U.S. WATER

SAFETY DATA SHEET

BIOTROL 12.5

1 PRODUCT AND COMPANY IDENTIFICATION

Product Identifier: BIOTROL 12.5
Common Name: Mixture
SDS Number: 1533
Revision Date: 9/3/2015
Version: 1
Internal ID: 301C
Product Use: Industrial chlorine based biocide
Supplier Details: U. S. Water Services
12270 43rd St. NE
St. Michael, MN 55376

Contact: Non-emergency #: 866-663-7632
Email: SDS@uswaterservices.com
Web: www.uswaterservices.com

EMERGENCY RESPONSE: (ChemTel)
US & Canada: 800-255-3924
International: +01-813-248-0585

2 HAZARDS IDENTIFICATION

Classification of the substance or mixture

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

Health, Skin corrosion/irritation, 1 B
Physical, Corrosive to Metals, 1
Health, Specific target organ toxicity - Single exposure, 1

GHS Label elements, including precautionary statements

GHS Signal Word: DANGER

GHS Hazard Pictograms:

GHS Hazard Statements:

H314 - Causes severe skin burns and eye damage
H290 - May be corrosive to metals
H370 - Causes damage to organs

GHS Precautionary Statements:

P234 - Keep only in original container.
P260 - Do not breathe dust/fume/gas/mist/vapors/spray.
P264 - Wash thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P301+330+331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P303+361+353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305+351+338 - IF IN EYES: Rinse continuously 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.
P363 - Wash contaminated clothing before reuse.
P404 - Store in a closed container.
P406 - Store in a corrosive resistant container with a resistant inner liner.
P501 - Dispose of contents/container in accordance with local, regional, and international regulations.

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

PPE recommendation is advisory only and based on typical use conditions. An industrial hygienist or safety officer familiar with the specific situation of anticipated use must determine actual PPE required when using this product (29 CFR 1910.132)

3 COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients:

Cas#	%	Chemical Name
7681-52-9	12.5	Sodium hypochlorite
1310-73-2	0.2-5.0%	Sodium hydroxide

4 FIRST AID MEASURES

Inhalation: If inhaled: Remove to fresh air. If breathing is difficult, administer oxygen. If not breathing, give artificial respiration, preferably mouth-to-mouth. GET MEDICAL ATTENTION IMMEDIATELY. Symptoms of pulmonary edema can be delayed up to 48 hours after exposure.

Skin Contact: If on skin: Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately. Do not reuse clothing and shoes until cleaned. Do not apply oils or ointments unless ordered by the physician. If skin feels slippery, caustic may still be present in sufficient quantities to cause rash or burn. Continue washing skin until slick feeling is gone. Discard footwear which cannot be decontaminated. Discard contaminated leather articles such as shoes and belt.

Eye Contact: If in eyes: Immediately flush eyes with plenty of water for at least 15 minutes while holding eyelids open. Tilt head to avoid contaminating unaffected eye. Get immediate medical attention. Do not attempt to neutralize with chemical agents. Washing eyes within several seconds is essential to achieve maximum effectiveness. Oils or ointments should not be used at this time. Remove contact lenses after the first 5 minutes and continue flushing.

Ingestion: If swallowed: If fully conscious, drink a quart of water. DO NOT induce vomiting. CALL A PHYSICIAN IMMEDIATELY. If unconscious or in convulsions, take immediately to a hospital or a physician. NEVER induce vomiting or give anything by mouth to an unconscious victim. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into the lungs. Do not give sodium bicarbonate, fruit juices or vinegar. If vomiting occurs spontaneously, keep airway clear and give more water.

Most important symptoms & effects (acute & delayed): No data available
Indication of need for immediate medical attention: None
Special treatment needs: No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be

dangerous to the person providing aid to give mouth-to-mouth resuscitation. There is no specific antidote. Treatment of overexposure should be directed at the control of symptoms and the clinical condition of the patient. The absence of visible signs or symptoms of burns does not reliably exclude the presence of actual tissue damage.

5 FIRE FIGHTING MEASURES

Flammability:	Not flammable
Flash Point:	None
Flash Point Method:	Pensky Martens Closed cup
Burning Rate:	No data available
Autoignition Temp:	No data available
LEL:	Not applicable
UEL:	Not applicable

Extinguishing Media:

Suitable: Use extinguishing media suitable for surrounding fire.

Unsuitable: None

Hazardous combustion products: Chlorine-containing gases. Metal oxides. Oxygen. Halogenated compounds. Toxic fumes. Carbon dioxide. Carbon monoxide. Sodium oxides. Irritating and/or toxic gases.
Unusual Fire or Explosion Hazards: OXIDIZER. May generate potentially explosive oxygen. Contact with combustible materials may cause a fire.
Special protective equipment/precautions: Wear self-contained breathing apparatus

6 ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective equipment, emergency procedures: Avoid contact with the material. See section 8 of SDS for PPE recommendations
Environmental Precautions: Keep runoff from entering drains or waterways
Spill/Leak procedures: Contain spill or leak. Dike area if necessary to prevent spill from spreading or entering sewers and waterways. Recover as much as possible then absorb remainder with inert material. Place into closed container for disposal.
Regulatory Requirements: Dispose of recovered material in accordance with all applicable state and federal regulations.

7 HANDLING AND STORAGE

Handling Precautions: Avoid contact with eyes, skin, and clothing. Use with adequate ventilation. Do not swallow. Avoid breathing vapors, mists, or dust. Do not eat, drink, or smoke in work area. Wash thoroughly after handling. Empty containers retain product residue (vapor, dust, or liquid) and can be dangerous. DO NOT pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other
source of ignition. They may explode and cause injury or death. Mixing this product with gross filth such as feces, urine, etc. or with ammonia, acids, detergents or other chemicals may release hazardous gases irritating to eyes, lungs and mucous

membranes. CORROSIVE MATERIAL. Avoid dust or mist formation.

Storage Requirements: CORROSIVE MATERIAL. Store in a cool, well ventilated area, out of direct sunlight. Store in a drylocation away from heat. Keep away from incompatible materials. Keep containers tightly closed. Do not store in unlabeled or mislabeled containers. Relieve pressure in containers weekly. Do not freeze. Avoid temperatures greater than 70 Deg. F. Product degrades more rapidly with increasing temperature. Avoid contact with
combustible materials, wood and organic materials. Avoid storage on wood floors or near wooden walls, etc.. DO NOT contaminate water, food or feed by storage or disposal. Highly corrosive to most metals with evolution of hydrogen gas.

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls: Provide local exhaust ventilation as needed to control misting.

Personal Protective Equipment: HMIS PP, C | Safety Glasses, Gloves, Apron

Respiratory protection: If needed use MSHA/NIOSH approved respirator for dusts and mists. Seek professional advice prior to respirator selection and use. Follow all requirements of OSHA respirator regulations (29 CFR 1910.134)
Safety Stations: Make emergency eyewash stations, safety/quick-drench showers, and washing facilities available in work area.
General Hygiene: Never eat, drink, or smoke in work areas. Practice good personal hygiene after using this material, especially before eating, drinking, using the toilet, or applying cosmetics.
PPE recommendation is advisory only and based on typical use conditions. An industrial hygienist or safety officer familiar with the specific situation of anticipated use must determine actual PPE required when using this product (29 CFR 1910.132)

Exposure Limits:	**Sodium Hypochlorite**	**Sodium Hydroxide**
OSHA PEL:	1ppm (Ceiling) as Chlorine*	2 mg/m^3 (TWA)
NIOSH/REL:	0.5ppm (Ceiling) as Chlorine*	

9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Clear, yellow-green		
Physical State:	Liquid	**Odor:**	Chlorine
Odor Threshold:	Not determined	**Solubility:**	Complete in water
Spec Grav./Density:	10.01 lb/gal	**Freezing/Melting Pt.:**	appx -10F
Viscosity:	Not determined	**Flash Point:**	None
Boiling Point:	Not determined	**Vapor Density:**	Not determined
Partition Coefficient:	Not determined	**Auto-Ignition Temp:**	Not determined
Vapor Pressure:	Not determined	**UFL/LFL:**	Not determined
pH:	>12		
Evap. Rate:	Not determined		
Decomp Temp:	Not determined		

10 STABILITY AND REACTIVITY

Stability: Product is stable under normal storage and use conditions.

Conditions to Avoid: Avoid exposure to light. Avoid temperatures greater than 70 Deg. F. Product

	degrades more rapidly with increasing temperature. Keep away from incompatibles.
Materials to Avoid:	Heavy metals. Nickel. Iron. Copper. Cobalt. Acids. Ammonia. Ammonium compounds. Hydrogen peroxide. Alum. Oxidizing agents. Reducing agents. Combustible materials. Wood. Organic materials. Organic solvents. Amines. Methanol. Cleaners. Solvents. Magnesium. Aluminum. Chromium. Carbon steel. Manganese. Steel. Tin. Zinc. Sodium sulfite. Sodium thiosulfate. Bronze. Brass. Reacts with other household chemicals, such as toilet bowl cleaners, pool/hot tub chemicals/materials, peroxides, brick and concrete cleaners, insecticides, windshield wash, gasoline, greases, oils, fuels, rust removers, vinegar, human and animal waste to produce hazardous gases such as chlorine. Ether, ammonia compounds, cloth, propane, organic polymers, ethylene glycol, sodium bisulfite, sodium hydrosulfite may release hazardous gases. Alcohols. Chlorinated compounds. Cyanides. Hydrocarbons. Metals such as aluminum, zinc, tin, etc. Lead. Other alkali sensitive metals or alloys. Organic nitro compounds. Chlorinated hydrocarbons. Fluorinated hydrocarbons. Acetaldehyde. Chlorine trifluoride. Hydroquinone. Maleic anhydride. Tetrahydrofuran. Acrolein. Phosphorous. Trichloroethylene. Leather. Wool. Phosphorous pentoxide. Halogenated compounds. Glycols. Explosives. Acrylonitrile. 1,2- Dichloroethylene. Tetrachloroethane. Organic peroxides. Sodium tetrahydroborate. Food sugars. Silver nitrate. Chloroform. Zirconium.
Hazardous Decomposition:	Chlorine-containing gases. Reacts with acids to release poisonous chlorine gas. Sodium oxide. Hypochlorous acid. Oxygen. Hydrogen chloride. Hydrogen gas. Carbon monoxide. Phosphine. Thermal decomposition may release:
Hazardous Polymerization:	Hazardous polymerization will not occur under normal conditions. Sodium hydroxide can induce hazardous polymerization of acetaldehyde, acrolein, and acrylonitrile. Contact with water may cause violent reaction with evolution of heat. To dilute: Add product slowly to lukewarm water; not water to product. Contact with acid or incompatible materials may cause a violent reaction with evolution of heat. May react with certain metals to produce flammable hydrogen gas. Contact with acids, halogenated organics, organic nitro compounds, glycols, or sodium tetrahydroborate may produce flammable hydrogen gas. Contact with 1,2-dichloroethylene, trichloroethylene, tetrachloroethane, or phosphorous can form spontaneously flammable chemicals. Reactions with various food sugars may form carbon monoxide.

11 TOXICOLOGICAL INFORMATION

Acute Toxicity:

Sodium Hypochlorite

Oral LD_{50} (rat) 8,200 mg/kg

Dermal LD_{50} (rabbit) >10,000 mg/kg

Sodium Hydroxide

Dermal LD_{50} (rabbit) 1,350 mg/kgs

ATE (Acute Toxicity Estimate)

Dermal 27,000 mg/kg

Skin Corrosion/Irritation: Corrosive

Serious eye damage/irritation: Corrosive

Respiratory or skin sensitization: Corrosive (Inhalation)

Specific target organ toxicity (single exposure): No data available

Specific target organ toxicity (repeated exposure): No data available

Aspiration hazard: No data available
Carcinogenicity: No carcinogenic effects are known for the components of this product
Germ Cell Mutagenicity: No mutagenic effects are known for the components of this product
Teratogenicity: No teratogenic effects are known for the components of this product

12 ECOLOGICAL INFORMATION

Aquatic Toxicity: Data provided is for Sodium Hypochlorite
Freshwater Fish Toxicity:

- LC_{50} clupea harengus 0.033 - 0.097 mg//l/96 hr, flow through bioassay (pH: 8)
- LC_{50} cymatogaster aggregata 0.045 - 0.098 mg/l/96 hr, flow through bioassay (pH: 8)
- LC_{50} gasterosteus aculeatus 0.141 - 0.193 mg/l/96 hr, flow through bioassay (pH: 8)
- LC_{50} oncorhynchus gorbuscha 0.023 - 0.052 mg/l/96 hr, flow through bioassay (pH: 8)
- LC50 oncorhynchus kisutch 0.026 - 0.038 mg/l/96 hr, flow through bioassay (pH: 8)
- LC_{50} oncorhynchus mykiss: 0.05-0.771 mg/L/96 hr, flow through
- LC_{50} oncorhynchus mykiss: >0.03-<0.19 mg/L/96 hr, semi-static
- LC_{50} oncorhynchus mykiss: 0.18-0.22 mg/L/96 hr, static
- LC_{50} parophrys vetulus 0.044 - 0.144 mg/l/96 hr, flow through bioassay (pH: 8)
- LC_{50} pimephales promelas 0.22 - 0.62 mg/l/96 hr, flow through bioassay (pH: 7)
- LC_{50} pimephales promelas: 4.5-7.6 mg/L/96 hr, static
- LC_{50} lepomis macrochirus: 0.4-0.8 mg/L/96 hr, static
- LC_{50} lepomis macrochirus: 0.28-1 mg/L/96 hr, flow through

Invertebrate Toxicity:

- EC_{50} ceriodaphnia sp. 0.006 mg/l/24 hr
- EC_{50} daphnia magna 0.07 - 0.7 mg/l/24 hr
- EC_{50} daphnia magna 2.1mg/l/96 hr
- EC_{50} gammarus fasciatus 4 mg/l/96 hr
- EC_{50} nitocra spinipes 40 mg/l/96 hr
- EC_{50} palaemonetes pugio 52 mg/l/96 hr

Algae:

- ErC_{50} dunaliella sp. 0.6 mg/l/24 hr
- ErC_{50} dunaliella tertiolecta 0.11 mg/l/24 hr
- ErC_{50} skeletonema costatum 0.095 mg/l/24 hr

Elimination (persistency & degradability): Material is inorganic
Bioaccumulative potential: Not expected to bioaccumulate
Mobility in soil: No data available
Other adverse effects: No data available

13 DISPOSAL CONSIDERATIONS

Dispose of in accordance with local regulations.

This material should be fully characterized for toxicity and possible reactivity prior to disposal (40 CFR 261). Use which results in chemical or physical change or contamination may subject it to regulation as a hazardous waste. Along with properly characterizing all waste materials, consult state and local regulations regarding the proper disposal of this material.

Container contents should be completely used and containers should be emptied prior to discard. Container rinsate could be considered a RCRA hazardous waste and must be disposed of with care and in full compliance with federal, state and local regulations. Larger empty containers, such as drums, should be returned to the distributor or to a drum reconditioner. To assure proper disposal of smaller empty containers, consult with state and local regulations and disposal authorities.

14 TRANSPORT INFORMATION

UN1791, Hypochlorite solutions, 8, PGIII, (Sodium Hypochlorite)

Certain shipping modes or package sizes may have exceptions from the transport regulations. The classification provided may not reflect those exceptions and may not apply to all shipping modes or package sizes.

DOT Transportation data (49 CFR 172.101)

See section 15 for information on Reportable Quantity chemicals (RQ)

15 REGULATORY INFORMATION

Component (CAS#) [%] - CODES

RQ(100LBS), Sodium hypochlorite (7681-52-9) [12.5] CERCLA, CSWHS, MASS, PA, TSCA

RQ(1000LBS), Sodium hydroxide (1310-73-2) [0.2-5.0%] CERCLA, CSWHS, MASS, OSHAWAC, PA, TSCA, TXAIR

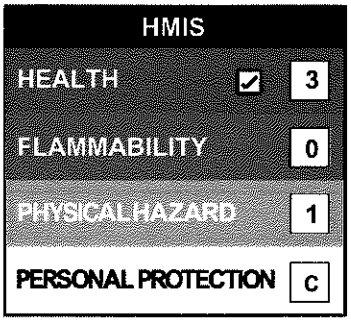
Regulatory CODE Descriptions

RQ = Reportable Quantity
CERCLA = Superfund clean up substance
CSWHS = Clean Water Act Hazardous substances
MASS = MA Massachusetts Hazardous Substances List
PA = PA Right-To-Know List of Hazardous Substances
TSCA = Toxic Substances Control Act
OSHAWAC = OSHA Workplace Air Contaminants
TXAIR = TX Air Contaminants with Health Effects Screening Level

EPA / CERCLA / SARA TITLE III:
Toxic Chemical List (SARA 313): This product does not contain any chemicals subject to routine annual toxic chemical release reporting.
Extremely Hazardous Substance (SARA 302/304): This product does not contain any extremely hazardous substances subject to emergency planning requirements.
SARA 312: Acute, Fire
RCRA: Corrosive, D002
TSCA: All components of this product are listed (or are not required to be listed) in the TSCA inventory
California Proposition 65: This product does not contain any proposition 65 chemicals.

16 OTHER INFORMATION

HMIS III: Health = 3(Chronic), Fire = 0, Physical Hazard = 1
HMIS PPE: C - Safety Glasses, Gloves, Apron



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