



SAFETY DATA SHEET

ACETIC ACID, 56%

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name	ACETIC ACID, 56% (All Grades)
CAS Number:	64-19-7
Chemical characterization	Carboxylic Acid
Chemical Name	Acetic acid
Synonyms	Ethanoic acid; Methanecarboxylic acid; Ethylic acid
Use of the Substance/Mixture	Intermediate, Solvent, Use in laboratories, Agrochemical uses
Company	Chemistry Connection 253 Sturgis Road Conway, AR 72034 (501) 470-9689 contact@thechemistryconnection.com
Emergency telephone number	During business hours (8am - 5pm Mon-Fri) 888-583-7738
Emergency telephone number	After business hours CHEMTREC 800-424-9300

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Flammable liquids	Category 3
Skin corrosion	Category 1A

GHS Classification Scale (1= severe hazard; 4= slight hazard)

Label elements

Hazard symbols :  

Signal Word : Danger

Hazard Statements : H226 Flammable liquid and vapor.
H314 Causes severe skin burns and eye damage.

Precautionary Statements : **Prevention**

P210 Keep away from open flames/hot surfaces. - No smoking.
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.
P260 Do not breathe dust/ fume/ gas/ mist/ vapors/ spray.
P264 Wash hands thoroughly after handling.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response

P370 + P378 In case of fire: Use alcohol-resistant foam, carbon dioxide or dry sand to extinguish.
P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
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.
P362 Take off contaminated clothing and wash before reuse.

Storage

P403 + P235 Store in a well-ventilated place. Keep cool.
P405 Store locked up.

Other hazards

No additional information available.

3. Composition/information on ingredients

Mixtures

Ingredients

Chemical Name	CAS-No.	Weight %
Acetic acid	64-19-7	50.0 - 80.0 %
Water	7732-18-5	20.0 - 50.0 %

SECTION 4. FIRST AID MEASURES

First aid procedures

- General advice : Corrosive. Causes severe eye and skin burns.
Move out of dangerous area.
Get medical attention immediately.
Take proper precautions to ensure your own health and safety before attempting rescue and providing first aid. For specific information refer to the Emergency Overview in Section 2 of this SDS.
Show this material safety data sheet to the doctor in attendance.
- If inhaled : Move the exposed person to fresh air at once. If breathing has stopped, perform artificial respiration. When breathing is difficult, properly trained personnel may assist the affected person by administering oxygen. Keep the affected person warm and at rest. Get medical attention immediately.
Keep patient warm and at rest.
Do not leave the victim unattended.
If breathing is difficult, give oxygen.
If unconscious place in recovery position and seek medical advice.
In the event of unconsciousness, apnea or cardiac arrest (no pulse) apply cardiopulmonary resuscitation.
GET MEDICAL ATTENTION IMMEDIATELY!
- In case of skin contact : Immediately remove excess chemical and contaminated clothing; thoroughly wash contaminated skin with mild soap and water. If irritation persists after washing, seek medical attention. Thoroughly clean contaminated clothing before reuse; discard contaminated leather goods (gloves, shoes, belts, wallets, etc.).
Flush with lukewarm water for 15 minutes.
Seek medical attention if tissue appears damaged or if pain or irritation persists.
Wash contaminated clothing before reuse.
- In case of eye contact : Immediately flush eyes thoroughly with plenty of water and continue flushing for at least 15 minutes.
Remove contact lenses.
GET MEDICAL ATTENTION IMMEDIATELY!
- If swallowed : DO NOT induce vomiting.
Never give anything by mouth to an unconscious person.
Rinse mouth with water.
Drink 1 or 2 glasses of water.
Do not attempt to neutralize acid with weak bases or antacids because the chemical reaction may extend the corrosive injury.

GET MEDICAL ATTENTION IMMEDIATELY!

Notes to physician

- Symptoms : May cause burns of the mouth, throat, esophagus and stomach. Signs and symptoms may include pain, nausea, vomiting, diarrhea, dizziness, drowsiness, faintness, weakness, collapse and coma.
- Hazards : Corrosive, can cause severe burns to mucus membranes, gastrointestinal mucosa, skin and eyes.
- Broncopneumonia, pulmonary edema, and reactive airway dysfunction syndrome (RADS) may follow acute inhalation overexposure or aspiration.
- Treatment : For ocular exposures, continuous irrigation with tap water or normal saline should continue until the eye fluid pH is neutral (7).
- Following ingestion, neutralization therapy or drinking large volumes of water or milk is not recommended because of concerns related to exothermic neutralization reactions and vomiting with possible aspiration and re-exposure of the esophagus to acid.
- There is no specific antidote available.
Assess airway if inhaled and/or ingested.
If ingested, cardiac and respiratory status must be continuously monitored.
Assess extent and severity of tissue injury by appropriate diagnostic studies and procedures.
Vigorous anti-inflammatory/steroid treatment may be required at first evidence of pulmonary/upper airway edema.
Prolonged observation may be indicated.
Treat symptomatically.
Treatment of overexposure should be directed at the control of symptoms and the clinical condition of the patient.

SECTION 5. FIRE-FIGHTING MEASURES

Flammable properties

- Flash point : ≥ 200 °F (93.3°C)
- Autoignition temperature : NA
- Lower explosion limit : 4.0 vol%

Upper explosion limit : 19.9 vol%
Flammability (solid, gas) : not applicable

Fire fighting

Suitable extinguishing media : SMALL FIRE: Use dry chemical, CO₂, water spray or regular foam. LARGE FIRE: Use water spray, water fog or regular foam. Do not use straight streams.

Unsuitable extinguishing media : Do not use solid water stream.

Further information : Always stay away from tanks engulfed in fire. Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.

Protective equipment and precautions for firefighters

Specific hazards during fire fighting : Keep away from heat and sources of ignition. Vapors may travel long distances along the ground before reaching a source of ignition and flashing back. Fire may produce irritating, corrosive and/or toxic gases. Cool containers with flooding quantities of water until well after fire is out. When fighting a fire, notify environmental authorities if liquid enters sewers or public waters. Move containers from fire area if it can be done without risk. Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank. Always stay away from tanks engulfed in fire. Heat may build enough pressure to rupture closed containers/spreading fire/increasing risk of burns/injuries. For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn. Sustained fire attack on vessels may result in a Boiling Liquid Expanding Vapour Explosion (BLEVE). Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Special protective equipment for fire-fighters : Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighter's protective clothing will only provide limited protection. Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions : Evacuate personnel to safe areas.
Eliminate all sources of ignition.
Keep people away from and upwind of spill/leak.
Avoid direct contact with released material. Stay upwind.
Do not touch or walk through spilled material.
Prevent product from entering drains.
Prevent further leakage or spillage if safe to do so.
Wear recommended personal protective equipment.
Refer to protective measures listed in sections 7 and 8.
- Environmental precautions : Prevent entry into waterways, sewers, basements or confined areas.
If the product contaminates rivers and lakes or drains inform respective authorities.
If necessary, all contaminated waste water must be treated in a municipal or industrial wastewater treatment plant before release to surface water.
- Chemical removal by air and water pollution control devices must meet the minimum efficiency requirements needed to reduce exposures to an acceptable level.
The discharge of treatment plant effluent to rivers and oceans must achieve the dilution ratio needed to reduce exposures to an acceptable level.
The size and capacity of wastewater treatment plants must meet the minimum requirements needed to reduce exposures to an acceptable level.
Waste management practices such as incineration, recycling, reuse must be enforced as needed to reduce exposures to an acceptable level.
- External treatment and disposal of waste should comply with applicable local and/or national regulations.
The maximum allowable site tonnage and the days of use should be below the number needed to maintain exposures at an acceptable level.
- Methods for containment /
Methods for cleaning up : Eliminate all sources of ignition.
Ensure adequate ventilation.
Evacuate/limit access.
Do not touch or walk through spilled material.
Stop leak if you can do it without risk.
All equipment used when handling this product must be grounded.
Contain spill and evacuate all non-essential personnel.
A vapor suppressing foam may be used to reduce vapors. Use clean non-sparking tools to collect absorbed material.
Water spray may reduce vapor; but may not prevent ignition in closed spaces.
Collect any excess material with absorbant pads, sand, or

other inert non-combustible absorbent materials.
Runoff to sewer may create fire or explosion hazard.
Prevent entry into sewers, basements or confined areas; dike if needed.

Additional advice : Mark the contaminated area with signs and prevent access to unauthorized personnel.
See section 13 for disposal information.

SECTION 7. HANDLING AND STORAGE

Handling

Advice on safe handling : Avoid contact with eyes, skin, and clothing.
Do not breathe vapors or spray mist.
Do not swallow.
Eliminate every possible source of ignition.
Keep container tightly closed when not in use.
Carefully vent any internal pressure before removing closure.
Wear recommended personal protective equipment.
After handling, always wash hands thoroughly with soap and water.
Avoid contact with incompatible agents.
Use only with adequate ventilation/personal protection.
Do not enter storage areas unless adequately ventilated.
Metal containers involved in the transfer of this material should be grounded and bonded.
Acid or caustic must be transferred only through hose rated and certified for this service.
Inspect frequently to identify bulging or leaking containers.
Handle 'empty' containers with care; residue may be harmful to eyes and skin.
Do not overfill containers which may burst on freezing.
Thaw frozen containers only at room temperature.
Isolate, vent, drain, wash and purge systems or equipment before maintenance or repair.
Check atmosphere for explosiveness and oxygen deficiencies.
Observe precautions pertaining to confined space entry.
Do not pressurize or expose empty containers to open flame, sparks, or heat.

Storage

Requirements for storage areas and containers : Protect container against physical damage. Detached or outside storage is preferred. Inside storage should be in an NFPA approved flammable liquids storage room or cabinet. All ignition sources should be eliminated. Electrical installations should be in accordance with Article 501 of the National Electrical Code. NFPA 30, Flammable and Combustible Liquids Code, should be followed for all storage and handling. Consult local fire codes for additional storage information.

Flammable materials should be stored in a separate safety storage cabinet or room.
 Keep containers tightly closed when not in use and store in a well-ventilated area. Isolate incompatible materials such as oxidizers. Containers should be clearly labeled. Metal containers used to store this material should be grounded. Isolate from oxidizers, caustics and alkalis, chemicals capable of spontaneous heating, ignition sources and explosives. All containers should be labeled to warn against exposure. Metal containers used to store this material should be grounded.
 All equipment must conform to applicable electrical code.
 Store closed drums with bung in up position.

Further information on storage conditions : Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
 Other data : The product is chemically stable.

8. Exposure controls/personal protection

Control parameters

Ingredients with workplace control parameters

Occupational Exposure Limits

Ingredients	CAS-No.	Type	Limit Value	Basis Revision Date	Additional Information
Acetic acid	64-19-7	STEL	15 ppm	US (ACGIH) 2012	
Acetic acid	64-19-7	TWA	10 ppm	US (ACGIH) 2012	
Acetic acid	64-19-7	IDLH	50 ppm	NIOSH September 2007	
Acetic acid	64-19-7	TWA	10 ppm 25 mg/m3	US (OSHA) June 23, 2006	

Consult local authorities for acceptable exposure limits.

Exposure controls

Engineering measures

Engineering controls, preferably enclosed systems, should be used whenever feasible to maintain exposures below acceptable criteria. When such controls are not feasible, or sufficient to achieve full conformance, other engineering controls such as local exhaust ventilation should be used.

Personal protective equipment

- Respiratory protection** : When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Where engineering controls are not feasible or sufficient to achieve full conformance with exposure limits (Section 8), use NIOSH approved respiratory protection equipment. Respirators should be selected based on the form and concentration of contaminant in air and in accordance with OSHA (29 CFR 1910.134).
- Hand protection** : Use chemical resistant gloves appropriate to conditions of use. Glove material butyl rubber; material thickness .5mm; break through time \geq 480 min. Gloves must be replaced after 8 hours of wear.
- The selected protective gloves have to satisfy the standard EN 374 derived from it. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.
- Eye and face protection** : Wear safety glasses meeting the specifications of OSHA 29CFR 1910.133 / ANSI Standard Z87.1 where no contact with the eye is anticipated. Chemical safety goggles meeting the specifications of OSHA 29CFR 1910.133 / ANSI Standard Z87.1 should be worn whenever there is the possibility of splashing or other contact with the eyes.
- Skin and body protection** : When skin contact is possible, protective clothing including gloves, apron, sleeves, boots, head and face protection should be worn. The equipment must be cleaned thoroughly after each use.
- Hygiene measures** : Selection of appropriate personal protective equipment should be based on an evaluation of the performance characteristics of the protective equipment relative to the task(s) to be performed, conditions present, duration of use, and the hazards and/or potential hazards that may be encountered during use. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Take off contaminated clothing and wash before reuse. Use good personal hygiene practices. Wash hands before eating, drinking, smoking, or using toilet facilities. Wash clothing frequently.
- Protective measures** : Wear full protective clothing and self-contained breathing

apparatus.
Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Physical state : liquid
Color : Clear, colorless.
Odor : Strong, acrid, vinegar odor.
Odor Threshold : 0.074 ppm
(detectable), Odor is not an adequate warning of potentially hazardous ambient air concentrations.

Safety data

Flash point : $\geq 200^{\circ}\text{F}$ (93.3°C)
Method: Tag closed cup
Lower explosion limit : 4.0 vol%
Upper explosion limit : 19.9 vol%
Flammability (solid, gas) : not applicable
Oxidizing properties : Not considered an oxidizing agent.
Autoignition temperature : NA
Decomposition temperature : NA
pH : < 3
Melting point/freezing point : -11°F (-24°C)
Boiling point/boiling range : $\geq 212^{\circ}\text{F}$ (100°C)
Vapor pressure : 20.79 hPa (15.59 mm Hg)
at 77°F (25°C)

Density	: 1.05 g/cm ³ at 77 °F (25 °C)
Water solubility	: completely soluble
Partition coefficient: n-octanol/water	: log Pow: -0.17 at 68 °F (20 °C)
Viscosity, kinematic	: 1 mm ² /s at 77 °F (25 °C)
Relative vapor density	: > 2.1
Evaporation rate	: no data available
Explosive properties	: Not explosive
Remarks - Other information	: Hygroscopic., Above properties based on Acetic Acid

SECTION 10. STABILITY AND REACTIVITY

Reactivity	: Will not occur.
Chemical stability	: Stable under recommended storage conditions.
Conditions to avoid	: Heat, sparks, open flame, other ignition sources, and oxidizing conditions.
Materials to avoid	: Bases Strong oxidizing agents Chromic acid. Nitric acid Sodium peroxide Carbonates. Hydroxides. Phosphates Corrosive to some metals. Potentially violent reaction with acetaldehyde and acetic anhydride. Ignites on contact with potassium-tert-butoxide.
Hazardous decomposition products	: Excessive heating and/or incomplete combustion may produce carbon monoxide, hydrogen sulfide and other harmful gases or vapors including oxides and/or other compounds of sulfur and sodium.

- Thermal decomposition : Thermal decomposition may generate carbon monoxide, carbon dioxide, and perhaps other toxic vapors.
- Hazardous reactions : Not expected to occur.

SECTION 11. TOXICOLOGICAL INFORMATION

- Product Summary** : The below given information is based on the assessment of the product including impurities.
- Acute toxicity**
- Acute oral toxicity** : Based on acute toxicity values, not classified.
- : May cause burns of the mouth, throat, esophagus and stomach. Signs and symptoms may include pain, nausea, vomiting, diarrhea, dizziness, drowsiness, faintness, weakness, collapse and coma.
- : LD50: 3,310 mg/kg
Species: rat
- Acute inhalation toxicity** : Based on acute toxicity values, not classified.
- : Exposure to vapor may cause irritation of the eyes, nose, and respiratory tract.
Inhalation may cause asthma-like symptoms, including coughing, wheezing, tightness of chest, shortness of breath, and headache.
- : LC50: > 16000 ppm
Exposure time: 4 HOURS
Species: rat
- Acute dermal toxicity** : no data available
study scientifically unjustified
- Skin corrosion/irritation** : Causes severe skin burns and eye damage.
- Serious eye damage/eye irritation** : Causes serious eye damage.
- Respiratory or skin sensitization** : Respiratory sensitization
Exposure to vapors of this material can lead to cough, dyspnea, and asthma like symptoms.

: Skin sensitization
no data available
study scientifically unjustified

Chronic toxicity

Carcinogenicity : Not classified
No adverse effect observed.

Germ cell mutagenicity : Not classified
No adverse effect observed.

Reproductive toxicity

Effects on fertility /
Effects on or via lactation : Not classified
No adverse effect observed.

Effects on Development : Not classified
No adverse effect observed.

**Target Organ Systemic
Toxicant - Single exposure** : Based on single exposure toxicity values, not classified.

**Target Organ Systemic
Toxicant - Repeated
exposure** : Based on repeated exposure toxicity values, not classified.

Aspiration hazard : Based on physico-chemical values or lack of human evidence,
not classified.

12. ECOLOGICAL INFORMATION

Ecotoxicology Assessment

Acute aquatic toxicity : Based on acute aquatic toxicity values, not classified.

Chronic aquatic toxicity : Not classified, based on readily biodegradability and low acute toxicity.

Toxicity to fish :
Acute toxicity to fish is very low.

**Toxicity to daphnia and
other aquatic invertebrates** : Acute toxicity to freshwater and marine invertebrates is very low.

- Toxicity to algae** : Acute toxicity to aquatic plants very low.
- Toxicity to bacteria** : Low toxicity to sewage microbes.
- Toxicity to fish (Chronic toxicity)** : Data waiver
Not expected to exhibit chronic toxicity to fish.
- Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)** : Data waiver
This material is not expected to bioaccumulate.

Persistence and degradability

- Biodegradability** : 96 %
Rapidly degradable.
(After 20 days in a ready biodegradability test)

Bioaccumulative potential

- Bioaccumulation** : Bioconcentration factor (BCF): 3.16
This material is not expected to bioaccumulate.
(QSAR calculated value)

Mobility in soil

- Distribution among environmental compartments** : Stability in water
no data available
- : Stability in soil
no data available
Low potential for soil adsorption expected

- Additional advice Environmental fate and pathways** : No additional information available.

Results of PBT and vPvB assessment

Not applicable.

Other adverse effects

- Additional ecological information** : No additional information available.

SECTION 13. DISPOSAL CONSIDERATIONS

- Further information : Do not dispose of waste into sewer.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Contaminated product, soil, water, container residues and spill cleanup materials may be hazardous wastes.
Contaminated product, soil or water should be considered dangerous due to potential evolution of flammable vapor.
Comply with applicable local, state or international regulations concerning solid or hazardous waste disposal and/or container disposal.
Proper grounding procedures to avoid static electricity should be followed.
Decontaminate containers thoroughly before reuse/disposal.
- Empty containers which have not been properly decontaminated should be designated U.S. Resource Conservation and Recovery Act (RCRA) hazardous waste number D001 (ignitable).
- Contaminated packaging : Dispose of contents/ container to an approved incineration plant.

SECTION 14. TRANSPORT INFORMATION

DOT

- UN number : 2790
Description of the goods : ACETIC ACID SOLUTION
Class : 8
Packing group : II
Labels : 8

SECTION 15. REGULATORY INFORMATION

If identified components of this product are listed under the TSCA 12(b) Export Notification rule, they will be listed below.

SARA 302/304

<u>Component</u>	<u>TPQ</u>	<u>RQ</u>
Acetic acid		5000 lbs

SARA 311/312

Fire Hazard.
Immediate (Acute) Health Hazard.

SARA 313

This product contains no known chemicals regulated under SARA 313.

State Reporting

This material is not known to contain a chemical substance known to the State of California to cause cancer, reproductive, or developmental toxicity under California Proposition 65. However, LyondellBasell has not tested for the presence of listed chemical substances.

This product contains the following chemicals regulated by New Jersey's Worker and Community Right to Know Act:

64-19-7 Acetic acid

This product contains the following chemicals regulated by Massachusetts' Right to Know Law:

64-19-7 Acetic acid

This product contains the following chemicals regulated by Pennsylvania's Right to Know Act:

64-19-7 Acetic acid

Other international regulations

Global Inventory Status

The ingredients of this product are compliant with the following chemical inventory requirements or exemptions.

*Additional Explanatory Status Statements follow the table, as necessary.

Country/Region	Inventory	Status Description
Australia	AICS	Compliant
Canada	DSL	Compliant
China	IECSC	Compliant
Europe	REACH	See REACH Compliance Statement
Japan	ENCS	Compliant
Korea	KECI	Compliant
New Zealand	NZIoC	Compliant
Philippines	PICCS	Compliant
United States of America	TSCA	Compliant

REACH status

If the product has been purchased from any company of the LyondellBasell group of companies registered in the European Union, we confirm that all substances in this preparation have been pre-registered or, where required under REACH, registered, and that we have the intention to proceed with their registration in accordance with the deadlines set forth in REACH. (Regulation (EU) No. 1907/2006)

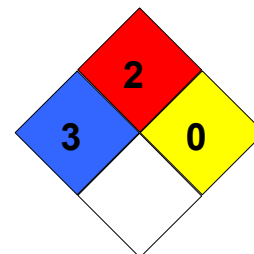
SECTION 16. OTHER INFORMATION

Further information

HMIS Classification : Health Hazard: 3
Flammability: 2
Physical hazards: 0



NFPA Classification : Health Hazard: 3
Fire Hazard: 2
Instability: 0



Other Information

HMIS rating scale (0 = minimal hazard; 4 = severe hazard)

NFPA rating scale (0 = minimal hazard; 4 = severe hazard)

Material safety datasheet sections which have been updated:

Updated format First Edition June 12 2014

Disclaimer

This document is generated for the purpose of distributing health, safety, and environmental data.

Information is correct to the best of our knowledge at the date of the SDS publication.

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This product(s) may not be used in:

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applications; and (iv) lead, asbestos or MTBE related applications. All references to U.S. FDA, Health Canada, and European Union regulations include another country's equivalent regulatory classification.

Language Translations

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