SECTION 1 - IDENTIFICATION

Product: AQUATROL® 13210

Recommended use of the chemical and restrictions on use:

Uses: Multi-Component Corrosion Inhibitor.
List of advices against: Not available.

Details of the supplier of the Safety Data Sheet:

Momar, Inc.
1830 Ellsworth Industrial Dr.
Atlanta, Ga. 30318
404-355-4580
800-556-3967
www.momar.com

Emergency Telephone Number (INFOTRAC): North America: 1-800-535-5053
International: 1-352-323-3500

SECTION 2 – HAZARD IDENTIFICATION

Classification:
Oxidizing Liquids: 3
Acute Toxicity – Oral: 4
Eye Damage/Irritation: 2B

Signal Word: Warning.

Hazard Statements:
May intensify fire; oxidizer.
Harmful if swallowed.
Causes eye irritation.

Pictograms:

Precautionary Statements:

Prevention:
Keep away from heat.
Keep/store away from clothing/combustible materials.
Take any precaution to avoid mixing with combustibles.
Wash hands and exposed skin thoroughly after handling.
Do not eat, drink or smoke when using this product.

Response:
In case of fire: Use dry sand, dry chemical or alcohol resistant foam to extinguish.
If swallowed: Call a poison center/doctor/hospital if you feel unwell.
Rinse mouth.
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 advice/attention.

Storage: None.

Disposal: Dispose of contents/container to approved waste disposal plant in accordance with federal, state, and local regulations.

Other Hazards: None known.

SECTION 3 – COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	CAS Number	Percent Weight
Sodium Tolytriazole	64665-57-2	<2%
Sodium Molybdate	10102-40-6	<15%
Sodium Nitrite	7632-00-0	<10%

SECTION 4 – FIRST AID MEASURES

Eye Contact: Flush eyes with a large quantity of water for 15 minutes. If irritation continues, seek medical attention.

Skin Contact: No adverse effects expected. If irritation occurs, wash with water to remove product. Remove contaminated clothing and wash before reuse. If difficulties arise, contact a physician.

Inhalation: No adverse effects expected. Not an inhalation hazard.

Ingestion: If large quantities are swallowed, contact a physician.

Most Important Symptoms and Effects:

Acute: May cause eye irritation with contact with product or mists. This is characterized by redness and swelling of the eye**.**

Delayed: Repeated or prolonged exposure to skin may cause dermatitis.

Indication of Any Immediate Medical Attention and Special Treatment Needed: None known.

SECTION 5 – FIREFIGHTING MEASURES

Extinguishing Media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Specific Hazards Arising From the Substance or Product: None

Hazardous Combustion Products: High temperature steam, potentially oxides of carbon, sodium, and nitrogen.

Protective Equipment and Precautions for Firefighters: Will not burn or support combustion. Use water spray to cool fire exposed containers and to flush spills. Wear a self-contained breathing apparatus in pressure- demand mode, and full protective gear.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment, and Emergency Procedures: Avoid contact with skin and eyes. Wear protective clothing, see Section 8.

Environmental Precautions: Keep out of sewers, drains, and bodies of water. Spills should be diked and absorbed.

Methods and Materials for Containment and Cleaning Up: Absorb in vermiculite, dry sand, or earth, and place in containers. Collect and reclaim or dispose of in sealed containers in a licensed waste facility. Liquid material may be removed with vacuum collection. Containers with spillage must be properly labeled with correct contents and hazard symbol.

SECTION 7 – HANDLING AND STORAGE

Precautions for Safe Handling: Avoid spilling, skin, and eye contact. Wash thoroughly after handling. Use only with adequate ventilation. For industrial or professional use only. Do not cut or weld empty container. KEEP OUT OF REACH OF CHILDREN.

Conditions for Safe Storage: Keep container closed when not in use. Store at temperatures below 120°F. Water contamination should be avoided.

Incompatibilities: Contact with strong oxidizers.

SECTION 8 – EXPOSURE CONTROL / PERSONAL PROTECTION

Exposure Limits and Recommendations:

Chemical Name	OSHA PEL	ACGIH TLV	Other Exposure Limits
Sodium Molybdate	5 mg/m^3	0.5 mg/m^3	

Engineering Controls: Normal ventilation.

Personal Protection Measures:

Respiratory Protection: Normally not needed. If needed, use NIOSH approved mask and filter for organic vapor.

Skin and Body: Chemical resistant gloves recommended. Chemical resistant apron, as needed.

Eye Protection: Safety glasses/goggles recommended.

Other Recommendations: None.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Odor: Clear amber liquid with no odor.
Odor Threshold: Not determined.
pH: 11.0
Freezing Point: Not determined.
Boiling Point: 212°F
Flash Point: No flash at boiling.
Evaporation Rate (BUAC=1): Slower.
Flammability: Not flammable.
Flammability or Explosion Limits: **Upper:** Not applicable. **Lower:** Not applicable.
Vapor Pressure: Not determined.
Specific Gravity: 1.150
Solubility in Water: Complete.
Solubility in Other Solvents: Not determined.
Partition Coefficient (n-octanol/water): Not determined.

Auto-ignition Temperature: Not determined.
Decomposition Temperature: Not determined.
Viscosity: Not determined.
Other Information: Not determined.

SECTION 10 – STABILITY AND REACTIVITY

Reactivity: No dangerous reaction known under conditions of normal use.
Chemical Stability: Stable under normal temperature conditions and recommended use.
Possible Hazardous Reactions: Not available.
Conditions to Avoid: Contact with incompatible materials.
Incompatible Materials: Strong oxidizing agents.
Hazardous Decomposition Products: Oxides of carbon, sodium and nitrogen, smoke, fumes.

SECTION 11 – TOXICOLOGICAL INFORMATION

Routes of Exposure:

Inhalation	Ingestion	Skin	Eye
		X	X

Physical, Chemical and Toxicological Effects:

Symptoms: May cause eye irritation with contact with product or mists. This is characterized by redness and swelling of the eye**.** Prolonged or repeated skin contact may cause irritation or dermatitis.

Delayed and Immediate Effects as well as Chronic Effects from Short and Long-term Exposure:

Sensitization: Not a skin sensitizer.
Germ Cell Mutagenicity: Not classified.
Carcinogenicity: This product has not been identified as a carcinogen or probable carcinogen by NTP or OSHA, nor have any of its components.
IARC – Sodium Nitrite – Group 2A: Probable carcinogenic to humans
Reproductive Toxicity: Not classified.
Specific Target Organ Toxicity: None.

Numerical Measures of Toxicity:

Product: Not determined.

Component:

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Sodium Nitrite	157.9 mg/kg (rat)	Not determined	Not determined

SECTION 12 – ECOLOGICAL INFORMATION

Ecotoxicity: Sodium Nitrite
Fish: Rainbow Trout: LC50 = 0.54 mg/L; 96 hr.
Invertebrates: Water Flea: EC50 = 12.5 mg/L; 48 hr.

Persistence and Degradability: Readily biodegradable per 40CFR 796.3200.

Bioaccumulation: Not determined.

Mobility: Not determined.

Other Adverse Effects: May be toxic to aquatic life.

SECTION 13 – DISPOSAL CONSIDERATIONS

Waste Treatment Methods:

Disposal of Wastes: Dispose of product in accordance with local, state, and federal regulations.

Contaminated Packaging: Empty containers should be taken to an approved waste handling site for recycling or disposal.

Other Information: None.

SECTION 14 – TRANSPORTATION INFORMATION

DOT:

UN Number: UN3219

Proper Shipping Name: Nitrites, Inorganic, Aqueous Solution, n.o.s. (Sodium Nitrite)

Hazard Class: 5.1

Packing Group: III

SECTION 15 – REGULATORY INFORMATION

US Federal Regulations:

TSCA: All ingredients of this product are listed in the TSCA inventory.

SARA 313: This product contains the following chemical or chemicals subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) and Title 40 CFR 372.

Chemical Name	CAS Number	Percent Weight
Sodium Nitrite	7632-00-0	<10%

US State Regulations:

California: **This product contains the following chemical or chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm:** None.

SECTION 16 – OTHER INFORMATION

Issue Date: April 11, 2006
Revision Date: March 21, 2016

Health	Flammability	Reactivity	Personal Protection
1	0	1	B

All information appearing herein is based upon data obtained from the manufacturer and/or recognized technical sources. While the information is believed to be accurate at the time of publication, Momar, Incorporated makes no representations as to its accuracy or sufficiency. Conditions of use are beyond Momar, Incorporated's control; and therefore, users are responsible to verify this data under their own operating conditions to determine whether the product is suitable for their particular purposes; and they assume all risks of their use, handling, and disposal of the product or from the publications or use of, or reliance upon, information contained herein. This information relates only to the product designed herein and does not relate to its use in combination with any other material or in any other process.

AquaTrol®
A DIVISION OF MOMAR, INC.

AquaTrol 13210

Liquid Closed System Corrosion Inhibitor with Molybdenum

- **Provides excellent corrosion inhibition**
- **Metal passivator and cleaner**
- **Maintains protection in hot or cold systems**
- **Provides long lasting corrosion protection**

Principal Application:

13210 is a multi-component corrosion inhibitor for treating closed systems. **13210** combines three proven corrosion inhibitor technologies to give long lasting corrosion protection with minimum maintenance attention. The basic inhibitor system incorporates a nitrite-borate blend that buffers pH to protect steel and forms a protective film over metal surfaces. This combination has long been the industry standard for treating closed systems. **13210** also incorporates a molybdate-based corrosion inhibitor system for added protection on metal surfaces. Tolyltriazole is added to **13210** to assure corrosion protection on non-ferrous metals. Nitrite and molybdate are film-forming inhibitors that effectively protect metal surfaces against oxygen attack. This inhibitor system provides added protection not available in standard nitrite-borate formulations.

Use Considerations

13210 is primarily intended for use in closed recirculating water systems and can be used in either hot or cold closed loop systems. Complete corrosion inhibition is attained by establishing the recommended initial treatment of **13210** in the system. Under normal operating conditions, it is not necessary to add further treatment to the system except to maintain the minimum recommended treatment residual. Additional quantities of **13210** should be added only to compensate for known water loss or if the system has an open expansion tank that would permit air contact with the water. Add **13210** at the rate indicated below in proportion to make-up to the system. Your AquaTrol Water Specialist will provide specific product selection and usage information.

Dosage & Control

The initial dose of **13210** is two gallons for each 1000 gallons of chilled system water volume. Thereafter, the correct treatment level is assured by adding enough **13210** to maintain a residual of 50-70 ppm of molybdenum (as Mo). The initial dose of **13210** is four gallons for each 1000 gallons of hot system water volume. Thereafter, the correct treatment level is assured by adding enough **13210** to maintain a residual of 100 -140 ppm of molybdenum (as Mo). Your AquaTrol Water Specialist will recommend complete program controls and product dosages.

Feeding

13210 should be fed into the recirculating water line using a chemical metering pump constructed of suitable resistant materials or through a bypass feeder if one is available. This product should be metered directly from the shipping container. Do not mix directly with other concentrated water treatment products.

Typical Properties

Appearance:	Light Amber, Clear Liquid
Odor:	Faint Acrid
pH (neat):	10.5 – 11.0
Density:	9.6 Pounds per Gallon

Handling Storage & Safety

Use normal precautions for chemical handling. Wear appropriate apron, gloves, or other protective clothing. Always wear goggles or face shield for eye protection. Keep out of the reach of children. Avoid contact with eyes, skin, or clothing. Do not swallow.
Read container labeling and Safety Data Sheet for more complete information on handling precautions. AquaTrol **13210** is available in 55-, 35-, 20-, and 5-gallon non-returnable containers. Store at room temperature; protect from freezing and extreme heat. Keep container closed when not in use. Use promptly upon opening.

SECTION 1 - IDENTIFICATION

Product: AQUATROL® 13420

Recommended use of the chemical and restrictions on use:

Uses: Silicate based closed loop inhibitor.
List of advices against: Not available.

Details of the supplier of the Safety Data Sheet:

Momar, Inc.
1830 Ellsworth Industrial Dr.
Atlanta, Ga. 30318
404-355-4580
800-556-3967
www.momar.com

Emergency Telephone Number (INFOTRAC): North America: 1-800-535-5053
International: 1-352-323-3500

SECTION 2 – HAZARD IDENTIFICATION

Classification: Eye Damage/Irritation 2B
Signal Word: Warning.
Hazard Statements: Causes eye irritation.
Pictograms: None.
Precautionary Statements:
Prevention: Wash hands and all exposed skin thoroughly after handling.
Response: 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 advice/attention.
Storage: None.
Disposal: None.
Other Hazards: None known.

SECTION 3 – COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	CAS Number	Percent Weight
Sodium silicate	1344-09-8	15 - 25

SECTION 4 – FIRST AID MEASURES

Eye Contact: Immediately flush eyes with plenty of water, remove contact lenses (if easy to do so), and continue to flush for at least 15-20 minutes, forcibly holding eyelids apart to ensure complete irrigation of all eye and lid tissue. Get medical attention immediately. Continue rinsing eyes while in transport.

Skin Contact: Immediately flush skin with plenty of water for at least 15 minutes. Remove contaminated clothing. Wash clothing and shoes before reuse. Get medical attention.

Inhalation: Remove from exposure. If not breathing, give artificial respiration. Get medical attention.

Ingestion: Get medical attention immediately. Do not induce vomiting. If victim is conscious and alert, give large amounts of water. If vomiting occurs spontaneously, keep airway clear. Give more water when vomiting stops. Never give anything by mouth to an unconscious person.

Most Important Symptoms and Effects:

Acute: Severe eye irritation or damage. Possible skin burns. Severe respiratory tract irritation or damage.

Delayed: Prolonged or excessive contact with skin could cause damage or dermatitis.

Indication of Any Immediate Medical Attention and Special Treatment Needed: None known.

SECTION 5 – FIREFIGHTING MEASURES

Extinguishing Media: Use extinguishing media appropriate for surrounding fire.

Specific Hazards Arising From the Substance or Product: Avoid contact with spilled material. Contact with metals may evolve flammable hydrogen gas. Avoid inhalation of material or combustion by-products.

Hazardous Combustion Products: Oxides of carbon, sodium, and boron, or other toxic vapors.

Protective Equipment and Precautions for Firefighters: Wear a self-contained breathing apparatus, and full protective gear. Chemical protective clothing may be needed.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment, and Emergency Procedures: Avoid contact with skin and eyes. Wear protective clothing, see Section 8.

Environmental Precautions: Keep out of sewers, drains, and bodies of water. Spills should be diked and vacuumed or absorbed.

Methods and Materials for Containment and Cleaning Up: Liquid material may be removed with a vacuum truck or absorbed in vermiculite, dry sand, or earth, and place in containers. Wet material is slippery under foot. Product dries to form glass film which can easily cut skin. Collect and reclaim or dispose of in sealed containers in a licensed waste facility. Containers with spillage must be properly labeled with correct contents and hazard symbol.

SECTION 7 – HANDLING AND STORAGE

Precautions for Safe Handling: Avoid spilling, skin, and eye contact. Avoid breathing aerosol mist. Wash thoroughly after handling. Do not use aluminum fittings or transfer lines, as flammable hydrogen gas may be generated. Use

only with adequate ventilation. For industrial or professional use only. Do not cut or weld empty container. KEEP OUT OF REACH OF CHILDREN.

Conditions for Safe Storage: Store in a cool dry place. Do not store in aluminum container as flammable hydrogen gas may be generated. Keep from freezing.

Incompatibilities: Strong acids, oxidizing agents, and alkali sensitive metals such as aluminum or zinc.

SECTION 8 – EXPOSURE CONTROL / PERSONAL PROTECTION

Exposure Limits and Recommendations:

Chemical Name	OSHA PEL	ACGIH TLV	Other Exposure Limits
Sodium silicate	Not established	Not established	6 mg/m^3 (OXY REL)

Engineering Controls: Normal ventilation.

Personal Protection Measures:

Respiratory Protection: Normally not needed. If needed, use NIOSH approved full face mask and filter for dust/fume/mists.

Skin and Body: Chemical resistant gloves recommended. Use gloves that are cut resistant if handling dry glass material. Chemical resistant apron, as needed.

Eye Protection: Safety glasses/goggles recommended.

Other Recommendations: None.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Odor: Clear, colorless liquid
Odor Threshold: Not determined.
pH: 11-12.
Freezing Point: Not determined.
Boiling Point: 212°F
Flash Point: No determined
Evaporation Rate (BUAC=1): Slower.
Flammability: Not flammable.
Flammability or Explosion Limits: **Upper:** Not applicable. **Lower:** Not applicable.
Vapor Pressure: Not determined.
Specific Gravity: 1.105
Solubility in Water: Complete.
Solubility in Other Solvents: Not determined.
Partition Coefficient (n-octanol/water): Not determined.
Auto-ignition Temperature: Not determined.
Decomposition Temperature: Not determined.
Viscosity: Not determined.
Other Information: Not determined.

SECTION 10 – STABILITY AND REACTIVITY

Reactivity: No dangerous reaction known under conditions of normal use. Avoid contact with incompatible materials. See list below.

Chemical Stability: Stable under normal temperature conditions and recommended use.

Possible Hazardous Reactions: Not available.

Conditions to Avoid: Contact with incompatible materials.

Incompatible Materials: Strong oxidizing agents, and acids, and alkali sensitive metals such as aluminum.

Hazardous Decomposition Products: Oxides of carbon, smoke, fumes.

SECTION 11 – TOXICOLOGICAL INFORMATION

Routes of Exposure:

Inhalation	Ingestion	Skin	Eye
		X	X

Physical, Chemical and Toxicological Effects:

Symptoms: Irritation and possible damage to skin and eyes. Irritation or damage to respiratory tract.

Delayed and Immediate Effects as well as Chronic Effects from Short and Long-term Exposure:

Sensitization: Not a skin sensitizer.

Germ Cell Mutagenicity: Not classified.

Carcinogenicity: No components of this product are listed by NTP, IARC, or OSHA.

Reproductive Toxicity: Not classified.

Specific Target Organ Toxicity: Eyes and skin

Numerical Measures of Toxicity:

Product: Not determined.

Component:

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Sodium silicate	1153 mg/kg (Rat)	4640 mg/kg (Rabbit)	Not determined

SECTION 12 – ECOLOGICAL INFORMATION

Ecotoxicity: Sodium Silicate

Fish: *Brachydanio:* LC50 = 3185 mg/L; 96hrs

Invertebrates: *C. dubia:* LC50 = 216 mg/L; 4hrs

Persistence and Degradability: Not expected to persist in the environment. Biodegradable.

Bioaccumulation: Not expect to be a bioaccumulator.

Mobility: Not expected to have mobility.

Other Adverse Effects: None known.

SECTION 13 – DISPOSAL CONSIDERATIONS

Waste Treatment Methods:

Disposal of Wastes: Dispose of product in accordance with local, state, and federal regulations.

Contaminated Packaging: Empty containers should be taken to an approved waste handling site for recycling or disposal.

Other Information: None.

SECTION 14 – TRANSPORTATION INFORMATION

DOT:

UN Number:

Proper Shipping Name: Not Regulated

Hazard Class:

Packing Group:

SECTION 15 – REGULATORY INFORMATION

US Federal Regulations:

TSCA: All ingredients of this product are listed in the TSCA inventory.

SARA 313: This product contains the following chemical or chemicals subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) and Title 40 CFR 372.

Chemical Name	CAS Number	Percent Weight
None		

US State Regulations:

California: **This product contains the following chemical or chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm:** None.

SECTION 16 – OTHER INFORMATION

Issue Date: July 18, 2019
Revision Date: December 29, 2022

Health	Flammability	Reactivity	Personal Protection
2	0	0	B

All information appearing herein is based upon data obtained from the manufacturer and/or recognized technical sources. While the information is believed to be accurate at the time of publication, Momar, Incorporated makes no representations as to its accuracy or sufficiency. Conditions of use are beyond Momar, Incorporated's control; and therefore, users are responsible to verify this data under their own operating conditions to determine whether the product is suitable for their particular purposes; and they

assume all risks of their use, handling, and disposal of the product or from the publications or use of, or reliance upon, information contained herein. This information relates only to the product designed herein and does not relate to its use in combination with any other material or in any other process.

AquaTrol®
A DIVISION OF MOMAR, INC.

AquaTrol 13420

Liquid Closed System Treatment

- **Convenient multifunctional liquid product**
- **Provides excellent corrosion inhibition**
- **Maintains protection in cold or hot systems**

Principal Application:

AquaTrol 13420 is a multi-component corrosion inhibitor for treating closed systems. **13420** combines proven corrosion inhibitor technologies to give long-lasting corrosion protection with minimum maintenance attention. The basic inhibitor system incorporates a silicate and pH buffer to protect steel and forms a protective film over metal surfaces. This combination has long been the industry standard for treating closed systems.

Use Considerations

13420 is primarily intended for use in closed recirculating water systems and can be used in either hot or cold closed loop systems. Complete corrosion inhibition is attained by stablishing the recommended initial treatment of **13420** in the system. Under normal operating conditions, it is not necessary to add further treatment to the system except to maintain the minimum recommended treatment residual. Additional quantities of **13420** should be added only to compensate for known water loss.

Dosage & Control

For chilled loops the initial dose of **13420** is 0.5 gallon for each 1000 gallons of system water volume. Thereafter, the correct treatment level is assured by adding enough **13420** to maintain a residual of 50-75 ppm of silicate (as SiO_2). For hot loops the initial dose of **13420** is one gallon for each 1000 gallons of system water volume. Thereafter, the correct treatment level is assured by adding enough **13420** to maintain a residual of 100-150 ppm of silicate (as SiO_2). Your AquaTrol Water Specialist will recommend complete program controls and product dosages.

Feeding

13420 should be fed into the recirculating water line using a chemical metering pump constructed of suitable resistant materials or through a bypass feeder if one is available. This product should be metered directly from the shipping container. Do not mix directly with other concentrated water treatment products.

Typical Properties

Appearance:	Colorless Clear Liquid
Odor:	Mild
pH (neat):	11.5
Density:	9.7 Pounds per Gallon

Handling Storage & Safety

Use normal precautions for chemical handling. Wear appropriate apron, gloves, or other protective clothing. Always wear goggles or face shield for eye protection. Keep out of the reach of children. Avoid contact with eyes, skin, or clothing. Do not swallow.
Read container labeling and Safety Data Sheet for more complete information on handling precautions. AquaTrol **13420** is available in 55-, 35-, 20-, and 5-gallon non-returnable containers. Store at room temperature; protect from freezing and extreme heat. Keep container closed when not in use. Use promptly upon opening.

SECTION 1 - IDENTIFICATION

Product: AQUATROL® 14846

Recommended use of the chemical and restrictions on use:

Uses: Boiler treatment, single drum.
List of advices against: Not available.

Details of the supplier of the Safety Data Sheet:

Momar, Inc.
1830 Ellsworth Industrial Dr.
Atlanta, Ga. 30318
404-355-4580
800-556-3967
www.momar.com

Emergency Telephone Number (INFOTRAC): North America: 1-800-535-5053
International: 1-352-323-3500

SECTION 2 – HAZARD IDENTIFICATION

Classification: Skin Corrosion/Irritation: 1B
Eye Damage/Irritation: 1

Signal Word: Danger.

Hazard Statements: Causes severe skin burns and eye damage.
Causes serious eye damage.

Pictograms:

Precautionary Statements:

Prevention: Do not breathe dusts or mists.
Wash hands and all exposed skin thoroughly after handling.
Wear protective gloves, protective clothing, eye protection, and face protection.

Response: If swallowed: Rinse mouth. Do NOT induce vomiting.
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
Wash contaminated clothing before reuse.
If inhaled: Remove person to fresh air and keep comfortable for breathing.
Immediately call a poison center, doctor, or hospital.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Storage: Store locked up.

Disposal: Dispose of contents/container in accordance with local/regional/ national regulations.

Other Hazards: None known.

SECTION 3 – COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	CAS Number	Percent Weight
Potassium hydroxide	1310-58-3	15 – 25
Tetrapotassium pyrophosphate	7320-34-5	5 – 10
Sodium metabisulfite	7681-57-4	5 – 10
Diethylaminoethanol	100-37-8	1 – 5
Morpholine	110-91-8	1 – 5

SECTION 4 – FIRST AID MEASURES

Eye Contact: Immediately flush eyes with plenty of water, remove contact lenses, and continue to flush for at least 15-20 minutes, forcibly holding eyelids apart to ensure complete irrigation of all eye and lid tissue. Get medical attention immediately.

Skin Contact: Immediately flush skin with plenty of water for at least 15 minutes. Remove contaminated clothing. Wash clothing and shoes before reuse. Get medical attention if irritation persists.

Inhalation: Remove from exposure. If not breathing, give artificial respiration. If breathing is difficult, get medical attention.

Ingestion: Get medical attention immediately. Do not induce vomiting. If victim is conscious and alert, give large amounts of water. Discontinue water if victim feels like they may vomit. Never give anything by mouth to an unconscious person.

Most Important Symptoms and Effects:

Acute: Severe eye irritation.

Delayed: Prolonged or excessive contact with skin could cause damage or dermatitis.

Indication of Any Immediate Medical Attention and Special Treatment Needed: None known.

SECTION 5 – FIREFIGHTING MEASURES

Extinguishing Media: Use media appropriate to the surrounding fire.

Specific Hazards Arising From the Substance or Product: None

Hazardous Combustion Products: Oxides of carbon, smoke, and fumes.

Protective Equipment and Precautions for Firefighters: Wear a self-contained breathing apparatus in pressure- demand mode, and full protective gear.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment, and Emergency Procedures: Avoid contact with skin and eyes. Wear protective clothing, see Section 8.

Environmental Precautions: Keep out of sewers, drains, and bodies of water. Spills should be diked and absorbed.

Methods and Materials for Containment and Cleaning Up: Absorb in vermiculite, dry sand, or earth, and place in containers. Collect and reclaim or dispose of in sealed containers in a licensed waste facility. Liquid material may be removed with vacuum collection. Containers with spillage must be properly labeled with correct contents and hazard symbol.

SECTION 7 – HANDLING AND STORAGE

Precautions for Safe Handling: Avoid spilling, skin, and eye contact. Wash thoroughly after handling. Use only with adequate ventilation. For industrial or professional use only. Do not cut or weld empty container. KEEP OUT OF REACH OF CHILDREN.

Conditions for Safe Storage: Store in a cool dry place.

Incompatibilities: Strong acids, oxidizing agents. Contact with zinc may liberate hydrogen gas.

SECTION 8 – EXPOSURE CONTROL / PERSONAL PROTECTION

Exposure Limits and Recommendations:

Chemical Name	OSHA PEL	ACGIH TLV	Other Exposure Limits
Potassium hydroxide	2 mg/m^3	2 mg/m^3	Not listed
Sodium metabisulfite	Not established	5 mg/m^3	Not listed
Diethylaminoethanol	10 ppm	2 ppm	100 ppm (NIOSH)
Morpholine	20 ppm	20 ppm	Not listed

Engineering Controls: Normal ventilation.

Personal Protection Measures:

Respiratory Protection: Normally not needed. If needed, use NIOSH approved mask and filter for organic vapor.

Skin and Body: Chemical resistant gloves recommended. Chemical resistant apron, as needed.

Eye Protection: Safety glasses/goggles and face shield recommended.

Other Recommendations: None.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Odor: Clear fluorescent green liquid with light amine odor.

Odor Threshold: Not determined.

pH: 13 – 14.

Freezing Point: Not determined.

Boiling Point: 212°F

Flash Point: No flash at boiling.

Evaporation Rate (BUAC=1): Slower.

Flammability: Not flammable.

Flammability or Explosion Limits: **Upper:** Not applicable. **Lower:** Not applicable.

Vapor Pressure: Not determined.

Specific Gravity: 1.220

Solubility in Water: Complete.
Solubility in Other Solvents: Not determined.
Partition Coefficient (n-octanol/water): Not determined.
Auto-ignition Temperature: Not determined.
Decomposition Temperature: Not determined.
Viscosity: Not determined.
Other Information: Not determined.

SECTION 10 – STABILITY AND REACTIVITY

Reactivity: No dangerous reaction known under conditions of normal use.
Chemical Stability: Stable under normal temperature conditions and recommended use.
Possible Hazardous Reactions: Not available.
Conditions to Avoid: Contact with incompatible materials.
Incompatible Materials: Strong oxidizing agents, acids, and bases.
Hazardous Decomposition Products: Oxides of carbon, smoke, fumes.

SECTION 11 – TOXICOLOGICAL INFORMATION

Routes of Exposure:

Inhalation	Ingestion	Skin	Eye
X	X	X	X

Physical, Chemical and Toxicological Effects:

Symptoms: Irritation to skin and eyes.

Delayed and Immediate Effects as well as Chronic Effects from Short and Long-term Exposure:

Sensitization: Not a skin sensitizer.
Germ Cell Mutagenicity: Not classified.
Carcinogenicity: No components of this product are listed by NTP, IARC, or OSHA.
Reproductive Toxicity: Not classified.
Specific Target Organ Toxicity: Not classified.

Numerical Measures of Toxicity:

Product: Not determined.

Component:

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Potassium hydroxide	365 mg/kg (rat)	Not determined	Not determined
Sodium metabisulfite	1,131-3,200 mg/kg (rat)	Not determined	Not determined
Diethylaminoethanol	1,320 mg/kg (rat)	855 mg/kg (guinea pig)	4.6 mg/L (rat)
Morpholine	1,420 mg/kg (rat)	500 mg/kg (rabbit)	Not determined

SECTION 12 – ECOLOGICAL INFORMATION

Ecotoxicity:

Potassium Hydroxide
- Fish: *Gambusia affinis*: LC50 = 80 mg/L; 96hr
- Invertebrates: *Daphnia magna*: EC50 = 60 mg/L; 48hr

Sodium metabisulfite
- Fish: LC50 = 32 mg/L;96hr
- Invertebrates: EC50 = 89 mg/L; 48hr
- Algae: EC50 = 48 mg/L; 72hr

Diethylaminoethanol
- Fish: LC50 > 100 mg/L; 96hr
- Invertebrates: *Daphnia magna*: EC50 = 165 mg/L; 48hr
- Algae: EC50 = 62.3 mg/L; 72hr

Morpholine
- Fish: LC50 = 180 mg/L; 96hr
- Invertebrates: EC50 = 119 mg/L; 24hr

Persistence and Degradability: Not expected to persist in the environment.

Bioaccumulation: Not expect to be a bioaccumulator.

Mobility: Not expected to have mobility.

Other Adverse Effects: None known.

SECTION 13 – DISPOSAL CONSIDERATIONS

Waste Treatment Methods:

Disposal of Wastes: Dispose of product in accordance with local, state, and federal regulations.

Contaminated Packaging: Empty containers should be taken to an approved waste handling site for recycling or disposal.

Other Information: None.

SECTION 14 – TRANSPORTATION INFORMATION

DOT:

UN Number: 1814

Proper Shipping Name: Potassium Hydroxide Solution

Hazard Class: 8

Packing Group: II

SECTION 15 – REGULATORY INFORMATION

US Federal Regulations:

TSCA: All ingredients of this product are listed in the TSCA inventory.

SARA 313: This product contains the following chemical or chemicals subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) and Title 40 CFR 372.

Chemical Name	CAS Number	Percent Weight
None		

US State Regulations:

California: **This product contains the following chemical or chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm:** None.

SECTION 16 – OTHER INFORMATION

Issue Date: October 9, 2014
Revision Date: March 4, 2021

Health	Flammability	Reactivity	Personal Protection
3	0	0	D

All information appearing herein is based upon data obtained from the manufacturer and/or recognized technical sources. While the information is believed to be accurate at the time of publication, Momar, Incorporated makes no representations as to its accuracy or sufficiency. Conditions of use are beyond Momar, Incorporated's control; and therefore, users are responsible to verify this data under their own operating conditions to determine whether the product is suitable for their particular purposes; and they assume all risks of their use, handling, and disposal of the product or from the publications or use of, or reliance upon, information contained herein. This information relates only to the product designed herein and does not relate to its use in combination with any other material or in any other process.

AquaTrol®
A DIVISION OF MOMAR, INC.

AquaTrol 14846

All-In-One Liquid Boiler Water Treatment

- **Convenient multifunctional liquid product**
- **Maintains clean heat transfer surfaces**
- **Prevents oxygen pitting**
- **Fluidizes boiler sludge**
- **Controls condensate line corrosion**

Principal Application:

14846 is a boiler treatment product that precipitates and conditions feed water calcium hardness to prevent scale and allow complete removal of sludge through regular blowdown. Sequestrants and crystal modifiers are included in **14846** to properly condition sludge, reduce suspended solids, and maintain clean, efficient heat transfer surfaces. Precipitated solids and boiler sludge are fluidized by a unique blend of organic polymers in **14846** to facilitate their removal through regular blowdown. **14846** supplements natural water alkalinity and usually does not require an alkalinity adjunct product. An efficient oxygen scavenger is provided to control oxygen pitting attack within the boiler. **14846** also contains a neutralizing amine which minimizes corrosion of steam condensate lines, steam traps and other condensate handling equipment.

Use Considerations

14846 is primarily intended for boilers using soft water for boiler make-up. **14846** provides complete internal boiler water treatment for most natural waters used as boiler make-up. Conditions do exist which would warrant the use of AquaTrol Adjunct Products to supplement specific components of this product and provide maximum protection in the boiler system.

Dosage & Control

Feed a sufficient quantity of **14846** to maintain a residual of 400-600 ppm of "P" alkalinity (as $CaCO_3$) and 30-60 ppm sulfite (as SO_3) in the boiler water. Actual product usage over any period of time will vary with the operating load of the boiler, amount of condensate returned and chemical composition of the make-up and feed water. Your AquaTrol Water Specialist will recommend complete program controls and product dosages.

Feeding

For best results, **14846** should be fed into the boiler feed water line using a chemical metering pump constructed of suitably resistant materials. Proportional feed is required and may be accomplished with a controller or by electrically connecting the chemical pump in parallel with the boiler feed water pump. **14846** can be metered directly from the shipping container or may be diluted to any convenient strength with soft water or cooled condensate. When using any Adjunct Product with **14846**, both products may be pre-diluted before mixing. Continuous agitation should be avoided.

Typical Properties

Appearance:	Clear Fluorescent Green Liquid
Odor:	Odorless
pH (neat):	13.5
Density:	10.2 Pounds per Gallon

Handling Storage & Safety

Use normal precautions for chemical handling. Wear appropriate apron, gloves, or other protective clothing. Always wear goggles or face shield for eye protection. Keep out of the reach of children. Avoid contact with eyes, skin, or clothing. Do not swallow.
Read container labeling and Safety Data Sheet for more complete information on handling precautions. AquaTrol **14846** is available in 55, 35, 20, and 5-gallon non-returnable containers. Store at room temperature; protect from freezing and extreme heat. Keep container closed when not in use. Use promptly upon opening.

SECTION 1 - IDENTIFICATION

Product: AQUATROL® 14848

Recommended use of the chemical and restrictions on use:

Uses: Boiler treatment, single drum.
List of advices against: Not available.

Details of the supplier of the Safety Data Sheet:

Momar, Inc.
1830 Ellsworth Industrial Dr.
Atlanta, Ga. 30318
404-355-4580
800-556-3967
www.momar.com

Emergency Telephone Number (INFOTRAC): North America: 1-800-535-5053
International: 1-352-323-3500

SECTION 2 – HAZARD IDENTIFICATION

Classification:

Corrosive to Metals:	1
Acute Toxicity – Oral:	4
Skin Corrosion/Irritation:	1A
Eye Damage/Irritation:	1

Signal Word: Danger.

Hazard Statements:
May be corrosive to metals.
Harmful if swallowed.
Causes severe skin burns and eye damage.
Causes serious eye damage.

Pictograms:

Precautionary Statements:

Prevention:
Keep only in original container.
Wash hands and exposed skin thoroughly after handling.
Do not eat, drink or smoke when using this product.
Do not breathe dusts or mists.
Wear protective gloves/protective clothing/eye protection/face protection.

Response:
Absorb spillage to prevent material damage.
If swallowed: Immediately call a poison center/doctor/hospital.
Rinse mouth. Do NOT induce vomiting.
If on skin (or hair): Take off immediately all contaminated clothing.
Rinse skin with water/shower.

If inhaled: Remove person to fresh air and keep comfortable for breathing.
Immediately call a poison center/doctor/hospital.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Storage: Store in corrosive resistant container with a resistant liner.
Store locked up.

Disposal: Dispose of contents/container in accordance with local/regional/ national regulations.

Other Hazards: None known.

SECTION 3 – COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	CAS Number	Percent Weight
Potassium Hydroxide	1310-58-3	5 – 10
Sodium bisulfite	7681-57-4	5 – 10

SECTION 4 – FIRST AID MEASURES

Eye Contact: Immediately flush eyes with plenty of water, remove contact lenses, and continue to flush for at least 15-20 minutes, forcibly holding eyelids apart to ensure complete irrigation of all eye and lid tissue. Get medical attention immediately.

Skin Contact: Immediately flush skin with plenty of water for at least 15 minutes. Remove contaminated clothing. Wash clothing and shoes before reuse. Get medical attention if irritation persists.

Inhalation: Remove from exposure. If not breathing, give artificial respiration. If breathing is difficult, get medical attention.

Ingestion: Get medical attention immediately. Do not induce vomiting. If victim is conscious and alert, give large amounts of water. Discontinue water if victim feels like they may vomit. Never give anything by mouth to an unconscious person.

Most Important Symptoms and Effects:

Acute: Severe eye irritation.

Delayed: Prolonged or excessive contact with skin could cause damage or dermatitis.

Indication of Any Immediate Medical Attention and Special Treatment Needed: None known.

SECTION 5 – FIREFIGHTING MEASURES

Extinguishing Media: Use media appropriate to the surrounding fire.

Specific Hazards Arising From the Substance or Product: None

Hazardous Combustion Products: Oxides of carbon, smoke, and fumes.

Protective Equipment and Precautions for Firefighters: Wear a self-contained breathing apparatus in pressure- demand mode, and full protective gear.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment, and Emergency Procedures: Avoid contact with skin and eyes. Wear protective clothing, see Section 8.
Environmental Precautions: Keep out of sewers, drains, and bodies of water. Spills should be diked and absorbed.

Methods and Materials for Containment and Cleaning Up: Absorb in vermiculite, dry sand, or earth, and place in containers. Collect and reclaim or dispose of in sealed containers in a licensed waste facility. Liquid material may be removed with vacuum collection. Containers with spillage must be properly labeled with correct contents and hazard symbol.

SECTION 7 – HANDLING AND STORAGE

Precautions for Safe Handling: Avoid spilling, skin, and eye contact. Wash thoroughly after handling. Use only with adequate ventilation. For industrial or professional use only. Do not cut or weld empty container. KEEP OUT OF REACH OF CHILDREN.

Conditions for Safe Storage: Store in a cool dry place.

Incompatibilities: Strong acids, oxidizing agents. Contact with zinc may liberate hydrogen gas.

SECTION 8 – EXPOSURE CONTROL / PERSONAL PROTECTION

Exposure Limits and Recommendations:

Chemical Name	OSHA PEL	ACGIH TLV	Other Exposure Limits
Potassium Hydroxide	Not established	2 mg/m^3	
Sodium bisulfite	Not established	5 mg/m3	

Engineering Controls: Normal ventilation.

Personal Protection Measures:

Respiratory Protection: Normally not needed. If needed, use NIOSH approved mask and filter for organic vapor.

Skin and Body: Chemical resistant gloves recommended. Chemical resistant apron, as needed.

Eye Protection: Safety glasses/goggles recommended.

Other Recommendations: None.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Odor: Clear light amber liquid with no odor.
Odor Threshold: Not determined.
pH: 13 – 14.
Freezing Point: Not determined.
Boiling Point: 212°F
Flash Point: No flash at boiling.

Evaporation Rate (BUAC=1):	Slower.		
Flammability:	Not flammable.		
Flammability or Explosion Limits:	**Upper:** Not applicable.	**Lower:**	Not applicable.
Vapor Pressure:	Not determined.		
Specific Gravity:	1.215		
Solubility in Water:	Complete.		
Solubility in Other Solvents:	Not determined.		
Partition Coefficient (n-octanol/water):	Not determined.		
Auto-ignition Temperature:	Not determined.		
Decomposition Temperature:	Not determined.		
Viscosity:	Not determined.		
Other Information:	Not determined.		

SECTION 10 – STABILITY AND REACTIVITY

Reactivity:	No dangerous reaction known under conditions of normal use.
Chemical Stability:	Stable under normal temperature conditions and recommended use.
Possible Hazardous Reactions:	Not available.
Conditions to Avoid:	Contact with incompatible materials.
Incompatible Materials:	Strong oxidizing agents, acids, and bases.
Hazardous Decomposition Products:	Oxides of carbon, smoke, fumes.

SECTION 11 – TOXICOLOGICAL INFORMATION

Routes of Exposure:

Inhalation	Ingestion	Skin	Eye
X	X	X	X

Physical, Chemical and Toxicological Effects:

Symptoms: Irritation to skin and eyes.

Delayed and Immediate Effects as well as Chronic Effects from Short and Long-term Exposure:

Sensitization:	Not a skin sensitizer.
Germ Cell Mutagenicity:	Not classified.
Carcinogenicity:	No components of this product are listed by NTP, IARC, or OSHA.
Reproductive Toxicity:	Not classified.
Specific Target Organ Toxicity:	Not classified.

Numerical Measures of Toxicity:

Product: Not determined.

Component:

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Potassium Hydroxide	Not determined	Not determined	Not determined
Sodium bisulfite	3200 mg/kg (rat)	Not determined	Not determined

SECTION 12 – ECOLOGICAL INFORMATION

Ecotoxicity: **Sodium Bisulfite**
Fish: LC50 = 32 mg/L; 96hr
Invertebrates: *Daphnia magna*: EC50 = 89 mg/L; 48hr
Algae: EC50 = 48 mg/L; 72hr

Persistence and Degradability: Not expected to persist in the environment.

Bioaccumulation: Not expect to be a bioaccumulator.

Mobility: Not expected to have mobility.

Other Adverse Effects: None known.

SECTION 13 – DISPOSAL CONSIDERATIONS

Waste Treatment Methods:

Disposal of Wastes: Dispose of product in accordance with local, state, and federal regulations.

Contaminated Packaging: Empty containers should be taken to an approved waste handling site for recycling or disposal.

Other Information: None.

SECTION 14 – TRANSPORTATION INFORMATION

DOT:

UN Number: 1814

Proper Shipping Name: Potassium Hydroxide Solution

Hazard Class: 8

Packing Group: III

SECTION 15 – REGULATORY INFORMATION

US Federal Regulations:

TSCA: All ingredients of this product are listed in the TSCA inventory.

SARA 313: This product contains the following chemical or chemicals subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) and Title 40 CFR 372.

Chemical Name	CAS Number	Percent Weight
None		

US State Regulations:

California: **This product contains the following chemical or chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm:** None.

SECTION 16 – OTHER INFORMATION

Issue Date: December 7, 2021
Revision Date:

Health	Flammability	Reactivity	Personal Protection
2	0	0	C

All information appearing herein is based upon data obtained from the manufacturer and/or recognized technical sources. While the information is believed to be accurate at the time of publication, Momar, Incorporated makes no representations as to its accuracy or sufficiency. Conditions of use are beyond Momar, Incorporated's control; and therefore, users are responsible to verify this data under their own operating conditions to determine whether the product is suitable for their particular purposes; and they assume all risks of their use, handling, and disposal of the product or from the publications or use of, or reliance upon, information contained herein. This information relates only to the product designed herein and does not relate to its use in combination with any other material or in any other process.

AquaTrol®
A DIVISION OF MOMAR, INC.

AquaTrol 14848

One-Drum Steam Boiler Internal Treatment

Principal Application:

AquaTrol 14848 is a boiler treatment product that precipitates and conditions feedwater calcium hardness to prevent scale and allow complete removal of sludge through regular blowdown. Sequestrants and crystal modifiers are included in 14848 to properly condition sludge, reduce suspended solids, and maintain clean, efficient heat transfer surfaces. Precipitated solids and boiler sludge are fluidized by a unique blend of organic polymers in 14848 to facilitate their removal through regular blowdown. 14848 supplements natural water alkalinity and usually does not require an alkalinity adjunct product. An efficient oxygen scavenger is provided to control oxygen pitting attack within the boiler. AquaTrol Adjunct Products should be considered for use with this Primary Product where operating conditions warrant their use. Your AquaTrol Specialists will provide specific product selection and usage information.

Use Considerations

14848 is primarily intended for boilers that are not using soft water for boiler make-up. 14848 provides complete internal boiler water treatment for most natural waters used as boiler make-up. Conditions do exist which would warrant the use of AquaTrol Adjunct Products to supplement specific components of this product and provide maximum protection in the boiler system.

Dosage & Control

Feed a sufficient quantity of 14848 to maintain a residual of 400-600 ppm of “P” alkalinity (as $CaCO_3$) and 30-60 ppm sulfite (as SO_3) in the boiler water. Actual product usage over any period of time will vary with the operating load of the boiler, amount, of condensate returned and chemical composition of the make-up and feedwater. Your AquaTrol Water Specialist will recommend complete program controls and product dosages.

Feeding

For best results, 14848 should be fed into the boiler feedwater line using a chemical metering pump constructed of suitably resistant materials. Proportional feed is required and is usually accomplished by electrically connecting the chemical pump in parallel with the boiler feedwater pump. Intermittent feed is accomplished with an appropriate timing device. 14848 can be metered directly from the shipping container or may be diluted to any convenient strength with soft water or cooled condensate. When using any Adjunct Product with 14848, both products may be pre-diluted before mixing. Continuous agitation should be avoided.

Typical Properties

pH (use dilution)	13.5
Density	10.1 Pounds Per Gallon
Appearance	Clear Light Amber Liquid
Odor	Odorless

Handling Storage & Safety

Use normal precautions for chemical handling. Wear appropriate apron, gloves, or other protective clothing. Always wear goggles or face shield for eye protection. Keep out of the reach of children. Avoid contact with eyes, skin, or clothing. Do not swallow.
Read container labeling and Safety Data Sheet for more complete information on handling precautions. AquaTrol 14848 is available in 55, 35, 20, and 5-gallon non-returnable containers. Store at room temperature; protect from freezing and extreme heat. Keep container closed when not in use. Use promptly upon opening.

SECTION 1 - IDENTIFICATION

Product: AQUATROL 14120™

Recommended use of the chemical and restrictions on use:

Uses: Liquid Boiler Water Adjunct.
List of advices against: None.

Details of the supplier of the Safety Data Sheet:

Momar, Inc.
1830 Ellsworth Industrial Dr.
Atlanta, Ga. 30318
404-355-4580
800-556-3967
www.momar.com

Emergency Telephone Number (INFOTRAC): North America: 1-800-535-5053
International: 1-352-323-3500

SECTION 2 – HAZARD IDENTIFICATION

Classification: This product contains no reportable hazardous components according to US Federal Regulations.
Signal Word: None required.
Hazard Statements: None required.
Pictograms: None required.
Precautionary Statements: None required.
Other Hazards: No information available.

SECTION 3 – COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	CAS Number	Percent Weight
Anionic Copolymer, Sodium Salt	Proprietary	1-10%
Anionic Polymer, Sodium Salt	Proprietary	1-10%
1-Hydroxyethylidene-1, 1-diphosphonic Acid (HEDP)	2809-21-4	1-10%

This product does not contain any hazardous components under OSHA 29CFR 1910.1200.

SECTION 4 – FIRST AID MEASURES

Eye Contact: Flush eyes with a large quantity of water for 15 minutes. If irritation continues, seek medical attention.
Skin Contact: No adverse effects expected. If irritation occurs, wash with water to remove product. Remove contaminated clothing and wash before reuse. If difficulties arise, contact a physician.

Inhalation: No adverse effects expected. Not an inhalation hazard.

Ingestion: No adverse effects expected under normal use. If large quantities are swallowed, contact a physician.

Most Important Symptoms and Effects:

Acute: May cause eye irritation with contact with product or mists. This is characterized by redness and swelling of the eye**.**

Delayed: Repeated or prolonged exposure to skin may cause dermatitis.

Indication of Any Immediate Medical Attention and Special Treatment Needed: None.

SECTION 5 – FIREFIGHTING MEASURES

Extinguishing Media: Product is nonflammable. Use extinguishing media appropriate for surrounding fire.

Specific Hazards Arising From the Substance or Product:

Hazardous Combustion Products: High temperature steam, potentially oxides of carbon, sodium, phosphorus, nitrogen, and sulfur.

Protective Equipment and Precautions for Firefighters: Will not burn or support combustion. Use water spray to cool fire exposed containers and to flush spills. Spilled material may cause the floor to be slippery. Fire fighters wear self-contained breathing apparatus with full face piece in pressure demand or other positive pressure mode for surrounding fire.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment, and Emergency Procedures: Product is slippery. Wear appropriate personal protection equipment.

Environmental Precautions: Avoid getting concentrate into sewers or water ways.

Methods and Materials for Containment and Cleaning Up: Contain spill if possible. Absorb on mineral clay absorbent material. Shovel into DOT approved container for disposal.

SECTION 7 – HANDLING AND STORAGE

Precautions for Safe Handling: Avoid spills and clean them up immediately when they occur. Product is slippery. For industrial or professional use only. KEEP OUT OF REACH OF CHILDREN!

Conditions for Safe Storage: Keep container closed when not in use. Store at temperatures below 120°F. Water contamination should be avoided.

Incompatibilities: Contact with strong oxidizers.

SECTION 8 – EXPOSURE CONTROL / PERSONAL PROTECTION

Exposure Limits and Recommendations:

Chemical Name	OSHA PEL	ACGIH TLV	Other Exposure Limits

Engineering Controls: Normal ventilation.

Personal Protection Measures:

Respiratory Protection: Not normally required.
Skin and Body: Use of gloves is recommended.
Eye Protection: Safety glasses recommended.
Other Recommendations: None.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Odor: Clear, brown liquid with mild odor.
Odor Threshold: Not determined.
pH: 9.0
Freezing Point: Not determined.
Boiling Point: 212°F
Flash Point: >200°F.
Evaporation Rate (BUAC=1): Slower.
Flammability: Product is not flammable.
Flammability or Explosion Limits: **Upper:** Not applicable. **Lower:** Not applicable.
Vapor Pressure: Not determined.
Specific Gravity: 1.14
Solubility in Water: Complete.
Solubility in Other Solvents: Not determined.
Partition Coefficient (n-octanol/water): Not determined.
Auto-ignition Temperature: Not applicable.
Decomposition Temperature: Not determined.
Viscosity: Not determined.
Other Information: None.

SECTION 10 – STABILITY AND REACTIVITY

Reactivity: No dangerous reaction known under conditions of normal use.
Chemical Stability: Stable.
Possible Hazardous Reactions: None known.
Conditions to Avoid: None known.
Incompatible Materials: Strong oxidizers.
Hazardous Decomposition Products: Oxides of carbon, sodium, phosphorus, nitrogen, and sulfur.

SECTION 11 – TOXICOLOGICAL INFORMATION

Routes of Exposure:

Inhalation	Ingestion	Skin	Eye
		X	X

Physical, Chemical and Toxicological Effects:

Symptoms: May cause eye irritation with contact with product or mists. This is characterized by redness and swelling of the eye**.** Prolonged or repeated skin contact may cause irritation or dermatitis.

Delayed and Immediate Effects as well as Chronic Effects from Short and Long-term Exposure:

Sensitization: Not a skin sensitizer.

Germ Cell Mutagenicity: No data available.

Carcinogenicity: This product has not been identified as a carcinogen or probable carcinogen by NTP, IARC, or OSHA, nor have any of its components.

Reproductive Toxicity: This product does not contain any known or suspected reproductive hazards.

Specific Target Organ Toxicity: Eye (Single Exposure).

Numerical Measures of Toxicity:

Product: Not determined.

SECTION 12 – ECOLOGICAL INFORMATION

Ecotoxicity: Anionic Copolymer
Fish: Bluegill Sunfish: LC50 = >10,000 mg/L; 96 hr.
Invertebrates: Water Flea: LC50 = 2,800 mg/L; 48 hr.
Anioic Polymer
Fish: Rainbow Trout: LC50 = 1,182 mg/L; 96 hr.
Invertebrates: Water Flea: EC50 = 1509 mg/L; 48 hr.

Persistence and Degradability: Readily biodegradable per 40CFR 796.3200.

Bioaccumulation: Not determined.

Mobility: Not determined.

Other Adverse Effects: This product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

SECTION 13 – DISPOSAL CONSIDERATIONS

Waste Treatment Methods:

Disposal of Wastes: Dispose of product in accordance with national and local regulations.

Contaminated Packaging: Empty containers should be taken to an approved waste handling site for recycling or disposal.

Other Information: None.

SECTION 14 – TRANSPORTATION INFORMATION

DOT:

UN Number: Not listed.
Proper Shipping Name: Compounds Cleaning Liquid.
Hazard Class: Not applicable.
Packing Group: Not applicable.

SECTION 15 – REGULATORY INFORMATION

US Federal Regulations:

TSCA: All ingredients of this product are listed in the TSCA inventory.
SARA 313: This product contains the following chemical or chemicals subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) and Title 40 CFR 372.

Chemical Name	CAS Number	Percent Weight
None		

US State Regulations:

California: **This product contains the following chemical or chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm:** None.

SECTION 16 – OTHER INFORMATION

Issue Date: June 18, 2014
Revision Date: April 20, 2017

Health	Flammability	Reactivity	Personal Protection
2	1	0	C

All information appearing herein is based upon data obtained from the manufacturer and/or recognized technical sources. While the information is believed to be accurate at the time of publication, Momar, Incorporated makes no representations as to its accuracy or sufficiency. Conditions of use are beyond Momar, Incorporated's control; and therefore, users are responsible to verify this data under their own operating conditions to determine whether the product is suitable for their particular purposes; and they assume all risks of their use, handling, and disposal of the product or from the publications or use of, or reliance upon, information contained herein. This information relates only to the product designed herein and does not relate to its use in combination with any other material or in any other process.

AquaTrol®
A DIVISION OF MOMAR, INC.

AquaTrol 14120

Liquid Boiler Water Adjunct

- **Improves cleanliness of heat transfer surfaces**
- **Increases heat transfer efficiency**
- **Fluidizes boiler sludge**
- **Controls metal ion deposition**
- **Provides economical product performance**
- **Authorized by USDA for steam/food contact**

Principal Application

14120 is a synthetic organic polymer boiler treatment that will supplement conditioning of solids and maintain a clean and efficient boiler. **14120** also contains organic sequestrants to reduce suspended solids in the boiler water.

Use Considerations

14120 is designed for use as an adjunct to a Primary AquaTrol Product to provide a complete boiler water treatment program. When operating conditions warrant, **14120** can be used to control deposition of iron, provide additional dispersion of suspended solids, and accomplish removal of accumulated deposits without interrupting normal boiler operation.

Dosage & Control

14120 dosage will depend upon several factors including iron loading in the system, deposit composition and fluctuations in feed water quality. **14120** contains a fluorescent trace molecule that can be read by a handheld fluorometer to confirm proper feed levels. Actual product usage will vary with operating load of the boiler and the amount of condensate returned. Overfeed of 14120 will cause foaming which can lead to physical carryover. Your AquaTrol Water Specialist will recommend complete program controls and product dosages.

Feeding

For best results, **14120** should be fed into the boiler feedwater line using a chemical metering pump constructed of suitably resistant materials. Continuous feed is desired and is usually accomplished by electrically connecting the chemical pump in parallel with the boiler operating controls. **14120** can be metered directly from the shipping container or may be diluted to any convenient strength with soft water or cooled condensate. Do not mix directly with other concentrated water treatment products. **14120** must be pre-diluted before mixing with other boiler feed water treatments in a chemical mixing tank. Continuous agitation should be avoided.

Typical Properties

Appearance:	Clear, Amber Liquid with Fluorescent Tint
Odor:	Odorless
pH (neat):	8.5
Density:	9.3 Pounds per Gallon

Handling Storage & Safety

Use normal precautions for chemical handling. Wear appropriate apron, gloves, or other protective clothing. Always wear goggles or face shield for eye protection. Keep out of the reach of children. Avoid contact with eyes, skin, or clothing. Do not swallow.
Read container labeling and Safety Data Sheet for more complete information on handling precautions. AquaTrol **14120** is available in 55, 35, 20, and 5-gallon non-returnable containers. Store at room temperature; protect from freezing and extreme heat. Keep container closed when not in use. Use promptly upon opening.

SECTION 1 - IDENTIFICATION

Product: AQUATROL® 14410

Recommended use of the chemical and restrictions on use:

Uses: Adjunct dispersant.
List of advices against: Not available.

Details of the supplier of the Safety Data Sheet:

Momar, Inc.
1830 Ellsworth Industrial Dr.
Atlanta, Ga. 30318
404-355-4580
800-556-3967
www.momar.com

Emergency Telephone Number (INFOTRAC): North America: 1-800-535-5053
International: 1-352-323-3500

SECTION 2 – HAZARD IDENTIFICATION

Classification: Eye Damage/Irritation 2A
Skin Corrosion/Irritation 2

Signal Word: Warning.

Hazard Statements: Causes serious eye irritation.
Causes skin irritation.

Pictograms:

Precautionary Statements:

Prevention: Wash hands and all exposed skin thoroughly after handling.
Wear eye protection/face protection. Wear protective gloves.

Response: 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 advice/attention.
If on skin: Wash with water / soap.
If skin irritation occurs: Get medical advice/attention.
Take off contaminated clothing and wash before reuse.

Storage: None.

Disposal: None.

Other Hazards: None known.

SECTION 3 – COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	CAS Number	Percent Weight
Ethylenediamine tetraacetic acid, tetrasodium salt	64-02-08	5.0 – 10.0
Potassium Hydroxide	1310-58-3	0.0 – 5.0
Acrylic Polymers	Proprietary	5.0 – 15.0

SECTION 4 – FIRST AID MEASURES

Eye Contact: Immediately flush eyes with plenty of water, remove contact lenses, and continue to flush for at least 15-20 minutes, forcibly holding eyelids apart to ensure complete irrigation of all eye and lid tissue. Get medical attention immediately.

Skin Contact: Immediately flush skin with plenty of water for at least 15 minutes. Remove contaminated clothing. Wash clothing and shoes before reuse. Get medical attention if irritation persists.

Inhalation: Remove from exposure. If not breathing, give artificial respiration. If breathing is difficult, get medical attention.

Ingestion: Get medical attention immediately. Do not induce vomiting. If victim is conscious and alert, give large amounts of water. Discontinue water if victim feels like they may vomit. Never give anything by mouth to an unconscious person.

Most Important Symptoms and Effects:

Acute: Severe eye irritation.

Delayed: Prolonged or excessive contact with skin could cause damage or dermatitis.

Indication of Any Immediate Medical Attention and Special Treatment Needed: None known.

SECTION 5 – FIREFIGHTING MEASURES

Extinguishing Media: To extinguish combustible residues of this product use water fog, carbon dioxide, dry chemical or foam.

Specific Hazards Arising From the Substance or Product: This material will not burn until the water has evaporated. Residue can burn.

Hazardous Combustion Products: Under fire conditions some components of this product may decompose. The smoke may contain unidentified toxic and/or irritating compounds. Combustion products may include and are not limited to: Oxides of nitrogen, Oxides of carbon, smoke, and fumes.

Protective Equipment and Precautions for Firefighters: Wear a self-contained breathing apparatus in pressure- demand mode, and full protective gear.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment, and Emergency Procedures: Avoid contact with skin and eyes. Wear protective clothing, see Section 8.

Environmental Precautions: Keep out of sewers, drains, and bodies of water. Spills should be diked and absorbed.

Methods and Materials for Containment and Cleaning Up: Absorb in vermiculite, dry sand, or earth, and place in containers. Collect and reclaim or dispose of in sealed containers in a licensed waste facility. Liquid material may be removed with vacuum collection. Containers with spillage must be properly labeled with correct contents and hazard symbol.

SECTION 7 – HANDLING AND STORAGE

Precautions for Safe Handling: Avoid spilling, skin, and eye contact. Wash thoroughly after handling. Use only with adequate ventilation. For industrial or professional use only. Do not cut or weld empty container. KEEP OUT OF REACH OF CHILDREN.

Conditions for Safe Storage: Store in a cool dry place.

Incompatibilities: Avoid contact with metals such as: aluminum alloys, copper, copper alloys and nickel. Flammable hydrogen may be generated from contact with metals such as: zinc and aluminum.

SECTION 8 – EXPOSURE CONTROL / PERSONAL PROTECTION

Exposure Limits and Recommendations:

Chemical Name	OSHA PEL	ACGIH TLV	Other Exposure Limits
Ethylenediamine tetraacetic acid, tetrasodium salt	Not established	Not established	
Potassium Hydroxide	2 mg/m3	2 mg/m3	
Acrylic Polymers	Not established	Not established	

Engineering Controls: Normal ventilation.

Personal Protection Measures:

Respiratory Protection: Normally not needed. If needed, use NIOSH approved mask and filter for organic vapor.

Skin and Body: Chemical resistant gloves recommended. Chemical resistant apron, as needed.

Eye Protection: Safety glasses/goggles recommended.

Other Recommendations: None.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Odor: Clear, fluorescent orange/green liquid with no odor.
Odor Threshold: Not determined.
pH: 12.0-13.0
Freezing Point: Not determined.
Boiling Point: 212°F
Flash Point: No flash at boiling.
Evaporation Rate (BUAC=1): Slower.
Flammability: Not flammable.
Flammability or Explosion Limits: **Upper:** Not applicable. **Lower:** Not applicable.
Vapor Pressure: Not determined.
Specific Gravity: 1.125

Solubility in Water: Complete.
Solubility in Other Solvents: Not determined.
Partition Coefficient (n-octanol/water): Not determined.
Auto-ignition Temperature: Not determined.
Decomposition Temperature: Not determined.
Viscosity: Not determined.
Other Information: Not determined.

SECTION 10 – STABILITY AND REACTIVITY

Reactivity: No dangerous reaction known under conditions of normal use.
Chemical Stability: Stable under normal temperature conditions and recommended use.
Possible Hazardous Reactions: Not available.
Conditions to Avoid: Contact with incompatible materials.
Incompatible Materials: Avoid contact with metals such as: aluminum alloys, copper, copper alloys and nickel. Flammable hydrogen may be generated from contact with metals such as: zinc and aluminum.
Hazardous Decomposition Products: Decomposition products depend upon temperature, air supply and the presence of other materials.

SECTION 11 – TOXICOLOGICAL INFORMATION

Routes of Exposure:

Inhalation	Ingestion	Skin	Eye
		X	X

Physical, Chemical and Toxicological Effects:

Symptoms: Irritation to skin and eyes.

Delayed and Immediate Effects as well as Chronic Effects from Short and Long-term Exposure:

Sensitization: Not a skin sensitizer.
Germ Cell Mutagenicity: Not classified.
Carcinogenicity: No components of this product are listed by NTP, IARC, or OSHA.
Reproductive Toxicity: Not classified.
Specific Target Organ Toxicity: Eyes

Numerical Measures of Toxicity:

Product:

Components:

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Ethylenediamine tetraacetic acid, tetrasodium salt	1,780 mg/kg (rat)	Not established	>1.0-5.0 mg/L (rat)
Potassium Hydroxide	284 mg/kg (rat)	Not established	Not established
Acrylic Polymers	>5,000 mg/kg (rat)	>5,000 mg/kg (rabbit)	Not established

SECTION 12 – ECOLOGICAL INFORMATION

Ecotoxicity:

Ethylenediamine tetraacetic acid, tetrasodium salt

Fish: *Pimephales* promelas: LC50 > 100 mg/L; 96 h

Invertebrates: *Daphnia magna*: EC50 = 140 mg/L; 48 h

Algae: *Desmodesmus* subspicatus: EC50 >100 mg/L; 72 h

Potassium hydroxide

Fish: *Gambusia affinis*: LC50 = 80 mg/L; 96 h

Invertebrates: *Daphnia magna*: EC50 = 60 mg/L; 48 h

Acrylic Polymers

Fish: *Oncorhynchus mykiss*: LC50 >1,000 mg/L; 96 h

Invertebrates: *Daphnia magna*: LC50 >1,000 mg/L; 48 h

Algae: *Pseudokirchneriella subcapitata*: EC50 >10 mg/L; 96h

Persistence and Degradability: Not expected to persist in the environment.

Bioaccumulation: Not expect to be a bioaccumulator.

Mobility: Not expected to have mobility.

Other Adverse Effects: None known

SECTION 13 – DISPOSAL CONSIDERATIONS

Waste Treatment Methods:

Disposal of Wastes: Dispose of product in accordance with local, state, and federal regulations.

Contaminated Packaging: Empty containers should be taken to an approved waste handling site for recycling or disposal.

Other Information: None.

SECTION 14 – TRANSPORTATION INFORMATION

DOT:

UN Number: 3267

Proper Shipping Name: Corrosive liquid, Basic, Organic, N.O.S. (Tetrasodium, Ethylenediamine, Tetraacetate)

Hazard Class: 8

Packing Group: III

SECTION 15 – REGULATORY INFORMATION

US Federal Regulations:

TSCA: All ingredients of this product are listed in the TSCA inventory.

SARA 313: This product contains the following chemical or chemicals subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) and Title 40 CFR 372.

Chemical Name	CAS Number	Percent Weight
None		

US State Regulations:

California: This product contains the following chemical or chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm: None.

SECTION 16 – OTHER INFORMATION

Issue Date: April 28, 2008
Revision Date: May 12, 2021

Health	Flammability	Reactivity	Personal Protection
2	0	0	B

All information appearing herein is based upon data obtained from the manufacturer and/or recognized technical sources. While the information is believed to be accurate at the time of publication, Momar, Incorporated makes no representations as to its accuracy or sufficiency. Conditions of use are beyond Momar, Incorporated's control; and therefore, users are responsible to verify this data under their own operating conditions to determine whether the product is suitable for their particular purposes; and they assume all risks of their use, handling, and disposal of the product or from the publications or use of, or reliance upon, information contained herein. This information relates only to the product designed herein and does not relate to its use in combination with any other material or in any other process.

AquaTrol®
A DIVISION OF MOMAR, INC.

AquaTrol 14410

Steam Boiler Internal Treatment

Principal Application:

AquaTrol 14410 is a blended chelant/polymer boiler treatment for controlling metal ion deposition and removing metal oxide deposits. 14410 is especially suited for preventing iron deposition in the boiler. 14410 also contains an organic sequestrant crystal growth modifier which will reduce suspended solids and provide clean and efficient heat transfer surfaces.

Use Considerations

14410 is designed for use as an internal boiler water treatment product in boilers using softened feed water but may have some iron concerns. When operating conditions warrant, 14410 can be used to control deposition of iron and accomplish removal of accumulated deposits without interrupting normal boiler operation. Your AquaTrol Water Specialist will provide specific product selection and usage information.

Dosage & Control

14410 dosage will depend upon several factors including iron loading in the system, deposit composition, and fluctuations in feedwater quality. Actual product usage over any period of time will vary with operating load of the boiler and the amount of condensate returned. Your AquaTrol Water Specialist will recommend complete program controls and product dosages.

Feeding

For best results, 14410 should be fed into the boiler feedwater line using a stainless-steel injection quill and a chemical metering pump constructed of suitably resistant materials. The injection point should be downstream of the last brass or bronze valve or check. Feedwater must be deaerated with oxygen scavenger prior to the injection feed-point of 14410. Proportional feed is required and is usually accomplished by electrically connecting the chemical pump in parallel with the boiler feedwater pump. 14410 can be metered directly from the shipping container or may be diluted to any convenient strength with deaerated soft water or cooled condensate. Do not mix directly with other concentrated water treatment products. 14410 must be pre-diluted before mixing with other boiler feedwater treatments in a chemical mixing tank. Continuous agitation should be avoided.

Typical Properties

pH (use dilution)	12.5-13.0
Density	9.4 Pounds Per Gallon
Appearance	Clear Fluorescent Orange/Green Liquid
Odor	Odorless

Handling Storage & Safety

Use normal precautions for chemical handling. Wear appropriate apron, gloves, or other protective clothing. Always wear goggles or face shield for eye protection. Keep out of the reach of children. Avoid contact with eyes, skin, or clothing. Do not swallow.
Read container labeling and Safety Data Sheet for more complete information on handling precautions. AquaTrol 14410 is available in 55, 35, 20, and 5-gallon non-returnable containers. Store at room temperature; protect from freezing and extreme heat. Keep container closed when not in use. Use promptly upon opening.

SECTION 1 - IDENTIFICATION

Product: AQUATROL® 14640

Recommended use of the chemical and restrictions on use:

Uses: Oxygen Scavenger.
List of advices against: None.

Details of the supplier of the Safety Data Sheet:

Momar, Inc.
1830 Ellsworth Industrial Dr.
Atlanta, Ga. 30318
404-355-4580
800-556-3967
www.momar.com

Emergency Telephone Number (INFOTRAC): North America: 1-800-535-5053
International: 1-352-323-3500

SECTION 2 – HAZARD IDENTIFICATION

Classification: Eye Damage/Irritation: 2A
Signal Word: Warning.
Hazard Statements: Causes serious eye irritation.
Pictograms:

Precautionary Statements:

Prevention: Wash hands and all exposed skin thoroughly after handling.
Wear eye protection and face protection.

Response: 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 advice/attention.

Storage: None.

Disposal: None.

Other Hazards: None known.

SECTION 3 – COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	CAS Number	Percent Weight
Sodium Sulfite	7757-83-7	< 15.0
Sodium Metabisulfite	7681-57-4	< 20.0

SECTION 4 – FIRST AID MEASURES

Eye Contact: Flush eyes with a large quantity of water for 15 minutes. If irritation continues, seek medical attention.

Skin Contact: No adverse effects expected. If irritation occurs, wash with water to remove product. Remove contaminated clothing and wash before reuse. If difficulties arise, contact a physician.

Inhalation: No adverse effects expected. Not an inhalation hazard.

Ingestion: No adverse effects expected under normal use. If large quantities are swallowed, contact a physician.

Most Important Symptoms and Effects:

Acute: May cause eye irritation with contact with product or mists. This is characterized by redness and swelling of the eye**.**

Delayed: Repeated or prolonged exposure to skin may cause dermatitis.

Indication of Any Immediate Medical Attention and Special Treatment Needed: None.

SECTION 5 – FIREFIGHTING MEASURES

Extinguishing Media: Product is nonflammable. Use extinguishing media appropriate for surrounding fire.

Specific Hazards Arising From the Substance or Product:

Hazardous Combustion Products: High temperature steam, potentially oxides of carbon and sulfur.

Protective Equipment and Precautions for Firefighters: Will not burn or support combustion. Use water spray to cool fire exposed containers and to flush spills. Spilled material may cause the floor to be slippery. Fire fighters wear self-contained breathing apparatus with full face piece in pressure demand or other positive pressure mode for surrounding fire.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment, and Emergency Procedures: Product is slippery. Wear appropriate personal protection equipment.

Environmental Precautions: Avoid getting concentrate into sewers or water ways.

Methods and Materials for Containment and Cleaning Up: Contain spill if possible. Absorb on mineral clay absorbent material. Shovel into DOT approved container for disposal.

SECTION 7 – HANDLING AND STORAGE

Precautions for Safe Handling: Avoid spills and clean them up immediately when they occur. Product is slippery. For industrial or professional use only. KEEP OUT OF REACH OF CHILDREN!

Conditions for Safe Storage: Keep container closed when not in use. Store at temperatures below 120°F. Water contamination should be avoided. Keep from freezing.

Incompatibilities: Acids and strong oxidizers.

SECTION 8 – EXPOSURE CONTROL / PERSONAL PROTECTION

Exposure Limits and Recommendations:

Chemical Name	OSHA PEL	ACGIH TLV	Other Exposure Limits
Sodium Metabisulfite	5 mg/m^3	5 mg/m^3	

Engineering Controls: Normal ventilation.

Personal Protection Measures:

Respiratory Protection: Not normally required.

Skin and Body: Use of gloves is recommended. Use chemical apron as needed.

Eye Protection: Safety glasses recommended.

Other Recommendations: None.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Odor: Clear, tinted to slightly pink liquid with no odor.
Odor Threshold: Not determined.
pH: 6.5
Freezing Point: Not determined.
Boiling Point: 212°F
Flash Point: None.
Evaporation Rate (BUAC=1): Slower.
Flammability: Product is not flammable.
Flammability or Explosion Limits: **Upper:** Not applicable. **Lower:** Not applicable.
Vapor Pressure: Not determined.
Specific Gravity: 1.255
Solubility in Water: Complete.
Solubility in Other Solvents: Not determined.
Partition Coefficient (n-octanol/water): Not determined.
Auto-ignition Temperature: Not applicable.
Decomposition Temperature: Not determined.
Viscosity: Not determined.
Other Information: None.

SECTION 10 – STABILITY AND REACTIVITY

Reactivity: No dangerous reaction known under conditions of normal use.
Chemical Stability: Stable.
Possible Hazardous Reactions: None known.
Conditions to Avoid: None known.
Incompatible Materials: Acids and strong oxidizers.
Hazardous Decomposition Products: Oxides of carbon and sulfur.

SECTION 11 – TOXICOLOGICAL INFORMATION

Routes of Exposure:

Inhalation	Ingestion	Skin	Eye
		X	X

Physical, Chemical and Toxicological Effects:

Symptoms: May cause eye irritation with contact with product or mists. This is characterized by redness and swelling of the eye**.** Prolonged or repeated skin contact may cause irritation or dermatitis.

Delayed and Immediate Effects as well as Chronic Effects from Short and Long-term Exposure:

Sensitization: Not a skin sensitizer.

Germ Cell Mutagenicity: No data available.

Carcinogenicity: This product has not been identified as a carcinogen or probable carcinogen by NTP, IARC, or OSHA, nor have any of its components.

Reproductive Toxicity: This product does not contain any known or suspected reproductive hazards.

Specific Target Organ Toxicity: Eye (Single Exposure).

Numerical Measures of Toxicity:

Product: Not determined.

Component:

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Sodium Sulfite	3560 mg/kg (rat)	Not determined	>5500 mg/m^3 - 4hr (rat)
Sodium Metabisulfite	1,540 mg/kg (rat)	2,000 mg/kg (rat)	Not determined

SECTION 12 – ECOLOGICAL INFORMATION

Ecotoxicity: Sodium Sulfite

Fish: Mosquito Fish: LC50 = 660 mg/L; 96hr

Sodium Metabisulfite

Fish: Rainbow Trout: LC50 = 150 – 220 mg/L; 96hr

Invertebrates: Water Flea: EC50 = 89 mg/L; 24hr

Algae: Green Algae: IC50 = 48 mg/L; 72hr

Persistence and Degradability: Readily biodegradable per 40CFR 796.3200.

Bioaccumulation: Not determined.

Mobility: Not determined.

Other Adverse Effects: None known.

SECTION 13 – DISPOSAL CONSIDERATIONS

Waste Treatment Methods:

Disposal of Wastes: Dispose of product in accordance with national and local regulations.

Contaminated Packaging: Empty containers should be taken to an approved waste handling site for recycling or disposal.

Other Information: None.

SECTION 14 – TRANSPORTATION INFORMATION

DOT:

UN Number: Not listed.

Proper Shipping Name: Not Regulated.

Hazard Class: Not applicable.

Packing Group: Not applicable.

SECTION 15 – REGULATORY INFORMATION

US Federal Regulations:

TSCA: All ingredients of this product are listed in the TSCA inventory.

SARA 313: This product contains the following chemical or chemicals subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) and Title 40 CFR 372.

Chemical Name	CAS Number	Percent Weight
None		

US State Regulations:

California: **WARNING**: This product can expose you to Cobalt sulfate heptahydrate, which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

SECTION 16 – OTHER INFORMATION

Issue Date: September 16, 2015

Revision Date: November 12, 2021

Health	Flammability	Reactivity	Personal Protection
2	0	1	C

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AquaTrol®
A DIVISION OF MOMAR, INC.

AquaTrol 14640

Liquid Oxygen Scavenger

- **Maintains efficient oxygen removal**
- **Prevents oxygen pitting**
- **Catalyzed for superior performance**

Principal Application:

14640 is a sulfite-based product used for efficient removal of dissolved oxygen in boiler systems. **14640** is a catalyzed liquid product that combines superior oxygen removal with the convenience of handling that liquid products offer. Proper use of **14640** assures complete removal of oxygen and protection against pitting corrosion.

Use Considerations

14640 is designed for use as an adjunct to a Primary AquaTrol Product to provide a complete boiler water treatment program. When operating conditions warrant, **14640** can be used to provide additional oxygen removal during system upsets or other unusual operating conditions. **14640** can also be used as part of a designed chemical program for wet lay-up storage of idle boilers. Your AquaTrol Water Specialist will provide specific product selection and usage information.

Dosage & Control

Feed a sufficient quantity to maintain a residual of 30 - 60 ppm of sulfite (as SO_3) in the boiler water. Actual product usage over any time period will vary with the operating load of the boiler, amount of condensate returned, and chemical composition of the makeup and feed water. Your AquaTrol Water Specialist will recommend complete program controls and product dosages.

Feeding

For best results, **14640** should be fed separately into the storage section of the deaerator or feed water tank using a chemical metering pump constructed of suitably resistant materials. Proportional feed is desired and is usually accomplished by electrically connecting the chemical pump in parallel with the boiler feed water pump. **14640** can be metered directly from the shipping container or may be diluted to any convenient strength with soft water or cooled condensate. Do not mix directly with other concentrated water treatment products. **14640** must be pre-diluted before mixing with other boiler feed water treatments in a chemical mixing tank. Continuous agitation should be avoided.

Typical Properties

Appearance:	Purple, Clear Liquid
Odor:	Mild Sulfur
pH (neat):	6.8
Density:	10.4 Pounds per Gallon

Handling Storage & Safety

Use normal precautions for chemical handling. Wear appropriate apron, gloves, or other protective clothing. Always wear goggles or face shield for eye protection. Keep out of the reach of children. Avoid contact with eyes, skin, or clothing. Do not swallow.
Read container labeling and Safety Data Sheet for more complete information on handling precautions. AquaTrol **14640** is available in 55, 35, 20, and 5 gallon non-returnable containers. Store at room temperature; protect from freezing and extreme heat. Keep container closed when not in use. Use promptly upon opening.

SECTION 1 - IDENTIFICATION

Product: AQUATROL® 14641

Recommended use of the chemical and restrictions on use:

Uses: Oxygen scavenger.
List of advices against: None.

Details of the supplier of the Safety Data Sheet:

Momar, Inc.
1830 Ellsworth Industrial Dr.
Atlanta, Ga. 30318
404-355-4580
800-556-3967
www.momar.com

Emergency Telephone Number (INFOTRAC): North America: 1-800-535-5053
International: 1-352-323-3500

SECTION 2 – HAZARD IDENTIFICATION

Classification: This product contains no reportable hazardous components according to US Federal Regulations.
Signal Word: None required.
Hazard Statements: None required.
Pictograms: None required.
Precautionary Statements: None required.
Other Hazards: No information available.

SECTION 3 – COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	CAS Number	Percent Weight
Sodium Sulfite	231-821-4	>95

This product does not contain any hazardous components in reportable amounts under OSHA 29CFR 1910.1200.

SECTION 4 – FIRST AID MEASURES

Eye Contact: Flush eyes with a large quantity of water for 15 minutes. If irritation persists, contact a physician.
Skin Contact: Wash with water and soap to remove product. Remove contaminated clothing and wash before reuse. If irritation persists, contact a physician.
Inhalation: If breathed in, move to fresh air. If not breathing, give artificial respiration. Consult a physician.
Ingestion: Never give anything by mouth to an unconscious person. Give water. Consult a physician.

Most Important Symptoms and Effects:

Acute: May cause mild eye irritation with contact with product. This is characterized by redness and swelling of the eye**.** Dust from powder products may affect people with asthma.

Delayed: Repeated or prolonged exposure to skin may cause mild irritation. Dust from powder products may affect people with asthma up to 48 hours later. May cause liver irregularities in sensitive individuals.

Indication of Any Immediate Medical Attention and Special Treatment Needed: None.

SECTION 5 – FIREFIGHTING MEASURES

Extinguishing Media: Water, Foam, CO_2, Dry Chemical
Specific Hazards Arising From the Substance or Product:

Hazardous Combustion Products: Oxides of sulfur.

Protective Equipment and Precautions for Firefighters: Moisten with water to reduce dust explosion hazard. Spilled material once contacted with water may cause the floor to be slippery. Fire fighters wear self-contained breathing apparatus with full face piece in pressure demand or other positive pressure mode for surrounding fire.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment, and Emergency Procedures: Wear appropriate personal protection equipment including respiratory protection.
Environmental Precautions: Avoid getting concentrate into drains and water ways.
Methods and Materials for Containment and Cleaning Up: Contain spill if possible. Avoid creating dusts. Do not flush with water. Clean up by scoop or vacuum. Place into DOT approved container for disposal.

SECTION 7 – HANDLING AND STORAGE

Precautions for Safe Handling: Avoid spills and clean them up immediately when they occur. Avoid creating dusts. Product is slippery when contacted with water. For industrial or professional use only. Wash hands thoroughly after use. KEEP OUT OF REACH OF CHILDREN!

Conditions for Safe Storage: Store in cool dry place. Keep container closed when not in use. Do not store near acids or strong oxidizers. Water contamination should be avoided.

Incompatibilities: Contact with acids liberates toxic gas.

SECTION 8 – EXPOSURE CONTROL / PERSONAL PROTECTION

Exposure Limits and Recommendations:

Chemical Name	OSHA PEL	ACGIH TLV	Other Exposure Limits

Engineering Controls: Normal ventilation is adequate in absence of dusts. Use local exhaust if dusting occurs.

Personal Protection Measures:

Respiratory Protection: Not normally required. Use a NIOSH approved dust respirator where airborne level exceeds appropriate occupational exposure limit.

Skin and Body: Use of chemical resistant gloves is recommended.

Eye Protection: Safety glasses or goggles recommended.

Other Recommendations: None.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Odor: White powdery/granular solid with no odor.
Odor Threshold: Not determined.
pH: 9.0-10.5 @ 126 g/L at 77°F.
Freezing Point: Not applicable.
Boiling Point: Not applicable.
Flash Point: None.
Evaporation Rate (BUAC=1): Not applicable.
Flammability: Product does not exhibit a flash point.
Flammability or Explosion Limits: **Upper:** Not determined. **Lower:** Not determined.
Vapor Pressure: Not determined.
Specific Gravity: Not applicable.
Solubility in Water: Appreciable.
Solubility in Other Solvents: Not determined.
Partition Coefficient (n-octanol/water): Not determined.
Auto-ignition Temperature: Not applicable.
Decomposition Temperature: Not determined.
Viscosity: Not applicable.
Other Information: Relative Density 2.630 g/cm^3.

SECTION 10 – STABILITY AND REACTIVITY

Reactivity: No dangerous reaction known under conditions of normal use.
Chemical Stability: Stable.
Possible Hazardous Reactions: Contact with acids liberates toxic gas.
Conditions to Avoid: Avoid dust generation.
Incompatible Materials: Acids and strong oxidizing agents.
Hazardous Decomposition Products: Oxides of sulfur.

SECTION 11 – TOXICOLOGICAL INFORMATION

Routes of Exposure:

Inhalation	Ingestion	Skin	Eye
		X	X

Physical, Chemical and Toxicological Effects:

Symptoms: May cause mild eye irritation with contact with product. This is characterized by redness and swelling of the eye**.** Prolonged or repeated skin contact may cause mild irritation.

Delayed and Immediate Effects as well as Chronic Effects from Short and Long-term Exposure:

Sensitization: Not a skin sensitizer.

Germ Cell Mutagenicity: No data available.

Carcinogenicity: No components of this product in reportable amounts are listed by NTP, IARC, or OSHA.

Reproductive Toxicity: This product does not contain any known or suspected reproductive hazards.

Specific Target Organ Toxicity: Eye (Single Exposure).

Numerical Measures of Toxicity:

Product: Oral LD50: =3560 mg/kg (rat).
Inhalation LD50: >5000 mg/m^3 (rat);4hr.

SECTION 12 – ECOLOGICAL INFORMATION

Ecotoxicity: Fish: *Gambusia affinis*: LC50 =660 mg/L;96hr.

Persistence and Degradability: Not determined.

Bioaccumulation: Not determined.

Mobility: Not determined.

Other Adverse Effects: None known.

SECTION 13 – DISPOSAL CONSIDERATIONS

Waste Treatment Methods:

Disposal of Wastes: Dispose of product in accordance with national and local regulations.

Contaminated Packaging: Empty containers should be taken to an approved waste handling site for recycling or disposal.

Other Information: None.

SECTION 14 – TRANSPORTATION INFORMATION

DOT:

UN Number: Not listed.
Proper Shipping Name: Not Regulated.
Hazard Class: Not applicable.
Packing Group: Not applicable.

SECTION 15 – REGULATORY INFORMATION

US Federal Regulations:

TSCA: All ingredients of this product are listed in the TSCA inventory.
SARA 313: This product does not contain a chemical or chemicals in reportable amounts subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) and Title 40 CFR 372.

US State Regulations:

California: **WARNING**: This product can expose you to Cobalt sulfate heptahydrate, which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

SECTION 16 – OTHER INFORMATION

Issue Date: September 15, 2004
Revision Date: November 12, 2021

Health	Flammability	Reactivity	Personal Protection
1	0	0	B

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AquaTrol®
A DIVISION OF MOMAR, INC.

AquaTrol 14641

Powdered Oxygen Scavenger

Principal Application:

AquaTrol 14641 is a sulfite-based product used for efficient removal of dissolved oxygen in boiler systems. 14641 is a catalyzed product that combines superior oxygen removal with economical protection against pitting corrosion.

Use Considerations

14641 is designed for use as an adjunct to a Primary AquaTrol Product to provide a complete boiler water treatment program. When operating conditions warrant, 14641 can be used to provide additional oxygen removal during system upsets or other unusual operating conditions. 14641 can also be used as part of a designed chemical program for wet lay-up storage of idle boilers. Your AquaTrol Water Specialist will provide specific product selection and usage information.

Dosage & Control

Feed a sufficient quantity of 14641 to maintain a residual of 30-60 ppm of sulfite (as SO3) in the boiler water. Actual product usage over any time period will vary with operating load of the boiler, amount of condensate returned and chemical composition of the make-up and feedwater. Your AquaTrol Water Specialist will recommend complete program controls and product dosages.

Feeding

For best results, 14641 should be fed separately into the storage section of the deaerator or feedwater tank using a chemical metering pump constructed of suitably resistant materials. Proportional feed is desired and is usually accomplished by electrically connecting the chemical pump in parallel with the boiler feedwater pump. 14641 should be dissolved in soft water or cooled condensate. Do not mix directly with other concentrated water treatment products. 14641 must be pre-dissolved before mixing with other boiler feedwater treatments in a chemical mixing tank. Continuous agitation should be avoided.

Typical Properties

pH (10% solution)	9.8
Density	90.9 Pounds Per Cubic Foot
Appearance	White Granular Powder
Odor	Odorless

Handling Storage & Safety

Use normal precautions for chemical handling. Wear appropriate apron, gloves, or other protective clothing. Always wear goggles or face shield for eye protection. Keep out of the reach of children. Avoid contact with eyes, skin, or clothing. Do not swallow.
Read container labeling and Safety Data Sheet for more complete information on handling precautions. AquaTrol 14641 is available in 55, 30, 12, and 5-gallon non-returnable containers. Store at room temperature; protect from freezing and extreme heat. Keep container closed when not in use. Use promptly upon opening.

SECTION 1 - IDENTIFICATION

Product: AQUATROL® 14650

Recommended use of the chemical and restrictions on use:

Uses: Oxygen corrosion inhibitor.
List of advices against: Not available.

Details of the supplier of the Safety Data Sheet:

Momar, Inc.
1830 Ellsworth Industrial Dr.
Atlanta, Ga. 30318
404-355-4580
800-556-3967
www.momar.com

Emergency Telephone Number (INFOTRAC): North America: 1-800-535-5053
International: 1-352-323-3500

SECTION 2 – HAZARD IDENTIFICATION

Classification:

Flammable Liquid:	3
Skin Corrosion/Irritation:	2
Eye Damage/Irritation	2B

Signal Word: Warning.

Hazard Statements:
Flammable liquid and vapor.
Causes skin irritation.
Causes eye irritation
May cause respiratory irritation

Pictograms:

Precautionary Statements:

Prevention:
Keep away from heat/sparks/open flames/hot surfaces -- No smoking.
Keep container tightly closed.
Ground/Bond container and receiving equipment.
Use explosion-proof electrical/ventilating/lighting/equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Wash hands and all exposed skin thoroughly after handling.
Wear protective gloves/eye protection/face protection.
Avoid breathing dust/fume/gas/mist/ vapors/spray.
Use only outdoors or in a well-ventilated area.

Response:
If on skin (or hair): Take off immediately all contaminated clothing.
Rinse skin with water/shower.

In case of fire: Use dry chemical, alcohol foam, carbon dioxide to extinguish.
If on skin: Wash with plenty of water/soap.
Take off contaminated clothing and wash it before reuse.
If skin irritation occurs: Get medical advice/attention.
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 advice/attention.
If inhaled: Remove person to fresh air and keep comfortable for breathing.
Call a poison center/doctor/hospital if you feel unwell.

Storage: Store locked up.
Store in a well-ventilated place. Keep cool.
Keep container tightly closed.

Disposal: Dispose of contents/container to approved waste disposal plant in accordance with federal, state, and local regulations.

Other Hazards: None known.

SECTION 3 – COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	CAS Number	Percent Weight
4-methoxyphenol	150-76-5	<5.0
N,N-Diethylhydroxylamine	3710-84-7	<25.0

SECTION 4 – FIRST AID MEASURES

Eye Contact: Immediately flush eyes with plenty of water for at least 15-20 minutes, forcibly holding eyelids apart to ensure complete irrigation of all eye and lid tissue. Get medical attention if irritation persists.

Skin Contact: Immediately flush skin with plenty of water for at least 15 minutes. Remove contaminated clothing. Wash clothing and shoes before reuse. Get medical attention if irritation persists.

Inhalation: Remove from exposure. If not breathing, give artificial respiration. If breathing is difficult, get medical attention.

Ingestion: Get medical attention immediately. Do not induce vomiting. If victim is conscious and alert, give large amounts of water. Discontinue water if victim feels like they may vomit. Never give anything by mouth to an unconscious person. Keep head low in case of vomiting to keep material from entering lungs.

Most Important Symptoms and Effects:

Acute: Possible eye and skin irritation.

Delayed: Prolonged or excessive contact with skin could cause dermatitis.

Indication of Any Immediate Medical Attention and Special Treatment Needed: None known.

SECTION 5 – FIREFIGHTING MEASURES

Extinguishing Media: Use dry chemical, carbon dioxide, or alcohol foam.
Specific Hazards Arising From the Substance or Product: Water spray may be ineffective. Use water spray to cool fire exposed containers.

Hazardous Combustion Products: Oxides of carbon, smoke, and fumes.

Protective Equipment and Precautions for Firefighters: Wear a self-contained breathing apparatus in pressure- demand mode, and full protective gear.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment, and Emergency Procedures: Avoid contact with skin and eyes. Wear protective clothing, see Section 8.
Environmental Precautions: Keep out of sewers, drains, and bodies of water. Spills should be diked and absorbed.
Methods and Materials for Containment and Cleaning Up: Absorb in vermiculite, dry sand, or earth, and place in containers. Collect and reclaim or dispose of in sealed containers in a licensed waste facility. Liquid material may be removed with a vacuum truck. Containers with spillage must be properly labeled with correct contents and hazard symbol.

SECTION 7 – HANDLING AND STORAGE

Precautions for Safe Handling: Avoid spilling, skin, and eye contact. Wash thoroughly after handling. Use only with adequate ventilation. Use away from ignition sources. For industrial or professional use only. Do not cut or weld empty container. KEEP OUT OF REACH OF CHILDREN.

Conditions for Safe Storage: Store in a cool dry place. Keep out of sunlight and away from ignition sources.

Incompatibilities: Avoid strong oxidizing agents.

SECTION 8 – EXPOSURE CONTROL / PERSONAL PROTECTION

Exposure Limits and Recommendations:

Chemical Name	OSHA PEL	ACGIH TLV	Other Exposure Limits
4-methoxyphenol	Not established	5 mg/m3	5 mg/m3 (NIOSH)
N,N-Diethylhydroxylamine	Not established	Not established	

Engineering Controls: Normal ventilation.

Personal Protection Measures:

Respiratory Protection: Normally not needed. If needed, use NIOSH approved mask and filter for organic vapor.

Skin and Body: Chemical resistant gloves recommended. Chemical resistant apron, as needed.

Eye Protection: Safety glasses/goggles recommended.

Other Recommendations: None.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Odor: Clear tinted liquid with amine odor.
Odor Threshold: Not determined.
pH: 11.0
Freezing Point: Not applicable.
Boiling Point: >212˚F
Flash Point: 120°F
Evaporation Rate (BUAC=1): Slower.
Flammability: Flammable.
Flammability or Explosion Limits: **Upper:** Not determined. **Lower:** Not determined.
Vapor Pressure: Not determined.
Specific Gravity: 0.999
Solubility in Water: Emulsifiable.
Solubility in Other Solvents: Not determined.
Partition Coefficient (n-octanol/water): Not determined.
Auto-ignition Temperature: Not determined.
Decomposition Temperature: Not determined.
Viscosity: Not determined.
Other Information: Not determined.

SECTION 10 – STABILITY AND REACTIVITY

Reactivity: No dangerous reaction known under conditions of normal use.
Chemical Stability: Stable under normal temperature conditions and recommended use.
Possible Hazardous Reactions: Not available.
Conditions to Avoid: Heat, flames, sparks. Contact with incompatible materials.
Incompatible Materials: Strong oxidizing agents.
Hazardous Decomposition Products: Oxides of carbon, smoke, fumes.

SECTION 11 – TOXICOLOGICAL INFORMATION

Routes of Exposure:

Inhalation	Ingestion	Skin	Eye
		X	X

Physical, Chemical and Toxicological Effects:

Symptoms: Irritation to skin and eyes.

Delayed and Immediate Effects as well as Chronic Effects from Short and Long-term Exposure:

Sensitization: Not a skin sensitizer.
Germ Cell Mutagenicity: Not classified.
Carcinogenicity: No components of this product are listed by NTP, IARC, or OSHA.
Reproductive Toxicity: Not classified.
Specific Target Organ Toxicity: Not classified.

Numerical Measures of Toxicity:

Product: Not determined.

Component:

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
4-methoxyphenol	Not determined	Not determined	Not determined
N,N-Diethylhydroxylamine	2,190 mg/kg (rat)	1,300 mg/kg (rabbit)	11.4 mg/l – 4hr (rat)

SECTION 12 – ECOLOGICAL INFORMATION

Ecotoxicity: 4-methoxyphenol
Fish: Fathead Minnow: LC50 = 55 mg/L; 96hr
Invertebrates: Water Flea: LC50 = 2.2 mg/l; 96hr
N,N-Diethylhydroxylamine
Fish: Fathead Minnow: LC50 = >134 mg/L; 96hr
Invertebrates: Water flea: EC50 = 8.2 mg/L; 48hr
Algae: Green algae: ErC50 = >101 mg/L; 72hr

Persistence and Degradability: Not readily biodegradable.

Bioaccumulation: Minimum.

Mobility: Expected to volatilize.

Other Adverse Effects: When spilled on water, this product may act like an oil, causing a film, sheen, emulsion or sludge at or beneath the surface of a body of water.

SECTION 13 – DISPOSAL CONSIDERATIONS

Waste Treatment Methods:

Disposal of Wastes: Dispose of product in accordance with local, state, and federal regulations.

Contaminated Packaging: Empty containers should be taken to an approved waste handling site for recycling or disposal.

Other Information: None.

SECTION 14 – TRANSPORTATION INFORMATION

DOT:

UN Number:

Proper Shipping Name: Compounds, Cleaning Liquid

Hazard Class:

Packing Group:

USDOT exception 49CFR173.150(f) applies

SECTION 15 – REGULATORY INFORMATION

US Federal Regulations:

TSCA: All ingredients of this product are listed in the TSCA inventory.

SARA 313: This product contains the following chemical or chemicals subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) and Title 40 CFR 372.

Chemical Name	CAS Number	Percent Weight
None		

US State Regulations:

California: **This product contains the following chemical or chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm:** None.

SECTION 16 – OTHER INFORMATION

Issue Date: October 6, 2009
Revision Date: August 19, 2014

Health	Flammability	Reactivity	Personal Protection
2	2	0	C

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AquaTrol®
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AquaTrol 14650

Oxygen Scavenger and Metal Passivator

Principal Application:

AquaTrol 14650 is a volatile oxygen scavenger used to remove oxygen from boiler feedwater prior to it entering a boiler system. **14650** is also an excellent metal passivator helping to protect boiler system surfaces from corrosion.

Secondary Application:

AquaTrol 14650 can also be fed strictly as a metal passivator to boiler systems as well as to hot loop systems that are experiencing corrosion to help curb system corrosion.

Use Considerations

AquaTrol 14650 is designed for use in boiler systems with a true deaerator and not a feedwater tank. It is not as effective as sulfite in taking high levels of oxygen down to zero. For systems with feedwater tanks or improperly functioning DA systems (O_2 above 30 ppb) a sulfite product should be used.

Dosage & Control

Feed a sufficient quantity of **AquaTrol 14650** to maintain a residual of 0.5-1.5 ppm of DEHA in the boiler feedwater. A cooled sample is needed to get an accurate reading. It is important to follow the procedure exactly and keep the cells out of light exposure during the reaction period prior to testing. Actual product usage over any time period will vary with the operating load of the boiler, amount of condensate returned, and chemical composition of the makeup and feedwater. Your AquaTrol Water Specialist will recommend complete program controls and product dosages.

For use of **AquaTrol 14650** in a hot closed loop system as a metal passivator, a target dosage of 2-4 ppm should be maintained.

Feeding

For best results **AquaTrol 14650** should be fed into the DA tank below the water line via a quill and the chemical should be pumped using a chemical metering pump constructed of suitably resistant materials. Proportional feed is desired and is usually accomplished by electrically connecting the chemical pump in parallel with the boiler feedwater pump. Intermittent feed is accomplished with an appropriate timing device. **AquaTrol 14650** can be metered directly from the shipping container and should be fed neat.

If using it as a passivation aid in a hot closed loop system, it should be fed via a pump into the system or should be added to the system's shot feeder after it has been flushed of any previous chemical that might have been added via it.

Typical Properties

pH	11.0
Density	8.34 Pounds Per Gallon
Appearance	Clear Light Amber Liquid
Odor	Amine

Handling Storage & Safety

Use normal precautions for chemical handling. Wear appropriate apron, gloves, or other protective clothing. Always wear goggles or face shield for eye protection. Keep out of the reach of children. Avoid contact with eyes, skin, or clothing. Do not swallow. Read container labeling and Safety Data Sheet for more complete information on handling precautions. **AquaTrol 14650** is available in 55-, 35-, 20-, and 5-gallon non-returnable containers. Store at room temperature; protect from freezing and extreme heat. Keep container closed when not in use. Use promptly upon opening.