

## SECTION 1 – PRODUCT AND COMPANY INFORMATION

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### Product Identifiers

**Product name:** 859 Closed System Inhibitor

**Product Application:** Boiler Water Treatment

**Emergency telephone number:** CHEMTREC (800) 424-9300 Poison Control: 1-800-222-1222

## SECTION 2 – HAZARD IDENTIFICATION

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### Classification of the substance or mixture

**GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)**

**Signal Word:** DANGER

**Physical Hazards:** May be corrosive to metals.

**Health Hazards:** Skin Irritation/Corrosion (Category 1) Causes severe skin burns.  
Eye Damage/Irritation (Category 1) Causes serious eye damage.  
Toxic if swallowed

**Environmental Hazards:** Acute aquatic toxicity (Category 1) Very toxic to aquatic life



### Precautionary Statements

P264 - Wash hands, forearms, and exposed areas thoroughly after handling.

P270 - Do not eat, drink or smoke when using this product.

P273 - Avoid release to the environment.

P280 - Wear eye protection, protective clothing, protective gloves.

P301+P310 - IF SWALLOWED: Immediately call a poison center or doctor.

P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P321 - Specific treatment (see section 4 on this SDS). P330 - Rinse mouth.

P337+P313 - If eye irritation persists: Get medical advice/attention.

P391 - Collect spillage. P405 - Store locked up.

P501 - Dispose of contents/container in accordance with local, regional, national, territorial, provincial, and international regulations.

**HNOC:** HMIS Rating: Health hazard:3 Chronic Health Hazard: Flammability: 0 Physical Hazard 0  
NFPA Rating: Health hazard: 3 Fire Hazard: 0 Reactivity Hazard: 0  
\* Hazards not otherwise classified (HNOC) or not covered by GHS.

### SECTION 3 – COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Ingredient	CAS	Wt%
Sodium Hydroxide	1310-73-2	2-10%
Sodium Nitrite	7632-00-0	15-25%
Silicic acid, sodium salt	1344-09-8	0.5-5%
Sodium mercaptobenzothiazole	2492-26-4	.05-1.5%

### SECTION 4 – FIRST AID MEASURES

#### Description of first aid measures

**General advice:** Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

**If inhaled:** If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

**In case of skin contact:** Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician.

**In case of eye contact:** Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Continue rinsing eyes during transport to hospital.

**If swallowed:** Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

**Most important symptoms and effects, both acute and delayed:** The most important known symptoms and effects are described in the labeling (see section 2) and/or in section 11

**Indication of any immediate medical attention and special treatment needed:** None known.

### SECTION 5 – FIREFIGHTING MEASURES

**Flammable Properties:** Non-Flammable

**Explosive Properties:** Risk of explosion if heated under confinement.

**Suitable Extinguishing media:** Water spray, fog.

**Unsuitable extinguishing media:** Do not use carbon dioxide. Do not use ABC dry chemical agents. Do not use a heavy water stream. Use of heavy stream of water may spread fire.

**Special hazards arising from the substance or mixture:** Overheating in fire conditions may produce POISONOUS GASES. Sodium Hydroxide in contact with water or moisture may generate enough heat to ignite combustibles.

**Advice for firefighters:** Wear self-contained breathing apparatus for firefighting if necessary.

**Further information:** If employees are expected to fight fires, they must be trained and equipped as stated in the OSHA Fire Brigades Standard (29 CFR 1910.156).

### SECTION 6 – ACCIDENTAL RELEASE MEASURES

**Personal precautions, protective equipment and emergency procedures:** Wear respiratory protection. Avoid dust formation. Avoid breathing vapor, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. For personal protection see Section 8.

**Environmental precautions:** Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

**Methods and materials for containment and cleaning up:** Keep in suitable, closed containers for disposal. Reference to other sections: For disposal see Section 13.

Product is water soluble and may be diluted and flushed as below described.

**Other Information:** This product is intended to be used in pretreatment of boiler water, and discharged to sanitary sewer in boiler blowdown water. Concentrated product may be diluted to a similar working concentration and flushed to sewer, or soaked up with absorbent material and landfilled in accordance with local, state, and federal regulations.

## SECTION 7 – HANDLING AND STORAGE

**Precautions for safe handling:** Avoid contact with skin and eyes. Avoid formation of aerosols. Provide appropriate exhaust ventilation. For precautions see Section 2.

**Conditions for safe storage, including any incompatibilities:** Keep container tightly closed in a dry and well-ventilated place. Store as a non-combustible, corrosive hazardous materials

## SECTION 8 – EXPOSURE CONTROL AND PERSONAL PROTECTION

### Control parameters

<b>Sodieme Nitrite</b>	7632-00-0	Contains no substances with occupational exposure limit values.		
<b>Silicic acid, sodium salt</b>	1344-09-8	Contains no substances with occupational exposure limit values.		
<b>Sodium Hydroxide</b>	1310-73-2	USA ACGIH	2 mg/m <sup>3</sup>	ACGIH Ceiling (mg/m <sup>3</sup> )
		USA OSHA	2 mg/m <sup>3</sup>	OSHA PEL (TWA) (mg/m <sup>3</sup> )
<b>Sodium mercaptobenzothiazole</b>	2492-26-4	Limits for sodium mercaptobenzothiazole have not been established by OSHA and ACGIH		

### Exposure controls

**Appropriate engineering controls:** Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

**Eye/face protection:** Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

**Skin protection:** Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product.

**Respiratory protection:** Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

**Control of environmental exposure:** Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

## SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

**Appearance:** Clear, yellow liquid  
**pH:** 12.1-13.1  
**Specific Gravity:** 1.213-1.24  
**Molecular Weight:** Mixture  
**Water Solubility:** Complete  
**Melt/Freeze Point:** Not Determined  
**Boiling Point:** 110 C / 230 F  
**Flammability:** Not Flammable  
**Flash Point:** N/A  
**Vapor Density:** NA  
**Note:** Physical Data is typical values based on material tested, but may vary based on composition. Values should not be accepted as guaranteed for every lot or as specifications for this product.

## SECTION 10 – STABILITY AND REACTIVITY

**Reactivity:** No data available  
**Chemical stability:** Stable under normal conditions of use and storage  
**Possibility of hazardous reactions:** No data available  
**Conditions to avoid:** None known  
**Incompatible materials:** Strong acids and oxidizers.  
**Hazardous decomposition products:** Thermal decomposition generates nitrogen oxides.

## SECTION 11 – TOXICOLOGICAL INFORMATION

<b>Component: Sodium nitrite CAS 7632-00-0</b>	
Acute Oral Toxicity	LD50 Oral - rat - 157.9 mg/kg
Acute inhalation toxicity	No data available
Acute Dermal Toxicity	No data available
Eye irritation	Moderate eye irritation - 24 h
Target Organ Systemic Toxicant -Single exposure	No data available
Target Organ Systemic Toxicant - Repeated exposure	No data available
Skin corrosion/irritation:	No skin irritation - 48 h

Inhalation	No data available
Respiratory or skin sensitization:	No data available
Reproductive toxicity:	No data available
Carcinogenicity	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
Aspiration hazard:	No data available
Germ cell mutagenicity:	No data available

**Additional Information**

RTECS: RA1225000

Headache, Nausea, Incoordination., Absorption into the body leads to the formation of methemoglobin which in sufficient concentration causes cyanosis. Onset may be delayed 2 to 4 hours or longer.

<b>Component: Silicic acid, sodium salt CAS 1344-09-8</b>	
Acute Oral Toxicity	Oral LD50 (rat) 3400 mg/kg bw
Acute inhalation toxicity	Inhalation LC50 (rat) >2.06 g/m <sup>3</sup>
Acute Dermal Toxicity	LD50 (rat) >5000 mg/kg bw
Eye irritation	Irritating to eyes.
Target Organ Systemic Toxicant -Single exposure	No data available
Target Organ Systemic Toxicant - Repeated exposure	Not classified. NOAEL oral (rat) >159 mg/kg bw/d
Skin corrosion/irritation:	Irritating to skin.
Inhalation	No data available
Respiratory or skin sensitization:	Not sensitising.
Reproductive toxicity:	No evidence of reproductive toxicity or developmental toxicity.
Carcinogenicity	IARC, NTP, OSHA, ACGIH do not list this product as known or suspected carcinogen
Aspiration hazard:	No data available
Germ cell mutagenicity:	No evidence of genotoxicity. In vitro/in vivo negative.
<b>Component: Sodium Hydroxide CAS 1310-73-2</b>	
Acute Oral Toxicity	LDLo - Lowest published lethal dose oral rabbit 500 mg /kg
Acute inhalation toxicity	No data available
Acute Dermal Toxicity	1350 mg/kg (Rabbit; Literature,Rabbit; Literature)
Eye irritation	Causes serious eye damage.
Target Organ Systemic Toxicant -Single exposure	Injection or inhalation will result in serious damage to affected membranes
Target Organ Systemic Toxicant - Repeated exposure	Based on available data, the classification criteria are not met

Skin corrosion/irritation:	Causes severe skin burns and eye damage.
Respiratory or skin sensitization:	No data available
Reproductive toxicity:	Based on available data, the classification criteria are not met
Carcinogenicity	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
Aspiration hazard:	No data available
Germ cell mutagenicity:	Based on available data, the classification criteria are not met
<b>Component: Sodium mercaptobenzothiazole CAS 2492-26-4</b>	
Acute Oral Toxicity	LD50 (Rat): = 2,639 mg/kg
Acute inhalation toxicity	LC50 (Rat): = 1.3 mg/L
Acute Dermal Toxicity	LD50 (Rabbit): > 7,940 mg/kg
Eye irritation	No data available
Target Organ Systemic Toxicant -Single exposure	Not expected to have specific target organ effects
Target Organ Systemic Toxicant - Repeated exposure	Not expected to have specific target organ effects
Skin corrosion/irritation:	No data available
Inhalation	No data available
Respiratory or skin sensitization:	Not expected to be a skin sensitizer No data available to indicate material may be a respiratory sensitizer
Reproductive toxicity:	Not expected to have reproductive effects
Carcinogenicity	This product and its components are not listed on OSHA, NIOSH, IARC or NTP lists as cancer-causing
Aspiration hazard:	No data available
Germ cell mutagenicity:	Not expected to be mutagenic in humans

## SECTION 12 – ECOLOGICAL INFORMATION

<b>Component: Sodium nitrite CAS 7632-00-0</b>	
Toxicity, Fish	LC50 - Oncorhynchus mykiss (rainbow trout) - 0.94 - 1.92 mg/l - 96.0 h
Toxicity, invertebrates	EC50 - Daphnia magna (Water flea) - 12.5 mg/l - 48 h
Toxicity, Algae	No data available
Bioaccumulation	No data available
Mobility	No data available. Product is water soluble, so will likely move within the aquifer.
Biodegradability	The methods for determining biodegradability are not applicable to inorganic substances
Biochemical OxygenDemand (BOD)	No data available

Other adverse effects:	An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Very toxic to aquatic life.
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<b>Component: Silicic acid, sodium salt CAS 1344-09-8</b>	
Toxicity, Fish	(Brachydanio rerio) LC50 (96 hour) 1108 mg/l
Toxicity, invertebrates	(Daphnia magna) EC50 (48 hour) 1700mg/l
Toxicity, Algae	No data available
Bioaccumulation	Inorganic. The substance has no potential for bioaccumulation.
Mobility	Not applicable.
Biodegradability	Inorganic. Soluble silicates, upon dilution, rapidly depolymerise into molecular species indistinguishable from natural dissolved silica.
Biochemical OxygenDemand (BOD)	No data available
Other adverse effects:	The alkalinity of this material will have a local effect on ecosystems sensitive to changes in pH.
<b>Component: Sodium Hydroxide CAS 1310-73-2</b>	
Toxicity, Fish	LC50 45.4 mg/l 96 h; Salmo gairdneri (Oncorhynchus mykiss)
Toxicity, invertebrates	LD50 100 mg/l (48 h; Daphnia magna; PURE SUBSTANCE)
Toxicity, Algae	No data available
Bioaccumulation	This material will not bioconcentrate
Mobility	No data available
Biodegradability	This Material will disassociate into ionic form in the aquatic environment . Natural carbon dioxide will slowly neutralize this material
Biochemical OxygenDemand (BOD)	No data available
Other adverse effects:	No data available
<b>Component: Sodium mercaptobenzothiazole CAS 2492-26-4</b>	
EcoToxicity	No data available
Toxicity, Fish	LC50/96 h/S. gairdneri = 1.8 mg/L
Toxicity, invertebrates	LC50/48 h/D. magna = 19.0 mg/L
Toxicity, Algae	EC50/96 h/cell count = 0.4 mg/L
Bioaccumulation	B1 (low)
Mobility	Mercaptobenzothiazole has a low to moderate mobility in soil, leaching may occur in alkine soil
Biodegradability	P2 (moderate)
Biochemical OxygenDemand (BOD)	No data available
Other adverse effects:	No data available

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## SECTION 13 – DISPOSAL CONSIDERATION

### Waste treatment methods:

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging: Dispose of as unused product.

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## SECTION 14 – TRANSPORT INFORMATION (USDOT)

<b>Proper shipping Name:</b>	Corrosive Liquid, N.O.S. (Contains Sodium Hydroxide)
<b>Hazard Class:</b>	Corrosive (8)
<b>UN/ID No</b>	UN1760
<b>Packing Group</b>	II
<b>Reportable Quantity (RQ)</b>	3571 lbs (calculated)
<b>Description:</b>	N/A



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## SECTION 15 – REGULATORY INFORMATION

**TSCA** (Toxic Substance Control Act): Components of this product are listed on the TSCA Inventory.

**DSL**: This product, or its components, are listed on or are exempt from the Canadian Domestic Substances List (DSL).

**CERCLA**: (Comprehensive Emergency Response Compensation, and Liability Act): Product is not found in “List of Hazardous Substances and Reportable Quantities” (40 CFR 302.4): None

**RCRA**: (Resource Conservation/Recovery Act): No

**SARA 302 Components**: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.



**SARA 313 Components:** Listed on United States SARA Section 313

**SARA 311/312 Hazards:** Reactive hazard, Immediate (acute) health hazard \

**STATES:** Massachusetts Right to Know Components, Pennsylvania Right To Know Components, New Jersey Right To Know Components: **Sodium nitrite (7632-00-0)**

California Prop. 65 Components: This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

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## SECTION 16 – OTHER INFORMATION

**Fire Protection Association (NFPA) Ratings:**



**NSF Certification:** N/A

This Safety Data Sheet compiled from information provided by the raw chemical product manufacturers.

Disclaimer: The information presented herein is based on data considered to be accurate as of the date of preparation of this Safety Data Sheet. However, no warranty or representation, expressed or implied, is made as to the accuracy or completeness of the foregoing data and safety information, nor is any authorization given or implied to practice any patented invention without a license. In addition, no responsibility can be assumed by the vendor for any damage or injury resulting from abnormal use, from failure to adhere to recommended practices, or from any hazards inherent in the nature of the product.