SAFETY DATA SHEET

CALCI-FREE™

Tankless water heater flush

Section 1 – Product and Company Information

Product Name
Calci-Free™

Product Codes
68708

Chemical Family
Inorganic acids

Use
Scale remover

Manufacturer's Name
The RectorSeal Corporation
2601 Spenwick Drive
Houston, Texas 77055 USA

Date of Validation
January 23, 2015

Date of Preparation
October 9, 2012

HMIS Codes

Health	3
Flammability	0
Reactivity	0
PPI	D

Emergency Telephone No.
Chemtrec 24 Hours
(800)-424-9300 USA
(703)-527-3887 International

Technical Service Telephone No.
(800)-231-3345 or (713)-263-8001

Section 2 – Hazards Identification

EMERGENCY OVERVIEW

OSHA Hazards
Corrosive

GHS CLASSIFICATION

Acute toxicity, Oral (Category 5)
Skin irritation (Category 2)
Serious eye damage (Category 1)
Acute aquatic toxicity (Category 3)

GHS Label elements, including precautionary statements

GHS05: Corrosive
Signal word: **Danger**

Hazard statement(s)
H303 May be harmful if swallowed.
H315 Causes skin irritation.
H318 Causes serious eye damage.
H402 Harmful to aquatic life.

Precautionary statement(s)
P280 Wear protective gloves/ eye protection/ face protection.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Summary Of Acute Hazards

Exposure to human tissue will result in irritation and subsequent chemical burns, bronchitis, pulmonary edema and chemical pneumonitus.

INHALATION
Respiratory and mucous membrane irritation, coughing, difficulty breathing.

EYE CONTACT
Corrosive, causes eye burns.

SKIN CONTACT
Causes skin irritation. Prolonged contact may cause skin burns.

INGESTION
Burns on mouth and lips, sour acrid taste, severe gastrointestinal irritation, nausea, vomiting, bloody diarrhea, difficult swallowing, severe abdominal pains, thirst, acidemia, difficult breathing, convulsions, collapse, shock, possible death.

SUMMARY OF CHRONIC HAZARDS
Bronchitis, pulmonary edema and chemical burns, bronchitis and chemical pneumonitus; possible death.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE
Skin disorders, eye problems, impaired liver and kidney, or respiratory function.

Section 3 – Composition/Information on Ingredients

Ingredient:	Sulfamic Acid
Percentage By Weight:	70-99
CAS Number:	5329-14-6
EC#:	226-218-8

Section 4 – First Aid Measures

If inhaled:	If overcome by exposure, remove victim to fresh air immediately. Give oxygen or artificial respiration as needed. Obtain emergency medical attention. Prompt action is essential.
If on skin:	Immediately flush with large amounts of water; use soap if available. Remove contaminated clothing.
If in eyes:	Immediately flush eyes with gentle but large stream of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Call a physician immediately.
If swallowed:	If swallowed, call a physician immediately. Only induce vomiting at the instruction of a physician. Never give anything by mouth to an unconscious person.

Section 5 – Fire Fighting Measures

Extinguishing Media
Use agents appropriate for surrounding fires.

Special Fire Fighting Procedures: Wear self-contained breathing apparatus (SCBA) and other protective clothing. Hazardous decomposition products possible (see Section 10). Evacuate immediate area.

Unusual Fire And Explosion Hazards: May release sulfur dioxide (SO_2), sulfur trioxide (SO_3), and ammonia gas (NH_3) if involved in a fire.

Section 6 – Accidental Release Measures

Steps To Be Taken In Case Material Is Released Or Spilled: Sweep up spillage and flush the area with large quantities of water. May be neutralized with sodium bicarbonate mixed with water.

Section 7 – Handling and Storage

Precautions To Be Taken In Handling And Storing: Prevent from absorption of moisture and possible caking. Should be stored in a cool and dry place. Do not store with cyanides, sulfides, chlorine, hypochlorous acid, or hypochlorites.

Other Precautions: Refrain from splashing product when pouring. Avoid all contact with skin or clothing. Empty containers may contain residues and vapors.

KEEP OUT OF REACH OF CHILDREN.

Section 8 – Exposure Controls/Personal Protection

Ingredient	Units
Sulfamic Acid	
ACGIH TLV:	N/D
OSHA PEL:	N/D

Respiratory Protection (Specify Type): In confined poorly ventilated areas, use NIOSH/MSHA approved air purifying or supplied air purifying or supplied air respirators.

Ventilation – Local Exhaust: Acceptable

Special: N/A

Mechanical (General): Preferable

Other: N/A

Protective Gloves: Wear acid resistant gloves (neoprene, PVC, butyl rubber).

Eye Protection: Full-face shield and chemical splash goggles (ANSI Z-87.1 or equivalent).

Other Protective Clothing Or Equipment: Acid resistant vinyl or polyethylene coated coveralls.

Work/Hygienic Practices: Where use can result in skin contact, wash exposed areas thoroughly before eating, drinking, smoking, or leaving work area. Launder contaminated clothing before reuse.

Section 9 – Physical and Chemical Properties

Boiling point:	214°F (101°C) @ 760 mmHg
Specific gravity (H20 = 1):	2.126
Vapor pressure (mmHg):	N/A
Melting point:	N/A
Vapor Density (Air = 1):	N/A
Evaporation rate (Ethyl Acetate = 1):	N/A
Appearance/Odor:	White solid/None
Solubility in water:	Soluble
Volatile Organic Compounds (VOC) Content (theoretical percentage by weight):	0% or (0 g/L)
Flash point:	None
Lower explosion limit:	None
Upper explosion limit:	None

Section 10 – Stability and Reactivity

Stability: Stable

Conditions To Avoid: Incompatibles.

Incompatibility (Materials To Avoid): Hazardous reaction in aqueous solution may occur with chlorine, hypochlorous acid, hypochlorites, cyanides, nitric acid, or sulfides. **An explosion occurred when chlorine was being passed at room temperature into a reaction mixture which included sulfamic acid and water.** It is suspected that nitrogen trichloride, a very sensitive explosive, was formed. Fuming nitric acid combined with sulfamic acid causes violent releases of nitrous oxide.

Hazardous Decomposition Products: Decomposes with heat (209°C) to release sulfur dioxide (SO_2), sulfur trioxide (SO_3), nitrogen (N_2), water (H_2O), and ammonia gas (NH_3).

Hazardous Polymerization: Will not occur.

Section 11 – Toxicology Information

Chronic Health Hazards

No ingredient in this product is an IARC, NTP or OSHA listed carcinogen.

Toxicology Data

Ingredient Name

Sulfamic Acid

Oral-Rat LD50:	3160 mg/kg
Inhalation-Rat LC50:	N/D

Section 12 – Ecological Information

Ecological Data

Ingredient Name:	**Sulfamic Acid**
Food Chain Concentration Potential	N/D
Waterfowl Toxicity	N/D
BOD	N/D
Aquatic Toxicity	N/D

Section 13 – Disposal Considerations

Waste Classification: Corrosive (D002)

Disposal Method: Neutralization

RCRA classified hazardous waste. Dispose of absorbed materials and liquid waste in accordance with all local, state and federal regulations.

Section 14 – Transportation Information

DOT:	UN1759, Corrosive Solid, n.o.s. (sulfamic acid), Class 8, PGIII, ERG#154 Individual containers under 11 lbs.: Consumer Commodity, ORM-D
Ocean (IMDG):	UN1759, Corrosive solid, n.o.s. (sulfamic acid), Class 8, PGIII, EMS-No: F-A, S-B Individual containers under 11 lbs.: UN1759, Corrosive solid, n.o.s. (sulfamic acid), Class 8, PGIII, EMS-No: F-A, S-B, Limited Quantities or Ltd. Qty.
Air (IATA):	UN1759, Corrosive solid, n.o.s. (sulfamic acid), Class 8, UN1759, PGIII, ERG#154

Section 15 – Regulatory Information

Regulatory Data

Ingredient Name:	**Sulfamic Acid**
SARA 313	No
TSCA Inventory	Yes
CERCLA RQ	N/A
RCRA Code	N/A

Section 16 – Other Information

This document is prepared pursuant to the OSHA Hazard Communication Standard (29 CFR 1910.1200). The information herein is given in good faith, but no warranty, expressed or implied is made.

Consult RectorSeal for further information: (713) 263-8001