



Safety Data Sheet

Section 01 - Identification

Product Identifier	ClearMem 2000
Other Means of Identification	PBTC
Product Use and Restrictions on Use	Sequestering agent, calcium carbonate scale inhibitor.
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
24-Hour Emergency Phone	Phone: 1 (306) 664 – 2522

Section 02 - Hazard Identification

GHS-Classification

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

Physical Hazards

Corrosive to Metals	Category 1
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Danger

Hazards Statements

H314 – Causes severe skin burns and eye damage.
H290 – May be corrosive to metals.

Pictograms



Precautionary Statements

P234 – Keep only in original packaging.
P405 – Store locked up.
P260 – Do not breathe mist, vapours or spray.
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.
P363 – Wash contaminated clothing before reuse.
P303 + P361 + P353 – IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

P305 + P351 + P338 – IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P301 +P330 + P331 – IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P310 – Immediately call a POISON CENTER or doctor/physician.
P390 – Absorb spillage to prevent material-damage.
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
2-phosphonobutan-1,2,4-tricarboxylic acid	37971-36-1	48-52%	
Water	7732-18-5	46.8-50.8%	

Section 04 - First Aid Measures

Inhalation	If symptoms are experienced, remove victim to fresh air. Give artificial respiration only if breathing has stopped. If breathing is difficult, give oxygen. Seek medical attention.
Skin Contact / Absorption	Remove contaminated clothing. Rinse skin with lukewarm, gently flowing water for 30 minutes. Seek immediate medical attention. Completely decontaminate clothing, shoes and leather goods before re-use or discard.
Eye Contact	Immediately flush eyes with lukewarm, gently flowing water for at least 30 minutes. Forcibly hold eyelids open 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	Never give anything by mouth if victim is rapidly losing consciousness, is unconscious or convulsing. Have victim rinse mouth with water. Do NOT induce vomiting. If vomiting occurs naturally, have victim lean forward to reduce the risk of aspiration. Have victim rinse mouth again. Seek medical attention.
Additional Information	Not Available.

Section 05 - Fire Fighting Measures

Suitable Extinguishing Media	Use extinguishing media appropriate for surrounding fire.
Unsuitable Extinguishing Media	Not Available
Specific Hazards Arising From the Chemical	May evolve oxides of carbon and phosphorus under fire conditions.
Special Protective Equipment and Precautions for Fire-Fighters	Wear NIOSH-approved self-contained breathing apparatus and protective clothing.
Further Information	Not Available

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.
Methods and Materials for Containment and Cleaning Up	SMALL SPILLS: Carefully neutralize with hydrated lime or soda ash. Wash away small spills with plenty of water.

LARGE SPILLS: Absorb larger spills with earth or sand. Sweep up material into containers for future disposal. Avoid using metal containers for spilled material. Flush remainder of spill with water, washing can be neutralized with hydrated lime or soda ash.

Section 07 - Handling and Storage

Precautions for Safe Handling	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 the containers tightly closed. Store in suitable labelled containers. Avoid freezing temperatures and material such as brass, aluminum and mild steel. PVC, polypropylene, glass reinforced plastic and polyethylene are suitable materials for containment.
Incompatibilities	Strong bases, brass, aluminum and mild steel.

Section 08 - Exposure Controls and Personal Protection

Exposure Limit(s)

Component	Regulation	Type of Listing	Value
2-phosphonobutan-1,2,4-tricarboxylic acid	WEELs®	WEEL-TWA	10mg/m ³ (aerosol)

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, full-face shield, or a full-face respirator is to be worn at all times when product is handled. 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 suits, 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 Respiratory protection is not normally needed. If airborne exposure will become excessive, then use approved respiratory protection with full face piece.

Thermal Hazards Not Available

Section 09 - Physical and Chemical Properties

Appearance

Physical State	Liquid
Colour	Clear, light yellow

Odour	Characteristic odour
Odour Threshold	Not Available
<u>Property</u>	
pH	2
Melting Point/Freezing Point	-15°C
Initial Boiling Point and Boiling Range	>100°C
Flash Point	Not Applicable
Evaporation Rate	Not Available
Flammability	Non-flammable
Upper Flammable Limit	Not Applicable
Lower Flammable Limit	Not Applicable
Vapour Pressure (mm Hg, 20°C)	Not Available
Vapour Density (Air=1)	Not Available
Relative Density	Not Available
Solubility(ies)	Completely soluble
Partition Coefficient: n-octanol/water	Not Available
Auto-ignition Temperature	Not Applicable
Decomposition Temperature	Not Available
Viscosity	Not Available
Explosive Properties	Not Available
Specific Gravity (Water=1)	1.27-1.30
% Volatiles by Volume	Not Available
Formula	C ₇ H ₁₁ O ₉ P
Molecular Weight	270.13

Section 10 - Stability and Reactivity

Reactivity	Not Available
Stability	Stable under normal conditions.
Possibility of Hazardous Reactions	Polymerizaiton will not occur.
Conditions to Avoid	Not Available

Incompatible Materials	Contact with strong bases, brass, aluminum and mild steel may generate heat, splattering or boiling and toxic vapours.
Hazardous Decomposition Products	Oxides of carbon and phosphorus.

Section 11 - Toxicological Information

Acute Toxicity

Component	Oral LD ₅₀	Dermal LD ₅₀	Inhalation LC ₅₀
2-phosphonobutan-1,2,4-tricarboxylic acid (50%)	>8,000mg/kg (rat)	>8,000mg/kg (rat)	>3,958 mg/m ³ (rat, 4hr)

Chronic Toxicity – Carcinogenicity

Component	IARC
2-phosphonobutan-1,2,4-tricarboxylic acid	Not Available

Skin Corrosion/Irritation	May be slightly irritating to skin and slightly toxic if absorbed through skin.
Ingestion	Not a likely route of exposure. Significant health effects are not expected if small amounts (less than a mouthful) are ingested.
Inhalation	Not a likely route of exposure.
Serious Eye Damage/Irritation	May be highly irritating to the eyes.
Respiratory or Skin Sensitization	Not expected to be a respiratory or skin sensitizer.
Germ Cell Mutagenicity	Not expected to be mutagenic.
Reproductive Toxicity	Not Available
STOT-Single Exposure	No adverse effects are expected.
STOT-Repeated Exposure	No adverse effects are expected.
Aspiration Hazard	Not Available
Synergistic Materials	Not Available

Section 12 – Ecological Information

Ecotoxicity

Component	Toxicity to Algae	Toxicity to Fish	Toxicity to Daphnia and Other Aquatic Invertebrates
2-phosphonobutan-1,2,4-tricarboxylic acid	EC ₅₀ (Green algae, 72hr): 140mg/L	LC ₅₀ (Leuciscus idus, 48hr): >500mg/L	EC ₅₀ (Daphnia magna, 24hr): 747mg/L

Biodegradability	Not readily biodegradable.
Bioaccumulation	Not Available
Mobility	Not Available
Other Adverse Effects	Not Available

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	UN3265								
UN Proper Shipping Name	CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (2-phosphonobutan-1,2,4-tricarboxylic acid)								
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	<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>1 L</td></tr><tr><td>III</td><td>5 L</td></tr></tbody></table>	<u>Packing Group</u>	<u>Limited Quantity Index</u>	I	0	II	1 L	III	5 L
<u>Packing Group</u>	<u>Limited Quantity Index</u>								
I	0								
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.

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 October 19, 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) HSDB
- 6) ECHA

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