



Safety Data Sheet

Section 01 - Identification

Product Identifier	Acetic acid 25%
Other Means of Identification	Ethanoic acid, methane carboxylic acid, ethylic acid
Product Use and Restrictions on Use	Laboratory reagent, chemical intermediate, solvent.
Initial Supplier Identifier	ClearTech Industries Inc. 1500 Quebec Avenue Saskatoon, SK. Canada S7K 1V7
Prepared By	ClearTech Industries Inc. Technical Writer Phone: 1 (800) 387-7503
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Section 02 - Hazard Identification

GHS-Classification

Skin Corrosion/Irritation	Category 1A
Serious Eye Damage/Irritation	Category 1

Physical Hazards

No known physical hazards.

Danger

Hazard Statement

H314 – Causes severe skin burns and eye damage.

Pictograms



Precautionary Statements

- P280 – Wear protective gloves, protective clothing, eye protection, and face protection.
- P260 – Do not breathe mist, vapours or spray.
- P301 + P330 + P331 – IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
- P303 + P361 + P353 – IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin.
- P363 – Wash contaminated clothing before reuse.
- 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.
- P310 – Immediately call a POISON CENTER or doctor/physician.

P405 – Store locked up.

P501 – Dispose of contents/container in accordance with all federal, provincial, and/or local regulations including the Canadian Environmental Protection Act.

Section 03 - Composition / Information on Ingredients

Chemical Name	CAS Number	Weight %	Unique Identifiers
Acetic acid	64-19-7	25%	Not Available
Water	7732-18-5	75 %	

Section 04 - First Aid Measures

Inhalation	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. If the heart has stopped, trained personnel should begin cardiopulmonary resuscitation (CPR) immediately. Get medical attention immediately.
Skin Contact / Absorption	In case of contact, immediately flush with lukewarm, gently flowing water for at least 30 minutes. Seek immediate medical attention. Completely decontaminate clothing, shoes and leather goods before reuse or discard.
Eye Contact	Contact lenses should never be worn when working with this product. Flush immediately with water for at least 30 minutes. Forcibly hold eyelids apart to ensure complete irrigation of eye tissue. If a contact lens is present, remove only if easy to do so. Seek immediate medical attention.
Ingestion	DO NOT INDUCE VOMITING. If vomiting occurs, lean victim forward to prevent breathing in vomitus. Give large amounts of water. Do not give anything by mouth to an unconscious or convulsing person. Seek immediate medical attention.
Additional Information	Treatment will be based on observation of physician and individual reactions of patient. Observe for pulmonary edema.

Section 05 - Fire Fighting Measures

Suitable Extinguishing Media	Use water spray, alcohol foam, dry chemical or carbon dioxide. Special “alcohol resistant fire-fighting foams” are recommended for use with any polar flammable liquid that is completely soluble in water.
Unsuitable Extinguishing Media	Not Available
Specific Hazards Arising From the Chemical	Carbon monoxide and carbon dioxide. Closed containers may rupture violently when heated.
Special Protective Equipment for Fire-Fighters	Wear NIOSH-approved self-contained breathing apparatus and protective clothing.
Further Information	Isolate for 800 meters or 0.5 miles in all directions if tank, rail car or tank truck is involved in fire. Containers exposed to intense heat from fires should be cooled with water to prevent vapour pressure build-up which could result in container rupture. Water may be used to flush spills away from fire exposures and to dilute spills to non-flammable mixtures. Water streams should not be directed to the liquid, as this will cause the liquid to boil and generate more vapour.

Section 06 - Accidental Release Measures

Personal Precautions / Protective Equipment / Emergency Procedures	Wear appropriate personal protective equipment. Ventilate area. Only enter area with PPE. Stop or reduce leak if safe to do so.
Environmental Precautions	Prevent material from entering sewers or confined spaces.

Methods and Materials for Containment and Cleaning Up

SMALL SPILLS: Contain spill with earth, sand, or absorbent material which does not react with spilled chemical. Put spilled material in suitable, covered, labelled containers. Flush area with water. Contaminated absorbent material may pose the same hazards as the spilled product.

LARGE SPILLS: Contact fire and emergency services and supplier for advice.

Section 07 - Handling and Storage

Precautions for Safe Handling

This material is a CORROSIVE, COMBUSTIBLE LIQUID. Use proper equipment for lifting and transporting all containers. Use sensible industrial hygiene and housekeeping practices. Wash thoroughly after handling. Avoid all situations that could lead to harmful exposure.

Conditions for Safe Storage

Store in a cool, dry, well-ventilated area, out of direct sunlight and away from heat and ignition sources. Keep storage area clear of burnable materials. Store away from incompatible materials.

Incompatibilities

Strong oxidizing agents, pentafluoride, chlorine trifluoride, phosphorus trichloride, p-xylene, strong alkalis or caustics, phosphorous isocyanate, potassium tert-butoxide, ammonium nitrate, most common metals, ammonium thiosulfate, acetaldehyde, 2-aminoethanol, chlorosulfonic acid, ethylene diamine, theyleneimine, oleum.

Section 08 - Exposure Controls and Personal Protection

Exposure Limit(s)

Component	Regulation	Type of Listing	Value
Acetic Acid	ACGIH	TLV-TWA	10ppm
	ACGIH	STEL	15ppm
	OSHA	TWA	10ppm
	IDLH		50ppm

Engineering Control(s)

Ventilation Requirements

Mechanical ventilation (dilution or local exhaust), process or personnel enclosure and control of process conditions must be provided in accordance with all fire codes and regulatory requirements. Supply sufficient replacement air to make up for air removed by exhaust systems.

Other

Emergency shower and eyewash must be available and tested in accordance with regulations and be in close proximity.

Protective Equipment

Eyes/Face

Chemical safety goggles. A face shield may also be necessary. Contact lenses should not be worn; they may contribute to severe eye injury.

Hand Protection

Impervious gloves of chemically resistant material (rubber or PVC) should be worn at all times. Wash contaminated clothing and dry thoroughly before reuse.

Skin and Body Protection

Body suite, aprons, and/or coveralls of chemical resistant material should be worn at all times. Wash contaminated clothing and dry thoroughly before reuse.

Impervious boots of chemically resistant material should be worn at all times. No special footwear is required other than what is mandated at place of work.

Respiratory Protection

Based on workplace contaminant level and working limits of the respirator, use a respirator approved by NIOSH. The following is the minimum recommended equipment for an occupational exposure level. For concentrations > 1 and < 10 times the occupational exposure level: Use air-purifying respirator with full facepiece and organic vapor cartridge(s) or air-purifying full facepiece respirator with an organic vapor canister or a full face piece powered air-purifying respirator fitted with organic vapor cartridge(s).

The air purifying element must have an end of service life indicator, or a documented change out schedule must be established. Otherwise, use supplied air.
For concentrations more than 10 times the occupational exposure level and less than the lower of either 100 times the occupational exposure level or the IDLH: Use Type C full facepiece supplied-air respirator operated in positive-pressure or continuous-flow mode.
For concentrations > 100 times the occupational exposure level or greater than the IDLH level or unknown concentrations (such as in emergencies): Use self-contained breathing apparatus with full facepiece in positive-pressure mode or Type C positive-pressure full facepiece supplied-air respirator with an auxiliary positive-pressure self-contained breathing apparatus escape system.

Thermal Hazards Not Available

Section 09 - Physical and Chemical Properties

Appearance

Physical State Liquid
Colour Colourless
Odour Strong vinegar-like odour
Odour Threshold 0.21-1.0ppm

Property

pH 2.4
Melting Point/Freezing Point ~ -6.3°C
Initial Boiling Point and Boiling Range Not Available
Flash Point Not Applicable
Evaporation Rate 0.97
Flammability Not Flammable
Upper Flammable Limit Not Available
Lower Flammable Limit Not Available
Vapour Pressure (mm Hg, 20°C) 16.3
Vapour Density (Air=1) 2.07
Relative Density Not Available
Solubility(ies) Miscible with water, alcohol, glycerol, ether, carbon tetrachloride.
Practically insoluble in carbon disulfide.
Partition Coefficient: n-octanol/water Log P_{ow} = -0.17
Auto-ignition Temperature 485°C
Decomposition Temperature Not Available
Viscosity ~1.40mPa·s at 20°C
Explosive Properties Mixtures with oxidizers may explode.

Specific Gravity (Water=1)	1.03-1.06
% Volatiles by Volume	100
Formula	CH ₃ COOH
Molecular Weight	60.05

Section 10 - Stability and Reactivity

Reactivity	Not Available
Stability	Stable under normal conditions.
Possibility of Hazardous Reactions	None known.
Conditions to Avoid	Temperatures above 39°C, open flames, sparks, electrostatic discharge, heat and other ignition sources.
Incompatible Materials	Strong oxidizing agents, pentafluoride, chlorine trifluoride, phosphorus trichloride, p-xylene, strong alkalis or caustics, phosphorous isocyanate, potassium tert-butoxide, ammonium nitrate, most common metals, ammonium thiosulfate, acetaldehyde, 2-aminoethanol, chlorosulfonic acid, ethylene diamine, theyleneimine, oleum.
Hazardous Decomposition Products	During a fire, toxic carbon monoxide, carbon dioxide and other irritant gases and vapour, which may include unburned acid and toxic constituents may be generated.

Section 11 - Toxicological Information

Acute Toxicity

Component	Oral LD₅₀	Dermal LD₅₀	LC₅₀
Acetic Acid (25%)	4800 mg/kg (rabbit)	4240 mg/kg (rabbit)	45.6 mg/L (rat, 4hr)

Chronic Toxicity – Carcinogenicity

Component	IARC
Acetic Acid	Not listed to be carcinogenic as per IARC and ACGIH.

Skin Corrosion/Irritation	Corrosive. Causes burns.
Ingestion	Can cause digestive tract burns. Symptoms of exposure may include: Inflammation of mouth, throat, esophagus and/or stomach. Nausea, vomiting, loss of appetite, gastrointestinal irritation and/ or diarrhea.
Inhalation	Symptoms of exposure may include nasal discharge, hoarseness, coughing, chest pain and breathing difficulty. Accumulation of fluid in the lungs (pulmonary edema) may occur.
Serious Eye Damage/Irritation	Causes severe eye burns. May cause permanent eye damage.
Respiratory or Skin Sensitization	May cause sensitization by skin contact. Acetic acid may cause occupational asthma.
Germ Cell Mutagenicity	Acetic acid is not known to be a mutagen.
Reproductive Toxicity	Acetic acid is not known to cause reproductive toxicity.
STOT-Single Exposure	Inhalation of the spray mist may produce severe irritation of respiratory tract.
STOT-Repeated Exposure	Extremely destructive to the tissue of the mucous membrane and upper respiratory tract.
Aspiration Hazard	Not Available
Synergistic Materials	In animal studies, concurrent exposure to acetic acid and known carcinogens has increased the incidence of cancer caused by the known carcinogen. This effect is likely because of the cytotoxicity of acetic acid and its potential to cause increased cell proliferation (hyperplasia).

Section 12 - Ecological Information

Ecotoxicity

Component	Toxicity to Algae	Toxicity to Fish	Toxicity to Daphnia and Other Aquatic Invertebrates
Acetic Acid	EC ₅₀ (Green algae, 24hr): 156mg/L	LC ₅₀ (Lepomis macrochirus, 96hr): 75mg/L	LC ₅₀ (Daphnia magna, 24hr): 47.0mg/L
Biodegradability	Acetic acid will biodegrade readily if released to water (ie: 5-Day BOD's 63-81%) or soil. The atmospheric photochemical degradation half-life is estimated to be 26.7 days.		
Bioaccumulation	An estimated BCF of 3.2 suggests the potential for bioconcentration in aquatic organisms is low. Acetic acid shows no potential for biological accumulation or food chain contamination.		
Mobility	Acetic acid and is not expected to be susceptible to direct photolysis by sunlight. If released to soil, acetic acid is expected to have very high to moderate mobility based upon Koc values ranging from 6.5 to 228.		
Other Adverse Effects	The aquatic toxicity and biodegradation of acetic acid are expected to be influenced by its potential to lower pH.		

Section 13 - Disposal Considerations

Waste From Residues/Unused Products	Dispose in accordance with all federal, provincial, and/or local regulations including the Canadian Environmental Protection Act.
Contaminated Packaging	Dispose in accordance with all federal, provincial, and/or local regulations including the Canadian Environmental Protection Act.

Section 14 - Transport Information

UN Number	UN 2790	
UN Proper Shipping Name	ACETIC ACID, SOLUTION	
Transport Hazard Class(es)	8	
Packaging Group	III	
Environmental Hazards	Not listed as a marine pollutant under Canadian TDG Regulations, schedule III.	
Special Precautions	Not Available	
Transport in Bulk	Not Available	
Additional Information	<u>Packing Group</u>	<u>Limited Quantity Index</u>
	II	1 L
	III	5 L

TDG

Other	Secure containers (full and/or empty) with suitable hold down devices during shipment and ensure all caps, valves, or closures are secured in the closed position.
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TDG PRODUCT CLASSIFICATION: This product has been classified on the preparation date specified at section 14 of this MSDS / SDS, for transportation in accordance with the requirements of part 2 of the Transportation of Dangerous Goods Regulations. If applicable, testing and/or published test data regarding the classification of this product are listed in the references at section 16 of this MSDS / SDS.

Section 15 - Regulatory Information

NOTE: THE PRODUCT LISTED ON THIS SDS HAS BEEN CLASSIFIED IN ACCORDANCE WITH THE HAZARD CRITERIA OF THE CANADIAN CONTROLLED PRODUCTS REGULATIONS. THIS SDS CONTAINS ALL INFORMATION REQUIRED BY THOSE REGULATIONS.

Section 16 - Other Information

Preparation Date

September 3, 2015

Note: The responsibility to provide a safe workplace remains with the user. The user should consider the health hazards and safety information contained herein as a guide and should take those precautions required in an individual operation to instruct employees and develop work practice procedures for a safe work environment. The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by the use of this material. It is the responsibility of the user to comply with all applicable laws and regulations.

Attention: Receiver of the chemical goods / SDS coordinator

As part of our commitment to the Canadian Association of Chemical Distributors (CACD) Responsible Distribution[®] initiative, ClearTech Industries Inc. and its associated companies require, as a condition of sale, that you forward the attached Safety Data Sheet(s) to all affected employees, customers, and end-users. ClearTech will send any available supplementary handling, health, and safety information to you at your request.

If you have any questions or concerns please call our customer service center.

References:

- 1) CHEMINFO
- 2) eChemPortal
- 3) TOXNET
- 4) Transportation of Dangerous Goods Canada
- 5) CHRIS
- 6) HSDB
- 7) ECHA

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