

Fiches signalétiques



Material Safety Data Sheet

Issue Date: 21-FEB-2012
Supersedes: 14-OCT-2011

GENGARD GN7112

1 Identification

Identification of substance or preparation
GENGARD GN7112

Product Application Area
Corrosion inhibitor

Company/Undertaking Identification
GE Water & Process Technologies Canada
3239 Dundas Street West
Oakville, Ontario, L6M 4B2
T 905-465-3030

Emergency Telephone
(800) 877-1940

Prepared by Product Stewardship Group: T 215-355-3300 Prepared on: 21-FEB-2012

2 Hazard(s) identification

EMERGENCY OVERVIEW

May cause moderate irritation to the skin. Severe irritant to the eyes. Mists/aerosols may cause irritation to upper respiratory tract.

Odor: Slight Ammonia; Appearance: Amber To Brown, Liquid

Fire fighters should wear positive pressure self-contained breathing apparatus(full face-piece type). Proper fire-extinguishing media: dry chemical, carbon dioxide, foam or water

POTENTIAL HEALTH EFFECTS

ACUTE SKIN EFFECTS:

Primary route of exposure; May cause moderate irritation to the skin.

ACUTE EYE EFFECTS:

Severe irritant to the eyes.

ACUTE RESPIRATORY EFFECTS:

Mists/aerosols may cause irritation to upper respiratory tract.

INGESTION EFFECTS:

May cause severe gastrointestinal irritation.

TARGET ORGANS:

No evidence of potential chronic effects.

MEDICAL CONDITIONS AGGRAVATED:

Not known.

SYMPTOMS OF EXPOSURE:

May cause redness or itching of skin, irritation, and/or tearing of eyes (direct contact).

3 Composition / information on ingredients

Information for specific product ingredients as required by the WHMIS Regulations is listed. Refer to additional sections of this MSDS for our assessment of the potential hazards of this formulation.

HAZARDOUS INGREDIENTS:

Cas#	Chemical Name	Range (w/w%)
7778-53-2	PHOSPHORIC ACID, TRIPOTASSIUM SALT Severe irritant (eyes); irritant (skin) ORAL LD50-RAT: 4500 MG/KG DERMAL LD50-RABBIT: >4640 MG/KG INHL. LC50: NO DATA.	15-40
7320-34-5	TETRAPOTASSIUM PYROPHOSPHATE Corrosive to aluminum; severe eye irritant; skin irritant ORAL LD50-RAT: >5000 mg/kg DERMAL LD50-RABBIT: >4640 MG/KG INHL. LC50: NO DATA.	7-13
1310-58-3	POTASSIUM HYDROXIDE Corrosive; toxic (by ingestion) ORAL LD50-RAT: 273 MG/KG DERMAL LD50: NO DATA. INHL. LC50: NO DATA.	1-5
202420-04-0	CHLOROTOLYLTRIAZOLE SODIUM SALT Potential irritant ORAL LD50: NO DATA. DERMAL LD50: NO DATA. INHL. LC50: NO DATA.	1-5

4 First-aid measures

SKIN CONTACT:

Wash thoroughly with soap and water. Remove contaminated clothing. Thoroughly wash clothing before reuse. Get medical attention if irritation develops or persists.

EYE CONTACT:

Remove contact lenses. Hold eyelids apart. Immediately flush eyes with plenty of low-pressure water for at least 15 minutes. Get

immediate medical attention.

INHALATION:

If nasal, throat or lung irritation develops - remove to fresh air and get medical attention.

INGESTION:

Do not feed anything by mouth to an unconscious or convulsive victim. Do not induce vomiting. Immediately contact physician. Dilute contents of stomach using 2-8 fluid ounces (60-240 mL) of milk or water.

NOTES TO PHYSICIANS:

No special instructions

5 Fire-fighting measures

FIRE FIGHTING INSTRUCTIONS:

Fire fighters should wear positive pressure self-contained breathing apparatus (full face-piece type).

EXTINGUISHING MEDIA:

dry chemical, carbon dioxide, foam or water

HAZARDOUS DECOMPOSITION PRODUCTS:

FLASH POINT:

> 213F > 101C P-M(CC)

6 Accidental release measures

PROTECTION AND SPILL CONTAINMENT:

Ventilate area. Use specified protective equipment. Contain and absorb on absorbent material. Place in waste disposal container. Flush area with water. Wet area may be slippery. Spread sand/grit.

DISPOSAL INSTRUCTIONS:

The waste characteristics of the absorbed material, or any contaminated soil, should be determined in accordance with provincial regulations. Water contaminated with this product may be sent to a sanitary sewer treatment facility, in accordance with any local agreement or discharged under provincial regulations. Incinerate or land dispose in an approved landfill.

7 Handling and storage

HANDLING:

Normal chemical handling.

STORAGE:

Keep containers closed when not in use. Protect from freezing. Do not store at elevated temperatures.

8 Exposure controls / personal protection

EXPOSURE LIMITS

Consult local authorities for acceptable provincial values.

CHEMICAL NAME

PHOSPHORIC ACID, TRIPOTASSIUM SALT

PEL (OSHA): LIMITS HAVE NOT BEEN ESTABLISHED BY US OSHA.

TLV (ACGIH): LIMITS HAVE NOT BEEN ESTABLISHED BY ACGIH.

TETRAPOTASSIUM PYROPHOSPHATE

PEL (OSHA): LIMITS HAVE NOT BEEN ESTABLISHED BY US OSHA.

TLV (ACGIH): LIMITS HAVE NOT BEEN ESTABLISHED BY ACGIH.

POTASSIUM HYDROXIDE

PEL (OSHA): LIMITS HAVE NOT BEEN ESTABLISHED BY US OSHA.

TLV (ACGIH): TWA (Ceiling) = 2 MG/M3

CHLOROTOLYLTRIAZOLE SODIUM SALT

PEL (OSHA): LIMITS HAVE NOT BEEN ESTABLISHED BY US OSHA.

TLV (ACGIH): LIMITS HAVE NOT BEEN ESTABLISHED BY ACGIH.

ENGINEERING CONTROLS:

adequate ventilation

RESPIRATORY PROTECTION:

If air-purifying respirator use is appropriate, use any of the following particulate respirators: N95, N99, N100, R95, R99, R100, P95, P99 or P100.

SKIN PROTECTION:

rubber, butyl, viton or neoprene gloves -- Wash off after each use. Replace as necessary.

EYE PROTECTION:

splash proof chemical goggles

9 Physical and chemical properties

Spec. Grav. (70F, 21C)	1.397	Vapor Pressure (mmHG)	~ 18.0
Freeze Point (F)	-11	Vapor Density (air=1)	< 1.00
Freeze Point (C)	-24		
Viscosity (cps 70F, 21C)	88	% Solubility (water)	100.0
Odor		Slight Ammonia	
Appearance		Amber To Brown	
Physical State		Liquid	
Flash Point	P-M(CC)	> 213F > 101C	
pH As Is (approx.)		> 13.0	
Evaporation Rate (Ether=1)		< 1.00	
Percent VOC:		0.0	

NA = not applicable ND = not determined

10 Stability and reactivity

CHEMICAL STABILITY:

Stable under normal storage conditions.

POSSIBILITY OF HAZARDOUS REACTIONS:

INCOMPATIBILITIES:

May react with acids or strong oxidizers.

DECOMPOSITION PRODUCTS:

11 Toxicological information

Oral LD50 RAT: >5000 mg/kg
NOTE - Calculated value according to GHS additivity formula
Dermal LD50 RABBIT: >5000 mg/kg
NOTE - Calculated value according to GHS additivity formula

12 Ecological information

AQUATIC TOXICOLOGY

Daphnia magna 48 Hour Static Renewal Bioassay (pH adjusted)
LC50= 911; No Effect Level= 500 mg/L
Fathead Minnow 96 Hour Static Renewal Bioassay (pH adjusted)
LC50= 201; No Effect Level= 125 mg/L
Rainbow Trout 96 Hour Static Renewal Bioassay (pH adjusted)
LC50= 176.8; No Effect Level= 125 mg/L

BIODEGRADATION

BOD-28 (mg/g): 16
BOD-5 (mg/g): 6
COD (mg/g): 168
TOC (mg/g): 50

13 Disposal considerations

Incinerate or bury in approved landfill. Please be advised that there may be additional local or provincial requirements relating to the disposal of waste. Consult provincial and local regulations regarding the proper disposal of this material.

14 Transport information

Transportation of Dangerous Goods:

CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S. (TRIPOTASSIUM SALT OF PHOSPHORIC ACID)
8, UN 3266, PG III
DOT EMERGENCY RESPONSE GUIDE #: 154

15 Regulatory information

This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

CEPA:

All components of this product comply with substance notification requirements under CEPA.

WHMIS CLASSIFICATION:

D2B E

16 Other information

HMIS vII		CODE TRANSLATION
Health	2	Moderate Hazard
Fire	1	Slight Hazard
Reactivity	0	Minimal Hazard

Special ALK pH above 12.0
(1) Protective Equipment B Goggles,Gloves

(1) refer to section 8 of MSDS for additional protective equipment recommendations.

CHANGE LOG

	EFFECTIVE DATE -----	REVISIONS TO SECTION: -----	SUPERCEDES -----
MSDS status:	26-SEP-2008		** NEW **
	02-MAR-2009	12	26-SEP-2008
	01-MAY-2009	12	02-MAR-2009
	01-FEB-2011	8	01-MAY-2009
	14-OCT-2011	12	01-FEB-2011
	21-FEB-2012	3	14-OCT-2011

MATERIAL SAFETY DATA SHEET

SPECTRUS OX1205C

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Brenntag Canada Inc.
43 Jutland Rd.
Toronto, ON
M8Z 2G6
(416) 259-8231

WHMIS#: 00069906
Index: HCl9046/07A
Effective Date: 2007 February 09
Date of Revision: 2007 February 09

Website: <http://www.brenntag.ca>

EMERGENCY TELEPHONE NUMBERS (FOR EMERGENCIES INVOLVING CHEMICAL SPILLS OR RELEASE)

Toronto, ON (416) 226-6117
Edmonton, AB (780) 424-1754

Montreal, QC (514) 861-1211
Calgary, AB (403) 263-8660

Winnipeg, MB (204) 943-8827
Vancouver, BC (604) 685-5036

PRODUCT IDENTIFICATION

Product Name: Spectrus OX1205C.
Chemical Name: Hypochlorous acid, sodium salt.
Synonyms: Not available.
Chemical Family: Hypochlorous acid salt.
Molecular Formula: NaOCl.
Product Use: Chemical intermediate. Laboratory reagent. Oxidizing agent. Bleaching agent.

WHMIS Classification / Symbol:

D-2B: Toxic (skin sensitizer)
E: Corrosive



READ THE ENTIRE MSDS FOR THE COMPLETE HAZARD EVALUATION OF THIS PRODUCT.

2. COMPOSITION, INFORMATION ON INGREDIENTS (Not Intended As Specifications)

<i>Ingredient</i>	<i>CAS#</i>	<i>ACGIH TLV</i>	<i>% Concentration</i>
Sodium Hypochlorite	7681-52-9	---	1 - 15
Decomposition Product: Chlorine	7782-50-5	0.5 ppm	*A4

A4 = Not classifiable as a human carcinogen. (ACGIH-A4).

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: Corrosive! May be fatal if swallowed. Causes severe skin and eye burns. Mists or sprays are extremely irritating to eyes and respiratory tract. May cause corneal damage and conjunctivitis. May cause skin sensitization or other allergic responses. See "Other Health Effects" Section. Can decompose at high temperatures forming toxic gases. Contents may develop pressure on prolonged exposure to heat.

POTENTIAL HEALTH EFFECTS

Inhalation:	Corrosive! Product may cause severe irritation of the nose, throat and respiratory tract. Repeated and/or prolonged exposures may cause productive cough, running nose, bronchopneumonia, pulmonary oedema (fluid build-up in lungs), and reduction of pulmonary function. If mixed with acids or warmed to temperatures greater than 40 °C Sodium Hypochlorite solutions release Chlorine gas. This gas can cause severe irritation of the nose and throat. Exposure to high levels of Chlorine gas may result in severe lung damage. (4) See "Other Health Effects" Section.
Skin Contact:	Corrosive! Burns can occur if not promptly removed. Concentrated solutions may cause pain and deep and severe burns to the skin. Prolonged and repeated exposure to dilute solutions often causes irritation, redness, pain and drying and cracking of the skin. Prolonged and repeated contact may lead to dermatitis. Toxic effects may be delayed. Avoid handling when the skin is moist, wet or abraded.
Skin Absorption:	Skin absorption is a secondary concern to the continual destruction of tissue while the product is in contact with the skin.
Eye Contact:	Extremely corrosive! This product causes corneal scarring and clouding. Glaucoma, cataracts and permanent blindness may occur.
Ingestion:	Corrosive! This product causes severe burning and pain in the mouth, throat and abdomen. Vomiting, diarrhea and perforation of the esophagus and stomach lining may occur.
Other Health Effects:	Corrosive effects on the skin and eyes may be delayed, and damage may occur without the sensation or onset of pain. Strict adherence to first aid measures following any exposure is essential. May cause skin sensitization or other allergic responses. See Section 11, "Other Studies Relevant to Material". Ingestion of very high levels may cause shock, coma or death. May cause pulmonary oedema. Pulmonary oedema is the build-up of fluid in the lungs that might be fatal. Symptoms of pulmonary oedema, such as shortness of breath, may not appear until several hours after exposure and are aggravated by physical exertion. (4)

4. FIRST AID MEASURES

FIRST AID PROCEDURES

Inhalation:	Move victim to fresh air. Give artificial respiration ONLY if breathing has stopped. Give cardiopulmonary resuscitation (CPR) if there is no breathing AND no pulse. Oxygen administration may be beneficial in this situation but should only be administered by personnel trained in its use. Obtain medical attention IMMEDIATELY.
Skin Contact:	Prompt removal of the material from the skin is essential. Remove all contaminated clothing and immediately wash the exposed areas with copious amounts of soap and water for a minimum of 30 minutes or up to 60 minutes for critical body areas. Immerse the exposed part immediately in ice water to relieve pain and to prevent swelling and blistering. Place cold packs, ice or wet cloths on the burned area if immersion is not possible. Cover the exposed part with a clean, preferably sterile, lint-free dressing. Obtain medical attention IMMEDIATELY and monitor breathing and treat for shock for severe exposure. See "Note to Physicians" below.
Eye Contact:	Immediately flush eyes with running water for a minimum of 30 minutes, preferably up to 60 minutes. Hold eyelids open during flushing. If irritation persists, repeat flushing. Do not transport victim until the recommended flushing period is completed unless flushing can be continued during transport.
Ingestion:	Do not attempt to give anything by mouth to an unconscious person. IMMEDIATELY contact local Poison Control Centre. If victim is alert and not convulsing, rinse mouth out and give 1 to 2 glasses of milk. Water may be used if milk is not available but it is not as effective. If spontaneous vomiting occurs, have victim lean forward with head down to avoid breathing in of vomitus, rinse mouth and administer more milk or water. IMMEDIATELY transport victim to an emergency facility.
Note to Physicians:	Due to the severely irritating or corrosive nature of the material, swallowing may lead to ulceration and inflammation of the upper alimentary tract with hemorrhage and fluid loss. Also, perforation of the esophagus or stomach may occur, leading to mediastinitis or peritonitis and the resultant complications. (3) Mucosal injury following ingestion of this corrosive material may contraindicate the induction of vomiting in the treatment of possible intoxication. Similarly, if gastric lavage is performed, intubation should be done with great care. If oral burns are present or a corrosive ingestion is suspected by the patient's history, perform esophagoscopy as soon as possible. Scope should not be passed beyond the first burn because of the risk of perforation. This product contains materials that may cause severe pneumonitis if aspirated. If ingestion has occurred less than 2 hours earlier, carry out careful gastric lavage; use endotracheal cuff if available, to prevent aspiration. Observe patient for respiratory difficulty from aspiration pneumonitis. Give artificial resuscitation and appropriate chemotherapy if respiration is depressed. Medical conditions that may be aggravated by exposure to this product include diseases of the skin, eyes or respiratory tract.

5. FIRE-FIGHTING MEASURES

<i>Flashpoint (°C)</i>	<i>Autolgnition Temperature (°C)</i>	<i>Flammability Limits in Air (%)</i>	
		<i>LEL</i>	<i>UEL</i>
Non-combustible (does not burn).	Not applicable.	Not applicable.	Not applicable.
Flammability Class (WHMIS):	Not regulated.		
Hazardous Combustion Products:	Thermal decomposition products are toxic and may include oxygen, chlorine gas and oxides of chlorine and sodium. Sodium Hypochlorite solutions decompose slowly. Decomposition is accelerated by heat (temperatures above 40 °C) and light. (4)		
Unusual Fire or Explosion Hazards:	Solutions non-flammable by themselves, but are strong oxidizers which can cause ignition of combustible or oxidizable materials. May decompose violently on contact with metals, or their salts, dusts or other contaminants. Sodium Hypochlorite is a strong oxidant, but solutions do not support combustion. If mixed with acids or warmed to temperatures greater than 40 degrees Celsius, Sodium Hypochlorite solutions release Chlorine gas. Hypochlorites may react with primary amines to form nitrogen trichloride which explodes spontaneously in air. Damp material may decompose exothermically and may cause combustion of organic material. (4) Closed containers exposed to heat may explode.		
Sensitivity to Mechanical Impact:	Not expected to be sensitive to mechanical impact.		
Rate of Burning:	Not available.		
Explosive Power:	Not available.		
Sensitivity to Static Discharge:	Not expected to be sensitive to static discharge.		
EXTINGUISHING MEDIA			
Fire Extinguishing Media:	Use media appropriate for surrounding fire and/or materials.		
FIRE FIGHTING INSTRUCTIONS			
Instructions to the Fire Fighters:	Fire-exposed containers should be kept cool by spraying with water to reduce pressure. This should be done from a safe distance since containers may rupture. Spilled material may cause floors and contact surfaces to become slippery.		
Fire Fighting Protective Equipment:	Use self-contained breathing apparatus and protective clothing. Protective clothing for skin and eye protection should be worn to protect against highly alkaline materials.		

6. ACCIDENTAL RELEASE MEASURES

Information in this section is for responding to spills, leaks or releases in order to prevent or minimize the adverse effects on persons, property and the environment. There may be specific reporting requirements associated with spills, leaks or releases, which change from region to region.

Containment and Clean-Up Procedures:	In all cases of leak or spill contact vendor at Emergency Number shown on the front page of this MSDS. See Section 13, "Deactivating Chemicals". Wear respirator, protective clothing and gloves. Spilled material may cause floors and contact surfaces to become slippery. Do not use combustible materials such as sawdust as an absorbent. For small spill, absorb with an inert dry material. For large spill, absorb with dry earth, sand or other non-combustible material. Notify applicable government authority if release is reportable or could adversely affect the environment. Replace damaged containers immediately to avoid loss of material and contamination of surrounding atmosphere.
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7. HANDLING AND STORAGE

HANDLING

Handling Practices:	Use normal "good" industrial hygiene and housekeeping practices. Containers exposed to heat may be under internal pressure. These should be cooled and carefully vented before opening. A face shield and apron should be worn.
Ventilation Requirements:	Do not use in poorly ventilated or confined areas without proper respiratory protection. See Section 8, "Engineering Controls".

Other Precautions: Use only with adequate ventilation and avoid breathing aerosols (vapours or mists). Avoid contact with eyes, skin or clothing. Wash thoroughly with soap and water after handling. Wash contaminated clothing thoroughly before re-use.

Corrosive residue is most likely to be deposited at process vents or storage tanks, especially during filling operations. The use of compressed air to force corrosive materials from delivery trucks is of special concern. Scrubbing the exhaust of these vents is highly recommended. Jurisdictional regulations should be consulted to determine required practices.

STORAGE

Storage Temperature (°C): Store below 29 °C. Do not freeze.

Ventilation Requirements: Ventilation should be corrosion proof. Strong solutions (greater than 10% available Chlorine) may slowly give off oxygen during storage, especially when warm (above 18 degrees Celsius). Vent caps may be required to prevent a build-up of pressure that could cause containers to burst.

Storage Requirements: Store in a clean, cool well ventilated area, away from organic chemicals, strong bases, strong acids, metal powders, carbides, sulfides, and any readily oxidizable material. Protect from direct sunlight. Protect against physical damage. Storage area should be equipped with corrosion-resistant floors, sumps and should have controlled drainage to a recovery tank.

Special Materials to be Used for Packaging or Containers: Materials of construction for storing the product include: polyethylene, PVC, Teflon, ceramic or Rubber lined steel. Equipment for storage, handling or transport should NOT be made from the following material, or, where applicable, its alloys: aluminum, stainless steel, cast iron, brass, bronze, nylon or phenolic resin. Some metals accelerate the decomposition of Sodium Hypochlorite. Confirm suitability of any material before using.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Recommendations listed in this section indicate the type of equipment, which will provide protection against overexposure to this product. Conditions of use, adequacy of engineering or other control measures, and actual exposures will dictate the need for specific protective devices at your workplace.

ENGINEERING CONTROLS

Engineering Controls: Local exhaust ventilation required. Ventilation should be corrosion proof. Make up air should be supplied to balance air that is removed by local or general exhaust ventilation. Ventilate low lying areas such as sumps or pits where dense vapours may collect.

For personnel entry into confined spaces (i.e. bulk storage tanks) a proper procedure must be followed. It must include consideration of, among other things, ventilation, testing of tank atmosphere, provision and maintenance of SCBA, and emergency rescue. Use the "buddy" system. The second person should be in view and trained and equipped to execute a rescue. (4)

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Eye Protection: Safety glasses with side shields are recommended to prevent eye contact. Use full face-shield and chemical safety goggles when there is potential for contact. Contact lenses should not be worn when working with this material.

Skin Protection: Gloves and protective clothing made from butyl rubber, natural rubber, nitrile rubber, polyethylene, viton or PVC should be impervious under conditions of use. Prior to use, user should confirm impermeability. Discard contaminated gloves.

Respiratory Protection: No specific guidelines available. A NIOSH/MSHA-approved full facepiece air-purifying respirator equipped with chlorine cartridges for concentrations up to 5 ppm for Chlorine vapours. An air-supplied respirator if concentrations are higher or unknown.

Other Personal Protective Equipment: Wear an impermeable apron and boots. Locate safety shower and eyewash station close to chemical handling area. Take all precautions to avoid personal contact.

EXPOSURE GUIDELINES

SUBSTANCE	ACGIH TLV (STEL)	OSHA PEL (TWA)	OSHA PEL (STEL)	NIOSH REL (TWA)	NIOSH REL (STEL)
Decomposition Product: Chlorine	1 ppm	---	1 ppm (Ceiling)	---	0.5 ppm (Ceiling)

9. PHYSICAL AND CHEMICAL PROPERTIES (Not intended as Specifications)

Physical State: Liquid.

Appearance:	Green to yellow, watery liquid with a chlorine (bleach) odour.
Odour:	Characteristic odour.
Odour Threshold (ppm):	Not available.
Boiling Range (°C):	40 (decompose).
Melting/Freezing Point (°C):	-25 (12%).
Vapour Pressure (mm Hg at 20° C):	12.
Vapour Density (Air = 1.0):	Not available.
Relative Density (g/cc):	1.1 - 1.2.
Bulk Density:	1 100 - 1 200 kg/m ³ .
Viscosity:	Not available.
Evaporation Rate (Butyl Acetate = 1.0):	Not available.
Solubility:	Miscible in water.
% Volatile by Volume:	Not available.
pH:	11- 13.
Coefficient of Water/Oil Distribution:	Not available.
Volatile Organic Compounds (VOC):	Not available.
Flashpoint (°C):	Non-combustible (does not burn).

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY

Under Normal Conditions:	Unstable. Sodium Hypochlorite solutions decompose slowly. Decomposition is accelerated by heat (temperatures above 40 °C) and light. Some metals accelerate the decomposition of Sodium Hypochlorite.
Under Fire Conditions:	Not flammable.
Hazardous Polymerization:	Will not occur.
Conditions to Avoid:	High temperatures, sparks, open flames and all other sources of ignition. Temperatures above 40 °C (104 °F). Avoid direct sunlight. The heat of sunlight can contribute to instability. Avoid a decrease in pH.
Materials to Avoid:	Strong oxidizers. Strong acids. (hydrochloric acid) Contact with acids will liberate. corrosive chlorine gas. Reducing agents. Strong bases. Combustibles. Organic materials. Alcohols. Amines. Ethylene Glycol. Lewis or mineral acids. Methanol. Some metals accelerate the decomposition of Sodium Hypochlorite. Nickel. Copper. Cobalt. tin. Iron and its alloys. Manganese. Nitrogen containing compounds. Ammonium hydroxide and ammonium salts. Contact with nitrogen compounds (ammonia, urea, primary amines and isocyanurates) can form toxic, reactive chloramines. Contact with Ammonium salts can form explosive nitrogen trichloride if acid is present. (4) Incompatible materials for storage include aluminum, cast bronze, cast iron, stainless steel, brass, nylon and phenolic resin. (3)
Decomposition or Combustion Products:	Thermal decomposition products are toxic and may include oxygen, chlorine gas and oxides of chlorine and sodium. Sodium Hypochlorite solutions decompose slowly. Decomposition is accelerated by heat (temperatures above 40 °C) and light. (4)

11. TOXICOLOGICAL INFORMATION

TOXICOLOGICAL DATA:

SUBSTANCE	LD50 (Oral, Rat)	LD50 (Dermal, Rabbit)	LC50 (Inhalation, Rat, 4h)
Sodium Hypochlorite	8910 mg/kg (3)	---	> 2625 mg/m ³ (3)
Decomposition Product: Chlorine	---	---	147 ppm (1)
Carcinogenicity Data:	The ingredient(s) of this product is (are) not classed as carcinogenic by ACGIH, IARC, OSHA or NTP.		
Reproductive Data:	Reproductivity tests in animals have been negative.		
Mutagenicity Data:	Mutagenicity tests in animals have been negative.		

Teratogenicity Data:	No adverse teratogenic effects are anticipated.
Respiratory / Skin Sensitization Data:	Sodium Hypochlorite may cause skin sensitization or other allergic responses. Sensitization is the process whereby a biological change occurs in the individual because of previous exposure to a substance and, as a result, the individual reacts more strongly when subsequently exposed to the substance. Once sensitized, an individual can react to extremely low airborne levels, even below the TLV, or to skin contact.
Synergistic Materials:	None known.
Other Studies Relevant to Material:	Rats were fed drinking water containing 0, 0.025, 0.05, 0.1, 0.2 and 0.4% Sodium Hypochlorite for 13 weeks. Slight damage to the liver was observed in the 0.2 and 0.4% groups. Some organ weights (lungs, liver and spleen in males; salivary glands, lungs, heart and brain in females) were significantly lower in the high-dose group. (4) High doses of Sodium Hypochlorite in drinking water caused a small but significant increase in abnormal sperm in mice. (4) Sodium Hypochlorite caused mutations in several short-term studies using bacteria and cultured mammalian cells. The significance of these tests is unclear. It was not mutagenic in tests (chromosome aberration and micronucleus) on live animals. (4)

12. ECOLOGICAL INFORMATION

Ecotoxicity:	Sodium Hypochlorite: 96-hour LC50 (Fathead minnows) = 5.9 mg/l (3) 48-hour LC50 (Rainbow Trout) = 0.07 mg/L (3)
Environmental Fate:	Not available. Do not contaminate domestic or irrigation water supplies, lakes, streams, ponds, or rivers.

13. DISPOSAL CONSIDERATIONS

Deactivating Chemicals:	Apply cautiously a dilute solution of a reducing agent such as sodium sulphite or sodium bisulphite to the contained spill. Confirm pH using pH paper. Neutralization is expected to be exothermic. Effervescence may result.
Waste Disposal Methods:	This information applies to the material as manufactured. Reevaluation of the product may be required by the user at the time of disposal since the product uses, transformations, mixtures and processes may influence waste classification. Dispose of waste material at an approved (hazardous) waste treatment/disposal facility in accordance with applicable local, provincial and federal regulations. Do not dispose of waste with normal garbage, or to sewer systems.
Safe Handling of Residues:	See Section 13, "Deactivating Chemicals".
Disposal of Packaging:	Empty containers retain product residue (liquid and/or vapour) and can be dangerous. Empty drums should be completely drained, properly bunged and promptly returned to a drum reconditioner. Treat package in the same manner as the product.

14. TRANSPORTATION INFORMATION

CANADIAN TDG ACT SHIPPING DESCRIPTION:

HYPOCHLORITE SOLUTION, Class 8, UN1791, PG II.

Label(s): Corrosives. Placard: Corrosives.

ERAP Index: -----, Exemptions:

This product is NOT REGULATED BY TRANSPORT at a concentration below 7%.

US DOT CLASSIFICATION (49CFR 172.101, 172.102):

HYPOCHLORITE SOLUTION, Class 8, UN1791, PG II.

Label(s): Corrosive. Placard: Corrosive.

CERCLA-RQ: 100 lb/45.4 kg. Exemptions:

This product is NOT REGULATED BY TRANSPORT at a concentration below 7%.

15. REGULATORY INFORMATION

CANADA

CEPA - NSNR: All constituents of this product are included on the DSL.

CEPA - NPRI: Not included.

Controlled Products Regulations Classification (WHMIS):

D-2B: Toxic (skin sensitizer)

E: Corrosive

USA

Environmental Protection Act: All constituents of this product are included on the TSCA inventory.

OSHA HCS (29CFR 1910.1200): Skin Sensitizer. Corrosive.

NFPA: Health, Fire, Reactivity (Not available.)

HMIS: 3 Health, 1 Fire, 0 Reactivity (3)

INTERNATIONAL

This product or its components are on the European inventory of existing commercial chemicals (EINECS).

16. OTHER INFORMATION

REFERENCES

1. RTECS-Registry of Toxic Effects of Chemical Substances, Canadian Centre for Occupational Health and Safety RTECS database.
2. Clayton, G.D. and Clayton, F.E., Eds., Patty's Industrial Hygiene and Toxicology, 3rd ed., Vol. IIA,B,C, John Wiley and Sons, New York, 1981.
3. Supplier's Material Safety Data Sheet(s).
4. CHEMINFO, through "CCINFOdisc", Canadian Centre for Occupational Health and Safety, Hamilton, Ontario, Canada.
5. Guide to Occupational Exposure Values, 2007, American Conference of Governmental Industrial Hygienists, Cincinnati, 2007.
6. Regulatory Affairs Group, Brenntag Canada Inc.
7. The British Columbia Drug and Poison Information Centre, Poison Managements Manual, Canadian Pharmaceutical Association, Ottawa, 1981.
8. NFPA 325M Fire Hazard Properties of Flammable Liquids, Gases, and Volatile Solids, 1994 Edition, Quincy, MA, 1994.

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GE Betz

GE Betz, Inc.
4636 Somerton Road
Trevose, PA 19053
Business telephone: (215) 355-3300

Material Safety Data Sheet

Issue Date: 07-FEB-2006

EMERGENCY TELEPHONE (Health/Accident): (800) 877-1940

1 PRODUCT IDENTIFICATION

PRODUCT NAME:

SPECTRUS BD1500

PRODUCT APPLICATION AREA:

WATER-BASED DEPOSIT CONTROL AGENT.

2 COMPOSITION / INFORMATION ON INGREDIENTS

Information for specific product ingredients as required by the U.S. OSHA HAZARD COMMUNICATION STANDARD is listed. Refer to additional sections of this MSDS for our assessment of the potential hazards of this formulation.

HAZARDOUS INGREDIENTS:

This product is not hazardous as defined by OSHA regulations.

No component is considered to be a carcinogen by the National Toxicology Program, the International Agency for Research on Cancer, or the Occupational Safety and Health Administration at OSHA thresholds for carcinogens.

3 HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

CAUTION

May cause slight irritation to the skin. May cause moderate irritation to the eyes. Mists/aerosols may cause irritation to upper respiratory tract.

DOT hazard is not applicable
Emergency Response Guide is not applicable
Odor: Slight; Appearance: Colorless, Liquid

Fire fighters should wear positive pressure self-contained breathing apparatus (full face-piece type). Proper fire-extinguishing media: dry chemical, carbon dioxide, foam or water

POTENTIAL HEALTH EFFECTS

ACUTE SKIN EFFECTS:

Primary route of exposure; May cause slight irritation to the skin.

ACUTE EYE EFFECTS:

May cause moderate irritation to the eyes.

ACUTE RESPIRATORY EFFECTS:

Mists/aerosols may cause irritation to upper respiratory tract.

INGESTION EFFECTS:

May cause slight gastrointestinal irritation.

TARGET ORGANS:

No evidence of potential chronic effects.

MEDICAL CONDITIONS AGGRAVATED:

Not known.

SYMPTOMS OF EXPOSURE:

May cause redness or itching of skin.

4 FIRST AID MEASURES

SKIN CONTACT:

Wash thoroughly with soap and water. Remove contaminated clothing. Get medical attention if irritation develops or persists.

EYE CONTACT:

Remove contact lenses. Hold eyelids apart. Immediately flush eyes with plenty of low-pressure water for at least 15 minutes. Get immediate medical attention.

INHALATION:

If nasal, throat or lung irritation develops - remove to fresh air and get medical attention.

INGESTION:

Do not feed anything by mouth to an unconscious or convulsive victim. Do not induce vomiting. Immediately contact physician. Dilute contents of stomach using 3-4 glasses milk or water.

NOTES TO PHYSICIANS:

No special instructions

5 FIRE FIGHTING MEASURES

FIRE FIGHTING INSTRUCTIONS:

Fire fighters should wear positive pressure self-contained breathing apparatus (full face-piece type).

EXTINGUISHING MEDIA:

dry chemical, carbon dioxide, foam or water

HAZARDOUS DECOMPOSITION PRODUCTS:

Thermal decomposition (destructive fires) yields elemental oxides.

FLASH POINT:

> 200F > 93C SETA(CC)

6 ACCIDENTAL RELEASE MEASURES

PROTECTION AND SPILL CONTAINMENT:

Ventilate area. Use specified protective equipment. Contain and absorb on absorbent material. Place in waste disposal container. Flush area with water. Wet area may be slippery. Spread sand/grit.

DISPOSAL INSTRUCTIONS:

Water contaminated with this product may be sent to a sanitary sewer treatment facility, in accordance with any local agreement, a permitted waste treatment facility or discharged under a permit. Product as is - Incinerate or land dispose in an approved landfill.

7 HANDLING & STORAGE

HANDLING:

Alkaline. Do not mix with acidic material.

STORAGE:

Keep containers closed when not in use. Reasonable and safe chemical storage.

8 EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMITS

This product is not hazardous as defined by OSHA regulations.

ENGINEERING CONTROLS:

adequate ventilation

PERSONAL PROTECTIVE EQUIPMENT:

Use protective equipment in accordance with 29CFR 1910 Subpart I

RESPIRATORY PROTECTION:

A RESPIRATORY PROTECTION PROGRAM THAT MEETS OSHA'S 29 CFR 1910.134 AND ANSI Z88.2 REQUIREMENTS MUST BE FOLLOWED WHENEVER WORKPLACE CONDITIONS WARRANT A RESPIRATOR'S USE. USE AIR PURIFYING RESPIRATORS WITHIN USE LIMITATIONS ASSOCIATED WITH THE EQUIPMENT OR ELSE USE SUPPLIED AIR-RESPIRATORS. If air-purifying respirator use is appropriate, use a respirator with dust/mist filters.

SKIN PROTECTION:

neoprene gloves-- Wash off after each use. Replace as necessary.

EYE PROTECTION:

splash proof chemical goggles

9 PHYSICAL & CHEMICAL PROPERTIES

Specific Grav. (70F, 21C)	1.020	Vapor Pressure (mmHG)	~ 18.0
Freeze Point (F)	31	Vapor Density (air=1)	< 1.00
Freeze Point (C)	-1		
Viscosity (cps 70F, 21C)	30	% Solubility (water)	100.0
Odor		Slight	
Appearance		Colorless	
Physical State		Liquid	
Flash Point	SETA(CC)	> 200F > 93C	
pH As Is (approx.)		12.5	
Evaporation Rate (Ether=1)		< 1.00	

NA = not applicable ND = not determined

10 STABILITY & REACTIVITY

STABILITY:

Stable under normal storage conditions.

HAZARDOUS POLYMERIZATION:

Will not occur.

INCOMPATIBILITIES:

May react with strong oxidizers.

DECOMPOSITION PRODUCTS:

Thermal decomposition (destructive fires) yields elemental oxides.

INTERNAL PUMPOUT/CLEANOUT CATEGORIES:

"A"

11 TOXICOLOGICAL INFORMATION

Oral LD50 RAT: >2,000 mg/kg
NOTE - Estimated value
Dermal LD50 RABBIT: >2,000 mg/kg
NOTE - Estimated value
Inhalation LC50 RAT: >20 mg/L/hr
NOTE - Estimated value

12 ECOLOGICAL INFORMATION

AQUATIC TOXICOLOGY

Daphnia magna 48 Hour Static Acute Bioassay
0% Mortality= 2000 mg/L
Fathead Minnow 96 Hour Static Bioassay with 48-Hour Renewal
0% Mortality= 2000 mg/L
Menidia beryllina (Silversides) 96 Hour Static Acute Bioassay
0% Mortality= 5000 mg/L
Mysid Shrimp 96 Hour Static Acute Bioassay
25% Mortality= 5000; No Effect Level= 2500 mg/L
Rainbow Trout 96 Hour Static Renewal Bioassay
No Effect Level= 3000 mg/L

BIODEGRADATION

BOD-28 (mg/g): 5
BOD-5 (mg/g): 4
COD (mg/g): 341
TOC (mg/g): 80

13 DISPOSAL CONSIDERATIONS

If this undiluted product is discarded as a waste, the US RCRA hazardous waste identification number is :
D002=Corrosive(pH) .

Please be advised; however, that state and local requirements for waste disposal may be more restrictive or otherwise different from federal regulations. Consult state and local regulations regarding the proper disposal of this material.

14 TRANSPORT INFORMATION

DOT HAZARD: Not Applicable
UN / NA NUMBER: Not applicable
DOT EMERGENCY RESPONSE GUIDE #: Not applicable

15 REGULATORY INFORMATION

TSCA:

All components of this product are listed in the TSCA inventory.

CERCLA AND/OR SARA REPORTABLE QUANTITY (RQ):

No regulated constituent present at OSHA thresholds

FOOD AND DRUG ADMINISTRATION:

21 CFR 176.170 (components of paper and paperboard in contact with aqueous and fatty foods)

USDA FOOD PLANT APPROVALS:

This product is composed of ingredients previously approved by USDA to meet G5 and G7 classification and may be used in water for cooking/cooling or in boiler or cooling systems with no food contact.

SARA SECTION 312 HAZARD CLASS:

Product is non-hazardous under Section 311/312

SARA SECTION 302 CHEMICALS:

No regulated constituent present at OSHA thresholds

SARA SECTION 313 CHEMICALS:

No regulated constituent present at OSHA thresholds

CALIFORNIA REGULATORY INFORMATION

CALIFORNIA SAFE DRINKING WATER AND TOXIC

ENFORCEMENT ACT (PROPOSITION 65) CHEMICALS PRESENT:

No regulated constituents present

MICHIGAN REGULATORY INFORMATION

No regulated constituent present at OSHA thresholds

16 OTHER INFORMATION

NFPA/HMIS		CODE TRANSLATION
Health	1	Slight Hazard
Fire	0	Minimal Hazard
Reactivity	0	Minimal Hazard
Special	ALK	pH above 12.0
(1) Protective Equipment	B	Goggles, Gloves

(1) refer to section 8 of MSDS for additional protective equipment recommendations.

CHANGE LOG

	EFFECTIVE DATE	REVISIONS TO SECTION:	SUPERCEDES
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MSDS status:	14-JUL-1997		** NEW **
	09-SEP-1998	15	14-JUL-1997
	15-SEP-1998	15	09-SEP-1998
	25-JUN-1999	11	15-SEP-1998
	02-APR-2001	12	25-JUN-1999
	25-JUN-2001	15	02-APR-2001
	05-OCT-2001	4, 16	25-JUN-2001
	10-JAN-2002	15	05-OCT-2001
	18-JAN-2002	15	10-JAN-2002
	07-FEB-2006	12	18-JAN-2002