Section 1 Identification

Product:	245
Other Means of Identification:	Product Code 00018; clear yellow alkaline liquid with a slight characteristic odor
Recommended Use and Restrictions on Use:	Boiler water treatment. Not for use in food preservation. Not for use in drinking water.
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

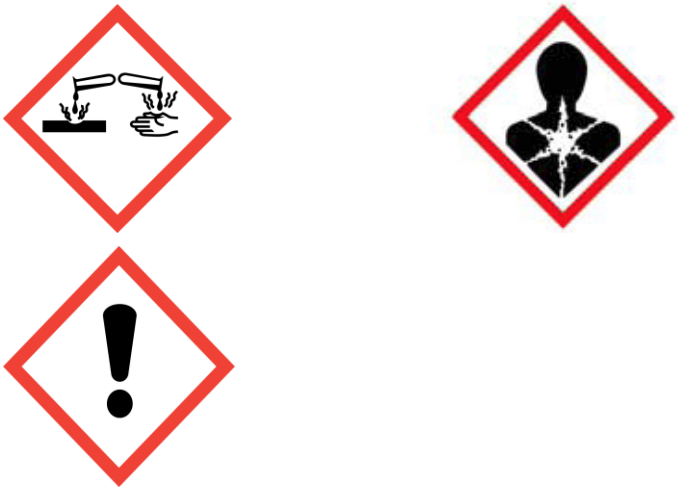
Emergency Overview:	Corrosive. Clear yellow alkaline liquid with a slight characteristic odor. Product is corrosive to eyes, skin, respiratory system, and some metals. May react exothermically (get hot) with acid and evolve toxic gases. Product is not flammable, but contact with metal may generate flammable hydrogen gas. If evaporated to dryness, sodium nitrite ingredient is an oxidizer.
Classification 29 CFR 1910.1200:	Product is hazardous by OSHA criteria.
Corrosive to skin	category 1, subcategory 1B
Serious eye damage	category 1
STOT-SE, respiratory system	category 1
STOT-SE, gastrointestinal system	category 1
Toxic, oral	category 4
Corrosive to metals	category 1
Hazardous to the aquatic environment	category 2

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

Signal Word:	DANGER
Hazard Statement(s):	Causes severe skin burns and eye damage Causes damage to respiratory system if inhaled Causes damage to digestive system if swallowed Harmful if swallowed due to toxicity May be corrosive to metals Toxic to aquatic life

Pictogram(s):

Corrosion
Health Hazard
STOT-SE
Toxicity



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 or mists.
Wash gloves and contaminated surfaces thoroughly after handling.
Do not eat, drink, or smoke when using this product.
Absorb spillage to prevent material damage.

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing for 15 minutes. Immediately, call a doctor.
If on skin (or hair): Immediately, take off all contaminated clothing. Rinse skin with water. Use safety shower if available. Immediately, call a doctor.
Wash contaminated clothing before reuse.
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. Immediately, call a poison control center or doctor.

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

Hazards Not Otherwise Classified:

Product contains nitrite. Contact with acids or thermal decomposition liberates oxides of nitrogen which are toxic gases.
There is an IARC Monograph - Volume 94, 2010 - that indicates "limited evidence" for carcinogenicity of ingested nitrite (the nitrite portion of the sodium nitrite ingredient) in lab animals. This IARC observation is most relevant to ingestion of FDA approved nitrite preservatives in food. The handling and use of this product presents no nitrite ingestion hazard.
Borax ingredient SDS indicates a hazard to the unborn child, i.e., reproductive toxicant/embryotoxicity. Indication originates from lab animal research. Lab animals ingested large doses per bodyweight having no corresponding

exposure in humans. The handling and use of this product presents no ingestion hazard and product is not classified as a reproductive toxicant.

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 elevate pH levels above tolerable levels for aquatic organisms. Product is also toxic to aquatic organisms at the GHS category 2 level in the international GHS system due primarily to the nitrite ingredient.

Section 3. Composition/Information on Ingredients

Hazardous Ingredient(s)	Common name	CAS#	% by Wt.*
Sodium hydroxide	Caustic soda	1310-73-2	1.0-10.0
Sodium nitrite	nitrite	7632-00-0	20.0-30.0
Sodium borate pentahydrate	borax	12179-04-3	1.0-5.0
Sodium tolyltriazole	TTA	64665-57-2	1.0-5.0

* 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 for 15 minutes. Immediately, call a doctor.

Skin: If on skin (or hair): Immediately, take off all contaminated clothing. Rinse skin with water. Use safety shower if available. Immediately, call a doctor.

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. Immediately, call a poison control center or doctor.

Acute Symptoms: Irritation or burns to eyes, skin, or mucous membranes. Injury may result in permanent damage to eyesight or permanent scars on skin.

Delayed Effects: If overexposure to product results in absorption of nitrite, symptoms following exposure may include headache, nausea, and formation of methemoglobin possibly causing a bluish skin color (cyanosis).

Immediate or Special Treatment Requirements:

After contact with product, immediately flush eyes and/or skin 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 is corrosive to eyes, skin, and respiratory system. Closed containers may rupture (due to buildup of pressure) when exposed to extreme heat. Contact with some metals may generate explosive hydrogen gas. Thermal decomposition under fire conditions may produce corrosive aerosols, metal oxide fumes, and oxides of carbon. Under fire conditions, firefighters should watch for and avoid brown to orange nitrogen oxide gases (toxic). If product water is boiled off under fire conditions, nitrite ingredient is an oxidizer.

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. Product contains 20-30% sodium nitrite. Sodium nitrite has a CERCLA RQ of 100 pounds. Product contains 1-10% sodium hydroxide. Sodium hydroxide has a CERCLA RQ of 1,000 pounds.

Containment & Clean-Up: Contain and collect spills with nonflammable 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. Avoid spillage. Clean up small spills and drips promptly. Protect product from contamination. Avoid contact between this product and other chemicals, especially acids and reducing agents. 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. Also, no exposure limits for sodium nitrite were located. Exposure limits for sodium hydroxide ingredient:

Ingredient	Source & Parameter	Exposure Limit
Sodium hydroxide	ACGIH Ceiling	2 mg/m3
	OSHA PEL	2 mg/m3
	NIOSH REL ceiling	2 mg/m3

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. 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 yellow alkaline liquid
Odor:	Slight characteristic odor
Odor threshold:	not known
pH:	12.5-13.2
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:	Not known, similar to water
Relative density:	Specific gravity, 1.23-1.27
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 reducing agents. Product will evolve oxides of nitrogen (gas) if contact with acid occurs. May also react exothermically (get hot) following contact with acid.
Chemical stability:	Stable at ambient temperatures and pressures.
Possibility of Hazardous Reactions:	Product will evolve oxides of nitrogen if contact with acid occurs. May react exothermically (get hot) following contact with acid. Polymerization will not occur.
Conditions to Avoid:	Contact with acids or reducing agents. Avoid elevated temperature. Keep container closed.
Incompatible Materials:	Acids and reducing agents. Do not use combustible absorbents in spill cleanup. May be corrosive to metals.
Hazardous Decomposition Products:	Corrosive aerosols, metal oxide fumes, oxides of nitrogen, and oxides of carbon.

Section 11. Toxicological Information

Likely Routes of Exposure:	Skin or eye contact

Symptoms Related to Physical, Chemical, and Toxicological Characteristics: Product is corrosive to eyes, skin, mucous membranes, and other tissues. Contact will irritate or burn eyes and skin. Permanent damage to eyesight is possible. Permanent scars are possible. Damage to critical respiratory or gastrointestinal systems is possible following overexposure. Inhalation of product in mist or aerosol form may do serious damage to respiratory system by burning tissues. Similar damage to the gastrointestinal system is possible following ingestion. Consequently, product is classified as a specific target organ toxicity – single exposure (STOT-SE) hazard for inhalation (respiratory system) or ingestion (digestive system).

Delayed Effects: If overexposure to product results in absorption of nitrite, symptoms following exposure may include headache, nausea, and formation of methemoglobin possibly causing a bluish skin color (cyanosis).

Immediate Effects: Irritation or burns to eyes, skin, or other tissues including upper respiratory tract. Gastrointestinal irritation or burns and nausea if ingested.

Chronic Effects: None known.

Numerical Measures of Toxicity: No toxicology available on the formulated product. Toxicology data for product ingredient(s):

Sodium hydroxide Oral rat LD50, ~300-500 mg/kg (Not toxic, death due to tissue corrosion. Current practice precludes toxicity testing for corrosives on lab animals due to animal welfare concerns. Caustic not classified as toxic for this product. Hazard is corrosive tissue damage.)

Sodium nitrite Oral rat LD50, 160 mg/kg

Carcinogenicity: None of the product ingredients are listed as carcinogens by NTP or OSHA. The sodium nitrite ingredient is listed as a group 2A carcinogen by IARC – probably carcinogenic to humans. This classification is relevant to FDA approved use of nitrite in food, but not relevant to the use of this industrial water treatment additive.

Section 12. Ecological Information

Ecotoxicity: Significant contamination of surface water may temporarily elevate pH above minimum requirements for aquatic organisms. Nitrite ingredient is also toxic to aquatic organisms. No aquatic toxicity data available for the formulated product. Aquatic toxicity for ingredients:

Sodium hydroxide Mosquito fish 96 hour LC50 – 125 mg/l

Sodium nitrite rainbow trout 96 hour LC50 – 0.94-1.92 mg/l

Daphnia magna 48h EC50 12.5 mg/l

Persistence and Degradability: Sodium hydroxide dissipates by way of neutralization reactions that form a variety of sodium salts. Sodium nitrite oxidizes to nitrate and is a macronutrient (fertilizer) for aquatic plants.

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, material is RCRA hazardous waste, D002, corrosive liquid. Dispose of contents or container in accordance with local, state, and federal regulations.

Section 14. Transport Information

UN Number:	UN1760
UN Proper Shipping Name:	Corrosive liquids, N.O.S.(sodium hydroxide and sodium tolyltriazole)
Transport Hazard class(es)	8
Packing Group:	PG II
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. Material is a Packing Group II corrosive liquid. No extraordinary measures are required for shipment in bulk tanks including totes.
Special Precautions:	If needed, see associated designations at 49 CFR172.102 for detailed descriptions of current container specifications.

Section 15. Regulatory Information

US EPA EPCRA SARA Section 312:	Immediate hazard, corrosive to skin and eyes
US EPA EPCRA SARA Section 313:	Sodium nitrite ingredient is listed.
US EPA CERCLA	Product contains 20-30% sodium nitrite. Sodium nitrite has a CERCLA RQ of 100 pounds. Product contains 1-10% sodium hydroxide. Sodium hydroxide has a CERCLA RQ of 1,000 pounds.
US EPA TSCA:	All ingredients listed or exempt.

Section 16. Other Information

NFPA Hazard Ranking

Health	Fire	Reactivity	Special
3	0	1	Cor

HMIS Hazard Ranking

Health	Fire	Reactivity	PPE
3	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 October 2019.
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. 2019.
7. 49 CFR 172.101, Hazardous Materials Table. Current DOT eCFR edition as of October 2019.
8. EPA List of Lists. EPA 550-B-19-003. June 2019. Online at www.epa.gov/epcra.

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Revision 2.0 for GHS documents

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