



## Material Safety Data Sheet

# BUFFER I

HEALTH	*	3
FLAMMABILITY		0
PHYSICAL HAZARD		1
PERSONAL PROTECTION		J

### 1. Product and Company Identification

<b>Material name</b>	<b>BUFFER I</b>
<b>Patent Number</b>	Not available
<b>Revision date</b>	March-31-2011
<b>Version No.</b>	1
<b>CAS #</b>	5329-14-6
<b>Manufacturer information</b>	Clearwater™ International L.L.C. 100 Leetsdale Industrial Drive Leetsdale, PA 15056 US CHEMTREC 1-800-424-9300/703-527-3887
<b>Emergency</b>	CHEMTREC 1-800-424-9300/703-527-3887
<b>Supplier information</b>	Producers Service Corp. 109 South Graham St. Zanesville, OH 43701 US
<b>Supplier emergency telephone number(s)</b>	24hr customer Service 740-454-6253

### 2. Hazards Identification

<b>Emergency overview</b>	DANGER
<b>OSHA regulatory status</b>	Corrosive. Causes skin and eye burns. Harmful by inhalation and if swallowed. Contact with this material will cause burns to the skin, eyes and mucous membranes. This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
<b>Potential health effects</b>	This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication).
<b>Routes of exposure</b>	Ingestion. Inhalation. Skin contact. Eye contact.
<b>Eyes</b>	This product causes eye burns. Risk of serious damage to eyes. Do not get this material in contact with eyes. This product may cause severe irritation, redness, or blurred vision.
<b>Skin</b>	Causes skin burns. Chronic exposure may cause dermatitis. Do not get this material in contact with skin.
<b>Inhalation</b>	Causes burns. Do not breathe dust/fume/gas/mist/vapors/spray.
<b>Ingestion</b>	Harmful if swallowed. Ingestion may produce burns to the lips, oral cavity, upper airway, esophagus and possibly the digestive tract. Do not ingest.
<b>Potential environmental effects</b>	May cause long-term adverse effects in the environment.



### 3. Composition / Information on Ingredients

Components	CAS #	Percent
Sulfamic Acid	5329-14-6	90 - 100

### 4. First Aid Measures

#### First aid procedures

**Eye contact**

Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Get medical attention immediately.

**Skin contact**

Immediately flush skin with plenty of water. Remove and isolate contaminated clothing and shoes. Get medical attention immediately. For minor skin contact, avoid spreading material on unaffected skin. Wash clothing separately before reuse.

**Inhalation**

Move to fresh air. Oxygen or artificial respiration if needed. Do not use mouth-to-mouth method if victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Get medical attention immediately.

**Ingestion**

Rinse mouth. Do not induce vomiting without medical advice. If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration. Never give anything by mouth to a victim who is unconscious or is having convulsions. Get medical attention immediately.

**Notes to physician**

In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

**General advice**

Take off contaminated clothing and shoes immediately. In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation. Get medical attention if symptoms occur. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

### 5. Fire Fighting Measures

**Flammable properties**

Not a fire hazard. The product is not flammable.

**Extinguishing media****Suitable extinguishing media**

Dry chemical, CO<sub>2</sub>, water spray or regular foam.

**Protection of firefighters****Protective equipment and precautions for firefighters**

Use water spray to cool unopened containers. Cool containers with flooding quantities of water until well after fire is out.

### 6. Accidental Release Measures

**Personal precautions**

Local authorities should be advised if significant spillages cannot be contained. Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering. Keep unnecessary personnel away. Stay upwind. Keep out of low areas.

**Environmental precautions**

Prevent further leakage or spillage if safe to do so. Do not contaminate water.

**Methods for containment**

Prevent entry into waterways, sewers, basements or confined areas.

**Methods for cleaning up**

Should not be released into the environment. Sweep up or gather material and place in appropriate container for disposal. Avoid dust formation. After removal flush contaminated area thoroughly with water.



## 7. Handling and Storage

<b>Handling</b>	Wash hands after handling and before eating. Do not get this material in contact with eyes. Do not get this material in contact with skin. Avoid release to the environment. Handle and open container with care. Do not get this material on clothing. Do not breathe dust/fume/gas/mist/vapors/spray. Use only with adequate ventilation. Wash thoroughly after handling.
<b>Storage</b>	Keep out of the reach of children.

## 8. Exposure Controls / Personal Protection

<b>Engineering controls</b>	Ensure adequate ventilation, especially in confined areas.
<b>Personal protective equipment</b>	
<b>Eye / face protection</b>	Wear safety glasses with side shields. Wear chemical goggles.
<b>Skin protection</b>	Protective gloves. Wear suitable protective clothing. Closed-toe shoes recommended.
<b>Respiratory protection</b>	When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. If exposure may or does exceed occupational exposure limits use a NIOSH-approved respirator to prevent overexposure.
<b>General hygiene considerations</b>	Do not get this material in contact with eyes. Do not get this material in contact with skin. Do not get this material on clothing. Wash hands before breaks and immediately after handling the product. Keep away from food and drink. Handle in accordance with good industrial hygiene and safety practice.

## 9. Physical & Chemical Properties

<b>Appearance</b>	Crystalline
<b>Color</b>	White
<b>Odor</b>	Odorless.
<b>Odor threshold</b>	Not available
<b>Physical state</b>	Solid.
<b>Form</b>	Solid
<b>pH</b>	1.18
<b>Melting point</b>	Not available
<b>Freezing point</b>	401 °F (205 °C)
<b>Boiling point</b>	224.6 °F (107 °C)
<b>Flash point</b>	Not available
<b>Evaporation rate</b>	Not available
<b>Flammability</b>	Not available.
<b>Flammability limits in air, upper, % by volume</b>	9.3 % v/v solution
<b>Flammability limits in air, lower, % by volume</b>	9.3 % v/v solution
<b>Vapor pressure</b>	0.0078 hPa at 20 °C
<b>Vapor density</b>	Not available
<b>Specific gravity</b>	2.125
<b>Relative density</b>	2.1248 g/cm <sup>3</sup> estimated
<b>Solubility (water)</b>	213 g/L



<b>Partition coefficient (n-octanol/water)</b>	Not available
<b>Auto-ignition temperature</b>	Not available
<b>Decomposition temperature</b>	408.2 °F (209 °C)
<b>Molecular weight</b>	97.0900
<b>Molecular formula</b>	NH <sub>2</sub> SO <sub>3</sub> H

## 10. Chemical Stability & Reactivity Information

<b>Chemical stability</b>	Stable at normal conditions. Hydrolyzes in hot water.
<b>Conditions to avoid</b>	Reacts violently with alkaline material. This product may react with reducing agents. Do not mix with other chemicals.
<b>Incompatible materials</b>	Water. Amines. Isocyanates. Ammonia. Acids. Incompatible with bases. This product may react with reducing agents
<b>Hazardous decomposition products</b>	Ammonia Oxides of carbon. May include oxides of nitrogen. May include oxides of sulphur.
<b>Possibility of hazardous reactions</b>	Hazardous polymerization does not occur.

## 11. Toxicological Information

<b>Acute effects</b>	Acute LD50: 1450 mg/kg, Rat, Oral Causes burns.
<b>Component analysis - LD50</b>	
<b>Toxicology Data - Selected LD50s and LC50s</b>	
Sulfamic Acid	5329-14-6 Oral LD50 Rat: 1450 mg/kg
<b>Chronic effects</b>	Not expected to be hazardous by OSHA criteria.
<b>Carcinogenicity</b>	Not expected to be hazardous by OSHA criteria.
<b>Neurological effects</b>	Not expected to be hazardous by OSHA criteria.

## 12. Ecological Information

<b>Ecotoxicity</b>	LC50 70.3 mg/L, Fish, 96.00 Hours, Components of this product have been identified as having potential environmental concerns. Because of the low pH of this product, it would be expected to produce significant ecotoxicity upon exposure to aquatic organisms and aquatic systems.
<b>Ecotoxicity - Freshwater Fish Species Data</b>	
Sulfamic Acid	5329-14-6 96 Hr LC50 Pimephales promelas: 70.3 mg/L [static]
<b>Environmental effects</b>	
<b>Ecotoxicity - Freshwater Fish Species Data</b>	
Sulfamic Acid	5329-14-6 96 Hr LC50 Pimephales promelas: 70.3 mg/L [static]

## 13. Disposal Considerations

<b>Waste codes</b>	D002: Waste Corrosive material [pH <=2 or =>12.5, or corrosive to steel]
<b>Disposal instructions</b>	Dispose of this material and its container at hazardous or special waste collection point. Do not allow this material to drain into sewers/water supplies. Incinerate the material under controlled conditions in an approved incinerator. Dispose in accordance with all applicable regulations.



## 14. Transport Information

### Department of Transportation (DOT) Requirements

**Basic shipping requirements:**

<b>Proper shipping name</b>	Sulfamic acid
<b>Hazard class</b>	8
<b>UN number</b>	UN2967
<b>Packing group</b>	III

**Additional information:**

<b>Special provisions</b>	IB8, IP3, T1, TP33
<b>Packaging exceptions</b>	154
<b>Packaging non bulk</b>	213
<b>Packaging bulk</b>	240
<b>ERG number</b>	154



### Department of Transportation (DOT) Requirements

#### Bulk

**Basic shipping requirements:**

<b>Proper shipping name</b>	Sulfamic acid
<b>Hazard class</b>	8
<b>UN number</b>	UN2967
<b>Packing group</b>	III

**Additional information:**

<b>Special provisions</b>	IB8, IP3, T1, TP33
<b>Packaging exceptions</b>	154
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<b>Packaging bulk</b>	240
<b>ERG number</b>	154



### Canadian Transportation of Dangerous Goods (TDG) Requirements

**Basic shipping requirements:**

<b>Proper shipping name</b>	SULFAMIC ACID; or SULPHAMIC ACID
<b>Hazard class</b>	8
<b>UN number</b>	UN2967
<b>Packing group</b>	III

**Additional information:**

<b>ERG number</b>	154
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## IMDG

### Basic shipping requirements:

<b>Proper shipping name</b>	SULPHAMIC ACID
<b>Hazard class</b>	8
<b>UN number</b>	2967
<b>Packing group</b>	III



## IATA

### Basic shipping requirements:

<b>Proper shipping name</b>	Sulphamic acid
<b>Hazard class</b>	8
<b>UN number</b>	2967
<b>Packing group</b>	III



## 15. Regulatory Information

### Labelling

**Contains** Sulfamic Acid

### US federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.  
All components are on the U.S. EPA TSCA Inventory List.

CERCLA/SARA Hazardous Substances - Not applicable.

### U.S. - FDA - Food Additives Generally Recognized as Safe (GRAS)

Sulfamic Acid 5329-14-6 21 CFR 186.1093

### Occupational Safety and Health Administration (OSHA)

**29 CFR 1910.1200 hazardous chemical** Yes

### CERCLA (Superfund) reportable quantity

None

### Superfund Amendments and Reauthorization Act of 1986 (SARA)

**Hazard categories**  
Immediate Hazard - Yes  
Delayed Hazard - No  
Fire Hazard - No  
Pressure Hazard - No  
Reactivity Hazard - No

**Section 302 extremely hazardous substance** No

**Section 311 hazardous chemical** Yes



### Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of New and Existing Chemicals (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	No
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
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)

### International regulations

#### Canada - WHMIS - Ingredient Disclosure List

Sulfamic Acid 5329-14-6 1 %

### State regulations

This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

#### U.S. - New Jersey - Right to Know Hazardous Substance List

Sulfamic Acid 5329-14-6 sn 1770

## 16. Other Information

### HMIS® ratings

Health: 3\*  
Flammability: 0  
Physical hazard: 1  
Personal protection: J

### NFPA ratings

Health: 3  
Flammability: 0  
Instability: 0

### Prepared by

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