CITY OF OLATHE PRICE AGREEMENT

THIS AGREEMENT is made in Johnson County, Kansas, by and between the City of Olathe, Kansas, hereinafter "City," and Brenntag Mid-South, Inc., hereinafter "Vendor" (each individually a “Party” and collectively, the “Parties”). City needs water and wastewater treatment chemicals, and contracts with Vendor to supply the goods or services described in **Exhibit A**, as needed and as requested by City.

1. PRICE AGREEMENT, ORDERS, AND TERM. City agrees to pay Vendor at the prices listed in **Exhibit A** to supply the goods or services described in **Exhibit A**, as needed and as requested by City. City will have no financial obligation under this Agreement until an order has been placed. Any order placed under this Agreement remains subject to any applicable procurement policies of City, including approval by the appropriate authority based on the dollar amount of the order. Any order placed pursuant to this Agreement is subject to all terms and provisions of this Agreement. This contract will be a one (1)-year contract with the option to renew for up to five (5) additional one (1)-year periods upon the written agreement of both parties.

2. ADDITIONAL SERVICES. Vendor may provide services in addition to those listed **Exhibit A** when authorized in writing by City.

3. BILLING. Vendor may bill City monthly for all completed work and reimbursable expenses. Vendor must submit a bill which itemizes the work and reimbursable expenses. City agrees to pay Vendor within thirty (30) days of approval by the Governing Body or other agent of City in accordance with the City’s Procurement Policy. The bill must be mailed to the attention of Account Payable, City of Olathe, PO Box 768, Olathe, KS 66051-0768 or emailed to apolathe@olatheks.org. The bill must indicate it is for work or expenses under this Agreement (include Agreement date for identification).

4. PAYMENT. If City becomes credibly informed that any representations of Vendor provided in its billing are wholly or partially inaccurate, City may withhold payment of sums then or in the future due to Vendor until the inaccuracy and the cause thereof is corrected to City's reasonable satisfaction.

5. STANDARD OF CARE. Vendor will exercise the same degree of care, skill, and diligence in the performance of the work as is ordinarily possessed and exercised by a professional under similar circumstances. If Vendor fails to meet the foregoing standard, Vendor will perform at its own cost, and without reimbursement, any work necessary to correct errors and omissions which are caused by Vendor’s negligence.

6. TERMINATION FOR CONVENIENCE. City may terminate this Agreement for convenience by providing fifteen (15) days’ written notice to Vendor. City will compensate Vendor for all work completed and accepted and reimbursable expenses incurred to the date of its receipt of the termination notice. Compensation will not include anticipatory profit or consequential damages, neither of which will be allowed.

7. TERMINATION FOR LACK OF FUNDS. If, for whatever reason, adequate funding is not made available by City to support or justify continuation of the level of work to be provided by Vendor under this Agreement, City may terminate or reduce the amount of work to be provided by Vendor under this Agreement. In such event, City will notify Vendor in writing at

least thirty (30) days in advance of such termination or reduction of work for lack of funds.

8. DISPUTE RESOLUTION. The Parties agree that disputes regarding the work will first be addressed by negotiations between the Parties. If negotiations fail to resolve the dispute, the Party initiating the claim that is the basis for the dispute may take such steps as it deems necessary to protect its interests. Notwithstanding any such dispute, Vendor will proceed with undisputed work as if no dispute existed, and City will continue to pay for Vendor's completed undisputed work. No dispute will be submitted to arbitration without both Parties' written approval.

9. SUBCONTRACTING. Vendor may not subcontract or assign any of the work to be performed under this Agreement without first obtaining the written approval of City. Unless stated in the written approval to an assignment, no assignment will release or discharge Vendor from any obligation under this Agreement. Any person or entity providing subcontracted work under this Agreement must comply with **Section 11** (**Insurance**).

10. OWNERSHIP OF DOCUMENTS. All final documents provided to City as part of the work provided under this Agreement, including but not limited to reports, plans, and related documents, will become City's property except that Vendor's copyrighted documents will remain owned by Vendor. Such documents must be clearly marked and identified as copyrighted by Vendor.

11. INSURANCE. Vendor and any subcontractor will maintain for the term of this Agreement insurance as provided in **Exhibit B**.

12. INDEMNIFICATION AND HOLD HARMLESS. For purposes of this Agreement, Vendor agrees to indemnify, defend, and hold harmless City, its officers, appointees, employees, and agents from any and all loss, damage, liability or expense, of any nature whatsoever caused or incurred as a result of the negligence or other actionable fault of Vendor, its affiliates, subsidiaries, employees, agents, assignees, and subcontractors and their respective employees and agents. Vendor is not required hereunder to defend City, its officers, appointees, employees, or agents from assertions that they were negligent, nor to indemnify and hold them harmless from liability based on City's negligence. City does not indemnify Vendor.

13. LIMITATION OF LIABILITY FOR BREACH OF CONTRACT OR NEGLIGENT PERFORMANCE. Any attempt to limit liability for breach of contract or negligent performance to the amount of the payment to Vendor by City is void. Any attempt to limit Vendor's liability to City for consequential, exemplary, or punitive damages, or any other measure of damages permitted by law, in any action against Vendor for breach of contract is void.

14. KANSAS ACT AGAINST DISCRIMINATION. ***Unless*** Vendor employs fewer than four (4) employees during the term of this Agreement, or ***unless*** the total of all agreements (including this Agreement) between Vendor and City during a calendar year are cumulatively less than $5,000, ***then*** during the performance of this Agreement, Vendor agrees that:

a. Vendor will observe the provisions of the Kansas Act Against Discrimination (K.S.A. 44-1001 *et seq.*) and will not discriminate against any person in the performance of work under the present contract because of race, religion, color, sex, disability, national origin, or ancestry;

b. in all solicitations or advertisements for employees, Vendor will include the phrase, "equal opportunity employer," or a similar phrase to be approved by the Kansas Human Rights Commission (“commission”);

c. if Vendor fails to comply with the way Vendor reports to the commission in accordance with the provisions of K.S.A. 44-1031 and amendments thereto, Vendor will be deemed to have breached the present contract and it may be canceled, terminated, or suspended, in whole or in part, by City without penalty;

d. if Vendor is found guilty of a violation of the Kansas Act Against Discrimination under a decision or order of the commission which has become final, Vendor will be deemed to have breached the present contract and it may be canceled, terminated, or suspended, in whole or in part, by the contracting agency; and

e. Vendor will include the provisions of subsections a. through d. in every subcontract or purchase order so that such provisions will be binding upon such subcontractor or vendor.

15. KANSAS OPEN RECORDS ACT. Vendor acknowledges that City is subject to the Kansas Open Records Act (K.S.A. 45-215, *et seq*.). City retains the final authority to determine whether it must disclose any document or other record under the Kansas Open Records Act and the manner in which such document or other record should be disclosed.

16. ENTIRE AGREEMENT. This Agreement, including all documents and exhibits included by reference herein, constitutes the entire Agreement between the Parties and supersedes all prior agreements, whether oral or written, covering the same subject matter. This Agreement may not be modified or amended except in writing mutually agreed to by both Parties. No form or document provided by Vendor after execution of this Agreement will modify this Agreement, even if signed by both Parties, unless it: 1) identifies the specific section number and section title of this Agreement that is being modified and 2) indicates the specific changes being made to the language contained in this Agreement.

17. NO THIRD-PARTY BENEFICIARIES. Nothing contained herein will create a contractual relationship with, or any rights in favor of, any Third Party.

18. INDEPENDENT CONTRACTOR STATUS. Vendor is an independent contractor and not an agent or employee of City.

19. COMPLIANCE WITH LAWS. Vendor will abide by all applicable federal, state, and local laws, ordinances, and regulations.

20. FORCE MAJEURE CLAUSE. Neither Party will be considered in default under this Contract because of any delays in performance of obligations hereunder due to causes beyond the control and without fault or negligence on the part of the delayed Party, including but not restricted to, an act of God or of a public enemy, civil unrest, volcano, earthquake, fire, flood, tornado, epidemic, quarantine restrictions, area-wide strike, freight embargo, unusually severe weather or delay of subcontractor or supplies due to such cause; provided that the delayed Party must notify the other Party in writing of the cause of delay and its probable extent within ten (10) days from the beginning of such delay. Such notification will not be the basis for a claim for additional compensation. The delayed Party must make all reasonable efforts to remove or

eliminate the cause of delay and must, upon cessation of the cause, diligently pursue performance of its obligation under the Agreement.

21. APPLICABLE LAW, JURISDICTION, VENUE. Interpretation of this Agreement and disputes arising out of or related to this Agreement will be subject to and governed by the laws of the State of Kansas, excluding Kansas' choice-of-law principles. Jurisdiction and venue for any suit arising out of or related to this Agreement will be in the District Court of Johnson County, Kansas.

22. SEVERABILITY. If any provision of this Agreement is determined to be void, invalid, unenforceable, or illegal for whatever reason, such provision(s) will be null and void; provided, however, that the remaining provisions of this Agreement will be unaffected and will continue to be valid and enforceable.

23. ORDER OF PRECEDENCE. If there is any conflict between the terms of this Agreement, excluding exhibits, and anything contained in the exhibits referenced herein or attached hereto, the terms and provisions of this Agreement, excluding exhibits, shall control.

[The remainder of this page is intentionally left blank.]

The Parties hereto have caused this Agreement to be executed this _____ day of

_____ 20___.

CITY OF OLATHE, KANSAS

By: _____
Mayor

ATTEST:

_____ (SEAL)
City Clerk

APPROVED AS TO FORM:

_____
City Attorney or Deputy/Assistant City Attorney

Brenntag Mid-South, Inc.

By: Ray Sibbitt
Ray Sibbitt, Dir. of Municipal Development
1405 HWY 136 W Henderson, KY 42420

Exhibit A
Vendor's Proposal

Item	Description	Unit	Unit Price	Brand
Caustic Soda, 50% solution	55 gal drums	lb	0.319	Brenntag
Citric Acid	Bulk truck, approx 2,500 gal shipments	lb	0.77	Brenntag
Sodium Bisulfite	55 gal drums	lb	0.263	Brenntag
Sodium Hypochlorite, 303-9	Bulk truck, approx 4,500 gal shipments	gal	1.655	Brenntag
Citric Acid	55 gal drums	lb	0.98	Brenntag
Citric Acid	330 gal tote	lb	0.98	Brenntag

CITY OF OLATHE, KS
IFB-25-0020
WATER & WASTEWATER TREATMENT CHEMICALS

All deliveries of chemicals shall be made between the hours of 7:00 AM and 3:00 PM on the date requested. Delivery outside specified hours on the date requested may be refused or unloading may be delayed until after 7:00 AM the following workday (Monday through Friday), at no additional cost to the City. **If there is to be a delivery delay for whatever reason to Olathe Water Plant, the Plant Control Operator shall be notified.**
Comply √ Exception _____

CITY OF OLATHE, KS DELIVERY SITES

1.	Olathe Water Plant (WP)	27065 W. 83rd Street (2 ½ miles West of K-7 Hwy) Lenexa, KS 66227
2.	Harold Street Wastewater Treatment Plant (WWHS)	200 W Harold Street Olathe, KS 66061
3.	Cedar Creek Wastewater Treatment Plant (WWCC)	25915 W 119th St Olathe, KS 66061

SECURITY
WP and WWCC have an intercom located at the front gate. Delivery person shall follow the instructions provided via the intercom for delivery of product. Access to the facility will be granted only after the chemical vendor has been satisfactorily identified with proper identification. All chemical vendors must sign in and out. No unauthorized persons shall be allowed to enter the plant areas unless escorted by a City of Olathe representative.

CERTIFICATIONS
All chemicals delivered to the Olathe Water Plant, with the exception of ammonia, shall be NSF (National Sanitation Foundation) listed for use in drinking water/potable water applications. All chemicals delivered to Harold Street Wastewater Treatment Plant and Cedar Creek Wastewater Treatment Plant shall be UL (Underwriters Laboratories) listed. Ammonia shall meet National Research Council Codex for Ammonium Hydroxide. The bidder's Sodium Hypochlorite solution must be approved and registered with EPA for use in potable water systems and shall be manufactured in the USA. Bidder's own EPA registration MUST be included with your bid submittal as a separate attachment when you upload your bid documents on **Bonfire**.

Bidders are **REQUIRED** to submit a detailed specification, typical analysis, material certification and MSD sheets for each item bid, in addition to an affidavit that the product(s) complies with the latest applicable requirements of the AWWA and NSF standard specified. The most current MSD sheets for each bid item MUST be included with the bid. If the MSD sheet revised- or reviewed-date is more than one year prior to the bid date, bidder MUST submit a statement on its company letterhead that the submitted MSD sheet is the most current available for the product. **Failure to submit this information may result in rejection of bid.**
Comply √ Exception _____

NO SUBSTITUTES
The words "NO SUBSTITUTES" means that the City has standardized on a brand or type of chemical and will not accept substitutions.

DETAILED SPECIFICATIONS
Bidders are required to document the specifications in the space provided by completing the requested information and indicating comply, not comply, or entering an explanation in the exception field. Failure to complete this information is grounds for rejection of bid. Pricing for all chemicals shall be entered on the online bid form at **Bonfire**. Bidders are requested to retain a copy of these specifications for future reference.

1. **AMMONIA/WP:**
   Ammonium Hydroxide (aqua ammonia) shall meet AWWA Standard B306, latest revision, and the National Research Council Codex for Ammonium Hydroxide 20.4° – 20.9° baume, 19% Aqua Ammonia – Bulk truck delivery (approximately 13-14 tons). CAS Number 1336-21-6

Comply N/A Exception N/A

2. **CARBON DIOXIDE/WP:** Meet AWWA standard B510, latest revision; meet ANSI/NSF Standard 60, Drinking Water Treatment Chemicals – Health Effects, deliver in bulk by truck in approximately 22-ton shipments. No less than 99.5% Carbon Dioxide by weight. CAS Number 124-38-9
   Comply N/A Exception N/A

3. **CAUSTIC SODA/WP:** Meet AWWA standard B501, latest revision; meet ANSI/NSF Standard 60, Drinking Water Treatment Chemicals – Health Effects; 50% solution, diaphragm or membrane grade, deliver in 55-gallon drums.
   Physical/Chemical Properties
   CAS Number 1310-73-2
   Specific Gravity (water = 1) 2.13 at 20°C
   Completely soluble in water, Clear to opaque liquid with no distinct odor
   Comply √ Exception _____

4, 5, and 6. **CITRIC ACID/WP:** Meet ANSI/NSF Standard 60, Drinking Water Treatment Chemicals – Health Effects; deliver in 55-gallon drums, 330-gallon totes, or approximately 2,500-gallon shipments.
   Physical/Chemical Properties
   CAS Number 77-92-9
   Citric Acid 48-50%, Water 48-50%
   Kosher/Food Grade
   PH < 2.5
   Arsenic < 1 ppm
   Heavy Metals < 5 ppm
   Tridodecyclamine < 0.1 ppm
   Liquid, clear white to medium yellow
   Specific Gravity 1.238 @ 63°F
   Comply √ Exception _____

7. **FERRIC SULFATE/WP:** Meet AWWA standard B406, latest revision; meet ANSI/NSF Standard 60, Drinking Water Treatment Chemicals – Health Effects; deliver in bulk by truck in 4,000-gallon shipments.
   Physical/Chemical Properties
   CAS Number 10028-22-5
   Specific Gravity 1.58-1.60
   % Ferric Sulfate 59% or >
   Red-Brown solution with no odor
   Comply N/A Exception N/A

8. **FLUOROSILIC ACID/WP:** Meet AWWA standard B703, latest revision; meet ANSI/NSF Standard 60, Drinking Water Treatment Chemicals – Health Effects; deliver in bulk by truck in approximately 4,500-gallon shipments. No less than 23% H_2SiF_6 by weight. Acid shall be completely soluble in water and heavy metal content shall not exceed 20 ppm.
   CAS Number 16961-83-4
   Comply √ Exception _____

9. **POLYPHOSPHATE/WP:** Meet AWWA standard B502, latest revision; meet ANSI/NSF Standard 60, Drinking Water Treatment Chemicals – Health Effects; deliver in bulk by truck in 3,500 to 4,000-gallon shipments. No less than 32% Polyphosphate content (as PO [4]).
   CAS Number 10124-56-8
   Comply N/A Exception N/A

10. **QUICKLIME/WP:** Meet AWWA standard B202, latest revision; meet ANSI/NSF Standard 60, Drinking Water Treatment Chemicals – Health Effects; state percentage of available calcium oxide, state particle size distribution, deliver in bulk by truck in approximately 22-ton shipments, 3/8" and under-particle size CAS Number 1305-78-8.
Delivery Time:
Normal Conditions – 48 hours
Emergency – 24 hours
Physical Analysis

Minus	0.375"	100%
Minus	100 Mesh	15% Max.
Minus	8 Mesh	0%

The maximum limit on insoluble matter is 7%
Range (%) of available Ca0 (90% min.) N/A to N/A
Average (%) of available Ca0 (90% min.) N/A

Temperature must rise at least 40°C in 3 minutes or less (when mixing 100 grams of lime with 400 ml of water with an initial temperature of 26°C). When the quicklime is mixed with water at 25°C the pH shall be a minimum of 12.45.
Comply N/A Exception N/A

11. **SODIUM BISULFITE/WP/WW:** Deliver in 55-gallon drums, 1-2 drums per shipment
Physical/Chemical Properties
CAS Number 7631-90-5
Sodium Bisulfite 35-44% by weight
Specific Gravity 1.33
Comply √ Exception _____

12. **SODIUM HYPOCHLORITE/WP:** Meet ANSI/NSF Standard 60, Drinking Water Treatment Chemicals – Health Effects; meet AWWA standard 303, latest revision, deliver in bulk by truck in 4,500-gallon shipments.
Physical/Chemical Properties
CAS Number 7681-52-9
10-15% by weight
Specific Gravity 1.115-1.173
Delivered pH 11-13
Soluble in water, clear yellow, chlorine bleach odor
Iron < 0.3 mg/l, Nickel < 0.03 mg/l, Chlorate < 1,500 mg/l
Bromate < 20 mg/l; Copper < 0.03 mg/l, Insoluble material less than 0.15% by weight
Shipments delivered shall achieve a filtration rate of < 3 minutes for 1000 ml when applying the "Suspended Solids Quality Test for Bleach using Vacuum Filtration"
Minimum of 0.1% by weight Sodium Hypochlorite and maximum of 0.4% by weight Sodium Hydroxide

The City reserves the right to sample and test Sodium Hypochlorite deliveries to ensure the chemical's conformance with requirements specified herein in addition to other applicable EPA/AWWA specifications and standards. Failure to comply with these specifications/standards shall constitute grounds for rejection of deliveries and repeated failures may result in cancellation of the contract.
Comply √ Exception _____

13. **HYDROCHOLORIC ACID 15%/WP:** Meet ANSI/NSF Standard 60, Drinking Water Treatment Chemicals – Health Effects; aqueous solution of 15% by weight; deliver in bulk by truck in 4,500-gallon shipments.
CAS 7647-01-0
Comply N/A Exception N/A

14. **SODIUM CHLORITE 25%/WP:** Meet ANSI/NSF Standard 60, Drinking Water Treatment Chemicals – Health Effects; deliver in bulk by truck in 4,500-gallon shipments.

Physical/Chemical Properties
CAS 7758-19-2
pH: 12.0 to 12.3
Specific Gravity 25% Sodium Chlorite Solution: 1.21 – 1.22 (10.2 lbs per gallon)
Freezing Point: 0 to 4°C
Solubility in Water – Soluble
Clear to pale yellow liquid with a faint bleach odor
Comply N/A Exception N/A

15. **FERROUS CHLORIDE/WP:** Meet ANSI/NSF Standard 60, Drinking Water Treatment Chemicals – Health Effects; deliver in bulk by truck in 4,500-gallon shipments.
Physical/Chemical Properties
Alternate Name Iron (II) Chloride
CAS Number 7758-94-3 (Ferrous Chloride) 7647-01-0 (Hydrochloric)
> 28% Ferrous Chloride
11.6%-13.1% Fe^{2+}
< 5% Hydrochloric Acid
Specific Gravity 1.18-1.40
pH <2
Infinitely soluble in water, light green liquid, acidic odor
No more than 0.05% insoluble matter

The City reserves the right to sample and test Ferrous Chloride deliveries to ensure the chemical's conformance with requirements specified herein in addition to other applicable EPA/AWWA specifications and standards. Failure to comply with these specifications/standards shall constitute grounds for rejection of deliveries and repeated failures may result in cancellation of the contract.
Comply N/A Exception N/A

16. **FERRIC CHLORIDE/WWCC/WWHS:** Meet AWWA standard B407, latest revision; deliver in bulk by truck in 4,000-gallon shipments. Shipments will need to be split between both facilities.
Physical/Chemical Properties
CAS Number 7705-08-0
Specific Gravity 1.39-1.49
% Ferric Chloride 37% - 45%
Dark Red-Brown solution with no odor
Comply N/A Exception N/A

Warranties

5.1. Subject to Sections 5.2, 5.3 and 5.4, Seller will replace, if necessary, any Product that does not meet the “Product Specifications Submitted by Buyer”, or if none, the manufacturer’s specifications. Seller may, at its sole option, elect to credit Buyer for the purchase price of any defective Product(s) in lieu of replacement.
5.2. Replacement of, or credit for, defective Products is subject to and conditional upon: a) Buyer’s account with Seller being current and in good standing; b) written notice from the Buyer within seven (7) days of delivery of any Product that does not meet specifications; c) provision of independent evidence satisfactory to Seller that the Product does not meet specifications; d) the provision of a sample of the Product to Seller for testing; e) proper storage of the Product in accordance with Seller’s or manufacturer’s instructions; f) decontamination of storage receptacles in accordance with statutory regulations and use of best practices prior to placing any Product in the receptacle; and g) use of the Product for its intended purpose.
5.3. This warranty excludes damage to or alteration of Products arising from circumstances outside the control of Seller, including, without limitation, mixing of other chemicals or products.
5.4. The Buyer agrees to use the Product(s) in accordance with: a) any instructions provided to it by Seller from time to time; b) all federal, provincial and local laws and regulations governing the storage, use and maintenance of the Product(s); and c) best industry practices.
5.5. Section 5.1 constitutes Buyer’s sole remedy and Seller’s sole obligation with respect to Products furnished hereunder.
EXCEPT AS EXPRESSLY SET FORTH HEREIN SELLER MAKES NO WARRANTIES, EXPRESS OR IMPLIED, STATUTORY OR OTHERWISE, INCLUDING BUT NOT LIMITED TO, ANY WARRANTY OF MERCHANTABILITY, NON-INFRINGEMENT, OR FITNESS FOR A PARTICULAR PURPOSE. WITHOUT LIMITING THE GENERALITY OF THE FOREGOING, NOTHING CONTAINED HEREIN SHALL BE CONSTRUED AS A WARRANTY WITH RESPECT TO THE RESULTS OBTAINED OR OBTAINABLE FROM THE USE OF ANY PRODUCTS SUPPLIED OR THE WORK OR SERVICES PERFORMED BY SELLER HEREUNDER.
5.6. Determination of the suitability of the Product(s) supplied hereunder for the uses and applications contemplated by Buyer and others shall be the sole responsibility of Buyer

6785-4 9/23/2010 1/11

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, DC 20460

SEP 23 2010

OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION

Andy Clements
Brenntag Mid-South, Inc.
1405 Highway 136 West
Henderson, KY. 42420

RE: Label Amendment Dated August 24, 2010
Product Name: Sodium Hypochlorite Solution 12.5%
EPA Registration Number: 6785-4

Dear Sir:

The Agency has reviewed your application submitted in accordance with continuing registration under the Federal Insecticide Fungicide and Rodenticide Act (FIFRA), as amended, and determined the action acceptable with the following conditions:

- Braces with the words Master Label were added through out your label for clarity.
- Under Hazards to Humans, change "Wash after handling" to "Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet."
- On page 2, the box of supplemental uses must be changed to read "For the following uses, contact your supplier for descriptive information and use directions."
- In the box of uses, change wood roofs and sidings to sealed wood roofs and sidings.

In summary, your request to move product specific use directions to a consolidated technical bulletin and update your storage and disposal directions in accordance with PR Notice 2007-4 is approved.

A stamped copy of the labeling accepted with conditions is enclosed. Submit one copy of your final printed labeling before distributing or selling the product bearing the revised labeling. Should you have any questions or comments concerning this letter, please call Tom Luminello at (703) 308-8075.

Sincerely,

Wanda Y. Henson
Acting Product Manager 32
Regulatory Management Branch II
Antimicrobials Division (7510P)

DIRECTIONS FOR USE

It is a violation of federal law to use this product in a manner inconsistent with its labeling.

Note: This product degrades with age. Use a chlorine test kit to increase dosage, as necessary, to obtain the required level of chlorine.

STORAGE AND DISPOSAL

PESTICIDE STORAGE: Store this product in a cool dry area, away from direct sunlight and heat to avoid deterioration. Do not contaminate food or feed by storage, disposal, or cleaning of equipment. In case of spill, flood areas with large quantities of water. Product or rinsates that cannot be used should be diluted with water before disposal in a sanitary sewer.

PESTICIDE DISPOSAL: Pesticide wastes may be hazardous. Improper disposal of excess pesticide, spray mixture or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste Representative at the nearest EPA Regional Office for guidance.

CONTAINER HANDLING:

REFILLABLE CONTAINER: Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before refilling is the responsibility of the refiller. Cleaning the container according to label instructions before final disposal is the responsibility of the person disposing of the container. If disposing refillable container, offer for recycling if available or place in trash collection.

CONTAINER CLEANING: Triple rinse or pressure rinse container (or equivalent) promptly after emptying.

Triple Rinse: If container has a capacity greater than five (5) gallons, triple rinse as follows: Empty remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into the application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times.

If container has a capacity of five (5) gallons or less, triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times.

Pressure Rinse: Pressure rinse as follows: Empty the remaining contents into application equipment or mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

SODIUM HYPOCHLORITE SOLUTION 12.5%

BLEACHES AND DISINFECTS

Active Ingredient - Sodium Hypochlorite	12.5%
Other Ingredients	87.5%
Total	100%

Available Chlorine 11.9%

KEEP OUT OF REACH OF CHILDREN
DANGER

FIRST AID

Call a poison control center or doctor immediately for treatment advice.

"If in Eyes", Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. **"If on Skin or Clothing"**, Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. **"If Inhaled"**, Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth – to mouth, if possible. **"If Swallowed"**, Call poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give anything by mouth to an unconscious person.

PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS AND DOMESTIC ANIMALS

DANGER: Corrosive, May cause severe skin irritation or chemical burns to broken skin. Causes eye damage. Do not get in eyes, on skin and clothing. Wear goggles or safety glasses and rubber gloves when handling this product. Wash after handling. Avoid breathing vapors. Remove and wash contaminated clothing before reuse. Vacate poorly ventilated areas as soon as possible. Do not reenter until strong odors have dissipated.

ENVIRONMENTAL HAZARDS

This pesticide is toxic to fish and aquatic organisms. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans, or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge.

Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance contact your state board or regional office of the EPA.

PHYSICAL OR CHEMICAL HAZARDS

STRONG OXIDIZING AGENT: **Mix only with water according to label directions. Mixing this product with chemicals (e.g. ammonia, acids, detergents, etc.) or organic matter (e.g. urine, feces, etc.) will release chlorine gas which is irritating to eyes, lungs and mucous membranes.**

BRENNTAG MID-SOUTH, INC.

P.O. BOX 20
HENDERSON, KY 42419-0020

FOR EMERGENCIES PHONE 270-830-1222

EPA Reg. No. 6785-4

NET CONTENTS _____ GALLONS

EPA ESTABLISHMENT NUMBER
6785-

IN-1 ☐	KY-3 ☐	WV-1 ☐
IN-2 ☐	TN-1 ☐	WV-2 ☐
KY-1 ☐	TN-2 ☐	MO-1 ☐
KY-2 ☐	FL-1 ☐	

{Master Label}

ACCEPTED
with COMMENTS
In EPA Letter Dated:

SEP 23 2010

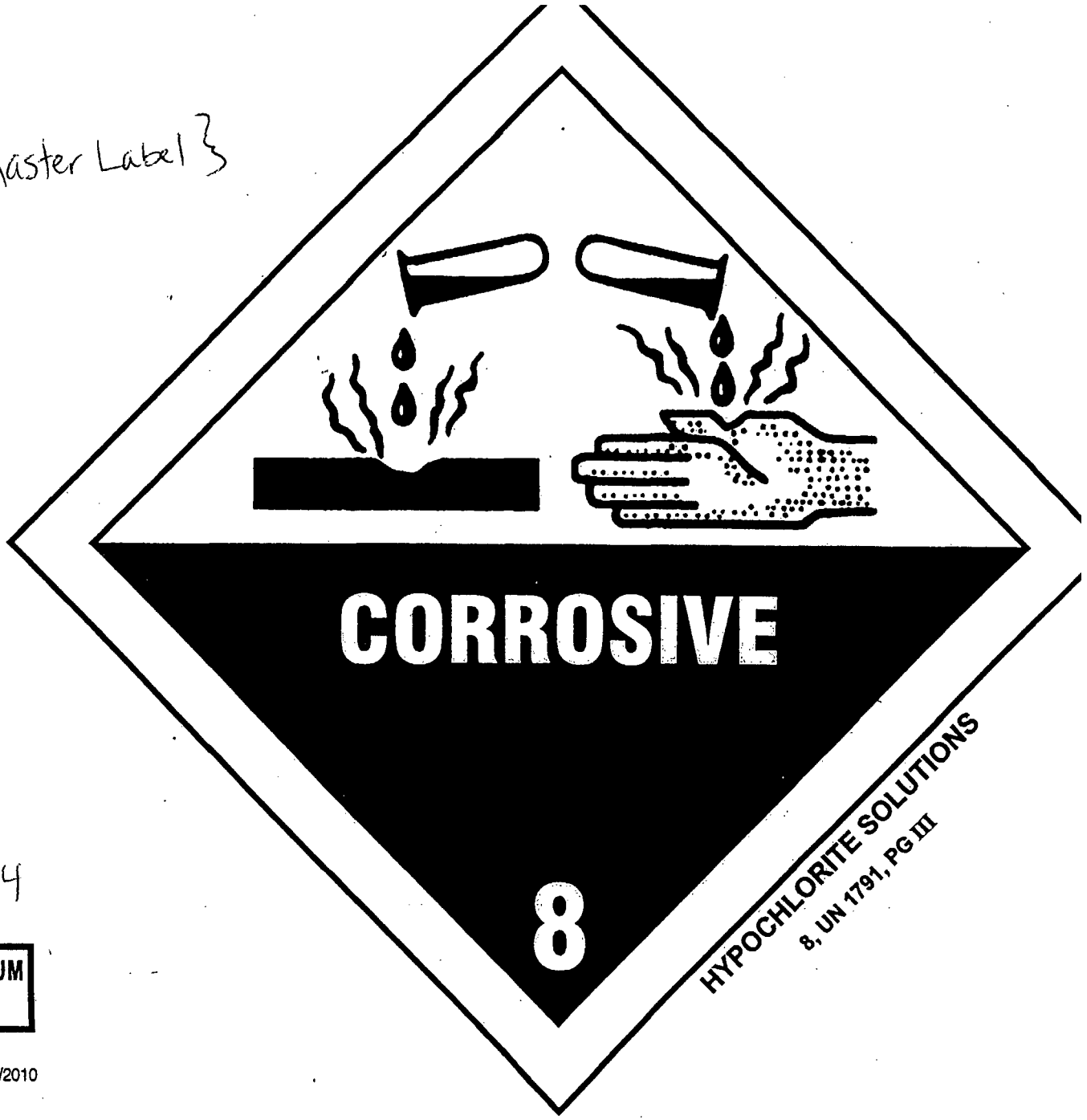
Under the Federal Insecticide, Fungicide, and Rodenticide Act as amended, for the pesticide, registered under EPA Reg. No. 6785-4

For the following supplemental uses, contact your supplier for descriptive information.

1. Sanitization of nonporous food contact surfaces.
2. Sanitization of nonporous non food contact surfaces.
3. Sanitization of porous food contact surfaces.
4. Sanitization of porous and non food contact surfaces.
5. Disinfection of nonporous non food contact surfaces.
6. Cooling tower evaporative condenser water.
7. Public water systems.
8. Swimming pool.
9. Sewage and wastewater treatment.
10. Agricultural uses.
11. Laundry sanitizers.
12. Disinfection of drinking water (emergency, public, individual systems).
13. Spas, hot tubs, immersion tanks, etc.
14. Aquacultural uses.
15. Pulp and paper mill process water systems.
16. Emergency disinfection after main breaks.
17. Emergency disinfection after droughts.
18. Emergency disinfection after fires.
19. Emergency disinfection after floods.
20. Sewage and Wastewater Effluent Treatment.
21. [illegible] Premises
22. [illegible]nitation of Dialysis Machines
23. Asphalt or Wood Roofs and Sidings
24. Boat Bottoms
25. Artificial Sand Beaches
26. Meat and Poultry Plants

SEALED

{Master Label}



ACCEPTED
with COMMENTS
In EPA Letter Dated:

SEP 23 2010

Under the Federal Insecticide, Fungicide, and Rodenticide Act as amended, for the pesticide, registered under EPA Reg. No. 6785-4

NSF®

CERTIFIED TO NSF/ANSI 60. MAXIMUM USE FOR POTABLE WATER 84 mg/L

02/2010

3/11

With COMMENTS in EPA Letter Dated: 4/11

SEP 2 3 2010

Under the Federal Insecticide, [illegible] and Rodenticide Act as amended, for the pesticide, registered under EPA Reg. No. 6785-4

MASTER LABEL
For
SODIUM HYPOCHLORITE 12.5%

EPA REGISTRATION No. 6785-4

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. The labeling must be in possession of the user at the time of application. Read the label affixed to the container for Sodium Hypochlorite 12.5% before applying. Use of Sodium Hypochlorite 12.5% according to this labeling is subject to the use precautions and limitations imposed by the label affixed to the container for Sodium Hypochlorite 12.5%.

SANITIZATION OF NONPOROUS FOOD CONTACT SURFACES:

RINSE METHOD – A SOLUTION OF 100 PPM AVAILABLE CHLORINE MAY BE USED IN THE SANITIZING SOLUTION IF A CHLORINE TEST KIT IS AVAILABLE. SOLUTIONS CONTAINING AN INITIAL CONCENTRATION OF 100 PPM AVAILABLE CHLORINE MUST BE TESTED AND ADJUSTED PERIODICALLY TO ENSURE THAT THE AVAILABLE CHLORINE DOES NOT DROP BELOW 50 PPM. PREPARE A 100 PPM SANITIZING SOLUTION BY THOROUGHLY MIXING 1 OZ. OF THIS PRODUCT WITH 10 GALLONS OF WATER. IF NO TEST KIT IS AVAILBLE, PREPARE A SANITIZING SOLUTION BY THOROUGHLY MIXING 2 OZ. OF THIS PRODUCT WITH 10 GALLONS OF WATER TO PROVIDE APPROXIMATELY 200 PPM AVAILABLE CHLORINE BY WEIGHT. CLEAN EQUIPMENT SURFACES IN THE NORMAL MANNER. PRIOR TO USE, RINSE ALL SURFACES THOROUGHLY WITH THE SANITIZING SOLUTION, MAINTAINING CONTACT WITH THE SANITIZER FOR AT LEAST 2 MINUTES. IF SOLUTION CONTAINS LESS THAN 50 PPM AVAILABLE CHLORINE, AS DETERMINED BY A SUITABLE TEST KIT, EITHER DISCARD THE SOLUTION OR ADD SUFFICIENT PRODUCT TO REESTABLISH A 200 PPM RESIDUAL. DO NOT RINSE EQUIPMENT WITH WATER AFTER TREATMENT AND DO NOT SOAK EQUIPMENT OVERNIGHT. SANITIZER USED IN AUTOMATED SYSTEMS MAY BE USED FOR GENERAL CLEANING BUT MAY NOT BE RE-USED FOR SANITIZING PURPOSES.

IMMERSION METHOD – A SOLUTION OF 100 PPM AVAILABLE CHLORINE MAY BE USED IN THE SANITIZING SOLUTION IF A CHLORINE TEST KIT IS AVAILABLE. SOLUTIONS CONTAINING AN INITIAL CONCENTRATION OF 100 PPM AVAILABLE CHLORINE MUST BE TESTED AND ADJUSTED PERIODICALLY TO ENSURE THAT THE AVAILABLE CHLORINE DOES NOT DROP BELOW 50 PPM. PREPARE A 100 PPM SANITIZING SOLUTION BY THOROUGHLY MIXING 1 OZ. OF THIS PRODUCT WITH 10 GALLONS OF WATER. IF NO TEST KIT IS AVAILABLE, PREPARE A SANITIZING SOLUTION BY THOROUGHLY MIXING 2 OZ. OF THIS PRODUCT WITH 10 GALLONS TO PROVIDE APPROXIMATELY 200 PPM AVAILABLE CHLORINE BY WEIGHT. CLEAN EQUIPMENT IN THE NORMAL MANNER. PRIOR TO USE, IMMERSE EQUIPMENT IN THE SANITIZING SOLUTION FOR AT LEAST 2 MINUTES AND ALLOW THE SANITIZER TO DRAIN. IF SOLUTION CONTAINS LESS THAN 50 PPM AVAILABLE CHLORINE, AS DETERMINED BY A SUITABLE TEST KIT, EITHER DISCARD THE SOLUTION OR ADD SUFFICIENT PRODUCT TO REESTABLISH A 200 PPM RESIDUAL. DO NOT RINSE EQUIPMENT WITH WATER AFTER TREATMENT. SANITIZER USED IN AUTOMATED SYSTEMS MAY BE USED FOR GENERAL CLEANING BUT MAY NOT BE RE-USED FOR SANITIZING PURPOSES.

FLOW PRESSURE METHOD – DISASSEMBLE EQUIPMENT AND THOROUGHLY CLEAN AFTER USE. ASSEMBLE EQUIPMENT IN OPERATING POSITION PRIOR TO USE. PREPARE A VOLUME OF A 200 PPM AVAILABLE CHLORINE SANITIZING SOLUTION EQUAL TO 110% OF VOLUME CAPACITY OF THE EQUIPMENT BY MIXING THE PRODUCT IN A RATIO OF 2 OZ. PRODUCT WITH 10 GALLONS OF WATER. PUMP SOLUTION THROUGH THE SYSTEM UNTIL FULL FLOW IS OBTAINED AT ALL EXTREMITIES, THE SYSTEM IS COMPLETELY FILLED WITH THE SANITIZER, AND ALL AIR IS REMOVED FROM THE SYSTEM. CLOSE DRAIN VALVES AND HOLD UNDER PRESSURE FOR A LEAST 2 MINUTES TO ENSURE CONTACT WITH ALL INTERNAL SURFACES. REMOVE SOME CLEANING SOLUTION FROM DRAIN VALVE AND TEST WITH A CHLORINE TEST KIT. REPEAT ENTIRE CLEANING SANITIZING PROCESS IF EFFLUENT CONTAINS LESS THAN 50 PPM AVAILABLE CHLORINE.

CLEAN IN PLACE METHOD – THOROUGHLY CLEAN EQUIPMENT AFTER USE. PREPARE A VOLUME OF A 200 PPM AVAILABLE CHLORINE SANITIZING SOLUTION EQUAL TO 110% OF VOLUME CAPACITY OF THE EQUIPMENT BY MIXING THE PRODUCT IN A RATIO OF 2 OZ. PRODUCT WITH 10 GALLONS OF WATER. PUMP SOLUTION THROUGH THE SYSTEM UNTIL FULL FLOW IS OBTAINED AT ALL EXTREMITIES, THE SYSTEM IS COMPLETELY FILLED WITH SANITIZER, AND ALL AIR IS REMOVED FROM THE SYSTEM. CLOSE DRAIN VALVE AND HOLD UNDER PRESSURE FOR A LEAST 10 MINUTES TO ENSURE CONTACT WITH ALL INTERNAL SURFACES. REMOVE SOME CLEANING SOLUTION FROM DRAIN VALVE AND TEST WIT A CHLORINE TEST KIT. REPEAT ENTIRE CLEANING SANITIZING PROCESS IF EFFLUENT CONTAINS LESS THAN 50 PPM AVAILABLE CHLORINE.

SPRAY FOG METHOD – PRECLEAN ALL SURFACES AFTER USE. USE A 200 PPM AVAILABLE CHLORINE SOLUTION TO CONTROL BACTERIA, MOLD OR FUNGI AND A 600 PPM SOLUTION TO CONTROL BACTERIOPHAGE. PREPARE A 200 PPM SANITIZING SOLUTION OF SUFFICIENT SIZE BY THOROUGHLY MIXING THE PRODUCT IN A RATIO OF 2 OZ. PRODUCT WITH 10 GALLONS OF WATER. PREPARE A 600 PPM SOLUTION BY THOROUGHLY MIXING THE PRODUCT IN A RATIO OF 6 OZ. PRODUCT WITH 10 GALLONS OF WATER. USE SPRAY OR FOGGING EQUIPMENT WHICH CAN RESIST HYPOCHLORITE SOLUTIONS. ALWAYS EMPTY AND RINSE SPRAY FOG EQUIPMENT WITH POTABLE WATER AFTER USE. THOROUGHLY SPRAY OR FOG ALL SURFACES UNTIL WET, ALLOWING EXCESS SANITIZER TO DRAIN. VACATE AREA FOR AT LEAST 2 HOURS. PRIOR TO USING EQUIPMENT, RINSE ALL SURFACES TREATED WITH A 600 PPM SOLUTION WITH A 200 PPM SOLUTION.

MASTER LABEL

SANITIZATION OF NONPOROUS NON FOOD CONTACT SURFACES:

RINSE METHOD – PREPARE A SANITIZING SOLUTION BY THOROUGHLY MIXING 2 OZ. OF THIS PRODUCT WITH 10 GALLONS OF WATER. TO PROVIDE APPROXIMATELY 200 PPM AVAILABLE CHLORINE BY WEIGHT. CLEAN EQUIPMENT SURFACES IN THE NORMAL MANNER. PRIOR TO USE, RINSE ALL SURFACES THOROUGHLY WITH THE SANITIZING SOLUTION, MAINTAINING CONTACT WITH THE SANITIZER FOR AT LEAST 2 MINUTES. DO NOT RINSE EQUIPMENT WITH WATER AFTER TREATMENT AND DO NOT SOAK EQUIPMENT OVERNIGHT.

IMMERSION METHOD – PREPARE A SANITIZING SOLUTION BY THOROUGHLY MIXING, IN A IMMERSION TANK, 2 OZ. OF THIS PRODUCT WITH 10 GALLONS OF WATER TO PROVIDE APPROXIMATELY 200 PPM AVAILABLE CHLORINE BY WEIGHT. CLEAN EQUIPMENT IN THE NORMAL MANNER. PRIOR TO USE, IMMERSE EQUIPMENT IN THE SANITIZING SOLUTION FOR A LEAST 2 MINUTES TO ALLOW THE SANITIZER TO DRAIN. DO NOT RINSE EQUIPMENT WITH WATER AFTER TREATMENT.

SPRAY FOG METHOD – PRECLEAN ALL SURFACES AFTER USE. PREPARE A 200 PPM AVAILABLE CHLORINE SANITIZING SOLUTON OF SUFFICIENT SIZE BY THOROUGHLY MIXING THE PRODUCT IN A RATIO OF 2 OZ. PRODUCT WITH 10 GALLONS OF WATER. USE SPRAY OR FOGGING EQUIPMENT WHICH CAN RESIST HYPOCHLORITE SOLUTIONS. PRIOR TO USING EQUIPMENT, THOROUGHLY SPRAY OR FOG ALL SURFACES UNTIL WET, ALLOWING EXCESS SANITIZER TO DRAIN. VACATE AREA FOR A LEAST 2 HOURS.

SANITIZATION OF POROUS FOOD CONTACT SURFACES:

RINSE METHOD – PREPARE A 600 PPM SOLUTION BY THOROUGHLY MIXING 6 OZ. OF THIS PRODUCT WITH 10 GALLONS OF WATER. CLEAN SURFACES IN THE NORMAL MANNER. RINSE ALL SURFACES THOROUGHLY WITH THE 600 PPM SOLUTION, MAINTAINING CONTACT FOR AT LEAST 2 MINUTES. PREPARE A 200 PPM SANITIZING SOLUTION BY THOROUGHLY MIXING 2 OZ. OF THIS PRODUCT WITH 10 GALLONS OF WATER. PRIOR TO USING EQUIPMENT, RINSE ALL SURFACES WITH A 200 PPM AVAILABLE CHLORINE SOLUTION. DO NOT RINSE AND DO NOT SOAK EQUIPMENT OVERNIGHT.

IMMERSION METHOD – PREPARE A 600 PPM SOLUTION BY THOROUGHLY MIXING, IN AN IMMERSION TANK, 6 OZ. OF THIS PRODUCT WITH 10 GALLONS OF WATER. CLEAN EQUIPMENT IN THE NORMAL MANNER. IMMERSE EQUIPMENT IN THE 600 PPM SOLUTION FOR AT LEAST 2 MINUTES. PREPARE A 200 PPM SANITIZING SOLUTION BY THOROUGHLY MIXING 2 OZ. OF THIS PRODUCT WITH 10 GALLONS OF WATER. PRIOR TO USING EQUIPMENT, IMMERSE ALL SURFACES IN A 200 PPM AVAILABLE CHLORINE SOLUTION. DO NOT RINSE AND DO NOT SOAK EQUIPMENT OVERNIGHT.

SPRAY FOG METHOD – PRECLEAN ALL SURFACES AFTER USE. PREPARE A 600 PPM AVAILABLE CHLORINE SANITIZING SOLUTION OF SUFFICIENT SIZE BY THOROUGHLY MIXING THE PRODUCT IN A RATIO OF 6 OZ. PRODUCT WITH 10 GALLONS OF WATER. USE SPRAY OR FOGGING EQUIPMENT WHICH CAN RESIST HYPOCHLORITE SOLUTIONS. ALWAYS EMPTY AND RINSE SPRAY FOG EQUIPMENT WITH POTABLE WATER AFTER USE. THOROUGHLY SPRAY OR FOG ALL SURFACES UNTIL WET, ALLOWING EXCESS SANITIZER TO DRAIN. VACATE AREA FOR AT LEAST 2 HOURS. PRIOR TO USING EQUIPMENT, RINSE ALL SURFACES WITH A 200 PPM AVAILABLE CHLORINE SOLUTION. PREPARE A 200 PPM SANITIZING SOLUTION BY THOROUGHLY MIXING 2 OZ. OF THIS PRODUCT WITH 10 GALLONS OF WATER.

SANITIZATION OF POROUS AND NON FOOD CONTACT SURFACES:

RINSE METHOD – PREPARE A SANITIZING SOLUTION BY THOROUGHLY MIXING 6 OZ. OF THIS PRODUCT WITH 10 GALLONS OF WATER TO PROVIDE APPROXIMATELY 600 PPM AVAILABLE CHLORINE BY WEIGHT. CLEAN SURFACES IN THE NORMAL MANNER. PRIOR TO USE, RINSE ALL SURFACES THOROUGHLY WITH THE SANITIZING SOLUTION, MAINTAINING CONTACT WITH THE SANITIZER FOR AT LEAST 2 MINUTES. DO NOT RINSE EQUIPMENT WITH WATER AFTER TREATMENT AND DO NOT SOAK EQUIPMENT OVERNIGHT.

IMMERSION METHOD – PREPARE A SANITIZING SOLUTION BY THOROUGHLY MIXING, IN AN IMMERSION TANK, 6 OZ. OF THIS PRODUCT WITH 10 GALLONS OF WATER TO PROVIDE APPROXIMATELY 600 PPM AVAILABLE CHLORINE BY WEIGHT. CLEAN EQUIPMENT IN THE NORMAL MANNER. PRIOR TO USE, IMMERSE EQUIPMENT IN THE SANITIZING SOLUTION FOR AT LEAST 2 MINUTES TO ALLOW THE SANITIZER TO DRAIN. DO NOT RINSE EQUIPMENT WITH WATER AFTER TREATMENT.

SPRAY FOG METHOD – AFTER CLEANING, SANITIZE NON-FOOD CONTACT SURFACES WITH 600 PPM AVAILABLE CHLORINE BY THOROUGHLY MIXING THE PRODUCT IN A RATIO 6 OZ. OF THIS PRODUCT WITH 10 GALLONS OF WATER. USE SPRAY OR FOGGING EQUIPMENT WHICH CAN RESIST HYPOCHLORITE SOLUTIONS. ALWAYS EMPTY AND RINSE SPRAY FOG EQUIPMENT WITH POTABLE WATER AFTER USE. PRIOR TO USING EQUIPMENT, THOROUGHLY SPRAY OR FOG ALL SURFACES UNTIL WET, ALLOWING EXCESS SANITIZER TO DRAIN. VACATE AREA FOR AT LEAST 2 HOURS.

SEWAGE & WASTEWATER EFFLUENT TREATMENT

THE DISINFECTION OF SEWAGE EFFLUENT MUST BE EVAUATED BY DETERMINING THE TOTAL NUMBER OF COLIFORM BACTERIA AND OR FECAL COLIFORM BACTERIA, AS DETERMINED BY THE MOST PROBABLE NUMBER (MPN) PROCEDURE, TO ENSURE THAT THE CHLORINATED EFFLUENT HAS BEEN REDUCED TO OR BELOW THE MAXIMUM PERMITTED BY THE CONTROLLING REGULATORY JURISDICTION. ON THE AVERAGE, SATISFACTORY DISINFECTION OF SECONDARY WASTEWATER EFFLUENT CAN BE OBTAINED WHEN THE CHLORINE RESIDUAL IS 0.5 PPM AFTER 15 MINUTES OF CONTACT. ALTHOUGH THE CHLORINE RESIDUAL IS THE CRITICAL FACTOR IN DISINFECTION, THE

MASTER LABEL

IMPORTANCE OF CORRELATING CHLORINE RESIDUAL WITH BACTERIAL KILL MUST BE EMPHASIZED. THE MPN OF THE EFFLUENT, WHICH IS DIRECTLY RELATED TO THE WATER QUALITY STANDARDS REQUIREMENTS, SHOULD BE THE FINAL AND PRIMARY STANDARD, AND THE CHLORINE RESIDUAL SHOULD BE CONSIDERED AN OPERATING STANDARD VALID ONLY TO THE EXTENT VERIFIED BY THE COLIFORM QUALITY OF THE EFFLUENT. THE FOLLOWING ARE CRITICAL FACTORS AFFECTING WASTEWATER DISINFECTION: 1. MIXING: IT IS IMPERATIVE THAT THE PRODUCT AND THE WASTEWATER BE INSTANTANEOUSLY AND COMPLETELY FLASH MIXED TO ASSURE REACTION WITH EVERY CHEMCIALLY ACTIVE SOLUBLE AND PARTICULATE COMPONENT OF THE WASTEWATER. 2. CONTACTING: UPON FLASH MIXING, THE FLOW THROUGH THE SYSTEM MUST BE MAINTAINED. 3. DOSAGE RESIDUAL CONTROL: SUCCESSFUL DISINFECTION IS EXTREMELY DEPENDENT ON RESPONSE TO FLUCTUATING CHLORINE DEMAND TO MAINTAIN A PREDETERMINED, DESIRABLE CHLORINE LEVEL. SECONDARY EFFLUENT SHOULD CONTAIN 0.2 – 1.0 PPM CHLORINE RESIDUAL AFTER A 15-30 MINUTE CONTACT TIME. A REASONABLE AVERAGE OF RESIDUAL CHLORINE IS 0.5 PPM AFTER 15 MINUTES CONTACT TIME.

DISINFECTION OF NONPOROUS NON FOOD CONTACT SURFACES:

RINSE METHOD – PREPARE A DISINFECTING SOLUTION BY THOROUGHLY MIXING 6 OZ. OF THIS PRODUCT WITH 10 GALLONS OF WATER TO PROVIDE APPROXIMATELY 600 PPM AVAILABLE CHLORINE BY WEIGHT. CLEAN EQUIPMENT SURFACES IN THE NORMAL MANNER. PRIOR TO USE, RINSE ALL SURFACES THOROUGHLY WITH THE DISINFECTING SOLUTION, MAINTAINING CONTACT WITH THE SOLUTION FOR A LEAST 10 MINUTES. DO NOT RINSE EQUIPMENT WITH WATER AFTER TREATMENT AND DO NOT SOAK EQUIPMENT OVERNIGHT.

IMMERSION METHOD – PREPARE A DISINFECTING SOLUTION BY THOROUGHLY MIXING, IN AN IMMERSION TANK, 6 OZ. OF THIS PRODUCT WITH 10 GALLONS OF WATER TO PROVIDE APPROXIMATELY 600 PPM AVAILABLE CHLORINE BY WEIGHT. CLEAN EQUIPMENT IN THE DISINFECTING SOLUTION FOR AT LEAST 10 MINUTES AND ALLOW THE SANITIZER TO DRAIN. DO NOT RINSE EQUIPMENT WITH WATER AFTER TREATMENT.

COOLING TOWER EVAPORATIVE CONDENSER WATER:

SLUG FEED METHOD – INITIAL DOSE: WHEN SYSTEM IS NOTICEABLY FOULED, APPLY 52 TO 104 OZ. OF THIS PRODUCT PER 10,000 GALLONS OF WATER IN THE SYSTEM TO OBTAIN FROM 5 TO 10 PPM AVAILABLE CHLORINE. REPEAT UNTIL CONTROL IS ACHIEVED. SUBSEQUENT DOSE: WHEN MICROBIAL CONTROL IS EVIDENT, ADD 11 OZ. OF THIS PRODUCT PER 10,000 GALLONS OF WATER IN THE SYSTEM DAILY, OR AS NEEDED TO MAINTAIN CONTROL AND KEEP THE CHLORINE RESIDUAL AT 1 PPM. BADLY FOULED SYSTEMS MUST BE CLEANED BEFORE TREATMENT IS BEGUN.

INTERMITTENT FEED METHOD – INITIAL DOSE: WHEN SYSTEM IS NOTICEABLY FOULED, APPLY 52 TO 104 OZ. OF THIS PRODUCT PER 10,000 GALLONS OF WATER IN THE SYSTEM TO OBTAIN 5 TO 10 PPM AVAILABLE CHLORINE. APPLY HALF (OR 0.3, 0.25, OR 0.2) OF THIS INITIAL DOSE WHEN HALF (OR 0.3, 0.25, OT 0.20) OF THE WATER IN THE SYSTEM HAS BEEN LOST BY BLOWDOWN. SUBSEQUENT DOSE: WHEN MICROBIAL CONTROL IS EVIDENT, ADD 11 OZ. OF THIS PRODUCT PER 10,000 GALLONS OF WATER IN THE SYSTEM TO OTAIN A 1 PPM RESIDUAL. APPLY HALF (OR 0.3, 0.25, OR 0.2) OF THIS INITIAL DOSE WHEN HALF (OR 0.3, 0.25, OR 0.2) OF THE WATER IN THE SYSTEM HAS BEEN LOST BY BLOWDOWN. BADLY FOULED SYSTEMS MUST BE CLEANED BEFORE TREATMENT IS BEGUN.

CONTINUOUS FEED METHOD – INITIAL DOSE: WHEN SYSTEM IS NOTICEBLY FOULED, APPLY 52 TO 104 OZ. OF THIS PRODUCT PER 10,000 GALLONS OF WATER IN THE SYSTEM TO OBTAIN 5 TO 10 PPM AVAILABLE CHLORINE. SUBSEQUENT DOSE: MAINTAIN THIS TEATMENT LEVEL BY STARTING A CONTINUOUS FEED OF 1 OZ. OF THIS PRODUCT PER 1,000 GALLONS OF WATER LOST BY BLOWDOWN TO MAINTAIN A 1 PPM RESIDUAL. BADLY FOULED SYSTEMS MUST BE CLEANED BEFORE TREATMENT IS BEGUN.

BRIQUETTES OR TABLETS – INITALLY SLUG DOSE THE SYSTEM WITH 52 OZ. OF THIS PRODUCT PER 10,000 GALLONS OF WATER IN THE SYSTEM. BADLY FOULED SYSTEMS MUST BE CLEANED BEFORE TREATMENT IS BEGUN. SUBSEQUENT DOSE: WHEN MICROBIAL CONTROL IS EVIDENT, ADD 11 OZ. OF THIS PRODUCT PER 10,000 GALLONS OF WATER IN THE SYSTEM DAILY, OR AS NEEDED TO MAINTAIN CONTROL AND KEEP THE CHLORINE RESIDUAL AT 1 PPM. BADLY FOULED SYSTEMS MUST BE CLEANED BEFORE TREATMENT IS BEGUN.

PUBLIC WATER SYSTEMS:

RESERVOIRS – ALGAE CONTROL – HYPOCHLORINATE STREAM FEEDING THE RESERVOIR. SUITABLE FEEDING POINTS SHOULD BE SELECTED ON EACH STREAM AT LEAST 50 YARDS UPSTREAM FROM THE POINTS OF ENTRY INTO THE RESERVOIR.

MAINS – THOROUGHLY FLUSH SECTION TO BE SANITIZED BY DISCHARGING FROM HYDRANTS. PERMIT A WATER FLOW OF AT LEAST 2.5 FEET PER MINUTE TO CONTINUE UNDER PRESSURE WHILE INJECTING THIS PRODUCT BY MEANS OF A HYPOCHLORINATOR. STOP WATER FLOW WHEN A CHLORINE RESIDUAL TEST OF 50 PPM IS OBTAINED AT THE LOW PRESSURE END OF THE NEW MAIN SECTION AFTER A 24 HOUR RETENTION TIME. WHEN CHLORINATION IS COMPLETED, THE SYSTEM MUST BE FLUSHED FREE OF ALL HEAVILY CHLORINATED WATER.

NEW TANKS, BASINS, ETC. – REMOVE ALL PHYSICAL SOIL FROM SURFACES. PLACE 20 OZ. OF THIS PRODUCT FOR EACH 5 CUBIC FEET OF WORKING CAPACITY (500 PPM AVAILABLE CHLORINE). FILL TO WORKING CAPACITY AND ALLOW TO STAND FOR AT LEAST 4 HOURS. DRAIN AND FLUSH WITH POTABLE WATER AND RETURN TO SURFACE.

MASTER LABEL

NEW FILTER SAND – APPLY 80 OZ. OF THIS PRODUCT FOR EACH 150 TO 200 CUBIC FEET OF SAND. THE ACTION OF THE PRODUCT DISSOLVING AS THE WATER PASSES THROUGH THE BED WILL AID IN SANITIZING THE NEW SAND.

NEW WELLS – FLUSH THE CASING WITH A 50 PPM AVAILABLE CHLORINE SOLUTION OF WATER CONTAINING 5 OZ. OF THIS PRODUCT FOR EACH 100 GALLONS OF WATER. THE SOLUTION SHOULD BE PUMPED OR FED BY GRAVITY INTO THE WELL AFTER THOROUGH MIXING WITH AGITATION. THE WELL SHOULD STAND FOR SEVERAL HOURS OR OVERNIGHT UNDER CHLORINATION. IT MAY THEN BE PUMPED UNTIL A REPRESENTATIVE RAW WATER SAMPLE IS OBTAINED. BACTERIAL EXAMINATION OF THE WATER WILL INDICATE WHETHER FURTHER TREATMENT IS NECESSARY.

EXISTING EQUIPMENT – REMOVE EQUIPMENT FROM SERVICE, THOROUGHLY CLEAN SURFACES OF ALL PHYSICAL SOIL. SANITIZE BY PLACING 20 OZ. OF THIS PRODUCT FOR EACH 5 CUBIC FEET CAPACITY (APPROXIMATELY 500 PPM AVAILABLE CHLORINE). FILL TO WORKING CAPACITY AND LET STAND AT LEAST 4 HOURS. DRAIN AND PLACE IN SERVICE. IF THE PREVIOUS TREATMENT IS NOT PRACTICAL, SURFACES MAY BE SPRAYED WITH A SOLUTION CONTAINING 5 OZ. OF THIS PRODUCT FOR EACH 5 GALLONS OF WATER (APPROXIMATELY 1000 PPM AVAILABLE CHLORINE). AFTER DRYING, FLUSH WITH WATER AND RETURN TO SERVICE.

SWIMMING POOL:

SWIMMING POOL WATER DISINFECTION – FOR A NEW POOL OR SPRING START-UP, SUPERCHLORINATE WITH 52 TO 104 OZ. OF PRODUCT FOR EACH 10,000 GALLONS OF WATER TO YIELD 5 TO 10 PPM AVAILABLE CHLORINE BY WEIGHT. CHECK THE LEVEL OF AVAILABLE CHLORINE WITH A TEST KIT. ADJUST AND MAINTAIN POOL WATER TO PH TO BETWEEN 7.2 TO 7.6. ADJUST AND MAINTAIN THE ALKALINITY OF THE POOL TO BETWEEN 50 AND 100 PPM. TO MAINTAIN THE POOL, ADD MANUALLY OR BY A FEEDER DEVICE 11 OZ. OF THIS PRODUCT FOR EACH 10,000 GALLONS OF WATER TO YIELD AN AVAILABLE CHLORINE RESIDUAL BETWEEN 0.6 TO 1.0 PPM BY WEIGHT. STABILIZED POOLS SHOULD MAINTAIN A RESIDUAL OF 1.0 TO 1.5 PPM AVAILABLE CHLORINE. TEST THE PH, AVAILABLE CHLORINE RESIDUAL AND ALKALINITY OF THE WATER FREQUENTLY WITH APPROPRIATE TEST KITS. FREQUENCY OF WATER TREATMENT WILL DEPEND UPON TEMPERATURE AND NUMBER OF SWIMMERS. EVERY 7 DAYS, OR AS NECESSARY, SUPERCHLORINATE THE POOL WITH 52 TO 104 OZ. OF PROUCT FOR EACH 10,000 GALLONS OF WATER TO YIELD 5 TO 10 PPM AVAILABLE CHLORINE BY WEIGHT. CHECK THE LEVEL OF AVAILABLE CHLORINE WITH A TEST KIT. DO NOT REENTER POOL UNTIL THE CHLORINE RESIDUAL IS BETWEEN 1.0 TO 3.0 PPM. AT THE END OF THE SWIMMING POOL SEASON OR WHEN WATER IS TO BE DRAINED FROM THE POOL, CHLORINE MUST BE ALLOWED TO DISSIPATE FROM TREATED POOL WATER BEFORE DISCHARGE. DO NOT CHLORINATE THE POOL WITHIN 24 HOURS PRIOR TO DISCHARGE.

WINTERIZING POOLS – WHILE WATER IS STILL CLEAR & CLEAN, APPLY 3 OZ. OF PRODUCT PER 1000 GALLONS, WHILE FILTER IS RUNNING, TO OBTAIN A 3 PPM AVAILABLE CHLORINE RESIDUAL, AS DETERMINED BY A SUITABLE TEST KIT. COVER POOL, PREPARE HEATER, FILTER, AND HEATER COMPONENTS FOR WINTER BY FOLLOWING MANUFACTURER'S DIRECTIONS.

SEWAGE AND WASTEWATER TREATMENT:

EFFLUENT SLIME CONTROL – APPLY A 100 TO 1000 PPM AVAILABLE CHLORINE SOLUTION AT A LOCATION WHICH WILL ALLOW COMPLETE MIXING. PREPARE THIS SOLUTION BY MIXING 10 TO 100 OZ. OF THIS PRODUCT WITH 100 GALLONS OF WATER. ONCE CONTROL IS EVIDENT, APPLY A 15 PPM AVAILABLE CHLORINE SOLUTION. PREPARE THIS SOLUTION BY MIXING 1.5 OZ. OF THIS PRODUCT WITH 100 GALLONS OF WATER.

FILTER BEDS SLIME CONTROL – REMOVE FILTER FROM SERVICE, DRAIN TO A DEPTH OF 1 FOOT ABOVE FILTER SAND, AND ADD 80 OZ. OF PRODUCT PER 20 SQUARE FEET EVENLY OVER SURFACE. WAIT 30 MINUTES BEFORE DRAINING WATER TO A LEVEL THAT IS EVEN WITH THE TOP OF THE FILTER. WAIT FOR 4 TO 6 HOURS BEFORE COMPLETELY DRAINING AND BACKWASHING FILTER.

AGRICULTURAL USES:

POST-HARVEST PROTECTION – POTATOES CAN BE SANITIZED AFTER CLEANING AND PRIOR TO STORAGE BY SPRAYING WITH A SANITIZING SOLUTION AT A LEVEL OF 1 GALLON OF SANITIZING SOLUTION PER TON OF POTATOES. THOROUGHLY MIX 1 OZ. OF THIS PRODUCT TO 2 GALLONS OF WATER TO OBTAIN 500 PPM AVAILABLE CHLORINE. DISINFECT LEAFCUTTING BEE CELLS AND BEE BOARDS BY IMMERSION IN A SOLUTION CONTAINING 1 PPM AVAILABLE CHLORINE FOR 3 MINUTES. ALLOW CELLS TO DRAIN FOR 2 MINUTES AND DRY FOR 4 TO 5 HOURS OR UNTIL NO CHLORINE ODOR CAN BE DETECTED. THIS SOLUTION IS MADE BY THOROUGHLY MIXING 1 TSP. OF THIS PRODUCT TO 100 GALLONS OF WATER. THE BEE DOMICILE IS DISINFECTED BY SPRAYING WITH A 0.1 PPM SOLUTION UNTIL ALL SURFACES ARE THOROUGHLY WET. ALLOW THE DOMICILE TO DRY UNTIL ALL CHLORINE ODOR HAS DISSIPATED.

FOOD EGG SANITIZATION – THOROUGHLY CLEAN ALL EGGS. THOROUGHLY MIX 2 OZ. OF THIS PRODUCT WITH 10 GALLONS OF WARM WATER TO PRODUCE A 200 PPM AVAILABLE CHLORINE SOLUTION. THE SANITIZER TEMPERATURE SHOULD NOT EXCEED 130 F. SPRAY THE WARM SANITIZER SO THAT THE EGGS ARE THOROUGHLY WETTED. ALLOW THE EGGS TO THOROUGHLY DRY BEFORE CASING OR BREAKING. DO NOT APPLY A POTABLE WATER RINSE. THE SOLUTION SHOULD NOT BE RE-USED TO SANITIZE EGGS.

FRUIT & VEGETABLE WASHING – THOROUGHLY CLEAN ALL FRUITS AND VEGETABLES IN WASH TANK. THOROUGHLY MIX 5 OZ. OF THIS PRODUCT IN 200 GALLONS OF WATER TO MAKE A SANITIZING SOLUTION OF 25 PPM AVAILABLE CHLORINE. AFTER DRAINING THE TANK, SUBMERGE FRUIT OR VEGETABLES FOR TWO MINUTES IN A SECOND WASH TANK CONTAINING THE RECIRCULATING SANITIZING SOLUTION.

SPRAY RINSE VEGETABLES WITH THE SANITIZING SOLUTION PRIOR TO PACKAGING. RINSE FRUIT WITH POTABLE WATER ONLY PRIOR TO PACKAGING.

LAUNDRY SANITIZERS;

IN SOAKING SUDS – THOROUGHLY MIX 2 OZ. OF THIS PRODUCT TO 10 GALLONS OF WASH WATER TO PROVIDE 200 PPM AVAILABLE CHLORINE. WAIT 5 MINUTES, THEN ADD SOAP OR DETERGENT. IMMERSE LAUNDRY FOR AT LEAST 11 MINUTES PRIOR TO STARTING THE WASH RINSE CYCLE.

IN WASHING SUDS – THOROUGHLY MIX 2 OZ. OF THIS PRODUCT TO 10 GALLONS OF WASH WATER CONTAINING CLOTHES TO PROVIDE 200 PPM AVAILABLE CHLORINE. WAIT 5 MINUTES, THEN ADD SOAP OR DETERGENT AND START THE WASH RINSE CYCLE.

COMMERCIAL LAUNDRY SANITIZERS – WET FABRICS OR CLOTHES SHOULD BE SPUN DRY PRIOR TO SANITIZATION. THOROUGHLY MIX 2 OZ. OF THIS PRODUCT WITH 10 GALLONS OF WATER TO YIELD 200 PPM AVAILABLE CHLORINE. PROMPTLY AFTER MIXING THE SANITIZER, ADD THE SOLUTION INTO THE PREWASH PRIOR TO WASHING FABRICS AND CLOTHES IN THE REGULAR WASH CYCLE WITH GOOD DETERGENT. TEST THE LEVEL OF AVAILABLE CHLORINE, IF SOLUTION HAS BEEN ALLOWED TO STAND. ADD MORE OF THIS PRODUCT IF THE AVAILABLE CHLORINE LEVEL HAS DROPPED BELOW 200 PPM.

FARM PREMISES

REMOVE ALL ANIMALS, POULTRY, AND FEED FROM PREMISES, VEHICLES, AND ENCLOSURES. REMOVE ALL LITTER AND MANURE FROM FLOORS, WALLS, AND SURFACES OF BARNS, PENS, STALLS, CHUTES, AND OTHER FACILITIES OCCUPIED OR TRAVERSED BY ANIMALS OR POULTRY. EMPTY ALL TROUGHS, RACKS, AND OTHER FEED AND WATER APPLIANCES. THOROUGHLY CLEAN ALL SURFACES WITH SOAP OR DETERGENT AND RINSE WITH WATER. TO DISINFECT, SATURATE ALL SURFACES WITH A SOLUTION OF AT LEAST 1000 PPM AVAILABLE CHLORINE FOR A PERIOD OF 10 MINUTES. A 1000 PPM SOLUTION CAN BE MADE BY THOROUGHLY MIXING 11 OZ. OF THIS PRODUCT WITH 10 GALLONS OF WATER. IMMERSE ALL HALTERS, ROPES, AND OTHER TYPES OF EQUIPMENT USED IN HANDLING AND RESTRAINING ANIMALS OR POULTRY, AS WELL AS THE CLEANED FORKS, SHOVELS, AND SCRAPERS USED FOR REMOVING LITTER AND MANURE. VENTILATE BUILDINGS, CARS, BOATS, AND OTHER CLOSED SPACES. DO NOT HOUSE LIVESTOCK OR POULTRY OR EMPLOY EQUIPMENT UNTIL CHLORINE HAS BEEN DISSIPATED. ALL TREATED FEED RACKS, MANGERS, TROUGHS, AUTOMATIC FEEDERS, FOUNTAINS, AND WATERERS MUST BE RINSED WITH POTABLE WATER BEFORE REUSE.

DISINFECTION OF DRINKING WATER (EMERGENCY, PUBLIC, INDIVIDUAL SYSTEMS):

PUBLIC SYSTEMS – MIX A RATIO OF 1 OZ. OF THIS PRODUCT TO 100 GALLONS OF WATER. BEGIN FEEDING THIS SOLUTION WITH A HYPOCHLORINATOR UNTIL A FREE AVAILABLE CHLORINE RESIDUAL OF AT LEAST 0.2 PPM AND NO MORE THAN 0.6 PPM IS ATTAINED THROUGHOUT THE DISTRIBUTION SYSTEM. CHECK WATER FREQUENCY WITH A CHLORINE TEST. BACTERIOLOGICAL SAMPLIMG MUST BE CONDUCTED AT A FREQUENCY NO LESS THAN THAT PRESCRIBED BY THE NATIONAL PRIMARY DRINKING WATER REGULATIONS. CONTACT YOUR LOCAL HEALTH DEPARTMENT FOR FURTHER DETAILS.

INDIVIDUAL SYSTEMS: DUG WELLS – UPON COMPLETION OF THE CASING (LINING), WASH THE INTERIOR OF THE CASING (LINING) WITH A 100 PPM AVAILABLE CHLORINE SOLUTION USING A STIFF BRUSH. THIS SOLUTION CAN BE MADE BY THOROUGHLY MIXING 1 OZ. OF THIS PRODUCT INTO 10 GALLONS OF WATER. AFTER COVERING THE WELL, POUR THE SANITIZING SOLUTION INTO THE WELL THROUGH BOTH THE PIPE SLEEVE OPENING AND THE PIPELINE. WASH THE EXTERIOR OF THE PUMP CYLINDER ALSO WITH THE SANITIZING SOLUTION. START PUMP AND PUMP WATER UNTIL STRONG ODOR OF CHLORINE IN WATER IS NOTED. STOP PUMP AND WAIT AT LEAST 24 HOURS. AFTER 24 HOURS, FLUSH WELL UNTIL ALL TRACES OF CHLORINE HAVE BEEN REMOVED FROM THE WATER. CONSULT YOUR LOCAL HEALTH DEPARTMENT FOR FURTHER DETAILS.

INDIVIDUAL WATER SYSTEMS: DRILLED, DRIVEN & BORED WELLS – RUN PUMP UNTIL WATER IS AS FREE FROM TURBIDITY AS POSSIBLE. POUR A 100 PPM AVAILABLE CHLORINE SANITIZING SOLUTION INTO THE WELL. THIS SOLUTION CAN BE MADE BY THOROUGHLY MIXING 1 OZ. OF THIS PRODUCT INTO 10 GALLONS OF WATER. ADD 5 TO 10 GALLONS OF CLEAN, CHLORINATED WATER TO THE WELL IN ORDER TO FORCE THE SANITIZER INTO THE ROCK FORMATION. WASH THE EXTERIOR OF PUMP CYLINDER WITH THE SANITIZER. DROP PIPELINE INTO THE WELL, START PUMP AND PUMP WATER UNTIL STRONG ODOR OF CHLORINE IN WATER IS NOTED. STOP PUMP AND WAIT AT LEAST 24 HOURS. AFTER 24 HOURS, FLUSH WELL UNTIL ALL TRACES OF CHLORINE HAVE BEEN REMOVED FROM THE WATER. DEEP WELLS WITH HIGH WATER LEVELS MAY NECESSITATE THE USE OF SPECIAL METHODS FOR INTRODUCTION OF THE SANITIZER INTO THE WELL. CONSULT YOUR LOCAL HEALTH DEPARTMENT FOR FURTHER DETAILS.

INDIVIDUAL WATER SYSTEMS: FLOWING ARTESIAN WELLS – ARTESIAN WELLS GENERALLY DO NOT REQUIRE DISINFECTION. IF ANALYSES INDICATE PERSISTENT CONTAMINATION, THE WELL SHOULD BE DISINFECTED. CONSULT YOUR LOCAL HEALTH DEPARTMENT FOR FURTHER DETAILS.

EMERGENCY DISINFECTION – WHEN BOILING OF WATER FOR 1 MINUTE IS NOT PRACTICAL, WATER CAN BE MADE POTABLE BY USING THIS PRODUCT. PRIOR TO ADDITION OF THE SANITIZER, REMOVE ALL SUSPENDED MATERIAL BY FILTRATION OR BY ALLOWING IT TO SETTLE TO THE BOTTOM. DECANT THE CLARIFIED, CONTAMINATED WATER TO A CLEAN CONTAINER AND ADD 1 DROP OF THIS PRODUCT TO 20 GALLONS OF WATER. ALLOW THE TREATED WATER TO STAND FOR 30 MINUTES. PROPERLY TREATED WATER SHOULD HAVE A SLIGHT

CHLORINE ODOR, IF NOT, REPEAT DOSAGE AND ALLOW THE WATER TO STAND AN ADDITIONAL 15 MINUTES. THE TREATED WATER CAN THEN BE MADE PALATABLE BY POURING IT BETWEEN CLEAN CONTAINERS FOR SEVERAL TIMES.

SPAS, HOT TUBS, IMMERSION TANKS, ETC.:

SPAS AND HOT-TUBS – APPLY 5 OZ. OF PRODUCT PER 1000 GALLONS OF WATER TO OBTAIN A FREE AVAILABLE CHLORINE CONCENTRATION OF 5 PPM, AS DETERMINED BY A SUITABLE CHLORINE TEST KIT.. ADJUST AND MAINTAIN POOL WATER PH TO BETWEEN 7.2 AND 7.8. SOME OILS, LOTIONS, FRAGRANCES, CLEANERS, ETC. MAY CAUSE FOAMING OR CLOUDY WATER AS WELL AS REDUCE THE EFFICIENCY OF THE PRODUCT. TO MAINTAIN THE WATER, APPLY 5 OZ. OF PRODUCT PER 1000 GALLONS OF WATER OVER THE SURFACE TO MAINTAIN A CHLORINE CONCENTRATION OF 5 PPM. AFTER EACH USE, SHOCK TREAT WITH 8 OZ. OF THIS PRODUCT PER 500 GALLONS OF WATER TO CONTROL ODOR AND ALGAE. DURING EXTENDED PERIODS OF DISUSE, ADD 3 OZ. OF PRODUCT DAILY PER 1000 GALLONS OF WATER TO MAINTAIN A 3 PPM CHLORINE CONCENTRATION.

HUBBARD AND IMMERSION TANKS – ADD 5 OZ. OF THIS PRODUCT PER 300 GALLONS OF WATER BEFORE PATIENT USE TO OBTAIN A CHLORINE RESIDUAL OF 25 PPM, AS DETERMINED BY A SUITABLE TEST KIT. ADJUST AND MAINTAIN THE WATER PH TO BETWEEN 7.2 AND 7.6. AFTER EACH USE, DRAIN THE TANK. ADD 5 OZ. TO A BUCKET OF WATER AND CIRCULATE THIS SOLUTION THROUGHOUT THE AGITATOR OF THE TANK FOR 15 MINUTES AND THEN RINSE OUT THE SOLUTION. CLEAN TANK THOROUGHLY AND DRY AND CLEAN CLOTHES. NOT APPROVED FOR THIS USE IN THE STATE OF CALIFORNIA.

HYDROTHERAPY TANKS – ADD 1 OZ. OF THIS PRODUCT PER 1000 GALLONS OF WATER TO OBTAIN A CHLORINE RESIDUAL OF 1 PPM, AS DETERMINED BY A SUITABLE CHLORINE TEST KIT. POOL SHOULD NOT BE ENTERED UNTIL THE CHLORINE RESIDUAL IS BELOW 3 PPM. ADJUST AND MAINTAIN THE WATER PH TO BETWEEN 7.2 AND 7.6. OPERATE POOL FILTER CONTINUOUSLY, DRAIN POOL WEEKLY, AND CLEAN BEFORE REFILLING.

MEAT AND POULTRY PLANTS

AUTHORIZED BY USDA FOR USE IN FEDERALLY INSPECTED MEAT AND POULTRY PLANTS
CHLORINE MAY BE PRESENT IN PROCESSING WATER OF MEAT AND POULTRY PLANTS AT CONCENTRATIONS UP TO 5 PARTS PER MILLION (PPM) CALCULATED AS AVAILABLE CHLORINE. ALSO CHLORINE MAY BE PRESENT IN POULTRY CHILLER INTAKE WATER, AND IN CARCASS WATER IN CONCENTRATIONS UP TO 50 PARTS PER MILLION CALCULATED AS AVAILABLE CHLORINE. CHLORINE MUST BE DISPENSED AT CONSTANT AND UNIFORM LEVEL AND THE METHOD OR SYSTEM MUST BE SUCH THAT A CONTROLLED RATE IS MAINTAINED. THOROUGHLY MIX 1 OZ. OF THIS PRODUCT IN 200 GALLONS OF WATER TO MAKE A SANITIZING SOLUTION OF 5 PPM AVAILABLE CHLORINE, OR 10 OZ. IN 200 GALLONS OF WATER FOR 50 PPM AVAILABLE CHLORINE.

AQUACULTURAL USES:

FISH PONDS – REMOVE FISH FROM PONDS PRIOR TO TREATMENT. THOROUGHLY MIX 104 OZ. OF THIS PRODUCT TO 10,000 GALLONS OF WATER TO OBTAIN 10 PPM AVAILABLE CHLORINE. ADD MORE PRODUCT TO THE WATER IF THE AVAILABLE CHLORINE LEVEL IS BELOW 1 PPM AFTER 5 MINUTES. RETURN FISH TO POND AFTER THE AVAILABLE CHLORINE LEVEL REACHES ZERO.

FISH POND EQUIPMENT – THOROUGHLY CLEAN ALL EQUIPMENT PRIOR TO TREATMENT. THOROUGHLY MIX 2 OZ. OF THIS PRODUCT TO 10 GALLONS OF WATER TO OBTAIN 200 PPM AVAILABLE CHLORINE. POROUS EQUIPMENT SHOULD SOAK FOR ONE HOUR.

MAIN LOBSTER PONDS – REMOVE LOBSTERS, SEAWEED, ETC. FROM PONDS PRIOR TO TREATMENT. DRAIN THE POND. THOROUGHLY MIX 6,200 OZ. OF THIS PRODUCT TO 10,000 GALLONS OF WATER TO OBTAIN AT LEAST 600 PPM AVAILABLE CHLORINE. APPLY SO THAT ALL BARROWS, GATES, ROCK AND DAM ARE TREATED WITH PRODUCT. PERMIT HIGH TIDE TO FILL THE POND AND THEN CLOSE THE GATES. ALLOW WATER TO STAND FOR 2 TO 3 DAYS UNTIL THE AVAILABLE CHLORINE LEVEL REACHES ZERO. OPEN GATES AND ALLOW 2 TIDAL CYCLES TO FLUSH THE POND BEFORE RETURNING LOBSTERS TO POND.

CONDITIONING LIVE OYSTERS - THOROUGHLY MIX 5 OZ. OF THIS PRODUCT TO 10,000 GALLONS OF WATER TO 50 TO 70 F TO OBTAIN 0.5 PPM AVAILABLE CHLORINE. EXPOSE OYSTERS TO THIS SOLUTION FOR AT LEAST 15 MINUTES, MONITORING THE AVAILABLE CHLORINE LEVEL SO THAT IT DOES NOT FALL BELOW 0.05 PPM. REPEAT ENTIRE PROCESS IF THE AVAILABLE CHLORINE LEVEL DROPS BELOW 0.5 PPM OR THE TEMPERATURE FALLS BELOW 50 F. NOT APPROVED FOR THIS USE IN THE STATE OF CALIFORNIA.

CONTROL OF SCAVENGERS IN FISH HATCHERY PONDS – PREPARE A SOLUTION CONTAINING 200 PPM OF AVAILABLE CHLORINE BY MIXING 2 OZ. OF PRODUCT WITH 10 GALLONS OF WATER. POUR INTO DRAINED POND POTHOLES. REPEAT IF NECESSARY. DO NOT PUT DESIRABLE FISH BACK INTO REFILLED PONDS UNTIL CHLORINE RESIDUAL HAS DROPPED TO 0 PPM, AS DETERMINED BY A TEST KIT.

SANITIZATION OF DIALYSIS MACHINES

FLUSH EQUIPMENT THOROUGHLY WITH WATER PRIOR TO USING THIS PRODUCT. THOROUGHLY MIX 6 OZ. OF THIS PRODUCT TO 10 GALLONS OF WATER TO OBTAIN AT LEAST 600 PPM AVAILABLE CHLORINE. IMMEDIATELY USE THIS PRODUCT IN THE HEMODIALYSATE SYSTEM ALLOWING FOR A MINIMUM CONTACT TIME OF 15 MINUTES OF 20 °C. DRAIN SYSTEM OF THE SANITIZING SOLUTION AND THOROUGHLY RINSE WITH WATER. DISCARD AND DO NOT REUSE THE SPENT SANITIZER. RINSATE MUST BE MONITORED WITH A

SUITABLE TEST KIT TO ENSURE THAT NO AVAILABLE CHLORINE REMAINS IN THE SYSTEM. THIS PRODUCT IS RECOMMENDED FOR DECONTAMINATING SINGLE AND MULTI-PATIENT HEMODIALYSATE SYSTEMS. THIS PRODUCT HAS BEEN SHOWN TO BE AN EFFECTIVE DISINFECTANT (VIRUCIDE, FUNGICIDE, BACTERICIDE, PSEUDOMONICIDE) WHEN TESTED BY AOAC AND EPA TEST METHODS. THIS PRODUCT MAY NOT TOTALLY ELIMINATE ALL VEGETATIVE MIROORGANISMS IN HEMODIALYSATE DELIVERY SYSTEMS DUE TO THEIR CONSTRUCTION AND OR ASSEMBLY, BUT CAN BE RELIED UPON TO REDUCE THE NUMBER OF MICROORGAMISMS TO ACCEPTABLE LEVELS WHEN USED AS DIRECTED. THIS PRODUCT SHOULD BE USED IN A DISINFECTANT PROGRAM WHICH INCLUDES BACTERIOLOGICAL MONITORING OF THE HEMODIALYSATE DELIVERY SYSTEM. THIS PRODUCT IS NOT RECOMMENDED FOR USE IN HEMODIALYSATE OR REVERSE OSMOSIS (RO) MEMBRANES. CONSULT THE GUIDELINES FOR HEMODIALYSATE SYSTEMS WHICH ARE AVAILABLE FROM THE HEPATITIS LABORATORIES, CDC, PHOENIX, AZ 85201. PLEASE NOTE: THIS PRODUCT IS NOT TO BE USED AS A TERMINAL STERILANT HIGH LEVEL DISINFECTANT ON ANY SURFACE OR INSTRUMENT THAT (1) IS INTRODUCED DIRECTLY INTO THE HUMAN BODY, EITHER INTO OR IN CONTACT WITH THE BLOODSTREAM OR NORMALLY STERILE AREAS OF THE BODY, OR (2) CONTACTS INTACT MUCOUS MEMBRANES BUT WHICH DOES NOT ORDINARILY PENETRATE THE BLOOD BARRIER OR OTHERWISE ENTER NORMALLY STERILE AREAS OF THE BODY. THIS PRODUCT MAY BE USED TO PRECLEAN OR DECONTAMINATE CRITICAL OR SEMI-CRITICAL MEDICAL DEVICES PRIOR TO STERILIZATION OR HIGH LEVEL DISINFECTION.

ASPHALT OR SEALED WOOD ROOFS AND SIDINGS

TO CONTROL FUNGUS AND MILDEW, FIRST REMOVE ALL PHYSICAL SOIL BY BRUSHING AND HOSING WITH CLEAN WATER, AND APPLY A 5000 PPM AVAILABLE CHLORINE SOLUTION. MIX 5 OZ. OF THIS PRODUCT PER GALLON OF WATER AND BRUSH OR SPRAY ROOF OR SIDING. AFTER 30 MINUTES, RINSE BY HOSING WITH CLEAN WATER.

BOAT BOTTOMS

TO CONTROL SLIME ON BOAT BOTTOMS, SLING A PLASTIC TARP UNDER BOAT, RETAINING ENOUGH WATER TO COVER THE FOULED BOTTOM AREA, BUT NOT ALLOWING WATER TO ENTER ENCLOSED AREA. THIS ENVELOPE SHOULD CONTAIN APPROXIMATELY 500 GALLONS OF WATER TO A 14 FOOT BOAT. ADD 18 OZ. OF THIS PRODUCT TO THIS WATER TO OBTAIN A 35 PPM AVAILABLE CHLORINE CONCENTRATION. LEAVE IMMERSED FOR 8 TO 12 HOURS. REPEAT AS NECESSARY. DO NOT DISCHARGE THE SOLUTION UNTIL THE FREE CHLORINE LEVEL HAS DROPPED TO 0 PPM, AS DETERMINED BY A SWIMMING POOL TEST KIT.

ARTIFICIAL SAND BEACHES

TO SANITIZE THE SAND, SPRAY A 500 PPM AVAILABLE CHLORINE SOLUTION CONTAINING 5 OZ. OF THIS PRODUCT PER 10 GALLONS OF WATER AT FREQUENT INTERVALS. SMALL AREAS CAN BE SPRINKLED WITH A WATER CAN.

PULP AND PAPER MILL PROCESS WATER SYSTEMS:

SLUG FEED METHOD – INITIAL DOSE: WHEN SYSTEM IS NOTICEABLY FOULED, APPLY 52 TO 104 OZ. OF THIS PRODUCT PER 10,000 GALLONS OF WATER IN THE SYSTEM TO OBTAIN FROM 5 TO 10 PPM AVAILABLE CHLORINE. REPEAT UNTIL CONTROL IS ACHIEVED. SUBSEQUENT DOSE: WHEN MICROBIAL CONTROL IS EVIDENT, ADD 11 OZ. OF THIS PRODUCT PER 10,000 GALLONS OF WATER IN THE SYSTEM DAILY, OR AS NEEDED TO MAINTAIN CONTROL AND KEEP THE CHLORINE RESIDUAL AT 1 PPM. BADLY FOULED SYSTEMS MUST BE CLEANED BEFORE TREATMENT IS BEGUN.

INTERMITTENT FEED METHOD – INITIAL DOSE: WHEN SYSTEM IS NOTICEABLY FOULED, APPLY 52 TO 104 OZ. OF THIS PRODUCT PER 10,000 GALLONS OF WATER IN THE SYSTEM TO OBTAIN 5 TO 10 PPM AVAILABLE CHLORINE. APPLY HALF (OR 0.3, 0.25, OR 0.2) OF THIS INITIAL DOSE WHEN HALF (OR 0.3, 0.25, OR 0.2) OF THE WATER IN THE SYSTEM HAS BEEN LOST BY BLOWDOWN. SUBSEQUENT DOSE: WHEN MICROBIAL CONTROL IS EVIDENT, ADD 11 OZ. OF THIS PRODUCT PER 10,000 GALLONS OF WATER IN THE SYSTEM TO OBTAIN A 1 PPM RESIDUAL. APPLY HALF (OR 0.3, 0.25, OR 0.2) OF THIS INITIAL DOSE WHEN HALF (OR 0.3, 0.25, OR 0.2) OF THE WATER IN THE SYSTEM HAS BEEN LOST BY BLOWDOWN. BADLY FOULED SYSTEMS MUST BE CLEANED BEFORE TREATMENT IS BEGUN.

CONTINUOUS FEED METHOD – INITIAL DOSE: WHEN THE SYSTEM IS NOTICEABLY FOULED, APPLY 52 TO 104 OZ. OF THIS PRODUCT PER 10,000 GALLONS OF WATER IN THE SYSTEM TO OBTAIN 5 TO 10 PPM AVAILABLE CHLORINE. SUBSEQUENT DOSE: MAINTAIN THIS TREATMENT LEVEL BY STARTING A CONTINUOUS FEED OF 1 OZ. OF THIS PRODUCT PER 10,000 GALLONS OF WATER LOST BY BLOWDOWN TO MAINTAIN A 1 PPM RESIDUAL. BADLY FOULED SYSTEMS MUST BE CLEANED BEFORE TREATMENT IS BEGUN.

BRIQUETTES OR TABLETS – INITIALLY SLUG DOSE THE SYSTEM WITH 52 OZ. OF THIS PRODUCT PER 10,000 GALLONS OF WATER IN THE SYSTEM. BADLY FOULED SYSTEMS MUST BE CLEANED BEFORE TREATMENT IS BEGUN. SUBSEQUENT DOSE: WHEN MICROBIAL CONTROL IS EVIDENT, ADD 11 OZ. OF THIS PRODUCT PER 10,000 GALLONS OF WATER IN THE SYSTEM DAILY, OR AS NEEDED TO MAINTAIN CONTROL AND KEEP THE CHLORINE RESIDUAL AT 1 PPM. BADLY FOULED SYSTEMS MUST BE CLEANED BEFORE TREATMENT IS BEGUN.

EMERGENCY DISINFECTION AFTER MAIN BREAKS:

ACCEPTED

MAINS – BEFORE ASSEMBLY OF THE REPAIRED SECTION, FLUSH OUT MUD AND SOIL. PERMIT A WATER FLOW OF AT LEAST 2.5 FEET PER MINUTE TO CONTINUE UNDER PRESSURE WHILE INJECTING THIS PRODUCT BY MEANS OF A HYPOCLORINATOR. STOP WATER FLOW WHEN

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MASTER LABEL

A CHLORINE RESIDUAL TEST OF 50 PPM IS OBTAINED AT THE LOW PRESSURE END OF THE NEW MAIN SECTION AFTER A 24 HOUR RETENTION TIME. WHEN CHLORINATION IS COMPLETED, THE SYSTEM MUST BE FLUSHED FREE OF ALL HEAVILY CHLORINATED WATER.

EMERGENCY DISINFECTION AFTER DROUGHTS:

SUPPLEMENTARY WATER SUPPLIES – GRAVITY OR MECHANICAL HYPOCHLORITE FEEDERS SHOULD BE SET UP ON A SUPPLEMENTARY LINE TO DOSE THE WATER TO A MINIMUM CHLORINE RESIDUAL OF 0.2 PPM AFTER A 20 MINUTE CONTACT TIME. USE A CHLORINE TEST KIT.

WATER SHIPPED IN BY TANKS, TANK CARS, TRUCKS, ETC. – THOROUGHLY CLEAN ALL CONTAINERS AND EQUIPMENT. SPRAY A 500 PPM AVAILABLE CHLORINE SOLUTION AND RINSE WITH POTABLE WATER AFTER 5 MINUTES. THE SOLUTION IS MADE BY MIXING 5 OZ. OF THIS PRODUCT FOR EACH 10 GALLONS OF WATER. DURING THE FILLING OF THE CONTAINERS, DOSE WITH SUFFICIENT AMOUNTS OF THIS PRODUCT TO PROVIDE AT LEAST A 0.2 PPM CHLORINE RESIDUAL. USE A CHLORINE TEST KIT.

EMERGENCY DISINFECTION AFTER FIRES:

CROSS CONNECTIONS OR EMERGENCY CONNECTIONS – HYPOCHLORINATION OR GRAVITY FEED EQUIPMENT SHOULD BE SET UP NEAR THE INTAKE OF THE UNTREATED WATER SUPPLY. APPLY SUFFICIENT PRODUCT TO GIVE A CHLORINE RESIDUAL OF AT LEAST 0.1 TO 0.2 PPM AT THE POINT WHERE THE UNTREATED SUPPLY ENTERS THE REGULAR DISTRIBUTION SYSTEM. USE A CHLORINE TEST KIT.

BEFORE TREATMENT IS BEGUN.

CONTINUOUS FEED METHOD – INITIAL DOSE: WHEN THE SYSTEM IS NOTICEABLY FOULED, APPLY 52 TO 104 OZ. OF THIS PRODUCT PER 10,000 GALLONS OF WATER IN THE SYSTEM TO OBTAIN 5 TO 10 PPM AVAILABLE CHLORINE. SUBSEQUENT DOSE: MAINTAIN THIS TREATMENT LEVEL BY STARTING A CONTINUOUS FEED OF 1 OZ. OF THIS PRODUCT PER 10,000 GALLONS OF WATER LOST BY BLOWDOWN TO MAINTAIN A 1 PPM RESIDUAL. BADLY FOULED SYSTEMS MUST BE CLEANED BEFORE TREATMENT IS BEGUN.

BRIQUETTES OR TABLETS – INITIALLY SLUG DOSE THE SYSTEM WITH 52 OZ. OF THIS PRODUCT PER 10,000 GALLONS OF WATER IN THE SYSTEM. BADLY FOULED SYSTEMS MUST BE CLEANED BEFORE TREATMENT IS BEGUN. SUBSEQUENT DOSE: WHEN MICROBIAL CONTROL IS EVIDENT, ADD 11 OZ. OF THIS PRODUCT PER 10,000 GALLONS OF WATER IN THE SYSTEM DAILY, OR AS NEEDED TO MAINTAIN CONTROL AND KEEP THE CHLORINE RESIDUAL AT 1 PPM. BADLY FOULED SYSTEMS MUST BE CLEANED BEFORE TREATMENT IS BEGUN.

EMERGENCY DISINFECTION AFTER FLOODS:

WELLS – THOROUGHLY FLUSH CONTAMINATED CASING WITH A 500 PPM AVAILABLE CHLORINE SOLUTION. PREPARE THIS SOLUTION BY MIXING 6 OZ. OF THIS PRODUCT WITH 10 GALLONS OF WATER. BACKWASH THE WELL TO INCREASE YIELD AND REDUCE TURBIDITY, ADDING SUFFICIENT CHLORINATING SOLUTION TO THE BACKWASH TO PRODUCE A 10 PPM AVAILABLE CHLORINE RESIDUAL, AS DETERMINED BY A CHLORINE TEST KIT. AFTER THE TURBIDITY HAS BEEN REDUCED AND THE CASING HAS BEEN TREATED, ADD SUFFICIENT CHLORINATING SOLUTION TO PRODUCE A 50 PPM AVAILABLE CHLORINE RESIDUAL. AGITATE THE WELL WATER FOR SEVERAL HOURS AND TAKE A REPRESENTATIVE WATER SAMPLE. RETREAT WELL IF WATER SAMPLES ARE BIOLOGICALLY UNACCEPTABLE.

RESERVOIRS – IN CASE OF CONTAMINATING BY OVERFLOWING STREAMS, ESTABLISH HYPOCHLORINATING STARTING UPSTREAM OF THE RESERVOIR. CHLORINATE THE INLET WATER UNTIL THE ENTIRE RESERVOIR OBTAINS A 0.2 PPM AVAILABLE CHLORINE RESIDUAL, AS DETERMINED BY A SUITABLE CHLORINE TEST KIT. IN CASE OF CONTAMINATION FROM SURFACE DRAINAGE, APPLY SUFFICIENT PRODUCT DIRECTLY TO THE RESERVOIR TO OBTAIN A 0.2 PPM AVAILABLE CHLORINE RESIDUAL IN ALL PARTS OF THE RESERVOIR.

BASINS, TANKS, FLUMES, ETC. – THOROUGHLY CLEAN ALL EQUIPMENT, THEN APPLY 26 OZ. OF PRODUCT PER 5 CU. FT. OF WATER TO OBTAIN 500 PPM AVAILABLE CHLORINE RESIDUAL, AS DETERMINED BY A SUITABLE TEST KIT. AFTER 24 HOURS, DRAIN, FLUSH, AND RETURN TO SERVICE. IF THE PREVIOUS METHOD IS NOT SUITABLE, SPRAY OR FLUSH THE EQUIPMENT WITH A SOLUTION CONTAINING 6 OZ. OF THIS PRODUCT FOR EACH 5 GALLONS OF WATER (1000 PPM AVAILABLE CHLORINE). ALLOW TO STAND FOR 2 TO 4 HOURS, FLUSH AND RETURN TO SERVICE.

FILTERS – WHEN THE SAND FILTER NEEDS REPLACEMENT, APPLY 104 OZ. OF THIS PRODUCT FOR EACH 150 TO 200 CUBIC FEET OF SAND. WHEN THE FILTER IS SEVERELY CONTAMINATED, ADDITIONAL PRODUCT SHOULD BE DISTRIBUTED OVER THE SURFACE AT THE RATE OF 104 OZ. PER 20 SQ. FT. WATER SHOULD STAND AT A DEPTH OF 1 FOOT ABOVE THE SURFACE OF THE FILTER BED FOR 4 TO 24 HOURS. WHEN FILTER BEDS CAN BE BACKWASHED OF MUD AND SILT, APPLY 80 OZ. OF THIS PRODUCT PER EACH 50 SQ. FT., ALLOWING THE WATER TO STAND AT A DEPTH OF 1 FOOT ABOVE THE FILTER SAND. AFTER 30 MINUTES, DRAIN WATER TO THE LEVEL OF THE FILTER. AFTER 4 TO 6 HOURS, DRAIN, AND PROCEED WITH NORMAL BACKWASHING.

DISTRIBUTION SYSTEM – FLUSH REPAIRED OR REPLACED SECTION WITH WATER. ESTABLISH A HYPOCHLORINATING STATION AND APPLY SUFFICIENT PRODUCT UNTIL A CONSISTENT AVAILABLE CHLORINE RESIDUAL OF AT LEAST 10 PPM REMAINS AFTER A 24 HOUR RETENTION TIME. USE A CHLORINE TEST KIT.

References

Seacoast Utilities Authority
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Palm Beach Gardens, FL 33418
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561-627-2900
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Chlorine & Sodium Hydroxide 50%

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lgray@fayettecountyga.gov
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Rick Struckmeyer
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Sulfuric Acid, Citric Acid, Sodium Hydroxide 25%, Sodium Hydroxide 50%, Sodium Percarbonate

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Sodium Hypochlorite, Chlorine, Sodium Silca Fluoride, Calcium Hypochlorite

CITY OF OLATHE, KANSAS
AFFIDAVIT

STATE OF Florida)
) SS.
COUNTY OF Osceola)

Sara Terry ~~of the City~~ of Municipal Contract Specialist with Brenntag Mid-South, Inc.
(Name of Individual)

County of Osceola, State of Florida,
being duly sworn on her or his oath, states;

1. That I am the Municipal Contract Specialist (Title) of Brenntag Mid-South, Inc. (Firm Name), and have been authorized by said firm to make this affidavit on its behalf;

2. **(Check the box the applies)**
☑ No officer, agent or employee of the City of Olathe, Kansas is financially interested, directly or indirectly, in what firm is offering to sell to the City pursuant to any solicitation issued by the City of Olathe;
OR
☐ The following officer(s), agent(s), or employee(s) of the City of Olathe would be financially interested in or receive a benefit from the profit or payments of any contract, job work, or service provided to the City of Olathe: (list all such officers, agents, or City employees on a separate sheet);

3. **(Check the box that applies)**
☑ If firm were awarded any contract, job work, or service for the City of Olathe, Kansas, no officer, agent or employee of the City would be financially interested in or receive any benefit from the profit or payments of such;
OR
☐ The following officer(s), agent(s), or employee(s) of the City of Olathe would be financially interested in or receive a benefit from the profit or payments of any contract, job work, or service provided to the City of Olathe: (list all such officers, agents, or City employees on a separate sheet);

4. Firm has not participated in collusion or committed any act in restraint of trade, directly or indirectly, which bears upon anyone's response or lack of response any solicitation issued by the City of Olathe.

Brenntag Mid-South, Inc. (Firm Name)

By: Sara Terry (Signature)

Sara Terry (Printed Name)

Municipal Contract Specialist (Title)

Mailing Address 5200 Stillwell Road

City, State, Zip Code Kansas City, MO 64120

Phone 828-729-7557 Fax N/A

Email BMS-Bids@brenntag.com

Federal Tax ID # 61-0504545

Subscribed and sworn before me this 18th day of February 2025

NOTARY PUBLIC in and for the County of Osceola

State of Florida

My commission expires: 1/11/2027

SEAL

Notary Public State of Florida
Jeannie Ubach
My Commission HH 348941
Expires 1/11/2027

OLATHE
KANSAS

COOPERATIVE PURCHASING BY OTHER INSTITUTIONS UNDER THIS CONTRACT

If the City of Olathe awarded you the proposed Contract, you hereby agree to sell, under the prices and terms of this Contract, to any Municipal, County, Public Utility, Hospital, or Educational Institution having membership in an affiliated chapter of the National Institute of Governmental Purchasing (NIGP) and located within the Greater Kansas City Metropolitan Trade Area? (All deliveries are to be F.O.B. Destination and there shall be no obligations on the part of any member of such chapter to utilize this Contract).

(Use the tab key to navigate through the fields).

(Check One) Yes ☑ No ☐ Minimum order if, applicable $ 600.00

Vendor Name:

Brenntag Mid-South, Inc.

Signature/ Date:

Sara Terry 2/18/2025

General Contact Information:

Bid/Contracts/Renewals -
Sara Terry
bms-bids@brenntag.com
828-729-7557

Place an order –
Peggy Forrester, CSR
peggy.forrester@brenntag.com
417-887-3663 ext.5226

Account Manager –
Jessica Barron
jessica.barron @brenntag.com
270-724-3601

Local Facility -
Kansas City South Branch
5200 Stillwell Road
Kansas City, MO 64120

Remittance –
PO Box 7410714
Chicago, IL 60674
mid-south.accountremittance@brenntag.com
Preferred method of payment is ACH
– account information available upon request.

BRENNTAG

MEMORANDUM

TO: **To Whom It May Concern**

FROM: **Chad Massie**

DATE: **February 24, 2025**

SUBJECT: **Authority to Sign**

This is to advise that Sara Terry, in her capacity as Municipal Contract Specialist, has authority to sign Bid Documents on behalf of Brenntag Mid-South, Inc.

Chad A. Massie, President
Brenntag Essentials Mid-South

Brenntag Mid-South, Inc. CORPORATE SEAL KENTUCKY

State of Kentucky
County of Henderson

Subscribed and sworn to before me by Chad Massie, personally known to me, on this the 24th day of February 2025.

Sandra L. Littrell, Notary Public
My Commission Expires: 1/22/26

Sandra L. Littrell
Notary Public, KY State at Large
KYNP # 42481
My Commission Expires: 1/22/26

Brenntag Mid-South, Inc.
1405 Highway 136 West (42420)
PO Box 20
Henderson, KY 42419-0020

BRENNTAG

SAFETY DATA SHEET

1. Identification

Other means of identification None known.

Product identifier **SODIUM HYDROXIDE 50% DIA NSF**

Recommended use ALL PROPER AND LEGAL PURPOSES

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Company name Brenntag Mid-South, Inc.

Address 1405 Highway 136, West
Henderson, KY 42420

Telephone 270-830-1222

E-mail Not available.

Emergency phone number 800-424-9300 CHEMTREC

2. Hazard(s) identification

Physical hazards Not classified.

Health hazards

Acute toxicity, oral	Category 3
Skin corrosion/irritation	Category 1
Serious eye damage/eye irritation	Category 1
Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation

Environmental hazards Not classified.

OSHA defined hazards Not classified.

Label elements

Signal word Danger

Hazard statement Toxic if swallowed. Causes severe skin burns and eye damage. Causes serious eye damage. May cause respiratory irritation.

Precautionary statement

Prevention Do not breathe dust or mists. Avoid breathing mist/vapors. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection.

Response If swallowed: Immediately call a poison center/doctor. Rinse mouth. If swallowed: Rinse mouth. Do NOT induce vomiting. If inhaled: Remove person to fresh air and keep comfortable for breathing. 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/doctor. Wash contaminated clothing before reuse. Call a POISON CENTER or doctor/physician if you feel unwell.

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

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

Hazard(s) not otherwise classified (HNOC) None known.

Supplemental information None.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
SODIUM HYDROXIDE (NA(OH))		1310-73-2	50 - 60

4. First-aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a poison center or doctor/physician if you feel unwell.
Skin contact	Take off immediately all contaminated clothing. Rinse skin with water/shower. Call a physician or poison control center immediately. Chemical burns must be treated by a physician. Wash contaminated clothing before reuse.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician or poison control center immediately.
Ingestion	Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Do not use mouth-to-mouth method if victim ingested the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.
Most important symptoms/effects, acute and delayed	Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause respiratory irritation.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Chemical burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim warm. Keep victim under observation. Symptoms may be delayed.
General information	If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

5. Fire-fighting measures

Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire fighting equipment/instructions	Move containers from fire area if you can do so without risk.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Avoid breathing mist/vapors. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.
Environmental precautions	Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling	Do not get in eyes, on skin, or on clothing. Do not taste or swallow. Avoid breathing mist/vapors. Avoid prolonged exposure. When using, do not eat, drink or smoke. Provide adequate ventilation. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Observe good industrial hygiene practices.
Conditions for safe storage, including any incompatibilities	Store locked up. Store in tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Permissible Exposure Limits (PEL) for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
SODIUM HYDROXIDE (NA(OH)) (CAS 1310-73-2)	PEL	2 mg/m3

US. ACGIH Threshold Limit Values (TLV)

Components	Type	Value
SODIUM HYDROXIDE (NA(OH)) (CAS 1310-73-2)	Ceiling	2 mg/m3

NIOSH. Immediately Dangerous to Life or Health (IDLH) Values, as amended

Components	Type	Value
SODIUM HYDROXIDE (NA(OH)) (CAS 1310-73-2)	IDLH	10 mg/m3

US. NIOSH: Pocket Guide to Chemical Hazards Recommended Exposure Limits (REL)

Components	Type	Value
SODIUM HYDROXIDE (NA(OH)) (CAS 1310-73-2)	Ceiling	2 mg/m3

Biological limit values No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls Good general ventilation 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. Eye wash facilities and emergency shower must be available when handling this product.

Individual protection measures, such as personal protective equipment

The following are recommendations for Personnel Protective Equipment (PPE). The employer/user of this product must perform a Hazard Assessment of the workplace according to OSHA regulations 29 CFR 1910.132 to determine the appropriate PPE for use while performing any task involving potential exposure to this product.

Eye/face protection Wear safety glasses with side shields (or goggles) and a face shield.

Skin protection

Hand protection Wear appropriate chemical resistant gloves.

Other Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

Respiratory protection Chemical respirator with organic vapor cartridge.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations Keep away from food and drink. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Physical state Liquid.

Form Liquid.

Color COLORLESS TO SLIGHTLY COLORED

Odor ODORLESS

Odor threshold Not available.

pH 14

Melting point/freezing point 58 °F (14.44 °C)

Initial boiling point and boiling range 1371.2 °F (744 °C) estimated

Flash point Not available.

Evaporation rate Not available.

Flammability (solid, gas) Not applicable.

Upper/lower flammability or explosive limits

Explosive limit - lower (%) Not available.

Explosive limit - upper (%)	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Density	12.76 lbs/gal 1.53 g/ml
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.
Percent volatile	50 % estimated
Specific gravity	1.53

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Contact with incompatible materials.
Incompatible materials	Strong acids.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	May cause irritation to the respiratory system. Prolonged inhalation may be harmful.
Skin contact	Causes severe skin burns.
Eye contact	Causes serious eye damage.
Ingestion	Toxic if swallowed. Causes digestive tract burns.
Symptoms related to the physical, chemical and toxicological characteristics	Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause respiratory irritation.

Information on toxicological effects

Acute toxicity In high concentrations, vapors are anesthetic and may cause headache, fatigue, dizziness and central nervous system effects. Toxic if swallowed.

Product	Species	Test Results
SODIUM HYDROXIDE 50% DIA NSF		
Acute		
Dermal		
ATEmix		2700 mg/kg bw
Oral		
ATEmix		280 mg/kg bw

Components	Species	Test Results
SODIUM HYDROXIDE (NA(OH)) (CAS 1310-73-2)		
Acute		
Dermal		
LD50	Rabbit	1350 mg/kg

Components	Species	Test Results
Oral		
LD50	Rat	140 - 340 mg/kg

Skin corrosion/irritation Causes severe skin burns and eye damage.

Serious eye damage/eye irritation Causes serious eye damage.

Respiratory or skin sensitization

Respiratory sensitization Due to partial or complete lack of data the classification is not possible.

Skin sensitization Due to partial or complete lack of data the classification is not possible.

Germ cell mutagenicity Due to partial or complete lack of data the classification is not possible.

Carcinogenicity Due to partial or complete lack of data the classification is not possible.

IARC Monographs. Overall Evaluation of Carcinogenicity

Not listed.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

US. National Toxicology Program (NTP) Report on Carcinogens

Not listed.

Reproductive toxicity Due to partial or complete lack of data the classification is not possible.

Specific target organ toxicity - single exposure May cause respiratory irritation.

Specific target organ toxicity - repeated exposure Due to partial or complete lack of data the classification is not possible.

Aspiration hazard Due to partial or complete lack of data the classification is not possible.

Chronic effects Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity The 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.

Components		Species	Test Results
SODIUM HYDROXIDE (NA(OH)) (CAS 1310-73-2)			
Aquatic			
Acute			
Crustacea	EC50	Water flea (Ceriodaphnia dubia)	34.59 - 47.13 mg/l, 48 hours
Fish	LC50	Western mosquitofish (Gambusia affinis)	125 mg/l, 96 hours

Persistence and degradability No data is available on the degradability of this product.

Bioaccumulative potential No data available.

Mobility in soil No data available.

Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions Dispose of this material and its container to hazardous or special waste collection point. Incinerate the material under controlled conditions in an approved incinerator. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations Dispose in accordance with all applicable regulations.

Hazardous waste code D002: Waste Corrosive material [pH ≤2 or =>12.5, or corrosive to steel]
The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT

UN number	UN1824
UN proper shipping name	SODIUM HYDROXIDE, SOLUTION
Transport hazard class(es)	
Class	8
Subsidiary hazard	-
Packing group	II
Environmental hazards	
Marine pollutant	No.
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
ERG number	154

Transport information on packaging may be different from that listed. Transportation information on packaging may be different from that listed. Information is for reference purposes only. The shipper is legally required to provide, certify, and receive training on, the transportation data for any shipment. Transportation information on packaging may be different from that listed. Information is for reference purposes only. The shipper is legally required to provide, certify, and receive training on, the transportation data for any shipment. Transportation information on packaging may be different from that listed.

DOT

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Toxic Substances Control Act (TSCA)

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

SODIUM HYDROXIDE (NA(OH)) (CAS 1310-73-2) Listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical	Yes
Classified hazard categories	Acute toxicity (any route of exposure) Skin corrosion or irritation Serious eye damage or eye irritation Specific target organ toxicity (single or repeated exposure)

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA)	Not regulated.

US state regulations

California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins. For more information go to www.P65Warnings.ca.gov.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Industrial Chemicals (AICIS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date	04-13-2016
Revision date	07-01-2024
Version #	10
HMIS® ratings	Health: 3 Flammability: 0 Physical hazard: 0
NFPA ratings	Health: 3 Flammability: 0 Instability: 1
Disclaimer	While Brenntag believes the information contained herein to be accurate, Brenntag makes no representation or warranty, express or implied, regarding, and assumes no liability for, the accuracy or completeness of the information. The Buyer assumes all responsibility for handling, using and/or reselling the Product in accordance with applicable federal, state, and local law. This SDS shall not in any way limit or preclude the operation and effect of any of the provisions of Brenntag's terms and conditions of sale.
Revision information	Hazard(s) identification: Prevention Hazard(s) identification: Response Physical and chemical properties: Color

SAFETY DATA SHEET

BRENNTAG

1. Identification

Other means of identification None known.

Product identifier **CITRIC ACID 50% FCC KOSH NSF**

Recommended use ALL PROPER AND LEGAL PURPOSES

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Company name Brenntag Mid-South, Inc.

Address 1405 Highway 136, West
Henderson, KY 42420

Telephone 270-830-1222

E-mail Not available.

Emergency phone number 800-424-9300 CHEMTREC

2. Hazard(s) identification

Physical hazards	Not classified.	
Health hazards	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 1
	Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation
Environmental hazards	Not classified.	
OSHA defined hazards	Not classified.	

Label elements

Signal word Danger

Hazard statement Causes skin irritation. Causes serious eye damage. May cause respiratory irritation.

Precautionary statement

Prevention Avoid breathing mist/vapors. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area. Wear eye protection/face protection. Wear protective gloves.

Response If inhaled: Remove person to fresh air and keep comfortable for breathing. 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/doctor. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse.

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

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

Hazard(s) not otherwise classified (HNOC) None known.

Supplemental information None.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
1,2,3-PROPANETRICARBOXYLIC ACID, 2-HYDROXY-		77-92-9	50
Other components below reportable levels			50

4. First-aid measures

Inhalation
Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a poison center or doctor/physician if you feel unwell.

Skin contact
Remove contaminated clothing. Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention. Wash contaminated clothing before reuse.

Eye contact
Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.

Ingestion
Rinse mouth. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed
Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause respiratory irritation. Skin irritation. May cause redness and pain.

Indication of immediate medical attention and special treatment needed
Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.

General information
If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media
Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).

Unsuitable extinguishing media
Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical
During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for firefighters
Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Fire fighting equipment/instructions
Move containers from fire area if you can do so without risk.

Specific methods
Use standard firefighting procedures and consider the hazards of other involved materials.

General fire hazards
No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures
Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Avoid breathing mist/vapors. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up
Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.

Environmental precautions
Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling
Do not get this material in contact with eyes. Avoid breathing mist/vapors. Avoid contact with eyes, skin, and clothing. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities
Store locked up. Store in tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits	No exposure limits noted for ingredient(s).
Biological limit values	No biological exposure limits noted for the ingredient(s).
Appropriate engineering controls	Good general ventilation 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. Provide eyewash station and safety shower.

Individual protection measures, such as personal protective equipment

The following are recommendations for Personnel Protective Equipment (PPE). The employer/user of this product must perform a Hazard Assessment of the workplace according to OSHA regulations 29 CFR 1910.132 to determine the appropriate PPE for use while performing any task involving potential exposure to this product.

Eye/face protection	Chemical respirator with organic vapor cartridge and full facepiece.
Skin protection	
Hand protection	Wear appropriate chemical resistant gloves.
Other	Wear appropriate chemical resistant clothing.
Respiratory protection	Chemical respirator with organic vapor cartridge and full facepiece.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance	
Physical state	Liquid.
Form	Liquid.
Color	CLEAR COLORLESS
Odor	ODORLESS TO MILD
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	212 °F (100 °C) estimated
Flash point	Not available.
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.

Other information

Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.
Percent volatile	50 % estimated

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	May cause irritation to the respiratory system.
Skin contact	Causes skin irritation.
Eye contact	Causes serious eye damage.
Ingestion	Expected to be a low ingestion hazard.
Symptoms related to the physical, chemical and toxicological characteristics	Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause respiratory irritation. Skin irritation. May cause redness and pain.

Information on toxicological effects

Acute toxicity Not known.

Product	**Species**	**Test Results**
CITRIC ACID 50% FCC KOSH NSF		
Acute		
Oral		
ATEmix		5000 mg/kg bw

Components	**Species**	**Test Results**
1,2,3-PROPANETRICARBOXYLIC ACID, 2-HYDROXY- (CAS 77-92-9)		
Acute		
Oral		
LD50	Mouse	5040 mg/kg
	Rat	3000 - 12000 mg/kg
		6730 mg/kg

Skin corrosion/irritation	Causes skin irritation.
Serious eye damage/eye irritation	Causes serious eye damage.

Respiratory or skin sensitization

Respiratory sensitization	Due to partial or complete lack of data the classification is not possible.
Skin sensitization	Due to partial or complete lack of data the classification is not possible.
Germ cell mutagenicity	Due to partial or complete lack of data the classification is not possible.
Carcinogenicity	Due to partial or complete lack of data the classification is not possible.

IARC Monographs. Overall Evaluation of Carcinogenicity

Not listed.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

US. National Toxicology Program (NTP) Report on Carcinogens

Not listed.

Reproductive toxicity	Due to partial or complete lack of data the classification is not possible.
Specific target organ toxicity - single exposure	May cause respiratory irritation.
Specific target organ toxicity - repeated exposure	Due to partial or complete lack of data the classification is not possible.
Aspiration hazard	Due to partial or complete lack of data the classification is not possible.

12. Ecological information

Ecotoxicity	The 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.
Persistence and degradability	No data is available on the degradability of any ingredients in the mixture.

Bioaccumulative potential

Partition coefficient n-octanol / water (log Kow)

1,2,3-PROPANETRICARBOXYLIC ACID, 2-HYDROXY-	-1.64

Mobility in soil	No data available.
Other adverse effects	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner.
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT

UN number	UN3265
UN proper shipping name	CORROSIVE LIQUID,ACIDIC,ORGANIC,N.O.S. (CITRIC ACID)
Transport hazard class(es)	
Class	8
Subsidiary hazard	-
Packing group	III
Environmental hazards	
Marine pollutant	No.
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

Transportation information on packaging may be different from that listed. Information is for reference purposes only. The shipper is legally required to provide, certify, and receive training on, the transportation data for any shipment. Transportation information on packaging may be different from that listed. Information is for reference purposes only. The shipper is legally required to provide, certify, and receive training on, the transportation data for any shipment. Transportation information on packaging may be different from that listed.

DOT

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Toxic Substances Control Act (TSCA)

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical Yes

Classified hazard categories
Skin corrosion or irritation
Serious eye damage or eye irritation
Specific target organ toxicity (single or repeated exposure)

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

US state regulations

California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins. For more information go to www.P65Warnings.ca.gov.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Industrial Chemicals (AICIS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No

Country(s) or region	Inventory name	On inventory (yes/no)*
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 09-14-2021

Revision date 01-24-2025

Version # 08

HMIS® ratings
Health: 3
Flammability: 0
Physical hazard: 0

NFPA ratings
Health: 3
Flammability: 0
Instability: 0

Disclaimer
While Brenntag believes the information contained herein to be accurate, Brenntag makes no representation or warranty, express or implied, regarding, and assumes no liability for, the accuracy or completeness of the information. The Buyer assumes all responsibility for handling, using and/or reselling the Product in accordance with applicable federal, state, and local law. This SDS shall not in any way limit or preclude the operation and effect of any of the provisions of Brenntag's terms and conditions of sale.

Revision information
Hazard(s) identification: Response
Toxicological Information: Toxicological Property Data
Toxicological information: Skin contact
Disposal considerations: Waste from residues / unused products

SAFETY DATA SHEET

BRENNTAG

1. Identification

Other means of identification None known.

Product identifier **CITRIC ACID 50% FCC KOSH NSF 1-WAY BMS**

Recommended use ALL PROPER AND LEGAL PURPOSES

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Company name Brenntag Mid-South, Inc.

Address 1405 Highway 136, West
Henderson, KY 42420

Telephone 270-830-1222

E-mail Not available.

Emergency phone number 800-424-9300 CHEMTREC

2. Hazard(s) identification

Physical hazards	Not classified.	
Health hazards	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 1
	Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation
Environmental hazards	Not classified.	
OSHA defined hazards	Not classified.	

Label elements

Signal word Danger

Hazard statement Causes skin irritation. Causes serious eye damage. May cause respiratory irritation.

Precautionary statement

Prevention Avoid breathing mist/vapors. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area. Wear eye protection/face protection. Wear protective gloves.

Response If swallowed: Rinse mouth. Do NOT induce vomiting. If inhaled: Remove person to fresh air and keep comfortable for breathing. 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/doctor. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse.

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

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

Hazard(s) not otherwise classified (HNOC) None known.

Supplemental information None.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
1,2,3-PROPANETRICARBOXYLIC ACID, 2-HYDROXY-		77-92-9	50
Other components below reportable levels			50

4. First-aid measures

Inhalation
Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a poison center or doctor/physician if you feel unwell.

Skin contact
Remove contaminated clothing. Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention. Wash contaminated clothing before reuse.

Eye contact
Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.

Ingestion
Rinse mouth. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed
Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause respiratory irritation. Skin irritation. May cause redness and pain.

Indication of immediate medical attention and special treatment needed
Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.

General information
If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media
Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).

Unsuitable extinguishing media
Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical
During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for firefighters
Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Fire fighting equipment/instructions
Move containers from fire area if you can do so without risk.

Specific methods
Use standard firefighting procedures and consider the hazards of other involved materials.

General fire hazards
No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures
Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Avoid breathing mist/vapors. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up
Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.

Environmental precautions
Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling
Do not get this material in contact with eyes. Avoid breathing mist/vapors. Avoid contact with eyes, skin, and clothing. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities
Store locked up. Store in tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits	No exposure limits noted for ingredient(s).
Biological limit values	No biological exposure limits noted for the ingredient(s).
Appropriate engineering controls	Good general ventilation 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. Provide eyewash station and safety shower.

Individual protection measures, such as personal protective equipment

The following are recommendations for Personnel Protective Equipment (PPE). The employer/user of this product must perform a Hazard Assessment of the workplace according to OSHA regulations 29 CFR 1910.132 to determine the appropriate PPE for use while performing any task involving potential exposure to this product.

Eye/face protection	Chemical respirator with organic vapor cartridge and full facepiece.
Skin protection	
Hand protection	Wear appropriate chemical resistant gloves.
Other	Wear appropriate chemical resistant clothing.
Respiratory protection	Chemical respirator with organic vapor cartridge and full facepiece.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance	
Physical state	Liquid.
Form	Liquid.
Color	CLEAR COLORLESS
Odor	ODORLESS TO MILD
Odor threshold	Not available.
pH	1.7
Melting point/freezing point	10 °F (-12.22 °C)
Initial boiling point and boiling range	212 °F (100 °C) estimated
Flash point	Not available.
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.

Other information

Density	10.32 lbs/gal 1.24 g/ml
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.
Percent volatile	50 % estimated
Specific gravity	1.24

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	May cause irritation to the respiratory system.
Skin contact	Causes skin irritation.
Eye contact	Causes serious eye damage.
Ingestion	Expected to be a low ingestion hazard.
Symptoms related to the physical, chemical and toxicological characteristics	Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause respiratory irritation. Skin irritation. May cause redness and pain.

Information on toxicological effects

Acute toxicity Not known.

Product	**Species**	**Test Results**
CITRIC ACID 50% FCC KOSH NSF 1-WAY BMS		
Acute		
Oral		
ATEmix		5000 mg/kg bw

Components	**Species**	**Test Results**
1,2,3-PROPANETRICARBOXYLIC ACID, 2-HYDROXY- (CAS 77-92-9)		
Acute		
Oral		
LD50	Mouse	5040 mg/kg
	Rat	3000 - 12000 mg/kg
		6730 mg/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation	Causes skin irritation.
Serious eye damage/eye irritation	Causes serious eye damage.

Respiratory or skin sensitization

Respiratory sensitization	Due to partial or complete lack of data the classification is not possible.
Skin sensitization	Due to partial or complete lack of data the classification is not possible.
Germ cell mutagenicity	Due to partial or complete lack of data the classification is not possible.

Carcinogenicity Due to partial or complete lack of data the classification is not possible.

IARC Monographs. Overall Evaluation of Carcinogenicity

Not listed.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

US. National Toxicology Program (NTP) Report on Carcinogens

Not listed.

Reproductive toxicity Due to partial or complete lack of data the classification is not possible.

Specific target organ toxicity - single exposure May cause respiratory irritation.

Specific target organ toxicity - repeated exposure Due to partial or complete lack of data the classification is not possible.

Aspiration hazard Due to partial or complete lack of data the classification is not possible.

12. Ecological information

Ecotoxicity The 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.

Persistence and degradability No data is available on the degradability of this product.

Bioaccumulative potential

Partition coefficient n-octanol / water (log Kow)

1,2,3-PROPANETRICARBOXYLIC ACID, 2-HYDROXY-	-1.64

Mobility in soil No data available.

Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations Dispose in accordance with all applicable regulations.

Hazardous waste code The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner.

Contaminated packaging Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT

Not regulated as dangerous goods.

Transport information on packaging may be different from that listed. Transportation information on packaging may be different from that listed. Information is for reference purposes only. The shipper is legally required to provide, certify, and receive training on, the transportation data for any shipment. Transportation information on packaging may be different from that listed. Information is for reference purposes only. The shipper is legally required to provide, certify, and receive training on, the transportation data for any shipment. Transportation information on packaging may be different from that listed.

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Toxic Substances Control Act (TSCA)

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical	Yes
Classified hazard categories	Skin corrosion or irritation Serious eye damage or eye irritation Specific target organ toxicity (single or repeated exposure)

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA)	Not regulated.

US state regulations

California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins. For more information go to www.P65Warnings.ca.gov.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Industrial Chemicals (AICIS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date	06-01-2015
Revision date	01-24-2025
Version #	10
HMIS® ratings	Health: 3 Flammability: 0 Physical hazard: 0

NFPA ratings	Health: 2 Flammability: 0 Instability: 0
Disclaimer	While Brenntag believes the information contained herein to be accurate, Brenntag makes no representation or warranty, express or implied, regarding, and assumes no liability for, the accuracy or completeness of the information. The Buyer assumes all responsibility for handling, using and/or reselling the Product in accordance with applicable federal, state, and local law. This SDS shall not in any way limit or preclude the operation and effect of any of the provisions of Brenntag's terms and conditions of sale.
Revision information	Hazard(s) identification: Response Toxicological information: Skin contact Disposal considerations: Waste from residues / unused products

SAFETY DATA SHEET

BRENNTAG

1. Identification

Other means of identification None known.

Product identifier **CITRIC ACID 50% NSF BMS**

Recommended use ALL PROPER AND LEGAL PURPOSES

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Company name Brenntag Mid-South, Inc.

Address 1405 Highway 136, West
Henderson, KY 42420

Telephone 270-830-1222

E-mail Not available.

Emergency phone number 800-424-9300 CHEMTREC

2. Hazard(s) identification

Physical hazards Not classified.

Health hazards Serious eye damage/eye irritation Category 2B

Specific target organ toxicity, single exposure Category 3 respiratory tract irritation

Environmental hazards Not classified.

OSHA defined hazards Not classified.

Label elements

Signal word Warning

Hazard statement Causes eye irritation. May cause respiratory irritation.

Precautionary statement

Prevention Avoid breathing mist/vapors. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area.

Response If swallowed: Rinse mouth. Do NOT induce vomiting. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a poison center/doctor if you feel unwell. If eye irritation persists: Get medical advice/attention. Take off contaminated clothing and wash it before reuse.

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

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

Hazard(s) not otherwise classified (HNOC) None known.

Supplemental information None.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
1,2,3-PROPANETRICARBOXYLIC ACID, 2-HYDROXY-		77-92-9	50
Other components below reportable levels			50

4. First-aid measures

Inhalation Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a poison center or doctor/physician if you feel unwell.

Skin contact Wash off with soap and water. Get medical attention if irritation develops and persists.

Eye contact Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

Ingestion Rinse mouth. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed Irritation of eyes. Exposed individuals may experience eye tearing, redness, and discomfort. May cause respiratory irritation.

Indication of immediate medical attention and special treatment needed Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.

General information If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).

Unsuitable extinguishing media Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for firefighters Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Fire fighting equipment/instructions Move containers from fire area if you can do so without risk.

Specific methods Use standard firefighting procedures and consider the hazards of other involved materials.

General fire hazards No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Avoid breathing mist/vapors. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.

Environmental precautions Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling Avoid breathing mist/vapors. Avoid contact with eyes. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities Store locked up. Store in tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits No exposure limits noted for ingredient(s).

Biological limit values	No biological exposure limits noted for the ingredient(s).
Appropriate engineering controls	Good general ventilation 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. Provide eyewash station.

Individual protection measures, such as personal protective equipment

The following are recommendations for Personnel Protective Equipment (PPE). The employer/user of this product must perform a Hazard Assessment of the workplace according to OSHA regulations 29 CFR 1910.132 to determine the appropriate PPE for use while performing any task involving potential exposure to this product.

Eye/face protection	Chemical respirator with organic vapor cartridge and full facepiece.
Skin protection	
Hand protection	Wear appropriate chemical resistant gloves.
Other	Wear suitable protective clothing.
Respiratory protection	Chemical respirator with organic vapor cartridge and full facepiece.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance	
Physical state	Liquid.
Form	Liquid.
Color	CLEAR COLORLESS
Odor	ODORLESS TO MILD
Odor threshold	Not available.
pH	1.7
Melting point/freezing point	10 °F (-12.22 °C)
Initial boiling point and boiling range	212 °F (100 °C) estimated
Flash point	Not available.
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Density	10.32 lbs/gal 1.24 g/ml
Explosive properties	Not explosive.

Oxidizing properties	Not oxidizing.
Percent volatile	50 % estimated
Specific gravity	1.24

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	May cause irritation to the respiratory system.
Skin contact	Prolonged skin contact may cause temporary irritation.
Eye contact	Causes eye irritation.
Ingestion	Expected to be a low ingestion hazard.
Symptoms related to the physical, chemical and toxicological characteristics	Irritation of eyes. Exposed individuals may experience eye tearing, redness, and discomfort. May cause respiratory irritation.

Information on toxicological effects

Acute toxicity Not known.

Product	**Species**	**Test Results**
CITRIC ACID 50% NSF BMS		
Acute		
Oral		
ATEmix		5000 mg/kg bw
Components	**Species**	**Test Results**
1,2,3-PROPANETRICARBOXYLIC ACID, 2-HYDROXY- (CAS 77-92-9)		
Acute		
Oral		
LD50	Mouse	5040 mg/kg
	Rat	3000 - 12000 mg/kg
		6730 mg/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation	Prolonged skin contact may cause temporary irritation.
Serious eye damage/eye irritation	Causes eye irritation.

Respiratory or skin sensitization

Respiratory sensitization	Due to partial or complete lack of data the classification is not possible.
Skin sensitization	Due to partial or complete lack of data the classification is not possible.
Germ cell mutagenicity	Due to partial or complete lack of data the classification is not possible.
Carcinogenicity	Due to partial or complete lack of data the classification is not possible.

IARC Monographs. Overall Evaluation of Carcinogenicity

Not listed.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

US. National Toxicology Program (NTP) Report on Carcinogens

Not listed.

Reproductive toxicity	Due to partial or complete lack of data the classification is not possible.
Specific target organ toxicity - single exposure	May cause respiratory irritation.
Specific target organ toxicity - repeated exposure	Due to partial or complete lack of data the classification is not possible.
Aspiration hazard	Due to partial or complete lack of data the classification is not possible.

12. Ecological information

Ecotoxicity	The 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.
Persistence and degradability	No data is available on the degradability of this product.

Bioaccumulative potential

Partition coefficient n-octanol / water (log Kow)

1,2,3-PROPANETRICARBOXYLIC ACID, 2-HYDROXY-	-1.64

Mobility in soil	No data available.
Other adverse effects	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner.
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT

Not regulated as dangerous goods.

Transport information on packaging may be different from that listed. Transportation information on packaging may be different from that listed. Information is for reference purposes only. The shipper is legally required to provide, certify, and receive training on, the transportation data for any shipment. Transportation information on packaging may be different from that listed. Information is for reference purposes only. The shipper is legally required to provide, certify, and receive training on, the transportation data for any shipment. Transportation information on packaging may be different from that listed.

15. Regulatory information

US federal regulations	This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Toxic Substances Control Act (TSCA)

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical	Yes
Classified hazard categories	Serious eye damage or eye irritation Specific target organ toxicity (single or repeated exposure)

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA)	Not regulated.

US state regulations

California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins. For more information go to www.P65Warnings.ca.gov.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Industrial Chemicals (AICIS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date	05-09-2016
Revision date	01-24-2025
Version #	09
HMIS® ratings	Health: 3 Flammability: 0 Physical hazard: 0
NFPA ratings	Health: 2 Flammability: 0 Instability: 0

Disclaimer	While Brenntag believes the information contained herein to be accurate, Brenntag makes no representation or warranty, express or implied, regarding, and assumes no liability for, the accuracy or completeness of the information. The Buyer assumes all responsibility for handling, using and/or reselling the Product in accordance with applicable federal, state, and local law. This SDS shall not in any way limit or preclude the operation and effect of any of the provisions of Brenntag's terms and conditions of sale.
Revision information	Hazard(s) identification: Response

BRENNTAG

SAFETY DATA SHEET

1. Identification

Other means of identification None known.

Product identifier **HYDROFLUOROSILICIC ACID 23% NSF**

Recommended use ALL PROPER AND LEGAL PURPOSES

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Company name Brenntag Mid-South, Inc.

Address 1405 Highway 136, West
Henderson, KY 42420

Telephone 270-830-1222

E-mail Not available.

Emergency phone number 800-424-9300 CHEMTREC

2. Hazard(s) identification

Physical hazards Not classified.

Health hazards

Acute toxicity, oral	Category 4
Acute toxicity, dermal	Category 3
Acute toxicity, inhalation	Category 2
Skin corrosion/irritation	Category 1
Serious eye damage/eye irritation	Category 1

Environmental hazards Not classified.

OSHA defined hazards Not classified.

Label elements

Signal word Danger

Hazard statement Harmful if swallowed. Toxic in contact with skin. Causes severe skin burns and eye damage. Causes serious eye damage. Fatal if inhaled.

Precautionary statement

Prevention Do not breathe vapor. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection. Wear respiratory protection.

Response If swallowed: Rinse mouth. Do NOT induce vomiting. If on skin: Wash with plenty of water. If inhaled: Remove person to fresh air and keep comfortable for breathing. 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/doctor. Specific treatment is urgent (see this label).

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

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

Hazard(s) not otherwise classified (HNOC) None known.

Supplemental information None.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
SILICATE(2-), HEXAFLUORO-, HYDROGEN (1:2)		16961-83-4	25
HYDROFLUORIC ACID		7664-39-3	0.9
Other components below reportable levels			74.1

4. First-aid measures

Inhalation
Remove victim to fresh air and keep at rest in a position comfortable for breathing. Oxygen or artificial respiration if needed. Do not use mouth-to-mouth method if victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Call a physician or poison control center immediately.

Skin contact
Take off immediately all contaminated clothing. Rinse skin with water/shower. Call a physician or poison control center immediately. Chemical burns must be treated by a physician. Wash contaminated clothing before reuse.

Eye contact
Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician or poison control center immediately.

Ingestion
Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

Most important symptoms/effects, acute and delayed
Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result.

Indication of immediate medical attention and special treatment needed
Provide general supportive measures and treat symptomatically. Chemical burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

General information
Take off immediately all contaminated clothing. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

5. Fire-fighting measures

Suitable extinguishing media
Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).

Unsuitable extinguishing media
Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical
During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for firefighters
Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Fire fighting equipment/instructions
Move containers from fire area if you can do so without risk.

Specific methods
Use standard firefighting procedures and consider the hazards of other involved materials.

General fire hazards
No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures
Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist/vapors. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up
Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.

Environmental precautions
Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling Do not breathe mist/vapors. Do not get in eyes, on skin, or on clothing. Do not taste or swallow. Avoid prolonged exposure. When using, do not eat, drink or smoke. Use only outdoors or in a well-ventilated area. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Wash contaminated clothing before reuse. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities Store locked up. Store in tightly closed container. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-2 (29 CFR 1910.1000)

Components	Type	Value
HYDROFLUORIC ACID (CAS 7664-39-3)	TWA	3 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value
HYDROFLUORIC ACID (CAS 7664-39-3)	Ceiling	2 ppm
	TWA	0.5 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
HYDROFLUORIC ACID (CAS 7664-39-3)	Ceiling	5 mg/m3
		6 ppm
	TWA	2.5 mg/m3
		3 ppm

Biological limit values No biological exposure limits noted for the ingredient(s).

Exposure guidelines

US - California OELs: Skin designation

HYDROFLUORIC ACID (CAS 7664-39-3) Can be absorbed through the skin.

US ACGIH Threshold Limit Values: Skin designation

HYDROFLUORIC ACID (CAS 7664-39-3) Can be absorbed through the skin.

Appropriate engineering controls Good general ventilation 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. Eye wash facilities and emergency shower must be available when handling this product.

Individual protection measures, such as personal protective equipment

The following are recommendations for Personnel Protective Equipment (PPE). The employer/user of this product must perform a Hazard Assessment of the workplace according to OSHA regulations 29 CFR 1910.132 to determine the appropriate PPE for use while performing any task involving potential exposure to this product.

Eye/face protection Chemical respirator with organic vapor cartridge and full facepiece.

Skin protection

Hand protection Wear appropriate chemical resistant gloves.

Other Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

Respiratory protection Chemical respirator with organic vapor cartridge and full facepiece.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations Keep away from food and drink. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Physical state Liquid.

Form	Liquid.
Color	CLEAR PALE YELLOW
Odor	PUNGENT
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	4 °F (-15.56 °C)
Initial boiling point and boiling range	210.26 °F (99.03 °C) estimated
Flash point	Not available.
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Density	10.29 lbs/gal 1.23 g/ml
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.
Percent volatile	74.1 % estimated
Specific gravity	1.23

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Fatal if inhaled.
Skin contact	Toxic in contact with skin. Causes severe skin burns.
Eye contact	Causes serious eye damage.
Ingestion	Causes digestive tract burns. Harmful if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result.

Information on toxicological effects

Acute toxicity Fatal if inhaled. Toxic in contact with skin. Harmful if swallowed.

Components	Species	Test Results
SILICATE(2-), HEXAFLUORO-, HYDROGEN (1:2) (CAS 16961-83-4)		
Acute		
Oral		
LD50	Rat	430 mg/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation Causes severe skin burns and eye damage.

Serious eye damage/eye irritation Causes serious eye damage.

Respiratory or skin sensitization

Respiratory sensitization Due to partial or complete lack of data the classification is not possible.

Skin sensitization Due to partial or complete lack of data the classification is not possible.

Germ cell mutagenicity Due to partial or complete lack of data the classification is not possible.

Carcinogenicity Due to partial or complete lack of data the classification is not possible.

IARC Monographs. Overall Evaluation of Carcinogenicity

Not listed.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

US. National Toxicology Program (NTP) Report on Carcinogens

Not listed.

Reproductive toxicity Due to partial or complete lack of data the classification is not possible.

Specific target organ toxicity - single exposure Due to partial or complete lack of data the classification is not possible.

Specific target organ toxicity - repeated exposure Due to partial or complete lack of data the classification is not possible.

Aspiration hazard Due to partial or complete lack of data the classification is not possible.

Chronic effects Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity The 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.

Persistence and degradability No data is available on the degradability of this product.

Bioaccumulative potential No data available.

Mobility in soil No data available.

Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Incinerate the material under controlled conditions in an approved incinerator. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations Dispose in accordance with all applicable regulations.

Hazardous waste code D002: Waste Corrosive material [pH <=2 or =>12.5, or corrosive to steel]
The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT

UN number UN1778
UN proper shipping name FLUOROSILICIC ACID
Transport hazard class(es)
Class 8
Subsidiary risk -
Packing group II
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.
Transport information on packaging may be different from that listed. Transportation information on packaging may be different from that listed.

IATA

UN number UN1778
UN proper shipping name FLUOROSILICIC ACID
Transport hazard class(es)
Class 8
Subsidiary risk -
Packing group II
Environmental hazards No.
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number UN1778
UN proper shipping name FLUOROSILICIC ACID SOLUTION (SILICATE(2-), HEXAFLUORO-, HYDROGEN (1:2))
Transport hazard class(es)
Class 8
Subsidiary risk -
Packing group II
Environmental hazards
Marine pollutant No.
EmS F-A, S-B
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

DOT

IATA; IMDG

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Toxic Substances Control Act (TSCA)

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

HYDROFLUORIC ACID (CAS 7664-39-3) Listed.

SARA 304 Emergency release notification

HYDROFLUORIC ACID (CAS 7664-39-3) 100 LBS

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance

Chemical name	CAS number	Reportable quantity (pounds)	Threshold planning quantity (pounds)	Threshold planning quantity, lower value (pounds)	Threshold planning quantity, upper value (pounds)
HYDROFLUORIC ACID	7664-39-3	100	100		

SARA 311/312 Hazardous chemical Yes

Classified hazard categories

Acute toxicity (any route of exposure)
Skin corrosion or irritation
Serious eye damage or eye irritation

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

HYDROFLUORIC ACID (CAS 7664-39-3)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

HYDROFLUORIC ACID (CAS 7664-39-3)

Safe Drinking Water Act (SDWA) Not regulated.

US state regulations

California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins. For more information go to www.P65Warnings.ca.gov.

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

HYDROFLUORIC ACID (CAS 7664-39-3)

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	Yes

Country(s) or region	Inventory name	On inventory (yes/no)*
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 07-19-2021

Version # 01

HMIS® ratings Health: 3
Flammability: 0
Physical hazard: 0

NFPA ratings Health: 3
Flammability: 0
Instability: 0

Disclaimer While Brenntag believes the information contained herein to be accurate, Brenntag makes no representation or warranty, express or implied, regarding, and assumes no liability for, the accuracy or completeness of the information. The Buyer assumes all responsibility for handling, using and/or reselling the Product in accordance with applicable federal, state, and local law. This SDS shall not in any way limit or preclude the operation and effect of any of the provisions of Brenntag's terms and conditions of sale.

BRENNTAG

SAFETY DATA SHEET

1. Identification

Other means of identification None known.

Product identifier **SODIUM BISULFITE 40%**

Recommended use ALL PROPER AND LEGAL PURPOSES

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Company name Brenntag Mid-South, Inc.

Address 1405 Highway 136, West
Henderson, KY 42420

Telephone 270-830-1222

E-mail Not available.

Emergency phone number 800-424-9300 CHEMTREC

2. Hazard(s) identification

Physical hazards Not classified.

Health hazards

Acute toxicity, oral	Category 4
Skin corrosion/irritation	Category 1C
Serious eye damage/eye irritation	Category 1
Sensitization, respiratory	Category 1
Sensitization, skin	Category 1

Environmental hazards Not classified.

OSHA defined hazards Not classified.

Label elements

Signal word Danger

Hazard statement Harmful if swallowed. Causes severe skin burns and eye damage. May cause an allergic skin reaction. Causes serious eye damage. May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Precautionary statement

Prevention Do not breathe dust or mists. Avoid breathing mist/vapors. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Contaminated work clothing must not be allowed out of the workplace. Wear protective gloves/protective clothing/eye protection/face protection. In case of inadequate ventilation wear respiratory protection.

Response Rinse mouth. If swallowed: 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. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If skin irritation or rash occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse.

Storage Store locked up.

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

Hazard(s) not otherwise classified (HNOC) None known.

Supplemental information None.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
SULFUROUS ACID, SODIUM SALT (1:1)		7631-90-5	40
Other components below reportable levels			60

4. First-aid measures

Inhalation
If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. Oxygen or artificial respiration if needed. Do not use mouth-to-mouth method if victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If experiencing respiratory symptoms: Call a poison center or doctor/physician.

Skin contact
Remove contaminated clothing immediately and wash skin with soap and water. Call a physician or poison control center immediately. Chemical burns must be treated by a physician. Wash contaminated clothing before reuse.

Eye contact
Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician or poison control center immediately.

Ingestion
Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

Most important symptoms/effects, acute and delayed
Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. Difficulty in breathing.

Indication of immediate medical attention and special treatment needed
Provide general supportive measures and treat symptomatically. Chemical burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

General information
Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before reuse.

5. Fire-fighting measures

Suitable extinguishing media
Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).

Unsuitable extinguishing media
Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical
During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for firefighters
Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Fire fighting equipment/instructions
Move containers from fire area if you can do so without risk.

Specific methods
Use standard firefighting procedures and consider the hazards of other involved materials.

General fire hazards
No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures
Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Avoid breathing mist/vapors. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up
Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.

Environmental precautions
Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling
Do not get in eyes, on skin, or on clothing. Do not taste or swallow. Avoid breathing mist/vapors. Avoid prolonged exposure. When using, do not eat, drink or smoke. Provide adequate ventilation. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities Store locked up. Store in tightly closed container. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US. ACGIH Threshold Limit Values (TLV)

Components	Type	Value
SULFUROUS ACID, SODIUM SALT (1:1) (CAS 7631-90-5)	TWA	5 mg/m3

US. NIOSH: Pocket Guide to Chemical Hazards Recommended Exposure Limits (REL)

Components	Type	Value
SULFUROUS ACID, SODIUM SALT (1:1) (CAS 7631-90-5)	TWA	5 mg/m3

Biological limit values No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls Good general ventilation 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. General ventilation normally adequate. Eye wash facilities and emergency shower must be available when handling this product.

Individual protection measures, such as personal protective equipment

The following are recommendations for Personnel Protective Equipment (PPE). The employer/user of this product must perform a Hazard Assessment of the workplace according to OSHA regulations 29 CFR 1910.132 to determine the appropriate PPE for use while performing any task involving potential exposure to this product.

Eye/face protection Wear safety glasses with side shields (or goggles) and a face shield. Face shield is recommended.

Skin protection

Hand protection Wear protective gloves.

Other Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

Respiratory protection Wear positive pressure self-contained breathing apparatus (SCBA).

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations Keep away from food and drink. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Contaminated work clothing should not be allowed out of the workplace.

9. Physical and chemical properties

Appearance

Physical state Liquid.

Form Liquid.

Color CLEAR YELLOW

Odor SULFUR DIOXIDE

Odor threshold Not available.

pH Not available.

Melting point/freezing point 45 °F (7.22 °C)

Initial boiling point and boiling range 212 °F (100 °C) estimated

Flash point Not available.

Evaporation rate Not available.

Flammability (solid, gas) Not applicable.

Upper/lower flammability or explosive limits

Explosive limit - lower (%) Not available.

Explosive limit - upper (%) Not available.

Vapor pressure Not available.

Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Density	11.16 lbs/gal 1.34 g/ml
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.
Percent volatile	60 % estimated
Specific gravity	1.34

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	May cause irritation to the respiratory system. May cause allergy or asthma symptoms or breathing difficulties if inhaled. Prolonged inhalation may be harmful.
Skin contact	Causes severe skin burns. May cause an allergic skin reaction.
Eye contact	Causes serious eye damage.
Ingestion	Causes digestive tract burns. Harmful if swallowed.
Symptoms related to the physical, chemical and toxicological characteristics	Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. Difficulty in breathing.

Information on toxicological effects

Acute toxicity Harmful if swallowed.

Components	Species	Test Results
SULFUROUS ACID, SODIUM SALT (1:1) (CAS 7631-90-5)		
Acute		
Oral		
LD50	Rat	2 g/kg

Skin corrosion/irritation	Causes severe skin burns and eye damage.
Serious eye damage/eye irritation	Causes serious eye damage.
Respiratory or skin sensitization	
Respiratory sensitization	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Skin sensitization	May cause an allergic skin reaction.
Germ cell mutagenicity	Due to partial or complete lack of data the classification is not possible.
Carcinogenicity	Due to partial or complete lack of data the classification is not possible.

IARC Monographs. Overall Evaluation of Carcinogenicity

Not listed.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

US. National Toxicology Program (NTP) Report on Carcinogens

Not listed.

Reproductive toxicity	Due to partial or complete lack of data the classification is not possible.
Specific target organ toxicity - single exposure	Due to partial or complete lack of data the classification is not possible.
Specific target organ toxicity - repeated exposure	Due to partial or complete lack of data the classification is not possible.
Aspiration hazard	Due to partial or complete lack of data the classification is not possible.
Chronic effects	Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity The 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.

Components	Species	Test Results
SULFUROUS ACID, SODIUM SALT (1:1) (CAS 7631-90-5)		
Aquatic		
Acute		
Fish	LC50	Western mosquitofish (Gambusia affinis) 240 mg/l, 96 hours

Persistence and degradability	No data is available on the degradability of this product.
Bioaccumulative potential	No data available.
Mobility in soil	No data available.
Other adverse effects	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions	Dispose of this material and its container to hazardous or special waste collection point. Incinerate the material under controlled conditions in an approved incinerator. Dispose of contents/container in accordance with local/regional/national/international regulations.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	D002: Waste Corrosive material [pH ≤2 or =>12.5, or corrosive to steel] The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT

UN number	UN2693
UN proper shipping name	BISULFITES, AQUEOUS SOLUTIONS, N.O.S.
Transport hazard class(es)	
Class	8
Subsidiary hazard	-
Packing group	III
Environmental hazards	
Marine pollutant	No.
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
ERG number	154

Transport information on packaging may be different from that listed. Transportation information on packaging may be different from that listed. Information is for reference purposes only. The shipper is legally required to provide, certify, and receive training on, the transportation data for any shipment. Transportation information on packaging may be different from that listed.

IMDG

Not regulated as dangerous goods.

DOT

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Toxic Substances Control Act (TSCA)

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

SULFUROUS ACID, SODIUM SALT (1:1) (CAS 7631-90-5) Listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical Yes

Classified hazard categories
Acute toxicity (any route of exposure)
Skin corrosion or irritation
Serious eye damage or eye irritation
Respiratory or skin sensitization

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

US state regulations

California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins. For more information go to www.P65Warnings.ca.gov.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Industrial Chemicals (AICIS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes

Country(s) or region	Inventory name	On inventory (yes/no)*
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 03-27-2015

Revision date 05-16-2024

Version # 32

HMIS® ratings Health: 3*
Flammability: 0
Physical hazard: 0

NFPA ratings Health: 3
Flammability: 0
Instability: 0

Disclaimer While Brenntag believes the information contained herein to be accurate, Brenntag makes no representation or warranty, express or implied, regarding, and assumes no liability for, the accuracy or completeness of the information. The Buyer assumes all responsibility for handling, using and/or reselling the Product in accordance with applicable federal, state, and local law. This SDS shall not in any way limit or preclude the operation and effect of any of the provisions of Brenntag's terms and conditions of sale.

Revision information This document has undergone significant changes and should be reviewed in its entirety.

BRENNTAG

SAFETY DATA SHEET

1. Identification

Other means of identification None known.

Product identifier **SODIUM HYPOCHLORITE 12.5% NSF**

Recommended use ALL PROPER AND LEGAL PURPOSES

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Company name Brenntag Mid-South, Inc.

Address 1405 Highway 136, West
Henderson, KY 42420

Telephone 270-830-1222

E-mail Not available.

Emergency phone number 800-424-9300 CHEMTREC

2. Hazard(s) identification

Physical hazards Not classified.

Health hazards Skin corrosion/irritation Category 1

Serious eye damage/eye irritation Category 1

Environmental hazards Not classified.

OSHA defined hazards Not classified.

Label elements

Signal word Danger

Hazard statement Causes severe skin burns and eye damage. Causes serious eye damage.

Precautionary statement

Prevention Wash thoroughly after handling. Wear protective gloves/protective clothing/eye protection/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. 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/international regulations.

Hazard(s) not otherwise classified (HNOC) None known.

Supplemental information None.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
HYPOCHLOROUS ACID, SODIUM SALT (1:1)		7681-52-9	12.5
Other components below reportable levels			87.5

4. First-aid measures

Inhalation Move to fresh air. Call a physician if symptoms develop or persist.

Skin contact	Take off immediately all contaminated clothing. Rinse skin with water/shower. Call a physician or poison control center immediately. Chemical burns must be treated by a physician. Wash contaminated clothing before reuse.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician or poison control center immediately.
Ingestion	Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.
Most important symptoms/effects, acute and delayed	Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Chemical burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim under observation. Symptoms may be delayed.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media	Foam. Powder. Carbon dioxide (CO2).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire fighting equipment/instructions	Move containers from fire area if you can do so without risk.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Prevent entry into waterways, sewer, basements or confined areas. Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.
Environmental precautions	Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling	Do not get in eyes, on skin, or on clothing. Avoid prolonged exposure. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.
Conditions for safe storage, including any incompatibilities	Store locked up. Store in tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US. OARS. Workplace Environmental Exposure Level (WEEL) Guide

Components	Type	Value
HYPOCHLOROUS ACID, SODIUM SALT (1:1) (CAS 7681-52-9)	STEL	2 mg/m3

Biological limit values	No biological exposure limits noted for the ingredient(s).
Appropriate engineering controls	Good general ventilation 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. Eye wash facilities and emergency shower must be available when handling this product.

Individual protection measures, such as personal protective equipment

The following are recommendations for Personnel Protective Equipment (PPE). The employer/user of this product must perform a Hazard Assessment of the workplace according to OSHA regulations 29 CFR 1910.132 to determine the appropriate PPE for use while performing any task involving potential exposure to this product.

Eye/face protection	Wear safety glasses with side shields (or goggles) and a face shield.
Skin protection	
Hand protection	Wear appropriate chemical resistant gloves.
Other	Wear appropriate chemical resistant clothing.
Respiratory protection	In case of insufficient ventilation, wear suitable respiratory equipment.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance	
Physical state	Liquid.
Form	Liquid.
Color	CLEAR PALE YELLOW
Odor	CHLORINE
Odor threshold	Not available.
pH	> 11.5 - < 13.5
Melting point/freezing point	-3 °F (-19.44 °C)
Initial boiling point and boiling range	212 °F (100 °C) estimated
Flash point	Not available.
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Density	10.06 lbs/gal 1.21 g/ml
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.
Percent volatile	87.5 % estimated

Specific gravity	1.21

10. Stability and reactivity

Reactivity	Reacts violently with strong acids. This product may react with oxidizing agents.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Contact with incompatible materials. Do not mix with other chemicals.
Incompatible materials	Acids. Oxidizing agents.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	May cause irritation to the respiratory system. Prolonged inhalation may be harmful.
Skin contact	Causes severe skin burns.
Eye contact	Causes serious eye damage.
Ingestion	Causes digestive tract burns.
Symptoms related to the physical, chemical and toxicological characteristics	Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result.

Information on toxicological effects

Acute toxicity Not known.

Components	Species	Test Results
HYPOCHLOROUS ACID, SODIUM SALT (1:1) (CAS 7681-52-9)		
Acute		
Oral		
LD50	Rat	8.91 g/kg

Skin corrosion/irritation	Causes severe skin burns and eye damage.
Serious eye damage/eye irritation	Causes serious eye damage.

Respiratory or skin sensitization

Respiratory sensitization	Due to partial or complete lack of data the classification is not possible.
Skin sensitization	Due to partial or complete lack of data the classification is not possible.
Germ cell mutagenicity	Due to partial or complete lack of data the classification is not possible.
Carcinogenicity	Due to partial or complete lack of data the classification is not possible.

IARC Monographs. Overall Evaluation of Carcinogenicity

Not listed.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

US. National Toxicology Program (NTP) Report on Carcinogens

Not listed.

Reproductive toxicity	Due to partial or complete lack of data the classification is not possible.
Specific target organ toxicity - single exposure	Due to partial or complete lack of data the classification is not possible.
Specific target organ toxicity - repeated exposure	Due to partial or complete lack of data the classification is not possible.
Aspiration hazard	Due to partial or complete lack of data the classification is not possible.
Chronic effects	Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity The 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.

Components		Species	Test Results
HYPOCHLOROUS ACID, SODIUM SALT (1:1) (CAS 7681-52-9)			
Aquatic			
Acute			
Crustacea	EC50	Water flea (Ceriodaphnia dubia)	>= 0.11 - <= 0.13 mg/l, 24 hours
	LC50	Calanoid copepod (Acartia tonsa)	>= 0.313 - <= 0.497 mg/l, 24 hours
		Coon stripe shrimp (Pandalus danae)	>= 0.246 - <= 0.333 mg/l, 96 hours
		Daggerblade grass shrimp (Palaemonetes pugio)	>= 46 - <= 58.8 mg/l, 96 hours
		Opossum shrimp (Americamysis bahia)	>= 0.229 - <= 0.321 mg/l, 96 hours
		Rotifer (Brachionus calyciflorus)	>= 0.35 - <= 0.39 mg/l, 24 hours
		Scud (Hyalella azteca)	>= 0.252 - <= 0.362 mg/l, 96 hours
		Water flea (Ceriodaphnia dubia)	0.14 mg/l, 24 hours
		Water flea (Daphnia magna)	>= 0.045 - <= 0.068 mg/l, 48 hours
Fish	LC50	Bleak (Alburnus alburnus)	>= 30 - <= 35 mg/l, 96 hours
		Brown trout (Salmo trutta)	>= 0.02 - <= 0.05 mg/l, 1.5 hours
		California grunion (Leuresthes tenuis)	0.139 mg/l, 24 hours
		Carp (Cyprinus carpio)	>= 1.75 - <= 1.89 mg/l, 160 minutes
		Channel catfish (Ictalurus punctatus)	0.45 mg/l, 96 hours
		Coho salmon,silver salmon (Oncorhynchus kisutch)	>= 0.245 - <= 0.328 mg/l, 15 minutes
		Fathead minnow (Pimephales promelas)	>= 4.4 - <= 7.1 mg/l, 24 hours
		Freshwater drum (Aplodinotus grunniens)	>= 1.67 - <= 1.83 mg/l, 160 minutes
		Rainbow trout,donaldson trout (Oncorhynchus mykiss)	>= 0.05 - <= 0.071 mg/l, 96 hours
			> 0.03 - < 0.07 mg/l, 96 hours
		Shiner perch (Cymatogaster aggregata)	>= 0.045 - <= 0.098 mg/l, 96 hours
		Yellow perch (Perca flavescens)	>= 18 - <= 28.7 mg/l, 15 minutes
		Yellowtail flounder (Pleuronectes ferrugineus)	0.1 mg/l, 24 hours

Persistence and degradability No data is available on the degradability of this product.

Bioaccumulative potential No data available.

Mobility in soil No data available.

Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions Dispose of this material and its container to hazardous or special waste collection point. Incinerate the material under controlled conditions in an approved incinerator. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations Dispose in accordance with all applicable regulations.

Hazardous waste code D002: Waste Corrosive material [pH ≤2 or =>12.5, or corrosive to steel]
The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT

UN number	UN1791
UN proper shipping name	HYPOCHLORITE SOLUTIONS MARINE POLLUTANT (SODIUM HYPOCHLORITE) RQ
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Packing group	III
Environmental hazards	
Marine pollutant	No.
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

Transport information on packaging may be different from that listed. Transportation information on packaging may be different from that listed.

DOT

General information IMDG Regulated Marine Pollutant.

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Toxic Substances Control Act (TSCA)

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

HYPOCHLOROUS ACID, SODIUM SALT (1:1) (CAS 7681-52-9) Listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical	Yes
Classified hazard categories	Skin corrosion or irritation Serious eye damage or eye irritation

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA)	Not regulated.

US state regulations

California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins. For more information go to www.P65Warnings.ca.gov.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Industrial Chemicals (AICIS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 11-11-2016

Revision date 09-27-2023

Version # 70

HMIS® ratings Health: 3
Flammability: 0
Physical hazard: 0

NFPA ratings Health: 3
Flammability: 0
Instability: 0

Disclaimer While Brenntag believes the information contained herein to be accurate, Brenntag makes no representation or warranty, express or implied, regarding, and assumes no liability for, the accuracy or completeness of the information. The Buyer assumes all responsibility for handling, using and/or reselling the Product in accordance with applicable federal, state, and local law. This SDS shall not in any way limit or preclude the operation and effect of any of the provisions of Brenntag's terms and conditions of sale.

Brenntag Canada Inc.

BRENNTAG

FICHE SIGNALÉTIQUE

HYPOCHLORITE DE CALCIUM, SOLIDE

1. PRODUIT CHIMIQUE ET IDENTIFICATION DE L'ENTREPRISE

Brenntag Canada Inc.
43, chemin Jutland
Toronto (Ontario)
M8Z 2G6
(416) 259-8231

Site web : http://www.brenntag.ca

Numéro de SIMDUT : 00020005
N° index FS : GCD0313F/15D
Date d'entrée en vigueur : 2015-10-02 (a-m-j)
Date de revision : 2015-10-02 (a-m-j)

NUMÉRO DE TÉLÉPHONE D'URGENCE (pour les urgences impliquant des rejets ou des déversements chimiques)

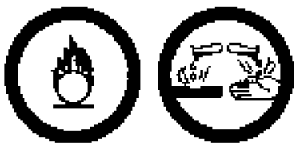
1 855 273 6824

IDENTIFICATION DU PRODUIT

Nom du produit :	Hypochlorite de calcium, solide.
Nom chimique :	Acide hypochloreux, sel de calcium.
Synonymes :	Chlore granulaire sec HTH ; Hypochlorite de calcium granulaire ; Hypochlorite de calcium ; Hypochlorite de calcium Pitchl Gran. 65 % ; Hypochlorite de calcium comm. 65 % ; Hypochlorite de calcium PPG 3" ; Accu-Tab blanc, bleu, SI, bleu SI, capsules blancs SI.
Famille chimique :	Acide hypochloreux, sel de sodium.
Formule moléculaire :	Ca (ClO) 2.
Usages du produit :	Désinfectant pour l'eau de piscine. Traitement de l'eau. Agent oxydant. Produit chimique intermédiaire.

Classification / symbole SIMDUT :

C : Matière comburante
E : Corrosif



LIRE LA FICHE SIGNALÉTIQUE EN ENTIER POUR L'ÉVALUATION COMPLÈTE DES DANGERS QUE COMPORTE CE PRODUIT

2. COMPOSITION, RENSEIGNEMENTS SUR LES INGRÉDIENTS (non prévu comme spécifications)

Ingrédient	*N° CAS*	*TLV de l'ACGIH (TWA)*	*Concentration %*
Hypochlorite de calcium	7778-54-3	---	60 - 80
Chlorure de sodium	7647-14-5	---	10 - 30
Carbonate de calcium	471-34-1	---	1 - 5
Hydroxyde de calcium	1305-62-0	5 mg/m³	1 - 5
Chlorate de calcium	10137-74-3	---	0 - 3

3. IDENTIFICATION DES DANGERS

URGENCES :	Corrosif ! Cause de sévères brûlures à la peau et aux yeux. Poussières extrêmement irritantes pour les voies respiratoires. Se reporter à la section « Autres effets sur la santé ». Produit oxydant. Le contact du présent produit avec un produit combustible peut déclencher un incendie. Le présent produit est un fort agent oxydant qui est stable dans des conditions normales, mais il peut se déposer s'il est contaminé. Le contact du présent produit avec un produit combustible peut déclencher un incendie. À de fortes températures, le produit peut se décomposer pour donner des gaz toxiques. La contamination par l'humidité, les acides, les matières organiques et d'autres produits chimiques (incluant sans y être limité les produits chimiques de nettoyage et autres produits chimiques pour la piscine), les produits pétroliers et de peinture et d'autres produits qui brûlent facilement peut entraîner une réaction chimique : génération de chaleur et de gaz dangereux et possible réaction violente amenant un incendie ou une explosion. (3)
EFFETS POTENTIELS SUR LA SANTÉ	
Inhalation :	Corrosif ! Si elles sont mélangées avec des acides ou si elles sont chauffées, les solutions d'hypochlorite dégagent du chlore gazeux. Ce gaz peut irriter sévèrement le nez et la gorge. L'exposition à de forts niveaux de chlore gazeux peut sévèrement endommager les poumons. (3)
Contact cutané :	Ce produit peut entraîner une irritation en raison de son action abrasive. Il y a risque de destruction de la pellicule graisseuse naturelle de la peau, d'assèchement et de gerçures. Hypochlorite de calcium peut entraîner des symptômes d'irritation cutanée tels que la rougeur, l'enflure, l'éruption, la desquamation et la formation d'ampoules. Un bref contact avec la poussière cause de l'irritation. Une plus grande exposition cause de sévères brûlures. En présence d'humidité (transpiration, humidité, larmes), la poussière se dissout pour former une solution corrosive qui peut causer des brûlures. (3) Hydroxyde de calcium : On a rapporté de nombreux cas de brûlures chimiques à la peau après l'exposition au ciment humide (contenant de l'oxyde de calcium), ne serait-ce qu'une demi-heure. Il n'y a souvent pas eu de douleur immédiatement, de sorte qu'on permet de continuer l'exposition (contact cutané). (4)
Absorption par la peau :	Ne sera probablement pas absorbé par la peau. L'absorption par la peau est une question secondaire par rapport à la destruction continue des tissus alors que le produit est en contact avec la peau.
Contact oculaire :	Très corrosif ! Ce produit entraîne des taches sur la cornée et son opacification. Il y a risque de glaucome, de cataracte et de cécité permanente.
Ingestion :	Corrosif ! Ce produit cause des douleurs et de graves brûlures dans la bouche, la gorge et l'abdomen. Il y a risque de vomissements, de diarrhée et de perforation de l'œsophage et de la muqueuse gastrique. Le présent produit peut être fatal s'il est avalé.
Autres effets sur la santé :	L'action corrosive sur la peau et les yeux peut se manifester tardivement et des lésions peuvent apparaître sans sensation de douleurs. La stricte observation des mesures de premiers soins à la suite de toute exposition est essentielle. En général, l'exposition à long terme à de fortes concentrations de poussière peut amener un plus grand écoulement muqueux du nez et des voies respiratoires. Habituellement, cet état de fait disparaît une fois l'exposition terminée. (4) Il existe une controverse quant au rôle de l'exposition à la poussière dans le développement de la bronchite chronique (inflammation des voies respiratoires dans les poumons). D'autres facteurs comme fumer et la pollution de l'air en général sont plus importants, mais l'exposition peut aussi contribuer à ce problème. (4)

4. MESURES DE PREMIERS SOINS

PREMIERS SOINS

Généralités :	Il est essentiel d'ôter le produit en contact et d'obtenir des soins médicaux. Ôter tous les vêtements contaminés et laver immédiatement les régions exposées avec de grandes quantités d'eau. Continuer à rincer durant le transport vers le centre des urgences. Les effets corrosifs peuvent être retardés jusqu'à 72 heures. Les dommages peuvent survenir sans qu'il y ait sensation de douleur. Communiquer avec votre centre antipoison pour de plus amples renseignements.
Inhalation :	Amener la victime au grand air. Pratiquer la respiration artificielle SEULEMENT si le sujet ne respire plus. Pratiquer la réanimation cardiorespiratoire s'il y a à la fois arrêt respiratoire ET absence de pouls. Obtenir d'URGENCE des soins médicaux.
Contact cutané :	Il est essentiel d'ôter rapidement le produit sur la peau. Ôter tous les vêtements contaminés et laver immédiatement les régions exposées avec de grandes quantités d'eau pendant au moins 30 minutes ou même 60 minutes pour les régions corporelles critiques. Obtenir des soins médicaux SUR-LE-CHAMP !
Contact oculaire :	Rincer immédiatement à l'eau courante pendant au moins 30 minutes, de préférence durant 60 minutes, en maintenant les paupières ouvertes. Si l'irritation persiste, reprendre l'irrigation des yeux. Ne pas transporter la victime avant la fin de la période recommandée ou à moins que l'on puisse continuer de rincer la région atteinte pendant le transport.

Ingestion :	Ne pas tenter de donner quoi que ce soit par la bouche à une personne inconsciente. Si la victime est consciente et qu'elle n'est pas en proie à des convulsions, lui faire rincer la bouche et lui faire boire de un demi à un verre d'eau pour diluer la matière. Communiquer IMMÉDIATEMENT avec un centre antipoison. Le vomissement ne doit être provoqué que sur l'ordre d'un médecin ou d'un centre antipoison. En cas de vomissement spontané, faire pencher la victime, tête baissée vers l'avant, pour éviter qu'elle n'aspire des vomissures ; lui faire rincer la bouche et lui donner encore de l'eau. Transporter IMMÉDIATEMENT la victime dans un service des urgences.
Remarque pour le médecin :	On doit consulter un centre antipoison SUR-LE-CHAMP. Les effets systémiques et localisés peuvent ne survenir que plus tard (72 heures). À cause de la nature sévèrement irritante ou corrosive du produit, en avaler peut amener l'ulcération et l'inflammation du tube digestif supérieur avec hémorragies et pertes de liquides. De plus, il pourrait y avoir perforation de l'œsophage et de l'estomac causant une médiastinite ou une péritonite et les complications en résultant. Une blessure aux muqueuses suivant l'ingestion de ce produit potentiellement corrosif peut contre-indiquer la provocation de vomissements dans le traitement d'une possible intoxication. De même, si on doit faire un lavement gastrique, l'intubation se fera avec beaucoup de précautions. En cas de brûlures orales ou une possible ingestion corrosive, pratiquer une œsophagoscopie le plus vite possible. L'œsophagoscope ne doit pas aller au-delà de la première brûlure à cause des risques de perforation. Les états pathologiques susceptibles d'être aggravés par une exposition à ce produit comprennent des problèmes neurologiques, cardio-vasculaires et cutanés.

5. MESURES POUR COMBATTRE LES INCENDIES

Point d'éclair (°C)	***Température d'auto-ignition (°C)***	**Limites d'inflammabilité dans l'air (%) :** ***LEL***	***UEL***
Non combustible (qui ne brûle pas).	Sans objet.	Sans objet.	Sans objet.

Classe d'inflammabilité (SIMDUT) :	Non réglementé.
Produits de combustion dangereux :	Les produits libérés au cours de la décomposition thermique sont toxiques et peuvent comprendre : du gaz de chlore corrosif, du chlorure d'hydrogène, des oxydes de sodium, calcium et du chlore.
Dangers d'incendie et d'explosion inhabituels :	Des comburants forts qui peuvent causer l'ignition de produits combustibles ou comburants. Si le produit entre en contact avec les métaux, leurs sels ou d'autres contaminants, il peut se décomposer violemment. Les produits humides peuvent se décomposer exothermiquement et causer la combustion des produits organiques. L'oxygène provenant de la décomposition exothermique peut entretenir la combustion. Dans certaines conditions, l'hypochlorite se décompose pour former du chlore gazeux. La surveillance périodique du chlore pourrait être nécessaire. (4) La contamination de l'hypochlorite peut enflammer des produits étrangers et dégager suffisamment de chaleur pour amener la décomposition du produit. (3) L'hypochlorite peut augmenter la combustibilité des produits avec lesquels il est en contact. (4) L'hypochlorite peut réagir avec les amines primaires pour donner du trichlorure d'azote qui explosera spontanément dans l'air. Réduire la dissémination des poussières au maximum. Le produit répandu peut rendre les surfaces de contact et les planchers glissants. Le produit devient glissant s'il est mélangé avec de l'eau. Faire respecter les réglements interdisant de fumer (DÉFENSE DE FUMER) dans le périmètre où le produit est utilisé.
Sensibilité aux chocs :	Le produit n'est probablement pas sensible aux chocs.
Taux de combustion :	Non disponible.
Puissance explosive :	Non disponible.
Sensibilité aux décharges électrostatiques :	Le produit n'est probablement pas sensible aux décharges d'électricité statique.
MOYENS D'EXTINCTION	
Agents extincteurs :	L'eau en grandes quantités est un agent extincteur efficace contre les réactions de décomposition et les incendies. Ne pas utiliser d'extincteur sec contenant des composés d'ammonium. Ne pas utiliser de dioxyde de carbone ni de produit chimique sec. Utiliser les agents appropriés pour circonscrire l'incendie ou les matières en cause.
DIRECTIVES POUR COMBATTRE LES INCENDIES	
Directives à l'intention des pompiers :	Le produit répandu peut rendre les surfaces de contact et les planchers glissants. Le produit devient glissant s'il est mélangé avec de l'eau.

Équipement protecteur des pompiers :	Porter des vêtements protecteurs et un appareil de protection respiratoire autonome.

6. MESURES EN CAS DE REJETS ACCIDENTELS

Les renseignements dans la présente section visent à réagir aux déversements, aux fuites ou aux rejets afin de prévenir ou de minimiser les effets adverses pour les personnes, la propriété et l'environnement. Il pourrait y avoir des déversements, des fuites ou des rejets à déclaration obligatoire variant d'une région à l'autre.

Méthode d'endiguement et de nettoyage :	Se reporter à la section 13 « Produits chimiques de désactivation ». Dans tous les cas de fuite et de déversement, communiquer avec le fournisseur au numéro d'urgence apparaissant sur la première page de la présente fiche signalétique. Garder loin des produits combustibles et incompatibles. Réduire la dissémination des poussières au maximum. Mettre un appareil de respiration, des vêtements protecteurs et des gants. Éviter le balayage à sec. Ne pas nettoyer les surfaces à l'aide d'air comprimé. On préfère le procédé à vide. Remettre le maximum de produit dans le contenant afin d'en disposer adéquatement. Tout produit récupéré peut être utilisé, selon la nature et l'étendue de la contamination, comme d'habitude. Si l'emballage (sac ou fût) du produit est endommagé, réparez-le ou mettez-le immédiatement dans un fût de récupération pour éviter ou minimiser la perte de produit et la contamination de l'environnement immédiat. Remplacer immédiatement les conteneurs endommagés afin d'éviter la perte de produit et la contamination de l'atmosphère immédiate. Recueillir le produit en vue de sa récupération ou de son élimination. Pour les déversements au sol ou dans les eaux de ruissellement, circonscrire au moyen de digues ou couvrir d'un absorbant inerte ; pour les déversements dans l'eau, endiguer ou faire dériver l'eau afin de minimiser l'étendue de la contamination. Ventiler les espaces clos. Si le déversement devait faire l'objet d'un rapport ou s'il se révélait nuisible pour l'environnement, avertir les autorités gouvernementales compétentes.

7. MANIPULATION ET ENTREPOSAGE

MANIPULATION

Méthode de manipulation :	Adopter de bonnes habitudes d'hygiène et d'entretien ménager. Nettoyez immédiatement pour éliminer tout risque de dérapage. Éviter l'humidité qui peut contaminer le produit. Garder loin des produits combustibles et incompatibles. Le produit devient glissant s'il est mélangé avec de l'eau. TOUJOURS AJOUTER LE PRODUIT À DE GRANDES QUANTITÉS D'EAU POUR LE DILUER COMPLÈTEMENT. NE PAS VERSER D'EAU AU PRODUIT, TOUJOURS AJOUTER LE PRODUIT À L'EAU. NE PAS UTILISER AVEC DU CHLORE STABILISÉ NI UN ALIMENTATEUR DE BROME. Ne pas ajouter ce produit à un distributeur contenant des résidus d'autres produits chimiques. (3)
Exigences pour la ventilation :	Voir section 8.
Précautions additionnelles :	N'employer le produit que dans un lieu bien ventilé et éviter d'en inhaler les poussières. Éviter tout contact du produit avec les yeux, la peau ou les vêtements. Bien se laver avec de l'eau et du savon après avoir manipulé le produit. Laver les vêtements contaminés avec soin avant de les réutiliser. Immerger les vêtements contaminés dans l'eau immédiatement et LAISSEZ-LES MOUILLÉS jusqu'à ce que vous en disposiez ou les laviez. La contamination par l'humidité, les acides, les matières organiques et d'autres produits chimiques (incluant sans y être limité les produits chimiques de nettoyage et autres produits chimiques pour la piscine), les produits pétroliers et de peinture et d'autres produits qui brûlent facilement peut entraîner une réaction chimique : génération de chaleur et de gaz dangereux et possible réaction violente amenant un incendie ou une explosion. (3)

ENTREPOSAGE

Température de stockage (en °C) :	Ne pas les exposer à des températures supérieures à 52 °C. (3)
Exigences pour la ventilation :	Le système de ventilation devrait être à l'épreuve de la rouille.
Conditions de stockage :	Stocker dans un lieu frais, sec et bien ventilé. Garder à l'abri de la chaleur, des étincelles et des flammes. Garder les contenants fermés. Éviter l'humidité qui peut contaminer le produit. L'entreposage prolongé peut amener le durcissement ou l'agglutination. Les produits humides peuvent se décomposer exothermiquement et causer la combustion des produits organiques. L'oxygène provenant de la décomposition exothermique peut entretenir la combustion. Protéger de la lumière du jour. Protéger des dommages physiques.
Produits spéciaux à être utilisés pour l'emballage ou les conteneurs :	Confirmez que les matériaux conviennent avant de les utiliser. Le produit peut réagir en présence de certains types de caoutchouc, de plastiques ou de revêtements et les endommager.

8. CONTRÔLES EN CAS D'EXPOSITION / PROTECTION PERSONNELLE

Les recommandations de cette section indiquent le type de matériel offrant une protection contre les surexpositions à ce produit. Les conditions d'emploi, la pertinence des vérifications techniques ou d'autres contrôles et les niveaux réels d'exposition permettront de choisir le matériel protecteur convenant à votre exploitation.

SÉCURITÉ INTÉGRÉE

Vérifications techniques :	Ventilateurs d'évacuation locaux requis. Le système de ventilation devrait être à l'épreuve de la corrosion. On fournira de l'air d'appoint afin d'équilibrer l'air qui provient des ventilateurs locaux ou généraux. Bien aérer les aires basses comme les puits ou les collecteurs, là où les poussières denses peuvent s'accumuler.

ÉQUIPEMENT DE PROTECTION INDIVIDUELLE

Protection des yeux :	Le port de lunettes de sécurité à écrans latéraux est recommandé pour éviter le contact oculaire. Porter un écran facial complet ou des lunettes monocoques antiacides en cas de risque de contact. On ne doit pas porter de verres de contact lorsqu'on travaille avec ce produit.
Protection de la peau :	Des gants et des vêtements protecteurs en caoutchouc butyle, en caoutchouc nitrile ou en néoprène devraient assurer l'étanchéité compte tenu des conditions d'utilisation. Avant utilisation, l'usager devra s'assurer de leur étanchéité. Jeter les gants contaminés. Le produit peut réagir en présence de certains types de caoutchouc, de plastiques ou de revêtements et les endommager.
Protection respiratoire :	Aucune ligne directrice particulière de disponible. NE PAS UTILISER d'appareil respiratoire à cartouche avec des sorbants oxydables (de charbon). Respirateur avec cartouches filtrantes homologué par le NIOSH/MSHA muni de cartouches contre les poussières, la buée et les vapeurs filtre et le chlore pour des concentrations maximales de 5 ppm pour les vapeurs de chlore ou 50 mg/m³ (Hydroxyde de calcium). Un appareil respiratoire autonome approuvé par le NIOSH/MSHA si les concentrations sont inconnues ou supérieures. Si, lorsque vous portez un appareil protecteur pour la respiration, vous pouvez sentir, goûter ou détecter quoi que ce soit d'inhabituel, ou si dans le cas d'un respirateur facial complet vous avez les yeux irrités, quittez les lieux immédiatement. S'assurer que le joint d'étanchéité du respirateur est encore bon. Si tel est le cas, remplacer le filtre ou la cartouche. Si le joint n'est plus bon, vous pourriez avoir besoin d'un nouveau respirateur. (6)
Autre équipement protecteur :	Bottes et tablier imperméables. Localiser la douche d'urgence et la fontaine oculaire se trouvant à proximité de l'aire de manipulation des produits chimiques. Prendre les précautions nécessaires pour éviter tout contact direct avec le produit.

LIGNES DIRECTRICES POUR EXPOSITI

SUBSTANCE	***ACGIH TLV***	***OSHA PEL***		***NIOSH REL***	
	(STEL)	***(TWA)***	***(STEL)***	***(TWA)***	***(STEL)***
Calcium Hypochlorite	---	---	---	---	---
Sodium Chloride	---	---	---	---	---
Calcium Carbonate	—	5 mg/m³ (Respirable fraction)	---	5 mg/m³ (Respirable fraction)	---
Calcium Hydroxide	—	5 mg/m³ (Respirable dust)	---	5 mg/m³	---
Calcium Chlorate	---	---	---	---	---

Particules non classées :

(ACGIH)	(OSHA)
10 mg/m³ - particules inhalables	50 mppcf* ou 15 mg/m³ - poussières totales
3 mg/m³ - particules respirables	15 mppcf* ou 5 mg/m³ - fraction respirable

* mppcf = million de particules par pied cube.

9. PROPRIÉTÉS PHYSIQUES ET CHIMIQUES (non prévu comme spécifications)

État physique :	Solide.
Aspect :	Petites billes, rondelles, poudre ou granules secs et blancs.
Odeur :	Légère odeur de chlore.
Seuil olfactif (ppm):	Sans objet.
Point d'ébullition (°C) :	Non disponible.

Point de fusion/point de congélation (°C) :	Non disponible.
Tension de vapeur (mm Hg à 20° C) :	Sans objet.
Densité de vapeur (air = 1,0) :	Sans objet.
Densité relative (g/cc) :	Non disponible.
Masse volumique globale :	1.07 - 1.4 g/cm³
Viscosité :	Sans objet.
Taux d'évaporation (acétate de butyle = 1,0) :	Sans objet.
Solubilité :	Soluble dans l'eau.
Volatilité en % par volume :	Sans objet.
pH :	10.8 (10% solution)
Coefficient de répartition eau-huile :	Non disponible.
Composés organiques volatils :	Sans objet.
Point d'éclair (°C) :	Non combustible (qui ne brûle pas).

10. STABILITÉ ET RÉACTIVITÉ

STABILITÉ CHIMIQUE

Dans des conditions normales :	Stable.
En présence de flammes :	Ininflammable. Les produits humides peuvent se décomposer exothermiquement et causer la combustion des produits organiques. L'oxygène provenant de la décomposition exothermique peut entretenir la combustion. Il y aura décomposition du produit à plus de 170 °C.
Risques de polymérisation brutale :	Nuls.
Conditions à éviter :	Températures élevées, étincelles, flammes nues et toute autre source d'inflammation. Sensible à l'humidité et à la chaleur. Les produits humides peuvent se décomposer exothermiquement et causer la combustion des produits organiques. L'oxygène provenant de la décomposition exothermique peut entretenir la combustion. Réduire la dissémination des poussières au maximum. Nettoyez immédiatement pour éliminer tout risque de dérapage. La contamination par l'humidité, les acides, les matières organiques et d'autres produits chimiques (incluant sans y être limité les produits chimiques de nettoyage et autres produits chimiques pour la piscine), les produits pétroliers et de peinture et d'autres produits qui brûlent facilement peut entraîner une réaction chimique : génération de chaleur et de gaz dangereux et possible réaction violente amenant un incendie ou une explosion. (3)
Substances incompatibles :	Ce produit est une comburante très forte. Des comburants forts qui peuvent causer l'ignition de produits combustibles ou comburants. Si le produit entre en contact avec les métaux, leurs sels ou d'autres contaminants, il peut se décomposer violemment. Agents réducteurs. Acides minéraux ou Lewis. Matières organiques. Combustibles. Azote contenant des composés. Ammoniac Nitrates. Alcalis. Composés comportant des hydroxyles. Oxydes métalliques. Métaux. Les matériaux contenant du soufre. Isocyanurates. L'hypochlorite peut réagir avec les amines primaires pour donner du trichlorure d'azote qui explosera spontanément dans l'air. Les fluors réagiront avec l'hydroxyde de calcium pour dégager de la chaleur et de la lumière. Aldéhydes. Térébenthine.
Produits de décomposition ou de combustion dangereux :	Les produits libérés au cours de la décomposition thermique sont toxiques et peuvent comprendre : du gaz de chlore corrosif, du chlorure d'hydrogène, des oxydes de sodium, calcium et du chlore.

11. RENSEIGNEMENTS TOXICOLOGIQUES

DONNÉES TOXICOLOGIQUES :

SUBSTANCE	***DL50 (oral, rat)***	***DL50 (cutané, lapin)***	***CL50 (inhalation, rat, 4 h)***
Hypochlorite de calcium	850 mg/kg (1,3)	> 1 000 mg/kg (3)	875 mg/m³ (3)
Chlorure de sodium	3 000 mg/kg (1,3)	---	---
Carbonate de calcium	6 450 mg/kg (1)	---	---
Hydroxyde de calcium	7 340 mg/kg (1)	---	---
Chlorate de calcium	---	---	---

Cancérogénicité :	Le CIRC a revu les études faites avec plusieurs sels d'hypochlorite. Le CIRC a jugé qu'il n'y avait pas assez de preuves pour classer les sels d'hypochlorite comme carcinogènes pour les humains et les animaux.
Données sur la reproduction :	On ne prévoit aucun effet adverse sur la reproduction.
Mutagénicité :	On ne prévoit aucun effet mutagène. Voir « Autres études en rapport avec le produit ».
Tératogénicité :	On ne prévoit aucun effet adverse tératogène. Voir « Autres études en rapport avec le produit ».
Sensibilisant respiratoire / cutané :	Inconnues.
Substances synergiques :	Inconnues.
Autres études pertinentes sur le produit :	L'hypochlorite de calcium est corrosif pour les yeux. L'application d'hypochlorite de calcium finement moulu a produit des blessures corrosives aux lapins. On a noté une blessure superficielle chez les lapins avec une solution d'hypochlorite de calcium 5 % dans l'eau (pH 11,5) appliquée pendant 30 secondes puis rincés à l'eau. (4) L'hypochlorite de calcium est corrosif pour la peau. L'application de 0,5 g d'hypochlorite de calcium finement moulu humidifié avec de l'eau pendant 24 h a produit une blessure corrosive chez les lapins. La cicatrisation n'est pas survenue en 21 jours. (4) On fait des essais de tératogénicité avec de l'hypochlorite de calcium sur des animaux de laboratoire. Les résultats ont montré que l'hypochlorite de calcium n'est pas tératogène. (4) Deux essais in vitro ont montré que l'hypochlorite de calcium produisait de l'activité mutagène. Cependant, en se fondant sur les essais micronucléus, il est incapable de produire des mutations chez les animaux. Les essais in vitro sont fréquemment inappropriés pour juger du potentiel mutagène des produits chimiques bactéricides à cause du haut degré de toxicité cellulaire. La concentration produisant des mutations dans ces essais in vitro est significativement plus grande que la concentration utilisée pour la désinfection. En se fondant sur la haute toxicité cellulaire dans les essais in vitro et le manque de propriétés mutagènes chez les animaux, le risque de dommages génétiques pour les humains n'est pas significatif. (3) Hydroxyde de calcium : L'application de 10 mg (0,01 g) d'hydroxyde de calcium solide a causé une sévère irritation des yeux ou de la corrosion dans un test de Draize modifié. Il n'y a pas eu de cicatrisation dans les 21 jours. L'exposition à l'hydroxyde de calcium en pâte pendant une minute, suivie par le nettoyage et le rinçage à l'aide d'une solution saline physiologique, a causé des blessures à la cornée. Cette blessure a atteint son paroxysme après une exposition de 24 heures ; l'œil n'était pas revenu à la normale après trois mois. (4)

12. RENSEIGNEMENTS ÉCOLOGIQUES

Écotoxicité :	Toxique pour la vie aquatique. (3) Hypochlorite de calcium : LC50 (capucette) = 37 µg/L (3), 96 heures EC50 (dapnie magna) = 0,73 - 0,79 (3), 48 heures
Environnement :	Non disponible. Ne pas contaminer les eaux domestiques et d'irrigation, les lacs, les étangs, les ruisseaux et les rivières.

13. CONSIDÉRATION POUR LA DISPOSITION

Produits chimiques de désactivation :	Neutralisez soigneusement en ajoutant du peroxyde d'hydrogène : 0,55 L d'une solution 35 % de peroxyde d'hydrogène pour 0,45 kg d'hypochlorite à neutraliser. Diluer les résidus neutralisés avec de l'eau. (4) On s'attend à ce que la neutralisation soit exothermique. Il pourrait y avoir effervescence. L'oxygène dégagé avec la décomposition exothermique peut entretenir la combustion.
Méthodes d'élimination des déchets :	Ces renseignements s'appliquent au produit tel qu'il est fabriqué. L'usager pourrait être appelé à réévaluer le produit lorsque viendra le temps d'en disposer puisque son utilisation, sa transformation, son mélange et son traitement peuvent influencer sa classification. Éliminer les résidus dans des installations autorisées pour le traitement ou l'élimination des déchets (dangereux) conformément aux réglementations municipale, provinciale et fédérale en vigueur. Ne pas jeter avec les ordures ménagères ni dans les égouts.
Manipulation sécuritaire des résidus :	Voir la section « Méthode de disposition des déchets ».

Disposition de l'emballage : Les conteneurs vides retiennent les résidus ce qui peut être dangereux. Les fûts vides doivent être complètement drainés, correctement bondonnés et promptement retournés pour reconditionnement. Traiter l'emballage de la même façon que le produit. Éliminer les résidus dans des installations autorisées pour le traitement ou l'élimination des déchets (dangereux) conformément aux réglementations locale, provinciale et fédérale en vigueur.

14. RENSEIGNEMENTS SUR LE TRANSPORT

DESCRIPTION RÉGLEMENTAIRE - LOI CANADIENNE SUR LE TMD (transport des marchandises dangereuses) :

UN2880, HYPOCHLORITE DE CALCIUM HYDRAT, Classe 5.1, GE II.

Étiquette : Matières comburantes. Plaque de danger : Matières comburantes.

Index ERAP : -----. Exemptions : Inconnues.

CLASSIFICATION DU DÉPARTEMENT DES TRANSPORTS DES É.-U. (49CFR172.101, 172.102) :

UN2880, HYPOCHLORITE DE CALCIUM HYDRAT, Classe 5.1, GE II.

Étiquette : Matière comburante. Plaque de danger : Matière comburante.

CERCLA-RQ : 100 lb / 45,4 kg Exemptions : Inconnus.

15. RENSEIGNEMENTS RÉGLEMENTAIRES

CANADA

LCPE - RRSN : Tous les ingrédients de ce produit apparaissent sur la LIS d'après la réglementation canadienne sur l'environnement.

LCPE - INRP : Non inclus.

Règlement sur les produits contrôlés (SIMDUT) :

C : Matière comburante

E : Corrosif

É.-U.

Loi sur la protection de l'environnement : Tous les ingrédients de ce produit apparaissent sur la liste des produits concernés par la US-EPA.

OSHA HCS (29CFR 1910.1200) : Comburant. Corrosif.

NFPA : Santé, Feu, Réactivité (Non disponible.)

HMIS : Santé, Feu, Réactivité (Non disponible.)

INTERNATIONAL

Non disponible.

16. AUTRES RENSEIGNEMENTS

RÉFÉRENCES

1. RTECS-Inscription des effets toxiques des substances chimiques, base de données RTECS du Centre canadien d'hygiène et de sécurité au travail.
2. Clayton, G.D. and Clayton, F.E., Eds., Patty's Industrial Hygiene and Toxicology, 3rd ed., Vol. IIA,B,C, John Wiley and Sons, New York, 1981.
3. Fiches signalétiques du fournisseur.
4. CHEMINFO, Centre canadien d'hygiène et de sécurité au travail, Hamilton (Ontario) Canada.
5. Guide to Occupational Exposure Values, 2011, American Conference of Governmental Industrial Hygienists, Cincinnati, 2011.
6. Le service des affaires réglementaires, Brenntag Canada Inc.
7. The British Columbia Drug and Poison Information Centre, Poison Managements Manual, Association pharmaceutique canadienne, Ottawa, 1981.

et les conditions d'utilisation et de manutention peuvent s'étendre à d'autres aspects. Aucune garantie quelle qu'elle soit n'est accordée et Brenntag Canada inc. ne peut en aucun cas être tenu responsable des dommages, des pertes, des blessures corporelles ni des dommages fortuits pouvant résulter de l'utilisation des présents renseignements. La présente fiche signalétique est en vigueur pendant trois ans.

Pour obtenir la version révisée de la présente fiche signalétique ou d'une autre fiche, veuillez communiquer avec le bureau de Brenntag Canada le plus près.

Colombie-Britannique : 20333-102B Avenue, Langley (Colombie-Britannique) V1M 3H1
Téléphone : (604) 513-9009 Télécopieur : (604) 513-9010

Alberta : 6628, 45e Rue, Leduc (Alberta) T9E 7C9
Téléphone : (780) 986-4544 Télécopieur : (780) 986-1070

Manitoba : 681, rue Plinquet, Winnipeg (Manitoba) R2J 2X2
Téléphone : (204) 233-3416 Télécopieur : (204) 233-7005

Ontario : 43, chemin Jutland, Toronto (Ontario) M8Z 2G6
Téléphone : (416) 259-8231 Télécopieur : (416) 259-5333

Québec : 2900, boul. Jean-Baptiste-Deschamps, Lachine (Québec) H8T 1C8
Téléphone : (514) 636-9230 Télécopieur : (514) 636-0877

Atlantique : 105 A, boul. Akerley, Dartmouth (Nouvelle-Écosse) B3B 1R7
Téléphone : (902) 468-9690 Télécopieur : (902) 468-3085

Rédaction : Le service des affaires réglementaires, Brenntag Canada Inc., (416) 259-8231.

The Public Health and Safety Organization

NSF Product and Service Listings

These NSF Official Listings are current as of **Thursday, March 6, 2025** at 12:15 a.m. Eastern Time. Please contact NSF to confirm the status of any Listing, report errors, or make suggestions.

Alert: NSF is concerned about fraudulent downloading and manipulation of website text. Always confirm this information by clicking on the below link for the most accurate information:
http://info.nsf.org/Certified/PwsChemicals/Listings.asp?Company=34960&Standard=060&

NSF/ANSI/CAN 60
Drinking Water Treatment Chemicals - Health Effects

Brenntag Mid-South, Inc.

1405 Highway 136 West
P.O. Box 20
Henderson, KY 42420-0020
United States
800-950-7267
270-827-3545
Visit this company's website
(http://www.brenntag.com/north-america/en/about-brenntag/regional-capabilities/brenntag-mid-south/index.jsp)

Facility : Clearwater, FL

Hydrochloric Acid

Trade Designation	*Product Function*	*Max Use*
Hydrochloric Acid 20 BE	Corrosion & Scale Control	44mg/L
Hydrochloric Acid 20 BE/31.45	Corrosion & Scale Control	44mg/L
Hydrochloric Acid 28%	Corrosion & Scale Control	50mg/L
Hydrochloric Acid 31.45%	Corrosion & Scale Control	44mg/L
Hydrochloric Acid 32%	Corrosion & Scale Control	44mg/L
Muriatic Acid 20 DEG BE	Corrosion & Scale Control	44mg/L
Muriatic Acid 22 DEG BE	Corrosion & Scale Control	40mg/L

Sodium Hypochlorite[HY]

Trade Designation	*Product Function*	*Max Use*
SNO-GLO BLEACH	Disinfection & Oxidation	105mg/L
Sno-Glo 10% Bleach	Disinfection & Oxidation	105mg/L
Sodium Hypochlorite 10.5%	Disinfection & Oxidation	100mg/L
Sodium Hypochlorite 12.5%	Disinfection & Oxidation	84mg/L
Sodium Hypochlorite, 10%	Disinfection & Oxidation	105mg/L

[HY] The residual levels of chlorine (hypochlorite ion and hypochlorous acid), chlorine dioxide, chlorate ion, chloramine and disinfection by-products shall be monitored in the finished drinking water to ensure compliance to all applicable regulations. Also, reference the AWWA B300 (Hypochlorites) standard's Recommendations for the Handling and Storage of Hypochlorite Solutions appendix for information on preservation techniques for hypochlorite bleach in transit and storage.

Sulfuric Acid

Trade Designation	*Product Function*	*Max Use*
Sulfuric Acid 15%	Corrosion & Scale Control pH Adjustment	260mg/L
Sulfuric Acid 38.5%	Corrosion & Scale Control pH Adjustment	120mg/L
Sulfuric Acid 50%	Corrosion & Scale Control pH Adjustment	93mg/L
Sulfuric Acid 66 BE	pH Adjustment Corrosion & Scale Control	50mg/L
Sulfuric Acid 66 DEG	Corrosion & Scale Control pH Adjustment	50mg/L
Sulfuric Acid 78%	pH Adjustment Corrosion & Scale Control	60mg/L
Sulfuric Acid 93%	Corrosion & Scale Control pH Adjustment	50mg/L

NOTE: Only products bearing the NSF Mark on the product, product packaging, and/or documentation shipped with the product are Certified.

Facility : Miami, FL

Sodium Hydroxide[1]

Trade Designation	*Product Function*	*Max Use*
Caustic Soda 20%	Corrosion & Scale Control	250mg/L
Caustic Soda 25%	Corrosion & Scale Control	200mg/L
Caustic Soda 50%	Corrosion & Scale Control	100mg/L
Sodium Hydroxide 20%	Corrosion & Scale Control	250mg/L

Sodium Hydroxide 25%	Corrosion & Scale Control	200mg/L
Sodium Hydroxide 50%	Corrosion & Scale Control	100mg/L

[1] Trade designation may be followed by a three digit alpha suffix to designate the chlor-alkali electrolytic cell category/grade.

Facility : Orlando, FL

Aluminum Sulfate[AL]

Trade Designation	*Product Function*	*Max Use*
Aluminum Sulfate 50%	Coagulation & Flocculation	150mg/L
Aluminum Sulfate 50% SOLN	Coagulation & Flocculation	150mg/L
Aluminum Sulfate 50% Solution	Coagulation & Flocculation	150mg/L
Aluminum Sulfate Solution	Coagulation & Flocculation	150 mg/L
Liquid Alum	Coagulation & Flocculation	150 mg/L

[AL] Based on an evaluation of health effects data, the level of aluminum in the finished drinking water shall not exceed 2 mg/L.

Chlorine[CL]

Trade Designation	*Product Function*	*Max Use*
Chlorine, Liquified Gas	Disinfection & Oxidation	30 mg/L

[CL] The residual levels of chlorine (hypochlorite ion and hypochlorous acid), chlorine dioxide, chlorate ion, chloramine and disinfection by-products shall be monitored in the finished drinking water to ensure compliance to all applicable regulations.

Ferric Chloride

Trade Designation	*Product Function*	*Max Use*
Ferric Chloride 38-42%	Coagulation & Flocculation	250mg/L
Ferric Chloride Liquid	Coagulation & Flocculation	250 mg/L
Ferric Chloride Solution	Coagulation & Flocculation	250 mg/L
Iron (III) Chloride Solution	Coagulation & Flocculation	250mg/L
Iron Trichloride Solution	Coagulation & Flocculation	250mg/L

Hydrochloric Acid

Trade Designation	*Product Function*	*Max Use*
Hydrochloric Acid 15%	Corrosion & Scale Control pH Adjustment	80mg/L
Hydrochloric Acid 20 BE	Corrosion & Scale Control	44mg/L

Hydrochloric Acid 20 BE / 31.45	Corrosion & Scale Control	44mg/L
Hydrochloric Acid 28%	Corrosion & Scale Control	50mg/L
Hydrochloric Acid 31.45%	Corrosion & Scale Control	44mg/L
Hydrochloric Acid 32%	Corrosion & Scale Control	44mg/L
Muriatic Acid	Corrosion & Scale Control	44mg/L
Muriatic Acid 10%	Corrosion & Scale Control	138mg/L
Muriatic Acid 15%	Corrosion & Scale Control pH Adjustment	80mg/L
Muriatic Acid 20 DEG BE	Corrosion & Scale Control	44mg/L
Muriatic Acid 22 DEG BE	Corrosion & Scale Control	40mg/L

Sodium Bisulfite[1]

Trade Designation	*Product Function*	*Max Use*
Sodium Bisulfite 19-44%	Dechlorinator & Antioxidant	46mg/L
Sodium Hydrogen Sulfite 40%	Dechlorinator & Antioxidant	46mg/L

[1] This product contains sulfite.
Sulfites have been known to cause potentially lethal allergic reactions in sulfite-sensitive individuals.
The maximum recommended allowable residual sulfite level in the finished drinking water is 100 ppb (0.1 mg/L).

Sodium Hydroxide[2]

Trade Designation	*Product Function*	*Max Use*
Caustic Soda 20%	Corrosion & Scale Control	250 mg/L
Caustic Soda 25%	Corrosion & Scale Control	200 mg/L
Caustic Soda 50%	Corrosion & Scale Control	100 mg/L
Sodium Hydroxide 20%	Corrosion & Scale Control	250mg/L
Sodium Hydroxide 25%	Corrosion & Scale Control	200mg/L
Sodium Hydroxide 50%	Corrosion & Scale Control	100mg/L

[2] Trade designation may be followed by a three digit alpha suffix to designate the chlor-alkali electrolytic cell category/grade.

Sodium Hypochlorite[HY]

Trade Designation	*Product Function*	*Max Use*
SNO-GLO BLEACH	Disinfection & Oxidation	105mg/L
Sno-Glo 10% Bleach	Disinfection & Oxidation	105 mg/L
Sodium Hypochlorite 12.5%	Disinfection & Oxidation	84 mg/L
Sodium Hypochlorite, 10%	Disinfection & Oxidation	105 mg/L

[HY] The residual levels of chlorine (hypochlorite ion and hypochlorous acid), chlorine dioxide, chlorate ion, chloramine and disinfection by-products shall be monitored in the finished drinking water to ensure compliance to all applicable regulations. Also, reference the AWWA B300 (Hypochlorites) standard's Recommendations for the Handling and Storage of Hypochlorite Solutions appendix for information on preservation techniques for hypochlorite bleach in transit and storage.

Sulfuric Acid

Trade Designation	*Product Function*	*Max Use*
Sulfuric Acid 66 BE	Corrosion & Scale Control	50mg/L
Sulfuric Acid 66 DEG	Corrosion & Scale Control	50mg/L
Sulfuric Acid 93%	Corrosion & Scale Control	50mg/L

NOTE: Only products bearing the NSF Mark on the product, product packaging, and/or documentation shipped with the product are Certified.

Facility : Tampa, FL

Ammonium Sulfate

Trade Designation	*Product Function*	*Max Use*
Ammonium Sulfate 38.5% Sol	Chloramination	60mg/L
Ammonium Sulfate 40%	Chloramination	60mg/L
Ammonium Sulfate 40% Sol	Chloramination	60mg/L
WWT 9710	Chloramination	60mg/L

Citric Acid[1]

Trade Designation	*Product Function*	*Max Use*
Citric Acid 50%	Membrane Cleaner	NA
Citric Acid Solution	Membrane Cleaner	NA

[1] These products are designed to be used off-line and flushed out prior to using the system for drinking water, following manufacturer's use instructions. The pH of the influent and effluent water should be monitored to ensure that all traces of the product have been removed before placing into service.

Hydrochloric Acid

Trade Designation	*Product Function*	*Max Use*
Hydrochloric Acid 15%	Corrosion & Scale Control pH Adjustment	80mg/L
Hydrochloric Acid 20 BE	Corrosion & Scale Control	44mg/L
Hydrochloric Acid 20 BE / 31.45	Corrosion & Scale Control	44mg/L

Hydrochloric Acid 28%	Corrosion & Scale Control	50mg/L
Hydrochloric Acid 31.45%	Corrosion & Scale Control	44mg/L
Hydrochloric Acid 32%	Corrosion & Scale Control	44mg/L
Muriatic Acid	Corrosion & Scale Control	44mg/L
Muriatic Acid 10%	Corrosion & Scale Control	138mg/L
Muriatic Acid 15%	Corrosion & Scale Control pH Adjustment	80mg/L
Muriatic Acid 20 DEG BE	Corrosion & Scale Control	44mg/L
Muriatic Acid 22 DEG BE	Corrosion & Scale Control	40mg/L

Sodium Bisulfite[2]

Trade Designation	*Product Function*	*Max Use*
Sodium Bisulfite 19-44%	Dechlorinator & Antioxidant	46mg/L
Sodium Hydrogen Sulfite 40%	Dechlorinator & Antioxidant	46mg/L

[2] This product contains sulfite. Sulfites have been known to cause potentially lethal allergic reactions in sulfite-sensitive individuals. The maximum recommended allowable residual sulfite level in the finished drinking water is 100 ppb (0.1 mg/L).

Sodium Hydroxide[3]

Trade Designation	*Product Function*	*Max Use*
Caustic Soda 25%	Corrosion & Scale Control	200mg/L
Caustic Soda 50%	Corrosion & Scale Control	100mg/L
Sodium Hydroxide 50% DIA	Corrosion & Scale Control	100mg/L
Sodium Hydroxide 50% MEM	Corrosion & Scale Control	100mg/L
Sodium Hydroxide Solution 25%	Corrosion & Scale Control	200mg/L
Sodium Hydroxide Solution 50%	Corrosion & Scale Control	100mg/L

[3] Trade designation may be followed by a three digit alpha suffix to designate the chlor-alkali electrolytic cell category/grade.

Sodium Hypochlorite[HY]

Trade Designation	*Product Function*	*Max Use*
Sodium Hypochlorite 10%	Disinfection & Oxidation	70mg/L

[HY] The residual levels of chlorine (hypochlorite ion and hypochlorous acid), chlorine dioxide, chlorate ion, chloramine and disinfection by-products shall be monitored in the finished drinking water to ensure compliance to all applicable regulations. Also, reference the AWWA B300 (Hypochlorites) standard's Recommendations for the Handling and Storage of Hypochlorite Solutions appendix for information on preservation techniques for hypochlorite bleach in transit and storage.

Sulfuric Acid

Trade Designation	*Product Function*	*Max Use*
Sulfuric Acid 15%	Corrosion & Scale Control pH Adjustment	260mg/L
Sulfuric Acid 38.5%	Corrosion & Scale Control pH Adjustment	120mg/L
Sulfuric Acid 50%	Corrosion & Scale Control pH Adjustment	93mg/L
Sulfuric Acid 66 BE	pH Adjustment Corrosion & Scale Control	50mg/L
Sulfuric Acid 66 DEG	Corrosion & Scale Control pH Adjustment	50mg/L
Sulfuric Acid 78%	pH Adjustment Corrosion & Scale Control	60mg/L
Sulfuric Acid 93%	Corrosion & Scale Control pH Adjustment	50mg/L

NOTE: Only products bearing the NSF Mark on the product, product packaging, and/or documentation shipped with the product are Certified.

Facility : Eastpoint, GA

Aluminum Chlorohydrate[AL]

Trade Designation	*Product Function*	*Max Use*
Prestofloc C-100	Coagulation & Flocculation	250mg/L

[AL] Based on an evaluation of health effects data, the level of aluminum in the finished drinking water shall not exceed 2 mg/L.

Ferric Chloride

Trade Designation	*Product Function*	*Max Use*
Ferric Chloride 38-42%	Coagulation & Flocculation	250mg/L
Ferric Chloride Liquid	Coagulation & Flocculation	250mg/L
Ferric Chloride Solution	Coagulation & Flocculation	250mg/L
Iron (III) Chloride Solution	Coagulation & Flocculation	250mg/L
Iron Trichloride Solution	Coagulation & Flocculation	250mg/L

Sodium Bisulfite[2]

Trade Designation	*Product Function*	*Max Use*
Sodium Bisulfite 19-44%	Dechlorinator & Antioxidant	46mg/L
Sodium Hydrogen Sulfite 40%	Dechlorinator & Antioxidant	46mg/L

[2] This product contains sulfite. Sulfites have been known to cause potentially lethal allergic reactions in sulfite-sensitive individuals. The maximum recommended allowable residual sulfite level in the finished drinking water is 100 ppb (0.1 mg/L).

Sodium Hydroxide[1]

Trade Designation	*Product Function*	*Max Use*
Caustic Soda 10%	Corrosion & Scale Control pH Adjustment	500mg/L
Caustic Soda 20%	Corrosion & Scale Control pH Adjustment	250mg/L
Caustic Soda 25%	Corrosion & Scale Control pH Adjustment	200mg/L
Caustic Soda 30%	Corrosion & Scale Control pH Adjustment	166mg/L
Caustic Soda 50%	Corrosion & Scale Control pH Adjustment	100mg/L
Sodium Hydroxide 10%	Corrosion & Scale Control pH Adjustment	500mg/L
Sodium Hydroxide 20%	Corrosion & Scale Control pH Adjustment	250mg/L
Sodium Hydroxide 25%	Corrosion & Scale Control pH Adjustment	200mg/L
Sodium Hydroxide 30%	Corrosion & Scale Control pH Adjustment	166mg/L
Sodium Hydroxide 50%	Corrosion & Scale Control pH Adjustment	100mg/L

[1] Trade Designation may be followed by a three digit alpha suffix to designate the chlor-alkali electrolytic cell category/grade.

Sodium Hypochlorite[HY]

Trade Designation	*Product Function*	*Max Use*
Sodium Hypochlorite 10%	Disinfection & Oxidation	105mg/L
Sodium Hypochlorite 12.5%	Disinfection & Oxidation	84mg/L

[HY] The residual levels of chlorine (hypochlorite ion and hypochlorous acid), chlorine dioxide, chlorate ion, chloramine and disinfection by-products shall be monitored in the finished drinking water to ensure compliance to all applicable regulations. Also, reference the AWWA B300 (Hypochlorites) standard's Recommendations for the Handling and Storage of Hypochlorite Solutions appendix for information on preservation techniques for hypochlorite bleach in transit and storage.

Sulfuric Acid

Trade Designation	*Product Function*	*Max Use*
Sulfuric Acid	Corrosion & Scale Control pH Adjustment	50mg/L
Sulfuric Acid 66	Corrosion & Scale Control pH Adjustment	50mg/L
Sulfuric Acid 66 Baumé	Corrosion & Scale Control pH Adjustment	50mg/L
Sulfuric Acid 66Be	Corrosion & Scale Control pH Adjustment	50mg/L
Sulfuric Acid 93%	Corrosion & Scale Control pH Adjustment	50mg/L

NOTE: Only products bearing the NSF Mark on the product, packing, and/or documentation shipped with the product are Certified.

Facility : Savannah, GA

Sodium Hydroxide

Trade Designation	*Product Function*	*Max Use*
Caustic Soda 50%	Corrosion & Scale Control	100mg/L
Sodium Hydroxide 50%	Corrosion & Scale Control	100mg/L

Facility : Valdosta, GA

Sodium Hydroxide[1]

Trade Designation	*Product Function*	*Max Use*
Caustic Soda 10%	Corrosion & Scale Control pH Adjustment	500mg/L
Caustic Soda 20%	Corrosion & Scale Control pH Adjustment	250mg/L
Caustic Soda 25%	Corrosion & Scale Control pH Adjustment	200mg/L
Caustic Soda 30%	Corrosion & Scale Control pH Adjustment	166mg/L
Caustic Soda 50%	Corrosion & Scale Control pH Adjustment	100mg/L
Sodium Hydroxide 10%	Corrosion & Scale Control pH Adjustment	500mg/L

Sodium Hydroxide 20%	Corrosion & Scale Control pH Adjustment	250mg/L
Sodium Hydroxide 25%	Corrosion & Scale Control pH Adjustment	200mg/L
Sodium Hydroxide 30%	Corrosion & Scale Control pH Adjustment	166mg/L
Sodium Hydroxide 50%	Corrosion & Scale Control pH Adjustment	100mg/L

[1] Trade Designation may be followed by a three digit alpha suffix to designate the chlor-alkali electrolytic cell category/grade.

Sodium Hypochlorite[HY]

Trade Designation	*Product Function*	*Max Use*
SNO-GLO BLEACH	Disinfection & Oxidation	82mg/L
Sno-Glo 10% Bleach	Disinfection & Oxidation	82mg/L
Sodium Hypochlorite 10%	Disinfection & Oxidation	82mg/L
Sodium Hypochlorite 10.5%	Disinfection & Oxidation	79mg/L
Sodium Hypochlorite 12.5%	Disinfection & Oxidation	66mg/L

[HY] The residual levels of chlorine (hypochlorite ion and hypochlorous acid), chlorine dioxide, chlorate ion, chloramine and disinfection by-products shall be monitored in the finished drinking water to ensure compliance to all applicable regulations. Also, reference the AWWA B300 (Hypochlorites) standard's Recommendations for the Handling and Storage of Hypochlorite Solutions appendix for information on preservation techniques for hypochlorite bleach in transit and storage.

NOTE: Only products bearing the NSF Mark on the product, packing, and/or documentation shipped with the product are Certified.

Facility : Distribution Center - East St. Louis, IL

Phosphoric Acid

Trade Designation	*Product Function*	*Max Use*
PHOSPHORIC ACID 75%	Corrosion & Scale Control Softener	13mg/L

Sulfuric Acid

Trade Designation	*Product Function*	*Max Use*
Sulfuric Acid 66 BE	Corrosion & Scale Control	50mg/L
Sulfuric Acid 66 DEG	Corrosion & Scale Control	50mg/L

Sulfuric Acid 93%	Corrosion & Scale Control	50mg/L

NOTE: Only products bearing the NSF Mark on the product, product packaging, and/or documentation shipped with the product are Certified.

Facility : Fairmont City, IL

Aluminum Chlorohydrate[AL]

Trade Designation	*Product Function*	*Max Use*
Brennfloc BC4105[PY]	Coagulation & Flocculation	31mg/L

[AL] Based on an evaluation of health effects data, the level of aluminum in the finished drinking water shall not exceed 2 mg/L.
[PY] Polyamines Certified by NSF International comply with 40 CFR 141.111 requirements for percent monomer and dose.

Aluminum Chlorohydrate/Polyaluminum Chloride[AL]

Trade Designation	*Product Function*	*Max Use*
Brennfloc 4000	Coagulation & Flocculation	250mg/L

[AL] Based on an evaluation of health effects data, the level of aluminum in the finished drinking water shall not exceed 2 mg/L.

Ammonium Hydroxide

Trade Designation	*Product Function*	*Max Use*
Ammonium Hydroxide 19%	Chloramination	10mg/L

Ammonium Sulfate

Trade Designation	*Product Function*	*Max Use*
Ammonium Sulfate	Chloramination	60mg/L
Ammonium Sulfate Solution	Chloramination	60mg/L

Blended Corrosion Inhibitor

Trade Designation	*Product Function*	*Max Use*
Robin Phos PO-2	Sequestering Corrosion & Scale Control	20mg/L

Blended Phosphates

Trade Designation	*Product Function*	*Max Use*
AquaPure 3637	Sequestering Corrosion & Scale Control	25mg/L

AquaPure 3655	Sequestering Corrosion & Scale Control	25mg/L
AquaPure 3673	Sequestering Corrosion & Scale Control	25mg/L
AquaPure 3691	Sequestering Corrosion & Scale Control	25mg/L
Robin Phos PO-73	Sequestering Corrosion & Scale Control	25mg/L

Citric Acid

Trade Designation	*Product Function*	*Max Use*
Citric Acid 50%[1] [2]	Membrane Cleaner	NA
Citric Acid Solution[1] [2]	Membrane Cleaner	NA

[1] This product is designed to be used off-line and flushed out prior to using the system for drinking water, following manufacturer's use instructions.
[2] The pH of the influent and effluent water should be monitored to ensure that all traces of the product have been removed before placing into service.

Miscellaneous Chemical Products

Trade Designation	*Product Function*	*Max Use*
Brennfloc 4220[AL]	Coagulation & Flocculation	250mg/L
Brennfloc 4420[AL] [PY]	Coagulation & Flocculation	100mg/L
Brennfloc 4420H[AL] [PY]	Coagulation & Flocculation	100mg/L

[AL] Based on an evaluation of health effects data, the level of aluminum in the finished drinking water shall not exceed 2 mg/L.
[PY] Polyamines Certified by NSF International comply with 40 CFR 141.111 requirements for percent monomer and dose.

Miscellaneous Water Supply Products

Trade Designation	*Product Function*	*Max Use*
Citric Acid 30-50%[1] [2]	Membrane Cleaner	NA

[1] This product is designed to be used off-line and flushed out prior to using the system for drinking water, following manufacturer's use instructions.
[2] The pH of the influent and effluent water should be monitored to ensure that all traces of the product have been removed before placing into service.

Monosodium Orthophosphate

Trade Designation	*Product Function*	*Max Use*

AquaPure 3601	Sequestering Corrosion & Scale Control	25mg/L

Poly (Diallyldimethylammonium Chloride)(pDADMAC)

Trade Designation	*Product Function*	*Max Use*
Brennfloc CP 7215P	Coagulation & Flocculation	100mg/L
Robin 110	Coagulation & Flocculation	100mg/L
Robin 120	Coagulation & Flocculation	50mg/L
Robin 220	Coagulation & Flocculation	50mg/L
RobinFloc 4325	Coagulation & Flocculation	100mg/L
RobinFloc 4728	Coagulation & Flocculation	96mg/L

Polyaluminum Chloride[AL]

Trade Designation	*Product Function*	*Max Use*
Aluminum Chloride Hydroxide Aqueous Solution	Coagulation & Flocculation	250mg/L
Aluminum Chlorohydrate Aqueous Solution	Coagulation & Flocculation	250mg/L
Robin AC-100	Coagulation & Flocculation	250mg/L
RobinFloc 4708	Coagulation & Flocculation	250mg/L

[AL] Based on an evaluation of health effects data, the level of aluminum in the finished drinking water shall not exceed 2 mg/L.

Polymer Blends[AL]

Trade Designation	*Product Function*	*Max Use*
AC 2602 PA	Coagulation & Flocculation	50mg/L
Brennfloc BC 4101	Coagulation & Flocculation	66mg/L
Polyaluminum Sulfate	Coagulation & Flocculation	150mg/L
Polyaluminum Sulfate Polymer Emulsion	Coagulation & Flocculation	150mg/L
Robin AC-3545	Coagulation & Flocculation	50mg/L
Robin AS-110	Coagulation & Flocculation	150mg/L
Robin AS-120	Coagulation & Flocculation	150mg/L
Robin AS-140	Coagulation & Flocculation	100mg/L
Robin FR-2003[PY]	Coagulation & Flocculation	20mg/L
Robin Floc 4725	Coagulation & Flocculation	155mg/L
RobinFloc 4707[PY]	Coagulation & Flocculation Flocculant	100mg/L
RobinFloc 4740	Coagulation & Flocculation Flocculant	68mg/L

[AL] Based on an evaluation of health effects data, the level of aluminum in the finished drinking water shall not exceed 2 mg/L.
[PY] Polyamines Certified by NSF International comply with 40 CFR 141.111 requirements for percent monomer and dose.

Sodium Permanganate[PO]

Trade Designation	*Product Function*	*Max Use*
Sodium Permanganate	Oxidant	176mg/L
Sodium Permanganate 20%	Oxidant	176mg/L
Sodium Permanganate 40%	Oxidant	86mg/L
Sodium Permanganate Solution	Oxidant	176mg/L
Sodium Permanganate Solution 15%	Oxidant	235mg/L
Sodium Permanganate Solution 19%	Oxidant	185mg/L

[PO] The finished drinking water shall be monitored to ensure that levels of manganese do not exceed 0.05 mg/L.

Sodium Polyphosphates, Glassy

Trade Designation	*Product Function*	*Max Use*
AquaPure SH 36	Corrosion Control	25mg/L
Robin Phos P-1	Corrosion Control Sequestering	28mg/L
SHMP	Corrosion Control Sequestering	28mg/L
Sodium Hexametaphosphate	Corrosion Control Sequestering	28mg/L
Sodium Polyphosphate	Corrosion Control Sequestering	28mg/L
Sodium Polyphosphates Glassy	Corrosion Control Sequestering	28mg/L

Facility : Indianapolis, IN

Aluminum Chlorohydrate[AL]

Trade Designation	*Product Function*	*Max Use*
Prestofloc C-100	Coagulation & Flocculation	250mg/L

[AL] Based on an evaluation of health effects data, the level of aluminum in the finished drinking water shall not exceed 2 mg/L.

Aluminum Sulfate[AL]

Trade Designation	*Product Function*	*Max Use*
Aluminum Sulfate Solution	Coagulation & Flocculation	150mg/L
Liquid Alum	Coagulation & Flocculation	150mg/L

Liquid Alum 50% Sol	Coagulation & Flocculation	150mg/L

[AL] Based on an evaluation of health effects data, the level of aluminum in the finished drinking water shall not exceed 2 mg/L.

Ammonium Sulfate

Trade Designation	*Product Function*	*Max Use*
Ammonium Sulfate 38.5% Sol	Chloramination	60mg/L
Ammonium Sulfate 40%	Chloramination	60mg/L
Ammonium Sulfate 40% Sol	Chloramination	60mg/L
WWT 9710	Chloramination	60mg/L

Citric Acid[1] [2]

Trade Designation	*Product Function*	*Max Use*
Citric Acid Solution	Membrane Cleaner	NA
Citric Acid, Anhydrous	Membrane Cleaner	NA

[1] This product is designed to be used off-line and flushed out prior to using the system for drinking water, following the manufacturer's use instructions.
[2] The pH of the influent and effluent water should be monitored to ensure that all traces of the product have been removed before placing into service.

Hydrofluosilicic Acid

Trade Designation	*Product Function*	*Max Use*
Hydrofluosilicic Acid 23%	Fluoridation	5 mg/L

Poly (Diallyldimethylammonium Chloride)(pDADMAC)

Trade Designation	*Product Function*	*Max Use*
Robin 110	Coagulation & Flocculation	100mg/L
Robin 120	Coagulation & Flocculation	50mg/L
Robin 220	Coagulation & Flocculation	50mg/L
RobinFloc 4325	Coagulation & Flocculation	100mg/L

Polyaluminum Chloride[AL]

Trade Designation	*Product Function*	*Max Use*
Brennfloc CC 2818	Coagulation & Flocculation	250mg/L
Brennfloc CC2358	Coagulation & Flocculation	100mg/L
Prestofloc C-100	Coagulation & Flocculation	250mg/L

[AL] Based on an evaluation of health effects data, the level of aluminum in the finished drinking water shall not exceed 2 mg/L.

Sodium Hydroxide[3]

Trade Designation	*Product Function*	*Max Use*
Caustic Soda 10%	Corrosion & Scale Control pH Adjustment	500mg/L
Caustic Soda 20%	Corrosion & Scale Control pH Adjustment	250mg/L
Caustic Soda 25%	pH Adjustment Corrosion & Scale Control	200mg/L
Caustic Soda 30%	Corrosion & Scale Control pH Adjustment	166mg/L
Caustic Soda 50%	pH Adjustment Corrosion & Scale Control	100mg/L
Sodium Hydroxide 10%	Corrosion & Scale Control pH Adjustment	500mg/L
Sodium Hydroxide 20%	Corrosion & Scale Control pH Adjustment	250mg/L
Sodium Hydroxide 25%	Corrosion & Scale Control pH Adjustment	200mg/L
Sodium Hydroxide 30%	Corrosion & Scale Control pH Adjustment	166mg/L
Sodium Hydroxide 50%	Corrosion & Scale Control pH Adjustment	100mg/L

[3] Trade Designation may be followed by a three digit alpha suffix to designate the chlor-alkali electrolytic cell category/grade.

Sodium Hypochlorite[HY]

Trade Designation	*Product Function*	*Max Use*
Chem Bleach Household	Disinfection & Oxidation	164mg/L
SNO-GLO BLEACH	Disinfection & Oxidation	86mg/L
Sno-Glo Bleach	Disinfection & Oxidation	86mg/L
Sodium Hypochlorite 10%	Disinfection & Oxidation	86mg/L
Sodium Hypochlorite 12.5%	Disinfection & Oxidation	69mg/L
Sodium Hypochlorite 5.25% Solution	Disinfection & Oxidation	164mg/L

[HY] The residual levels of chlorine (hypochlorite ion and hypochlorous acid), chlorine dioxide, chlorate ion, chloramine and disinfection by-products shall be monitored in the finished drinking water to ensure compliance to all applicable regulations. Also, reference the AWWA B300 (Hypochlorites) standard's Recommendations for the Handling and Storage of Hypochlorite Solutions appendix for information on preservation techniques for hypochlorite bleach in transit and storage.

Sulfuric Acid

Trade Designation	*Product Function*	*Max Use*
Sulfuric Acid	Corrosion & Scale Control pH Adjustment	50mg/L
Sulfuric Acid 50%	Corrosion & Scale Control pH Adjustment	93mg/L
Sulfuric Acid 66 BE	Corrosion & Scale Control pH Adjustment	50mg/L
Sulfuric Acid 66 Degree	Corrosion & Scale Control pH Adjustment	50mg/L

NOTE: Only products bearing the NSF Mark on the product, packing, and/or documentation shipped with the product are Certified.

Facility : Terre Haute, IN

Chlorine[CL]

Trade Designation	*Product Function*	*Max Use*
Chlorine	Disinfection & Oxidation	30 mg/L

[CL] The residual levels of chlorine (hypochlorite ion and hypochlorous acid), chlorine dioxide, chlorate ion, chloramine and disinfection by-products shall be monitored in the finished drinking water to ensure compliance to all applicable regulations.

Sodium Hydroxide[1]

Trade Designation	*Product Function*	*Max Use*
Caustic Soda 10%	Corrosion & Scale Control pH Adjustment	500mg/L
Caustic Soda 20%	Corrosion & Scale Control pH Adjustment	250mg/L
Caustic Soda 25%	Corrosion & Scale Control pH Adjustment	200mg/L
Caustic Soda 30%	Corrosion & Scale Control pH Adjustment	166mg/L
Caustic Soda 50%	Corrosion & Scale Control pH Adjustment	100mg/L
Sodium Hydroxide 10%	Corrosion & Scale Control pH Adjustment	500mg/L
Sodium Hydroxide 20%	Corrosion & Scale Control pH Adjustment	250mg/L

Sodium Hydroxide 25%	Corrosion & Scale Control pH Adjustment	200mg/L
Sodium Hydroxide 30%	Corrosion & Scale Control pH Adjustment	166mg/L
Sodium Hydroxide 50%	Corrosion & Scale Control pH Adjustment	100mg/L

[1] Trade Designation may be followed by a three digit alpha suffix to designate the chlor-alkali electrolytic cell category/grade.

Sodium Hypochlorite[HY]

Trade Designation	*Product Function*	*Max Use*
Chem Bleach Household	Disinfection & Oxidation	200mg/L
SNO-GLO BLEACH	Disinfection & Oxidation	105mg/L
Sno-Glo Bleach	Disinfection & Oxidation	105mg/L
Sodium Hypochlorite 10%	Disinfection & Oxidation	105mg/L
Sodium Hypochlorite 12.5%	Disinfection & Oxidation	84 mg/L
Sodium Hypochlorite 5.25% Solution	Disinfection & Oxidation	200mg/L

[HY] The residual levels of chlorine (hypochlorite ion and hypochlorous acid), chlorine dioxide, chlorate ion, chloramine and disinfection by-products shall be monitored in the finished drinking water to ensure compliance to all applicable regulations. Also, reference the AWWA B300 (Hypochlorites) standard's Recommendations for the Handling and Storage of Hypochlorite Solutions appendix for information on preservation techniques for hypochlorite bleach in transit and storage.

NOTE: Only products bearing the NSF Mark on the product, packing, and/or documentation shipped with the product are Certified.

Facility : Georgetown, KY

Sodium Hypochlorite[HY]

Trade Designation	*Product Function*	*Max Use*
Sodium Hypochlorite	Disinfection & Oxidation	64mg/L

[HY] The residual levels of chlorine (hypochlorite ion and hypochlorous acid), chlorine dioxide, chlorate ion, chloramine and disinfection by-products shall be monitored in the finished drinking water to ensure compliance to all applicable regulations. Also, reference the AWWA B300 (Hypochlorites) standard's Recommendations for the Handling and

Storage of Hypochlorite Solutions appendix for information on preservation techniques for hypochlorite bleach in transit and storage.

Facility : Henderson, KY

Aluminum Chlorohydrate[AL]

Trade Designation	*Product Function*	*Max Use*
Brennfloc BC4105[PY]	Coagulation & Flocculation	31mg/L
Prestofloc C-100	Coagulation & Flocculation	250 mg/L

[AL] Based on an evaluation of health effects data, the level of aluminum in the finished drinking water shall not exceed 2 mg/L.
[PY] Polyamines Certified by NSF International comply with 40 CFR 141.111 requirements for percent monomer and dose.

Aluminum Sulfate[AL]

Trade Designation	*Product Function*	*Max Use*
Aluminum Sulfate 50%	Coagulation & Flocculation	150mg/L
Aluminum Sulfate 50% Solution	Coagulation & Flocculation	150mg/L
Aluminum Sulfate Solution	Coagulation & Flocculation	150 mg/L
Liquid Alum	Coagulation & Flocculation	150 mg/L

[AL] Based on an evaluation of health effects data, the level of aluminum in the finished drinking water shall not exceed 2 mg/L.

Ammonia, Anhydrous

Trade Designation	*Product Function*	*Max Use*
Ammonia, Anhydrous	Chloramination	5 mg/L

Ammonium Hydroxide

Trade Designation	*Product Function*	*Max Use*
AQUA AMMONIA	Chloramination	10 mg/L
Ammonium Hydroxide 19%	Chloramination	10mg/L
Aqua Ammonia 26 Deg	Chloramination	10mg/L

Ammonium Sulfate

Trade Designation	*Product Function*	*Max Use*
Ammonium Sulfate 38.5% Sol	Chloramination	60mg/L
Ammonium Sulfate 40%	Chloramination	60mg/L
Ammonium Sulfate 40% Sol	Chloramination	60mg/L

WWT 9710	Chloramination	60mg/L

Blended Phosphates

Trade Designation	*Product Function*	*Max Use*
AquaPure 3627	Corrosion & Scale Control Sequestering	25mg/L
AquaPure 3628	Corrosion & Scale Control Sequestering	25mg/L
AquaPure 3637	Corrosion & Scale Control Sequestering	25mg/L
AquaPure 3646	Corrosion & Scale Control Sequestering	25mg/L
AquaPure 3664	Corrosion & Scale Control Sequestering	25mg/L
AquaPure 3672	Corrosion & Scale Control Sequestering	25mg/l
AquaPure 3673	Corrosion & Scale Control Sequestering	25mg/L
AquaPure 3682	Corrosion & Scale Control Sequestering	25mg/l
AquaPure 3691	Corrosion & Scale Control Sequestering	25mg/L
Aquapure 3610	Corrosion & Scale Control Sequestering	25mg/L
Aquapure 3619	Corrosion & Scale Control Sequestering	25mg/L
Aquapure 3655	Corrosion & Scale Control Sequestering	25mg/L

Chlorine[CL]

Trade Designation	*Product Function*	*Max Use*
Chlorine, Liquified Gas	Disinfection & Oxidation	30 mg/L

[CL] The residual levels of chlorine (hypochlorite ion and hypochlorous acid), chlorine dioxide, chlorate ion, chloramine and disinfection by-products shall be monitored in the finished drinking water to ensure compliance to all applicable regulations.

Citric Acid[1]

Trade Designation	*Product Function*	*Max Use*
Citric Acid 50%	Membrane Cleaner	NA
Citric Acid Solution	Membrane Cleaner	NA

[1] These products are designed to be used off-line and flushed out prior to using the system for drinking water, following manufacturer's use instructions. The pH of the

influent and effluent water should be monitored to ensure that all traces of the product have been removed before placing into service.

Ferric Chloride

Trade Designation	*Product Function*	*Max Use*
Ferric Chloride 38-42%	Coagulation & Flocculation	250mg/L
Ferric Chloride Liquid	Coagulation & Flocculation	250 mg/L
Ferric Chloride Solution	Coagulation & Flocculation	250 mg/L
Iron (III) Chloride Solution	Coagulation & Flocculation	250mg/L
Iron Trichloride Solution	Coagulation & Flocculation	250mg/L

Ferric Sulfate

Trade Designation	*Product Function*	*Max Use*
Ferri-Floc Liquid	Coagulation & Flocculation	500 mg/L
Ferric Sulfate	Coagulation & Flocculation	500 mg/L

Fluosilicic Acid

Trade Designation	*Product Function*	*Max Use*
Hydrofluosilicic Acid 23%	Fluoridation	5 mg/L

Hydrochloric Acid

Trade Designation	*Product Function*	*Max Use*
Hydrochloric Acid 15%	Corrosion & Scale Control pH Adjustment	80mg/L
Hydrochloric Acid 20 BE	Corrosion & Scale Control	44mg/L
Hydrochloric Acid 20 BE / 31.45	Corrosion & Scale Control	44mg/L
Hydrochloric Acid 28%	Corrosion & Scale Control	50mg/L
Hydrochloric Acid 31.45%	Corrosion & Scale Control	44mg/L
Hydrochloric Acid 32%	Corrosion & Scale Control	44mg/L
Muriatic Acid	Corrosion & Scale Control	44mg/L
Muriatic Acid 10%	Corrosion & Scale Control	138mg/L
Muriatic Acid 15%	Corrosion & Scale Control pH Adjustment	80mg/L
Muriatic Acid 20 DEG BE	Corrosion & Scale Control	44mg/L
Muriatic Acid 22 DEG BE	Corrosion & Scale Control	40mg/L

Hydrogen Peroxide [HP]

Trade Designation	*Product Function*	*Max Use*
Hydrogen Peroxide 30%[2]	Oxidant	3.5mg/L
Hydrogen Peroxide 32%[3]	Oxidant	3.3mg/L
Hydrogen Peroxide 35%[4]	Oxidant	3 mg/L
Hydrogen Peroxide 8%	Oxidant	13mg/L

[2] This product may be used at a maximum use level of 95 mg/L for the following functions:
- reoxygenation of treated water
- oxidation of organic residuals
- oxidation of any reduced products, such as Fe(II) and sulfides

Treatment must be followed by chlorination to a chlorine residual no to exceed 4 mg/L, the EPA's proposed maximum residual level.

[3] This product may be used at a maximum use level of 90 mg/L for the following functions:
- reoxygenation of treated water
- oxidation of organic residuals
- oxidation of any reduced products, such as Fe(II) and sulfides

Treatment must be followed by chlorination to a chlorine residual no to exceed 4 mg/L, the EPA's proposed maximum residual level.

[4] This product may be used at a maximum use level of 85 mg/L for the following functions:
- reoxygenation of treated water
- oxidation of organic residuals
- oxidation of any reduced products, such as Fe(II) and sulfides

Treatment must be followed by chlorination to a chlorine residual no to exceed 4 mg/L, the EPA's proposed maximum residual level.

[HP] Use of this product shall be followed by chlorination to remove levels of hydrogen peroxide. Chlorine residuals shall not exceed 4 mg/L, the EPA's proposed maximum residual level.

Miscellaneous Water Supply Products[5] [6]

Trade Designation	*Product Function*	*Max Use*
Innova	Well Cleaning Aid	NA
Layne RC	Well Cleaning Aid	N/A
Layne RC10	Well Cleaning Aid	N/A
Layne RC15	Well Cleaning Aid	N/A

[5] These products are designed to be used off-line and flushed out prior to using the system for drinking water, following manufacturer's use instructions.

[6] The well is to be properly flushed and drained before being places in service.

Monosodium Orthophosphate

Trade Designation	*Product Function*	*Max Use*
AquaPure 3601	Corrosion & Scale Control Sequestering	25mg/L

Phosphoric Acid

Trade Designation	*Product Function*	*Max Use*
Aquapure Ortho	Corrosion & Scale Control	26mg/L
Phosphoric Acid (36% PO4)	Corrosion & Scale Control	26mg/L
Phosphoric Acid 75%	Corrosion & Scale Control	13mg/L

Polyaluminum Chloride[AL]

Trade Designation	*Product Function*	*Max Use*
Brennfloc BC 2380	Coagulation & Flocculation	200mg/L
Brennfloc BC 2381	Coagulation & Flocculation	200mg/L
Brennfloc CC 2818	Coagulation & Flocculation	250mg/L
Brennfloc CC2358	Coagulation & Flocculation	100mg/L
Prestofloc C-50	Coagulation & Flocculation	250 mg/L

[AL] Based on an evaluation of health effects data, the level of aluminum in the finished drinking water shall not exceed 2 mg/L.

Polyamines[PY]

Trade Designation	*Product Function*	*Max Use*
Brennfloc CP 7452P	Coagulation & Flocculation	20mg/L

[PY] Polyamines Certified by NSF International comply with 40 CFR 141.111 requirements for percent monomer and dose.

Polymer Blends[AL] [PY]

Trade Designation	*Product Function*	*Max Use*
Brennfloc BC 2376	Coagulation & Flocculation	250mg/L

[AL] Based on an evaluation of health effects data, the level of aluminum in the finished drinking water shall not exceed 2 mg/L.
[PY] Polyamines Certified by NSF International comply with 40 CFR 141.111 requirements for percent monomer and dose.

Sodium Bisulfite[7]

Trade Designation	*Product Function*	*Max Use*
Sodium Bisulfite 19-44%	Dechlorinator & Antioxidant	46mg/L

[7] This product contains sulfite. Sulfites have been known to cause potentially lethal allergic reactions in sulfite-sensitive individuals. The maximum recommended allowable residual sulfite level in the finished drinking water is 100 ppb (0.1 mg/L).

Sodium Carbonate

Trade Designation	*Product Function*	*Max Use*
Soda Ash 15%	Corrosion & Scale Control pH Adjustment	667mg/L

Sodium Carbonate 15%	Corrosion & Scale Control pH Adjustment	667mg/L

Sodium Chlorite[8] [CL]

Trade Designation	*Product Function*	*Max Use*
Sodium Chlorite	Chlorine Dioxide Production	14mg/L
Sodium Chlorite 31.25%	Chlorine Dioxide Production	22mg/L

[8] These products are certified for use in chlorine dioxide generation.
[CL] The residual levels of chlorine (hypochlorite ion and hypochlorous acid), chlorine dioxide, chlorate ion, chloramine and disinfection by-products shall be monitored in the finished drinking water to ensure compliance to all applicable regulations.

Sodium Hydroxide[9]

Trade Designation	*Product Function*	*Max Use*
Caustic Soda 20%	Corrosion & Scale Control	250 mg/L
Caustic Soda 25%	Corrosion & Scale Control	200 mg/L
Caustic Soda 50%	Corrosion & Scale Control	100 mg/L
Caustic Sodia 30%	Corrosion & Scale Control	166mg/L
Sodium Hydroxide 20%	Corrosion & Scale Control	250mg/L
Sodium Hydroxide 25%	Corrosion & Scale Control	200mg/L
Sodium Hydroxide 30%	Corrosion & Scale Control	166mg/L
Sodium Hydroxide 50%	Corrosion & Scale Control	100mg/L

[9] Trade designation may be followed by a three digit alpha suffix to designate the chlor-alkali electrolytic cell category/grade.

Sodium Hypochlorite[HY]

Trade Designation	*Product Function*	*Max Use*
Chem Bleach Household	Disinfection & Oxidation	200mg/L
SNO-GLO BLEACH	Disinfection & Oxidation	105mg/L
Sno-Glo 10% Bleach	Disinfection & Oxidation	105 mg/L
Sodium Hypochlorite 10%	Disinfection & Oxidation	105 mg/L
Sodium Hypochlorite 12.5%	Disinfection & Oxidation	84 mg/L
Sodium Hypochlorite 12.5% NSF	Disinfection & Oxidation	84mg/L
Sodium Hypochlorite 5.25% Solution	Disinfection & Oxidation	200mg/L

[HY] The residual levels of chlorine (hypochlorite ion and hypochlorous acid), chlorine dioxide, chlorate ion, chloramine and disinfection by-products shall be monitored in the finished drinking water to ensure compliance to all applicable regulations. Also, reference the AWWA B300 (Hypochlorites) standard's Recommendations for the Handling and

Storage of Hypochlorite Solutions appendix for information on preservation techniques for hypochlorite bleach in transit and storage.

Sodium Permanganate[PO]

Trade Designation	*Product Function*	*Max Use*
Sodium Permanganate	Oxidant	176mg/L
Sodium Permanganate 20%	Oxidant	176mg/L
Sodium Permanganate 40%	Oxidant	88mg/L
Sodium Permanganate Solution	Oxidant	176mg/L
Sodium Permanganate Solution 15%	Oxidant	235mg/L
Sodium Permanganate Solution 19%	Oxidant	185mg/L

[PO] The finished drinking water shall be monitored to ensure that levels of manganese do not exceed 0.05 mg/L.

Sodium Polyphosphates, Glassy

Trade Designation	*Product Function*	*Max Use*
AquaPure SH 36	Corrosion & Scale Control	25mg/L

Sodium Silicate

Trade Designation	*Product Function*	*Max Use*
N Sodium Silicate Solution	Corrosion & Scale Control	42mg/L

Sulfuric Acid

Trade Designation	*Product Function*	*Max Use*
Sulfuric Acid 35%	Corrosion & Scale Control	133mg/L
Sulfuric Acid 38.5%	Corrosion & Scale Control	121mg/L
Sulfuric Acid 50%	Corrosion & Scale Control	93mg/L
Sulfuric Acid 78%	Corrosion & Scale Control	60mg/L
Sulfuric Acid 93%	Corrosion & Scale Control	50mg/L

Tetrapotassium Pyrophosphate

Trade Designation	*Product Function*	*Max Use*
Tetrapotassium Pyrophosphate 60% Solution	Corrosion & Scale Control Sequestering	29mg/L

[CP] The finished drinking water shall be monitored to ensure that levels of copper do not exceed 1.3 mg/L.

Facility : Louisville, KY

Sodium Hypochlorite[HY]

Trade Designation	*Product Function*	*Max Use*
Sodium Hypochlorite 12.5%	Disinfection & Oxidation	43mg/L

[HY] The residual levels of chlorine (hypochlorite ion and hypochlorous acid), chlorine dioxide, chlorate ion, chloramine and disinfection by-products shall be monitored in the finished drinking water to ensure compliance to all applicable regulations. Also, reference the AWWA B300 (Hypochlorites) standard's Recommendations for the Handling and Storage of Hypochlorite Solutions appendix for information on preservation techniques for hypochlorite bleach in transit and storage.

Facility : Charlotte, NC

Hydrochloric Acid

Trade Designation	*Product Function*	*Max Use*
Hydrochloric Acid 15%	pH Adjustment Corrosion & Scale Control	80mg/L
Hydrochloric Acid 20 BE	Corrosion & Scale Control	44mg/L
Hydrochloric Acid 20 BE / 31.45	Corrosion & Scale Control	44mg/L
Hydrochloric Acid 28%	Corrosion & Scale Control	50mg/L
Hydrochloric Acid 31.45%	Corrosion & Scale Control	44mg/L
Hydrochloric Acid 32%	Corrosion & Scale Control	44mg/L
Muriatic Acid	Corrosion & Scale Control	44mg/L
Muriatic Acid 10%	Corrosion & Scale Control	138mg/L
Muriatic Acid 15%	pH Adjustment Corrosion & Scale Control	80mg/L
Muriatic Acid 20 DEG BE	Corrosion & Scale Control	44mg/L
Muriatic Acid 22 DEG BE	Corrosion & Scale Control	40mg/L

Sodium Hydroxide[1]

Trade Designation	*Product Function*	*Max Use*
Caustic Soda 20%	Corrosion & Scale Control	250mg/L
Caustic Soda 25%	Corrosion & Scale Control	200mg/L
Caustic Soda 30%	Corrosion & Scale Control	166mg/L
Caustic Soda 50%	Corrosion & Scale Control	100mg/L
Sodium Hydroxide 20%	Corrosion & Scale Control	250mg/L
Sodium Hydroxide 25%	Corrosion & Scale Control	200mg/L
Sodium Hydroxide 30%	Corrosion & Scale Control	166mg/L
Sodium Hydroxide 50%	Corrosion & Scale Control	100mg/L

[1] Trade designation may be followed by a three digit alpha suffix to designate the chlor-alkali electrolytic cell category/grade.

Sodium Hypochlorite[HY]

Trade Designation	*Product Function*	*Max Use*
Sodium Hypochlorite 12.5%	Disinfection & Oxidation	84mg/L

[HY] The residual levels of chlorine (hypochlorite ion and hypochlorous acid), chlorine dioxide, chlorate ion, chloramine and disinfection by-products shall be monitored in the finished drinking water to ensure compliance to all applicable regulations. Also, reference the AWWA B300 (Hypochlorites) standard's Recommendations for the Handling and Storage of Hypochlorite Solutions appendix for information on preservation techniques for hypochlorite bleach in transit and storage.

Sulfuric Acid

Trade Designation	*Product Function*	*Max Use*
Sulfuric Acid	Corrosion & Scale Control pH Adjustment	50mg/L
Sulfuric Acid 15%	Corrosion & Scale Control pH Adjustment	260mg/L
Sulfuric Acid 38.5%	Corrosion & Scale Control pH Adjustment	120mg/L
Sulfuric Acid 50%	Corrosion & Scale Control pH Adjustment	93mg/L
Sulfuric Acid 66 BE	Corrosion & Scale Control pH Adjustment	50mg/L
Sulfuric Acid 66 DEG	Corrosion & Scale Control pH Adjustment	50mg/L
Sulfuric Acid 78%	Corrosion & Scale Control pH Adjustment	60mg/L
Sulfuric Acid 93%	Corrosion & Scale Control pH Adjustment	50mg/L

[PY] Polyamines Certified by NSF International comply with 40 CFR 141.111 requirements for percent monomer and dose.

Facility : Durham, NC

Ammonium Sulfate

Trade Designation	*Product Function*	*Max Use*
Ammonium Sulfate 38.5% Sol	Chloramination	60mg/L

Ammonium Sulfate 40%	Chloramination	60mg/L
Ammonium Sulfate 40% Sol	Chloramination	60mg/L
WWT 9710	Chloramination	60mg/L

Facility : Greensboro, NC

Hydrogen Peroxide[HP]

Trade Designation	*Product Function*	*Max Use*
Hydrogen Peroxide 30%	Disinfection & Oxidation	3.5mg/L
Hydrogen Peroxide 32%	Disinfection & Oxidation	3.3mg/L
Hydrogen Peroxide 35%	Disinfection & Oxidation	3mg/L
Hydrogen Peroxide 50%	Disinfection & Oxidation	2.1mg/L
Hydrogen Peroxide 8%	Disinfection & Oxidation	13mg/L

[HP] Use of this product shall be followed by chlorination to remove levels of hydrogen peroxide. Chlorine residuals shall not exceed 4 mg/L, the EPA's proposed maximum residual level.

Miscellaneous Corrosion Chemicals[1]

Trade Designation	*Product Function*	*Max Use*
Aquapure ® ZOP 1237	Corrosion & Scale Control	15mg/L

[1] Based on an evaluation of health effects data, the level of zinc in the finished drinking water should not exceed 2.0 mg/L.

Facility : Wilmington, NC

Sodium Hydroxide

Trade Designation	*Product Function*	*Max Use*
Caustic Soda 25%	pH Adjustment	200mg/L
Caustic Soda 50%	pH Adjustment	100mg/L
Sodium Hydroxide 25%	pH Adjustment	200mg/L
Sodium Hydroxide 50%	pH Adjustment	100mg/L

NOTE: Only products bearing the NSF Mark on the product, packing, and/or documentation shipped with the product are Certified.

Facility : Charleston, SC

Sodium Hydroxide[1]

Trade Designation	*Product Function*	*Max Use*
Caustic Soda 50%	Corrosion & Scale Control pH Adjustment	100mg/L

[1] Trade designation may be followed by a three digit alpha suffix to designate the chlor-alkali electrolytic cell category/grade.

NOTE: Only products bearing the NSF Mark on the product, product packaging, and/or documentation shipped with the product are Certified.

Facility : Chattanooga, TN

Aluminum Sulfate[AL]

Trade Designation	*Product Function*	*Max Use*
Aluminum Sulfate Solution	Coagulation & Flocculation	150 mg/L
Liquid Alum	Coagulation & Flocculation	150 mg/L

[AL] Based on an evaluation of health effects data, the level of aluminum in the finished drinking water shall not exceed 2 mg/L.

Chlorine[CL]

Trade Designation	*Product Function*	*Max Use*
Chlorine, Liquified Gas	Disinfection & Oxidation	30 mg/L

[CL] The residual levels of chlorine (hypochlorite ion and hypochlorous acid), chlorine dioxide, chlorate ion, chloramine and disinfection by-products shall be monitored in the finished drinking water to ensure compliance to all applicable regulations.

Citric Acid[1]

Trade Designation	*Product Function*	*Max Use*
Citric Acid 50%	Membrane Cleaner	NA
Citric Acid Solution	Membrane Cleaner	NA

[1] This product is designed to be used off-line and flushed prior to using the system for drinking water, following manufacturer's use

instructions. The pH of the influent and effluent water should be monitored to ensure that all traces of the product have been removed before placing into service.

Ferric Chloride

Trade Designation	*Product Function*	*Max Use*
Ferric Chloride 38-42%	Coagulation & Flocculation	250mg/L
Ferric Chloride Liquid	Coagulation & Flocculation	250 mg/L
Ferric Chloride Solution	Coagulation & Flocculation	250 mg/L
Iron (III) Chloride Solution	Coagulation & Flocculation	250mg/L
Iron Trichloride Solution	Coagulation & Flocculation	250mg/L

Ferric Sulfate

Trade Designation	*Product Function*	*Max Use*
Ferri-Floc Liquid	Coagulation & Flocculation	500 mg/L
Ferric Sulfate	Coagulation & Flocculation	500 mg/L

Fluosilicic Acid

Trade Designation	*Product Function*	*Max Use*
Hydrofluosilicic Acid 23%	Fluoridation	5mg/L

Hydrochloric Acid

Trade Designation	*Product Function*	*Max Use*
Hydrochloric Acid 20 BE	Corrosion & Scale Control	44mg/L
Hydrochloric Acid 20 BE / 31.45	Corrosion & Scale Control	44mg/L
Hydrochloric Acid 28%	Corrosion & Scale Control	50mg/L
Hydrochloric Acid 31.45%	Corrosion & Scale Control	44mg/L
Hydrochloric Acid 32%	Corrosion & Scale Control	44mg/L
Muriatic Acid	Corrosion & Scale Control	44mg/L
Muriatic Acid 10%	Corrosion & Scale Control	138mg/L
Muriatic Acid 20 DEG BE	Corrosion & Scale Control	44mg/L
Muriatic Acid 22 DEG BE	Corrosion & Scale Control	40mg/L

Hydrogen Peroxide [HP]

Trade Designation	*Product Function*	*Max Use*
Hydrogen Peroxide 30%[2]	Oxidant	3.5mg/L
Hydrogen Peroxide 32%[3]	Oxidant	3.3mg/L
Hydrogen Peroxide 50%[4]	Oxidant	2.1mg/L
Hydrogen Peroxide 8%	Oxidant	13mg/L
Hydrogen peroxide 35%	Oxidant	3mg/L

[2] This product may be used at a maximum use level of 95 mg/L for the following functions:
- reoxygenation of treated water
- oxidation of organic residuals
- oxidation of any reduced products, such as Fe(II) and sulfides

Treatment must be followed by chlorination to a chlorine residual no to exceed 4 mg/L, the EPA's proposed maximum residual level.

[3] This product may be used at a maximum use level of 90 mg/L for the following functions:
- reoxygenation of treated water
- oxidation of organic residuals
- oxidation of any reduced products, such as Fe(II) and sulfides

Treatment must be followed by chlorination to a chlorine residual no to exceed 4 mg/L, the EPA's proposed maximum residual level.

[4] This product may be used at a maximum use level of 60 mg/L for the following functions:
- reoxygenation of treated water
- oxidation of organic residuals
- oxidation of any reduced products, such as Fe(II) and sulfides

Treatment must be followed by chlorination to a chlorine residual no to exceed 4 mg/L, the EPA's proposed maximum residual level.

[HP] Use of this product shall be followed by chlorination to remove levels of hydrogen peroxide. Chlorine residuals shall not exceed 4 mg/L, the EPA's proposed maximum residual level.

Polyaluminum Chloride[AL]

Trade Designation	*Product Function*	*Max Use*
Brennfloc BC 2380	Coagulation & Flocculation	250mg/L

[AL] Based on an evaluation of health effects data, the level of aluminum in the finished drinking water shall not exceed 2 mg/L.

Polymer Blends[PY]

Trade Designation	*Product Function*	*Max Use*
ICS 7191	Coagulation & Flocculation	258mg/L
ICS 7201	Coagulation & Flocculation	490mg/L

[PY] Polyamines Certified by NSF International comply with 40 CFR 141.111 requirements for percent monomer and dose.

Sodium Bisulfite[5]

Trade Designation	*Product Function*	*Max Use*
Sodium Bisulfite 19-44%	Dechlorinator & Antioxidant	46mg/L
Sodium Hydrogen Sulfite 40%	Dechlorinator & Antioxidant	46mg/L

[5] This product contains sulfite. Sulfites have been known to cause potentially lethal allergic reactions in sulfite-sensitive individuals. The maximum recommended allowable residual sulfite level in the finished drinking water is 100 ppb (0.1 mg/L).

Sodium Hydroxide[6]

Trade Designation	*Product Function*	*Max Use*
Caustic Soda 20%	Corrosion & Scale Control	250 mg/L
Caustic Soda 25%	Corrosion & Scale Control	200 mg/L
Caustic Soda 50%	Corrosion & Scale Control	100 mg/L
Sodium Hydroxide 20%	Corrosion & Scale Control	250mg/L
Sodium Hydroxide 25%	Corrosion & Scale Control	200mg/L
Sodium Hydroxide 50%	Corrosion & Scale Control	100mg/L

[6] Trade designation may be followed by a three digit alpha suffix to designate the chlor-alkali electrolytic cell category/grade.

Facility : Distribution Center - Chattanooga, TN

Sodium Hydroxide[1]

Trade Designation	*Product Function*	*Max Use*
Caustic Soda 50%	Corrosion & Scale Control	100mg/L
Sodium Hydroxide 50%	Corrosion & Scale Control	100mg/L
Sodium Hydroxide 55%	Corrosion & Scale Control	100mg/L

[1] Trade designation may be followed by a three digit alpha suffix to designate the chlor-alkali electrolytic cell category/grade.

Facility : Memphis, TN

Sodium Hydroxide[1]

Trade Designation	*Product Function*	*Max Use*
Caustic Soda 20%	Corrosion & Scale Control	250mg/L
Caustic Soda 25%	Corrosion & Scale Control	200mg/L
Caustic Soda 50%	Corrosion & Scale Control	100mg/L
Sodium Hydroxide 20%	Corrosion & Scale Control	250mg/L
Sodium Hydroxide 25%	Corrosion & Scale Control	200mg/L
Sodium Hydroxide 50%	Corrosion & Scale Control	100mg/L

[1] Trade designation may be followed by a three digit alpha suffix to designate the chlor-alkali electrolytic cell category/grade.

Sodium Hypochlorite[HY]

Trade Designation	*Product Function*	*Max Use*
Sodium Hypochlorite 12.5%	Disinfection & Oxidation	40mg/L

[HY] The residual levels of chlorine (hypochlorite ion and hypochlorous acid), chlorine dioxide, chlorate ion, chloramine and disinfection by-products shall be monitored in the finished drinking water to ensure compliance to all applicable regulations. Also, reference the AWWA B300 (Hypochlorites) standard's Recommendations for the Handling and Storage of Hypochlorite Solutions appendix for information on preservation techniques for hypochlorite bleach in transit and storage.

Sulfuric Acid

Trade Designation	*Product Function*	*Max Use*
Sulfuric Acid 35%	Corrosion & Scale Control	133mg/L
Sulfuric Acid 38.5%	Corrosion & Scale Control	121mg/L
Sulfuric Acid 50%	Corrosion & Scale Control	93mg/L
Sulfuric Acid 66 BE	Corrosion & Scale Control pH Adjustment	50mg/L
Sulfuric Acid 66 DEG	Corrosion & Scale Control pH Adjustment	50mg/L
Sulfuric Acid 78%	Corrosion & Scale Control	60mg/L
Sulfuric Acid 93%	Corrosion & Scale Control	50mg/L

NOTE: Only products bearing the NSF Mark on the product, product packaging, and/or documentation shipped with the product are Certified.

Facility : Richmond, VA

Sodium Hydroxide[1]

Trade Designation	*Product Function*	*Max Use*
Caustic Soda 25%	Corrosion & Scale Control	200mg/L
Caustic Soda 50%	Corrosion & Scale Control	100mg/L
Sodium Hydroxide 25%	Corrosion & Scale Control	200mg/L
Sodium Hydroxide 50% DIA	Corrosion & Scale Control	100mg/L
Sodium Hydroxide 50% MEM	Corrosion & Scale Control	100mg/L
Sodium Hydroxide Solution 50%	Corrosion & Scale Control	100mg/L

[1] Trade designation may be followed by a three digit alpha suffix to designate the chlor-alkali electrolytic cell category/grade.

Sodium Hypochlorite[HY]

Trade Designation	*Product Function*	*Max Use*
Sodium Hypochlorite 12.5%	Disinfection & Oxidation	79mg/L

[HY] The residual levels of chlorine (hypochlorite ion and hypochlorous acid), chlorine dioxide, chlorate ion, chloramine and disinfection by-products shall be monitored in the finished drinking water to ensure compliance to all applicable regulations. Also, reference the AWWA B300 (Hypochlorites) standard's Recommendations for the Handling and Storage of Hypochlorite Solutions appendix for information on preservation techniques for hypochlorite bleach in transit and storage.

Facility : Nitro, WV

Aluminum Sulfate[AL]

Trade Designation	*Product Function*	*Max Use*
Aluminum Sulfate 50%	Coagulation & Flocculation	150mg/L
Aluminum Sulfate 50% SOLN	Coagulation & Flocculation	150mg/L
Aluminum Sulfate 50% Solution	Coagulation & Flocculation	150mg/L
Aluminum Sulfate Solution	Coagulation & Flocculation	150 mg/L
Liquid Alum	Coagulation & Flocculation	150 mg/L

[AL] Based on an evaluation of health effects data, the level of aluminum in the finished drinking water shall not exceed 2 mg/L.

Chlorine[CL]

Trade Designation	*Product Function*	*Max Use*
Chlorine, Liquified Gas	Disinfection & Oxidation	30mg/L

[CL] The residual levels of chlorine (hypochlorite ion and hypochlorous acid), chlorine dioxide, chlorate ion, chloramine and disinfection by-products shall be monitored in the finished drinking water to ensure compliance to all applicable regulations.

Hydrogen Peroxide [HP]

Trade Designation	*Product Function*	*Max Use*
Hydrogen Peroxide 30%[1]	Oxidant	3.5mg/L
Hydrogen Peroxide 32%[2]	Oxidant	3.3mg/L
Hydrogen Peroxide 35%[3]	Oxidant	3mg/L
Hydrogen Peroxide 8%	Oxidant	13mg/L

[1] This product may be used at a maximum use level of 95 mg/L for the following functions:
- reoxygenation of treated water
- oxidation of organic residuals
- oxidation of any reduced products, such as Fe(II) and sulfides

Treatment must be followed by chlorination to a chlorine residual not to exceed 4 mg/L, the EPA's proposed maximum residual level.

[2] This product may be used at a maximum use level of 90 mg/L for the following functions:
- reoxygenation of treated water
- oxidation of organic residuals
- oxidation of any reduced products, such as Fe(II) and sulfides

Treatment must be followed by chlorination to a chlorine residual not to exceed 4 mg/L, the EPA's proposed maximum residual level.

[3] This product may be used at a maximum use level of 85 mg/L for the following functions:
- reoxygenation of treated water
- oxidation of organic residuals
- oxidation of any reduced products, such as Fe(II) and sulfides

Treatment must be followed by chlorination to a chlorine residual not to exceed 4 mg/L, the EPA's proposed maximum residual level.

[HP] Use of this product shall be followed by chlorination to remove levels of hydrogen peroxide. Chlorine residuals shall not exceed 4 mg/L, the EPA's proposed maximum residual level.

Polyaluminum Chloride[AL]

Trade Designation	*Product Function*	*Max Use*
Brennfloc BC 2380	Coagulation & Flocculation	200mg/L
Brennfloc BC 2381	Coagulation & Flocculation	200mg/L

[AL] Based on an evaluation of health effects data, the level of aluminum in the finished drinking water shall not exceed 2 mg/L.

Potassium Hydroxide

Trade Designation	*Product Function*	*Max Use*
Caustic Potash 45%	Corrosion & Scale Control	100 mg/L
Potassium Hydroxide	Corrosion & Scale Control	100 mg/L

Sodium Hypochlorite[HY]

Trade Designation	*Product Function*	*Max Use*
SNO-GLO BLEACH	Disinfection & Oxidation	105mg/L
Sno-Glo 10% Bleach	Disinfection & Oxidation	105mg/L
Sodium Hypochlorite 12.5%	Disinfection & Oxidation	84mg/L
Sodium Hypochlorite, 10%	Disinfection & Oxidation	105mg/L

[HY] The residual levels of chlorine (hypochlorite ion and hypochlorous acid), chlorine dioxide, chlorate ion, chloramine and disinfection by-products shall be monitored in the finished drinking water to ensure compliance to all applicable regulations. Also, reference the AWWA B300 (Hypochlorites) standard's Recommendations for the Handling and Storage of Hypochlorite Solutions appendix for information on preservation techniques for hypochlorite bleach in transit and storage.

Facility : Kansas City South

Sodium Hydroxide[1]

Trade Designation	*Product Function*	*Max Use*
Caustic Soda 20%	Corrosion & Scale Control	250mg/L
Caustic Soda 25%	Corrosion & Scale Control	200mg/L
Caustic Soda 50%	Corrosion & Scale Control	100mg/L
Sodium Hydroxide 20%	Corrosion & Scale Control	250mg/L
Sodium Hydroxide 25%	Corrosion & Scale Control	250mg/L
Sodium Hydroxide 50%	Corrosion & Scale Control	100mg/L

[1] Trade designation may be followed by a three digit alpha suffix to designate the chlor-alkali electrolytic cell category/grade.

Sodium Hypochlorite[HY]

Trade Designation	*Product Function*	*Max Use*
Chem Bleach Household	Disinfection & Oxidation	200mg/L
SNO-GLO-BLEACH	Disinfection & Oxidation	105mg/L
Sno-Glo 10%	Disinfection & Oxidation	105mg/L
Sodium Hypochlorite 10%	Disinfection & Oxidation	105mg/L
Sodium Hypochlorite 12.5%	Disinfection & Oxidation	84mg/L
Sodium Hypochlorite 5.25% Solution	Disinfection & Oxidation	200mg/L

[HY] The residual levels of chlorine (hypochlorite ion and hypochlorous acid), chlorine dioxide, chlorate ion, chloramine and disinfection by-products shall be monitored in the finished drinking water to ensure compliance to all applicable regulations. Also, reference the AWWA B300 (Hypochlorites) standard's Recommendations for the Handling and Storage of Hypochlorite Solutions appendix for information on preservation techniques for hypochlorite bleach in transit and storage.

Sulfuric Acid

Trade Designation	*Product Function*	*Max Use*

Sulfuric Acid	Corrosion & Scale Control pH Adjustment	50mg/L
Sulfuric Acid 50%	Corrosion & Scale Control pH Adjustment	93mg/L
Sulfuric Acid 66 Degree	Corrosion & Scale Control pH Adjustment	50mg/L

NOTE: Only products bearing the NSF Mark on the product, product packaging, and/or documentation shipped with the product are Certified.

Facility : St. Louis, MO - Chouteau

Aluminum Chlorohydrate[AL]

Trade Designation	*Product Function*	*Max Use*
Brennfloc 4000	Coagulation & Flocculation	250mg/L
Brennfloc BC4105[PY]	Coagulation & Flocculation	31mg/L

[AL] Based on an evaluation of health effects data, the level of aluminum in the finished drinking water shall not exceed 2 mg/L.
[PY] Polyamines Certified by NSF International comply with 40 CER 141.111 requirements for percent monomer and dose.

Ammonium Hydroxide

Trade Designation	*Product Function*	*Max Use*
Ammonium Hydroxide 19%	Chloramination	10mg/L

Ammonium Sulfate

Trade Designation	*Product Function*	*Max Use*
Ammonium Sulfate	Chloramination	60mg/L
Ammonium Sulfate Solution	Chloramination	60mg/L

Blended Corrosion Inhibitor

Trade Designation	*Product Function*	*Max Use*
Robin Phos PO-2	Corrosion & Scale Control Sequestering	20 mg/L

Blended Phosphates

Trade Designation	*Product Function*	*Max Use*
AquaPure 3637	Corrosion & Scale Control Sequestering	25mg/L
AquaPure 3655	Corrosion & Scale Control Sequestering	25mg/L

AquaPure 3673	Corrosion & Scale Control Sequestering	25mg/L
AquaPure 3691	Corrosion & Scale Control Sequestering	25mg/L
Robin Phos PO-73	Corrosion & Scale Control Sequestering	25 mg/L

Miscellaneous Chemical Products

Trade Designation	*Product Function*	*Max Use*
Brennfloc 4220[AL]	Coagulation & Flocculation	250mg/L
Brennfloc 4420[AL] [PY]	Coagulation & Flocculation	100mg/L
Brennfloc 4420H[AL] [PY]	Coagulation & Flocculation	100mg/L
Robin 3000	Coagulation & Flocculation	15mg/L
RobinFloc 1212	Coagulation & Flocculation	15mg/L
Robinfloc 2000[PY]	Coagulation & Flocculation	15mg/L

[AL] Based on an evaluation of health effects data, the level of aluminum in the finished drinking water shall not exceed 2 mg/L.
[PY] Polyamines Certified by NSF International comply with 40 CER 141.111 requirements for percent monomer and dose.

Miscellaneous Water Supply Products

Trade Designation	*Product Function*	*Max Use*
Citric Acid 30-50%[1] [2]	Membrane Cleaner	NA

[1] This product is designed to be used off-line and flushed out prior to using the system for drinking water, following manufacturer's use instructions.
[2] The pH of the influent and effluent water should be monitored to ensure that all traces of the product have been removed before placing into service.

Monosodium Orthophosphate

Trade Designation	*Product Function*	*Max Use*
AquaPure 3601	Corrosion & Scale Control	25mg/L

Poly (Diallyldimethylammonium Chloride)(pDADMAC)

Trade Designation	*Product Function*	*Max Use*
Brennfloc CP 7215P	Coagulation & Flocculation	100mg/L
Robin 110	Coagulation & Flocculation	100mg/L
Robin 120	Coagulation & Flocculation	50 mg/L
Robin 220	Coagulation & Flocculation	50mg/L
RobinFloc 4325	Coagulation & Flocculation	100mg/L
RobinFloc 4728	Coagulation & Flocculation	96mg/L

Polyaluminum Chloride[AL]

Trade Designation	*Product Function*	*Max Use*
Aluminum Chloride Hydroxide Aqueous Solution	Coagulation & Flocculation	250 mg/L
Aluminum Chlorohydrate Aqueous Solution	Coagulation & Flocculation	250 mg/L
Brennfloc 4000	Coagulation & Flocculation	250mg/L
Robin AC-100	Coagulation & Flocculation	250 mg/L
RobinFloc 4708	Coagulation & Flocculation	250mg/L

[AL] Based on an evaluation of health effects data, the level of aluminum in the finished drinking water shall not exceed 2 mg/L.

Polymer Blends[AL] [PY]

Trade Designation	*Product Function*	*Max Use*
AC 2602 PA	Coagulation & Flocculation	50mg/L
Brennfloc BC 4101	Coagulation & Flocculation	66mg/L
Polyaluminum Sulfate	Coagulation & Flocculation	150 mg/L
Polyaluminum Sulfate Polymer Emulsion	Coagulation & Flocculation	150mg/L
Robin AC 110	Coagulation & Flocculation	130 mg/L
Robin AC-3545	Coagulation & Flocculation	50 mg/L
Robin AS-110	Coagulation & Flocculation	150 mg/L
Robin AS-120	Coagulation & Flocculation	150 mg/L
Robin AS-140	Coagulation & Flocculation	100 mg/L
Robin FR-2003	Coagulation & Flocculation	20mg/L
RobinFloc 4707	Coagulation & Flocculation Flocculant	100mg/L
RobinFloc 4714	Coagulation & Flocculation	238mg/L
RobinFloc 4715	Coagulation & Flocculation	156mg/L
RobinFloc 4725	Coagulation & Flocculation	155mg/L
RobinFloc 4740	Coagulation & Flocculation Flocculant	68mg/L

[AL] Based on an evaluation of health effects data, the level of aluminum in the finished drinking water shall not exceed 2 mg/L.
[PY] Polyamines Certified by NSF International comply with 40 CER 141.111 requirements for percent monomer and dose.

Sodium Permanganate[MN]

Trade Designation	*Product Function*	*Max Use*
Sodium Permanganate	Oxidant	176mg/L
Sodium Permanganate Solution	Oxidant	176mg/L
Sodium Permanganate Solution 15%	Oxidant	235mg/L
Sodium Permanganate Solution 19%	Oxidant	185mg/L

[MN] The finished drinking water should be monitored to ensure that levels of manganese do not exceed .05 mg/L.

Sodium Polyphosphates, Glassy

Trade Designation	*Product Function*	*Max Use*
AquaPure SH 36	Corrosion & Scale Control	25mg/L
Robin Phos P-1	Corrosion Control Sequestering	28 mg/L
SHMP	Corrosion Control Sequestering	28mg/L
Sodium Hexametaphosphate	Corrosion Control Sequestering	28mg/L
Sodium Polyphosphate	Corrosion Control Sequestering	28mg/L
Sodium Polyphosphates Glassy	Corrosion Control Sequestering	28mg/L

Facility : St. Louis, MO - Soper

Aluminum Sulfate[AL]

Trade Designation	*Product Function*	*Max Use*
Aluminum Sulfate Liquid	Coagulation & Flocculation	150mg/L
Aluminum Sulfate Solution	Coagulation & Flocculation	150mg/L
Dialuminum Sulfate Solution	Coagulation & Flocculation	150mg/L
Liquid Alum	Coagulation & Flocculation	150mg/L
Polyaluminum Sulfate Solution	Coagulation & Flocculation	150mg/L

[AL] Based on an evaluation of health effects data, the level of aluminum in the finished drinking water shall not exceed 2 mg/L.

Ferric Chloride

Trade Designation	*Product Function*	*Max Use*
Ferric Chloride 38-42%	Coagulation & Flocculation	250mg/L
Ferric Chloride Liquid	Coagulation & Flocculation	250mg/L
Ferric Chloride Solution	Coagulation & Flocculation	250mg/L
Iron (III) Chloride Solution	Coagulation & Flocculation	250mg/L
Iron Trichloride Solution	Coagulation & Flocculation	250mg/L

Ferric Sulfate

Trade Designation	*Product Function*	*Max Use*

Ferric Sulfate Solution	Coagulation & Flocculation	500mg/L
Iron (III) Sulfate Solution	Coagulation & Flocculation	500mg/L
Iron Persulfate Solution	Coagulation & Flocculation	500mg/L

Potassium Hydroxide

Trade Designation	*Product Function*	*Max Use*
Caustic Potash 45%	pH Adjustment	100mg/L
Potassium Hydroxide	pH Adjustment	100mg/L

Sodium Hydroxide[1]

Trade Designation	*Product Function*	*Max Use*
Caustic Soda 10%	Corrosion & Scale Control pH Adjustment	500mg/L
Caustic Soda 20%	Corrosion & Scale Control pH Adjustment	250mg/L
Caustic Soda 25%	Corrosion & Scale Control pH Adjustment	200mg/L
Caustic Soda 30%	Corrosion & Scale Control pH Adjustment	166mg/L
Caustic Soda 50%	Corrosion & Scale Control pH Adjustment	100mg/L
Sodium Hydroxide 10%	Corrosion & Scale Control pH Adjustment	500mg/L
Sodium Hydroxide 20%	Corrosion & Scale Control pH Adjustment	250mg/L
Sodium Hydroxide 25%	Corrosion & Scale Control pH Adjustment	200mg/L
Sodium Hydroxide 30%	Corrosion & Scale Control pH Adjustment	166mg/L
Sodium Hydroxide 50%	Corrosion & Scale Control pH Adjustment	100mg/L

[1] Trade Designation may be followed by a three digit alpha suffix to designate the chlor-alkali electrolytic cell category/grade.

Sodium Permanganate[PO]

Trade Designation	*Product Function*	*Max Use*
Sodium Permanganate	Oxidant	176mg/L
Sodium Permanganate 15%	Oxidant	235mg/L
Sodium Permanganate 19%	Oxidant	185mg/L
Sodium Permanganate 20%	Oxidant	176mg/L
Sodium Permanganate 40%	Oxidant	88mg/L
Sodium Permanganate Solution	Oxidant	176mg/L

[PO] The finished drinking water shall be monitored to ensure that levels of manganese do not exceed 0.05 mg/L.

Sulfuric Acid

Trade Designation	*Product Function*	*Max Use*
Sulfuric Acid	Corrosion & Scale Control pH Adjustment	50mg/L
Sulfuric Acid 66	Corrosion & Scale Control pH Adjustment	50mg/L
Sulfuric Acid 66 Baumé	Corrosion & Scale Control pH Adjustment	50mg/L
Sulfuric Acid 66Be	Corrosion & Scale Control pH Adjustment	50mg/L
Sulfuric Acid 93%	Corrosion & Scale Control pH Adjustment	50mg/L

NOTE: Only products bearing the NSF Mark on the product, packing, and/or documentation shipped with the product are Certified.

Number of matching Manufacturers is 1

Number of matching Products is 580

Processing time was 0 seconds

Exhibit B

CITY OF OLATHE INSURANCE REQUIREMENTS

These requirements apply to the vendor or contractor ("Vendor") entering into an Agreement with the City of Olathe ("City").

A. Insurance. Secure and maintain for the term of the Agreement insurance of such types and in at least such amounts as set forth below from a Kansas authorized insurance company which carries a Best's Policyholder rating of "A-" or better and carries at least a Class "VII" financial rating or better, unless otherwise agreed to by City:

1. Commercial General Liability: City must be listed by ISO endorsement or its equivalent as an additional insured on a primary and noncontributory basis on any commercial general liability policy of insurance. The insurance must apply separately to each insured against whom claim is made or suit is brought, subject to the limits of liability.

   Limits: Per Occurrence, including Personal & Advertising Injury and Products/Completed Operations: $1,000,000; General Aggregate: $2,000,000.

2. Business Auto Insurance: City must be listed by ISO endorsement or its equivalent as an additional insured on a primary and noncontributory basis on any automobile policy of insurance. Insurance must apply separately to each insured against whom claim is made or suit is brought, subject to liability limits.

   Limits: All Owned Autos; Hired Autos; and Non-Owned Autos: Per occurrence, combined single limit: $500,000.

   Notwithstanding the foregoing, if Vendor does not own any automobiles, then Vendor must maintain Hired and Non-Owned Auto insurance.

3. Worker's Compensation and Employer's Liability: Workers compensation insurance must protect Vendor against all claims under applicable state Worker's Compensation laws at the statutory limits, and employer's liability with the following limits.

   Limits: $500,000 Each Accident/$500,000 Policy Limit/$500,000 Each Employee

4. Professional Liability (***if applicable***): ***Unless excused by the Agreement with the City,*** Vendor must maintain for the term of this Agreement and for a period of three (3) years after the termination of this Agreement, Professional Liability Insurance.

   Limits: Each Claim: $1,000,000; General Aggregate: $1,000,000.

5. Cyber Insurance (***if applicable***): ***IF*** accessing the City's network or City's data, ***THEN*** maintain the following coverages throughout for the term of this

Agreement and for a period of three (3) years after the termination of this Agreement: Cyber Incident/Breach Response and Remediation Expenses, Digital Data Recovery, Privacy and Network Security Liability, and Notification Expense.
Limits: Per claim, each insuring agreement: $1,000,000; Aggregate: $1,000,000.

B. Exposure Limits. Above are minimum acceptable coverage limits and do not imply or place a liability limit nor imply that the City has assessed the risk that may be applicable to Vendor. Vendor must assess its own risks and if it deems appropriate and/or prudent maintain higher limits and/or broader coverage. The Vendor's insurance must be primary, and any insurance or self-insurance maintained by the City will not contribute to, or substitute for, the coverage maintained by Vendor.

C. Costs. Insurance costs must be at Vendor's expense and accounted for in Vendor's bid or proposal. Any deductibles or self-insurance in the above-described coverages will be the responsibility and at the sole risk of the Vendor.

D. Verification of Coverage

1. Must provide certificate of insurance on ISO form or equivalent, listing the City as certificate holder, and additional insured endorsements for requested coverages.
2. Any self-insurance must be approved in advance by the City and specified on the certificate of insurance. Additionally, when self-insured, the name, address, and telephone number of the claim's office must be noted on the certificate or attached in a separate document.
3. When any of the insurance coverages are required to remain in force after final payment, additional certificates with appropriate endorsements evidencing continuation of such coverage must be submitted along with the application for final payment.
4. For cyber insurance, the certificate of insurance confirming the required protection must confirm the required coverages in the "Additional Comments" section or provide a copy of the declarations page confirming the details of the cyber insurance policy.

E. Cancellation. No required coverage may be suspended, voided, or canceled, except after Vendor has provided thirty (30) days' advance written notice to the City.

F. Subcontractor's Insurance: If a part of this Agreement is to be sublet, Vendor must either cover all subcontractors under its insurance policies; ***OR*** require each subcontractor not so covered to meet the standards stated herein.