

## Material Safety Data Sheet

### SECTION 1 – CHEMICAL PRODUCT AND COMPANY INFORMATION

**Product Name:** ENDIMAL® 1500 (15% Stabilized Oxychlorine Solution)

**Chemical Family:** Inorganic salt solution

**Manufacturer's Name:** Siemens Industry, Inc. - Water Technologies Business Unit

**Address:** 2650 Tallevast Road, Sarasota, FL 34243

**Product/Technical Information Phone Number:** 1(941) 355-2971

**Medical/Handling Emergency Phone Number:** CHEMTREC 1 (800) 424-9300  
24 hours a day

**Transportation Emergency Phone Number:** CHEMTREC 1 (800) 424-9300  
24 hours a day

**Issue Date:** April 2005

**Revision Number / Date:** Rev 1 April 2011

### SECTION 2 – COMPOSITION INFORMATION

<u>Chemical Name</u>	<u>Percent by Weight</u>	<u>CAS#</u>
Oxychlorine Compounds	13 – 25	Proprietary
Buffer(s)	1.5 – 2	Proprietary
Inert Ingredients	Balance	Proprietary

### SECTION 3 – HAZARDS IDENTIFICATION

**Appearance & Odor:** Clear pale green solution with faint chlorine odor.

**Emergency Overview:** Contact with acids, organic materials, reducing agents, or chlorine donors will produce chlorine dioxide gas and heat. This product may easily be ignited by heat or friction if allowed to dry out. Clean up spills promptly.

**Fire & Explosion Hazards:** Do not allow this product to evaporate to dryness as it may easily ignite when dry. Do not allow this product to dry on cloth as oxidation can cause a fire hazard.

**Primary Route(s) of Exposure:** Inhalation, skin, eyes.

**Inhalation – Acute Effects:** Causes respiratory tract and mucous membrane irritation with sore throat, coughing, and difficulty breathing. Intense exposures may result in delayed pulmonary edema.

**Skin Contact – Acute Effects:** Causes irritation. Prolonged contact may cause dermatitis.

**Eye Contact – Acute Effects:** Causes severe irritation.

**Ingestion – Acute Effects:** May cause gastrointestinal irritation, nausea, vomiting, and diarrhea.

**Note:** Upon contact with acids, organic materials, oxidizing agents or chlorine donors, this product will release chlorine dioxide gas. Inhalation of chlorine dioxide can cause respiratory

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tract irritation, coughing, wheezing, and burns of the mucous membranes. Inhalation of large amounts may lead to pulmonary edema and bronchitis. Prolonged or repeated inhalation of chlorine dioxide gas may cause chronic bronchitis or emphysema. Oxychlorine compounds have been shown to cause blood disorders in laboratory animals. Direct contact with chloride dioxide causes eye and skin irritation and may cause burns. Chlorine dioxide is toxic by ingestion. Prolonged or repeated exposure to chlorine dioxide may aggravate existing medical conditions such as asthma, bronchitis or any other respiratory ailment.

### SECTION 4 – FIRST AID MEASURES

**Inhalation First Aid:** Remove affected person to fresh air. If breathing is difficult qualified personnel should administer oxygen. Give artificial respiration ONLY if breathing has stopped and give CPR ONLY if there is no breathing and no pulse. Obtain immediate medical attention.

**Skin Contact First Aid:** Remove contaminated clothing and immediately wash affected area for 15 - 20 minutes with flowing water. Contaminated clothing should be rinsed until chemical is fully removed. Obtain medical attention if irritation persists.

**Eye Contact First Aid:** Immediately flush eyes with flowing water continuously for 15 - 20 minutes while holding eyes open. Contacts should be removed before or during flushing. Obtain medical attention.

**Ingestion First Aid:** If victim is conscious and able to swallow immediately give person two glasses of water. Never give an unconscious person anything by mouth. DO NOT induce vomiting. If spontaneous vomiting occurs, have affected person lean forward with head down to avoid breathing in of vomitus. Rinse mouth again and give more water to drink. Obtain medical attention immediately.

**Medical Conditions Aggravated:** May aggravate medical conditions such as asthma, bronchitis, or other respiratory ailments.

**Note to Physician:** Probable mucosal damage may contraindicate the use of gastric lavage.

### SECTION 5 – FIRE FIGHTING MEASURES

**Flash Point/Method:** Not Applicable

**Auto Ignition Temperature:** Not Applicable

**Upper/Lower Explosion Limits:** Not Applicable

**Extinguishing Media:** Water. Apply water from a protected location or from a safe distance.

**Fire Fighting Procedures:** Wear NIOSH/MSHA approved positive-pressure self-contained breathing apparatus and full protective equipment.

**Fire & Explosion Hazards:** Contact with acids, organic materials, reducing agents, or chlorine donors will produce chlorine dioxide gas and heat. The lower explosive limit (LEL) for chlorine dioxide is 10%. Flush area with large amounts of air to keep chlorine dioxide concentration

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below 10%. If allowed to dry, this product can be easily ignited by heat or friction. Do not allow this product to dry on cloth as oxidation can cause a fire hazard.

**Hazardous Products of Decomposition and/or Combustion:** Thermal decomposition will produce toxic chlorine dioxide gas.

**NFPA Ratings:** HEALTH - 1    FLAMMABILITY - 0    REACTIVITY - 1    OTHER - OX

### SECTION 6 – ACCIDENTAL RELEASE MEASURES

DO NOT DUMP ON THE GROUND OR INTO ANY BODY OF WATER.

**Spill/Leak Procedures:** Dike spill with earth or sand. Soak up with sand, oil dry, or other non-combustible absorbent material. Flush with water to dilute. Do not allow contact with rags, paper, or other oxidizable materials. For large spills, evacuate the area, contain liquid and transfer to closed polyethylene drums. Prevent contact with oxidizers and acids. Do not allow product to dry. Keep product out of the water supply. Flush area with water after liquid is removed.

All disposal methods must be in compliance with all Federal, State, Local, and Provincial laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator.

### SECTION 7 – HANDLING AND STORAGE

**Handling:** Avoid contact with eyes, skin, and clothing. Do not breathe vapor or mist. Wash thoroughly after handling. Wash clothing after use.

**Storage:** Protect from heat, freezing, and ultraviolet light. Keep container closed. Store in a cool, dry location away from incompatible materials. Keep away from food and feed products.

**General Comments:** Use adequate ventilation. Do not allow solution to evaporate to dryness.

### SECTION 8 – PERSONAL PROTECTION/ EXPOSURE CONTROL

**Respiratory Protection:** Use only with adequate ventilation. Wear NIOSH/MSHA approved respirator, suitable for use in a chlorine or chlorine dioxide atmosphere as necessary.

**Skin Protection:** Rubber or neoprene gloves. Body protection as necessary to prevent skin contact.

**Eye Protection:** Safety goggles. Wear chemical splash goggles or a face shield if liquid splashing is likely.

**Ventilation Protection:** General local exhaust ventilation as necessary to control any air contaminants to within their PELs or TLVs during the use of this product.

**Other Protection:** Safety showers, with quick opening valves which stay open, and eye wash fountains, or other means of washing the eyes with a gentle flow of cool to tepid water, should

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be readily available in all areas where this material is handled or stored. Water should be supplied through insulated and heat-traced lines to prevent freeze-ups in cold weather.

### Exposure Limits:

OSHA – None established for the product. ACGIH - None established for the product.

Note: This product can release chlorine dioxide. For chlorine dioxide,  
OSHA PEL = 0.1 ppm, STEL = 0.3 ppm. ACGIH TLV = 0.1 ppm, STEL = 0.3 ppm.

## SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

**Appearance & Odor:** Clear pale green solution with faint chlorine odor.

**Vapor Pressure:** 21 mm Hg

**Vapor Density (Air=1):** Not determined

**Boiling Point:** 106° C

**Freezing Point:** -18° C

**Specific Gravity:** 1.19 – 1.22

**Solubility in Water:** Miscible

**Volatile Percentage:** 100

**pH:** 9.5 – 10.0

**Flash Point/method:** Not Applicable

**Evaporation Rate:** Not Determined

**Auto Ignition Temperature:** Not Applicable

**Upper/Lower Explosion Limits:** Not applicable

## SECTION 10 – STABILITY AND REACTIVITY

**Stability:** Stable.

**Incompatibilities:** Contact with acids, organic materials, oxidizing agents, and chlorine donors will release toxic chlorine dioxide gas.

**Polymerization:** Will not occur.

**Decomposition:** Thermal decomposition will produce toxic chlorine dioxide gas.

**Conditions to Avoid:** Heat, drying, freezing, and ultraviolet light.

## SECTION 11 – TOXICOLOGICAL INFORMATION

**Inhalation – Acute Effects:** This product has not been tested for inhalation toxicity. However, for chlorine dioxide LC 50 (rat) > 6.53 mg/l/4 hr.

**Inhalation – Chronic Effects:** No chronic effects are known.

**Skin Contact – Acute Effects:** Testing indicates this product is not corrosive to the skin. However, for chlorine dioxide, LD 50 (rat) > 2000 mg/kg.

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**Skin Contact – Chronic Effects:** No chronic effects are known.

**Eye Contact – Acute Effects:** This product has not been tested for eye toxicity.

**Eye Contact – Chronic Effects:** No chronic effects are known.

**Ingestion – Acute Effects:** This product has not been tested for ingestion toxicity. However, for chlorine dioxide LD 50 (rat) = 1075 mg/kg.

**Ingestion – Chronic Effects:** No chronic effects are known.

**Carcinogenicity/Mutagenicity Effects:** None of the components present in this product at concentrations equal to or greater than 0.1% is listed by IARC, NTP, OSHA, or ACGIH.

**Reproductive Effects:** None known.

**Neurotoxicity:** None known.

**Other Effects:** None

**Target Organs:** No known target organs.

## SECTION 12 – ECOLOGICAL INFORMATION

This product is toxic to fish and aquatic organisms. Keep out of sewers, storm drains, and waterways.

## SECTION 13 – DISPOSAL CONSIDERATIONS

Material that cannot be used or chemically reprocessed and empty containers should be disposed of in accordance with all applicable regulations. Product containers should be thoroughly emptied before disposal. Generators of waste material are required to evaluate all waste for compliance with RCRA and any local disposal procedures and regulations. NOTE: State and local regulations may be more stringent than federal regulations.

## SECTION 14 – TRANSPORTATION INFORMATION

Not regulated as a hazardous material by DOT, IMO, or IATA

## SECTION 15 – REGULATORY INFORMATION

**TSCA:** Listed

### **SARA 311 and 312 Hazard Categories**

Immediate (Acute) Health Hazard: Yes

Delayed (Chronic) Health Hazard: No

Fire Hazard: No

Reactivity Hazard: No

Sudden Release of Pressure: No

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### SECTION 16 – OTHER INFORMATION

**Disclaimer:** The information contained herein is based on data considered accurate. However, no warranty is expressed or implied regarding the accuracy of these data or the results to be obtained from the user thereof. It is the buyer's responsibility to ensure that its activities comply with federal, state, provincial, and local laws.

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**Revision Indicator:** Legal Entity name change 04/01/11