



# Safety Data Sheet

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## Section 01 - Identification

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<b>Product Identifier</b>	Propargyl Alcohol
<b>Other Means of Identification</b>	2-propynyl alcohol; 2-propyn-1-ol, Prop-2-yn-1-ol
<b>Product Use and Restrictions on Use</b>	Intermediate in organic synthesis. Corrosion inhibitor, a metal complex solution, solvent stabilizer and electroplating brightener additive.
<b>Initial Supplier Identifier</b>	ClearTech Industries Inc. 1500 Quebec Avenue Saskatoon, SK. Canada S7K 1V7
<b>Prepared By</b>	ClearTech Industries Inc. Technical Writer Phone: 1 (800) 387-7503
<b>24-Hour Emergency Phone</b>	Phone: 1 (306) 664 – 2522

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## Section 02 - Hazard Identification

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### GHS-Classification

<b>Acute Toxicity-Oral</b>	Category 3
<b>Acute Toxicity-Dermal</b>	Category 3
<b>Acute Toxicity-Inhalation</b>	Category 3
<b>Skin Corrosion/Irritation</b>	Category 1B
<b>Skin Sensitizer</b>	Category 1
<b>Serious Eye Damage/Irritation</b>	Category 1
<b>Carcinogenicity</b>	Category 2

### Physical Hazards

<b>Flammable Liquid</b>	Category 3
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### **Danger**

#### **Hazards Statements**

H301 – Toxic if swallowed.  
H311 – Toxic in contact with skin.  
H331 – Toxic if inhaled.  
H314 – Causes severe skin burns and eye damage.  
H317 – May cause an allergic skin reaction.  
H351 – Suspected of causing cancer.  
H226 – Flammable liquid and vapour.

## Pictograms



## Precautionary Statements

P201 – Obtain special instructions before use.

P202 – Do not handle until all safety precautions have been read and understood.

P210 – Keep away from heat, sparks, open flames, and hot surfaces. — No smoking.

P240 – Ground/bond container and receiving equipment.

P241 – Use explosion-proof electrical, ventilating, lighting, and equipment.

P242 – Use only non-sparking tools.

P243 – Take precautionary measures against static discharge.

P370 + P378 – In case of fire: Use carbon dioxide, dry chemicals or “alcohol resistant” foam for extinction.

P308 + P313 – IF exposed or concerned: Get medical advice/attention.

P403 + P235 – Store in a well-ventilated place. Keep cool.

P233 – Keep container tightly closed.

P405 – Store locked up.

P260 – Do not breathe mist, vapours or spray.

P271 – Use only outdoors or in a well-ventilated area.

P304 + P340 – IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P280 – Wear protective gloves, protective clothing, eye protection, and face protection.

P303 + P361 + P353 – IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin.

P333 + P313 – If skin irritation or rash occurs: Get medical advice/attention.

P363 – Wash contaminated clothing before reuse.

P272 – Contaminated work clothing should not be allowed out of the workplace.

P270 – Do not eat, drink or smoke when using this product.

P301 + P330 + P331 – IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P305 + P351 + P338 – IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

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

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## Section 03 - Composition / Information on Ingredients

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Chemical Name	CAS Number	Weight %	Unique Identifiers
Prop-2-yn-1-ol	107-19-7	97-99%	
Formaldehyde	50-00-0	0.7% maximum	

NOTE: Propargyl alcohol has Formaldehyde, CAS# 50-00-0 as part of it's composition.

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## Section 04 - First Aid Measures

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### Inhalation

This product is flammable and very toxic. Remove victim to fresh air. If breathing has stopped give artificial respiration or, if the heart has stopped, cardiopulmonary resuscitation. Seek immediate medical attention.

### Skin Contact / Absorption

Remove contaminated clothing and rinse skin with lukewarm, gently flowing water for at least 30 minutes. Seek immediate medical attention. Completely decontaminate clothing, shoes and leather goods.

### Eye Contact

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. Neutral saline solution may be used as soon as it is available. Seek immediate medical attention.

### Ingestion

NEVER give anything by mouth if victim is rapidly losing consciousness, is unconscious or is convulsing. Have victim rinse mouth thoroughly with water. Do NOT induce vomiting. Have victim drink 240 to 300mL of water to dilute material in stomach. If vomiting occurs

naturally, have victim lean forward to reduce risk of aspiration. Repeat administration of water. Seek medical attention.

**Additional Information**

NOTE: This product is suspected of causing cancer. Take proper precautions to ensure your own safety before assisting others.

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## Section 05 - Fire Fighting Measures

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<b>Suitable Extinguishing Media</b>	Use Carbon Dioxide, Dry Chemicals, and "alcohol resistant" Foam. Water may not be effective to extinguish fire. Use water spray to cool fire exposed surfaces.
<b>Unsuitable Extinguishing Media</b>	Not Available
<b>Specific Hazards Arising From the Chemical</b>	Can release vapours that form explosive mixtures with air at, or above 33°C. Vapour is heavier than air and may travel a considerable distance to a source of ignition and flash back to a leak or open container. During a fire, irritating/toxic gases may be generated. Can accumulate in confined spaces, resulting in an explosion or toxicity hazard. Containers may rupture violently when heated.
<b>Special Protective Equipment and Precautions for Fire-Fighters</b>	Wear NIOSH-approved self-contained breathing apparatus and protective clothing.
<b>Further Information</b>	Not Available

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## Section 06 - Accidental Release Measures

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<b>Personal Precautions / Protective Equipment / Emergency Procedures</b>	Wear appropriate personal protective equipment. Ventilate area. Only enter area with PPE. Stop or reduce leak if safe to do so. Flush with water to remove any residue.
<b>Environmental Precautions</b>	Prevent material from entering sewers or confined spaces.
<b>Methods and Materials for Containment and Cleaning Up</b>	Do not touch spilled material. Remove all potential sources of heat and ignition. Stop or reduce leak if safe to do so. Contain spill with earth, sand, or absorbent material which does not react with spilled material. SMALL SPILLS: Soak up spill with absorbent material which does not react with spilled chemical. Put 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.

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## Section 07 - Handling and Storage

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<b>Precautions for Safe Handling</b>	This material is FLAMMABLE LIQUID, VERY TOXIC by inhalation and CORROSIVE. 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.
<b>Conditions for Safe Storage</b>	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 away from direct sunlight. Keep containers tightly closed.
<b>Incompatibilities</b>	Oxidizing agents, strong acids, alkalis, phosphorus pentoxide, metallic halide salts, heavy metal compounds.

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## Section 08 - Exposure Controls and Personal Protection

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**Exposure Limit(s)**

Component	Regulation	Type of Listing	Value
Prop-2-yn-1-ol	OSHA	TWA	1ppm
	ACGIH	TLV-TWA	1ppm

Formaldehyde	ACGIH	TLV-C	0.3ppm
	OSHA	PEL-TWA	0.75ppm

### **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 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**

If exposure exceeds occupational exposure limits, use an appropriate NIOSH approved respirator. In case of spill or leak resulting in unknown concentration, use a NIOSH approved supplied air respirator.

#### **Thermal Hazards**

Not Available

## **Section 09 - Physical and Chemical Properties**

### **Appearance**

#### **Physical State**

Liquid

#### **Colour**

Colourless to yellow

#### **Odour**

Pungent odour

#### **Odour Threshold**

Not Available

### **Property**

#### **pH**

Probably neutral

#### **Melting Point/Freezing Point**

-53°C

#### **Initial Boiling Point and Boiling Range**

114-115°C

#### **Flash Point**

36°C (closed cup)

#### **Evaporation Rate**

Not Available. Moderately volatile.

#### **Flammability**

Flammable liquid

#### **Upper Flammable Limit**

Not Available

<b>Lower Flammable Limit</b>	Not Available
<b>Vapour Pressure (mm Hg, 20°C)</b>	11.6mmHg
<b>Vapour Density (Air=1)</b>	1.93
<b>Relative Density</b>	Not Available
<b>Solubility(ies)</b>	Soluble in water. Soluble in ethanol, acetone, diethyl ether, benzene, chloroform, 1,2-dichloroethane, dioxane, tetrahydrofuran; insoluble in aliphatic hydrocarbons.
<b>Partition Coefficient: n-octanol/water</b>	Not Available
<b>Auto-ignition Temperature</b>	Not Available
<b>Decomposition Temperature</b>	Not Available
<b>Viscosity</b>	1.68cP at 20°C
<b>Explosive Properties</b>	Can release vapours that form explosive mixtures with air at, or above 33 °C.
<b>Specific Gravity (Water=1)</b>	0.949
<b>% Volatiles by Volume</b>	100
<b>Formula</b>	HC <sub>2</sub> CH <sub>2</sub> OH
<b>Molecular Weight</b>	56.06

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## Section 10 - Stability and Reactivity

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<b>Reactivity</b>	Although propargyl alcohol is stable, violent reactions can occur in the presence of contaminants, particularly at elevated temperatures.
<b>Stability</b>	Normally stable.
<b>Possibility of Hazardous Reactions</b>	May polymerize explosively. Polymerization may be caused by heat, sunlight, oxidizing agents, peroxides, heavy metal ions and caustic solutions. Uninhibited monomer vapour may form polymer in vents and other confined spaces. At elevated temperatures, closed containers may rupture violently due to polymerization. Acidified aqueous solutions are resistant to polymerization and weak acids have been used to stabilize propargyl alcohol prior to distillation.
<b>Conditions to Avoid</b>	Heat, sparks, open flames, and other ignition sources; sunlight; distillation to dryness.
<b>Incompatible Materials</b>	Oxidizing agents, strong acids, alkalies, phosphorus pentoxide, metallic halide salts, heavy metal compounds.
<b>Hazardous Decomposition Products</b>	None reported.

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## Section 11 - Toxicological Information

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### Acute Toxicity

Component	Oral LD <sub>50</sub>	Dermal LD <sub>50</sub>	Inhalation LC <sub>50</sub>
Prop-2-yn-1-ol	20-50 mg/kg (rat)	16 mg/kg (rabbit)	520 ppm (rat, 4hr)

## Chronic Toxicity – Carcinogenicity

### Component

### IARC

Formaldehyde

Group 1: Carcinogenic to humans.

<b>Skin Corrosion/Irritation</b>	Can cause severe skin irritation, tissue damage and corrosive effects. In animal studies, it has been absorbed through the skin in harmful amounts producing apathy, irregular breathing, bleeding in the stomach, diarrhea and death.
<b>Ingestion</b>	Ingestion is likely to result in severe irritation of the mouth, throat and stomach. It may cause CNS effects, such as nausea, vomiting, accelerated breathing, apathy muscle weakness, incoordination and, in severe cases, death. In animal studies, propargyl alcohol caused internal bleeding, liver and kidney damage.
<b>Inhalation</b>	Vapour may cause irritation of the mucous membranes of the nose and throat, coughing, difficult breathing and shortness of breath, as well as central nervous system effects, such as nausea, vomiting, apathy, and lack of coordination, stupor and, in severe cases, death. It is a strong lachrymator and can cause excessive tearing.
<b>Serious Eye Damage/Irritation</b>	Corrosive. May cause conjunctivitis and swelling. May cause permanent eye damage. May cause lachrymation (excessive tears).
<b>Respiratory or Skin Sensitization</b>	Formaldehyde is a skin and respiratory sensitizer.
<b>Germ Cell Mutagenicity</b>	Formaldehyde is considered mutagenic, based on positive results (e.g. chromosomal aberrations in lung cells) observed in studies with live animals.
<b>Reproductive Toxicity</b>	Not Available
<b>STOT-Single Exposure</b>	Irritating to the respiratory system.
<b>STOT-Repeated Exposure</b>	In animals, long-term inhalation exposure to relatively low levels caused irritation of the mucous membranes, increased white blood cell counts and liver and kidney damage.
<b>Aspiration Hazard</b>	Inhalation may result in respiratory effects such as inflammation, edema, and chemical pneumonitis.
<b>Synergistic Materials</b>	Not Available

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## **Section 12 – Ecological Information**

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### Ecotoxicity

Component	Toxicity to Algae	Toxicity to Fish	Toxicity to Daphnia and Other Aquatic Invertebrates
Prop-2-yn-1-ol	Not Available	LC <sub>50</sub> (Pimephales promelas, 96hr): 1.44mg/L	EC <sub>50</sub> (Daphnia magna, 24hr): 11mg/L
Formaldehyde	EC <sub>50</sub> (Green algae, 48hr): 2.627mg/L	LC <sub>50</sub> (Oncorhynchus mykiss, 48hr): 50mg/L	EC <sub>50</sub> (Daphnia magna, 24hr): 42mg/L
<b>Biodegradability</b>	Readily biodegradable.		
<b>Bioaccumulation</b>	An estimated BCF of 3 suggests the potential for bioconcentration in aquatic organisms is low.		
<b>Mobility</b>	If released to soil, propargyl alcohol is expected to have very high mobility based upon an estimated Koc of 14. If released into water, propargyl alcohol is not expected to adsorb to suspended solids and sediment based upon the estimated Koc.		
<b>Other Adverse Effects</b>	Not Available		

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## **Section 13 – Disposal Considerations**

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

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## Section 14 – Transport Information

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UN Number	UN2927						
UN Proper Shipping Name	TOXIC LIQUID, CORROSIVE, ORGANIC, N.O.S. (Propargyl alcohol)						
Transport Hazard Class(es)	6.1 (8)						
Packaging Group	II						
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	<table><thead><tr><th><u>Packing Group</u></th><th><u>Limited Quantity Index</u></th></tr></thead><tbody><tr><td>I</td><td>0</td></tr><tr><td>II</td><td>0.1 L</td></tr></tbody></table>	<u>Packing Group</u>	<u>Limited Quantity Index</u>	I	0	II	0.1 L
<u>Packing Group</u>	<u>Limited Quantity Index</u>						
I	0						
II	0.1 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.

**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.

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## Section 15 – Regulatory Information

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**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.**

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## Section 16 – Other Information

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**Preparation Date** August 31, 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<sup>®</sup> 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) HSDB
- 6) ECHA
- 7) PAN

## **ClearTech Industries Inc. - Locations**

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