



February 24, 2021

Potential Bidders

Street No. and Suite #

City, State - Zip

Subject: Mid-Michigan Water Bulk Chemical Consortium for 2021/2022 RFP

Dear Bidder,

Attached to this letter is **Addendum No. 02** to subject Request for Proposal.

This Addendum:

1. Revised Proposal Form
2. Revised - Mandatory Pre-Bid Participants Listing

Bidders are reminded to sign the attached Addendum Acknowledgement Form and return it with their proposal. All other requirements of the RFP remain the same as before.

Please direct any questions to the undersigned.

Sincerely,

Tony De Luca, Buyer
Purchasing & Warehousing Department
(517) 702-6194 Phone
(517) 702-6042 Fax
tony.deluca@lbwl.com



NOTICE TO BIDDERS

ADDENDUM NO. 02

This Addendum contains changes to and/or provides information related to the requirements of the Request for Proposal documents and shall be incorporated therein. The changes shall apply to the work with the same meaning and force as if they had been included in the original document. The remaining of the Request for Proposal documents not modified by this Addendum remains in full force and effect.

Bidder shall Acknowledge this Addendum in writing by signing the attached Addendum Acknowledgement form and returning it with its proposal. Failure of Bidder to acknowledge this **Addendum No. 02** may cause the Bidder to be considered as "non-responsive".

Where required, Bidder shall replace the pages in the Request for Proposal Document with the corresponding revised pages included in this Addendum. The proposals submitted must include the latest Revision, as of the date of the Proposal, of all pages.



ADDENDUM ACKNOWLEDGEMENT

The undersigned Bidder acknowledges receipt of **Addendum No. 02**, dated 2/24/2021, to Request for Proposal for Mid-Michigan Water Bulk Chemical Consortium for 2021/2022 RFP, and certifies that it has considered same in formulating its proposal.

Name of Bidder: Alexander Chemical Corporation

Address of Bidder: 7593 S First Road

LaPorte, IN 46350

Acknowledged By: 

Signature

Robert Davidson

Name

President

Title

February 24, 2020

Date

Addendum No. 02

1. See attached revised Proposal Form

2. Listing for Mandatory Pre-Bid Participants:

Kevin McGinty, Tata Chemicals, participated in the Mandatory Pre-Bid Meeting, but was erroneously missed on the participant listing, on Addendum No. 1.

END OF ADDENDUM



February 23, 2021

Potential Bidders

Street No. and Suite #

City, State - Zip

Subject: Mid-Michigan Water Bulk Chemical Consortium for 2021/2022 RFP

Dear Bidder,

Attached to this letter is **Addendum No. 01** to subject Request for Proposal.

This Addendum:

1. Questions and Answers.
2. Mandatory Pre-Bid Participants

Bidders are reminded to sign the attached Addendum Acknowledgement Form and return it with their proposal. All other requirements of the RFP remain the same as before.

Please direct any questions to the undersigned.

Sincerely,

Tony De Luca, Buyer
Purchasing & Warehousing Department
(517) 702-6194 Phone
(517) 702-6042 Fax
tony.deluca@lbwl.com



NOTICE TO BIDDERS

ADDENDUM NO. 01

This Addendum contains changes to and/or provides information related to the requirements of the Request for Proposal documents and shall be incorporated therein. The changes shall apply to the work with the same meaning and force as if they had been included in the original document. The remaining of the Request for Proposal documents not modified by this Addendum remains in full force and effect.

Bidder shall Acknowledge this Addendum in writing by signing the attached Addendum Acknowledgement form and returning it with its proposal. Failure of Bidder to acknowledge this **Addendum No. 01** may cause the Bidder to be considered as "non-responsive".

Where required, Bidder shall replace the pages in the Request for Proposal Document with the corresponding revised pages included in this Addendum. The proposals submitted must include the latest Revision, as of the date of the Proposal, of all pages.



ADDENDUM ACKNOWLEDGEMENT

The undersigned Bidder acknowledges receipt of **Addendum No. 01**, dated 2/22/2021, to Request for Proposal for Mid-Michigan Water Bulk Chemical Consortium for 2021/2022 RFP, and certifies that it has considered same in formulating its proposal.

Name of Bidder: Alexander Chemical Corporation

Address of Bidder: 7593 S First Road

LaPorte, IN 46350

Acknowledged By: 

Signature

Robert Davidson

Name

President

Title

February 24, 2020

Date

Addendum No. 01

Contents

1. City of Jackson, listed for Hypo questioning if they even use Hypo any more I thought they had switch to ultraviolet.

Answer: The vendor is correct, we DO NOT use hypo anymore.

2. On Soda Ash- in part 4 of the Scope of Work, it indicates deliveries for Lansing and Jackson to be 35 tons. *We have* found we get more economical rates from a carrier that utilizes 23 to 24-ton deliveries. Would this be acceptable?

**Answer: Jackson - The Soda Ash delivery tonnage would be fine.
BWL - No. this would not be acceptable.**

3. Clarify City of Ann Arbor Hypo typical delivery what they mean by 60,000 gals once per month.

Answer: Estimated yearly usage: 150,000 gallons. Minimum delivery 4,500gallons delivered twice a month.

4. City of Owosso - will the once a month Hypo delivery be split between the Water & Wastewater plants.

Answer: Over 90% of the deliveries are split between the two plants. The quantity required is largely driven by weather conditions at the WWTP, higher rainfall and influent requiring more disinfectant. At the drinking water plant, we have a fairly constant usage and so when either plant needs a refill we call each other up before ordering and try to ensure that both plants are topped off.

5. We missed the mandatory pre-bid, does that disqualify us from bidding?

Answer: Since the pre-bid meeting was mandatory, those vendors that did not participate at the virtual meeting, are not eligible to submit a proposal response.

Mandatory Pre-Bid Participants:

Pam Nowaske, Jones Chemicals; Don Skidmore, Jones Chemicals; John Dunlap, Alexander Chemicals; Lisbeth Todner, Oil; Justin Ross, Carmeuse; Mark Samuels Carmeuse; Stephanie Robinson, City of Lansing; Brady Overton, USP Technologies; Matthew Radake, Carmeuse; Joe O'Malley, PVS Chemicals; Tyler Hamlin, City of Ann Arbor; Biju Daniel, Graymont; Christian Flores, PVS Chemicals; Sara Gentile, PVS Chemicals; Geneva Vanlerberg, BWL; and Tony De Lua, BWL

END OF ADDENDUM



February 4, 2021

Sealed Proposals in response to this Request for Proposal ("RFP") will be received by the Board of Water and Light ("BWL") up to **March 1, 2021, at 2:00 pm local time**, for furnishing:

Mid-Michigan Water Bulk Chemical Consortium for 2021/2022 RFP

Proposals must be in full accordance with the enclosed Specification/Scope of Work.

Proposals must be submitted via electronic format.

Electronic copies shall be in a non-protected, Adobe pdf format and e-mailed to sealedbids@lbwl.com. For ease of identification, enter "**Mid-Michigan Water Bulk Chemical Consortium for 2021/2022 RFP**" in the subject line of your e-mail Proposal. **All Proposals must be received by due date/time deadline. Proposals received after deadline will be rejected.**

Hard copy of Proposals will not be accepted.

A mandatory virtual pre-bid meeting via Microsoft Teams is scheduled for February 10, 2021, at 1:00 p.m. To receive the meeting link ID number, please email: tony.deluca@lbwl.com, prior to the scheduled pre-bid meeting date. If you have preliminary questions, to be addressed at the pre-bid, submit to Tony De Luca, by February 9th, 2:00 p.m.

The BWL reserves the right to reject any or all Proposals, waive irregularities or technicalities in any Proposal, and accept any Proposal in whole or in part, which in the opinion of the BWL, is in its best interest. The BWL does not limit the methods or factors to be used for evaluation.

BWL will accept questions regarding this RFP through **February 22, 2021**. Direct all questions in writing concerning this RFP via email to **Tony De Luca**, at tony.deluca@lbwl.com. Responses to questions timely received will be issued to all Bidders via addenda to this RFP (reference Article 6 in the enclosed Instruction to Bidders).

Sincerely,

Tony De Luca, Buyer
Purchasing Department
(517) 702-6194 Phone
(517) 702-6042 Fax
tony.deluca@lbwl.com

INSTRUCTIONS TO BIDDERS

Mid-Michigan Water Bulk Chemical Consortium for 2021/2022 RFP

1. THE RFP CONSISTS OF THE FOLLOWING ("PROPOSAL DOCUMENTS"):

- (a) Notice to Bidders;
- (b) Instructions to Bidders;
- (c) Check List
- (d) Addenda, if issued;
- (e) Scope of Work;
- (f) Proposal Form;
- (g) Sworn and Notarized Affidavit of Compliance - Iran Economic Sanctions Act;
- (h) Terms and Conditions for Chemicals ("BWL's Standard Terms and Conditions"); and
- (i) Terms and Conditions or Requirements from other Participating Municipal Utilities.

2. TERMS AND CONDITIONS

Do not submit BIDDER's standard terms and conditions as a replacement to the BWL's Standard Terms and Conditions. BIDDER shall submit their Proposal based upon the BWL's Standard Terms and Conditions as attached. BIDDER may request clarifications, tender exceptions consistent with Section 7 (or provide alternative language that corresponds to a tendered exception as provided in Section 7) to the BWL's Standard Terms and Conditions. Exceptions to the BWL's Standard Terms and Conditions must be noted on the Proposal Form in the space provided. Wholesale rejection of the BWL's Standard Terms and Conditions, as well as replacing with BIDDER'S standard terms and conditions will not receive consideration and result in a rejection in BIDDER'S Proposal in its entirety. Further, Proposals which are submitted and contingent upon BIDDER'S standard terms and conditions will be rejected.

3. BIDDER'S RESPONSIBILITY

It shall be the BIDDER'S responsibility to be familiar with the Proposal Documents and with the BWL, scope of work, and conditions that are likely to be encountered. BIDDER shall visit the site and specific areas on the site wherein the Work will be performed.

Any failure by the successful BIDDER to familiarize itself with conditions likely to be encountered, to acquaint itself with the available information, or to attend any meeting of BIDDERS shall not relieve the BIDDER from responsibility for providing the specified equipment, materials, and service. A failure to comply with this requirement does not constitute grounds for extra compensation over the pricing stated in the BIDDER'S Proposal.

BIDDER shall be prepared to make a presentation at the BWL's request on its Proposal and to answer questions.

4. AVAILABILITY OF LABOR AND MATERIALS

The BWL will not furnish any labor, facilities, services, utilities, materials, equipment, or supplies unless specifically stated in the Proposal Documents.

BIDDER shall assess and determine the availability of necessary labor and the prevailing wages applicable to that workforce. In addition, BIDDER shall assess and determine the availability of materials and equipment necessary to fulfill the contract in a complete and timely manner. The BWL will not honor any claim for additional cost premised on the unavailability of materials or equipment, shortage of labor, or unexpected wage rates.

5. ADDENDA

The BWL will clarify any questions or correct the RFP by the issuance of an Addendum to all BIDDERS.

Each BIDDER shall acknowledge receipt of each Addendum by filling in the blank space provided on the Proposal Form.

6. DRAWINGS

Not Applicable.

7. PREPARATION OF PROPOSAL FORM

The Proposal Form is included in the Proposal Documents. BIDDER shall prepare its Proposal and submit it as stated in the Notice to Bidders.

Proposals must be prepared in full accordance with the Proposal Documents. The Proposal price(s) stated on the Proposal Form must include all cost provisions of the complete Scope of Work and all requirements under the RFP. If the BIDDER chooses to submit an alternate or take an exception to any provision contained in the Proposal Documents, the alternate or exception must be specifically stated in BIDDER'S Proposal, must reference the objectionable article of the Proposal Documents, and must propose alternate language or alternate Work. Any exception to the Proposal Documents, including any exception to the BWL's Standard Terms and Conditions must be raised in BIDDER'S Proposal as exceptions provided subsequently will not be considered. Once a purchase order has been issued, and the Acknowledgement of Purchase Order ("Acknowledgement") returned, a binding contract exists between the parties and further negotiation of terms is not permitted.

Proposals received after the time and date for receipt will not be accepted. The BIDDER is responsible for timely delivery of the Proposal at the designated location and time for receipt.

The Proposal must be signed with the full name and address of the BIDDER. Proposals received without signature will not be accepted. If the BIDDER is a co-partnership, the firm name and signature of all parties are required. If the BIDDER is a corporation, full corporate name, signature of authorized official is required. BIDDER shall certify that the person who signs the Proposal is empowered to do so by the corporation. Such certificate shall be up-to-date and current at time of the Proposal Form submittal.

A Proposal may not be modified, withdrawn or canceled unilaterally by the BIDDER for a period of sixty (60) days following the time and date designated for the receipt of Proposals, and BIDDER so agrees in submitting the Proposal. A Proposal submission is a confirmation by the BIDDER that it is prepared to commence and complete the various stages of the work as described in the Proposal Documents.

Expenses for developing and presenting Proposals shall be the responsibility of the BIDDER. It is the BIDDER'S responsibility to ensure that no conflict of interest or other ethical concern precludes the BWL from considering BIDDER'S Proposal.

8. SUBSTITUTION

Under certain circumstances, the Proposal Documents may permit substitution of products. Those areas where substitution is permitted will be designated with the qualifying phrase or equal as may be approved by the BWL REPRESENTATIVE. If BIDDER would like to substitute a product, BIDDER must make a Proposal including the products specified in the Proposal Documents and an alternate Proposal including the proposed substitution, specifically referencing any price change based on the substitution.

BIDDER'S Proposal shall contain data to substantiate that the substitution is, in fact, equal to the products specified. Substantiating data may consist of drawings or other documents necessary or helpful to indicate any modifications resulting from use of proposed substitutions. BIDDER bears the burden of proving that the proposed substitutions meet the quality standards established in the Proposal Documents.

If BIDDER is eventually awarded a Purchase Order, the Purchase Order will indicate whether the substitution was acceptable or whether the original product must be used.

The acceptance of a substitution does not alleviate BIDDER of any contractual responsibility.

9. BONDS

Not Applicable.

10. INSURANCE

The certificates of insurance required by the Contract Documents must also accompany the Acknowledgment. All these documents should be directed to the attention of the BWL Buyer listed on the Notice to Bidders with a copy to the person designated as "BWL REPRESENTATIVE." The Purchase Order number must be indicated on the Acknowledgement, bonds, and certificates of insurance.

11. EVALUATION OF PROPOSALS

All Proposals will be sealed until the time designated on the Notice to Bidders. At the opening, the names of all BIDDERS will be made public.

To evaluate the Proposals, the BWL will consider such factors as responsiveness of Proposal, price, time of completion, exceptions to the Proposal Documents, financial stability, recent and past experience and similar factors in determining which Proposal it deems to be in its best interest. The BWL does not herein limit the methods or factors to be used for evaluation. The intent of the evaluation process is to choose the best-evaluated Proposal.

The BWL reserves the right to enter into private negotiations with the selected BIDDER(S), for further scrutiny, even though these negotiations may result in changes to the BWL specifications or to the BIDDER(S) services, price quotations, etc.

The BWL may reject any Proposal, waive irregularities or technicalities in any Proposal, and accept any Proposal in whole or in part. The BWL may cancel, in whole or in part, the entire RFP at any time prior to full execution of a contract between both parties.

12. VENDOR CYBERSECURITY QUESTIONNAIRE

Not Applicable.

13. QUESTIONS, MEETING OF BIDDERS, AND ADDENDA

In the beginning of the bid preparation period, the BWL REPRESENTATIVE may notify each BIDDER of a Meeting of BIDDERS ("Meeting") to be held at a later date, usually during the second week of the Proposal preparation time. If a Meeting is held, BIDDERS are required to attend the Meeting to present their questions about the Proposal Documents, to receive answers to questions, to receive copies of Addenda, to participate in open discussion of the Project, and to participate in the only conducted tour of the site. The Notice of Meeting will give complete details about the Meeting and instructions regarding preparation for the Meeting

Changes, revisions, and corrections that may result from the discussions that occur during the Meeting will be confirmed by the issuance of an Addendum. Suggestions of topics for the Meeting agenda should be directed to the person designated on the Notice to Bidders.

14. CONTRACT PRICE

The contract price shall be equal to the Proposal price adjusted to any price changes as agreed upon in writing by the BIDDER and the BWL.

The contract price may be modified via a change order upon mutual agreement of both parties.

15. EXECUTION OF ACKNOWLEDGMENT

The successful BIDDER shall, within twenty-four hours after issuance of the Purchase Order, return the properly executed Acknowledgment to the person designated on the Notice to Bidders. BIDDER shall certify that the person who signs the Acknowledgment is empowered to do so. Upon execution, an agreement will be deemed consummated and the documents, as specified in the list of RFP documents set forth in Section 1 herein, along with any mutually agreed written changes, shall constitute the full and binding agreement between the parties. If the properly executed Acknowledgment, along with any required bonds and insurance certificates, are not returned within five (5) calendar days, the BWL may deem the Purchase Order rejected and offer the Purchase Order to another BIDDER without penalty.

16. CONFIDENTIALITY

All complete, in-process or conceptual work are the sole property of the BWL and may not be used without the consent of the BWL. Any product used, such as, drawings and specifications, photos, campaigns, drafts, etc. are the sole property of the BWL. All BWL information will be kept confidential at all times. The BIDDER shall not disclose to others, without the written consent of the BWL, any information concerning the service provided, the organization, its personnel, or its activities, which the BIDDER may obtain as a result of, or in connection with the performance of the services.

17. FREEDOM OF INFORMATION ACT (MCL §15.231 ET SEQ.) (FOIA)

The BWL is subject to FOIA. The BWL may be required to make available certain information submitted with your bid or Proposal available to the public if requested. This information may include comparative pricing and other data which the BIDDER may normally consider to be proprietary or confidential. If the BIDDER submits any information it deems to be exempt from FOIA requirements, the BIDDER shall clearly mark it as such.

18. LOCAL PREFERENCE

Applies to bids of \$100,000 or greater only.

Businesses with an office in the BWL service area shall be given the following advantage when the BWL receives a sealed Proposal:

- (a) After the Proposals are evaluated and the best-evaluated Proposal is selected, the BWL shall determine whether the best-evaluated BIDDER is a Local business.
- (b) If a Local business was not selected as the best-evaluated BIDDER due entirely to its Proposal price being higher than the price of the best-evaluated Proposal, the BWL shall determine whether the best-evaluated Local business's Proposal was within 5% of the Proposal price of the best evaluated Proposal. If so, this Local business shall then have the opportunity to reduce its price to match the price of the original best-evaluated BIDDER, and upon such agreement, shall be deemed the best-evaluated Proposal.
- (c) If more than one Local business is within 5% of the price of the best-evaluated Proposal and is otherwise equal to the best-evaluated Proposal, and the Local business identified in (b) refuses to lower its Proposal price, the same opportunity shall be afforded to the other qualifying Lansing-based businesses, in order of ascending price.

If no Lansing-based business agrees to the conditions described above, the contract shall be awarded to the person or business originally deemed the best-evaluated BIDDER.

19. SAFETY

Unless excepted in the Proposal, and accepted by the BWL, all BIDDERS will be required to comply with the BWL's Safety Manual. All BIDDERS should read and understand the BWL Safety Manual before submitting a Proposal. The BWL Safety Manual can be found on the BWL's website at www.lbwl.com/safetymanual.

END OF INSTRUCTIONS TO BIDDERS



Check List

RFP Title: Mid-Michigan Water Bulk Chemical Consortium for 2021/2022 RFP

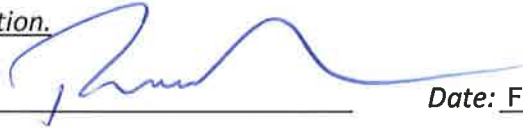
Instructions: Please provide a (✓) next to each item to signify completion. Submit this Check List with your Proposal submission.

1. Reviewed *Notice to Bidders*.
2. Reviewed *Instructions to Bidders*. **All Proposals *must* strictly conform to these instructions to be considered.**
3. Reviewed all the Proposal Documents, and can provide the materials, specifications, and/or services. (Please refer to Section 1 of the *Instructions to Bidders for a list of the Proposal Documents*).
4. Enclosed a thoroughly completed and signed the *Proposal Form*, along with other required documentation listed in the Scope of Work.
5. Reviewed *BWL's Standard Terms and Conditions, Master Service Agreement, and/or Software License Agreements*. Please refer to Section 3 of the Instructions to Bidders. (Specifically, any exceptions must be provided as redlines to be considered.) Provide any End User License Agreements related to software purchases (if applicable). Review each entity's terms and conditions, insurance requirements, etc. and provide markup to any exceptions.
6. Reviewed and can **adhere** to the insurance coverage requirements outlined in *BWL's Standard Terms and Conditions*. (Any exceptions **must be** provided as redlines to be considered as provided in Section 3 of the Instructions to Bidders.) **As a reminder, a Certificate of Insurance consistent with *BWL's Standard Terms and Conditions*, as well as every other entity, is required before any purchase of goods or work can begin.**
7. Enclosed a completed *Iran Economic Sanctions Form*, with a notarized signature.

8. ✓ Enclosed any issued Addendum Acknowledgment(s).
9. N/A Enclosed the Proposal Security, if required under Section 2 of the *Instructions to Bidders*.

By initializing this Check List, you are acknowledging that you have reviewed and understand each of the foregoing and that any Proposal received after due date, will be rejected from any consideration.

Initials: _____



Date: February 25, 2021

SCOPE OF WORK

Mid-Michigan Water Bulk Chemical Consortium 2021/2022 RFP

1. GENERAL

The Lansing Board of Water & Light (BWL) is soliciting proposals for a joint chemical contract. This contract is for one year, July 01, 2021 – June 30, 2022. The entities participating in this contract are as follows: BWL, City of Jackson, City of Ann Arbor, City of Lansing, City of Adrian, East Lansing – Meridian Water & Sewer Authority, City of East Lansing, City of Owosso. All chemicals must conform to National Science Foundation (NSF) and American National Standards Institute (ANSI) standards for use in potable drinking water and meet all specifications listed in bid documents. Unit prices of chemical are for delivery to any and all of the facilities listed in the proposal.

2. EVALUATION CRITERIA

Eligible proposals will be evaluated for each chemical according to the matrix below. Bidder should include all relevant information for use in scoring their proposal. Bidders notified of award will need to be in contact with each entity for individual Purchase Orders. Successful bidders who subsequently cannot meet the terms of each entity's Purchase Order may have their contract cancelled and the next bidder awarded the contract. It is the responsibility of each bidder to ensure they understand the requirements of each Purchase Order before submitting their proposal.

Criteria	Description	Weight
Price Competitiveness	Price as compared to other bidders.	25%
Product Quality	The product consistently meets the required specifications. Evaluated based on previous experience with vendor, contact with references, provided substantiating data, etc.	25%
Delivery Requirements	Deliveries are reliably made during specified times and dates. Vendor openly and honestly communicates when delivery schedule must be changed. Evaluated based on previous experience with vendor, contact with references, etc.	25%
Administrative Requirements	Vendor meets all conditions laid out in the specification including the Terms and Conditions, Insurance requirements, etc.	25%

3. DELIVERY AND BILLING ADDRESSES

The chemical is to be delivered and billed to the facilities and cities as listed below:

	DELIVERY ADDRESS	BILLING ADDRESS
LANSING BOARD OF WATER & LIGHT	<p>Lansing Board of Water and Light Dye Water 148 S. Cedar St. Lansing, MI 48912-1139</p> <p>Deliveries: Mon-Fri 7:00 am – 2:00 pm. Call one hour in advance of delivery. P: 517-643-6621</p>	<p>Lansing Board of Water and Light Attn: Accounting Dept.- Accounts Payable P: 517-702-6186 E: crystal.jefferson@lbwl.com E: bwlinvoices@lbwl.com</p>
	<p>Lansing Board of Water and Light Wise Rd. 5411 Wise Rd. Lansing, MI 48911-3409</p> <p>Deliveries: Mon-Fri 7:00 am – 12:00 pm. Call one hour in advance of delivery. P: 517-643-6621</p>	
CITY OF ANN ARBOR	<p>Ann Arbor Water Treatment Plant 919 Sunset Road Ann Arbor, MI 48103 Del Hours: 7am to 3pm</p>	<p>City of Ann Arbor c/o Finance 301 East Huron St. PO Box 8647 Ann Arbor, MI 48107</p>
	<p>Ann Arbor Waste Water Treatment Plant 49 S. Dixboro Rd Ann Arbor, MI 48105 Del Hours: 8am to 5pm</p>	
CITY OF JACKSON	<p>City of Jackson Water Treatment Plant 740 East Mansion St. Jackson, MI 49203</p>	<p>City of Jackson, Michigan 161 W. Michigan Avenue Jackson, Michigan 49201</p>
	<p>Wastewater Treatment Plant 2995 Lansing Ave. Jackson, MI 49201</p> <p>Deliveries: Mon-Fri 7:00am – 3:00pm. No weekends or holidays unless prearranged or emergency.</p>	
CITY OF LANSING	<p>City of Lansing – Public Service Waste Water Division 1625 Sunset Ave Lansing, MI 48917</p>	<p>City of Lansing – Public Service Waste Water Division 1625 Sunset Ave Lansing, MI 48917</p>

	Deliveries: Mon.-Fri. 7:00 am – 2:00 pm. No weekends or holidays unless prearranged or emergency.	
CITY OF ADRIAN	Adrian Water Treatment 815 Bent Oak Ave. Adrian MI 49221 Deliveries: Mon. – Fri. 7:00am to 2:00pm. No weekends or holidays unless prearranged or emergency <hr/> Adrian Wastewater Plant 1001 Oakwood Rd. Adrian, MI 49221	City of Adrian Utilities Attn: Accounting 135 E. Maumee St. Adrian, MI 49221
EAST LANSING-MERIDIAN WATER & SEWER AUTHORITY	2470 Burcham Dr. East Lansing, MI 48823 Deliveries: Mon. – Fri. 8:00am to 4:00pm. No weekends or holidays unless prearranged or emergency	East Lansing-Meridian Water & Sewer Authority 2470 Burcham Drive East Lansing, MI 48823
CITY OF EAST LANSING	Water Resource Recovery Facility 1700 Trowbridge Road East Lansing, MI 48823 <hr/>	Water Resource Recovery Facility 1700 Trowbridge Road East Lansing, MI 48823 <hr/>
OWOSSO	Waste Water Treatment Plant 1410 Chippewa Trail Owosso, MI 48867 Owosso Water Filtration Plant 1111 Allendale Ave Owosso, MI 48867	City of Owosso Attn: Accounts Payable – Rhonda Pritchett 301 W. Main St. Owosso, MI 48867

4. ESTIMATED ANNUAL USAGES PER MUNICIPALITY

<u>MUNICIPALITY</u>	<u>CHEMICAL</u>	<u>ESTIMATED YEARLY USAGE</u>	<u>TYPICAL DELIVERY</u>
LANSING BOARD OF WATER & LIGHT	SODIUM HYPOCHLORITE	225,000 gallons	4000-4800 gallon shipments required
	HYDROFLUOSILIC ACID	90 tons	30,000 and 40,000 lbs. shipments
	FERRIC CHLORIDE	48 ton	18 ton 2 – 3 times a year

	PEBBLE QUICKLIME	11,650 tons	1-6 50 ton deliveries a week Truck must be capable of unloading from either side.
	SODA ASH		35 ton deliveries, 1-3 times per week Truck must be capable of unloading from either side.
CITY OF JACKSON	SODIUM HYPOCHLORITE	73,000 gallons	5,000 gallons maximum
	HYDROFLUOSILICIC ACID	55 tons	Self-unloading truck, 2,500 gallons required
	FERRIC CHLORIDE	60 tons	3,000 gal
	PEBBLE QUICKLIME	3,700 tons	45 ton deliveries
	SODA ASH		35 ton delivery once every 3 months
CITY OF ANN ARBOR	SODIUM HYPOCHLORITE	850 tons	60,000 gal once per month
	HYDROFLUOSILICIC ACID	68 tons	Delivery is 2-3 times per year
	FERRIC CHLORIDE	Dry: 105 Liquid: 48,000	3,000 gal min
	PEBBLE QUICKLIME	5,000 ton	Delivery 2-3 times per week
CITY OF LANSING	FERRIC CHLORIDE	468 dry tons	8,000 gallon shipments preferred
	SODIUM HYPOCHLORITE	80,000 gallons	4000-4800 gallon shipments required
CITY OF ADRIAN	SODIUM HYPOCHLORITE	45,000 gallons	4,500 gallons every two months
	FERRIC CHLORIDE	66,000 liquid gallons	6,000 liquid gallons every five weeks
	HYDROFLUOSILICIC ACID	14,000 lbs wet	Min delivery 2,000 gals –PRICE IN LBS ON INVOICE
	PEBBLE QUICKLIME	1,200 tons	40 ton dry
EAST LANSING-MERIDIAN WATER & SEWER AUTHORITY	SODIUM HYPOCHLORITE	55,000 gallons	4,000 gallons per delivery, every 2-3 weeks
	HYDROFLUOSILICIC ACID	8 tons	1,500 gallons per delivery, about two per year
	FERRIC CHLORIDE	35 dry tons	Self Unloading truck, 3,000 gal delivery
	PEBBLE QUICKLIME	2,010 tons	Pneumatic truck-45 ton load, 1 per week
	SODA ASH		Infrequently as needed

CITY OF EAST LANSING	FERRIC CHLORIDE	420 dry tons	8,000 gallons every two weeks
	SODIUM HYPOCHLORITE	45 wet tons	4,500 gallons once or twice per year
OWOSSO	SODIUM HYPOCHLORITE	54,000 gal	4,500 gal per month
	FERRIC CHLORIDE	72,000 lbs	6,000 lbs Fe per month
	PEBBLE QUICKLIME	720 to 960 tons	60 to 80 tons per month. Max del of 55 tons can be accepted.

5. CHEMICAL SPECIFICATIONS

NSF certification and Safety Data Sheet (SDS) shall accompany all orders and shipments and be included in the proposal. The Contractor/ Driver are responsible for appropriate hoses, adapters, and attachments to properly connect to unloading lines. Deliveries shall be made by self-unloading bulk trucks. If any deficiency is found and cannot be resolved with the supplier, the contract can be cancelled in accordance with the General Terms. A submitted proposal indicates compliance with this Scope of Work.

Sodium Hypochlorite

- Shall meet NSF/ANSI Standard 60 and American Water Works Association (AWWA) B300-18.
- Sodium Hypochlorite to be between 12% and 17% by weight.
- Delivery will be within ten days of manufactured date.

Hydrofluosilic Acid

- Pricing is on an "as is" basis. Price shall stay the same regardless of the assay received.
- Fluoride shall be furnished as Fluorosilicic Acid containing twenty (20) to thirty (30) percent H_2SiF_6 by weight
- Must meet NSF/ANSI Standard 60 and AWWA B703-19.
- A certified analysis is to be furnished with each shipment detailing the percent acid and the specific gravity of the solution
- Truck must be capable of maintaining 20 PSIG air pressure during unloading

Ferric Chloride

- Dry
 - Actual delivered solution to be 38% ferric chloride
 - Propose per dry ton price
- Liquid Ton

- Ferric Chloride shall be furnished as liquid ferric chloride and must conform to current AWWA Standard B407. The solution will have a specific gravity of 1.3 to 1.5 and the ferric chloride content will be between 38.5% and 45% by weight.
- Bids for ferric chloride are to be submitted on the basis of 100% FeCl₃.
- Delivery shall be made by self-unloading bulk trucks of approximately 3,000 gallons per delivery.
- Ferric chloride shall be free of objectionable amounts of solids or foreign material. In the event an objectionable amount is detected in the product, or accumulates in the storage tank, it shall be the suppliers responsibility to have the storage tank cleaned out at its expense, or to reimburse for costs incurred if the supplier fails to clean the tank in a timely manner.

Pebble Quick Lime

- Pebble quicklime shall meet all chemical specifications set forth in AWWA B202-18 unless otherwise specified in this Scope of Work.
- Pebble quicklime shall be sized 3/8 X 3/4, and shall conform to Section 4.1.2 of AWWA B202-18, as recommended for pneumatic dry-feed equipment. The material shall not contain excessive amounts of fines or dust that would inhibit efficient transport.
- Pebble quick lime shall be free of debris including rubber, string, hardware (e.g. nuts, bolts, nails, wire, washers, etc.), and wood. Supplier shall be responsible for ALL COSTS associated with the repair and replacement of equipment damaged by debris or excess inert material. Supplier shall also provide a 20% discount on subsequent delivery should the specifications outlined herein fail to be met.
- Pebble Quicklime shall be high-reactive when the slaking rate is tested in accordance with Section 5.4 of AWWA B202-18.
- Pebble quicklime shall not contain excessive amounts of Objectionable Insoluble Matter (grit) as determined by the rejection volume at the lime slaker, or by the method in Section 5.5 of AWWA B202-18.
- The lime shall not contain any organic or inorganic substances in quantities capable of producing deleterious effect upon the health of people drinking the water that has been treated with it.
- The purchase price of Calcium Oxide shall be based on 90% or greater available calcium oxide content when tested in accordance with Section 5.3 of AWWA B202-18. There shall be a reduction of 1.5% of the bid price for each 1.0%, or fraction thereof, deficiency of available calcium oxide content between 90% and 80%, and a 2.0% reduction for each 10%, or fraction thereof, deficiency of available calcium oxide content below 80% based on analysis done by the municipality's laboratory analysis using method AWWA 202-18.
- The vendor shall supply a sample of each load to the Operations Supervisor prior to unloading. One-half of each sample will be retained for 30 days for inspection or analysis by the supplier. The municipality will notify the supplier within ten days of receipt of a shipment, when possible, that does not meet specifications.

END SCOPE OF WORK

PROPOSAL FORM
Mid-Michigan Water Bulk Chemical Consortium 2021/2022 RFP

Note: This form may be completed using MS Word®

Provide the following business and contact information:

Legal Name: Alexander Chemical Corporation		Federal ID or Social Security Number: 36-3213468
Address: 7593 S First Road		State of Incorporation Illinois
City: LaPorte	State & Zip: IN, 46350	Primary E-Mail: bids@alexanderchemical.com
Type of Organization: <input type="checkbox"/> Corporation <input type="checkbox"/> LLC <input type="checkbox"/> LLP <input type="checkbox"/> Sole Proprietor <input type="checkbox"/> Partnership <input checked="" type="checkbox"/> S-Corporation <input type="checkbox"/> Other (Explain)		
Office Phone: (800) 348-8827	Alternate Office Phone: (219) 393-5558	Office Fax: (219) 393-5364
Primary Contact: John Dunlap, Sales Representative	Contact Phone: 773-875-5140	Contact Fax: (219) 393-5364
Contact Mobile: 773-875-5140	Contact E-Mail: John.Dunlap@alexanderchemical.com	Website URL: www.alexanderchemical.com

Provide responses to the following questions:

How many years has your firm been in business under the present ownership?	105 years
Have you done business with the Board of Water and Light? Or any other consortium entity? If so, furnish specifics.	Yes, contract # 4600001304, 4600000877, 46000000722, 723, 726, 729
Have you done business with the City of Lansing? If so, furnish specifics.	Yes, supplying sodium hypochlorite
Have you ever defaulted on a contract or been involved in litigation with the Board of Water and Light or the City of Lansing or any other consortium entity? If so, furnish specifics.	NO
Have you ever defaulted on a contract or been involved in litigation or pending litigation or claims with any other client in the past five years? If so, furnish specifics.	NO
List any relationships between your firm's staff and any current BWL or other consortium entity employee.	None
Specify your background, training, experience, credentials and other factors which qualify you to perform the work described in the Scope of Work included in this Request for Proposal.	Supplying HFS and Ammonia to BWL and Lansing
List at least three (3) references for similar work you have performed for other clients. Include Client name, contact name, title and phone number.	*** SEE ATTACHED ***
List subcontractors that you plan to use on this project (including trucking services). Required Field.	None

PROPOSAL FORM
Mid-Michigan Water Bulk Chemical Consortium 2021/2022 RFP

Indicate any exceptions to the enclosed Terms and Conditions for Chemicals from participating consortium entities.	
Include any additional information you may deem helpful in evaluating your proposal.	

The undersigned Bidder hereby acknowledges receipt of the following addenda:

Addendum No.	Date	Enter addenda numbers and received dates if applicable
01	2/23/21	
02	2/24/21	

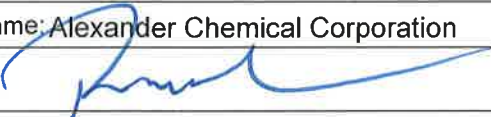
Activity	Unit Pricing
Sodium Hypochlorite Chemical: Demurrage:	\$ <u>.08274</u> / gal \$ <u>75.00</u> / hour *first 4 hours free
Hydrofluosilic Acid Chemical in minimum 40,000 lbs. shipments: Chemical in minimum 30,000 lbs. shipments: Chemical split between multiple locations in minimum 40,000 lbs. shipments: Demurrage:	\$ <u>388.00</u> / ton \$ <u>426.00</u> / ton \$426.00/ton delivered+ \$60.00 \$ <u>split load fee</u> / ton \$ <u>75.00</u> / hour *first 4 hours free
Ferric Chloride Dry Chemical: Liquid Chemical: Demurrage:	\$ <u>NO BID</u> / ton \$ <u>NO BID</u> / ton \$ <u>NO BID</u> / hour *first 4 hours free
Pebble Quick Lime Chemical: Demurrage:	\$ <u>NO BID</u> / ton \$ <u>NO BID</u> / hour *first 4 hours free
Soda Ash Demurrage:	\$ <u>NO BID</u> /ton \$ <u>NO BID</u> /hour *first 4 hours free

PROPOSAL FORM
Mid-Michigan Water Bulk Chemical Consortium 2021/2022 RFP

<p>Product meets quality specifications in the Scope of Work?</p>	<p align="center">Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>If No, explain (use additional pages if needed):</p>
<p>Able to meet delivery requirements for each municipality included in the Scope of Work? Including but not limited to delivery days of week, hours, load size, unloading requirements. If vendor has a minimum delivery different from that above, note it here.</p>	<p align="center">Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>If No, explain (use additional pages if needed):</p>
<p>Able to provide insurance requirements and other requirements as included for each municipality? This must be substantiated before contract award.</p>	<p align="center">Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>If No, explain (use additional pages if needed):</p>
<p>Please note any exceptions taken, if any. Use additional pages if needed).</p>	

The undersigned Bidder states that this proposal is made in conformity with the Proposal Documents and agrees that, in the event of any discrepancies or differences between any conditions of their proposal and the Proposal Documents, the provisions of the latter shall prevail. No verbal or written agreements or understandings considered or entered into prior to signing of a contract in the form of a purchase order, shall be binding after the signing of the contract unless incorporated in the contract.

The undersigned Bidder certifies that this proposal is made in good faith, without collusion or connection with any other person or persons submitting proposals for the work.

<p>Company Name: Alexander Chemical Corporation</p>
<p>Signature: </p>
<p>Name: Robert Davidson</p>
<p>Title: President</p>
<p>Date: February 25, 2021</p>

END OF PROPOSAL FORM

ALEXANDER CHEMICAL CORPORATION REFERENCES

Sodium Hypochlorite

City of Milwaukee
841 North Broadway
Milwaukee, WI 53202
Contact: Nathan Churchill
Phone: 414-286-2392

- Deliver water and wastewater treatment chemicals.

City of Mishawaka
600 E Third Street
Mishawaka, IN 46544
Contact: David Majewski
Phone: 574-258-1652

- Deliver water and wastewater treatment chemicals.

City of Goshen
204 E Jefferson Street
Goshen, IN 46528
Contact: Keitha Windsor
Phone: 574-537-3816

- Deliver water and wastewater treatment chemicals.

City of Wyoming
16700 New Holland St.
Holland, MI 49424-5554
Contact: Jodi Heintzelman
Phone: 616-530-7299

- Deliver water and wastewater treatment chemicals.

City of Napoleon, OH
255 West River Avenue
Napoleon, OH 43545
Contact: Jeff Weis
Phone: (419) 599-1235

- Deliver water and wastewater treatment chemicals.



ALEXANDER CHEMICAL HFS REFERENCES

Rockford, IL
425 S State St
Rockford, IL 61114
Contact: Sandi Leombruni
Phone: 815-987-5712

West Chicago
1400 W Hawthorne Lane
West Chicago, IL 60185
Phone: 630-738-8873

Barrington, IL
616 Bryant Ave
Barrington, IL 60010
Contact: David
Phone: 847-304-3358

SWORN AND NOTARIZED AFFIDAVIT OF COMPLIANCE

IRAN ECONOMIC SANCTIONS ACT

Michigan Public Act No. 517 of 2012

All bidders must submit the following certification statement in compliance with Public Act No. 517 of 2012 (the "Iran Economic Sanctions Act") and attach this form to the bid. **The Lansing Board of Water & Light shall not accept any bid that does not include this sworn and notarized certification of statement.**

The undersigned, the owner or authorized officer of Alexander Chemical Corporation (the Bidder), pursuant to the compliance certification requirement provided in the Lansing Board of Water & Light Request for Proposal, hereby certifies, represents and warrants that the Bidder (including its officers, directors and employees) is not an "Iran linked business" within the meaning of the Iran Economic Sanctions Act, and that in the event the Bidder is awarded a contract as a result of the aforementioned Request for Proposal, the Bidder will not become an "Iran linked business" at any time during the course of performing the work or any services under the contract.

Specifically, the undersigned, owner or authorized officer of Alexander Chemical Corporation (the Bidder) attests it does not fall within the following definition of a "Iran linked business" under the Iran Economic Sanctions Act:

MCL 129.312 (e) of the Act provides:

(e) "Iran linked business" means either of the following:

- (i) A person [as defined below by MCL 129.312(f)] engaging in investment activities in the energy sector of Iran, including a person that provides oil or liquefied natural gas tankers or products used to construct or maintain pipelines used to transport oil or liquefied natural gas for the energy sector of Iran.*
- (ii) A financial institution that extends credit to another person, if that person will use the credit to engage in investment activities in the energy sector of Iran.*

MCL 129.312(f) of the Act defines "Person" as follows:

(f) "Person" means any of the following:

- (i) An individual, corporation, company, limited liability company, business association, partnership, society, trust, or any other nongovernmental entity, organization, or group.*
- (ii) Any governmental entity or instrumentality of a government, including a multilateral development institution, as defined in section 1701(c)(3) of the international financial institutional act, 22 USC 262r(c)(3).*

The Bidder further acknowledges that any person who is found to have submitted a false certification is responsible for a civil penalty of not more than \$250,000.00 or two (2) times the amount of the contract or proposed contract for which the false certification is made, whichever is greater, the cost of the Lansing Board of Water & Light's investigation, and reasonable attorney fees, in addition to the fine. Moreover, any person who submitted a false certification shall be ineligible to bid on a Request for Proposal for three (3) years from the date it is determined that the person has submitted the false certification.

BIDDER

Alexander Chemical Corporation

By: 
Robert Davidson

Its: President

Date: February 25, 2021

STATE OF INDIANA)

COUNTY OF LAPORTE)

This instrument was acknowledged before me on the 25th day of February, 2021, by Robert Davidson, President.




_____, Notary Public

Starke County, IN My
Commission Expires: 6-15-2025 Acting
in the County of: Starke

TERMS AND CONDITIONS FOR WATER CHEMICALS

General Requirements may be individually modified or superseded by PURCHASER Supplemental Requirements. In case of conflicts, the PURCHASER Supplemental Requirements shall govern.

1. DEFINITIONS

All terms and conditions of the Seller most recent Permit application shall remain in effect except as may be modified herein.

2. TERM

The following meanings are ascribed to the terms used in these General Requirements:

PURCHASER – means the City of Lansing, by its Board of Water and Light.

Consortium – means Mid-Michigan Drinking Water Consortium, consisting of the City of Lansing, by its Board of Water and Light, City of Jackson Water and Wastewater, City of Adrian, Ann Arbor Drinking Water Treatment Plant, East Lansing-Meridian Water and Sewer Authority, Delhi Charter Township, and Delta Township.

Contract Documents – means the PURCHASER's solicitation, including the invitation to bid or request for proposal or quotation, instructions to bidders/offerors, SELLER'S response to the solicitation, PURCHASER drawings, the specifications, any addenda or supplements including Change Orders, the purchase order, these General Requirements, and Supplemental Requirements.

SELLER– means the individual, partnership, corporation or other entity awarded a purchase order by the PURCHASER.

Day – means a calendar day.

Designated Representative – means the General Manager of the PURCHASER, or authorized designee. Designated Representative shall be the individual designated to receive submissions and notices from SELLER and to represent the PURCHASER in the performance of the Contract. Any interaction with another division of the PURCHASER shall be coordinated through the Designated Representative.

Participants – means entities part of Mid-Michigan Drinking Water Consortium.

Work – means the products and services to be furnished under the Contract Documents. Work includes and is the result of performing services, transporting chemicals, and furnishing chemicals.

3. TERMS

A. QUALITY

- (1) Chemicals shall meet all criteria identified in the Specifications.
- (2) The PURCHASER reserves the right to reject all chemicals that fail to meet those criteria.
- (3) Chemicals that fail to meet those criteria that have been delivered to the PURCHASER must be removed by the SELLER at SELLER's expense.

B. CHEMICALS FURNISHED BY SELLER

- (1) The SELLER shall arrange and pay all charges for the proper delivery, receipt, rigging, unloading, and storage of all chemicals requested by the PURCHASER. The place of delivery is the PURCHASER's place of business. The PURCHASER will provide an area for storage of the material at its delivery site. SELLER must supply a sufficient number of individuals to promptly unload and store chemicals. SELLER continues to bear all responsibility for care, custody, control and protection of the chemicals until the chemicals are properly stored. After storage, SELLER retains responsibility only for the quality of the chemicals.

- (2) The SELLER shall notify the PURCHASER's Representative when any material is ready for shipment. Before arranging for any shipment, SELLER must ensure that the delivery will not cause undue blocking at the delivery site.
- (3) SELLER shall supply the manufacturer's name and catalog number for each item, if applicable.
- (4) PURCHASER's Designated Representative must coordinate shipment to the site.
- (5) If requested by the PURCHASER's Designated Representative, SELLER shall furnish copies of bills of lading, shipping manifests, and other papers showing shipment of chemicals and/or reports of their receipt.
- (6) SELLER shall show the PURCHASER's purchase order number and release number on all shipments, packing lists, and invoices. Shipments may be refused without this information.
- (7) All chemicals shall be new and from a reputable manufacturer currently engaged in the production of like chemicals.

4. PERMITS

SELLER shall obtain all permits necessary to transport and deliver chemicals to the PURCHASER. The PURCHASER shall obtain any necessary permit to store the chemicals on its properties.

5. PRICE

All prices shall be a firm delivered price for the term of the contract, unless specified in SELLER's proposal or bid and accepted by the PURCHASER before award. Prices shall include any fuel surcharge.

The PURCHASER shall solely be financially responsible for such material it procures on its own behalf and through its own bilateral contracts under the proposal of this agreement. The PURCHASER shall not in any shape or form be financially responsible for any procured material obtained from contracts by any other Participant(s) of Consortium.

6. SAFETY

- (1) SELLER shall proceed with the Work in a manner dictated by all applicable federal and state safety regulations, the PURCHASER Safety Manual, and safe practice, using chemicals, tools and rigging of a safe character. The current version of the PURCHASER's Safety Manual can be found at http://www.lbw.com/uploadedFiles/MainSite/Content/Doing_Business/BWL_Safety_Manual.pdf. SELLER shall strictly comply with these laws, rules and regulations including, but not limited to, OSHA and MIOSHA requirements, including without limitation MIOSHA "Right to Know" obligations, MCL 408.1001 et seq., and shall provide documented evidence of that compliance upon the Designated Representative's request.
- (2) SELLER shall provide and use all protective devices to permit safe working conditions for SELLER's employees and to prevent hazards to employees of other Seller, the PURCHASER and its employees, or the public.
- (3) While on PURCHASER property, SELLER'S personnel shall wear appropriate personal protection equipment.
- (4) If, in the PURCHASER's opinion, SELLER is not proceeding with its Work in a safe manner or in accordance with federal, state, or PURCHASER safety regulations, the PURCHASER may issue a Seller Safety Violation Notice or otherwise stop the Work and direct the SELLER to rectify the unsafe conditions immediately. If SELLER fails to promptly rectify the situation, the PURCHASER may proceed to rectify the unsafe conditions at SELLER'S expense. Compliance with this paragraph shall effect neither the Contract price nor the schedule. SELLER shall comply with all PURCHASER'S, OSHA, and MIOSHA confined space requirements and procedures, including PURCHASER permitting requirements.

7. INSURANCE

- (1) At its own expense, SELLER shall acquire and continue in effect for the term of the Contract, insurance providing the following coverage(s):
 - (a) Commercial General Liability Insurance on an occurrence basis. This coverage shall include Personal Injury, Contractual Liability, and Products/Completed Operations insurance. The limit of liability shall be at least \$1,000,000 combined single limit for bodily injury and property damage. There shall be no exclusion for work within any distance of railroad property.
 - (b) Automobile liability insurance that complies with the requirements of the Michigan No-fault law with residual liability limit of at least \$1,000,000 combined single limit for bodily injury and property damage. There shall be coverage for owned, hired, and non-owned vehicles.
 - (c) Worker's compensation insurance as required by Michigan law.

- (2) SELLER shall purchase insurance from companies acceptable to the PURCHASER. Generally, a company rated A- or better by A.M. Best and domiciled in the United States will be acceptable to the PURCHASER. The A.M. Best website can be found at: <http://www.ambest.com/>.
- (3) Certificates of insurance shall state that they will not be canceled nor any changes made, which alters, restricts or reduces the insurance provided or changes the name of the insured, without first giving thirty (30) days' notice in writing to the Corporate Secretary, PURCHASER, 1232 Haco Dr., P.O. Box 13007, Lansing, Michigan 48901.

8. INDEMNITY

SELLER shall, to the fullest extent allowed by law, defend, indemnify, and hold harmless the PURCHASER, the City of Lansing, their respective officers, agents, employees and insurers against any liability, loss, damage, demand, governmental action, citation, cause of action, or expense of whatever nature (including costs of defense, settlement, court costs and attorney's fees) which may result from any loss, injury, death, or damage (including environmental harm) allegedly sustained by any person, firm, corporation, or other entity, which arises out of or is caused by any act or omission of SELLER its officers, agents, or employees in connection with or in any way arising out of this Contract. SELLER's obligations under this paragraph shall survive the expiration or termination of this Contract.

9. REMEDIES

If SELLER fails or refuses to substantially perform according to the terms of this Contract, SELLER shall be declared to be in default by the PURCHASER by a written notice and shall be given an opportunity to perform in accordance with the notice. If the default has not been corrected or begun to be corrected within the time specified in the notice, or the SELLER has ceased to pursue the correction with due diligence, the PURCHASER may elect to (a) "cover" by purchasing the chemicals from another responsible vendor at the lowest cost available to the PURCHASER, and passing any additional cost on to the SELLER, who must pay the additional costs within 30 days of invoice receipt; (b) terminate the agreement and seek damages, or (c) treat the agreement as continuing and require specific performance, or (d) avail itself of any other remedy at law or equity.

If the PURCHASER fails or refuses to substantially perform according to the terms of this Contract, the PURCHASER shall be declared to be in default by the SELLER by a written notice and shall be given an opportunity to perform in accordance with the notice. If the default has not been corrected or begun to be corrected within the time specified in the notice, or the PURCHASER has ceased to pursue the correction with due diligence, the SELLER may elect to (a) terminate the agreement and seek damages, or (b) treat the agreement as continuing and require specific performance, or (c) avail itself of any other remedy at law or equity.

10. PLANT PROTECTION AND SECURITY

- (1) If the Work requires SELLER'S employees to enter a protected or policed area of the PURCHASER, including all utility operating areas, the SELLER shall arrange, in conjunction with PURCHASER security, for visible identification badges for all SELLER personnel employed on such Work. SELLER's trucks or common carriers entering PURCHASER property are subject to inspection.
- (2) SELLER, its employees, or suppliers, shall observe traffic rules, speed regulations, or other safety rules in the operation of its vehicles and equipment on PURCHASER property, as established by PURCHASER.
- (3) SELLER's employees shall comply with the PURCHASER's "Weapons in the Workplace" policy and "Prevention of Violence in the Workplace" policy.

11. TIME AND MANNER OF PERFORMANCE

- (1) The PURCHASER's Designated Representative shall contact SELLER when a shipment of chemicals is needed. The SELLER shall deliver the chemicals within 21 days to the PURCHASER location identified by the PURCHASER's Designated Representative, unless a shorter time is specified in the bid/proposal documents. In some cases, a shipment may be split between two PURCHASER locations.
- (2) SELLER shall keep a sufficient quantity of chemicals on hand to meet the PURCHASER's demands, in accordance with the Specifications.
- (3) Any activities occurring on PURCHASER property shall be performed from 8 a.m. through 5 p.m., Monday through Friday, excluding PURCHASER holidays. If SELLER wishes to perform Work on PURCHASER property during other times, SELLER must receive express written permission from the Designated Representative.

12. REPORTING

SELLER shall provide quarterly reports to the PURCHASER, including sales per month, order fulfillment percentage, backorder reports, on time delivery tracking, and other information requested by the PURCHASER.

13. DELAY

- (1) Time is of the essence in the execution of the Work.
- (2) If SELLER fails to deliver the chemicals within 21 days after demand, or shorter time specified in the bid/proposal documents, and the delay is not caused by the PURCHASER or its agent, SELLER shall pay the PURCHASER's direct costs caused by the delay, including the need to "cover" by purchasing chemicals from another vendor, if applicable. The PURCHASER may elect to waive this penalty, in writing, by permitting a back-order of up to fourteen days past the expected delivery date.

13. GOVERNING LAW AND VENUE

- (1) The Contract Documents shall be interpreted in accordance with the laws of the State of Michigan, without regard to conflict of laws provisions.
- (2) Venue shall be in Ingham County, Michigan.

14. FORCE MAJEURE

Neither the PURCHASER nor SELLER shall be held responsible for any delay or default caused by fire, act of God, riot, terrorist act, other violent act, war, or flood where such cause was beyond the delaying or defaulting party's reasonable control. However, SELLER shall make all reasonable efforts to remove or eliminate such a cause of delay or default and shall, upon the cessation of the cause, diligently pursue performance or its obligation under this Contract. SELLER'S management of its plant operations and compliance with regulations, even if they impact SELLER'S ability to meet the contract requirements, do not constitute force majeure.

15. RIGHT TO AUDIT RECORDS

The PURCHASER shall be entitled to audit the books and records of a SELLER or under any PURCHASER contract or subcontract to the extent that such books, documents, papers and records are pertinent to the performance of such contract or subcontract. The SELLER shall maintain such books and records for a period of three years from the date of final payment under the prime contract for a period of three years from the date of final payment under the subcontract.

16. NONDISCRIMINATION

SELLER agrees not to discriminate against an employee or applicant for employment with respect to hire, tenure, terms, conditions, or privileges of employment, or a matter directly or indirectly related to employment, because of race, color, creed, religion, national origin, sex, disability, age, height, weight, veteran status, marital status, or any other reason prohibited by law. A breach of this covenant shall be considered a material breach of contract.

17. INDEPENDENT SELLER

SELLER shall be, for all purposes, an independent SELLER and not an employee or agent of the PURCHASER. SELLER shall not hold itself out as an agent of the PURCHASER or the City of Lansing.

SELLER acknowledges that PARTICIPANTS are, for all purposes, independent SELLER(S) and not an employee or agent of the PURCHASER or the City of Lansing.

18. TERMINATION FOR CONVENIENCE

The PURCHASER may also terminate this Contract for its own convenience upon thirty days written notice. If the PURCHASER terminates for convenience, however, it shall compensate SELLER for all Specification-conforming chemicals delivered to the PURCHASER.

19. CONTRACT

The final versions of the Contract Documents, taken as a whole, constitute the sole and final agreement between the parties (Contract), which can only be modified by a written document properly executed by both parties.

20. LOADING/UNLOADING

Prior to offloading any chemical, the facility personnel shall:

- Verify the Bill of Lading for the correct chemical and correct PURCHASER delivery address.
- Assure that the material is being off loaded into the correct bulk tank.
- Determine the available tank volume is sufficient for the incoming delivery.
- Require that the driver remain in line of sight of the delivery hose and bulk tank connection at all times.
- Require that the driver have the appropriate facility personal protective equipment, including but not limited to hardhat, steel toed shoes, chemical safety goggles, etc.
- Require that the driver have appropriate spill response supplies and that any storm drains in the immediate area will be protected with appropriate "drain blocker" mats or plugs prior to starting the off-loading process.

Immediately report to management any problems with driver actions, PURCHASER tank fill connections, fill valve containment, tank level indicators, secondary containment, or any other safety or environmental concern.

END OF TERMS AND CONDITIONS



I, Amy Berggren, do hereby certify that I am a duly elected, qualified and acting Assistant Secretary of Carus Group Inc., a Delaware corporation, and as such have custody of the corporate records and seal.

I hereby further certify that the following resolutions were duly adopted by Unanimous Consent of the Board of Directors of Carus Group Inc. effective 1 January 2019 as of the date below pertaining to persons authorized to act for Carus Group Inc. and its member companies.

WHEREAS, the Board desires to grant to certain Carus Group officers specific spending authority necessary to the day-to-day performance of their respective functions;

IT IS FURTHER RESOLVED, that the Board hereby approves, for the purpose of signing sales contracts, municipal bids, purchase requisitions, capital expenditures, raw material supply contracts, and other day-to-day contracts and obligations of the Company, the officer spending authorizations included in the document titled "CARUS GROUP INC. AUTHORIZATION LEVELS - 1 January 2019," attached hereto as Exhibit 2.

In witness whereof I have hereunto set my hand and affixed the seal of the corporation on this 25th day of February 2020.

Amy Berggren
Asst. Secretary



**EXHIBIT 2
CARUS GROUP INC.
AUTHORIZATION LEVELS – 1 JANUARY 2019 *****

<u>TITLE</u>	<u>REVENUE CONTRACTS**</u>
Chairman	\$5,000,000
Chief Executive Officer & President *	\$5,000,000
Vice President, CFO *	\$3,000,000
Vice President, Operations	-
Global VP, Sales & Mktg., Europe	\$1,500,000
Vice Pres., Sec. & General Counsel	-
VP, Human Resources	-
VP, Corporate Development	-
VP, Finance	-
Director, Global Strategic Sourcing	-
Supply Chain Manager - EAME	-
M. Blouke Carus Fellow, VP Carus Tech	-
Plant Manager	
Business Development Director	-
Director of Finance/IT	-
Director of Sales	\$1,000,000
Global Product Manager	\$ 500,000
Director of Marketing/EHSS	-
Bid Channel Manager	\$ 200,000

NOTES:

***ANY COMMITMENT FOR THE PURCHASE OR LEASE OF GOODS OR SERVICES IN EXCESS OF A 12-MONTH PERIOD MUST BE APPROVED BY THE CHIEF EXECUTIVE OFFICER & PRESIDENT OR CFO OF CARUS GROUP INC.**

****ANY CONTRACT OR BID THAT IS EFFECTIVE FOR LONGER THAN ONE YEAR, REGARDLESS OF REVENUE VOLUME, REQUIRES THE SIGNATURE OF THE CHIEF EXECUTIVE OFFICER & PRESIDENT OR CFO OF CARUS GROUP INC.**

ANY CONTRACT OR BID THAT IS EFFECTIVE FOR MORE THAN ONE YEAR IS SUBJECT TO AN ANNUAL PRICE REVIEW, REGARDLESS OF ESCALATION CLAUSES.

*****THE APPROVALS AUTHORIZED HEREIN SHALL APPLY WITH EQUAL EFFECT TO ALL MEMBER COMPANIES OF CARUS GROUP INC., (i.e., CARUS CORPORATION, CARUS CHEMICAL COMPANY, CARUS EUROPE, CIRCLE TRANSPORT INC., ALEXANDER CHEMICAL CORPORATION).**

SAFETY DATA SHEET

1. Identification

Product identifier Sodium hypochlorite solution - sodium hypochlorite
Other means of identification Not available.
Recommended use Primarily used as a water treatment chemical as a disinfectant. Also used as a bleaching agent.
Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Company name Alexander Chemical Corporation
Telephone 800-348-8827
Fax 219-393-5364
E-mail info@alexanderchemical.com
Website www.alexanderchemical.com
Address 7593 S. First Road,
Kingsbury Industrial Park, Kingsbury, Indiana 46345, USA

Emergency telephone number All other non-emergency inquiries about the product should be directed to the company.
For Hazardous Materials [or Dangerous Goods] Incidents ONLY (spill, leak, fire, exposure or accident), call CHEMTREC at
CHEMTREC®, USA: 001 (800) 424-9300
CHEMTREC®, Mexico (Toll-Free - must be dialed from within country):
001-800-13-203-9987
CHEMTREC®, Other countries: 001 (703) 527-388

2. Hazard(s) identification

Physical hazards Corrosive to metals Category 1
Health hazards Skin corrosion/irritation Category 1
Serious eye damage/eye irritation Category 1
Environmental hazards Hazardous to the aquatic environment, acute hazard Category 1
OSHA defined hazards Not classified.
Label elements



Signal word Danger
Hazard statement May be corrosive to metals. Causes severe skin burns and eye damage. Toxic to aquatic life.
Precautionary statement
Prevention Keep only in original container. Do not breathe mist or vapor. Wash thoroughly after handling. Avoid release to the environment. 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. 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. Absorb spillage to prevent material damage.
Storage	Store locked up. Store in corrosive resistant container with a resistant inner liner.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	None known.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Sodium hypochlorite	7681-52-9	5-20
Sodium hydroxide	1310-73-2	1-5
Water	7732-18-5	Balance

Composition comments All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

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	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO ₂).
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.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist or vapor. 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.
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Methods and materials for containment and cleaning up

This product is miscible in water.

Large Spills: Stop the flow of material, if this is without risk. Use water spray to reduce vapors or divert vapor cloud drift. Dike the spilled material, where this is possible. Absorb spillage to prevent material damage. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Prevent entry into waterways, sewer, basements or confined areas. 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 release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling

Do not breathe mist or vapor. Do not get in eyes, on skin, or on clothing. Provide adequate ventilation. Wear appropriate personal protective equipment. Avoid release to the environment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Store locked up. Store in corrosive resistant container with a resistant inner liner. Keep only in the original 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 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
Sodium hydroxide (CAS 1310-73-2)	PEL	2 mg/m3

US. ACGIH Threshold Limit Values

Components	Type	Value
Sodium hydroxide (CAS 1310-73-2)	Ceiling	2 mg/m3

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Sodium hydroxide (CAS 1310-73-2)	Ceiling	2 mg/m3

US. Workplace Environmental Exposure Level (WEEL) Guides

Components	Type	Value
Sodium hypochlorite (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 (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product.

Individual protection measures, such as personal protective equipment

Eye/face protection

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

Skin protection

Hand protection

Wear appropriate chemical resistant gloves. Be aware that the liquid may penetrate the gloves. Frequent change is advisable. Nitrile or neoprene gloves are recommended.

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	Greenish yellow liquid.
Color	Light greenish yellow.

Odor	Chlorine.
Odor threshold	Not available.
pH	11.5 ±0.3
Melting point/freezing point	-11 °F (-23.9 °C)
Initial boiling point and boiling range	> 212 °F (> 100 °C)
Flash point	Not available.
Evaporation rate	Not available.
Flammability (solid, gas)	Not available.

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	1.09 -1.21

Solubility(ies)

Solubility (water)	Completely soluble in water.
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Partition coefficient (n-octanol/water)	Not available.
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Auto-ignition temperature	Not available.
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Decomposition temperature	Not available.
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Viscosity	Not available.
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10. Stability and reactivity

Reactivity	May be corrosive to metals.
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Chemical stability	Material is stable under normal conditions.
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Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
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Conditions to avoid	Contact with incompatible materials.
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Incompatible materials	Acids. Metals. Strong oxidizing agents.
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Hazardous decomposition products	No hazardous decomposition products are known. Contact with acids liberates toxic gas.
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11. Toxicological information

Information on likely routes of exposure

Ingestion	Causes digestive tract burns.
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.

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.
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Information on toxicological effects

Acute toxicity

Components	Species	Test Results
Sodium hydroxide (CAS 1310-73-2)		
Acute		
<i>Dermal</i>		
LC50	Rabbit	1350 mg/kg, (Calculated)
<i>Oral</i>		
LDLo	Rabbit	500 mg/kg, (Calculated)
Sodium hypochlorite (CAS 7681-52-9)		
Acute	Rat	
<i>Oral</i>	Causes severe skin burns and eye damage.	8.91 g/kg
LD50	Causes serious eye damage.	

Skin corrosion/irritation**Serious eye damage/eye irritation****Respiratory or skin sensitization****Respiratory sensitization** Not classified.**Skin sensitization** This product is not expected to cause skin sensitization.**Germ cell mutagenicity**

No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity

This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

IARC Monographs. Overall Evaluation of Carcinogenicity

Sodium hypochlorite (CAS 7681-52-9) 3 Not classifiable as to carcinogenicity to humans.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Reproductive toxicity

This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure

Not classified.

Specific target organ toxicity - repeated exposure

Not classified.

Aspiration hazard

Not classified.

Chronic effects

Prolonged inhalation may be harmful.

12. Ecological information**Ecotoxicity**

Components	Species	Test Results
Sodium hydroxide (CAS 1310-73-2)		
Aquatic		
Crustacea	EC50	
Fish	LC50	Western mosquitofish (<i>Gambusia affinis</i>) 125 mg/l, 96 hours
		Water flea (<i>Ceriodaphnia dubia</i>) 34.59 - 47.13 mg/l, 48 hours

Components	Species	Test Results
Sodium hypochlorite (CAS 7681-52-9)		
Aquatic		
Fish	LC50 Rainbow trout,donaldson trout (Oncorhynchus mykiss)	0.03 - 0.07 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	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. 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.
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

UN number	UN1791
UN proper shipping name	Hypochlorite solutions
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Label(s)	8
Packing group	II
Environmental hazards	
Marine pollutant	Yes
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Special provisions	A7, B2, B15, IB2, IP5, N34, T7, TP2, TP24
Packaging exceptions	154
Packaging non bulk	202
Packaging bulk	242

IATA

UN number	UN1791
UN proper shipping name	Hypochlorite solution
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Packing group	II
Environmental hazards	Yes
ERG Code	8L
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number	UN1791
UN proper shipping name	HYPOCHLORITE SOLUTION

Transport hazard class(es)	
Class	8
Subsidiary risk	-
Label(s)	8
Packing group	II
Environmental hazards	
Marine pollutant	Yes
EmS	F-A, S-B
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	This product is a liquid and when transported in bulk is covered under MARPOL 73/78 Annex II. This product is listed in the IBC Code. Ship type: 2 Pollution category: Y

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

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

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)

Sodium hydroxide (CAS 1310-73-2)	LISTED
Sodium hypochlorite (CAS 7681-52-9)	LISTED

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - Yes
Delayed Hazard - Yes
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical Yes

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

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

DANGER

Keep out of reach of children. Hazardous to Humans and domestic animals.
Corrosive, causes severe skin and eye irritation or chemical burns to broken skin.
Causes eye damage.
This pesticide is toxic to fish and aquatic organisms.
Strong oxidizing agent.

US. Massachusetts RTK - Substance List

Sodium hydroxide (CAS 1310-73-2)

Sodium hypochlorite (CAS 7681-52-9)

US. New Jersey Worker and Community Right-to-Know Act

Sodium hydroxide (CAS 1310-73-2)

Sodium hypochlorite (CAS 7681-52-9)

US. Pennsylvania Worker and Community Right-to-Know Law

Sodium hydroxide (CAS 1310-73-2)

Sodium hypochlorite (CAS 7681-52-9)

US. Rhode Island RTK

Sodium hydroxide (CAS 1310-73-2)

Sodium hypochlorite (CAS 7681-52-9)

US. 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.

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance

Not listed.

International Inventories

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

*A "Yes" indicates this product complies 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	30-July-2014
Revision date	26-January-2021
Version #	04
NFPA ratings	



Disclaimer

The information contained herein is accurate to the best of our knowledge. However, data, safety standards and government regulations are subject to change and, therefore, holders and users should satisfy themselves that they are aware of all current data and regulations relevant to their particular use of product. ALEXANDER CHEMICAL CORPORATION DISCLAIMS ALL LIABILITY FOR RELIANCE ON THE COMPLETENESS OR ACCURACY OR THE INFORMATION INCLUDED HEREIN. CARUS CORPORATION MAKES NO WARRANTY, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR PARTICULAR USE OR PURPOSE OF THE PRODUCT DESCRIBED HEREIN. All conditions relating to storage, handling, and use of the product are beyond the control of Alexander Chemical Corporation, and shall be the sole responsibility of the holder or user of the product.

Chemical Properties:

Chemical formula: NaOCl

Molecular weight: 74.44 g

Appearance: Bright yellow to yellow-green liquid

Odor: Chlorine odor

pH: 12.5 - 13.5

Solution Strength	Available Chlorine by % Volume	Available Chlorine by % Weight	Specific Gravity @ 60°F (g/mL)
	12.0 – 13.0	10.27 – 11.01	1.168– 1.181
Excess Alkalinity (Typical) *	NaOH%	NaOH g/L	
	0.2 - 0.5	2.0 –5.0	

* Excess Alkalinity on finished product is customized to specific customer requirements.

Physical Properties:

Boiling Point, °F: > 212 @ 10.50% (wt.) Available Chlorine

Freezing Point, °F: 2 @ 10.50% (wt.) Available Chlorine

Solubility in Water: Complete

NSF International maximum use for 12.50 % (wt.) Available Chlorine: 84 mg/L.

Manufactured by:

Alexander Chemical Corporation

Kingsbury Industrial Park

Kingsbury, Indiana 46345

800/348-8827



Certified to
NSF/ANSI 60

Maximum Usage
Level: 84mg/L



The Public Health and Safety Organization

NSF Product and Service Listings

These NSF Official Listings are current as of **Wednesday, January 13, 2021** 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=17460&Standard=060&>

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

Alexander Chemical Corporation

7593 South First Road
Kingsbury Industrial Park
Kingsbury, IN 46345
United States
800-445-9458
630-955-6050

Facility : Kingsbury, IN

Ammonia, Anhydrous

Trade Designation

Anhydrous Ammonia

Product Function

Chloramination

Max Use

5 mg/L

Ammonium Hydroxide

Trade Designation

Ammonium Hydroxide

Product Function

Chloramination

Max Use

10 mg/L

Chlorine[CL]

Trade Designation

Chlorine

Product Function

Disinfection & Oxidation

Max Use

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.

Hydrofluosilicic Acid

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Fluosilicic Acid - Water Treatment Grade	Fluoridation	5 mg/L
Hydrofluosilicic Acid - Water Treatment Grade	Fluoridation	5 mg/L

Sodium Bisulfite[1]

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Sodium Bisulfite Solution, 38%	Dechlorination	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

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Caustic Soda-Liquid	Corrosion & Scale Control pH Adjustment	100 mg/L
Sodium Hydroxide-Liquid (Diaphragm Cell)	Corrosion & Scale Control pH Adjustment	100 mg/L
Sodium Hydroxide-Liquid (Membrane Cell)	Corrosion & Scale Control pH Adjustment	100 mg/L

Sodium Hypochlorite[CL]

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
12.5% Sodium Hypochlorite	Disinfection & Oxidation	84mg/L
Liquid Bleach	Disinfection & Oxidation	84 mg/L
Liquid Bleach 15%	Disinfection & Oxidation	67mg/L
Sodium Hypochlorite 12.5%	Disinfection & Oxidation	84 mg/L
Sodium Hypochlorite 15%	Disinfection & Oxidation	67mg/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.

Sulfuric Acid

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
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Sulfuric Acid

Corrosion & Scale Control

50 mg/L

Number of matching Manufacturers is 1

Number of matching Products is 15

Processing time was 0 seconds

SAFETY DATA SHEET

1. Identification

Product identifier Hydrofluosilicic acid
Other means of identification
Synonyms Fluorosilicic acid, Hydrofluorosilicic acid
Recommended use Hydrofluosilicic acid is an acid used in water treatment application.
Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Company name Alexander Chemical Corporation
Address 7593 S. First Road,
Kingsbury Industrial Park, USA
Fax 219-393-5364
Website www.alexanderchemical.com
Contact Person Keith Bonner
Telephone (800) 348-8827 - non-emergency inquiries only

Emergency telephone number

For Hazardous Materials [or Dangerous Goods] Incidents ONLY

(spill, leak, fire, exposure or accident), call CHEMTREC at
CHEMTREC®, USA: 001 (800) 424-9300
CHEMTREC®, Mexico (Toll-Free - must be dialed from within country):
001-800-13-203-9987
CHEMTREC®, Other countries: 001 (703) 527-388

2. Hazard(s) identification

Physical hazards Acute toxicity, oral Category 4
Health hazards Skin corrosion/irritation Category 1B
Serious eye damage/eye irritation Category 1
Not classified.

OSHA defined hazards

Label elements



Signal word Danger
Hazard statement Harmful if swallowed. Causes severe skin burns and eye damage.
Precautionary statement
Prevention Do not breathe mist. Do not eat, drink or smoke when using this product. Wear protective gloves/protective clothing/eye protection/face protection. Wash thoroughly after handling.

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. 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.
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.

3. Composition/information on ingredients

Substances

Chemical name	Common name and synonyms	CAS number	%
Hydrofluorosilicic acid		16961-83-4	24

Composition comments All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

Inhalation	Move injured person into fresh air and keep person calm under observation. Get medical attention if symptoms occur.
Skin contact	Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately. Chemical burns must be treated by a physician.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Hold eyelids apart. Continue rinsing. Get medical attention immediately.
Ingestion	Rinse mouth thoroughly with water and give large amounts of milk or water to people not unconscious. Do not induce vomiting. If vomiting occurs, the head should be kept low so that stomach vomit doesn't enter the lungs. Obtain medical attention and take along these instructions.
Most important symptoms/effects, acute and delayed	Corrosive. Prolonged contact causes serious eye and tissue damage. May cause burns in mucous membranes, throat, esophagus and stomach. May cause lung edema. Symptoms may be delayed.
Indication of immediate medical attention and special treatment needed	In case of shortness of breath, give oxygen. 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. Wash contaminated clothing before reuse.

5. Fire-fighting measures

Suitable extinguishing media	Use fire-extinguishing media appropriate for surrounding materials.
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	Fire may produce irritating, corrosive and/or toxic gases.
Special protective equipment and precautions for firefighters	Firefighters should wear full protective clothing including self contained breathing apparatus. Structural firefighters protective clothing will only provide limited protection.
Fire-fighting equipment/instructions	Use standard firefighting procedures and consider the hazards of other involved materials. Use water spray to cool unopened containers. Cool containers with flooding quantities of water until well after fire is out. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Local authorities should be advised if significant spillages cannot be contained. Stay upwind. Keep out of low areas. Ensure adequate ventilation. Avoid contact with eyes, skin, and clothing. Avoid breathing mist or vapor. Use personal protection recommended in Section 8 of the SDS.
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Methods and materials for containment and cleaning up

Should not be released into the environment.

Large Spills: Dike far ahead of liquid spill for later disposal. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal.

Small Spills: Absorb spill with vermiculite or other inert material. Clean contaminated surface thoroughly. After removal flush contaminated area thoroughly with water.

Never return spills in original containers for re-use.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not contaminate water.

7. Handling and storage**Precautions for safe handling**

Handle and open container with care. Use only with adequate ventilation. Avoid contact with skin, eyes and clothing. Avoid breathing mist or vapor. Wash thoroughly after handling. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Keep in a well-ventilated place. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep this material away from food, drink and animal feed. Use care in handling/storage. Transfer and storage systems should be compatible and corrosion resistant.

8. Exposure controls/personal protection**Occupational exposure limits****US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)**

Components	Type	Value
Hydrofluorosilicic acid (CAS 16961-83-4)	PEL	2.5 mg/m3

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

Components	Type	Value	Form
Hydrofluorosilicic acid (CAS 16961-83-4)	TWA	2.5 mg/m3	Dust.

US. ACGIH Threshold Limit Values

Components	Type	Value
Hydrofluorosilicic acid (CAS 16961-83-4)	TWA	2.5 mg/m3

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Hydrofluorosilicic acid (CAS 16961-83-4)	TWA	2.5 mg/m3

Biological limit values**ACGIH Biological Exposure Indices**

Components	Value	Determinant	Specimen	Sampling Time
Hydrofluorosilicic acid (CAS 16961-83-4)	3 mg/l	Fluoride	Urine	*
	2 mg/l	Fluoride	Urine	*

* - For sampling details, please see the source document.

Appropriate engineering controls

Provide adequate ventilation. Observe Occupational Exposure Limits and minimize the risk of inhalation of vapors. Eye wash facilities and emergency shower must be available when handling this product.

Individual protection measures, such as personal protective equipment**Eye/face protection**

Wear approved safety glasses or goggles.

Skin protection**Hand protection**

Wear protective gloves. Be aware that the liquid may penetrate the gloves. Frequent change is advisable. Suitable gloves can be recommended by the glove supplier.

Other

Wear appropriate chemical resistant clothing. Protective shoes or boots. Structural firefighters protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations. Wear chemical protective equipment that is specifically recommended by the Personal Protective Equipment manufacturer.

Respiratory protection

If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. In case of inadequate ventilation or risk of inhalation of mist, use suitable respiratory equipment with particle filter. In the United States of America, if respirators are used, a program should be instituted to assure compliance with OSHA 29 CFR 1910.134 and ANSI Z88.2.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

When using, do not eat, drink or smoke. Wash hands before breaks and immediately after handling the product. Remove and isolate contaminated clothing and shoes. Handle in accordance with good industrial hygiene and safety practice. Launder contaminated clothing before reuse.

9. Physical and chemical properties

Appearance	White to straw yellow solution.
Physical state	Liquid.
Form	Liquid.
Color	White to straw yellow.
Odor	Pungent, sour penetrating odor.
Odor threshold	Not available.
pH	1.2
Melting point/freezing point	-4 °F (-20 °C)
Initial boiling point and boiling range	225 °F (107.22 °C)
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.
Vapor pressure	218 mm Hg (100 °F / 38 °C)
Vapor density	Not available.
Relative density	1.22 ± 0.03
Relative density temperature	77 °F (25 °C)
Solubility(ies)	
Solubility (water)	Completely soluble in water.
Partition coefficient (n-octanol/water)	No data available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
VOC (Weight %)	Not available

10. Stability and reactivity

Reactivity	The product is non-reactive under normal conditions of use, storage and transport.
Chemical stability	Stable at normal conditions.
Possibility of hazardous reactions	Contact with metals may evolve flammable hydrogen gas.
Conditions to avoid	Keep away from water, steam or other incompatible materials.
Incompatible materials	Glass. Stoneware. Metals. Bases.
Hazardous decomposition products	Hydrogen fluoride. Silicon tetrafluoride. Hydrogen gas.

11. Toxicological information

Information on likely routes of exposure

Ingestion	Harmful if swallowed. Causes digestive tract burns.
Inhalation	Causes respiratory tract burns. May cause lung edema.
Skin contact	Causes severe skin burns.
Eye contact	Causes severe eye burns.

Symptoms related to the physical, chemical and toxicological characteristics Corrosive. Prolonged contact causes serious eye and tissue damage. May cause burns in mucous membranes, throat, esophagus and stomach. May cause lung edema. Symptoms may be delayed.

Information on toxicological effects

Acute toxicity Harmful if swallowed.

Components	Species	Test Results
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Hydrofluorosilicic acid (CAS 16961-83-4)

Acute

Oral

LD50	Rat	430 mg/kg
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Skin corrosion/irritation Causes severe skin burns.

Serious eye damage/eye irritation Causes severe eye damage.

Respiratory or skin sensitization

Respiratory sensitization No data available.

Skin sensitization No data available.

Germ cell mutagenicity No data available.

Carcinogenicity No data available.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Reproductive toxicity No data available.

Specific target organ toxicity - single exposure No data available.

Specific target organ toxicity - repeated exposure No data available.

Aspiration hazard No data available.

Chronic effects Prolonged overexposure to fluorides may increase fluoride content of bones and teeth, and may result in fluorosis, with mottling of teeth (in children) and brittleness of bones. Absorbed fluoride can cause metabolic imbalances with irregular heartbeat, nausea, dizziness, vomiting and seizures. Risk of hypocalcemia with nervous problems (tetany) and cardiac arrhythmia.

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 available.

Bioaccumulative potential No data available.

Mobility in soil The product is water soluble and may spread in water systems.

Other adverse effects The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.

13. Disposal considerations

Disposal instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Dispose of contents/container in accordance with local/regional/national/international regulations. Dispose in accordance with all applicable regulations.

Hazardous waste code D002: Waste Corrosive material [pH <=2 or >=12.5, or corrosive to steel]
Waste codes should be assigned by the user based on the application for which the product was used.

Waste from residues / unused products Dispose of in accordance with local regulations.
Contaminated packaging Dispose of in accordance with local regulations. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

UN number UN1778
UN proper shipping name Fluorosilicic acid
Transport hazard class(es)
Class 8
Subsidiary risk -
Label(s) 8
Packing group II
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.
Special provisions A6, A7, B2, B15, IB2, N3, N34, T8, TP2, TP12
Packaging exceptions None
Packaging non bulk 202
Packaging bulk 242

DOT BULK

BULK

UN number UN1778
UN proper shipping name Fluorosilicic acid
Transport hazard class(es)
Class 8
Label(s) 8
Packing group II
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.
Special provisions A6, A7, B2, B15, IB2, N3, N34, T8, TP2, TP12
Packaging exceptions None
Packaging non bulk 202
Packaging bulk 242

IATA

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

IMDG

UN number UN1778
UN proper shipping name FLUOROSILICIC ACID
Transport hazard class(es)
Class 8
Subsidiary risk -
Label(s) Packing 8
group Environmental II
hazards
Marine pollutant No.
EmS F-A, S-B
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code This product is a liquid and when transported in bulk is covered under MARPOL 73/78 Annex II.
This product is listed in the IBC Code.
Ship type: 3
Pollution category: Y

15. Regulatory information

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

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

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - Yes
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - Yes

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical Yes

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 This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

US. Massachusetts RTK - Substance List

Hydrofluorosilicic acid (CAS 16961-83-4)

US. New Jersey Worker and Community Right-to-Know Act

Hydrofluorosilicic acid (CAS 16961-83-4)

US. Pennsylvania Worker and Community Right-to-Know Law

Hydrofluorosilicic acid (CAS 16961-83-4)

US. Rhode Island RTK

Not regulated.

US. California Proposition 65

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance

Not listed.

International Inventories

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

*A "Yes" indicates this product complies 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 25-July-2014
Revision date Revision date: 5/20/20
Version # 01

NFPA ratings



References

Registry of Toxic Effects of Chemical Substances (RTECS)
GESTIS Substance Database
US. IARC Monographs on Occupational Exposures to Chemical Agents

Disclaimer

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Chemical Properties:

CAS#:	16961-83-4
Chemical formula:	H ₂ SiF ₆
Molecular weight:	144.06
Hydrofluosilicic acid, %:	23.00 - 25.00
Hydrofluoric acid (HF), %:	1 Maximum
Heavy metals as lead, ppm:	200.00 maximum
Color:	25 APHA maximum

Physical Properties:

Boiling point, °F:	225.00
Freezing point, °F:	- 4.00
Specific gravity @ 60 °F:	1.223 @ 25.00 %
Vapor pressure, mm Hg @ 167 °F:	218
pH:	1.2
Appearance:	White to Straw Yellow
Odor:	Sour, pungent
Solubility in water:	Complete

NSF International maximum use: 5.00 milligrams per liter

Packaged by:

Alexander Chemical Corporation
7593 South First Road
La Porte, Indiana 46350
800-348-8827



The Public Health and Safety Organization

NSF Product and Service Listings

These NSF Official Listings are current as of **Wednesday, January 13, 2021** 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=17460&Standard=060&>

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

Alexander Chemical Corporation

7593 South First Road
Kingsbury Industrial Park
Kingsbury, IN 46345
United States
800-445-9458
630-955-6050

Facility : Kingsbury, IN

Ammonia, Anhydrous

Trade Designation

Anhydrous Ammonia

Product Function

Chloramination

Max Use

5 mg/L

Ammonium Hydroxide

Trade Designation

Ammonium Hydroxide

Product Function

Chloramination

Max Use

10 mg/L

Chlorine[CL]

Trade Designation

Chlorine

Product Function

Disinfection & Oxidation

Max Use

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.

Hydrofluosilicic Acid

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Fluosilicic Acid - Water Treatment Grade	Fluoridation	5 mg/L
Hydrofluosilicic Acid - Water Treatment Grade	Fluoridation	5 mg/L

Sodium Bisulfite[1]

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Sodium Bisulfite Solution, 38%	Dechlorination	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

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Caustic Soda-Liquid	Corrosion & Scale Control pH Adjustment	100 mg/L
Sodium Hydroxide-Liquid (Diaphragm Cell)	Corrosion & Scale Control pH Adjustment	100 mg/L
Sodium Hydroxide-Liquid (Membrane Cell)	Corrosion & Scale Control pH Adjustment	100 mg/L

Sodium Hypochlorite[CL]

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
12.5% Sodium Hypochlorite	Disinfection & Oxidation	84mg/L
Liquid Bleach	Disinfection & Oxidation	84 mg/L
Liquid Bleach 15%	Disinfection & Oxidation	67mg/L
Sodium Hypochlorite 12.5%	Disinfection & Oxidation	84 mg/L
Sodium Hypochlorite 15%	Disinfection & Oxidation	67mg/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.

Sulfuric Acid

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
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Sulfuric Acid

Corrosion & Scale Control

50 mg/L

Number of matching Manufacturers is 1

Number of matching Products is 15

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