

## Material Safety Data Sheet

### SECTION 1 – CHEMICAL PRODUCT AND COMPANY INFORMATION

**Product Name:** Bioxide®-AE

**Part Number:** None

**Chemical Family:** Nitrate/Alkaline Inorganic Salt /Aromatic Ketone Solution

**Manufacturer's Name:** Siemens Water Technologies Corp.

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

**Product/Technical Information Phone Number:** (941) 355.2971

**Medical/Handling Emergency Phone Number:** Call CHEMTREC at 800/424-9300  
24 hours a day

**Transportation Emergency Phone Number:** Call CHEMTREC at 800/424-9300  
24 hours a day

**Issue Date:** November 3, 2003

**Revision Date/Revision Number:** October 18, 2005/#2

### SECTION 2 – COMPOSITION INFORMATION

<u>Chemical Name</u>	<u>Percent by Weight</u>	<u>CAS#</u>
Sodium nitrate	Proprietary	7631-99-4
Alkali	Proprietary	1310-73-2
Anthraquinone	Proprietary	84-65-1
Water	Proprietary	7732-18-5

### SECTION 3 – HAZARDS IDENTIFICATION

**Appearance & Odor:** Clear to cloudy, colorless to light tan colored, odorless solution.

**Emergency Overview:** DANGER. Corrosive. May cause irritation and burns to the skin, eyes, respiratory tract, and digestive system. May be fatal if swallowed.

**Fire & Explosion Hazards:** Minimal. Avoid drying, do not contact with organics, chlorine, or hypochlorite products.

**Primary Route(s) of Exposure:** Skin and eye contact, inhalation, and ingestion.

**Inhalation – Acute Effects:** Inhalation of vapors or mists may cause severe irritation or burns of the respiratory tract, dizziness, abdominal cramps, vomiting, headache, mental impairment, coughing, labored breathing or cyanosis. May cause pulmonary edema.

**Skin Contact – Acute Effects:** Skin contact may cause irritation and burns with deep ulceration and permanent scarring. Burns may not be immediately painful; onset of pain may be delayed minutes to hours. Multiple skin burns may cause temporary loss of hair.

**Eye Contact – Acute Effects:** Eye contact may cause irritation and burns. Damage can range from severe irritation and mild scarring to blistering, disintegration, ulceration, severe scarring, and clouding. Conditions which affect vision such as glaucoma and cataracts are possible late developments. In severe cases, there is progressive ulceration and clouding of eye tissue which may lead to permanent blindness.

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**Ingestion – Acute Effects:** Ingestion may cause irritation and burns to the esophageal tissue, which may progress to stricture formation. Ingestion may result in severe pain and cramps; burning of the mouth, throat and esophagus; vomiting; diarrhea; headache; weakness; dizziness; blue lips, fingernails and skin; labored breathing; convulsions; collapse; and possible death. Ingestion causes swallowing to become painful and difficult almost immediately.

### SECTION 4 – FIRST AID MEASURES

**Inhalation First Aid:** Remove affected person from area to fresh air and provide oxygen if breathing is difficult. Give artificial respiration ONLY if breathing has stopped. Obtain medical attention.

**Skin Contact First Aid:** Immediately remove clothing from affected area and wash skin for 15-20 minutes with flowing water. Clothing should be discarded or washed before reuse. DO NOT instruct person to neutralize affected skin area. Obtain medical attention immediately.

**Eye Contact First Aid:** Immediately irrigate eyes with flowing water continuously for 15-20 minutes while holding eyes open. Contacts should be removed before or during flushing. DO NOT instruct person to neutralize. **Obtain medical attention immediately.**

**Ingestion First Aid:** If victim is alert and not convulsing rinse mouth with water and give water to drink. 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:** None known.

**Note to Physician:** Treat symptomatically.

### SECTION 5 – FIRE FIGHTING MEASURES

**Flash Point/Method:** Not applicable.

**Auto Ignition Temperature:** Not applicable.

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

**Extinguishing Media:** Use media appropriate for surrounding material.

**Fire Fighting Procedures:** Wear appropriate protective clothing and a NIOSH/OSHA approved self-contained breathing apparatus. Use water with caution and in flooding amounts. Do not splatter or splash this material.

**Fire & Explosion Hazards:** This solution contains a strong oxidant that, if dried, may react with combustible and reducing materials, causing a fire and explosion hazard.

**Hazardous Products of Decomposition and/or Combustion:** Heating or burning dried product produces Sodium Oxide, Sodium Peroxide, Nitrogen Oxides, Oxygen, Carbon Monoxide, and Carbon Dioxide.

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**NFPA Ratings:** HEALTH-3 FLAMMABILITY-0 REACTIVITY-1 OTHER- OX

**HMS Ratings:** HEALTH-3 FLAMMABILITY-0 REACTIVITY-1 OTHER- D

### SECTION 6 – ACCIDENTAL RELEASE MEASURES

Wear appropriate personal protective equipment (See Section 8). Stop leak if safe to do so without risk. Ventilate area. If safe to do so, absorb spill with inert material, (e.g., dry sand or earth), then place into a chemical waste container. Flush area with flooding amounts of water.

DO NOT DUMP ON THE GROUND OR INTO ANY BODY OF WATER. 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:** Wash thoroughly after handling. Use with adequate ventilation. Do not get in eyes, on skin, or on clothing. Do not ingest or inhale. Wear all recommended personal protective equipment (See Section 8).

**Storage:** Store away from food, beverages, strong acids, metals, reducing agents, combustible and flammable liquids, organic halogens, and liquids with low flash points.

**General Comments:** This solution is a strong base; it reacts violently with acid and is corrosive in moist air to metals like zinc, aluminum, tin, and lead forming a combustible/explosive gas (hydrogen). It will attack some forms of plastics, rubber or coatings; it absorbs carbon dioxide from the air.

### SECTION 8 –PERSONAL PROTECTION/ EXPOSURE CONTROL

**Respiratory Protection:** None required under normal use conditions.

**Skin Protection:** Wear neoprene, rubber or latex gloves, and other protective clothing as appropriate to prevent skin contact such as lab coat, apron, and rubber boots.

**Eye Protection:** Wear safety glasses with side shields and face shield or goggles and face shield. Faceshield recommended when connecting and disconnecting piping.

**Ventilation Protection:** None required under normal use conditions. Use general or local exhaust ventilation to meet TLV requirements.

**Other Protection:** Recommend means of washing the skin and/or eyes with a gentle flow of cool to tepid tap water be readily available in all areas where this material is handled or stored. Employees should wash their hands and face before eating, drinking or using tobacco products. Educate and train employees on the safe use and handling of this product.

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### Exposure Limits:

For Alkali: OSHA PEL-TWA: 2 mg/m<sup>3</sup>

ACGIH TLV-TWA: 2 mg/m<sup>3</sup>

NIOSH REL-TWA: 2 mg/m<sup>3</sup>; CEIL: 15 mg/m<sup>3</sup>

NIOSH IDLH: 10 mg/m<sup>3</sup>

### SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

**Appearance & Odor:** Clear to cloudy, colorless to light tan colored, odorless solution.

**Vapor Pressure:** N/D\*\*

**Vapor Density (Air=1):** N/A\*

**Boiling Point:** 102-110°C, 215-230°F

**Melting Point:** N/A

**Specific Gravity:** 1.20-1.50

**Solubility in Water:** Complete

**Volatile Percentage:** N/D

**pH:** Over 14

**Flash Point/method:** N/A

**Auto Ignition Temperature:** N/A

**Upper/Lower Explosion Limits:** N/A

\*N/A=Not applicable

\*\*N/D=Not determined

### SECTION 10 – STABILITY AND REACTIVITY

**Stability:** This material is stable under normal use conditions.

**Incompatibilities:** Corrosive to metals such as aluminum, tin, and zinc as well as to alloys such as steel, and may cause formation of flammable hydrogen gas.

**Polymerization:** Hazardous polymerization will not occur.

**Decomposition:** Heating or burning dried product produces Sodium oxide, Sodium peroxide, Nitrogen oxides, Oxygen, Carbon monoxide, and Carbon dioxide.

**Conditions to Avoid:** Avoid evaporation to dryness. Avoid contact with incompatible materials.

### SECTION 11 – TOXICOLOGICAL INFORMATION

**Inhalation – Acute:** Inhalation of vapors or mists may cause severe irritation or burns of the respiratory tract, dizziness, abdominal cramps, vomiting, headache, mental impairment, coughing, labored breathing, or cyanosis. May cause pulmonary edema.

**Inhalation – Chronic:** There are no known chronic inhalation effects.

**Skin Contact – Acute:** Skin contact may cause irritation and burns with deep ulceration and permanent scarring. Burns may not be immediately painful; onset of pain may be delayed minutes to hours. Multiple skin burns may cause temporary loss of hair.

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**Skin Contact – Chronic:** Prolonged or repeated skin contact may cause dermatitis. May cause skin sensitization, an allergic reaction, which becomes evident upon re-exposure to this material.

**Eye Contact – Acute:** Eye contact may cause irritation and burns. Damage can range from severe irritation and mild scarring to blistering, disintegration, ulceration, severe scarring, and clouding. Conditions which affect vision such as glaucoma and cataracts are possible late developments. In severe cases, there is progressive ulceration and clouding of eye tissue which may lead to permanent blindness.

**Ingestion – Acute:** Ingestion may cause irritation and burns to the esophageal tissue, which may progress to stricture formation. Ingestion may result in severe pain and cramps; burning of the mouth, throat, and esophagus; vomiting; diarrhea; headache; weakness; dizziness; blue lips, fingernails, and skin; labored breathing; convulsions; collapse; and possible death. Ingestion causes swallowing to become painful and difficult almost immediately. In terms of total dose, caustic alkalis have killed adult humans who have ingested less than 10 grams. The probable oral lethal dose of Sodium Nitrate for a human is 0.5-5 g/kg – between 1 ounce and 1 pint (or 1 pound) for a 70 kg person (150 lbs.).

**Ingestion – Chronic:** Anemia, methemoglobinemia, or nephritis may occur with chronic overexposure. Small repeated doses may cause headache and mental impairment.

**Carcinogenicity/Mutagenicity:** There are no known carcinogenic or mutagenic effects.

**Reproductive Effects:** There are no known reproductive effects.

**Neurotoxicity:** There are no known neurotoxic effects.

**Other Effects:** Constant oral intake of nitrate containing foods or water could lead to the formation of carcinogenic N-Nitroso compounds. Sodium nitrate may cause effects on the blood, resulting in the formation of methaemoglobin. The effects may be delayed.

**Target Organs:** Target organs include the skin, eyes, digestive tract and respiratory system.

#### SECTION 12 – ECOLOGICAL INFORMATION

This product may be hazardous to the environment; special attention should be given to water organisms. Safely store product to prevent inadvertent release to the environment.

#### SECTION 13 – DISPOSAL CONSIDERATIONS

Material that cannot be used, or reprocessed for use, 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.

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### SECTION 14 – TRANSPORTATION INFORMATION

**DOT Shipping Name:** Caustic Alkali Liquids, NOS, (Sodium Nitrate)

**Hazard Class:** 8

**UN Number:** 1719

**Packing Group:** II

### SECTION 15 – REGULATORY INFORMATION

CERCLA SECTION 103 (40CFR302.4): RQ: Alkali 1000 lbs.

SARA SECTION 302 (40CFR355.30): No SARA SECTION 304 (40CFR355.40): No

SARA SECTION 313 (40CFR372.65): No

OSHA PROCESS SAFETY (29CFR1910.119): No

CALIFORNIA PROPOSITION 65: No

### 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.