Product	BT-4310
Revision Date	06/05/2015
Revision	1

Safety Data Sheet

SECTION 1: IDENTIFICATION

Product Name	BT-4310
Identifier Uses	Boiler Treatment.
Supplier	Clear Water Technologies, LLC 13560 Colombard Court Fontana, California 92337 Tel: 844.429.8324
Contact Person	info@clearwatertech.com
Emergency Telephone	24-HOUR EMERGENCY TELEPHONE: INFOTRAC: 1-800-535-5053 INTERNATIONAL#: 1-352-323-3500

SECTION 2: HAZARDS IDENTIFICATION

Appearance	Granular black and white solid.
Color	Black and white.
Odor	Wood-like.
Pictogram(s)	
Signal Word	Danger
Hazard Statements	H314 Causes severe skin burns and eye damage H335 May cause respiratory irritation.
Precautionary Statements	P280 Wear protective gloves/ protective clothing/eye protection/face protection. P303 + P361 + P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/ shower P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P310 Immediately call a POISON CENTER or doctor/physician
Contains	disodium metasilicate sodium hydroxide
GHS Classification	
Physical and Chemical Hazards	Not classified
Human Health	Skin Corr. 1A - H314, STOT SE 3 - H335
Environment	Not classified
OSHA Regulatory Status	This product is Hazardous under the OSHA Hazard communication Standard.
Inhalation	Exposure to product dusts, vapors, mists or fumes may cause severe irritation or burns to mucous membranes and respiratory tract. Breathing dusts may destroy mucous membranes and cause severe pneumonitis. Repeated or prolonged exposures may cause productive cough, running nose, bronchopneumonia, pulmonary edema and reduction of pulmonary function. Brief contact with the dust causes irritation. Greater exposure causes severe burns. Excessive contact with powder may cause drying of mucous membranes of the nose and throat due to absorption of moisture and oils. In the presence of moisture (perspiration, humidity, tears), the dust dissolves to form a corrosive solution which may cause burns. Sulfite-sensitive individuals may experience a severe allergic reaction. Avoid contact.

Ingestion	Exposure to product may cause severe irritation, burns and pain in the mouth, throat and abdomen. Symptoms of exposure may include nausea, vomiting, diarrhea and perforation of the esophagus and stomach lining. Ingestion may be fatal. Sulfite-sensitive individuals may experience a severe allergic reaction. Do NOT ingest.
Skin contact	Exposure to product may cause severe irritation to skin. Chemical burns may occur if not promptly removed from skin. Contact may cause irritation and ulceration, especially under the finger nails (and other confined spaces such as under rings or watch bands). The effect of local dermal exposure may consist of multiple areas of superficial destruction of the skin or primary irritant dermatitis. Skin absorption is a secondary concern to the continual destruction of tissue while the product is in contact with the skin. Corrosive and toxic effects may be delayed, and damage may occur without the sensation or onset of pain. Avoid contact.
Eye contact	Exposure to product may cause severe irritation and burns to eyes, and possibly eye damage. May cause corneal scarring and clouding, glaucoma, cataracts and permanent blindness. Brief contact may cause severe pain and eye damage. Prolonged and repeated exposure may cause visual disturbances. Corrosive effects may be delayed, and damage may occur without the sensation or onset of pain. Avoid contact.
Routes of Exposure	No Information available.

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

Composition Comments	Confidential business information has been removed without affecting the overall safety information on the safety data sheet.

SECTION 4: FIRST AID MEASURES

Description of first aid measures

General Information	General first aid, rest, warmth and fresh air.
Inhalation	If this product is inhaled, move the exposed person to fresh air promptly. Give artificial respiration ONLY if breathing has stopped. Give cardiopulmonary resuscitation (CPR) if there is no breathing AND no pulse. Oxygen administration may be beneficial in this situation but should only be administered by personnel trained in its use. Seek medical attention IMMEDIATELY.
Ingestion	If this product is ingested, do NOT attempt to give anything by mouth to an unconscious person. If the exposed person is alert and not convulsing, rinse mouth out and give one-half (1/2) to one (1) glass of water to dilute material. Do NOT induce vomiting. If spontaneous vomiting occurs, have the person lean forward with head down to avoid breathing in of vomitus, rinse mouth and administer more water. Seek medical attention IMMEDIATELY. Do NOT give acidic agents (citrus juices or vinegar) to "neutralize" the alkali. This action may cause an exothermic reaction and burn the esophagus.
Skin contact	If this product contacts the skin, prompt removal of the material from the skin is essential. If the product penetrates the clothing, promptly remove the contaminated clothing or shoes, and immediately flush the affected area with copious amounts of soap and water for at least thirty (30) minutes or up to sixty (60) minutes for critical body areas. Immerse the exposed part immediately in ice water to relieve pain and to prevent swelling and blistering. Place cold packs, ice or wet clothes on the burned area if immersion is not possible. Cover the exposed part with a clean, preferably sterile, lint-free dressing. Seek medical attention IMMEDIATELY and monitor breathing. Treat for shock for severe exposure.
Eye contact	If this product contacts the eyes, immediately flush eyes with plenty of clean running water for at least thirty (30) minutes, preferably up to sixty (60) minutes. Hold eyelids open during flushing. If irritation persists, repeat flushing. Do NOT transport the exposed person until the recommended flushing period is completed unless flushing can be continued during transport. Seek medical attention.

Most important symptoms and effects, both acute and delayed

General Information	No information available
Inhalation	Exposure to product dusts, vapors, mists or fumes may cause severe irritation or burns to mucous membranes and respiratory tract. Breathing dusts may destroy mucous membranes and cause severe pneumonitis. Repeated or prolonged exposures may cause productive cough, running nose, bronchopneumonia, pulmonary edema and reduction of pulmonary function. Brief contact with the dust causes irritation. Greater exposure causes severe burns. Excessive contact with powder may cause drying of mucous membranes of the nose and throat due to absorption of moisture and oils. In the presence of moisture (perspiration, humidity, tears), the dust dissolves to form a corrosive solution which may cause burns. Sulfite-sensitive individuals may experience a severe allergic reaction. Avoid contact.

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Routes of Exposure	No Information available.

Most important symptoms and effects, both acute and delayed

Notes to the Physician	May cause pneumonitis if aspirated. If ingestion has occurred less than two (2) hours earlier, carry out careful gastric lavage; use endotracheal cuff if available, to prevent aspiration.

SECTION 5: FIREFIGHTING MEASURES

Auto Ignition Temperature (°C)	No Information available.
Flammability Limit - Lower (%)	No Information available.
Flammability Limit - Upper (%)	No Information available.
Flash point	No Information available.
Extinguishing Media	Use water, foam, dry chemical or carbon dioxide to extinguish fire.
Hazardous combustion products	Thermal decomposition products are toxic and may include oxides of sodium.
Unusual Fire & Explosion Hazards	Avoid direct contact of this product with water as this can cause a violent exothermic reaction. Spilled material may cause floors and contact surfaces to become slippery. Reacts with most metals to produce hydrogen gas which could make an explosive mixture with air. Irritating vapors may be emitted during a fire.
Special Fire Fighting Procedures	Avoid direct contact of this product with water as this can cause a violent exothermic reaction. Remove containers from fire zone whenever possible.
Protective equipment for fire-fighters	Fire fighters should wear full protective equipment, including a NIOSH-approved self-contained breathing apparatus.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions	Use proper personal protection (refer to Section 8).Shut off or remove all sources of ignition. Approach spill upwind and evacuate area downwind. Ensure proper ventilation.
Environmental Precautions	Run off from fire control or dilution water may cause pollution. Keep out of drains, municipal sewers, open bodies of water and water course.
Spill Clean Up Methods	Where a package (drum or bag) is damaged or leaking, repair it, or place it into an over-pack drum immediately so as to avoid or minimize material loss and contamination of surrounding environment. Replace damaged containers immediately to avoid loss of material and contamination of surrounding atmosphere. Collect product for recovery or disposal. Ventilate enclosed spaces.

SECTION 7: HANDLING AND STORAGE

Handling	Use proper personal protection when handling (refer to Section 8).Use under well-ventilated conditions. Avoid contact with eyes, skin and clothing. Avoid breathing vapors and mists. Avoid prolonged or repeated contact. Do NOT ingest. Wash thoroughly after handling. Rinse container before disposal. Avoid moisture contamination. When diluting, never add water to this material. Add this material to water in small amounts to avoid spattering. Water should be lukewarm. Never start with hot or cold water. Do NOT handle product around food or beverages. Hazardous carbon monoxide can form in enclosed spaces when alkaline products contact food and beverage products that contain sugars.
Usage Description	Use only according to directions.
Storage Precautions	The recommended shelf life is two (2) years. It is recommended that products be retested if

stored for more than two (2) years. Under ideal storage conditions, the shelf life is almost indefinite.

Specific End Use(s) The identified uses are in section 1 of this Safety Data Sheet.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

Protective Equipment

Component	STD	TWA (8 Hrs)		STEL (15mins)		Notes
cobalt	OSHA		0.1mg/m3			
sodium hydroxide	OSHA		2mg/m3			

Ingredient Comments OSHA

Process Conditions Provide eyewash, quick drench.

Engineering Measures Local exhaust ventilation required. Ventilation should be corrosion proof. Make up air should be supplied to balance air that is removed by local or general exhaust ventilation. Ventilate low lying areas such as sumps or pits where dense dust may collect.

Respiratory Equipment Use a dust mask to minimize inhalation contact. A NIOSH approved respirator with N95 (dust, fume, mist) filters may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits, or when symptoms have been observed that are indicative of overexposure. A half face piece air-purifying respiratory may be used in concentrations up to ten (10) times the acceptable exposure level and a full face piece air-purifying respirator may be used in concentrations up to fifty (50) times the acceptable exposure level. Supplied air should be used when the level is expected to be above fifty (50) times the acceptable level, or when there is a potential for uncontrolled release. In the event of failure of respiratory protective equipment, every effort should be made to exit immediately.

Hand Protection Use neoprene, butyl rubber, natural rubber, nitrile rubber, polyvinyl chloride (PVC) or viton gloves to minimize skin contact. Do NOT use gloves made of polyvinyl alcohol (PVA).

Eye Protection To avoid contact with eyes, use chemical splash goggles. Face shield is recommended. Eye wash station should be available in the work area.

Hygiene Measures DO NOT SMOKE IN WORK AREA! Wash hands at the end of each work shift and before eating, smoking and using the toilet. Wash promptly if skin becomes wet or contaminated. Promptly remove any clothing that becomes contaminated. When using do not eat, drink or smoke.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on Basic Physical and Chemical Properties

Appearance Granular black and white solid.

Color Black and white.

Odor Wood-like.

Odor Threshold - Lower No Information available.

Odor Threshold - Upper No Information available.

pH-Value, Conc. Solution No Information available.

Melting point No Information available.

Initial boiling point and boiling range No Information available.

Flashpoint No Information available.

Evaporation rate	No Information available.
Flammability State	No Information available.
Flammability Limit - Lower (%)	No Information available.
Flammability Limit - Upper (%)	No Information available.
Vapor pressure	No Information available.
Vapor Density (air=1)	No Information available.
Relative density	No Information available.
Bulk Density	No Information available.
Solubility	Completely soluble in water.
Decomposition temperature	No Information available.
Partition coefficient; n-octanol/water	No Information available.
Auto Ignition Temperature (°C)	No Information available.
Viscosity	No Information available.
Explosive Properties	No information available.
Oxidizing Properties	No Information available.
Molecular Weight	No Information available.
Volatile Organic Compound	No Information available.

SECTION 10: STABILITY AND REACTIVITY

Reactivity	Reactions may occur with halogenated compounds, oxidizers, organic materials, combustibles, water, metals, metallic fines, metallic powders, strong acids, organic halogen compounds, organic nitric compounds, sodium, potassium, barium and potassium chlorate. Contact with small quantities of water will give off heat. Contact with larger volumes of water may cause violent exothermic reaction. Avoid moisture. Product attacks some types of rubber, plastics and coatings. Reacts with most metals to produce hydrogen gas which could make an explosive mixture with air. Avoid aluminum and its alloys, zinc and its alloys, copper and its alloys, brass, bronze, lead, chromium, magnesium, tin and alkali metals. Avoid food and beverage products that contain sugars as potentially deadly carbon monoxide gas can form in enclosed areas or enclosed tanks.
Stability	This product is stable at ambient temperatures and atmospheric pressures.
Hazardous Polymerization	Hazardous polymerization is not expected to occur under normal temperatures and pressures.
Hazardous Decomposition Products	Thermal decomposition products are toxic and may include oxides of sodium.
Conditions to Avoid	Avoid contact with oxides of sodium.
Materials to Avoid	Keep away from oxides of sodium.

SECTION 11: TOXICOLOGICAL INFORMATION

Toxicological Information	No toxicological information for the overall finished product.
Acute Toxicity (Oral LD50)	>211.00mg/kg Rat
Acute Toxicity (Dermal LD50)	>1154.00mg/kg Rabbit
Acute Toxicity (Inhalation LC50)	No Information available.
Skin Corrosion/Irritation	No Information available.

Respiratory Sensitization No Information available.
Skin Sensitization No Information available.
Reproductive Toxicity: No Information available.
Germ Cell Mutagenicity:
Genotoxicity - In Vitro
Genotoxicity - In Vivo

Carcinogenicity:
Carcinogenicity No Information available.
NTP - Carcinogenicity **cobalt**: Reasonably anticipated to be a human carcinogen.
OSHA - Carcinogenicity The product and its components are not listed.
IARC Carcinogenicity cobalt: 2B IARC Group 2B possibly carcinogenic to humans.

Specific Target Organ Toxicity - Single Exposure:
STOT - Single Exposure No Information available.
Specific Target Organ Toxicity - Repeated Exposure:
STOT - Repeated Exposure No Information available.

Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
sodium sulphite	820mg/kg Mouse		
sodium carbonate	4090mg/kg Rat		2.3mg/l (vapors) Rat
disodium metasilicate	770mg/kg Mouse		
cobalt	6170mg/kg Rat		

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity No Information available.

Acute Toxicity - Fish 175.00ppm Carassius auratus (Goldfish)
Acute Toxicity - Aquatic Invertebrates No Information available.

Acute Toxicity - Aquatic Plants No Information available.

Degradability No information available.

Bioaccumulative Potential No data available on bioaccumulation.

Mobility Completely soluble in water.

Results of PBT and vPvB Assessment The product does not contain any PBT or vPvB substances.

Other Adverse Effects None known.

Name	Acute Toxicity (Fish)	Acute Toxicity (Aquatic Invertebrates)	Acute Toxicity (Aquatic
sodium carbonate	LC50 96 Hours <320.00mg/l Lepomis macrochirus (Bluegill)	LC50 96 Hours <565.00mg/l Daphnia magna	

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Management When handling waste, consideration should be made to the safety precautions applying to handling of the product.

Disposal Methods Do NOT dump into any sewers, on the ground or into any body of water. Rinse containers before disposal. Since emptied containers contain product residue, follow label warnings even after container is emptied. Do NOT reuse empty containers. Dispose in accordance with all applicable federal, state and local laws and regulations. Neutralize carefully with weak acid to pH 6 – 9. Neutralization is expected to be exothermic. Effervescence may result. Confirm pH with pH paper.

SECTION 14: TRANSPORT INFORMATION

UN No. (DOT/TDG)	1759 - CORROSIVE SOLID, (Sodium Hydroxide)
UN No. (IMDG)	1759 - CORROSIVE SOLID, (Sodium Hydroxide)
UN No. (ICAO)	1759 - Corrosive solid (Sodium Hydroxide)
DOT Proper Shipping Name	1759 - CORROSIVE SOLID, (Sodium Hydroxide)
TDG Proper Shipping Name	1759 - CORROSIVE SOLID, (Sodium Hydroxide)
DOT Hazard Class	8
DOT Hazard Label	Class 8 - Corrosive
TDG Class	8
TDG Label(s)	8
IMDG Class	8
ICAO Class	8
Transport Labels	
DOT Pack Group	II
IMDG Pack Group	II
Air Pack Group	II
EMS	F-A, S-B
Environmentally Hazardous Substance/Marine Pollutant	No

SECTION 15: REGULATORY INFORMATION

US Federal Regulations

SARA Section 302 Extremely Hazardous Substances Tier II Threshold Planning Quantities

The Following ingredients are listed: None Listed.

CERCLA/Superfund, Hazardous Substances/Reportable Quantities (EPA)

The Following ingredients are listed: cobalt, sodium hydroxide

SARA Extremely Hazardous Substances EPCRA Reportable Quantities

The Following ingredients are listed: None Listed.

SARA 313 Emission Reporting

The Following ingredients are listed: cobalt

CAA Accidental Release Prevention

The Following ingredients are listed: pentasodium triphosphate, trisodium trimetaphosphate, cobalt

OSHA Highly Hazardous Chemicals

The Following ingredients are listed: cobalt

US State Regulations

California Proposition 65 Carcinogens and Reproductive Toxins

The Following ingredients are listed: cobalt

California Air Toxics "Hot Spots" (A-I)
The Following ingredients are listed sodium hydroxide

California Air Toxics "Hot Spots" (A-Ii)
The Following ingredients are listed None Listed.

Massachusetts "Right To Know" List
The Following ingredients are listed pentasodium triphosphate
tetrasodium pyrophosphate
trisodium trimetaphosphate
cobalt
sodium hydroxide

Rhode Island "Right To Know" List
The Following ingredients are listed cobalt
sodium hydroxide

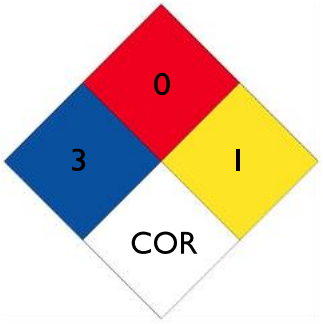
Minnesota "Right To Know" List
The Following ingredients are listed tetrasodium pyrophosphate
cobalt
sodium hydroxide

New Jersey "Right To Know" List
The Following ingredients are listed tetrasodium pyrophosphate
cobalt
sodium hydroxide

Pennsylvania "Right To Know" List
The Following ingredients are listed pentasodium triphosphate
tetrasodium pyrophosphate
trisodium trimetaphosphate
cobalt
sodium hydroxide

SECTION 16: OTHER INFORMATION

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)



HAZARDOUS MATERIAL INFORMATION SYSTEM (HMIS)

Health	3
Flammability	0
Physical Hazard	1
Personal Protection	E

Disclaimer
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