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 inhalation toxicity</td>
<td>Category 4</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>Category 2</td>
</tr>
<tr>
<td>Specific target organ systemic toxicity</td>
<td>Category 3</td>
</tr>
<tr>
<td>Chronic aquatic toxicity</td>
<td>Category 3</td>
</tr>
</tbody>
</table>

Label elements

Signal Word
Danger

Hazard Statements
Highly flammable liquid and vapor
Harmful if inhaled
Suspected of causing cancer
May cause respiratory irritation
Harmful to aquatic life with long lasting effects
Precautionary statements
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
Keep container tightly closed.
Ground/bond container and receiving equipment.
Use explosion-proof electrical/ ventilating/ lighting/ equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
In case of fire:
Use foam, dry chemical, carbon dioxide (CO2) to extinguish.
Wear protective gloves/protective clothing/eye protection/face protection
Avoid breathing dust/fume/gas/mist/vapors/spray.
Use only outdoors or in a well-ventilated area.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
Call a POISON CENTER or doctor if you feel unwell.
IF exposed or concerned: Get medical advice/attention.
Store locked up.
Store in a well-ventilated place. Keep cool.
Dispose of contents/container to an approved waste disposal plant.

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>

Remarks
Hydroquinone is present at 3-30 ppm as a polymerization inhibitor. Monomethyl ether of hydroquinone may be present upon request.

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.

Isolation
Keep unnecessary people away; isolate hazard area and deny entry. Stay upwind; keep out of low areas. Isolate for 800 meters or 0.5 miles in all directions if tank, rail car, or tank truck is involved in fire. Evacuate downwind areas as conditions warrant to prevent exposure and to allow vapors or fumes to dissipate. Spills may expose downwind areas to toxic or flammable concentrations over considerable distances in some cases.

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.

Authority Notification
Within the United States, call the National Response Center (800-424-8802) and appropriate state and local authorities if the quantity released over 24 hours is equal to or greater than the reportable quantity listed below:
7. Handling and storage

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

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.

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 max. Store at temperatures not exceeding 38 °C/ 100.4 °F.

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

Incompatible products
oxidizing agents, radical initiators, strong acids, amines

8. Exposure controls / personal protection

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>

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>

Mexico National Exposure Limits

<table>
<thead>
<tr>
<th>Components</th>
<th>LMPE - PPT</th>
<th>STEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vinyl acetate</td>
<td>30 mg/m³</td>
<td>10 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.

Protective equipment
A safety shower and eyewash should be readily available.

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.

Respiratory protection
Based on workplace contaminant level and working limits of the respirator, use a respirator approved by NIOSH. The following is the minimum recommended equipment for an occupational exposure level. To estimate an occupational exposure level see Section 8 and Section 11.

For concentrations > 1 and < 10 times the occupational exposure level: Use an air-purifying respirator with a full facepiece and organic vapor cartridge(s) or air-purifying full facepiece respirator with an organic vapor canister or a full facepiece powered air-purifying respirator fitted with organic vapor cartridge(s). The air purifying element must have an end of service life indicator, or a documented change out schedule must be established. Otherwise, use supplied air.

For concentrations more than 10 times the occupational exposure level and less than the lower of either 100 times the occupational exposure level or the IDLH: Use Type C full facepiece supplied-air respirator operated in positive-pressure or continuous-flow mode.

For concentrations > 100 times the occupational exposure level or greater than the IDLH level or unknown concentrations (such as in emergencies): Use self-contained breathing apparatus with full facepiece in positive-pressure mode or Type C positive-pressure full facepiece supplied-air respirator with an auxiliary positive-pressure self-contained breathing apparatus escape system.

For escape: Use self-contained breathing apparatus with full facepiece or any respirator specifically approved for escape.

Skin protection:
Wear impervious clothing and gloves to prevent contact. PE/EVA/PE is recommended. Other protective material may be used, depending on the situation, if adequate degradation and permeation data is available. If other chemicals are used in conjunction with this chemical, material selection should be based on protection for all chemicals present.

Eye/face protection:
Wear chemical goggles when there is a reasonable chance of eye contact.
9. Physical and chemical properties

Appearance

Form: liquid
Color: colourless
Odor: sweet, fruity

Molecular Weight: 86.09
Flash point: -8°C (17.6°F)
Method: closed cup
Ignition temperature: 402°C (725°F)
Decomposition Temperature: Not determined
Lower explosion limit: 2.6 Vol. %
Upper explosion limit: 13.4 Vol. % (-135 °F)
Boiling point/range: 72.7°C (163°F) @ 1013 hPa

Density: 0.932 g/ml @ 20°C
pH: neutral
Viscosity: 0.42 - 0.43 mPa*s @ 20°C (0.43 cps @ 20°C)
Vapor pressure: 113 hPa @ 20°C (90 mmHg)
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)
Self-Accelerating polymerization temperature (SAPT): > 50 °C

10. Stability and reactivity

Chemical stability
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.
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.

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>Skin</td>
<td>May cause slight skin irritation.</td>
</tr>
<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.</td>
</tr>
</tbody>
</table>

Ingestion
May cause gastrointestinal irritation.

Other:
Vinyl Acetate is listed as an IARC 2B, possible human carcinogen based on animal data.

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

<table>
<thead>
<tr>
<th>Test</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute oral toxicity</td>
<td>LD50: 3500 mg/kg</td>
</tr>
<tr>
<td>Acute dermal toxicity</td>
<td>LD50: 7440 mg/kg</td>
</tr>
<tr>
<td>Acute inhalation toxicity</td>
<td>LC50 (4h): 15810 mg/m³</td>
</tr>
<tr>
<td>Skin corrosion/irritation</td>
<td>Not irritating</td>
</tr>
<tr>
<td>Species Method</td>
<td>rabbit</td>
</tr>
<tr>
<td>Skin Sensitization</td>
<td>nonsensitizer</td>
</tr>
<tr>
<td>Species Method</td>
<td>mouse female</td>
</tr>
<tr>
<td>Serious eye damage/eye irritation</td>
<td>Not irritating</td>
</tr>
<tr>
<td>Species</td>
<td>rabbit eye</td>
</tr>
</tbody>
</table>

Issuing date: Mar.13.2018
Revision Date: Mar.13.2018
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**
- Method: OECD 487
- EC50: 12.6 mg/l (48h)
12. Ecological Information

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
Species: activated sludge
Method: 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

13. Disposal considerations

Dispose of spilled material in accordance with state and local regulations for hazardous waste. Recommended methods are incineration or biological treatment at a federally or state-permitted disposal facility. Note that this information applies to the material as manufactured; processing, use, or contamination may make this information inappropriate, inaccurate, or incomplete.

Note that this handling and disposal information may also apply to empty containers, liners and rinsate. State or local regulations or restrictions are complex and may differ from federal regulations. This information is intended as an aid to proper handling and disposal; the final responsibility for handling and disposal is with the owner of the waste.

EPA Hazardous Waste Code(s): D001

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

TDG
UN/NA Number: UN 1301
Proper Shipping Name: VINYL ACETATE, STABILIZED
Class: 3
Packing Group: II
Mexico Transport Information
UN-No.  UN 1301
Proper Shipping Name  Vinyl Acetate, Stabilized
Hazard Class  3
Packing Group  II
Emergency Response Guide  129P

ICAO/IATA
UN-No.  UN 1301
Proper Shipping Name  Vinyl Acetate, stabilized
Hazard Class  3
Packing group  II

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

Remarks
Special provision 386 taken into account.

15. Regulatory Information

US State Regulations
Chemicals associated with the product which are subject to the state right-to-know regulations are listed along with the applicable state(s):

Vinyl acetate 108-05-4
Pennsylvania  Listed
New York  Listed
New Jersey  Listed
Illinois  Listed
Louisiana  Listed
Massachusetts  Listed
Rhode Island  Listed

U.S. FEDERAL REGULATIONS

TSCA Inventory:
We certify that all components are either on the TSCA inventory or qualify for an exemption.

Environmental Regulations:
Safety Data Sheet

| Product name | Vinyl acetate | MSDS number | 80094 | Revision Date | Mar.13.2018 | Revision Number | 10.01 | Issuing date | Mar.13.2018 |

Vinyl acetate 108-05-4
EPCRA Section 313 Listed
CERCLA Hazardous Substance Listed
Extremely Hazardous Substance Listed

SARA 311:
- Acute health: Yes
- Chronic health: Yes
- Fire: Yes
- Sudden release of pressure: No
- Reactive: Yes

INTERNATIONAL REGULATIONS

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

NFPA: Health: 2 Flammability: 3 Instability: 2
HMIS: Health: 2* Flammability: 3 Physical Hazard: 2

Prepared By
Product Stewardship Department
Celanese

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.

Other Information:
Observe national and local legal requirements
Changes against the previous version are marked by ***
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