Section 1 Identification

Product:	312
Other Means of Identification:	Product Code 00022; clear, colorless liquid with a faint pungent sulfur odor
Recommended Use and Restrictions on Use:	Boiler water oxygen scavenger. Do not use in the treatment of drinking water. Do not use in a confined space. Avoid contact with acid or other use where generation of sulfur dioxide gas occurs.
Source:	Heat Power Engineering 702 Incentive Drive Fort Wayne, IN 46825
Emergency Phone:	INFOTRAC (800) 535-5053
Office Phone:	(260) 497-9500
Website:	hpewater.com

Section 2. Hazard(s) Identification

Emergency Overview:	Clear, colorless liquid with a faint pungent sulfur odor. Product is irritating to eyes, skin, and respiratory system if contact or inhalation occurs. Exposure to sulfur dioxide in head space gas may result in respiratory distress for sulfite sensitive individuals or asthmatics. Contact between product and acid will generate sulfur dioxide gas.
Classification 29 CFR 1910.1200:	Product is hazardous by OSHA criteria.

Eye irritant	category 2A
Skin irritant	category 2
STOT-SE, respiratory system	category 3 (respiratory irritant, sulfite)
STOT-SE, serious loss of respiratory function	category 2 (rare, potential for anaphylactic shock, sulfite)

* STOT-SE refers to specific target organ toxicity–single exposure

Signal Word:	Warning
Hazard Statement(s):	Causes serious eye irritation and skin irritation May cause respiratory irritation May cause damage to respiratory function, anaphylactic shock or respiratory distress, if swallowed or inhaled by sulfite sensitive person

Pictogram(s):

Skin & eye Irritant
Health Hazard
STOT-SE





Precautionary Statements:

Do not get in eyes, on skin, or on clothing.
Wear eye protection and protective industrial rubber gloves. When conditions warrant use, add face shield, apron, and/or rubber boots.
Do not breathe dusts, mists, off-gases, or container headspace gas.
Wash gloves and contaminated surfaces thoroughly after handling.

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical attention.
If on skin: Wash with plenty of water. Take off contaminated clothing, and wash it before reuse. If skin irritation occurs: get medical attention.
If inhaled: If breathing is difficult, remove person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms: Call a doctor.
If swallowed: Rinse mouth. Do NOT induce vomiting. If concerned, call a poison control center or doctor.

Store locked up.
Dispose of contents or container in accordance with local state and federal regulations.

Hazards Not Otherwise Classified:

Product contains sulfite. Contact with acids liberates toxic gases. Contact with acid may generate sufficient sulfur dioxide gas in a confined space to create an asphyxiation hazard. Ingestion of product may result in anaphylactic shock for sulfite sensitive individuals.

Ingredients with Unknown Toxicity:

None known.

Potential Environmental Effects:

Significant contamination of small bodies of surface water or localized areas at the point of a spill may depress oxygen levels below minimum requirements for aquatic organisms.

Section 3. Composition/Information on Ingredients

Hazardous Ingredient(s)	Common name	CAS#	% by Wt.*
Sodium sulfite	Sulfite	7757-83-7	5.0-15.0

* The exact percent by weight of the ingredient(s) in this formulation is proprietary.

Section 4. First-Aid Measures

Eyes: If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical attention.

Skin: If on skin: Wash with plenty of water. Take off contaminated clothing, and wash it before reuse. If skin irritation occurs, get medical attention.

Inhalation: If inhaled: If breathing is difficult, remove person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms: Call a doctor.

Ingestion: If swallowed: Rinse mouth. Do NOT induce vomiting. If concerned, call a poison control center or doctor.

Acute Symptoms: Irritation to eyes, skin, or mucous membranes. Coughing and respiratory distress following inhalation exposure

Delayed Effects: None known.

Immediate or Special Treatment Requirements:

After eye contact with product, immediately flush eyes with water for 15 minutes. If safety shower or eye wash is plumbed to cold water, it may be necessary to move victim to a locker room shower or elsewhere to obtain a lukewarm water source before the 15 minute flush is complete. After the 15 minute flush, seek medical treatment.

Section 5. Fire Fighting Measures

Suitable Extinguishing Media: Product is not flammable. Use media appropriate for surrounding fire.

Specific Hazards: Product and decomposition gas may be irritating to eyes, skin, and respiratory system. Closed containers may rupture (due to buildup of pressure) when exposed to extreme heat. Thermal decomposition under fire conditions may produce sulfur dioxide and flammable sodium sulfide. Under fire conditions, firefighters should expect the presence of clear, colorless sulfur dioxide gas (toxic, significant respiratory and eye irritant) and possibly other oxides of sulfur especially at floor level.

Special PPE & Precautions: Wear self-contained breathing apparatus and full turn-out gear. Approach fire from upwind direction. If possible, move containers away from fire. Cool fire exposed containers with water spray. If containers rupture or leak, product may evolve irritating or toxic gas under extreme heat.

Section 6. Accidental Release Measures

Personal Precautions, PPE, & Emergency Procedures: Wear chemical splash goggles and protective industrial rubber gloves. When conditions warrant use, add face shield, apron, and/or rubber boots. If spill escapes to sanitary sewer, notify local public works authorities. If spill escapes to the environment, notify state and federal EPA and, if appropriate, the Coast Guard.

Containment & Clean-Up: Contain and collect spills with commercial absorbents. Consult local authorities for appropriate waste classification and waste disposal options in your location.

Section 7. Handling and Storage

Precautions for Safe Handling: Open container slowly until pressure is relieved. Handle in a well ventilated area. Avoid spillage. Clean up small spills and drips promptly. Protect product from contamination. Avoid contact between this product and other chemicals, especially acids. The recommended disposal for rinse waters from empty units is discharge to the treated system.

Conditions for Safe Storage: Store product in closed container in well ventilated, secure area. Protect containers against physical damage. Protect label. Empty containers retain product residues and all label hazards are still present until container is thoroughly cleaned.

Section 8. Exposure Controls/Personal Protection

Exposure limits for the formulated product are not established. Exposure limits for sodium hydroxide and the sulfur dioxide present in head space gas (or off gases if acidified):

Ingredient	Source & Parameter	Exposure Limit
Sulfur dioxide (potential headspace gas)	ACGIH STEL	0.25 ppm
	OSHA PEL	13 mg/m3
	NIOSH REL	5 mg/m3
	NIOSH IDLH	100 ppm

NOTE: OSHA - Occupational Safety and Health Administration; ACGIH - American Conference of Governmental Industrial Hygienists; NIOSH – National Institute for Occupational Safety and Health; PEL – Permissible Exposure Limit; TWA – Time Weighted Average; TLV – Threshold Limit Value; REL – Recommended Exposure Limit; STEL – Short Term Exposure Limit; IDLH - Immediately Dangerous to Life or Health.

Engineering Controls: General exhaust ventilation is adequate. Avoid inhalation of container head space gas. Employ work practices and product transfer practices that avoid spills, drips, or contact with any incompatible material.

Individual Protection/PPE: Wear chemical splash goggles and protective industrial rubber gloves. When conditions warrant use, add face shield, apron, and/or rubber boots.

Section 9. Physical and Chemical Properties

Appearance (physical state, color, etc.):	Clear colorless liquid
Odor:	Faint pungent sulfur odor
Odor threshold:	1-5 ppm, sulfur dioxide
pH:	9.9-10.5
Melting point/freezing point:	<32º F
Initial boiling point and boiling range:	>212º F
Flash point:	None, not flammable
Evaporation rate:	Similar to water
Flammability (solid, gas):	Not flammable
Upper/lower flammability or explosive limits:	None, not flammable
Vapor pressure:	Not known, similar to water
Vapor density:	>2, air = 1, potential sulfur dioxide gas
Relative density:	Specific gravity, ~1.09-1.15
Solubility(ies):	Completely miscible in water

Partition coefficient: n-octanol/water:	Not known
Auto-ignition temperature:	None, not flammable
Decomposition temperature:	Not known, > 212º F
Viscosity:	Not known

Section 10. Stability and Reactivity

Reactivity:	Product will react with acids or oxidizers. Product will evolve sulfur dioxide gas if contact with acid occurs. Product will undergo exothermic reactions with oxidizers (get hot).
Chemical stability:	Stable at ambient temperatures and pressures.
Possibility of Hazardous Reactions:	Product will evolve sulfur dioxide gas if contact with acid occurs. Polymerization will not occur.
Conditions to Avoid:	Contact with acid or oxidizers. Avoid elevated temperature. Keep container closed.
Incompatible Materials:	Acids and oxidizers.
Hazardous Decomposition Products:	Sulfur dioxide, other oxides of sulfur, and sodium sulfide.

Section 11. Toxicological Information

Likely Routes of Exposure:	Skin or eye contact; inhalation of head space gas.
Symptoms Related to Physical, Chemical, and Toxicological Characteristics:	Product is irritating to eyes, skin, mucous membranes, and other tissues. Contact will irritate eyes and skin. Inhalation of container head space gas (sulfur dioxide) will irritate the upper respiratory system and may cause dyspnea (shortness of breath) and coughing. May also cause gastrointestinal irritation, nausea, and – in sulfite sensitive individuals – severe allergy reactions, if ingested.
Delayed Effects:	None known.
Immediate Effects:	Irritation to eyes, skin, or other tissues including upper respiratory tract. Coughing and respiratory distress following inhalation of off-gas. Gastrointestinal irritation and nausea if ingested. Anaphylactic shock possible following ingestion by sulfite sensitive individuals.
Chronic Effects:	None known.
Numerical Measures of Toxicity:	No toxicology available on the formulated product. Toxicology data for product ingredient(s):
Sodium sulfite	Oral rat LD50, 2,610 mg/kg Inhalation rat LC50, 5.5 mg/l/4 hours, dust
Carcinogenicity:	None of the product ingredients are listed as carcinogens by IARC, NTP, or OSHA.

Section 12. Ecological Information

Ecotoxicity: Significant contamination of surface water may temporarily depress oxygen levels below minimum requirements for aquatic organisms. No aquatic toxicity data available for the formulated product. Aquatic toxicity for ingredients:

Sodium sulfite Western mosquitofish 96 hour LC50 – 460 mg/l
Daphnia magna 48 hour LC50 - 440 mg/l

Persistence and Degradability: Sodium sulfite in aqueous solution oxidizes to less toxic sulfate.

Bioaccumulative Potential: Product ingredients do not bioaccumulate.

Mobility in Soil: Not known.

Other Adverse Effects: None known.

Section 13. Disposal Considerations

Product is consumed during recommended use. Flush container residues to the treated system. If product is not consumed in use, uncontaminated material is not RCRA hazardous waste. Dispose of contents or container in accordance with local, state, and federal regulations.

Section 14. Transport Information

UN Number:	None. Not DOT regulated.
UN Proper Shipping Name:	None
Transport Hazard class(es)	None
Packing Group:	None
Environmental Hazards:	Does not contain ingredient(s) listed as marine pollutant.
Transport in Bulk:	Product container meets or exceeds DOT requirements. Product is shipped to end user. No extraordinary measures are required for shipment in bulk tanks including totes.
Special Precautions:	None known..

Section 15. Regulatory Information

US EPA EPCRA SARA Section 312:	Immediate hazard, irritating to skin and eyes
US EPA EPCRA SARA Section 313:	Not listed
US EPA CERCLA	Not listed
US EPA TSCA:	All ingredients listed or exempt

Section 16. Other Information

NFPA Hazard Ranking

Health	Fire	Reactivity	Special
2	0	1	Cor

HMIS Hazard Ranking

Health	Fire	Reactivity	PPE
2	0	1	n & p or X (defined below)

n – splash goggles
p – gloves
X – consult supervisor

References

1. Manufacturers' SDS on file for raw materials used in this product.
2. 29 CFR 1910.1200. Current OSHA eCFR edition as of July 2018.
3. ANSI Z400.1/Z129.1-2010. Hazard Evaluation and Safety Data Sheet and Labeling Preparation. American Nationals Standards Institute, Inc., New York, NY. 2010.
4. The Globally Harmonized system of Classification and Labeling of Chemicals. (Purple Book) United Nations. 2009.
5. The Globally Harmonized system of Classification and Labeling of Chemicals. (Purple Book) Fifth Revised Edition. United Nations. 2013.
6. ACGIH. Threshold Limit Values and Biological Exposures Indices. 2018.
7. 49 CFR 172.101, Hazardous Materials Table. Current DOT eCFR edition as of July 2018.
8. EPA List of Lists. EPA 550-B-15-001. March 2015. Online at https://www.epa.gov/sites/production/files/2015-03/documents/list_of_lists.pdf.

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