Safety Data Sheet
(OPTIMAL AQUACHLOR)

1 – PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: .....OPTIMAL AQUACHLOR
CHEMICAL NAME/
CLASS/SYNONYMS: .....Bleach, Hypo, Hypochlorite, Liquid Chlorine Solution
PRODUCT NUMBER:.....OPTIMAL AQUACHLOR
UN/NA NUMBER:.....1791
CHEMICAL FAMILY: .....Sanitizer
CAS NUMBER:.....7681-52-9
FORMULA:.....NaOCl

COMPANY: .....**Optimal Water Technologies, LLC.**
22215 Prats Dairy Road - Abita Springs, LA 70420
Phone (225) 939-6902

EMERGENCY PHONE: .....For Chemical Emergency, Spill, Leak, Fire Exposure or Accident
Call CHEMTREC Day or Night: 800-424-9300.
DATE PREPARED: .....June 1, 2021

2 – HAZARDS IDENTIFICATION

GHS HAZARD CLASSIFICATION:

Physical Hazards
Flammable Liquids:.....No Hazard Statement established for this Product
Corrosive Liquids: .....May be corrosive to metals
Health Hazards
Acute Toxicity:.....Category 3 - Toxic if swallowed, in contact with skin, inhaled
Skin Corrosion/Irritation:.....Catagory 1C - Causes severe skin burns and eye damage
Eye Damage/Irritation: .....Catagory 1 - Causes severe eye damage
Aspiration Hazard:.....Category 3 - Respiratory tract irritation
Carcinogen: .....No Hazard Statement established for this Product
See Section 11 for additional Toxicological information

EMERGENCY OVERVIEW:

Pictograms:

Certified to NSF/ANSI/CAN 60

Signal Word (GHS-US): .....DANGER!

Hazard Statements:
Physical Hazards (GHS-US):
H290: May be corrosive to metals
Health Hazards (GHS-US):
H314: Causes severe skin burns and eye damage. H318: Causes serious eye damage.
Environmental Hazards (GHS-US):
H400 Very toxic to aquatic life. H412 Harmful to aquatic life with long lasting effects.
Precautionary Statements (GHS-US):
P101+102+103: If medical advice is needed, have product container or label at hand. Keep out of the reach of children. Read label before use.
P202+233+270+280+281: Do not handle until all safety precautions have been read and understood. Keep container tightly closed. Do not eat, drink or smoke when using this product. Wear protective gloves/protective clothing/eye protection/face protection. Use personal protective equipment as required. P264: Wash thoroughly after handling. P260: Do not breathe mist, vapors, spray. P273: Avoid release to the environment.
P405 Store locked up. P406 Store in a corrosive resistant container with a resistant inner liner.
Response Statements (GHS-US):
P304+P340+P310 IF INHALED: Remove person to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor.
P301+P310+P330+P331 IF SWALLOWED: Immediately call a POISON CENTER or doctor. Rinse mouth. Do NOT induce vomiting. P302+P361+P353+P363+P310 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. Immediately call a POISON CENTER or doctor. P305+P351+P338+P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor.
P501: Dispose of contents/container: Treatment, storage, transportation and disposal must be in accordance with Federal, State/Provincial and Local Regulations, and product characteristics at time of disposal.

TOTAL VOC's:.....No data available

3 – COMPOSITION / INFORMATION ON INGREDIENTS

HAZARDOUS INGREDIENT	PERCENT*	CAS NUMBER
Sodium Hypochlorite	12.5	107-21-1
Sodium Hydroxide	0.2	1310-73-2

*Any concentration shown as a range is to protect confidentiality or is due to batch variation.

4 – FIRST-AID MEASURES

BREATHING (INHALATION):..... Remove from exposure area to fresh air immediately. If breathing has stopped, perform artificial resuscitation. Keep person warm and at rest. Treat symptomatically and supportively. Seek medical attention immediately. Qualified medical personnel should consider administering oxygen.

SWALLOWING (INGESTION):..... Give large amounts of fresh water or milk immediately. Do not give anything by mouth if person is unconscious or otherwise unable to swallow. If vomiting occurs, keep head below hips to prevent aspiration. Treat symptomatically and supportively. Seek medical attention immediately.

EYES: .....Flush eye with copious quantities of water. If persistent irritation occurs, obtain medical attention.

SKIN (DERMAL): .....Remove contaminated clothing and wash affected skin with soap and water. If persistent irritation occurs, obtain medical attention. When using high pressure equipment, injection of product under the skin can occur. If high pressure injuries occur, the casualty should be sent immediately to a hospital. Do not wait for symptoms to develop.

NOTE TO PHYSICIAN: .....Pre-existing medical conditions may be aggravated by exposures affecting target organs. There are no known chronic effects. Probable mucosal damage may contraindicate the use of gastric lavage. In addition to the alkalinity of this product, the continued generation of chlorine gas after ingestion can damage further the stomach mucous, depending on the amount ingested. Consideration may be given to removal of the product from the stomach, taking care to avoid perforation of esophagus or stomach. An ounce of 1% sodium thiosulfate or milk of magnesia is helpful.

5 – FIRE-FIGHTING MEASURES

GENERAL FIRE HAZARDS: .....Do not use Mono Ammonium Phosphate (MAP) fire extinguishers. Such use may cause explosion with release of toxic gases. On burning will emit toxic fumes. Fire fighters to wear self-contained breathing apparatus and suitable protective clothing if risk of exposure to vapor or products of combustion. Heating can cause expansion or decomposition of the material, which can lead to the containers exploding. If safe to do so, remove containers from the path of fire. Keep containers cool with water spray.

AUTOIGNITION TEMP:..... None - Water based material

EXTINGUISHING MEDIA:..... Determined by surrounding material. In case of fire, use water fog, dry chemical, CO_2, or "alcohol" foam. Firefighting should be attempted only by those who are adequately trained and equipped with proper protective equipment.

SPECIAL FIRE FIGHTING UNUSUAL FIRE AND EXPLOSION HAZARDS:.....Containers may explode from internal pressure if confined to fire. Cool with water spray.

6 – ACCIDENTAL RELEASE MEASURES

SPILL PROCEDURES: .....Slippery when spilt. Begin clean up immediately. Wear protective equipment to prevent skin and eye contact and breathing in vapours. Work up wind or increase ventilation. Contain - prevent run off into drains and waterways. Use absorbent (soil, sand or other inert material). Collect and seal in properly labelled containers or drums for disposal. Wash area down with excess water. **Deactivating Chemicals:** Sodium Sulfite, Sodium Thiosulfate and Sodium Bisulfite.

WASTE DISPOSAL:.....Treatment, storage, transportation and disposal must be in accordance with Federal, State/Provincial and Local Regulations. Regulations may vary in different locations. Characterization and compliance with applicable laws are the responsibility solely of the generator. Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

RCRA STATUS:..... If discarded in its purchased form, it is not a RCRA hazardous waste. It is the responsibility of the product user to determine at the time of disposal, whether a material containing the product should be classified as a hazardous waste. (40CFR261.20-24).

7 – HANDLING and STORAGE

STORAGE:..... Keep in a tightly closed container, stored in a cool, dry, ventilated area below 44°C (110°F). Protect against physical damage. Isolate from incompatible substances. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product. Drum must not be washed out or used for other purposes.

HANDLING:.....Avoid contact with eyes, skin and clothing. Do not inhale vapors and fumes. Wash thoroughly after handling. Use only with adequate ventilation. Do not take internally. For industrial use only.

8 – EXPOSURE CONTROLS / PERSONAL PROTECTION

OCCUPATIONAL EXPOSURE LIMITS

HAZARDOUS INGREDIENT	PEL	TLV-TWA
Sodium Hypochlorite	1 ppm	1 ppm
Sodium Hydroxide	2 mg/m^3	2 mg/m^3

EXPOSURE CONTROLS:..... Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

RESPIRATORY PROTECTION:.....If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. In the United States of America, if respirators are used, a program should be instituted to assure compliance with OSHA Standard 63 FR 1152, January 8, 1998. Respirator type: Air-purifying respirator with an appropriate, government approved (where applicable), air-purifying filter, cartridge or canister. Contact health and safety professional or manufacturer for specific information.

PROTECTIVE CLOTHING:..... **Eye/face protection:** Wear chemical goggles; face shield (if splashing is possible). **Skin protection:** Chemical resistant, impermeable gloves. Gloves should be tested to determine suitability for prolonged contact. Use of impervious apron or chemical suit and chemical resistant boots are recommended.

ADDITONAL MEASURES:..... Handle in accordance with good industrial hygiene and safety practice. Wash thoroughly with soap and water after handling and before eating, drinking, or using tobacco. Safety shower and eye wash should be available close to work areas.

9 – PHYSICAL / CHEMICAL PROPERITES

BOILING POINT:..... Decomposes at 230°F (110°C)
FREEZING POINT:..... -10°F (-23.3°C)
FLASHPOINT: .....230°F (110°C)
UPPER FLAME LIMIT (%):.....NA
LOWER FLAME LIMIT (%):.....NA
VAPOR PRESSURE: .....12.1 mm Hg @ 20°C (68°F)
VAPOR DENSITY (AIR=1):.....2.61 (Air=1)
SPECIFIC GRAVITY: 1.20
pH: .....10% Solution in water: 12.0 - 12.5
SOLUBILITY IN WATER:.....Complete
VOLATILITY
INCLUDING WATER: .....10.0 pounds per gallon
MOLECULAR WEIGHT:.....74.5
EVAPORATION RATE: .....< 1
PHYSICAL STATE:.....Liquid
COLOR: .....Greenish yellow liquid
ODOR: .....Bland

10 – STABILITY and REACTIVITY

STABILITY: .....Stable
HAZARDOUS DECOMP.: .....Will not occur
INCOMPATIBILITY: .....Oxidizers or Oxidizing Materials.
HAZARDOUS REACTIONS:.....Rate of decomposition increases with heat. May develop chlorine if mixed with acidic solutions.

11 – TOXICOLOGICAL INFORMATION

THRESHOLD LIMIT VALUE:.....2 mg/m^3: 15 minute. (Short-term time weighted average)
OSHA PEL:.....1 ppm as Cl_2
LISTED CARCINOGEN:..... This product IS NOT listed in the National Toxicology Program (NTP) Report on Carcinogens (latest edition) or has been found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs (latest editions) or found to be a potential carcinogen by OSHA.
MEDICAL CONDITION AGGRAVATED:..... Existing dermatitis.

INFORMATION ON ACUTE TOXICOLOGICAL EFFECTS

ORAL

Product: .....Corrosive. Can cause severe corrosion of and damage to the gastrointestinal tract (including mouth, throat, and esophagus). Exposure is characterized by nausea, vomiting, abdominal pain, diarrhea, bleeding, and/or tissue ulceration.

DERMAL

Product: .....Prolonged and repeated exposure to dilute solutions often causes irritation, redness, pain and drying and cracking of the skin. Human evidence has indicated that an ingredient in this product can cause skin sensitization. Depending upon the concentration and how soon after exposure the skin is washed with water, skin contact may cause burns and tissue destruction.

INHALATION

Product: .....Strong irritating to mucous membranes in the nose, throat and respiratory tract. Prolonged contact can cause chronic irritation, pulmonary edema and central nervous system depression. Repeated inhalation exposure may cause impairment of lung function and permanent lung damage.

REPEATED DOSE TOXICITY

Product: .....Based on the toxicity profile and exposure scenarios for sodium hypochlorite, EPA concludes that the risks from chronic and subchronic exposure to low levels of this Product are minimal and without consequence to human health.

SKIN CORROSION / IRRITATION

Product: .....Repeated and prolonged exposure to concentrated material may cause dermatitis or chemical burns.

SERIOUS EYE DAMAGE / IRRITATION

Product: ..... Strongly irritating to eyes. Exposure to vapor can cause tearing, conjunctivitis and burning of the eyes. Eye contact may cause a corneal injury. The severity of the effects depend on the concentration and how soon after exposure the eyes are washed with water. In severe exposure cases, glaucoma, cataracts and permanent blindness may occur.

RESPIRATORY OR SKIN SENSITIZATION

Product: ..... Human evidence has indicated that an ingredient in this product can cause skin sensitization.

MUTAGENCITY

IN VITRO

Product: ..... No Data Available

IN VIVO

Product: ..... Sodium Hypochlorite has been shown to produce damage to genetic material when tested in vitro. Studies in vivo have shown no evidence of mutagenic potential for this material. It is judged that the risk of genetic damage is insignificant for sodium hypochlorite because of its biological activity, lack of mutagenicity in vivo, and failure to produce carcinogenic response.

Specified Substance(s)	**Information as provided by manufacturer**
Sodium Hypochlorite	No Data Available

CARCINOGENICITY

Product: ..... Based on available data the classification criteria are not met. Not classified as hazardous.

REPODUCTIVE TOXICITY

Product: ..... Based on available data the classification criteria are not met. Not classified as hazardous.

SPECIFIC TARGET ORGAN TOXICITY – SINGLE EXPOSURE

Product:..... GENERAL: This product contains highly alkaline ingredients. **INHALATION:** Exposure to vapor, mist or liquid can cause mild to severe irritation to the respiratory tract, including chemical burns. Severe exposures could result in chemical pneumonia. **EYES:** Contact can cause severe damage including burns and blindness. The severity of the effects depend on concentration and how soon after exposure the eyes are washed. **SKIN:** Brief contact may cause slight to mild irritation with itching and local redness. Prolonged contact may cause more severe irritation, with discomfort or pain, local redness and swelling and possible tissue damage. **INGESTION:** Severe irritant. May cause severe burns of the mucous membranes of the mouth, esophagus, and stomach.

SPECIFIC TARGET ORGAN TOXICITY – REPEATED EXPOSURE

Product: ..... The effects of long-term, low-level exposures to this product have not been determined. Safe handling of this material on a long-term basis should emphasize the avoidance of all effects from repetitive acute exposure. This product may aggravate existing eye, skin, and respiratory conditions.

ASPIRATION HAZARD

Product: ..... Droplets of the product aspirated into the lungs through ingestion or vomiting may cause chemical pneumonia.

OTHER ADVERSE EFFECTS

Product: ..... Acute Toxicity: Oral Toxicity (LD_{50}): 3-5 g/kg (rat). Dermal Toxicity (LD_{50}): >2 g/kg (rabbit). Primary Eye Irritation: Corrosive. Primary Skin Irritation: Corrosive. Inhalation Toxicity (LC_{50}): No data available. Chronic Effects (Human Risk Assessment): Based on the toxicity profile and exposure scenarios for sodium hypochlorite, EPA concludes that the risks from chronic and subchronic exposure to low levels of these pesticides are minimal and without consequence to human health.

12 – ECOLOGICAL INFORMATION

ACUTE TOXICITY

FISH

Product: .....LC_{50} = 0.141 - 0.193 mg/l/96 hr, flow through bioassay (pH: 8), Pink Salmon (oncorhynchus gorbuscha) Fat Head Minnow (pimephales promelas) LC_{50} = 0.22 - 0.62 mg/l/96 hr, flow through bioassay (pH: 7)

AQUATIC INVERTEBRATES

Product: ..... Water Flea (daphnia magna) LC_{50} = 2.1 mg/l/96 hr. Fresh Water Shrimp (gammarus fasciatus) LC_{50} = 0.4 mg/l/96 hr

CHRONIC TOXICITY

FISH

Product: ..... This material has exhibited moderate toxicity to aquatic organisms.

AQUATIC INVERTEBRATES

Product: ..... This material has exhibited moderate toxicity to aquatic organisms.

TOXICITY TO AQUATIC PLANTS

Product: ..... Toxic to algae. Estimated based on individual component values.

PERSISTENCE AND DEGRADABILITY

BIODEGRADATION

Product: ..... The methods for determining the biological degradability are not applicable to predominately inorganic substances.

BIOLOGICAL OXYGEN DEMAND

Product: Not applicable

CHEMICAL OXYGEN DEMAND

Product: Not applicable

BOD / COD RATIO

Product: ..... No data available

BIOACCUMULATIVE POTENTIAL

Product: .....Potential to bioaccumate is low.

MOBILITY IN SOIL

Product: .....Expected to partition to water.

RESULTS OF PBT AND mPvB ASSESSMENT

Product: .....Not fulfilling PBT (persistent/bio accumulative/toxic) criteria. Not fulfilling vPvB (very persistent, very bio accumulative) criteria.

OTHER ADVERSE EFFECTS

Product: .....No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential or global warming potential) are expected from this product.

13 –DISPOSAL CONSIDERATIONS

WASTE DISPOSAL:.....Treatment, storage, transportation and disposal must be in accordance with Federal, State/Provincial and Local Regulations. Regulations may vary in different locations. Characterization and compliance with applicable laws are the responsibility solely of the generator. Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

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14 – TRANSPORTATION INFORMATION

Important Note: Shipping descriptions may vary based on mode of transport, quantities, package size, and/or origin and destination. Consult your company's Hazardous Materials/Dangerous Goods expert for information specific to your situation.

UN/NA NUMBER:.....1791
PROPER SHIPPING NAME:..... Hypochlorite Solutions
HAZARD CLASS:.....8
PACKAGING GROUP :.....III

LETTER:.....C (Corrosive substances)
ENVIRONMENTAL HAZARD: .....Do not contaminate domestic or irrigation water supplies, lakes, streams, ponds, or rivers. May be an aesthetic nuisance due to color. Mammals and birds, exposed wildlife would be subject to skin irritation and burns due to the corrosive nature of this material.
REPORTABLE QUANTITY:.....100 lbs. (45.36 kg)

15 - REGULATIONS

This Safety Data Sheet conforms to ANSI Z400.5, and to the format requirements and the International Chemical Safety Cards of the Global Harmonizing System. This SDS complies with 29 CFR 1910.1200 (HAZARD COMMUNICATION STANDARD). **IMPORTANT:** Read this SDS before handling & disposing of this product. Pass this information on to employees, customers, & users of this product.

EPA SRA Title III Chemical Listings:

TSCA STATUS: .....This product is listed on the TSCA inventory. If this product is a blend, all ingredients in the product are listed on the TSCA Inventory List. Any impurities present in this product are exempt from listing.
SECTION 302:.....None
SECTION 304:.....None
SECTION 312:.....Yes
SARA SECTION 313:.....None
ACUTE: .....Yes (Eyes)
CHRONIC: .....Yes
FIRE:.....No
PRESSURE:.....No
REACTIVE:.....No
CLEAN WATER ACT:.....None

IMDG – International Marine Dangerous Goods Code
UN1797, Hypochlorite Solutions, 8, PGIII. EmS F-A, S-B. Marine Pollutant: Yes.
IATA
UN1797, Hypochlorite Solutions, 8, PGIII.

DEA Chemical Trafficking Act: ..No
Homeland Security Regulated ..This product does not contain any reportable DHS chemicals.

California Proposition 65.....This product contains the following Proposition 65 chemicals:
Component.....Sodium Hypochlorite, CAS 7681-52-9, Sodium Hydroxide CAS 1310-73-2

Cal Prop 65..... This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.
Cal Prop 65 NSRL.....No Significant Risk Level
Category..... This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

US State Right to Know (RTK)
Component.....
Massachusetts.....Yes **
New Jersey .....Yes **
Pennsylvania .....Yes **
Illinois .....Yes **
Rhode Island.....Yes **

****RTK Chemical(s)** .....Sodium Hypochlorite, CAS 7681-52-9, Sodium Hydroxide CAS 1310-73-2

Canada NPRI .....Sodium Hypochlorite, CAS 7681-52-9, Sodium Hydroxide CAS 1310-73-2

DSL (Canadian Domestic Substances List) and CEPA (Canadian Environmental Protection Act): All ingredients in this product are listed on the DSL. Any impurities present in this product are exempt from listing.
AICS / NICNAS (Australian Inventory of Chemical Substances and National Industrial Chemicals Notification and Assessment Scheme): All ingredients in this product are listed on AICS or otherwise complies with NICNAS.
MITI (Japanese Handbook of Existing and New Chemical Substances): All ingredients in this product are listed in the Handbook or has been approved in Japan by new substance notification.
ECL (Korean Toxic Substances Control Act): All ingredients in this product are listed on the Korean inventory or otherwise complies with the Korean Toxic Substances Control Act.KE-04134
Philippines Inventory (PICCS): All ingredients in this product are listed on the Philippine Inventory or otherwise complies with PICCS.
Inventory of Existing Chemical Substances in China: All ingredients in this product are listed on the Inventory of Existing Chemical Substances in China (IECSC).

16 – OTHER INFORMATION

HMIS*

HEALTH		2
FLAMMABILITY		0
REACTIVITY		0
PERSONAL PROTECTION		H

HMIS®HAZARD INDEX: 0=Minimal Hazard, 1=Slight Hazard, 2=Moderate Hazard, 3=Serious Hazard, 4=Severe Hazard.
HMIS® rating involves data interpretations that may vary from company to company. They are intended only for rapid, general identification of the magnitude of the specific hazard. To deal adequately with the safe handling of this material, all the information contained in this SDS and product label must be considered.

ND = No Data, NA = Not Applicable/Not Available, ≤ = Less than or equal to, ≥ = Greater than or equal to

REVISION STATEMENT: Changes have been made throughout this Safety Data Sheet (SDS). Please read the entire document. Prepared according to the OSHA Hazard Communication Standard (29 CFR 1910.1200) and The Globally Harmonized System of Classification and Labeling of Chemicals (GHS) by the Company Health and Risk Assessment Unit.

DISCLAIMER:
Although the information and recommendations set forth herein (hereinafter "Information") are presented in good faith and believed to be correct as of the date hereof, the Company makes no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving this Safety Data Sheet (SDS) will make their own determination as to its suitability for their intended purposes prior to use. Since the product is within the exclusive control of the user, it is the user's obligation to determine the conditions of safe use of this product. Such conditions should comply with all Federal and State Regulations concerning the Product. It must be recognized that the physical and chemical properties of any product may not be fully understood and that new, possibly hazardous products may arise from reactions between chemicals. The information given in this data sheet is based on our present knowledge and shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship. **NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OF ANY OTHER NATURE ARE MADE HEREUNDER WITH RESPECT TO INFORMATION OR THE PRODUCT TO WHICH INFORMATION REFERS.**

*****This is the last page of this SDS*****