



**LEONID CHEMICALS PVT. LTD.,
BANGALORE**

An ISO-9001:2008 Certified Company

Quality Assurance Department

(CODE) DOCUMENT : WI

(CODE) SECTION : WI/SM

(DATE) : 01.04.2011



Issue : 02

Rev.: 00

Title: MATERIAL SAFETY DATA SHEET (MSDS): ACETIC ACID

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SECTION 1- CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

MSDS Name: Acetic acid

Catalog Numbers: A028, A067, A114

Synonyms: Ethanoic acid; Glacial acetic acid; Methanecarboxylic acid

CAS-No. : 64-19-7

Company Information:

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SECTION 2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 [EU-GHS/CLP]

Flammable liquids (Category 3)

Skin corrosion (Category 1A)

Classification according to EU Directives 67/548/EEC or 1999/45/EC

Flammable. Causes severe burns.

2.2 Label elements

Labelling according Regulation (EC) No 1272/2008 [CLP]

Signal word Danger

Hazard statement(s)

H226 Flammable liquid and vapour.

H314 Causes severe skin burns and eye damage.

Precautionary statement(s)

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

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes.

Remove contact lenses, if present and easy to do. Continue rinsing.

P310 Immediately call a POISON CENTER or doctor/ physician.

Supplemental Hazard



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Statements None
According to European Directive 67/548/EEC as amended.

Hazard symbol(s)

R-phrase(s)

R10 Flammable.
R35 Causes severe burns.

S-phrase(s)

S23 Do not breathe gas/fumes/vapour/spray.
S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

2.3 Other hazards - none

SECTION 3: Composition/information on ingredients

3.1 Substances

Synonyms : Glacial acetic acid
Formula : C₂H₄O₂
Molecular Weight : 60,05 g/mol

Component	Concentration
Acetic acid	
CAS-No. 64-19-7	
EC-No. 200-580-7	
Index-No. 607-002-00-6	

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact



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Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, Nausea, Vomiting, Ingestion or inhalation of concentrated acetic acid causes damage to tissues of the respiratory and digestive tracts. Symptoms include: hematemesis, bloody diarrhea, edema and/or perforation of the esophagus and pylorus, pancreatitis, hematuria, anuria, uremia, albuminuria, hemolysis, convulsions, bronchitis, pulmonary edema, pneumonia, cardiovascular collapse, shock, and death. Direct contact or exposure to high concentrations of vapor with skin or eyes can cause: erythema, blisters, tissue destruction with slow healing, skin blackening, hyperkeratosis, fissures, corneal erosion, opacification, iritis, conjunctivitis, and possible blindness., To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

4.3 Indication of any immediate medical attention and special treatment needed no data available

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture

Carbon oxides

5.3 Advice for firefighters

Wear self contained breathing apparatus for fire fighting if necessary.

5.4 Further information

Use water spray to cool unopened containers.



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SECTION 6: Accidental release measures

- 6.1 Personal precautions, protective equipment and emergency procedures**
Wear respiratory protection. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
- 6.2 Environmental precautions**
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.
- 6.3 Methods and materials for containment and cleaning up**
Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).
- 6.4 Reference to other sections**
For disposal see section 13.

SECTION 7: Handling and storage

- 7.1 Precautions for safe handling**
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.
- 7.2 Conditions for safe storage, including any incompatibilities**
Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Moisture sensitive.
- 7.3 Specific end uses**
no data available

SECTION 8: Exposure controls/personal protection

- 8.1 Control parameters**
Components with workplace control parameters
- 8.2 Exposure controls**
Appropriate engineering controls
Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.
Personal protective equipment



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Eye/face protection

Tightly fitting safety goggles. Faceshield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices.

Wash and dry hands.

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Immersion protection

Material: butyl-rubber
Minimum layer thickness: 0,3 mm
Break through time: > 480 min
Material tested: Butoject

Splash protection

Material: Nature latex/chloroprene
Minimum layer thickness: 0,6 mm
Break through time: > 30 min
Material tested: Lapren
test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an Industrial Hygienist familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection

Complete suit protecting against chemicals, Flame retardant antistatic protective clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).



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SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

- a) Appearance Form : liquid
- Colour : colourless
- b) Odour : pungent
- c) Odour Threshold : no data available
- d) pH : 2,4 at 60,05 g/l
- e) Melting point/freezing point : Melting point/range: 16,2 °C - lit.
- f) Initial boiling point and boiling range : 117 - 118 °C - lit.
- g) Flash point : 40,0 °C - closed cup
- h) Evaporation rate : no data available
- i) Flammability (solid, gas) : no data available
- j) Upper/lower flammability or explosive limits : Upper explosion limit: 19,9 %(V)
Lower explosion limit: 4 %(V)
- k) Vapour pressure : 73,3 hPa at 50,0 °C
15,2 hPa at 20,0 °C
- l) Vapour density : no data available
- m) Relative density : 1,049 g/cm³ at 25 °C
- n) Water solubility : completely miscible
- o) Partition coefficient: noctanol/water : log Pow: -0,17
- p) Autoignition temperature : 485,0 °C
- q) Decomposition temperature : no data available
- r) Viscosity : 1.53 mPa.s @ 25 °C
- s) Explosive properties : no data available
- t) Oxidizing properties : no data available

9.2 Other safety information

Surface tension 28,8 mN/m at 10,0 °C

SECTION 10: Stability and reactivity

10.1 Reactivity

no data available

10.2 Chemical stability

no data available

10.3 Possibility of hazardous reactions



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no data available

10.4 Conditions to avoid

Heat, flames and sparks.

10.5 Incompatible materials

Oxidizing agents, Soluble carbonates and phosphates, Hydroxides, Metals, Peroxides, permanganates, e.g. potassium permanganate, Amines, Alcohols

10.6 Hazardous decomposition products

Other decomposition products - no data available

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

LD50 Oral - rat - 3.310 mg/kg

LC50 Inhalation - mouse - 1 h - 5620 ppm

Remarks: Sense Organs and Special Senses (Nose, Eye, Ear, and Taste):Eye:Conjunctive irritation.

Sense Organs and Special Senses (Nose, Eye, Ear, and Taste):Eye:Other.

Blood:Other changes.

LC50 Inhalation - rat - 4 h - 11,4 mg/l

LD50 Dermal - rabbit - 1.112 mg/kg

Skin corrosion/irritation

no data available

Serious eye damage/eye irritation

Eyes - rabbit - Corrosive to eyes

Respiratory or skin sensitization

May cause sensitization by skin contact.

Germ cell mutagenicity

no data available

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

Reproductive toxicity

no data available

Specific target organ toxicity - single exposure



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no data available

Specific target organ toxicity - repeated exposure

no data available

Aspiration hazard

no data available

Potential health effects

Inhalation Toxic if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.

Ingestion May be harmful if swallowed. Causes burns.

Skin Harmful if absorbed through skin. Causes skin burns.

Eyes Causes eye burns.

Signs and Symptoms of Exposure

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, Nausea, Vomiting, Ingestion or inhalation of concentrated acetic acid causes damage to tissues of the respiratory and digestive tracts. Symptoms include: hematemesis, bloody diarrhea, edema and/or perforation of the esophagus and pylorus, pancreatitis, hematuria, anuria, uremia, albuminuria, hemolysis, convulsions, bronchitis, pulmonary edema, pneumonia, cardiovascular collapse, shock, and death. Direct contact or exposure to high concentrations of vapor with skin or eyes can cause: erythema, blisters, tissue destruction with slow healing, skin blackening, hyperkeratosis, fissures, corneal erosion, opacification, iritis, conjunctivitis, and possible blindness., To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Additional Information

RTECS: AF1225000

SECTION 12: Ecological information

12.1 Toxicity

Toxicity to fish semi-static test LC50 - Oncorhynchus mykiss (rainbow trout) - > 1.000 mg/l -96 h

Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates

EC50 - Daphnia magna (Water flea) - > 300,82 mg/l - 48h

Method : OECD Test Guideline 202

12.2 Persistence and degradability



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Biodegradability aerobic - Exposure time 30 d
Result: 99 % - Readily biodegradable.
Remarks: Expected to be biodegradable

12.3 Bioaccumulative potential

no data available

12.4 Mobility in soil

no data available

12.5 Results of PBT and vPvB assessment

no data available

12.6 Other adverse effects

Harmful to aquatic life.

Additional ecological
Information

no data available

Biochemical Oxygen
Demand (BOD)

880 mg/g

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging

Dispose of as unused product.

SECTION 14: Transport information

14.1 UN number

ADR/RID: 2789 IMDG: 2789 IATA: 2789

14.2 UN proper shipping name

ADR/RID: ACETIC ACID, GLACIAL
IMDG: ACETIC ACID, GLACIAL
IATA: Acetic acid, glacial

14.3 Transport hazard class(es)

ADR/RID: 8 (3) IMDG: 8 (3) IATA: 8 (3)

14.4 Packaging group

ADR/RID: II IMDG: II IATA: II



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14.5 Environmental hazards

ADR/RID: no IMDG Marine pollutant: no IATA: no

14.6 Special precautions for user

no data available

SECTION 15: Regulatory information

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

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

no data available



15.2 Chemical Safety Assessment

no data available

SECTION 16 - ADDITIONAL INFORMATION

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Leonid Chemicals Pvt. Ltd. be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Leonid Chemicals Pvt. Ltd. has been advised of the possibility of such damages.

CHEMLABS
Quality Our Forte

	LEONID CHEMICALS PVT. LTD., BANGALORE An ISO-9001:2008 Certified Company Quality Assurance Department	(CODE) DOCUMENT : R/QPM/8.2.4/06	
		(CODE) SECTION : A028	
Title: SPECIFICATION MANUAL - ACETIC ACID GLACIAL			Issue : 02 Rev.: 00 1 Page of 2

Specification manual - Acetic acid glacial

$C_2H_4O_2$



Mol Wt: 60.05

Product : Acetic acid glacial AR
Description : A clear colourless liquid with a characteristic odour
Cat No : A028
CAS No : 67-64-1
Prepared Date : 27-12-2007
Approved Date : 27-12-2007

REVISION HISTORY			
Issue/Rev	Description of Change	Author	Effective Date
01/00	Initial Release	S. Paul Joshua	27-12-2007
02/00	Reviewed no changes	S. Paul Joshua	01.04.2011
Next Review Due :	02.04.2015		
To be reviewed by :	Head-QC/QA		



Sl. No.	Tests	Specification	Protocol
		AR	
1	Assay	NLT 99.7%	
2	Freezing point	16.2°C	2/3.1-05
3	Density at 20°C	1.048-1.050 g/mL	2/3.1-4.2
4	Water insoluble matter	Passes test	
5	NVM	0.001 %	2/3.1-01
6	Chloride	0.0001 %	2/3.1-09
7	Formate	0.01 %	
8	Sulphate	0.0001 %	2/3.1-14
9	Arsenic	0.00005 %	2/3.1-17
10	Iron	0.00002 %	2/3.1-11

Approved By: S.Paul Joshua, Head Quality Control and Quality Assurance

 Chemlabs	LEONID CHEMICALS PVT. LTD., BANGALORE An ISO-9001:2008 Certified Company Quality Assurance Department	(CODE) DOCUMENT : R/QPM/8.2.4/06 (CODE) SECTION : A028 (DATE) : 01.04.2011	 Issue : 02 Rev.: 00
Title: SPECIFICATION MANUAL - ACETIC ACID GLACIAL		2 Page of 2	

11	Heavy metals	0.00005 %	
12	Substances reducing Dichromate	0.003 %	

Approved By: S.Paul Joshua, Head Quality Control and Quality Assurance

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		(CODE) SECTION : A067	
Title: SPECIFICATION MANUAL - ACETIC ACID GLACIAL			Issue : 02 Rev.: 00
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Specification manual - Acetic acid glacial

$C_2H_4O_2$

Mol Wt: 60.05

Product : Acetic acid glacial LR
Description : A clear colourless liquid with a characteristic odour
Cat No : A067
Cas No : 64-19-7
Prepared Date : 27-12-2007
Approved Date : 27-12-2007

REVISION HISTORY			
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To be reviewed by :	Head-QC/QA		

Sl. No.	Tests	Specification	Protocol
		LR	
1	Assay	Min 99.5%	
2	Freezing point (or)	16°C	2/3.1-05
3	Boiling point	117°C - 119°C	2/3.1-03

Approved By: S.Paul Joshua, Head Quality Control and Quality Assurance