

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Liquid
 Product name : Acetic Acid, Glacial
 Product code : 562011-50

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

Use of the substance/mixture : Laboratory chemicals, reagent for cytogenetic applications.

1.3. Details of the supplier of the safety data sheet

ADS BIOTEC INC.
 7409 Irvington Road
 Omaha, NE 68122 - USA
support@adstiotec.com

1.4. Emergency telephone number

Emergency Contact Number : USA: 1-800-255-3924 (CHEMTEL 24hr); International: +1-813-248-0585 (CHEMTEL 24hr)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification

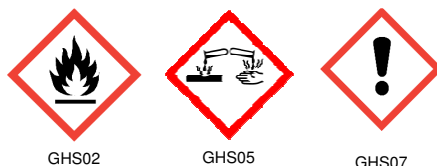
Flam. Liq. 3 H226
 Skin Corrosion, 1A H314
 Acute Tox. 3 (Oral) H301
 Serious eye damage 1 H318

For the full text of the H-Statements mentioned in this Section, see Section 16

2.2. Label elements

GHS-US labeling

Hazard pictograms (GHS-US) :



Signal word (GHS-US) :

Danger

Hazard statements (GHS-US) :

H226 - Flammable liquid and vapour
 H314 - Causes severe skin burns and eye damage
 H301+H311+H314+H318+H331 - Toxic/Harmful if swallowed, in contact with skin, eyes or if inhaled
 H370 - Causes damage to organs

Precautionary statements (GHS-US) :

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
 P261 - Avoid breathing vapours
 P264 - Wash hands thoroughly after handling
 P270 - Do not eat, drink or smoke when using this product
 P271 - Use only outdoors or in a well-ventilated area
 P280 - Wear protective gloves, protective clothing, eye protection, face protection
 P301+P312 - IF SWALLOWED: call a POISON CENTER or doctor/physician if you feel unwell
 P330 - If swallowed, rinse mouth
 P303+P361+P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
 P304+P340 - IF INHALED: Remove person to fresh air and keep 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
 P337+P313 - If eye irritation persists: Get medical advice/attention

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P362+P364 - Take off contaminated clothing and wash it before reuse
P370+P378 - In case of fire: Use dry sand, dry chemical or alcohol resistant foam for extinction
P403+P235 - Store in a well-ventilated place. Keep cool
P501 - Dispose of contents/container to licensed waste management site

2.3. Other hazards

Other hazards not contributing to the classification : Vapours may form explosive mixture with air. Lachrymator.

2.4. Unknown acute toxicity (GHS-US)

No data available

SECTION 3: Composition/information on ingredients

3.1. Substance

Synonyms Acetic Acid, Glacial
Molecular Weight 60.05 g/mol
Formula CH₃COOH
CAS-No. 64-19-7
EC-No. 603-001-00-X
Registration No. 01-2119475328-30-XXXX

3.2. Acetic Acid

Name	Product identifier	%	GHS-US classification
Acetic Acid (single constituent)	(CAS No) 64-19-7	99-100	Flam. Liq. 3; Met. Corrosive 1; Skin Corrosive 1A; Eye Damage 1; H226, H290, H314

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

First-aid measures after inhalation : Remove to fresh air, keep the patient warm and at rest. If symptoms develop obtain medical attention.

First-aid measures after skin contact : Remove/Take off immediately all contaminated clothing. Wash with plenty of soap and water. If symptoms develop obtain medical attention. Wash contaminated clothing before reuse.

First-aid measures after eye contact : Rinse immediately with plenty of water for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If symptoms develop obtain medical attention.

First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Give 100 - 200 ml of water to drink. If symptoms develop obtain medical attention.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries after inhalation : Harmful if inhaled.

Symptoms/injuries after skin contact : Harmful in contact with skin.

Symptoms/injuries after eye contact : Causes serious eye irritation.

Symptoms/injuries after ingestion : Harmful if swallowed.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Foam. Dry powder. Carbon dioxide. Water spray. Sand.

Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

Fire hazard : No data available.

Explosion hazard : On exposure to high temperature, may decompose, releasing explosive vapours. May form flammable/explosive vapour-air mixture.

Reactivity : Stable under normal conditions.

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5.3. Advice for firefighters

- Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire.
- Protection during firefighting : Fire fighters should wear complete protective clothing including self-contained breathing apparatus.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

- General measures : Avoid all contact with skin, eyes, or clothing. Beware of vapours accumulating to form explosive concentrations.

6.1.1. For non-emergency personnel

- Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

- Protective equipment : Wear suitable protective clothing and eye or face protection.
- Emergency procedures : Remove ignition sources. Avoid contact with eyes, skin and clothing. Ensure adequate ventilation.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

- Methods for cleaning up : Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Wash spill area with soapy water.

6.4. Reference to other sections

SECTION 8: Exposure controls/personal protection. SECTION 13: Disposal considerations.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Additional hazards when processed : Avoid inhalation of vapour or mist. Handle empty containers with care because residual vapours are flammable.
- Precautions for safe handling : Avoid contact with skin, eyes and clothing. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapour. Use only non-sparking tools. Keep away from open flames, hot surfaces and sources of ignition.
- Hygiene measures : Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling.

7.2. Conditions for safe storage, including any incompatibilities

- Technical measures : Proper grounding procedures to avoid static electricity should be followed.
- Storage conditions : Keep only in the original container in a cool well ventilated place. Keep container tightly closed. Moisture sensitive, storage class TRGS 510: 3 Flammable Liquids
- Incompatible products : Strong bases. Metals. Oxidizing agent. Reducing agents. Combustible materials.

7.3. Specific end use(s)

A general laboratory reagent or a reagent used for preparing fixative solution for use in a professional diagnostic or research laboratory.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Acetic Acid (CAS 64-19-7)		
USA ACGIH	TWA	10 ppm
	Remarks	Pulmonary function Upper respiratory tract irritation Eye irritation
USA, ACGIH (TLV)	STEL	15 ppm
	Remarks	Pulmonary function Upper respiratory tract irritation Eye irritation

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Acetic Acid (CAS 64-19-7)		
USA. NIOSH Recommended Exposure Limits	TWA	10 ppm, 25 mg/m ³
	Can be found in 5-8% vinegar	
USA. NIOSH Recommended Exposure Limits	ST	15 ppm, 25 mg/m ³
	Can be found in 5-8% vinegar	
USA. Occupational Exposure Limits (OSHA) -Table Z-1 Limits for Air Contaminants	TWA	10 ppm, 25 mg/m ³
	The value in mg/m ³ is approximate	
California permissible exposure limits for chemical contaminants (Title 8, Article 107)	STEL	15 ppm, 37 mg/m ³
California permissible exposure limits for chemical contaminants (Title 8, Article 107)	C	40 ppm

8.2. Exposure controls

Appropriate engineering controls	: Ensure adequate ventilation.
Personal protective equipment	: Avoid all unnecessary exposure.
Hand protection	: Wear chemically resistant protective gloves.
Eye protection	: Safety glasses with face shield.
Skin and body protection	: Use chemically protective clothing.
Respiratory protection	: Wear suitable respiratory protective equipment.
Thermal hazard protection	: Not required for normal conditions of use.
Environmental exposure controls	: Avoid release to the environment.
Other information	: Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Colour	: Colourless.
Odour	: Pungent.
Odour threshold	: No data available
pH	: 2.4 at 60.05 g/L
Relative evaporation rate (butylacetate=1)	: No data available
Melting point	: 16.2 °C (61.2 °F)
Freezing point	: No data available
Boiling point	: 117-118 °C (243-244 °F)
Flash point	: 40 °C (104°F)
Self ignition temperature	: 485 °C (905°F)
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapour pressure	: 73.3 hPa (55 mmHg) @ 50 °C (122 °F) 15.2 hPa (11.4 mmHg) @ 20 °C (68 °F)
Relative vapour density at 20 °C	: No data available
Relative density	: 1.049 g/ml
Solubility	: Miscible with water.
Log Pow	: -0.77
Log Kow	: No data available
Viscosity, kinematic	: No data available

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Viscosity, dynamic	: No data available
Explosive properties	: Not explosive
Oxidising properties	: Not classified as oxidizing
Explosive limits	: 6 - 36 vol % ACETIC ACID

9.2. Other information

Surface tension 28.8 mN/m at 10.0 °C (50.0 °F)

SECTION 10: Stability and reactivity

10.1. Reactivity

No data available.

10.2. Chemical stability

Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions

No data available

10.4. Conditions to avoid

Heat, flames, sparks. Extremely high or low temperatures.

10.5. Incompatible materials

Oxidizing agents. Soluble carbonates and phosphates. Hydroxides, Peroxides. Acid anhydrides. Permanganates, Amines, Alcohols, Nitric Acid

10.6. Hazardous decomposition products

Carbon monoxide. Carbon dioxide. May release flammable gases.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity	: Harmful if swallowed. Harmful in contact with skin. Harmful if inhaled. LD50 Oral – Rat male and female - 3310 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 - male and female - 4 h – 11.4 mg/l LD50 Dermal – Rabbit - 1112 mg/kg Remarks: No data available
Skin corrosion/irritation	: Skin - Rabbit Result: Causes severe burns
Serious eye damage/irritation	: Eyes - Rabbit Result: Corrosive to eyes
Respiratory or skin sensitisation	: No data available.
Germ cell mutagenicity	: Based on available data, the classification criteria are not met
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. NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP. OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens
Reproductive toxicity	: Not classified Based on available data, the classification criteria are not met
Specific target organ toxicity (single exposure)	: No data available
Specific target organ toxicity (repeated exposure)	: Not classified Based on available data, the classification criteria are not met

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Aspiration hazard	: Not classified Based on available data, the classification criteria are not met
Potential Adverse human health effects and symptoms	: Based on available data, the classification criteria are not met. Harmful if swallowed. Harmful in contact with skin.
Symptoms/injuries after inhalation	: Harmful if inhaled.
Symptoms/injuries after skin contact	: Harmful in contact with skin.
Symptoms/injuries after eye contact	: Causes serious eye irritation.
Symptoms/injuries after ingestion	: Harmful if swallowed.
Additional Information: RTECS AF1225000	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. Stomach-Irregularities-Based on Human Evidence Stomach-Irregularities-Based on Human Evidence

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : Not classified.

Acetic Acid	
Toxicity to fish	Semi-static test LC50-Oncorhynchus mykiss (rainbow trout)-> 1,000 mg/l-96 h(OECD Test Guideline 203)
Toxicity to daphnia and other aquatic invertebrates	EC50 – Daphnia magna (water flea) - > 300.82 mg/l – 48 hrs (OECD test guideline 202)

12.2. Persistence and degradability

Acetic Acid	
Persistence and degradability	Aerobic - Exposure time 30 d Result: 99 % - Readily biodegradable. Expected to be biodegradable.
Biological Oxygen Demand (BOD)	BOD - 880 mg/g

12.3. Bioaccumulative potential

Acetic Acid	
Bioaccumulative potential	No data available

12.4. Mobility in soil

Acetic Acid	
Ecology – soil	No data available

12.5. Other adverse effects

Other information : Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations. Dispose of empty containers as unused product. Contact a licensed professional waste disposal service to dispose of this material.

Additional information : Handle empty containers with care because residual vapours are flammable.

Ecology - waste materials : Avoid release to the environment.

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SECTION 14: Transport information

In accordance with DOT

UN-No.(DOT) : 2789
DOT Proper Shipping Name : Acetic Acid, glacial
Department of Transportation (DOT) Hazard Classes : 8 - Class 8 - Corrosive 49 CFR 173.136
(3) - Class 3 - Flammable and Combustible Liquid 49 CFR 173.120

Hazard labels (DOT) : 8 - Corrosive



Packing group (DOT) : II - Medium Danger
DOT Packaging Exceptions (49 CFR 173.xxx) : 154
DOT Packaging Non Bulk (49 CFR 173.xxx) : 202
DOT Packaging Bulk (49 CFR 173.xxx) : 242
DOT Quantity Limitations Passenger Aircraft/Rail (49 CFR 173.27) : 1L
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 30 L
DOT Vessel Stowage Location : A - (i) The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers, or one passenger per each 3 m of overall vessel length.

Additional information

Other information : No supplementary information available.

Transport by sea

Proper Shipping Name (IMDG) : Acetic Acid, glacial
Class (IMDG) : 8 (3) – Corrosive, Flammable Liquid
Packing group (IMDG) : II - Medium Danger

Air transport

Proper Shipping Name (IATA) : Acetic Acid, Glacial
Class (IATA) : 8 (3) – Corrosive, Flammable Liquid
Packing group (IATA) : II - Medium Danger

SECTION 15: Regulatory information

15.1. US Federal regulations

Acetic Acid	
SARA 311/312 Hazard Classes	Fire hazard, Immediate (acute) health hazard, Chronic health hazard
SARA 302 Components	No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302
SARA 313	This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Acetic Acid (CAS 64-19-7)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Listed on SARA Section 313 (Specific toxic chemical listings)	
RQ (Reportable quantity, section 304 of EPA's List of Lists) :	5000 lb final RQ, 2270 lb kg final RQ

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15.2. International regulations

CANADA

Acetic Acid	
WHMIS Classification	Class B Division 3 - Combustible Liquid Class E Corrosive Material

15.2.2. National regulations

No additional information available

15.3. US State regulations

Acetic Acid (64-19-7)

U.S. - Massachusetts - Right To Know List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List
U.S. - California Prop 65 - This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

SECTION 16: Other information

Abbreviations and acronyms : ADR (Accord européen relatif au transport international des marchandises Dangereuses par Route). CAS (Chemical Abstracts Service) number. IARC (International Agency for Research on Cancer). IATA (International Air Transport Association). IMDG (International Maritime Dangerous Goods Code). RID (Règlement concernant le transport international ferroviaire de marchandises).

Other information : None.

Full text of H-phrases: see section 16:

Eye Damage	Serious eye damage
Flammable liquids	Flammable liquids
H226	Flammable liquid and vapour.
H290	May be corrosive to metals.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
Metals Corrosive	Corrosive to metals.

NCEC SDS US GHS (Hazcom 2012)

The information and recommendations contained herein are based upon data believed to be up-to-date and correct. However, no guarantee or warranty of any kind, express or implied, is made with respect to the information and recommendations contained herein. We accept no responsibility and disclaim all liability for any harmful effects that may be caused by (incorrect) use, handling, purchase, resale, or exposure to our product. Customers and users of our product must comply with all applicable health and safety laws, regulations, and orders. In particular, they are under an obligation to carry out a risk assessment for the particular work places and to take adequate risk management measures in accordance with the national implementation legislation of EU Directives 89/391 and 98/24.