



1. PRODUCT AND COMPANY IDENTIFICATION

**Product Name** : Acetaldehyde  
**Catalog Number** : A1001  
**Synonym** : Ethanal  
**Brand** : Northernchem  
**Product Use** : For laboratory research purposes  
**Manufacturer** : Northernchem Inc.  
 8485 Montrose Rd., Niagara Falls, Ontario, CANADA L2H 3L7  
 Phone : +1(905) 353-1500  
 Fax : +1(289) 975-5138  
**Supplier** : Northernchem Inc.  
 8485 Montrose Rd., Niagara Falls, Ontario, CANADA L2H 3L7  
 Phone : +1(905) 353-1500  
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**Emergency Phone** : +1(905) 650-1938

2. HAZARDS IDENTIFICATION

WHMIS Classification

<b>B2</b>	Flammable liquid	Flammable liquid
<b>D2A</b>	Very Toxic Material Causing Other Toxic Effects	Carcinogen
<b>D2B</b>	Toxic Material Causing Other Toxic Effects	Moderate respiratory irritant & Moderate eye irritant

GHS Classification

<b>Flammable liquid</b>	Category	1
<b>Acute toxicity, Inhalation</b>	Category	5
<b>Acute toxicity, Dermal</b>	Category	5
<b>Skin Irritation</b>	Category	3
<b>Eye Irritation</b>	Category	2A
<b>Carcinogenicity</b>	Category	2
<b>Specific Target Organ Toxicity</b>	Category	3
<b>Respiratory system</b>	Category	3
<b>Acute aquatic toxicity</b>		

GHS Label Elements, Including Precautionary Statements

Pictogram



Signal Word

Danger

Hazard Statement(s)

<b>H224</b>	Extremely flammable liquid and vapour
<b>H313+H333</b>	May be harmful in contact with skin or if inhaled.
<b>H316</b>	Causes mild skin irritation.
<b>H319</b>	Causes serious eye irritation.
<b>H335</b>	May cause respiratory irritation.
<b>H351</b>	Suspected of causing cancer.
<b>H402</b>	Harmful to aquatic life.

## Precautionary Statement(s)

<b>P201</b>	Obtain special instructions before use.
<b>P202</b>	Do not handle until all safety precautions have been read and understood.
<b>P210</b>	Keep away from heat/sparks/open flames/hot surfaces. No smoking.
<b>P233</b>	Keep container tightly closed.
<b>P240</b>	Ground/bond container and receiving equipment.
<b>P241</b>	Use explosion-proof electrical/ventilating/lighting/equipment.
<b>P242</b>	Use only non-sparking tools.
<b>P243</b>	Take precautionary measures against static discharge.
<b>P261</b>	Avoid breathing dust/fume/gas/mist/vapours/spray.
<b>P264</b>	Wash skin thoroughly after handling
<b>P271</b>	Use only outdoors or in a well-ventilated area
<b>P280</b>	Wear protective gloves/protective clothing/eye protection/face protection.
<b>P303 + P361 + P353</b>	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
<b>P304 + P340 + P312</b>	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
<b>P305 + P351 + P338</b>	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
<b>P332 + P313</b>	If skin irritation occurs: Get medical advice/ attention.
<b>P337 + P313</b>	If eye irritation persists: Get medical advice/ attention.
<b>P370 + P378</b>	In case of fire: Use ... for extinction.
<b>P403 + P233</b>	Store in a well-ventilated place. Keep container tightly closed.
<b>P403 + P235</b>	Store in a well-ventilated place. Keep cool.
<b>P405</b>	Store locked up.
<b>P501</b>	Dispose of contents/container to ...

## HMIS Classification

<b>Health Hazard</b>	2
<b>Chronic Health Hazard</b>	*
<b>Flammability</b>	4
<b>Physical Hazards</b>	2

## NFPA Rating

<b>Health Hazard</b>	No data available
<b>Fire</b>	No data available
<b>Reactivity Hazard</b>	No data available

## Potential Health Effects

<b>Inhalation</b>	: May be harmful if inhaled. Causes respiratory tract irritation.
<b>Skin</b>	: May be harmful if absorbed through skin. Causes skin irritation.

**Eyes** : Causes eye irritation.  
**Ingestion** : May be harmful if swallowed.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

**Formula** : C<sub>2</sub>H<sub>4</sub>O  
**Molecular Weight** : 44.05 g/mol  
**CAS-No.** : 75-07-0  
**EC-No.** : 200-836-8  
**Purity** : ≥99.5%

### 4. FIRST AID MEASURES

**General Advice** : Consult a physician. Show this SDS to Physician in attendance. Move out of dangerous area.  
**Inhalation** : If breathed in, move victim into fresh air. If not breathing, give artificial respiration. Consult a physician.  
**Skin Contact** : Wash off with soap and plenty of water. Consult a physician.  
**Eye Contact** : Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.  
**Ingestion** : Do not induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

### 5. FIREFIGHTING MEASURES

**Condition of Flammability** : Flammable when temperature is above flash point or when source of ignition is present. Avoid hot surfaces/sparks/ heat/open flames. Smoking prohibited.  
**Suitable Extinguishing Media** : Use alcohol-resistant foam, water spray, dry chemicals or carbon dioxide.  
**Specific Hazards Arising from the Chemical** : Possible explosion when heated. During runaway polymerization, closed containers may rupture and explode. Avoid vapours accumulating in low areas to form explosive concentrations.  
**Special Protective Equipment for Firefighters** : When necessary, wear self-contained breathing apparatus.  
**Hazardous Combustion Products** : Under fire conditions, hazardous decomposition products may form. - Carbon oxides  
**Explosion Data – Sensitivity to Mechanical Impact** : No data available  
**Explosion Data – Sensitivity to Static Discharge** : No data available  
**Further Information** : To cool unopened containers, utilize water sprays.

### 6. ACCIDENTAL RELEASE MEASURES

**Personal Precautions** : Wear personal protective equipment. Do not breathe in vapours, mist or gas. Ensure proper ventilation. Avoid all sources of ignition. Evacuate workers to safe areas. Avoid vapours accumulating in low areas to form explosive concentrations.

- Environmental Precautions** : If safe, prevent further leakage or spillage. Do not allow products to enter drains. Avoid releasing products into the environment.
- Methods and Materials for Containment and Cleaning Up** : Control leakage, and then gather with an electrically protected vacuum cleaner or by wet-wiping and place in container. Dispose products in accordance with government regulations (see section 13).

## 7. HANDLING AND STORAGE

- Precautions for Safe Handling** : Prevent contact with skin and eyes. Do not breathe in vapour or mist. Utilize explosion-proof equipment. Avoid sources of ignition – Smoking prohibited. Avoid the buildup of electrostatic charge.
- Conditions for Safe Storage** : Store tightly closed container in a dry area. Ensure adequate ventilation. To prevent leakage, opened containers must be resealed cautiously and kept upstanding.

Recommended storage temperature: 2 - 8 °C

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Personal Protective Equipment

- Respiratory** : Where air-purifying respirators are necessary, use a full-face respirator with multi-purpose combination (US) or type AXBEK (EN 14387) respirator cartridges as a backup. Use a full-face supplied air respirator if the respirator is the main method of protection. Utilize respirators and components tested and approved under proper government standards such as NIOSH (US) or CEN (EU).
- Hand** : Use gloves when handling. Gloves must be inspected prior to use. Remove gloves properly (without touching glove's outer surface) to avoid skin contact with this product. Dispose contaminated gloves after use according to applicable laws and general laboratory practices. Wash then dry hands.
- Eyes** : Wear safety glasses with side-shields according to EN166. Use eye protection equipment tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).
- Skin and Body** : Wear complete suit protecting against chemicals and flame retardant antistatic protective clothing. Type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
- Hygiene Measures** : Handle corresponding to general industrial hygiene and safety practice. Wash and dry hands before breaks and at the end of work.
- Engineering Controls** : Use laboratory fume hoods or mechanical exhaust to prevent exposure.
- Workplace Control Parameters** : No data available

## 9. PHYSICAL AND CHEMICAL PROPERTIES

- Form** : Liquid, clear
- Colour** : Colourless

<b>pH</b>	: 5 at 20 °C (68 °F)
<b>Melting Point/Freezing Point</b>	: -125 °C (-193 °F) - lit.
<b>Boiling Point</b>	: 21 °C (70 °F) - lit.
<b>Flash Point</b>	: -40 °C (-40 °F) - closed cup
<b>Ignition Temperature</b>	: 175 °C (347 °F)
<b>Autoignition Temperature</b>	: No data available
<b>Lower Explosion Limit</b>	: 4 %(V)
<b>Upper Explosion Limit</b>	: 60 %(V)
<b>Vapour Pressure</b>	: 1,008.5 hPa (756.4 mmHg) at 20 °C (68 °F) 1,451 hPa (1,088 mmHg) at 30 °C (86 °F) 2,660 hPa (1,995 mmHg) at 55 °C (131 °F)
<b>Density</b>	: 0.785 g/cm <sup>3</sup> at 25 °C (77 °F)
<b>Water Solubility</b>	: completely miscible
<b>Partition Coefficient (n-octanol/water)</b>	: log Pow: 0.5
<b>Relative Vapour Density density</b>	: 1.52 - (Air = 1.0)
<b>Odour</b>	: No data available
<b>Odour Threshold</b>	: No data available
<b>Evaporation Rate</b>	: No data available

## 10. STABILITY AND REACTIVITY

<b>Chemical Stability</b>	: To avoid peroxide formation, prevent exposure to air any longer than necessary. Keep product stable under recommended storage conditions.
<b>Possibility of Hazardous Reactions</b>	: Explosive mixture may form when vapours are exposed to air.
<b>Conditions to Avoid</b>	: Air, heat, flames and sparks. Direct sunlight and extreme temperatures.
<b>Materials to Avoid</b>	: Oxidizing agents, Reducing agents, Acids, Nitric acid, Peroxides, Bases, Sodium Hydroxide, Amines, Ammonia, Oxygen Warning: acetaldehyde is oxidized rapidly and exothermically by air to acetic acid, Acid anhydrides, Alcohols, Halogens, Ketones, Phenol, Hydrogen sulfide gas, Hydrogen peroxide
<b>Hazardous Decomposition Products</b>	: Hazardous decomposition products formed under fire conditions. - Carbon oxides

## 11. TOXICOLOGICAL INFORMATION

<b>Acute Toxicity</b>	
<b>Oral LD<sub>50</sub></b>	: Lowest observable effect level Oral - rat - 675 mg/kg
<b>Inhalation LC<sub>50</sub></b>	: LC50 Inhalation - rat - 4 h - 13300 ppm
<b>Dermal LD<sub>50</sub></b>	: LD50 Dermal - rabbit - 3,540 mg/kg
<b>Other Information</b>	: no data available



## Skin Corrosion/Irritation

Skin - rabbit - Mild skin irritation - OECD Test Guideline 404

## Serious Eye Damage/Eye Irritation

No data available

## Respiratory or Skin Sensitisation

Maximisation Test - guinea pig - OECD Test Guideline 406 - Did not cause sensitisation on laboratory animals

## Germ Cell Mutagenicity

Laboratory experiments have shown mutagenic effects.

## Carcinogenicity

This product is or contains a component that has been reported to be possibly carcinogenic based on its IARC, ACGIH, NTP, or EPA classification.

IARC: 2B - Group 2B: Possibly carcinogenic to humans (Acetaldehyde)

Limited evidence of carcinogenicity in animal studies

## Reproductive Toxicity

No data available

## Teratogenicity

No data available

## Specific Target Organ Toxicity (Single Exposure)

No data available

## Specific target Organ Toxicity (Repeated Exposure)

No data available

## Aspiration Hazard

No data available

## Signs and Symptoms of Exposure

Blurred vision, Unconsciousness, Headache, Vomiting, Nausea, Pulmonary edema. Effects may be delayed., Convulsions, sneezing, Cough, Shortness of breath

## Synergistic Effects

No data available

## Additional Information

RTECS: AB1925000

## 12. ECOLOGICAL INFORMATION

### Toxicity

- Toxicity to Fish** : LC50 - Pimephales promelas (fathead minnow) - 31 mg/L - 96 h
- Toxicity to Daphnia and other Aquatic Invertebrates** : Immobilization EC50 - Daphnia magna (Water flea) - 57.4 mg/L- 48 h  
Method: OECD Test Guideline 202
- Toxicity to Algae** : Growth inhibition EC50 - Pseudokirchneriella subcapitata (green algae) - > 100 mg/L  
Method: OECD Test Guideline 201

### Persistence and Degradability

- Biodegradability** : Biotic/Aerobic  
Result: 80 % - Readily biodegradable. Method: OECD Test Guideline 301C

### Bioaccumulative Potential

No data available

### Mobility in Soil

No data available

## PBT and vPvB Assessment

No data available

## Other Adverse Effects

Environmental hazard could be present in the event of unprofessional handling or disposal. Dangerous to aquatic life.

## 13. DISPOSAL CONSIDERATIONS

### Product

Burn in a chemical incinerator with an afterburner and scrubber but take extra care in igniting due to the high flammability of this product. To dispose this material, contact a licensed professional waste disposal service and offer surplus and non-recyclable solutions.

### Contaminated Packaging

Dispose as unused product.

## 14. TRANSPORT INFORMATION

### DOT (US)

UN number: 1089 Class: 3 Packing group: I  
Proper shipping name: Acetaldehyde  
Reportable Quantity (RQ): 1000 lbs  
Marine pollutant: No  
Poison Inhalation Hazard: No

### IMDG

UN number: 1089 Class: 3 Packing group: I EMS-No: F-E, S-D  
Proper shipping name: ACETALDEHYDE  
Marine pollutant: No

### IATA

UN number: 1089 Class: 3 Packing group: I  
Proper shipping name: Acetaldehyde  
IATA Passenger: Not permitted for transport

## 15. REGULATORY INFORMATION

### WHMIS Classification

<b>B2</b>	Flammable liquid	Flammable liquid
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<b>D2B</b>	Toxic Material Causing Other Toxic Effects	Moderate respiratory irritant & Moderate eye irritant

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations.

## 16. OTHER INFORMATION

# Safety Data Sheet

Version 2.00

Revision Date 2017-08-02

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