

ACETIC ACID

Safety Data Sheet

Supersedes: 02/05/2022

Revision: 1.2

Revision date: 12/12/2023

SECTION 1: Identification

1.1 Identification

Product form	:	Substance
Substance name	:	Acetic Acid
CAS No	:	64-19-7
EC/ List No	:	200-580-7
Formula	:	C ₂ H ₄ O ₂
Molecular weight	:	60.05 g/mol
Synonyms	:	Acetic acid, glacial / alcohol of vinegar / carboxylic acid C ₂ / ethanoic acid / ethylic acid / methane carboxylic acid / pyroligneous acid / vinegar acid / Biobased Acetic Acid

1.2 Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture	:	Chemical intermediate Solvent, Pharmaceutical Agrochemical Food industry: additive Laboratory chemical Photographic chemical
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1.3 Details of the supplier of the safety data sheet

Godavari Biorefineries Ltd.
45/47, Somaiya bhavan,
Mahatma Gandhi Road,
Fort, Mumbai -400001, INDIA.
T 0091 22 22048272
Email: alka@somaiya.com
www.somaiya.com

1.4 Emergency telephone Number

Emergency number	:	0091 2423 279308 0091 22 22048272 (Monday – Friday - 09.30 hrs to 18.00 hrs)
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SECTION 2: Hazard(s) identification

GHS classification

2.1 Classification of the substance or mixture

Flammable liquids Category 3	:	H226
Skin corrosion/irritation Category 1B	:	H314

2.2: GHS labeling

Hazard pictograms (GHS)



GHS02



GHS05

Signal word (GHS) : Danger

Hazard statements (GHS)

H226	:	Flammable liquid and vapor.
H290	:	May be corrosive to metals.
H314	:	Causes severe skin burns and eye damage.
H318	:	Causes serious eye damage.
H332	:	Harmful if inhaled.
H412	:	Harmful to aquatic life with long lasting effects.

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Precautionary Statements:

P210	:	Keep away from heat, sparks, open flames, hot surfaces. - No smoking
P242	:	Use only non-sparking tools
P260	:	Do not breathe mist, vapors, spray
P280	:	Wear protective clothing, protective gloves, eye protection, face protection.
P303 + P361 + P353	:	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
P403 + P235	:	Store in a well-ventilated place. Keep cool
P405	:	Store locked up
P501	:	Dispose of contents/container to comply with local, state and federal regulations
P301 + P330 + P331	:	If swallowed: Rinse mouth. Do not induce vomiting.
P304 + P340	:	If inhaled: Remove victim to fresh air & keep at rest in a position comfortable for breathing.
P305 + P351 + P338	:	In eyes: rinse cautiously with water for several minutes, remove contact lenses, if present

2.3 Other hazards

Other hazards not contributing to the Classification : None.

2.4 Unknown acute toxicity (GHS)

Not applicable.

SECTION 3: Composition/Information on ingredients

3.1 Substance: Mono-constituent

Name	Product identifier CAS No EC No Index No	Concentration %	GHS classification
Acetic Acid (Main constituent)	64-19-7 200-580-7 607-002-00-6	≥99.5	Flam. Liq. 3, H226 Skin Corr. 1B, H314 Eye Dam. 1, H318

Full text of hazard classes and H-statements: see section 16

3.2 Mixture

Not applicable

SECTION 4: First aid measures

4.1 Description of first aid measures

General information	:	Check the vital functions. Unconscious: maintain adequate airway and respiration. Respiratory arrest: artificial respiration or oxygen. Give psychological aid. Keep the victim calm, avoid physical strain. Depending on the victim's condition: doctor/hospital.
Inhalation	:	Remove the victim into fresh air. Immediately consult a doctor/medical service.
Skin contact	:	Wash immediately with lots of water (15 minutes)/shower. Do not apply (chemical) neutralizing agents. Remove clothing while washing. Do not remove clothing if it sticks to the skin. Cover wounds with sterile bandage. Consult a doctor/medical service.
Eye contact	:	Rinse immediately with plenty of water for 15 minutes. Do not apply neutralizing agents. Take victim to an ophthalmologist.

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Ingestion	:	Rinse mouth with water. Immediately after ingestion: give lots of water to drink. Do not induce vomiting. Do not give activated charcoal. Immediately consult a doctor/medical service. Ingestion of large quantities: immediately to hospital. Do not give chemical antidote. Doctor: gastric lavage is not recommended.
Symptoms/injuries after inhalation	:	Irritation of the respiratory tract and nasal mucous membranes. Coughing.
Symptoms/injuries after skin contact	:	Corrosion of the skin.
Symptoms/injuries after eye contact	:	Corrosion of the eye tissue. Permanent eye damage.
Symptoms/injuries after ingestion	:	Burns to the gastric/intestinal mucosa. Risk of aspiration pneumonia
Chronic symptoms	:	On continuous / repeated exposure: Red skin. Slight irritation. Inflammation/damage of the eye tissue. Dry/sore throat. Possible inflammation of the respiratory tract.

4.2 Most important symptoms and effects, both acute and delayed

No Data Available.

4.3 Indication of any immediate medical attention and special treatment needed

Seek medical assistance.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media	:	Water spray. Polyvalent foam. Alcohol-resistant foam. BC powder. Carbon dioxide.
Unsuitable extinguishing media	:	No unsuitable extinguishing media known.

5.2 Special hazards arising from the substance or mixture

Flammable liquid and vapour.	:	DIRECT FIRE HAZARD. Flammable. Gas/vapor flammable with air within explosion limits. INDIRECT FIRE HAZARD. May be ignited by sparks.
Hazardous combustion products	:	DIRECT EXPLOSION HAZARD. Gas/vapour explosive with air within explosion limits. INDIRECT EXPLOSION HAZARD. may be ignited by sparks
Reactivity	:	On heating: release of corrosive/combustible gases/vapours (acetic acid vapours). Upon combustion: CO and CO ₂ are formed. Violent to explosive reaction with many compounds e.g.: with (strong) oxidizers:

5.3 Advice for firefighters

Firefighting instructions	:	Cool tanks/drums with water spray/remove them into safety location. Do not move the load if exposed to heat. Dilute toxic gases with water spray. Take account of toxic fire-fighting water. Use water moderately and if possible collect or contain it.
Protection during firefighting	:	Do not enter fire area without proper protective equipment, including respiratory protection.

5.4 Additional information

No Data Available.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

6.1.1 For non-emergency personnel

Protective equipment	:	Gas-tight chemical suit. Corrosion-proof suit. Refer "Material-Handling" to select protective clothing.
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- Emergency procedures :
- : Keep upwind. Mark the danger area. Consider evacuation. Seal off low-lying areas. Close doors and windows of adjacent premises. Stop nearby engines and no smoking. No naked flames or sparks. Use Spark- and explosion-proof appliances and lighting equipment. Keep containers closed.
 - : Wash contaminated clothes.

6.1.2 For Emergency responders

- Protective equipment :
- : Equip cleanup crew with proper protection.
- Emergency procedures :
- : Stop leak if safe to do so. Ventilate area.

6.2 Environmental precautions

Prevent soil and water pollution. Prevent spreading in sewers, water bodies

6.3 Methods and material for containment and cleaning up

- For containment :
- : Contain released substance, transfer (pump) into suitable containers. Use compatible material of containers. Try to reduce evaporation. Measure the concentration of the explosive gas-air mixture. Dilute combustible/toxic gases/vapours with water spray. Provide equipment/receptacles with earthing. Do not use compressed air for pumping over spills.
- Methods for cleaning up :
- : Take up liquid spill into inert absorbent material, e.g.: sand, earth, vermiculite, powdered limestone. Scoop absorbed substance into closing containers. Clean contaminated surfaces with an excess of water. Take collected spill to manufacturer/ authorized disposal facility. Wash clothing and equipment after handling.

6.4 Reference to other sections

No additional information available.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

- Precautions for safe handling :
- : Comply with the legal requirements. Remove contaminated clothing immediately. Clean contaminated clothing. Keep the substance free from contamination. Use corrosion proof equipment. Thoroughly clean/dry the installation before use. Do not discharge the waste into the drain. Do not use compressed air for pumping over. Use spark-/explosionproof appliances and lighting system.
 - : Take precautions against electrostatic charges. Keep away from naked flames/heat. Keep away from ignition sources/sparks. Keep container tightly closed.
 - : Measure the concentration in the air regularly. Work under local exhaust/ventilation. Exhaust gas must be neutralised.
- Hygiene measures :
- : Do not eat, drink or smoke when using this product. Wash contaminated clothing before reuse. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

7.2 Conditions for safe storage, including any incompatibilities

- Storage temperature :
- : > 17 °C
- Heat-ignition :
- : KEEP SUBSTANCE AWAY FROM: heat sources. ignition sources.
- Prohibitions on mixed storage :
- : KEEP SUBSTANCE AWAY FROM: combustible materials. oxidizing agents. (strong) bases. metals. alcohols. amines. water/moisture.
- Storage area :
- : Store in a dry area. Ventilation at floor level. Keep out of direct sunlight. Fireproof storeroom. Keep locked up. Meet the legal requirements.
- Special rules on packaging :
- : SPECIAL REQUIREMENTS: closing. dry. clean. correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.

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Packaging materials : SUITABLE MATERIAL: aluminium. glass. MATERIAL TO AVOID: steel. iron. zinc. lead. copper. bronze.

7.3 Specific end uses

Part from the uses mentioned in section 1.2 no other specific uses are stipulated.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

8.1.1 Occupational exposure limits:

Acetic Acid (64-19-7)

ACGIH	:	ACGIH TWA (ppm)	10 ppm (Acetic acid; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)
ACGIH	:	ACGIH STEL (ppm)	15 ppm (Acetic acid; USA; Short time value; TLV - Adopted Value)
OSHA	:	OSHA PEL (TWA) (mg/m ³)	25 mg/m ³
OSHA	:	OSHA PEL (TWA) (ppm)	10 ppm
IDLH	:	US IDLH (ppm)	50 ppm
NIOSH	:	NIOSH REL (TWA) (mg/m ³)	25 mg/m ³
NIOSH	:	NIOSH REL (TWA) (ppm)	10 ppm
NIOSH	:	NIOSH REL (STEL) (mg/m ³)	37 mg/m ³
NIOSH	:	NIOSH REL (STEL) (ppm)	15 ppm

8.2 Exposure controls

8.2.1 Appropriate engineering controls : Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Material should be handled safely.

Personal protective equipment :



Protective goggles. Gloves. Protective clothing. Face shield. Gas mask with filter.

Materials for protective clothing : GIVE EXCELLENT RESISTANCE: butyl rubber. polyethylene/ethylene vinyl alcohol. viton. GIVE GOOD RESISTANCE: neoprene. GIVE LESS RESISTANCE: natural rubber. PVC. GIVE POOR RESISTANCE: polyethylene. PVA.

Hand protection : Gloves.

Eye protection : Safety glasses.

Skin and body protection : Head/neck protection. Corrosion-proof clothing.

Respiratory protection : Wear gas mask with filter type A if conc. in air > exposure limit. High vapour/ gas concentration: self-contained respirator.

Thermal hazard protection : None.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	:	Liquid
Appearance	:	Liquid
Colour	:	Colourless

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Odour	:	Irritating/pungent odour
pH	:	2.4 (6 %)
Melting point	:	16.64 °C
Freezing point	:	No Data Available
Initial boiling point/boiling range	:	117.9 °C
Flash Point	:	39 °C (Closed cup)
Relative evaporation rate	:	No Data Available
Relative density	:	1.0496 (27 °C)
Relative vapour density at 20°C	:	2.1
Specific gravity/ density	:	1049 kg/m ³
Molecular mass	:	60.05 g/mol
Flammability(Solid, Gas)	:	No Data Available
Upper/lower flammability or Explosive limit	:	4 – 19.9 vol %
Solubility	:	Soluble in water, ethanol, ether, acetone and glycerol.
Vapor pressure	:	No Data Available
Vapour density	:	No Data Available
Evaporation Rate	:	No Data Available
Partition coefficient n-octanol/water	:	-0.17 (Experimental value; 20 °C, n-octanol water)
Auto-ignition temperature	:	463 °C
Decomposition temperature	:	No Data Available
Viscosity	:	1.168 cSt(Kinematic), 1.056 mPa (25°C)(Dynamic)
Oxidizing properties	:	No Data Available

9.2 Other information

No data available.

SECTION 10: Stability and reactivity

10.1 Reactivity	:	On heating: release of corrosive/combustible gases/vapours (acetic acid vapours). Upon combustion: CO and CO ₂ are formed. Violent to explosive reaction with many compounds e.g.: with (strong) oxidizers: (increased) risk of fire/explosion. Reacts violently with (some) bases. Reacts with (some) metals: release of highly flammable gases/vapours (hydrogen).
10.2 Chemical Stability	:	Hygroscopic.
10.3 Possibility of hazardous reactions	:	Reacts violently with (some) bases: release of heat.
10.4 Conditions to avoid	:	Extremely high or low temperatures. Incompatible materials.
10.5 Incompatible materials	:	May react violently with alkalis. May react with bases, copper, silver, mercury, magnesium, zinc and their alloys.
10.6 Hazardous decomposition products	:	Carbon dioxide. Carbon monoxide.

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SECTION 11: Toxicological information

11.1 Information on toxicological effects

Likely routes of exposure : Inhalation; Skin and eye contact
 Acute toxicity : Not classified

Acetic Acid (64-19-7)

LD50 oral toxicity : 3310 mg/kg body weight (Rat)
 LD50 dermal toxicity : 1120 mg/kg body weight (Rabbit)
 LC50 inhalation toxicity : > 16000ppm, equivalent to > 40 mg/L
 Exposure time: 4 h (Rat)
 Skin corrosion/irritation : Causes severe skin burns and eye damage. pH: 2.4 (6 %)
 Serious eye damage/irritation : Causes serious eye damage.
 Respiratory or skin sensitization : pH: 2.4 (6 %)
 Germ cell mutagenicity : Not classified
 Carcinogenicity : Not classified

(Based on available data, the classification criteria are not met)

Reproductive toxicity : Not classified
 Specific target organ toxicity (single exposure) : Not classified
 Specific target organ toxicity (repeated exposure) : Not classified
 Aspiration hazard : Not classified

SECTION 12: Ecological information

12.1 Toxicity

Ecology – general : Not classified as dangerous for the environment according to the criteria of Regulation (EC) No 1272/2008.
 Ecology – air : Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009). Not included in the list of substances which may contribute to the greenhouse effect (Regulation (EC) No 842/2006). TA-Luft Klasse 5.2.5/II.
 Ecology – water : Slightly harmful to fishes and invertebrates (Daphnia). Not harmful to algae

Acetic Acid (64-19-7)				
		Toxicity to Fish	Toxicity to aquatic invertebrates	Toxicity to Microorganisms
Species	:	Oncorhynchus mykiss (previous name: Salmo gairdneri)	Daphnia magna	Pseudomonas putida
Value	:	>300.82 mg/l	>300.82 mg/l	850mg/l
Exposure time	:	96 h	48 h	16h

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12.2 Persistence and degradability

Acetic Acid (64-19-7)

Persistence and degradability : Readily biodegradable in water. Biodegradable in the soil. Highly mobile in soil.

12.3 Bioaccumulative potential

Acetic Acid (64-19-7)

BCF fish 1	:	3.16 (BCF; Pisces)
Log Pow	:	-0.17 (Experimental value; 25 °C)
Bioaccumulative potential	:	Low potential for bioaccumulation (Log Kow < 4).

12.4 Mobility in soil

Acetic Acid (64-19-7)

Surface tension	:	0.028 N/m (20 °C)
Log Koc	:	log Koc,0.06; QSAR
Ecology - soil	:	May be harmful to plant growth, blooming and fruit formation.

No data available

12.5 Results of PBT and vPvB assessment

No data available.

12.6 Other adverse effects

No data available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Waste disposal recommendations : Remove and dispose waste in accordance with local and/or national regulations.- Recommended practice of distillation, physico-chemical/biological treatment and authorized waste incinerator for solvents with energy recovery. Do not discharge into drains or the environment.

SECTION 14 : TRANSPORT INFORMATION

Marine transport (IMDG)

UN number	:	UN 2789
Proper shipping name and description	:	Acetic Acid
Chemical name	:	Acetic Acid
Class	:	8 (3)
Packaging group	:	II
Hazard Identification Number	:	8, 3
EmS code	:	F-E, S-C
Marine pollutant	:	No

Air transport ICAO/IATA

UN number	:	UN 2789
Proper shipping name and description	:	Acetic Acid
Chemical name	:	Acetic Acid
Class	:	8 (3)
Packaging group	:	II

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Hazard Labels : Corrosive and Flammable liquid
 Environmentally hazardous : No

Department of Transportation (DOT)

UN number : UN 2789
 Proper shipping name : Acetic Acid with more than 80 percent acid, by mass
 Transport hazard class : 8 - Class 8 - Corrosive material 49 CFR 173.136
 Packing group : II - Medium Danger
 Reportable Quantity (RQ) : 1000 lbs
 Poison Inhalation hazard : No
 Hazard labels :



3 - Flammable liquid



8 – Corrosive

SECTION 15: Regulatory information

15.1 National regulations

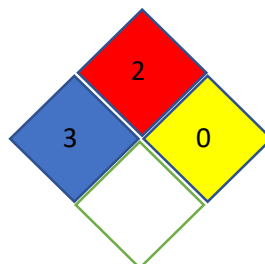
Country	National Inventories	Listing
AUSTRALIA	AICS	Listed
CANADA	DSL	Listed
CHINA	IECSC	Listed
EUROPE	EC	Listed
JAPAN	ENCS	Listed
NEWZEALAND	NZIoC	Listed
PHILIPPINES	PICCS	Listed
SOUTH KOREA	KECI	Listed
TAIWAN	TCSI	Listed
USA	TSCA	Listed

SECTION 16: Other information

16.1 Hazard Statement

H226 : Flammable liquid and vapor.
 H290 : May be corrosive to metals.
 H314 : Causes severe skin burns and eye damage.
 H318 : Causes serious eye damage.
 H332 : Harmful if inhaled.
 H412 : Harmful to aquatic life with long lasting effects.

16.2 NFPA Rating



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16.3 Abbreviations and acronyms

- : PBT =Persistent Bioaccumulative and Toxic
- vPvB= Very Persistent and Very Bioaccumulative
- SCBA= Self Contained Breathing Apparatus
- NIOSH REL= National Institute for Occupational Safety and Health Recommended Exposure Limit
- OSHA PEL=Occupational Safety and Health Administration Permissible Exposure Limit
- OELTWA= Occupational Exposure Limit Time Weighted Averages
- IDLH= Immediately Dangerous to Life or Health
- UEL= Upper Explosive Limit
- LEL= Lower Explosive Limit
- RTECS= Registry of Toxic Effects of Chemical Substances
- NTP=National Toxicology Programm
- IARC= International Agency for Research on Cancer
- EPA=Environmental Protection Agency
- TSCA= Toxic Substances Control Act
- NFPA= National Fire Protection Association
- CSR=Chemical Safety Report
- BCF = Bio Concentration Factor
- DNEL = Derived No Effect Level
- PNEC = Predicted No Effect Concentration
- TLV = Threshold Limit Value
- ACGIH = American Conference of Governmental Industrial Hygienist
- REACH = Registration, Evaluation .Authorisation and Restriction of Chemicals
- CLP = Classification, Labelling and Packaging
- LD / LC = Lethal Doses / Lethal Concentration
- GHS = Globally Harmonised System
- ADR = Accord europeen relative au transport international de marchandises
- IMDG-Code = International Maritime Code for Dangerous Goods
- EmS = Emergency measures on Sea
- ICAO = International Civil Aviation Organization
- IATA/DGR= International Air Transport Association/Dangerous Goods Regulation

16.4 Further information:

Information in this SDS is from available published sources and is believed to be accurate. No warranty, express or implied, is made and Godavari Biorefineries Ltd. assumes no liability resulting from the use of this SDS. The user must determine suitability of this information for his application.