GE Power & Water
Water & Process Technologies

SAFETY DATA SHEET

HARDNESS BUFFER

1. Product and Company Identification

Material name	**HARDNESS BUFFER**
Version #	2.0
Revision date	Dec-30-2014
Supersedes date	Feb-15-2012
Prepared by	This MSDS has been prepared by GE Water & Process Technologies Regulatory Department (1-215-355-3300).
CAS #	Mixture
Product application	Field test reagent.

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

2. Hazards Identification

Emergency overview Corrosive to the eyes. May be corrosive in contact with moist skin. Mists/aerosols may cause irritation to upper respiratory tract.

Potential health effects

- **Eyes** Corrosive to eyes
- **Skin** May be irritating to the skin. Primary route of exposure May be corrosive in contact with moist skin.
- **Inhalation** Mists/aerosols may cause irritation to upper respiratory tract.
- **Ingestion** May cause gastrointestinal irritation with possible nausea, vomiting, abdominal discomfort and diarrhea.

Target organs No evidence of potential chronic effects.

Signs and symptoms Causes irritation of the skin, eyes and/or respiratory system.

3. Composition / Information on Ingredients

Components	CAS #	Percent (wt/wt)
Sodium Borate	12179-04-3	5 - 10
Potassium Hydroxide	1310-58-3	1 - 5
Sodium sulfide	1313-82-2	0.5 - 1.5

Composition comments 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.

4. First Aid Measures

First aid procedures

- **Eye contact** URGENT! Immediately flush eyes with plenty of low-pressure water for at least 20 minutes while removing contact lenses. Hold eyelids apart. Get immediate medical attention.

Skin contact	URGENT! Wash thoroughly with soap and water. Remove contaminated clothing. Get immediate medical attention. Thoroughly wash clothing before reuse.
Inhalation	Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, trained personnel should give oxygen. Seek medical attention.
Ingestion	Never give anything by mouth to a victim who is unconscious or is having convulsions. Do NOT induce vomiting! Immediately contact a physician. Dilute contents of stomach using 2-8 fluid ounces (60-240ml) of milk or water.
Notes to physician	No specific antidotes are recommended.

5. Fire Fighting Measures

Extinguishing media

Suitable extinguishing media	Carbon dioxide, dry chemicals, foam, water spray (fog).

Protection of firefighters

Specific hazards arising from the chemical	Corrosive liquid. Acidic.
Protective equipment for firefighters	Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.
Fire fighting equipment/instructions	Cool containers / tanks with water spray. Move containers from fire area if you can do so without risk. In case of fire and/or explosion do not breathe fumes. Use standard firefighting procedures and consider the hazards of other involved materials. Fire fighters should wear positive pressure self-contained breathing apparatus (full face-piece type).

Explosion data

Sensitivity to static discharge	Not applicable.
Sensitivity to mechanical impact	Not applicable.

6. Accidental Release Measures

Personal precautions	Avoid inhalation of vapors and spray mists. Avoid contact with spilled material. See Section 8 of the MSDS for Personal Protective Equipment. Acidic. Corrosive to skin and eyes. Please refer also to section no. 8 'Exposure controls' for further information. Alkaline.
Environmental precautions	Prevent from entering sewers or the immediate environment. Accidental release of large quantities into the aquatic environment may harm aquatic organisms. Water contaminated with this product may be sent to a sanitary sewer treatment facility, or a permitted waste treatment facility, in accordance with any local agreements.
Methods for containment	Stop leak if you can do so without risk. Dike the spilled material, where this is possible. Absorb spillage to prevent material damage. Scoop up used absorbent into drums or other appropriate container. If sweeping of a contaminated area is necessary use a dust suppressant agent which does not react with the product.
Methods for cleaning up	Ventilate area, use specified protective equipment. Sweep up and remove. Minimize dust generation.

7. Handling and Storage

Handling	Normal chemical handling.
Storage	Keep container tightly closed in a dry and well-ventilated place.

8. Exposure Controls / Personal Protection

Occupational exposure limits

US. ACGIH Threshold Limit Values

Components	Type	Value
Potassium Hydroxide (CAS 1310-58-3)	Ceiling	2 mg/m3

Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2)

Components	Type	Value
Potassium Hydroxide (CAS 1310-58-3)	Ceiling	2 mg/m3
Sodium Borate (CAS 12179-04-3)	STEL	3 ppm
	TWA	1 mg/m3

Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)

Components	Type	Value	Form
Potassium Hydroxide (CAS 1310-58-3)	Ceiling	2 mg/m3	
Sodium Borate (CAS 12179-04-3)	STEL	6 mg/m3	Inhalable
	TWA	2 mg/m3	Inhalable

Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act)

Components	Type	Value
Potassium Hydroxide (CAS 1310-58-3)	Ceiling	2 mg/m3

Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents)

Components	Type	Value	Form
Potassium Hydroxide (CAS 1310-58-3)	Ceiling	2 mg/m3	
Sodium Borate (CAS 12179-04-3)	STEL	6 mg/m3	Inhalable fraction.
	TWA	2 mg/m3	Inhalable fraction.

Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment)

Components	Type	Value
Potassium Hydroxide (CAS 1310-58-3)	Ceiling	2 mg/m3
Sodium Borate (CAS 12179-04-3)	TWA	1 mg/m3

Biological limit values No biological exposure limits noted for the ingredient(s).

Engineering controls Adequate ventilation to maintain air contaminants below exposure limits.

Personal protective equipment

Eye / face protection Airtight chemical goggles.

Skin protection The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace. Glove selection must take into account any solvents and other hazards present. Chemical resistant apron. Wash off after each use. Replace as necessary. Gauntlet-type rubber, butyl or neoprene gloves. Gauntlet-type neoprene gloves.

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.

9. Physical & Chemical Properties

Appearance

Physical state Powder

Color White

Odor Slight sulfur

Odor threshold Not available.

Vapor pressure Not available.

Vapor density Not available.

Boiling point Not available.

Melting point/Freezing point Not available.

Solubility (water) 100

Specific gravity (70°F, 21°C) Not available.

Flash point < 200 °F (< 93 °C) Pensky-Martens Closed Cup

Flammability limits in air, upper, % by volume Not available.

Flammability limits in air, lower, % by volume Not available.

Auto-ignition temperature Not available.

Evaporation rate < 1

Other data

Density 45.00 lb/ft³

10. Chemical Stability & Reactivity Information

Chemical stability	Material is stable under normal conditions.
Conditions to avoid	Avoid heat, sparks, open flames and other ignition sources. Protect from freezing.
Incompatible materials	Avoid contact with strong oxidizers.
Hazardous decomposition products	Oxides of boron Oxides of carbon evolved in fire. Sulfur oxides.

11. Toxicological Information

Toxicological data

Product	Species	Test Results
HARDNESS BUFFER (CAS Mixture)		
Acute		
Dermal		
LD50	Rabbit	> 2000 mg/kg, (Estimated value)
Oral		
LD50	Rat	> 2000 mg/kg, (Estimated value)

Components	Species	Test Results
Potassium Hydroxide (CAS 1310-58-3)		
Acute		
Oral		
LD50	Rat	333 mg/kg
Sodium Borate (CAS 12179-04-3)		
Acute		
Dermal		
LD50	Rabbit	> 2000 mg/kg
Oral		
LD50	Rat	2550 mg/kg
Sodium sulfide (CAS 1313-82-2)		
Acute		
Oral		
LD50	Rat	1122 mg/kg

12. Ecological Information

Ecotoxicity	No ecotoxicity data noted for the ingredient(s).

13. Disposal Considerations

Disposal instructions	According to Hazardous Waste Regulations. Via an authorized waste disposal contractor to an approved waste disposal site, observing all local and national regulations.
Contaminated packaging	According to Hazardous Waste Regulations. Via an authorized waste disposal contractor to an approved waste disposal site, observing all local and national regulations.

14. Transport Information

TDG

Not regulated as dangerous goods.

DOT

Not regulated as a dangerous good.

IMDG

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

Some containers may not be approved under IATA, please check BOL for exact container classification.

15. Regulatory Information

WHMIS status	Controlled

WHMIS classification D2B - Other Toxic Effects-TOXIC

WHMIS labeling

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other Information

List of abbreviations

CAS: Chemical Abstract Service Registration Number
TSRN indicates a Trade Secret Registry Number is used in place of the CAS number.
ACGIH: American Conference of Governmental Industrial Hygienists
NOEL: No Observed Effect Level
STEL: Short Term Exposure Limit
LC50: Lethal Concentration, 50%
TWA: Time Weighted Average
BOD: Biochemical Oxygen Demand
COD: Chemical Oxygen Demand
TOC: Total Organic Carbon
IATA: International Air Transport Association
IMDG: International Maritime Dangerous Goods Code
LD50: Lethal Dose, 50%
NFPA: National Fire Protection Association

HMIS® ratings

Health: 3
Flammability: 1
Physical hazard: 0
Personal protection: D

NFPA ratings

Health: 3
Flammability: 3
Instability: 1

This data sheet contains changes from the previous version in section(s):

Physical & Chemical Properties: Multiple Properties
HazReg Data: International Inventories