

## MATERIAL SAFETY DATA SHEET

Acetic Acid 99.5% Glacial

MSDS Date of Issue: 10/5/05

### SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME:** Acetic Acid 99.5% Glacial  
**PRODUCT CODE(S):** 3580100

**DISTRIBUTER:** TerraLink Horticulture Inc.  
**ADDRESS:** 464 Riverside Road, Abbotsford, BC. Canada V2S 7M1  
**PHONE:** 604-864-9044

**24 HOUR CEDA EMERGENCY PHONE:** 604-540-4100  
**CHEMICAL SPILLS:** 800-663-3456

**PRODUCT USE:** Fertilizer  
**PREPARED BY:** Regulatory Affairs  
**REVISION DATE:** December 22, 2010.

### SECTION 2: COMPOSITION / INFORMATION ON INGREDIENTS

<u>REPORTABLE INGREDIENT(S)</u>	<u>CAS NO.</u>	<u>EXPOSURE LIMITS OSHA PEL-TWA</u>	<u>% VOL/WT</u>
Acetic acid	64-19-7	10 ppm (25 mg/m <sup>3</sup> )	99.5 - 100

### SECTION 3: HAZARDS IDENTIFICATION

#### EMERGENCY OVERVIEW

**CAUTION: KEEP OUT OF REACH OF CHILDREN**

#### Potential Acute Health Effects:

**Eye Contact:** Causes severe eye burns. May cause permanent eye damage. Symptoms of exposure may include: eye irritation, burning sensation, pain, watering and/or change of vision.

**Skin Contact:** Causes burns. Harmful if absorbed through the skin. Symptoms of exposure may include: Redness or discoloration, swelling, itching, burning or blistering of skin. Prolonged or repeated contact may cause skin sensitization.

**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.

**Ingestion:** Causes 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.

### SECTION 4: FIRST AID MEASURES

**Eye Contact:** In case of contact, or suspected contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention immediately after flushing.

**Skin Contact:** In case of contact, immediately flush skin with plenty of water for at least 15 minutes. Get medical attention. Remove contaminated clothing and launder before reuse. Remove contaminated shoes and discard.

**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.

**Ingestion:** Do NOT induce vomiting. Never give anything by mouth to an unconscious or convulsing person. Seek immediate medical attention. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into the lungs.

**Notes to Physician:** Treatment based on sound judgment of physician and individual reactions of patient. Observe for pulmonary edema.

### SECTION 5: FIRE-FIGHTING MEASURES

**Flash Point:** 39 °C / 103 °F

**Flash Point Method:** Closed cup.

**Autoignition Temperature:** 516 °C / 961 °F

**Flammable Limits in Air (%):** Lower: 4 Upper: 16

**Extinguishing Media:** Use DRY chemicals, CO<sub>2</sub>, alcohol foam or water spray.

**Special Exposure Hazards:** Isolate and restrict area access. Stop leak only if safe to do so. Stay upwind. Water run-off and vapour cloud may be corrosive. Containers exposed to intense heat from fires should be cooled with water to prevent vapour pressure build-up which could

## MATERIAL SAFETY DATA SHEET

### Acetic Acid 99.5% Glacial

MSDS Date of Issue: 10/5/05

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. Dike and collect water used to fight fire for neutralization before release.

**Hazardous Decomposition/Combustion Materials (under fire conditions):** Carbon monoxide. Carbon dioxide. Toxic fumes.

**Special Protective Equipment:** Fire fighters should wear full protective clothing, including self-contained breathing equipment.

**NFPA RATINGS FOR THIS PRODUCT ARE:** HEALTH 3, FLAMMABILITY 2, REACTIVITY 0

**HMIS RATINGS FOR THIS PRODUCT ARE:** HEALTH 3, FLAMMABILITY 2, REACTIVITY 0

### SECTION 6: ACCIDENTAL RELEASE MEASURES

**Personal Precautionary Measures:** Wear appropriate protective equipment. Isolate for 800 metres or 0.5 miles in all directions if tank, rail car, or tank truck is involved in fire. Evacuate downwind areas as conditions warrant to prevent exposure and to allow vapours or fumes to dissipate. Spills may expose downwind areas to toxic or flammable concentrations over considerable distances in some cases.

**Environmental Precautionary Measures:** Prevent entry into sewers or streams, dike if needed.

**Procedure for Clean Up:** Eliminate all ignition sources. Contain spill by diking. If fire potential exists, blanket spill with alcohol type aqueous film-forming foam or use water fog stream to disperse vapours. Neutralize the residue with sodium carbonate or crushed limestone. Absorb with an inert dry material and place in an appropriate waste disposal container. Flush area with water to remove trace residue.

### SECTION 7: HANDLING AND STORAGE

**Handling:** Use with adequate ventilation. Keep the containers closed when not in use. Handle and open containers with care. Avoid breathing vapor. Avoid contact with eyes, skin and clothing. Fixed equipment as well as transfer containers and equipment should be grounded to prevent accumulation of static charge. Do not cut, drill, grind, weld or perform similar operations on or near containers. Empty containers may contain hazardous product residues. Wash thoroughly after handling. Protect from freezing.

**Storage:** Store in a cool, dry, well ventilated area, away from heat and ignition sources. Place away from incompatible materials. Store in accordance with good industrial practices. Keep containers tightly closed. Store out of direct sunlight and on an impermeable floor.

### SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

#### Engineering Controls:

Local exhaust ventilation as necessary to maintain exposures to within applicable limits.

**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 facepiece 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.

For escape: Use self-contained breathing apparatus with full facepiece or any respirator specifically approved for escape.

**Gloves:** Appropriate chemical resistant gloves should be worn. Neoprene gloves.

**Skin Protection:** Skin contact should be prevented through the use of suitable protective clothing, gloves and footwear, selected for conditions of use and exposure potential. Consideration must be given both to durability as well as permeation resistance.

**Eyes:** Chemical goggles; also wear a face shield if splashing hazard exists.

**Other Personal Protection Data:** Ensure that eyewash stations and safety showers are proximal to the work-station location.

Ingredients	Exposure Limit - ACGIH	Exposure Limit - OSHA	Immediately Dangerous to Life or Health - IDLH
Acetic Acid	10 ppm TLV-TWA 15 ppm STEL	10 ppm TWA 25 mg/m <sup>3</sup> TWA	50 ppm

## MATERIAL SAFETY DATA SHEET

Acetic Acid 99.5% Glacial

MSDS Date of Issue: 10/5/05

### SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

**Physical State:** Liquid  
**Colour:** Colourless  
**Odour:** Strong Acrid Vinegar Smell  
**pH** 2.4 (1% soln)  
**Specific Gravity:** 1.0492 @ 20°C  
**Boiling Point:** 118 °C / 244 °F  
**Freezing/Melting Point:** 16.6 °C / 63 °F  
**Vapour Pressure:** 11 mmHg @ 20°C  
**Vapour Density:** 2.1  
**% Volatile by Volume:** Not Available.  
**Evaporation Rate:** 0.97  
**Solubility:** Completely soluble.  
**VOCs:** Not Available.  
**Viscosity:** Not Available.  
**Molecular Weight:** 60.05

### SECTION 10: STABILITY AND REACTIVITY

**Chemical Stability:** Stable.  
**Hazardous Polymerization:** Will not occur.  
**Conditions to Avoid:** Avoid excessive heat, open flames and all ignition sources.  
**Materials to Avoid:** Strong oxidizing agents. Strong alkalis. Common metals and their alloys. Aldehydes. Ammonium nitrate. Sodium peroxide. Carbonates. Hydroxides. Oxides. Phosphates. Perchloric acid.  
**Additional Information:**  
No additional remark.

### SECTION 11: TOXICOLOGICAL INFORMATION

#### Principle Routes of Exposure

**Ingestion:** Causes 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.

**Skin Contact:** Causes burns. Harmful if absorbed through the skin. Symptoms of exposure may include: Redness or discoloration, swelling, itching, burning or blistering of skin. Prolonged or repeated contact may cause skin sensitization.

**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.

**Eye Contact:** Causes severe eye burns. May cause permanent eye damage. Symptoms of exposure may include: eye irritation, burning sensation, pain, watering and/or change of vision.

**Additional Information:** Overexposure (prolonged or repeated exposure) may cause: injury to the eyes, digestive tract damage, respiratory tract damage, skin damage.

#### Acute Test of Product:

**Acute Oral LD50:** Not Available.

**Acute Dermal LD50:** Not Available.

**Acute Inhalation LC50:** Not Available.

#### Carcinogenicity:

Ingredients	IARC - Carcinogens	ACGIH - Carcinogens
Acetic Acid	Not listed.	Not listed.

**Carcinogenicity Comment:** No additional information available.

**Reproductive Toxicity/ Teratogenicity/ Embryotoxicity/ Mutagenicity:** Mixed results in vitro (negative in the Ames and Chinese hamster ovary assay; positive in human lymphocytes for SCEs and in some DNA damage assays). The positive results are thought to be due to artifacts caused by acidification of the culture media.

## MATERIAL SAFETY DATA SHEET

Acetic Acid 99.5% Glacial

MSDS Date of Issue: 10/5/05

### SECTION 12: ECOLOGICAL INFORMATION

#### Ecotoxicological Information:

Ingredients	Ecotoxicity - Fish Species	Data Acute Crustaceans Toxicity:	Ecotoxicity - Freshwater Algae Data
Acetic Acid	LC50 (goldfish) 423 mg/L LC50 (bluegill sunfish) 75 mg/L LC50 (fathead minnow) 88 mg/L	Not Available.	Not Available.

#### Other Information:

**Ecotoxicity:** The aquatic toxicity and biodegradation of acetic acid are expected to be influenced by its potential to lower pH.

**Degradation:** Acetic acid will biodegrade readily if released to water (e.g., 5-Day BOD's 63-81%) or soil. The atmospheric photochemical degradation half-life is estimated to be 26.7 days.

**Bioaccumulation:** The log n-octanol water partition coefficient for acetic acid is -0.17. This suggests that acetic acid has low potential to bioaccumulate.

### SECTION 13: DISPOSAL CONSIDERATIONS

**Disposal of Waste Method:** Disposal of all wastes must be done in accordance with municipal, provincial and federal regulations.

**Contaminated Packaging:** Empty containers should be recycled or disposed of through an approved waste management facility.

### SECTION 14: TRANSPORT INFORMATION

#### DOT (U.S.):

**DOT Shipping Name:** ACETIC ACID GLACIAL

**DOT Hazardous Class** 8 (3)

**DOT UN Number:** UN2789

**DOT Packing Group:** II

**DOT Reportable Quantity (lbs):** 5000 lb / 2270 kg

**Note:** No additional remark.

**Marine Pollutant:** No.

#### ICAO/IATA:

**IATA Proper Shipping Name:** ACETIC ACID GLACIAL

**IATA Hazard Class:** 8 (3)

**UN Number:** UN2789

**Packing Group:** II

**IATA Label:** Corrosive. Flammable liquid.

**IATA Remarks:** No additional remark.

#### IMDG:

**IMDG Proper Shipping Name:** ACETIC ACID GLACIAL

**Hazard Class:** 8 (3)

**UN Number:** UN2789

**Packing Group:** II

**Marine Pollutant:** No.

**IMDG Label:** Corrosive. Flammable.

**Remarks:** No additional remark.

#### TDG (Canada):

**TDG Proper Shipping Name:** ACETIC ACID GLACIAL

**Hazard Class:** 8 (3)

**UN Number:** UN2789

**Packing Group:** II

**Note:** No additional remark.

**Marine Pollutant:** No.

## MATERIAL SAFETY DATA SHEET

Acetic Acid 99.5% Glacial

MSDS Date of Issue: 10/5/05

### SECTION 15: REGULATORY INFORMATION

**U.S. TSCA Inventory Status:** All components of this product are either on the Toxic Substances Control Act (TSCA) Inventory List or exempt.

**Canadian DSL Inventory Status:** All components of this product are either on the Domestic Substances List (DSL), the Non-Domestic Substances List (NDSL) or exempt.

**Note:** Not available.

#### U.S. Regulatory Rules

**Ingredients**  
Acetic Acid

**CERCLA/SARA – Section 302:**  
Not Listed.

**SARA (311, 312) Hazard Class:**  
LISTED

**CERCLA/SARA – Section 313:**  
Not Listed.

**California Proposition 65:** Not Listed.

**MA Right to Know List:** Listed.

**New Jersey Right-to-Know List:** Listed.

**Pennsylvania Right to Know List:** Listed.

**WHMIS Hazardous Class:**

B3 COMBUSTIBLE LIQUIDS



E CORROSIVE MATERIAL



### SECTION 16: OTHER INFORMATION

**Additional Information:** This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

Abbreviations used throughout the MSDS are:

- NA = Not available
- NAb = Not available for blend
- NAp = Not applicable
- N/E = None established

Company references utilized in preparation of the MSDS.

#### DISCLAIMER:

.....  
**Terralink Horticulture Inc. provides the information contained herein in good faith, but makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgement in determining its appropriateness for a particular purpose. TERRALINK HORTICULTURE INC. MAKES NO REPRESENTATIONS OR WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO THE INFORMATIONS SET FORTH HEREIN OR THE PRODUCT TO WHICH THE INFORMATION REFERS. ACCORDINGLY, TERRALINK HORTICULTURE INC. WILL NOT BE RESPONSIBLE FOR DAMAGES RESULTING FROM THE USE OF OR RELIANCE UPON THIS INFORMATION.**  
.....