SIEMENS

Siemens Industry, Inc.
Water Technologies Business Unit

Material Safety Data Sheet

SECTION 1 – CHEMICAL PRODUCT AND COMPANY INFORMATION

Product Name: Buffer Salt - pH 10.0
Part Number: none **Chemical Family**: Carbonate Buffer

Manufacturer's Name: Siemens Industry, Inc. - Water Technologies Business Unit
Address: 2650 Tallevast Road, Sarasota, FL 34243
Product/Technical Information Phone Number: (412)-772-0044
Medical/Handling Emergency Phone Number: CHEMTREC 1-800-424-9300
Transportation Emergency Phone Number: CHEMTREC 1-800-424-9300
Issue Date: August 18, 2000
Revision Date/Revision Number: April 2011/ Rev 2

SECTION 2 – COMPOSITION INFORMATION

Chemical Name	Percent by Weight	CAS#
Sodium Borate 10-hydrate	45-50	1303-96-4
Sodium Carbonate	45-50	497-19-8
Proprietary Ingredient	<3	proprietary

SECTION 3 – HAZARDS IDENTIFICATION

Appearance & Odor: Odorless, blue powder

Emergency Overview:

- Harmful if inhaled or swallowed.
- May cause severe skin, eye, respiratory and digestive tract irritation.

Fire & Explosion Hazards: Sodium carbonate may explode if applied to red-hot aluminum.

Primary Route(s) of Exposure: inhalation of dust, skin contact, eye contact

Inhalation – Acute Effects: Dust is irritating to the respiratory tract. Inhalation of dusts or vapors may cause irritation of mucous membranes with subsequent coughing and shortness of breath. Inhalation may also cause weakness, lethargy, headache, restlessness, fever, shock syndrome, cold clammy skin, cyanosis, thready pulse and low blood pressure, tremors and convulsion with central nervous system depression, occasionally kidney injury and rarely liver damage. Excessive contact is known to cause damage to the nasal septum.

Skin Contact – Acute Effects: Dust is irritating to the skin. Excessive contact may cause irritation with blistering and redness and "soda ulcers" on hands. Solutions may cause severe irritation or burns.

Eye Contact – Acute Effects: Eye contact may cause irritation. Long term exposure to dust may lead to conjunctivitis, conjunctival edema and corneal destruction.

Ingestion – Acute Effects: Ingestion may cause nausea, vomiting, fever, diarrhea and epigastric pain, shock syndrome, cold clammy skin, cyanosis, thready pulse and low blood pressure, occasionally kidney injury and rarely liver damage. Ingestion of large quantities may produce corrosion of gastrointestinal tract, circulatory collapse and death.

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 and give CPR ONLY if there is no breathing and no pulse. Obtain medical attention.

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

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

Ingestion First Aid: If victim is alert and not convulsing rinse mouth with water and give plenty of water to drink. 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.

Medical Conditions Aggravated: none known

Note to Physician: Treat patient 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 extinguishing media appropriate for surrounding fire.

Fire Fighting Procedures: Firefighters should wear proper protective equipment and self-contained (positive pressure if available) breathing apparatus with full facepiece.

Fire & Explosion Hazards: Sodium carbonate may explode if applied to red-hot aluminum.

Hazardous Products of Decomposition and/or Combustion: Carbon dioxide, carbon monoxide, phosphorous and boron oxides.

NFPA Ratings:

HEALTH- 2 FLAMMABILITY- 0 REACTIVITY- 0 OTHER- none

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Spill/Leak Procedures: Clean up spills in a manner that does not disperse dust into the air.

Cleanup: Pick up material with a clean shovel and place into clean, dry container, cover.

Regulatory Requirements: 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.

Disposal: DO NOT DUMP INTO ANY SEWERS, 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. Minimize dust generation and accumulation. Do not breathe dust, vapor or mist.

Storage: Keep container tightly closed. Store in a cool, dry, well-ventilated area away from incompatible substances.

General Comments: Containers of this product may be hazardous when empty since they retain product residues (solids, dust); observe all warnings and precautions listed for the product.

SECTION 8 –PERSONAL PROTECTION/ EXPOSURE CONTROL

Respiratory Protection: For conditions where exposure to dust or mist is apparent, a half-face dust/mist respirator may be worn.

Skin Protection: Wear appropriate protective gloves and clothing to prevent skin exposure.

Eye Protection: Safety glasses with side shields are recommended for any type of handling. Where eye contact or dusty conditions may be likely, dust tight goggles are recommended.

Ventilation Protection: Provide ventilation if necessary to minimize exposure. Dilute ventilation acceptable, but local mechanical exhaust ventilation preferred, if practical, at sources of air contamination such as open process equipment.

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 tap water, should 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:
Sodium Borate 10-hydrate:
ACGIH TLV-TWA: 5 mg/m3
NIOSH REL-TWA: 5 mg/m3
Sodium carbonate:
No exposure limits have been developed.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Appearance & Odor: Odorless, blue powder

Vapor Pressure: not applicable

Vapor Density (Air=1): not applicable

Boiling Point: not applicable

Melting Point: not determined

Specific Gravity: not applicable

Solubility in Water: Complete

Volatile Percentage: not applicable

pH: not determined

Flash Point/method: not applicable

Auto Ignition Temperature: not applicable

Upper/Lower Explosion Limits: not applicable

Other: not applicable

SECTION 10 – STABILITY AND REACTIVITY

Stability: Stable under normal storage and use conditions. Sodium carbonate is hygroscopic and readily absorbs moisture from air.

Incompatibilities: Strong acids and oxidizers, red hot aluminum, phosphorous pentoxide, fluorine, lithium, sulfuric acid, zinc, lithium, moisture, calcium hydroxide and 2,4,6-trinitrotoluene. Reacts violently with acids to form carbon dioxide.

Polymerization: Will not occur.

Decomposition: Carbon dioxide, carbon monoxide, phosphorous and boron oxides.

Conditions to Avoid: Acidic conditions, dust generation, excess heat and incompatible materials.

SECTION 11 – TOXICOLOGICAL INFORMATION

Inhalation – Acute: Dust is irritating to the respiratory tract. Inhalation of dusts or vapors may cause irritation of mucous membranes with subsequent coughing and shortness of breath. Inhalation may also cause weakness, lethargy, headache, restlessness, fever, shock syndrome, cold clammy skin, cyanosis, thready pulse and low blood pressure, tremors and convulsion with central nervous system depression, occasionally kidney injury and rarely liver damage. Excessive contact is known to cause damage to the nasal septum. Death may occur due to vascular collapse in the early stages or later due to central nervous system depression. The Sodium carbonate inhalation LC50 (rat) is 2300 mg/m3/2H.

Inhalation – Chronic: Long term exposure to Sodium Borate 10-hydrate dust may lead to inflammations of the mucous membranes of the airways (bronchitis, laryngitis).

Skin Contact – Acute: Dust is irritating to the skin. Excessive contact may cause irritation with blistering and redness and "soda ulcers" on hands. Solutions may cause severe irritation or burns.

Skin Contact – Chronic: Chronic poisoning from skin absorption of Sodium Borate 10-hydrate causes dermatitis, anorexia, weight loss, vomiting, mild diarrhea, skin rash, alopecia, convulsions and anemia. Prolonged or repeated skin contact with Sodium carbonate contact may cause sensitization.

Eye Contact – Acute: Eye contact may cause irritation. Long term exposure to dust may lead to conjunctivitis, conjunctival edema and corneal destruction.

Ingestion – Acute: Ingestion may cause nausea, vomiting, fever, diarrhea and epigastric pain, shock syndrome, cold clammy skin, cyanosis, thready pulse and low blood pressure, occasionally kidney injury and rarely liver damage. Ingestion of large quantities may produce corrosion of gastrointestinal tract, circulatory collapse and death. The adult fatal dose of Sodium Borate 10-hydrate is 15-25g. Acute gastroenteric or percutaneous absorption of over 1 gram of Sodium Borate 10-hydrate can result in severe gastrointestinal irritation, kidney injury and even death from central nervous system depression or vascular collapse, especially in infants. The Sodium Borate 10-hydrate oral LD50 (mouse) is 2 gm/kg. The Sodium Borate 10-hydrate oral LD50 (rat) is 2660 mg/kg. The Sodium carbonate oral LD50 (rat) is 4090 mg/kg.

Ingestion – Chronic: Chronic poisoning from ingestion of Sodium Borate 10-hydrate causes mild gastroenteritis, anorexia, weight loss, vomiting, mild diarrhea, skin rash, alopecia, convulsions and anemia.

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

Reproductive Effects: There are no known reproductive effects.

Neurotoxicity: This product may cause central nervous system depression.

Other Effects: Sodium carbonate dust causes coarseness and bleaching of hair.

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

SECTION 12 – ECOLOGICAL INFORMATION

There are no known ecological effects.

SECTION 13 – DISPOSAL CONSIDERATIONS

Spill/Leak Procedures: Clean up spills in a manner that does not disperse dust into the air.

Cleanup: Pick up material with a clean shovel and place into clean, dry container, cover. 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.

Regulatory Requirements: 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. NOTE: State and local regulations may be more stringent than federal regulations.

Disposal: DO NOT DUMP INTO ANY SEWERS, 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. NOTE: State and local regulations may be more stringent than federal regulations.

SECTION 14 – TRANSPORTATION INFORMATION

DOT Shipping Description: Not regulated by D.O.T.

SECTION 15 – REGULATORY INFORMATION

Applies to both Sodium Borate 10-hydrate and Sodium carbonate:
CERCLA SECTION 103 (40CFR302.4): no RQ: none
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.

Revision Indicator: April 2011, Revised Section 1 (Updated manufacturer's name)