Section 1: Product and Company Identification

Product Name
Acetic acid 99-100%

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
Chemical intermediate Agrochemicals Cleaning agent Process chemicals

Section 2: Hazard Identification

Emergency Overview
Flammable liquid and vapor. Causes skin, eye, digestive tract and respiratory tract burns. Causes respiratory tract irritation. May be harmful if absorbed through skin.

GHS Classification

<table>
<thead>
<tr>
<th>Hazards</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flammable liquid</td>
<td>Category 3</td>
</tr>
<tr>
<td>Acute oral toxicity</td>
<td>Category 5</td>
</tr>
<tr>
<td>Skin corrosion/irritation</td>
<td>Category 1A</td>
</tr>
<tr>
<td>Serious eye damage/eye irritation</td>
<td>Category 1</td>
</tr>
</tbody>
</table>
### Labeling

**Signal Word**
Danger

**Hazard Statements**
- H226 - Flammable liquid and vapor
- H303 - May be harmful if swallowed
- H314 - Causes severe skin burns and eye damage
- H318 - Causes serious eye damage

### Precautionary statements

**Prevention**
- P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking
- P233 - Keep container tightly closed
- P240 - Ground/Bond container and receiving equipment
- P241 - Use explosion-proof electrical/ventilating/lighting/equipment
- P243 - Take precautionary measures against static discharge
- P260 - Do not breathe dust/fume/gas/mist/spray/spray.
- P271 - Use only outdoors or in a well-ventilated area
- P280 - Wear protective gloves/protective clothing/eye protection/face protection

**Response**
- P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
- P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
- P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
- P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

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

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

### Physical and chemical hazards
Flammable liquid and vapor.

### Potential health effects

**Routes of exposure**
Skin, eyes, inhalation.

**Immediate effects**
Skin
Causes skin burns. May be harmful if absorbed through skin. Symptoms of overexposure include: Redness or discoloration, swelling, itching, burning or blistering of skin.

Eyes
Exposure to vapors and liquid Causes severe eye burns, damage irreversible. Symptoms of exposure may include: Eye irritation, burning sensation, pain, watering, and/or change of vision.

Inhalation
Causes respiratory tract irritation. 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.

Ingestion
Causes digestive tract burns. Symptoms of exposure may include: Nausea, vomiting, loss of appetite, gastrointestinal irritation and/or diarrhea. Inflammation of mouth, throat, esophagus and/or stomach.

Delayed / long-term effects
No information available

Target organ effects
Overexposure (prolonged or repeated exposure) may cause:
Injury to the eyes
Digestive tract damage
Respiratory tract damage
Skin damage.

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>Acetic acid</td>
<td>64-19-7</td>
<td>min 99.85</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
Move to fresh air. Keep at rest. Call a physician immediately.

Skin
Wash off immediately with plenty of water for at least 15 minutes Obtain medical attention

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

Ingestion
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.

Special hazard
respiratory disorder.
Treatment
Treat symptomatically. In case of lung irritation first treatment with dexametason aerosol (spray). In case of choking: gastroscopy inclusive of aspiration and acidosis compensation..

Section 5: Fire-fighting Measures

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

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)
- Nitrogen oxides (NOx)
Combustion gases of organic materials must in principle be graded as inhalation poisons

Special protective equipment for fire-fighters
Wear self-contained breathing apparatus and protective suit.

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. Dike and collect water used to fight fire.

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
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.

Temperature class
T1

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.

Incompatible products
Keep away from: Bases 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>Acetic acid</td>
<td>10 PPM</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Components</th>
<th>STEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetic acid</td>
<td>15 PPM</td>
</tr>
</tbody>
</table>

China National Exposure Limits

<table>
<thead>
<tr>
<th>Components</th>
<th>TWA:</th>
<th>STEL:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetic acid</td>
<td>10 mg/m³</td>
<td>20 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  
Do not get in eyes, on skin, or on clothing. 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  
If aerosols or vapors are present, respiratory protection is required (gas filter E).

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 6
Material thickness  
Approx. 0.3 mm
Break through time  
approx. 480 min

Section 9: Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form</td>
<td>liquid</td>
</tr>
<tr>
<td>Color</td>
<td>colourless</td>
</tr>
<tr>
<td>Odor</td>
<td>pungent</td>
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<tr>
<td>Odor Threshold</td>
<td>24.3 ppm (gas in air)</td>
</tr>
<tr>
<td>Molecular Weight</td>
<td>60.05 g/mol</td>
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<tr>
<td>Flash point</td>
<td>39°C</td>
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<tr>
<td>Method</td>
<td>closed cup</td>
</tr>
<tr>
<td>Ignition temperature</td>
<td>463°C</td>
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<tr>
<td>Decomposition</td>
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<tr>
<td>Temperature</td>
<td></td>
</tr>
<tr>
<td>Lower explosion limit</td>
<td>4.0 Vol. %</td>
</tr>
<tr>
<td>Upper explosion limit</td>
<td>19.9 Vol. %</td>
</tr>
<tr>
<td>Flammability (solids)</td>
<td>not applicable</td>
</tr>
<tr>
<td>Melting point/range</td>
<td>17°C</td>
</tr>
<tr>
<td>Boiling point/range</td>
<td>118°C</td>
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<tr>
<td>Density</td>
<td>1.045 g/ml @ 25°C</td>
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<tr>
<td>pH</td>
<td>2.4 @ 60 g/l</td>
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<tr>
<td>Viscosity</td>
<td>1.056 mPa*s @ 25°C</td>
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<tr>
<td>Vapor pressure</td>
<td>21 hPa @ 25°C</td>
</tr>
<tr>
<td></td>
<td>77 hPa @ 50°C</td>
</tr>
<tr>
<td>Vapor density</td>
<td>2.07 (Air=1)</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>0.97 (n-Butyl acetate = 1)</td>
</tr>
<tr>
<td>Water solubility</td>
<td>miscible</td>
</tr>
<tr>
<td>Solubility in other solvents</td>
<td>miscible with, Ethanol, Diethyl ether, Acetone, Benzene, soluble in, Chloroform</td>
</tr>
<tr>
<td>Partition coefficient</td>
<td>-0.17 (measured)</td>
</tr>
<tr>
<td>(n-octanol/water)</td>
<td></td>
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<tr>
<td>Explosive Properties</td>
<td>not applicable based on consideration of the structure</td>
</tr>
</tbody>
</table>
Oxidizing Properties

not applicable based on consideration of the structure

Surface Tension

27.10 mN/m @ 25°C

Dissociation constant

4.76 @ 25°C

Section 10: Stability and reactivity

Reactivity

Stable under normal conditions of handling, use and transportation.

Possibility of hazardous reactions

Hazardous polymerization does not occur.

Conditions to avoid

Avoid any source of ignition. Avoid contact with heat, sparks, open flame, and static discharge.

Incompatible Materials

Keep away from:, Amines, Bases.

Section 11: Toxicological information

Acetic acid

Acute oral toxicity

Species rat

LD50: 3310 mg/kg

Acute inhalation toxicity

Species rat

LC50 (4h): > 40000 mg/m³

Skin corrosion/irritation

Species rabbit

Method OECD 404

corrosive

Serious eye damage/eye irritation

Species rabbit eye

Method OECD 405

corrosive

Skin Sensitization

in vitro Mutagenicity

Ames Test: negative - with and without metabolic activation - Method: OECD 471

In vitro Mammalian Chromosome aberrations in Chinese Hamster Cells: negative - with and without metabolic activation - Method: OECD 473

in vivo Mutagenicity

In vivo Mammalian Erythrocyte Micronucleus Test: negative - Method: EU Method B.12

(Reference substance: Acetic anhydride)

Carcinogenic effects

No evidence of carcinogenicity

Developmental effects

No evidence of reproductive and developmental toxicity

Routes of exposure oral gavage

Species rabbit, rat, mouse

Method EU Method B.31

NOAEL: 1600 mg/kg bw/day

Prenatal Developmental Toxicity Study

Repeated exposure

No adverse effects

Routes of exposure oral gavage
SAFETY DATA SHEET (GB/T 16483 and GB/T17519)

Section 11: Toxicological information

Species: rat, male
NOAEL: 290 mg/kg bw/day
Type of study: 8-week oral subchronic toxicity study

Section 12: Ecological information

Acetic acid

Acute fish toxicity
Species: Oncorhynchus mykiss (rainbow trout)
Method: OECD 203
LC50: > 300.82 mg/l (96h)

Acute daphnia toxicity
Species: Daphnia magna
Method: OECD 202
EC50: > 300.82 mg/l (48h)

Toxicity to aquatic plants
Species: Skeletonema costatum
Method: ISO 10253
EC50: > 300.82 mg/l (72h)

Toxicity to bacteria
Species: Pseudomonas putida
Method: OECD 301 C
EC3 (16h): 850 mg/l

Biodegradation
Method: Readily biodegradable

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 2789
Proper Shipping Name: Acetic acid, glacial
Hazard Class: 8
Subsidiary Risk: 3
Packing group: II
Tunnel Restriction Code: (D/E)
Hazard Number: 83

ADN: Container and Tanker
Section 14: Transport information

**UN/ID No.**
UN 2789

**Proper Shipping Name**
Acetic acid, glacial

**Hazard Class**
8

**Subsidiary Risk**
3

**Packing group**
II

**ICAO/IATA**

**UN-No.**
UN 2789

**Proper Shipping Name**
Acetic acid, glacial

**Hazard Class**
8

**Subsidiary Risk**
3

**Packing group**
II

**IMDG**

**UN/ID No.**
UN 2789

**Proper Shipping Name**
Acetic acid, glacial

**Hazard Class**
8

**Subsidiary Risk**
3

**Packing group**
II

**Marine pollutant**
no

**EmS Code**
F-E, S-C

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: listed
GB 18218-2009 "major hazard identification of hazardous chemicals ": Acetic Acid: 23°C<= flashpoint < 61°C, critical volume (T): 5000
List of first batch of hazardous chemicals under priority management: unlisted

**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):**
List of Dangerous Goods (GB12268-2012): Listed. Hazard class 8, Corrosive; Subsidiary Risk 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).
SAFETY DATA SHEET (GB/T 16483 and GB/T17519)  

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