

SECTION 1 – PRODUCT AND COMPANY INFORMATION

Product Identifiers

Product name: 225 CLOSED SYSTEM INHIBITOR
Product Number: Illinois Water Survey #0225, M-1 Blend
Product Application: Hydronic Boiler (Closed Recirculating Water Loop) Corrosion Inhibitor
Emergency telephone number: CHEMTREC (800) 424-9300 Poison Control: 1-800-222-1222

SECTION 2 – HAZARD IDENTIFICATION

Classification of the substance or mixture

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

Signal Word: DANGER

Pictograms: Corrosive, Toxic, Irritant, Health Hazard

Physical Hazards: Corrosive (Category 2)

Health Hazards: Acute Oral Toxicity (Category 4)

Reproductive Toxicity (Category 2)

Serious Eye Damage / Eye Irritation Category 2A

Environmental Hazards: N/A

Hazard Statements:

H302 Harmful if swallowed.

H319 Causes serious eye irritation.



Precautionary Statements:

Prevention:

P102 Keep out of reach of children.

P103 Read label before use.

P202 Do not handle until all safety precautions have been read and understood.

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P220 Keep/Store away from clothing/.../combustible materials.

P221 Take any precaution to avoid mixing with combustibles.

P264 Wash hands thoroughly after handling

P270 Do not eat or drink or smoke when using this product

P273 Avoid release to the environment

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P308/313 If exposed or concerned: Get medical advice/attention

P305/P351/P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing and seek medical attention.

P501 Dispose of contents / container in accordance with local / state / federal regulations.

Response:

P301 + P312 + P330 + P331 IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell. Rinse mouth. Do NOT induce vomiting.

P370/P378 In case of fire: Use Extinguishing Media detailed in Section 5 to extinguish.

P391 Collect spillage.

Storage:

P405 Store locked up

Disposal:

P501 Dispose of contents / container in accordance with local / state / federal regulations

HNOC:

HMIS Rating: Health hazard: 2 Flammability: 0 Physical Hazard 1 Personal Protection: D

NFPA Rating: Health hazard: 2 Fire Hazard: 0 Reactivity Hazard: 1 Special Hazard: N/A

* Hazards not otherwise classified (HNOC) or not covered by GHS.

SECTION 3 – COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Ingredient	CAS	Wt%
Disodium tetraborate pentahydrate	12179-04-3	1-5%
Sodium Hydroxide	1310-73-2	1-5%
Sodium tolyltriazole	64665-57-2	0-5%
Sodium benzotriazole	15217-42-2	0-5%

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.

P304/ P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P302/P352 IF ON SKIN: Wash with plenty of water

P333/P313 If skin irritation or rash occurs: Get medical attention.

P361/P364 Take off immediately all contaminated clothing and wash it before reuse.

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

P337/P313 If eye irritation persists: get medical advice/attention.

P301/P330/P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

Most important symptoms and effects, both acute and delayed: None known.

Information for Emergency Physician: Treat symptomatically.

SECTION 5 – FIREFIGHTING MEASURES

Flammable Properties: Non-Flammable

Explosive Properties: N/A

Suitable Extinguishing media: N/A

Unsuitable extinguishing media: N/A.

Special hazards arising: Overheating in fire conditions may produce toxic vapors

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 – ACCIDENTIAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures:

Shut down all possible sources of ignition. Clear area of all unnecessary personnel. Avoid skin & eye contact. Avoid inhaling vapors. Advise emergency services if Reportable Quantity spill is likely or exceeded.

Environmental precautions: Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Avoid allowing runoff to enter ditches / waterways.

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 compatible absorbent material and landfilled in accordance with local, state, and federal regulations.

SECTION 7 – HANDLING AND STORAGE

Precautions for safe handling: Avoid skin & eye contact. Avoid inhaling vapors. Provide appropriate exhaust ventilation.

Conditions for safe storage, including any incompatibilities:

P403/P233/P235 Store in a well-ventilated place. Keep container tightly closed. Keep Cool. Store away from combustible materials, sources of heat or ignition, foodstuffs, acids, ammonium salts.

SECTION 8 – EXPOSURE CONTROL AND PERSONAL PROTECTION

Control parameters

Disodium tetraborate pentahydrate	12179-04-3	ACGIH	2 mg/m ³	8-hr TWA OEL (mg/m ³) inhalable fraction – Borate Compounds, inorganic
		ACGIH	6 mg/m ³	15 min STEL (mg/m ³) inhalable fraction – Borate Compounds, inorganic
		OSHA/PEL (total dust)	15 mg/m ³	Particulate Not Otherwise Classified or Nuisance Dust
		OSHA/PEL (respirable dust)	5 mg/m ³	Particulate Not Otherwise Classified or Nuisance Dust
		Cal OSHA/PEL	5 mg/m ³	Particulate Not Otherwise Classified or Nuisance Dust
Sodium Hydroxide	1310-73-2	USA ACGIH	2 mg/m ³	ACGIH Ceiling (mg/m ³)
		USA OSHA	2 mg/m ³	OSHA PEL (TWA) (mg/m ³)
Sodium Tolyltriazole	64665-57-2 0-25%	Limits for triazole mixture have not been established by OSHA and ACGIH		
Sodium Benzotriazole	15217-42-2 0-25%			

Exposure controls

Appropriate engineering controls: Handle in accordance with good industrial hygiene and safety practice. Use in well ventilated area. Avoid inhaling vapors. Use local exhaust ventilation or wear appropriate organic acid filtered respirator. 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 respirator with appropriate 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. Avoid allowing runoff to enter ditches / waterways.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Clear light yellow liquid with mild organic odor

pH: 12.9

Specific Gravity: 1.145

Molecular Weight: Mixture

Water Solubility: Complete

Melt/Freeze Point: Not Determined

Boiling Point: 107 C / 225 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, but no hazardous reactivity expected in this blend.

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: None known

SECTION 11 – TOXICOLOGICAL INFORMATION

Component: Disodium tetraborate pentahydrate CAS 12179-04-3	
Acute Oral Toxicity	Low acute oral toxicity. LD50 in rats is 3,305 mg/kg of body weight.
Acute inhalation toxicity	Low acute inhalation toxicity; LC50 in rats is > 2.0 mg/l (or g/m3). Based on the available data, the classification

Acute Dermal Toxicity	Low acute dermal toxicity; LD50 in rabbits is > 2,000 mg/kg of body weight. Poorly absorbed through intact skin.
Eye irritation	Irritating, fully reversible in 14 days.
Target Organ Systemic Toxicant -Single exposure	The maximum exposure of 1704 mg/m ³ resulted in a reduced respiratory rate of 33%, graded as moderate irritation. The lowest exposure tested of 186 mg/m ³ sodium tetraborate pentahydrate resulted in a reduced respiration rate of 11%, graded as no irritation. Based on the available data, the classification criteria are not met.
Target Organ Systemic Toxicant - Repeated exposure	A NOAEL of 17.5 mg B/kg bw/day equivalent to 118 mg sodium tetraborate pentahydrate/kg bw/day was determined in a chronic feeding study (2 years) in rats and is based on testes effects. Other effects (kidney, haemopoietic system) are regarded only at even higher dose levels. Based on the available data, the classification criteria are not met
Skin corrosion/irritation:	Mean Primary Irritation Score: 0. Based on the available data, the classification criteria are not met.
Inhalation	No data available
Respiratory or skin sensitization:	Not a skin sensitiser. No respiratory sensitisation studies have been conducted. There are no data to suggest that disodium tetraborates are respiratory sensitisers.
Reproductive toxicity:	NOAEL in rats for effects on fertility in males is 100 mg boric acid/kg bw and 155 mg sodium tetraborate decahydrate/kg bw; equivalent to 17.5 mg B/kg bw.
Carcinogenicity	No evidence of carcinogenicity (based on boric acid).
Aspiration hazard:	No data available
Germ cell mutagenicity:	Not mutagenic (based on boric acid). Based on the available data, the classification criteria are not met.
Component: Sodium Hydroxide CAS 1310-73-2	
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	Ingestion 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
Component: Triazole mixture	
Sodium Tolyltriazole	64665-57-2 0-25%
Sodium Benzotriazole	15217-42-2 0-25%
Tetrahydro Tolyltriazole	1307867-84-0 0-10%

Acute Oral Toxicity	ATE oral = 1632 mg/kg
Acute inhalation toxicity	ATE inhalation = 4 mg/L
Acute Dermal Toxicity	ATE dermal = 6666 mg/kg
Eye irritation	redness, burning, swelling, tearing or pain
Target Organ Systemic Toxicant -Single exposure	No data available
Target Organ Systemic Toxicant - Repeated exposure	No data available
Skin corrosion/irritation:	redness, itching or swelling
Inhalation	may be irritating to mucous membranes and respiratory tract
Respiratory or skin sensitization:	No data available
Reproductive toxicity:	No data available
Carcinogenicity	No data available
Aspiration hazard:	No data available
Germ cell mutagenicity:	No data available

SECTION 12 – ECOLOGICAL INFORMATION

Component: Disodium tetraborate pentahydrate CAS 12179-04-3	
Toxicity, Fish	EC10 2.9 mg B/L (Micropterus salmoides) to 17 mg B/L (Carassius auratus)
Toxicity, invertebrates	EC10 5.7 mg B/L (Daphnia magna) to 32 mg B/L (Chironomus riparius)
Toxicity, Algae	EC10 10 mg B/L (Chlorella pyrenoidosa) to 50 mg B/L (Anacystis nidulans)
Ecotoxicity	Based on the acute data for freshwater species, this substance is not classified as hazardous to the environment.
Bioaccumulation	This product will undergo hydrolysis in water to form undissociated boric acid. Boric acid will not biomagnify through the foodchain. Octanol/Water partition coefficient: Log Pow = -0.7570 @ 25°C (based on boric acid)
Mobility	The product is soluble in water and is leachable through normal soil. Adsorption to soils or sediments is insignificant.
Biodegradability	Biodegradation is not an applicable endpoint since the product is an inorganic substance
Biochemical OxygenDemand	No data available

(BOD)	
Other adverse effects:	No data available
Component: Sodium Hydroxide CAS 1310-73-2	
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 Oxygen Demand (BOD)	No data available
Other adverse effects:	No data available
Component: Triazole mixture	
Sodium Tolyltriazole	64665-57-2 0-25%
Sodium Benzotriazole	15217-42-2 0-25%
Tetrahydro Tolyltriazole	1307867-84-0 0-10%
EcoToxicity	No data available
Toxicity, Fish	50/96 hr/P. promelas = 273 mg/L (95% C.I. 255-292 mg/L)
Toxicity, invertebrates	LC50/48 hr/C. dubia = 414 mg/L (95% C.I. 355-483 mg/L)
Toxicity, Algae	No data available
Bioaccumulation	No data available
Mobility	No data available
Biodegradability	No data available
Biochemical Oxygen Demand (BOD)	No data available
Other adverse effects:	No data available

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.

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 the concentrate soaked up with compatible absorbent material and landfilled in accordance with local, state, and federal regulations.

SECTION 14 – TRANSPORT INFORMATION (USDOT)

Proper shipping Name: Corrosive Liquid, N.O.S. (Contains Sodium Hydroxide)
Hazard Class: Corrosive (8.1)
UN/ID No UN1760
Packing Group II
Reportable Quantity (RQ) N/A



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: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards: Acute Health Hazard

STATES: Massachusetts Right to Know Components, Pennsylvania Right To Know Components, New Jersey Right To Know Components: Potassium hydroxide CAS-No.1310-58-3

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.

SECTION 16 – OTHER INFORMATION

Fire Protection Association (NFPA) Rating:

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.



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SAFETY DATA SHEET (GHS Format)

Also available for download at:

<http://www.WalterLouis.com/MSDS/>