

INVITATION TO BID

 COPY

ITB No. 4375

WATER TREATMENT PLANT CHEMICAL BID
Sodium Hydroxide (NaOH)

PVS
\$484



Due Date: Thursday, April 30, 2015 at 2:00 p.m.

Issued By:

City of Ann Arbor
Procurement Unit
301 E. Huron Street
Ann Arbor, MI 48104

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ADVERTISEMENT
FOR THE
WATER TREATMENT CHEMICAL BID
SODIUM HYDROXIDE (NaOH)
ITB NO. 4375

Sealed Bids will be received by the City of Ann Arbor Procurement Unit, 301 East Huron Street, Fifth Floor, Larcom City Hall, on or before Thursday, April 30, 2015 by 2:00 PM for the chemical Sodium Hydroxide (NaOH) for use by the City's Water Treatment System. Bids will be publically opened and read aloud at this time.

Sodium Hydroxide must be supplied to the City Water Treatment Plan, FOB destination, freight prepaid. The selected bidder will be responsible for transferring the product from the transport vehicle to the City storage vessel.

Bid documents, plans, specifications, and addenda shall be downloaded by Bidders at either of the following websites: Michigan Inter-governmental Trade Network (MITN) www.mitn.info or City of Ann Arbor Purchasing website: www.A2gov.org. It is the Bidder's responsibility to verify they have obtained all information before submitting a bid.

Each bidder shall provide the City of Ann Arbor with a complete copy of the U. S. Department of Occupational Safety & Health Administration, Material Safety Data Sheets, (form OSHA-20) for each product bid.

A Bid, once submitted, becomes the property of the City. In the sole discretion of the City, the City reserves the right to allow a bidder to reclaim submitted documents provided the documents are requested and retrieved no later than 48 hours prior to the scheduled bid opening.

Precondition for entering into a Contract with the City of Ann Arbor is compliance with Chapter 112 of Title IX of the Code of the City of Ann Arbor. Further information is outlined in the Contract Documents.

After the time of opening, no Bid may be withdrawn for a period of 60 days. The City reserves the right to accept any Bid, to reject any or all Bids, to waive irregularities and/or informalities in any Bid, and to make the award in any manner the City believes to be in its best interest.

Any further information on bid documents may be obtained from the Procurement Office, (734) 794-6500.

CITY OF ANN ARBOR PROCUREMENT UNIT

INVITATION TO BID

City of Ann Arbor
Guy C. Larcom Municipal Building
Ann Arbor, Michigan 48107

Ladies and Gentlemen:

The undersigned, as Bidder, declares that this Bid is made in good faith, without fraud or collusion with any person or persons bidding on the same Contract; that this Bidder has carefully read and examined the bid documents, including, City Nondiscrimination and Wage requirements, Vendor Conflict of Interest Form, Instructions to Bidders, Bid, Bid Forms, Contract, Bond Forms (if any), General Conditions, Standard Specifications, Detailed Specifications, all Addenda, and the Plans (if applicable) and understands them. The Bidder declares that it is fully informed as to the nature of the work and the conditions relating to the work's performance. The Bidder also declares that it has extensive experience in successfully completing projects similar to this one.

The Bidder acknowledges that it has not received or relied upon any representations or warrants of any nature whatsoever from the City of Ann Arbor, its agents or employees, and that this Bid is based solely upon the Bidder's own independent business judgment.

In accordance with these bid documents, and Addenda numbered 1, the undersigned, as Bidder, proposes to perform all work included herein for the amounts set forth in the Bid Forms.

The Bidder declares that it has become familiar with the City Conflict of Interest Disclosure Form and certifies that the statement contained therein is true and correct.

If the Bidder enters into the Contract in accordance with this Bid, or if this Bid is rejected, then the accompanying check or Bid Bond shall be returned to the Bidder.

In submitting this Bid, it is understood that the right is reserved by the City to accept any Bid, to reject any or all Bids, to waive irregularities and/or informalities in any Bid, and to make the award in any manner the City believes to be in its best interest.

SIGNED THIS 27th DAY OF April, 2015

PVS Nolwood Chemicals, Inc.
Bidder's Name

10900 Harper Ave., Detroit, MI 48213
Official Address

313-921-1200
Telephone Number


Authorized Signature of Bidder

Milisav Bulatovic
(Print Name of Signer Above)

bids@pvschemicals.com
Email Address for Award Notice

Section 1
INSTRUCTIONS TO BIDDERS

General

The City is soliciting bids for Sodium Hydroxide (NaOH). Chemical specifications are included in Section 2

Any Bid which does not conform fully to these instructions may be rejected.

Site Inspection

Prior to Tuesday, April 28, 2015, a bidder may inspect the City's site and equipment. Inspections are by appointment only during business hours (8:00 a.m. to 3:00 p.m). Appointments can be scheduled by email to Larry Sanford, Assistant Manager, Water Treatment Unit at LSanford@a2gov.org. No appointments will be scheduled after April 28, 2015

Preparation of Bids

Bids should be prepared providing a straight-forward, concise description of the Bidder's ability to meet the requirements of the ITB. Bids shall be written in ink or typewritten. No erasures are permitted. Mistakes may be crossed out and corrected and must be initialed and dated in ink by the person signing the Bid.

Bids must be submitted on the "Bid Forms" provided with each blank properly filled in. If forms are not fully completed it may disqualify the bid.

Each person signing the Bid certifies that he/she is the person in the Bidder's firm/organization responsible for the decision as to the fees being offered in the Bid and has not and will not participated in any action contrary to the terms of this provision.

Questions or Clarification on ITB Specifications

All questions regarding this ITB shall be submitted via email. Emailed questions and inquires will be accepted from any and all prospective Bidders in accordance with the terms and conditions of the ITB.

All questions shall be submitted by April 24, 2015 and should be addressed as follows:
Specification/Scope of Work questions emailed to Larry Sanford, Asst. Mgr, Water Treatment Services Unit at LSanford@a2gov.org.

Bid Process and HR Compliance questions emailed to Mark Berryman, Purchasing Manager at mberryman@a2gov.org.

Addenda

If it becomes necessary to revise any part of the ITB, notice of the Addendum will be posted to Michigan Inter-governmental Trade Network (MITN) www.mitn.info and/or City of Ann Arbor web site www.A2gov.org for all parties to download.

Each Bidder must in its Bid, to avoid any miscommunications, acknowledge all addenda which it has received, but the failure of a Bidder to receive, or acknowledge receipt of; any addenda shall not relieve the Bidder of the responsibility for complying with the terms thereof.

The City will not be bound by oral responses to inquiries or written responses other than written addenda.

Bid Submission

All Bids are due and must be delivered to the City of Ann Arbor Procurement Unit on or before Thursday, April 30, 2015 by 2:00 PM. Bids submitted late or via oral, telephonic, telegraphic, electronic mail or facsimile **will not** be considered or accepted.

Each Bidder must submit one (1) original Bid and one (1) additional Bid copies in a sealed envelope clearly marked: **ITB No. 4375 – Water Treatment Chemical – Sodium Hydroxide.**

Bids must be addressed and delivered to:

City of Ann Arbor
Procurement Unit,
c/o Customer Service, 1st Floor
301 East Huron Street
P.O. Box 8647
Ann Arbor, MI 48107

All Bids received on or before the Due Date will be publicly opened and recorded immediately. No immediate decisions are rendered.

Hand delivered Bids will be date/time stamped/signed by the Procurement Unit at the address above in order to be considered. Normal business hours are 9:00 a.m. to 3:00 p.m. Monday through Friday, excluding Holidays. The City will not be liable to any Bidder for any unforeseen circumstances, delivery or postal delays. Postmarking to the Due Date will not substitute for receipt of the Bid. Each Bidder is responsible for submission of their Bid.

Additional time for submission of bids past the stated due date and time will not be granted to a single Bidder; however, additional time may be granted to all Bidders when the City determines in its sole discretion that circumstances warrant it.

Award

The City intends to award a Contract(s) to the lowest responsible Bidder(s). For unit price bids, the contract will be awarded based upon the unit prices and the lump sum prices stated by the bidder. If the City determines that the unit price for any item is materially different for the work item bid than either other bidders or the general market, the City, in its sole discretion, in addition to any other right it may have, may reject the bid as not responsible or non-conforming.

The City intends to issue a purchase order to the selected Bidder. The City Purchase Order terms and conditions have been included. The contract term is to start approximately July 1, 2015 and continue through June 30, 2016 (twelve-month period). The City reserves the right to renew the contract with the selected Bidder for up to three (3) one-year periods provided that by sixty (60) days prior to the end of the original contract term or renewal term (as applicable) written notice of the City's exercise of its extension rights is provided to the Vendor. Extension to be under the same terms and conditions.

Official Documents

The City of Ann Arbor officially distributes bid documents from the Procurement Unit or through the Michigan Intergovernmental Trade Network (MITN). Copies of the bid documents obtained from any other source are not Official copies. Addenda and other bid information will only be posted to these official distribution sites. If you obtained City of Ann Arbor Bid documents from other sources, it is recommended that you register on www.MITN.info and obtain an official Bid.

Withdrawal of Bids

After the time of opening, no Bid may be withdrawn for the period of 60 days specified in the Advertisement. Bid Pricing must be firm through August 30, 2015

Human Rights Information

All contractors proposing to do business with the City shall satisfy the contract compliance administrative policy adopted by the City Administrator in accordance with the Section 9:158 of the Ann Arbor City Code. Breach of the obligation not to discriminate as outlined in the General Conditions section herein shall be a material breach of the contract. Contractors are required to post a copy of Ann Arbor's Non-Discrimination Ordinance at all work locations where its employees provide services under a contract with the City.

Disclosures

After bids are opened, all information in a submitter's bid is subjected to disclosure under the provisions of Michigan Public Act No. 442 of 1976, as amended (MCL 15.231 et seq.) known as the "Freedom of Information Act." The Freedom of Information Act

also provides for the complete disclosure of contracts and attachments thereto except where specifically exempted.

Bid Protest

All Bid protests must be in writing and filed with the Purchasing Agent within five (5) business days of the award action. The Bidder must clearly state the reasons for the protest. If a Bidder contacts a City Service Area/Unit and indicates a desire to protest an award, the Service Area/Unit shall refer the Bidder to the Purchasing Agent. The Purchasing Agent will provide the Bidder with the appropriate instructions for filing the protest. The protest shall be reviewed by the City Administrator or designee whose decision shall be final.

Reservation of Rights

The City of Ann Arbor reserves the right to accept any bid or alternative bid proposed in whole or in part, to reject any or all bids or alternatives bids in whole or in part and to waive irregularity and/or informalities in any bid and to make the award in any manner deemed in the best interest of the City.

**SECTION 2
CITY OF ANN ARBOR
STANDARD SPECIFICATIONS
FOR
SODIUM HYDROXIDE**

This specification pertains to sodium hydroxide (NaOH) for use in the treatment of municipal water supplies. Chemicals supplied under this specification must meet or exceed the requirements of ANSI/AWWA B501-93 and NSF/ANSI Standard 60.

PART 1: General Information

Part 1.1 Definitions

The following definitions shall apply in this specification:

Manufacturer: *Any party that produces Sodium hydroxide (caustic soda) as covered by this specification.*

Purchaser: *Any party that enters into a contract, either written or verbal, to purchase sodium hydroxide in accordance with the provisions of this specification.*

Vendor: *Any party that enters into a contract, either written or verbal, to supply sodium hydroxide for purchase in accordance with this specification.*

Part 1.2 Affidavit of Compliance

The purchaser requires an affidavit from the manufacturer or vendor that the sodium hydroxide furnished under the purchaser's orders conforms to NSF/ANSI Standard 60 and meets or exceeds the specifications of this standard.

Part 1.3 Rejection

Notice of Nonconformance. If the sodium hydroxide does not meet the requirements of this standard, a notice of nonconformance shall be provided by the purchaser to the vendor within 10 working days of receipt of the shipment at its point of destination. The results of the purchaser's test shall prevail unless the vendor notifies the purchaser within five working days of receipt of the notice of nonconformance that a retest is desired. On receipt of the request for a retest, the purchaser shall forward to the vendor one of the sealed samples taken in accordance to section 4.1 of this standard. In the event that the retest results do not agree with the test results of the purchaser, the other sealed sample shall be forwarded to a referee laboratory agreed upon by both parties for analysis. The results of the referee laboratory's analysis shall be considered final. If the shipment is found to be in compliance with this standard, then the cost of the referee laboratory shall be assumed by the purchaser. If the shipment is found not to meet the

specifications of this standard, the cost of the referee laboratory shall be assumed by the vendor.

If the material delivered is found to not meet the requirements of this standard, the responsibility of removal from the point of destination shall fall wholly on the vendor. An exception to this point may be made if a price adjustment is made between the vendor and the purchaser.

PART 2: Specifications

Part 2.1 Description

50% Sodium hydroxide solution is normally a clear and colorless liquid but may sometimes be slightly colored and turbid. It is a caustic liquid and is neither combustible nor explosive. However, caustic soda can react violently or explosively with many organic chemicals. This solution begins to crystallize at 12°C. Considerable heat is generated when water is added to caustic soda which may result in boiling and splattering of hot caustic solution.

Part 2.2 Physical Requirements

Sodium hydroxide is a compound that is commonly produced in the electrolytic manufacture of chlorine. In the anhydrous form, it is white to slightly off white, opaque or translucent solid that rapidly absorbs moisture from the atmosphere. Liquid sodium hydroxide is a solution of anhydrous sodium hydroxide and water.

Part 2.3 Chemical Requirements

Liquid sodium hydroxide supplied under this specification shall contain approximately 50 percent sodium hydroxide (NaOH).

Part 2.4 Impurities

The sodium hydroxide provided under this specification shall contain no soluble or insoluble material, either organic or inorganic, capable of producing deleterious or injurious effects on the health of those consuming water that has been properly treated with the sodium hydroxide.

The sodium hydroxide supplied under this specification shall be diaphragm or membrane grade.

This material shall be certified as suitable for contact with or treatment of drinking water by an accredited certification organization in accordance with ANSI/NSF Standard 60, Drinking Water Treatment Chemicals – Health Effects.

The manufacturer or supplier shall furnish a certificate of analysis that includes but is

not limited to the following parameters: sodium hydroxide, sodium oxide, sodium chloride, sodium carbonate, sodium chlorate, sodium sulfate, aluminum, silicon, calcium, magnesium, iron, manganese, lead, mercury, arsenic, potassium, bromide, bromate.

PART 3: Delivery

Part 3.1 Marking

Each shipment of material shall carry with it some means of identification. Accompanying each shipment shall be documentation showing the net weight, the name of the manufacturer, the brand name (if any) and other information as required by applicable laws and regulations.

Part 3.2 Shipping

Liquid sodium hydroxide shall be delivered in properly cleaned self-unloading tank trucks. All bulk loads shall be accompanied by certified weight tickets. Size of load shall meet load limit restrictions. Plant facilities include two 3250 gallon fiberglass reinforced plastic tanks with two inch fill lines.

PART 4: Verification

Part 4.1 Sampling

Samples shall be taken at the point of destination, in accordance with AWWA B501-93, section 5.1, unless the shipment is accompanied by a certified analysis from the manufacturer or vendor.

Part 4.2 Testing

All testing shall be done in accordance to the most current and applicable AWWA standard for sodium hydroxide (eg. B501-93 Section 5.3-5.5). The following is a partial list of chemical and physical characteristics that may be tested:

- 1. Alkali (Na_2O).**
- 2. Hydroxide.**
- 3. Sodium Carbonate**

SECTION 3: INSURANCE

Effective the date of this Agreement, and continuing without interruption during the term of this Agreement, Contractor shall provide certificates of insurance to the City on behalf of itself, and when requested any subcontractor(s).

A. The certificates of insurance shall meet the following minimum requirements.

1. Worker's Compensation Insurance in accordance with all applicable state and federal statutes. Further, Employers Liability Coverage shall be obtained in the following minimum amounts:

Bodily Injury by Accident - \$500,000 each accident
Bodily Injury by Disease - \$500,000 each employee
Bodily Injury by Disease - \$500,000 each policy limit

2. Commercial General Liability Insurance equivalent to, as a minimum, Insurance Services Office form CG 00 01 07 98 or current equivalent. The City of Ann Arbor shall be an additional insured. There shall be no added exclusions or limiting endorsements including, but not limited to: Products and Completed Operations, Explosion, or Pollution. Limited Pollution endorsement is allowed if Broadened Pollution Liability Coverage is included in the Motor Vehicle Liability Insurance. Further, the following minimum limits of liability are required:

\$1,000,000 Each occurrence as respect Bodily Injury Liability

or

\$2,000,000 Property Damage Liability, or both combined
\$1,000,000 Per Job General Aggregate
\$1,000,000 Personal and Advertising Injury

3. Motor Vehicle Liability Insurance, including Michigan No-Fault Coverages, equivalent to, as a minimum, Insurance Services Office form CA 00 01 07 97 or current equivalent. The City of Ann Arbor shall be an additional insured. There shall be no added exclusions or limiting endorsements. Coverage shall include all owned vehicles, all non-owned vehicles and all hired vehicles. Further, the limits of liability shall be \$1,000,000 for each occurrence as respects Bodily Injury Liability or Property Damage Liability, or both combined. Pollution Liability – Broadened Coverage Required
4. Umbrella/Excess Liability Insurance shall be provided to apply in excess of the Commercial General Liability,

Employers Liability and the Motor Vehicle coverage enumerated above, for each occurrence and for aggregate in the amount of \$1,000,000.

- B. Insurance required under A.2 and A.3 above of this contract shall be considered primary as respects any other valid or collectible insurance that the City may possess, including any self-insured retentions the City may have; and any other insurance the City does possess shall be considered excess insurance only and shall not be required to contribute with this insurance. Further, the Contractor agrees to waive any right of recovery by its insurer against the City.
- C. Documentation must provide and demonstrate an unconditional 30 day written notice of cancellation in favor of the City of Ann Arbor. Further, the documentation must explicitly state the following: (a) the policy number; name of insurance company; name and address of the agent or authorized representative; name and address of insured; project name; policy expiration date; and specific coverage amounts; (b) any deductibles or self-insured retentions which shall be approved by the City, in its sole discretion; (c) that the policy conforms to the requirements specified. An original certificate of insurance may be provided as an initial indication of the required insurance, provided that no later than 21 calendar days after commencement of any work the Contractor supplies a copy of the endorsements required on the policies. Upon request, the Contractor shall provide within 30 days a copy of the policy(ies) to the City. If any of the above coverages expire by their terms during the term of this contract, the Contractor shall deliver proof of renewal and/or new policies to the Administering Service Area/Unit at least ten days prior to the expiration date.

SECTION 4: BID FORM

All Bidders shall submit pricing in the format requested herein.

SODIUM HYDROXIDE 50% BULK	\$	<u>484.00</u>	<u>DRY</u>	TON
FREIGHT	\$	<u>0.00</u>		TON
TOTAL DELIVERED COST	\$	<u>484.00</u>	<u>DRY</u>	TON

INVOICE TERMS: Discount of 0 % or \$ 0.00 will be allowed for payment of invoice thirty (30) days from day of delivery and acceptance.

OTHER TERMS: Less than 30 days, E.O.M., Proximo, etc., will not be considered in determining award of contract.

Sodium Hydroxide shall be supplied to the City of Ann Arbor Water Treatment Plant, f.o.b. destination, freight prepaid. Contractor shall be responsible for transferring the product from transport vehicle to the City of Ann Arbor storage vessel. Bidder shall specify minimum shipping amount if any:

45,000 pounds Minimum Bulk Load

QUANTITY: The annual quantity is approximately **362 tons**. This quantity is for estimating purposes only, not a guarantee of actual usage. Product will be ordered on an "as needed" basis. All prices are to remain firm.

MONITORING: The successful Provider may provide a telemetry device(s) for tank monitoring that provides data to the Provider on tank level, so that ordering product is unnecessary and resupply is managed by the supplier according to the needs of the Water Treatment Plant. This device (these devices) will be at no cost to the City of Ann Arbor.

SECTION 5: PRICING

Supplier may revise the price semi-annually using the formula below, using the Producers Price Index (PPI) published by the U.S. Bureau of Labor Statistics ("BLS"). The choice of specific BLS Producers Price index or indices and the weighting given to a choice of multiple indices will be mutually agreed upon by the City and the Provider. Seasonally unadjusted indices will be used. The adjusted price will be in effect for six months only, at which time it will be adjusted again or revert to the bid price (base selling price).

- The Supplier should include in their bid an appropriate index or indices and the weighting to be applied to each. The Supplier should include the Series ID number with their bid and include their proposed revision formula.
- The Supplier will adjust the price semiannually, on January 20 and July 20 (if the renewal extensions are exercised or the contract is multiyear). The bid price (base selling price) must be in effect for at least 6 months before the first price adjustment.
- The Base Selling Price will be the amount bid by the Supplier.
- The Base Period Factor, denoted with a subscripted zero (in the example: E_0 and D_0), shall consist of an average of the most recent finalized indices for a period of one year, immediately preceding the date of the approved City Council resolution for the product being purchased, for that particular representative index. For monthly published indices this will be the arithmetic average of the twelve most recently published finalized indices. For quarterly published indices this will be the arithmetic average of the four most recently published finalized indices.
- The Adjustment Factor, denoted with no subscript (in the example: E and D), shall be based upon an average of the six most recently published monthly indices, (or three most recently published quarterly indices) at the time of the revision, for that particular index. For timeliness, if any monthly or quarterly index is still preliminary (designated with a P in the published numbers) at the time of the revision, it will be used in its preliminary state.
- Should the index referenced cease to be published or is published in an alternate form (different Series Number, Base Date, or Period), a mutually agreed upon and similar index will be used for future adjustments.
- When Base Dates are revised by the BLS, rebasing shall be done as needed based upon the old and new reference base period.
- The US Bureau of Labor Statistics Producers Price indices can be found at www.bls.gov/ppi
- The Revision Formula is: $P = P_0[r/100(X/X_0) + s/100(Y/Y_0) + t/100(Z/Z_0) + \dots]$
Where
 - P_0 = Base Selling Price or original bid price as per the Bid Documents.
 - P = Revised product price for the new future six month period.
 - X_0 = Base Period Factor for a selected index.
 - X = Adjustment Factor for the same index.

City of Ann Arbor: General Terms and Conditions
The following General Terms and Conditions shall apply.

Tax Exemption: The City of Ann Arbor is tax exempt, ID# 38-004534.

Acceptance of Contract: This order is the City's contract to purchase the goods and services described on the reverse front side of this document from the Vendor. The City's placement of this order is expressly conditioned upon the Vendor's acceptance of all the terms and conditions of purchase contained on or attached to his purchase order. All specifications, drawings, and data submitted to the Vendor with this order are hereby incorporated and made part hereof.

Amendments: No agreement or understanding to modify this contract shall be binding upon the City unless in writing and signed by the City's authorized agent.

Delivery: All prices must be F.O.B. delivery point. Time is of the essence on this contract. If delivery dates cannot be met, the Vendor agrees to advise the City, in writing of the earliest possible shipping date. The City reserves the right to cancel or purchase elsewhere and hold the Vendor accountable.

Risk of Loss: Regardless of F.O.B. point, the Vendor agrees to bear all risk of loss, injury, or destruction of goods and materials ordered herein which may for any reason occur prior to delivery or acceptance by the City, whichever is later. No such loss, injury, or destruction shall release the Vendor from any obligations hereunder.

Inspection: Goods and materials must be properly packaged. Damaged goods and materials will not be accepted. The City reserves the right to inspect the goods at a reasonable time subsequent to delivery where circumstances or conditions prevent effective inspection of the goods at the time of delivery. All rejected goods shall be returned to the Vendor at no cost to the City, whether the damage is readily apparent at the time of delivery or later. The City's acceptance is conditioned on such inspection.

Patents and Copyrights: If an article sold and delivered to the City hereunder shall be protected by any applicable patent or copyright, the Vendor agrees to indemnify and save harmless the City, from and against any and all suits, claims, judgments, and costs instituted or recovered against it by any person whomsoever on account of the use or sale of such articles by the City in violation or right under such patent or copyright.

Uniform Commercial Code: All applicable portions of the Michigan Uniform Commercial Code shall govern contracts for goods with the City of Ann Arbor; except as modified by contract documents.

Non-waiver of Rights: No failure of either party to exercise any power given to it hereunder or to insist upon strict compliance by the other party with its obligations hereunder, and no custom or practice of the parties at variance with the terms hereof, nor any payment under this agreement shall constitute a waiver of either party's right to demand exact compliance with the terms hereof.

Material Safety Data Sheets: Applicable Material Safety Data Sheets, in compliance with OSHA/MIOSHA hazard communication regulations/standards, must be provided by the Vendor to the City at the time of purchase.

Assignments: The Vendor agrees not to assign or transfer this contract or any part thereof without the written consent of the City of Ann Arbor, acting through its authorized representative. Any unauthorized assignment may subject the contractor to immediate termination.

Laws Governing, Severability: This contract shall be governed by and construed according to the laws of the State of Michigan. Vendor agrees to submit to the jurisdiction and venue of the Circuit Court of Washtenaw County, MI, or if original jurisdiction is established, the U.S. District Ct. for Eastern District of MI, Southern Division. The Vendor stipulates venues referenced are convenient and waives any claim of non-convenience. If any term herein is found to be ineffective, unenforceable or illegal under any present or future laws, such term shall be fully severable, and the remaining terms shall not be affected and shall remain full force and effect.

Prevailing Wage: It shall be the responsibility of the Vendor to comply, when applicable, with the prevailing wage requirements and/or the Davis-Bacon Act as amended.

Living Wage: It shall be the responsibility of the Vendor to comply, when applicable, with the City of Ann Arbor's Living Wage Ordinance as defined in Chapter 23, Section 1:811-1:821.

Non-Discrimination: It shall be the responsibility of the Vendor to comply, when applicable, with, all State, Federal and Local non-discrimination laws, including MCL 37.2209 and Section 9:158 of the City Code.

Indemnification: To the fullest extent permitted by law the Vendor shall indemnify, defend and hold the City, its officers, employees and agents harmless from all suits, claims, judgments and expenses including attorney's fees resulting or alleged to result from any act or omission, associated with the performance of this contract by the Vendor or anyone acting on the Vendor's behalf under this contract. The Vendor shall not be responsible to indemnify the City for losses or damages caused by or resulting from the City's sole negligence. This indemnity survives delivery and acceptance of the Vendor's goods and services.

Warranty: The Vendor warrants to the City that all goods and services furnished hereunder will conform in all respects to the terms of this contract, including any drawings, specifications and standards incorporated herein. In addition, the Vendor warrants the goods and services are suitable for and will perform in accordance with the purposes for which they were intended.

Payment Terms: The City of Ann Arbor's payment terms are net 30. The payment date will be calculated based on the invoice receipt date or delivery date, whichever is later.

Payments: All invoices for goods and services shall be emailed to accountspayable@a2gov.org. Mailed invoices shall be addressed to the City of Ann Arbor, Accounts Payable, P.O. Box 8647, Ann Arbor, MI 48107, as indicated on the front of this purchase order. Invoices must include the Vendor's name, phone number, and clearly listed item descriptions, quantities and units of measure. The Vendor acknowledges and understands that invoices not addressed as stated above shall have the net 30 begin once the invoice is received by Accounts Payable.

Compliance with Laws: The Vendor certifies that in performing this contract it will comply with all applicable provisions of Federal, State and Local laws, regulations, rules and orders.

Termination for Cause: In the event the Vendor fails, at any time, to comply with, fully perform or strictly adhere to any covenant, condition or representation contained within the contract, the City shall have the right to give written notice to Vendor of such failure. If such failure is not cured to the City's satisfaction within ten (10) business days from the time of delivery to Vendor of such notice, the City shall have the right to terminate immediately without the requirement of a further notice.

LEGAL STATUS OF BIDDER

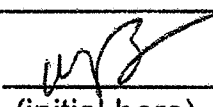
(The Bidder shall fill out the applicable section and strike out the other two.)


Bidder declares that it is:

- A corporation organized and doing business under the laws of the State of Michigan, for whom Milisav Bulatovic, bearing the office title of Assistant Treasurer, whose signature is affixed to this Bid, is authorized to execute contracts.

NOTE: If not incorporated in Michigan, please attach the corporation's Certificate of Authority

- ~~• A limited liability company doing business under the laws of the State of _____, whom _____ bearing the title of _____ whose signature is affixed to this proposal, is authorized to execute contract on behalf of the LLC.~~
- ~~• A partnership, organized under the laws of the state of _____ and filed in the county of _____, whose members are (list all members and the street and mailing address of each) (attach separate sheet if necessary):~~

- An individual, whose signature with address, is affixed to this Bid: 
(initial here)

Authorized Official
 Date April 27, 2015
(Print) Name Milisav Bulatovic Title Assistant Treasurer
Company: PVS Nolwood Chemicals, Inc.
Address: 10900 Harper Ave., Detroit, MI 48213
Contact Phone (313) 921-1200 Fax (313) 579-1675
Email: bids@pvschemicals.com

CITY OF ANN ARBOR NON-DISCRIMINATION ORDINANCE

Relevant provisions of Chapter 112, Nondiscrimination, of the Ann Arbor City Code are included below. You can review the entire ordinance at www.a2gov.org/departments/city-clerk

Intent: It is the intent of the city that no individual be denied equal protection of the laws; nor shall any individual be denied the enjoyment of his or her civil or political rights or be discriminated against because of actual or perceived age, arrest record, color, disability, educational association, familial status, family responsibilities, gender expression, gender identity, genetic information, height, HIV status, marital status, national origin, political beliefs, race, religion, sex, sexual orientation, source of income, veteran status, victim of domestic violence or stalking, or weight.

Discriminatory Employment Practices: No person shall discriminate in the hire, employment, compensation, work classifications, conditions or terms, promotion or demotion, or termination of employment of any individual. No person shall discriminate in limiting membership, conditions of membership or termination of membership in any labor union or apprenticeship program.

Discriminatory Effects: No person shall adopt, enforce or employ any policy or requirement which has the effect of creating unequal opportunities according to actual or perceived age, arrest record, color, disability, educational association, familial status, family responsibilities, gender expression, gender identity, genetic information, height, HIV status, marital status, national origin, political beliefs, race, religion, sex, sexual orientation, source of income, veteran status, victim of domestic violence or stalking, or weight for an individual to obtain housing, employment or public accommodation, except for a bona fide business necessity. Such a necessity does not arise due to a mere inconvenience or because of suspected objection to such a person by neighbors, customers or other persons.

Nondiscrimination by City Contractors: All contractors proposing to do business with the City of Ann Arbor shall satisfy the contract compliance administrative policy adopted by the City Administrator in accordance with the guidelines of this section. All city contractors shall ensure that applicants are employed and that employees are treated during employment in a manner which provides equal employment opportunity and tends to eliminate inequality based upon any classification protected by this chapter. All contractors shall agree 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 any applicable protected classification. All contractors shall be required to post a copy of Ann Arbor's Non-Discrimination Ordinance at all work locations where its employees provide services under a contract with the city.

Complaint Procedure: If any individual has a grievance alleging a violation of this chapter, he/she has 180 calendar days from the date of the individual's knowledge of the allegedly discriminatory action or 180 calendar days from the date when the individual should have known of the alleged discriminatory action to file a complaint with the city's Human Rights Commission. If an individual fails to file a complaint alleging a violation of this chapter within the specified time frame, the complaint will not be considered by the Human Rights Commission. The complaint should be made in writing to the Human Rights Commission. The complaint may be filed in person with the City Clerk, by e-mail at ahumanrightscommission@gmail.com, or by mail (Ann Arbor Human Rights Commission, PO Box 8647, Ann Arbor, MI 48107). The complaint must contain information about the alleged discrimination, such as name, address, phone number of the complainant and location, date and description of the alleged violation of this chapter.

Private Actions For Damages or Injunctive Relief: To the extent allowed by law, an individual who is the victim of discriminatory action in violation of this chapter may bring a civil action for appropriate injunctive relief or damages or both against the person(s) who acted in violation of this chapter

THIS IS AN OFFICIAL GOVERNMENT NOTICE AND
MUST BE DISPLAYED WHERE EMPLOYEES CAN READILY SEE IT.

ADDENDUM No. 1

ITB No. 4375

WATER TREATMENT PLANT CHEMICAL BID Sodium Hydroxide (NaOH)

Due: April 30, 2015 at 2:00PM

The following changes, additions, and/or deletions shall be made to the Invitation to Bid for Water Treatment Plant Chemical Bid, Sodium Hydroxide (NaOH), ITB No. 4375, on which proposals will be received on/or before April 30, 2015 by 2:00 p.m.

The information contained herein shall take precedence over the original documents and all previous addenda (if any), and is appended thereto. **This Addendum includes 2 pages.**

Bidder is to acknowledge receipt of this Addendum No. 1, including all attachments (if any) in its Bid by so indicating on the Invitation to Bid Form. Bids submitted without acknowledgement of receipt of this addendum will be considered nonconforming.

I. QUESTIONS AND ANSWERS

Respondents are directed to take note in its review of the documents of the following questions and City responses as they affect work or details in other areas not specifically referenced here.

The following Questions have been received by the City. Responses are being provided in accordance with the terms of the ITB.

- 1.) May I please obtain the most previous year's tabulation for this chemical.
RESPONSE: See attached.
- 2.) Also, can you please advise when the last time Sodium Hexametaphosphate was out to bid.
RESPONSE: May 2012. this is irrelevant to the sodium hydroxide bid.
- 3.) Will there be a public opening and announcement of all bids on the due date? Just wondering whether to drive it down there myself and be present for the opening.
RESPONSE: There will be a public opening but very few attend.
- 4.) When quoting the price on "Section 4: Bid form" are you looking for the price per solution weight (wet product) or are you looking for the price per Dry Ton?
RESPONSE: Dry tons. Either membrane or diaphragm grade as stated in the ITB Document.

Bidders are responsible for any conclusions that they may draw from the information contained in the Addendum.



CITY OF ANN ARBOR
BID TABULATION SHEET

BID NUMBER: ITB-4153

DATE: May 3, 2011

BID NAME: Sodium Hydroxide

BIDDER	BID DEPOSIT (YES OR NO)	ADDENDUM REC'D (YES OR NO)	BASE BID AMOUNT
1. P/S Melwood			\$ 875 / dry Ton
2. Alexander			\$ 150 / dry Ton (\$375 wet)
3. K-T Steel			\$ 624 / dry Ton
4. JCI Jones			\$ 560 / dry Ton
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			

JK

SAFETY DATA SHEET

1. Identification

Product identifier Sodium Hydroxide Solution 30 - 54%

Other means of identification
SDS number 10000009

Synonyms Caustic Soda, Caustic, Alkali, Lye, Caustic lye, Caustic Soda Liquid 50%, Soda Lye, Liquid Caustic, Sodium Hydrate.

Recommended use Pulping and Bleaching, pH neutralizer, Detergent, Soaps.

Recommended restrictions None known.

Manufacturer / Importer / Supplier / Distributor information

Company name Olin Chlor Alkali Products
Address 490 Stuart Road, NE
Cleveland, TN 37312

Company name Pioneer Americas, LLC (d/b/a Olin Chlor Alkali Products)
Address 490 Stuart Road, NE
Cleveland, TN 37312

Company name Olin Canada ULC (d/b/a Olin Chlor Alkali Products)
Address 2020 University, Suite 2190
Montreal, Quebec H3A 2A5

General Information
Telephone (888) 656-6SDS (737)
Website olinchloralkali.com
Contact person ORC SDS Control Group
Emergency phone number CHEMTREC
US: 1-800-424-9300 Canada: 1-800-567-7455

2. Hazard(s) Identification

Physical hazards Corrosive to metals Category 1

Health hazards Acute toxicity, oral Category 4
Skin corrosion/irritation Category 1
Serious eye damage/eye irritation Category 1

OSHA defined hazards Not classified.

Label elements



Signal word Danger

Hazard statement May be corrosive to metals. Harmful if swallowed. Causes severe skin burns and eye damage.

Precautionary statement

Prevention Keep only in original container. Wear protective gloves/protective clothing/eye protection/face protection. Do not eat, drink or smoke when using this product. Do not breathe mist or vapor. Wash thoroughly after handling.

Response If swallowed: Rinse mouth. Do NOT induce vomiting. If inhaled: Remove person to fresh air and keep comfortable for breathing. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. 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.

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

Hazard(s) not otherwise classified (HNOC) Not classified.

Environmental hazards Hazardous to the aquatic environment, acute hazard Category 3

Supplemental information	
Hazard statement	Harmful to aquatic life.
Precautionary statement	
Prevention	Avoid release to the environment.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Sodium hydroxide	1310-73-2	30 - 54

4. First-aid measures

Inhalation	Move to fresh air. If breathing is difficult, give oxygen. If breathing stops, provide artificial respiration. Do not use mouth-to-mouth method if victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Call a physician or poison control center immediately.
Skin contact	Take off immediately all contaminated clothing. Wash off IMMEDIATELY with plenty of water for at least 15-20 minutes. Get medical attention immediately! Wash clothing separately before reuse. Destroy or thoroughly clean contaminated shoes.
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. Do not induce vomiting. Immediately rinse mouth and drink plenty of water. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Never give anything by mouth to an unconscious person. Do not use mouth-to-mouth method if victim ingested the substance.
Most important symptoms/effects, acute and delayed	Burning pain and severe corrosive skin damage. Permanent eye damage including blindness could result. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Shortness of breath.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Symptoms may be delayed. Keep victim under observation.
General information	In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO ₂). Use extinguishing agent suitable for type of surrounding fire.
Unsuitable extinguishing media	Do not use a solid water stream as it may scatter and spread fire. Do not use halogenated extinguishing agents.
Specific hazards arising from the chemical	The product itself does not burn. May decompose upon heating to produce corrosive and/or toxic fumes. Contact with metal may release flammable hydrogen gas.
Special protective equipment and precautions for firefighters	Fire fighters should enter the area only if they are protected from all contact with the material. Full protective clothing, including self-contained breathing apparatus, coat, pants, gloves, boots and bands around legs, arms, and waist, should be worn. No skin surface should be exposed.
Fire-fighting equipment/instructions	In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk. Use water spray to cool unopened containers.

6. Accidental release measures

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

7. Handling and storage

Precautions for safe handling

Use caution when combining with water; DO NOT add water to caustic; ALWAYS add caustic to water while stirring to minimize heat generation. Do not get in eyes, on skin, or on clothing. Do not taste or swallow. Do not breathe mist or vapor. Use only with adequate ventilation. Wear appropriate personal protective equipment. Transfer and storage systems should be compatible and corrosion resistant. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Keep container tightly closed. Store in a cool, dry, well-ventilated place. Store in corrosive resistant container with a resistant inner liner. Store away from incompatible materials (See Section 10). Store at temperatures not exceeding 40°C/104°F. Compatible storage materials may include, but not be limited to, the following: nickel and nickel alloys, steel, plastics, plastic or rubber-lined steel, FRP, or Derakane vinyl ester resin. Do not allow material to freeze.

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/m ³

US. ACGIH Threshold Limit Values

Components	Type	Value
Sodium hydroxide (CAS 1310-73-2)	Ceiling	2 mg/m ³

US NIOSH Pocket Guide to Chemical Hazards: Ceiling Limit Value and Time Period (if specified)

Components	Type	Value
Sodium hydroxide (CAS 1310-73-2)	Ceiling	2 mg/m ³

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 chemical goggles and face shield.

Skin protection

Hand protection

Wear appropriate chemical resistant gloves.

Other

Wear appropriate chemical resistant clothing.

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. Respirator type: Chemical respirator with organic vapor cartridge and full facepiece.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

When using, do not eat, drink or smoke. 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	Viscous liquid.
Color	Clear.
Odor	Odorless.
Odor threshold	Not available.
pH	14
Melting point/freezing point	50 - 53 °F (10 - 11.67 °C) (50% solution)
Initial boiling point and boiling range	266 - 284 °F (130 - 140 °C) (50% solution)
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	23.76 mm Hg (approximately) (77 °F (25 °C))
Vapor density	Not available.
Relative density	1.525 (50% solution)
Relative density temperature	68 °F (20 °C)
Solubility(ies)	Completely miscible with water.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Molecular formula	NaOH
Molecular weight	40.1 g/mol

10. Stability and reactivity

Reactivity	Contact with metal may release flammable hydrogen gas.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Reacts violently with strong acids. This product may react with oxidizing agents. Do not mix with other chemicals. Corrosive to aluminum, tin, zinc, copper and most alloys in which they are present including brass and bronze. Corrosive to steels at elevated temperatures above 40°C (104°F).
Incompatible materials	Oxidizing agents. Acids. Phosphorus. Aluminum. Zinc. Tin. Initiates or catalyzes violent polymerization of acetaldehyde, acrolein or acrylonitrile.
Hazardous decomposition products	Contact with metals (aluminum, zinc, tin) and sodium tetrahydroborate liberates hydrogen gas.

11. Toxicological information

Information on likely routes of exposure

Ingestion	Causes digestive tract burns. Harmful if swallowed.
Inhalation	May cause irritation to the respiratory system.
Skin contact	Causes severe skin burns.
Eye contact	Causes severe eye burns. Causes serious eye damage.

Symptoms related to the physical, chemical and toxicological characteristics
 Burning pain and severe corrosive skin damage. Permanent eye damage including blindness could result.

Information on toxicological effects

Acute toxicity Harmful if swallowed.

Product	Species	Test Results
Sodium Hydroxide Solution 30 - 54%		
Acute		
Dermal		
LD50	Rabbit	> 2 g/kg
Oral		
LD50	Rat	300 - 500 mg/kg

Product	Species	Test Results
Other LD50	Mouse	40 mg/kg, Intraperitoneal
Skin corrosion/irritation	Causes severe skin burns and eye damage. Standard Draize Test: 500 mg/24 hour(s) skin - rabbit severe.	
Serious eye damage/eye irritation	Causes severe eye burns. Causes serious eye damage. Standard Draize Test: 400 µg eyes - rabbit mild; 1 percent eyes - rabbit severe.	
Respiratory sensitization	No data available.	
Skin sensitization	No data available.	
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.	
Reproductive toxicity	No data available.	
Specific target organ toxicity - single exposure	Not available.	
Specific target organ toxicity - repeated exposure	Not available.	
Aspiration hazard	Droplets of the product aspirated into the lungs through ingestion or vomiting may cause a serious chemical pneumonia.	
Chronic effects	Prolonged exposure may cause chronic effects.	

12. Ecological information

Product	Species	Test Results
Ecotoxicity		
Harmful to aquatic life.		
Sodium Hydroxide Solution 30 - 54%		
Aquatic		
Acute		
Fish	LC50	Bluegill (<i>Lepomis macrochirus</i>) 99 mg/l, 48 hours
		Mosquitofish (<i>Gambusia affinis affinis</i>) 125 mg/l, 96 hours
Persistence and degradability	Expected to degrade rapidly in air.	
Bioaccumulative potential	The product is not expected to bioaccumulate.	
Mobility in soil	Not 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. This material and its container must be disposed of as hazardous waste. 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.
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
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	UN1824
UN proper shipping name	Sodium hydroxide solution
Transport hazard class(es)	8
Subsidiary class(es)	-
Packing group	II
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Special provisions	B2, IB2, N34, T7, TP2

Packaging exceptions 154
Packaging non bulk 202
Packaging bulk 242

IATA

UN number UN1824
UN proper shipping name Sodium hydroxide solution
Transport hazard class(es) 8
Subsidiary class(es) -
Packaging group II
Environmental hazards No
Labels required 8
ERG Code 8L
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number UN1824
UN proper shipping name SODIUM HYDROXIDE SOLUTION
Transport hazard class(es) 8
Subsidiary class(es) -
Packaging group II
Environmental hazards
Marine pollutant No
Labels required 8
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

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.

US. 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

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 No

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.

Food and Drug Administration (FDA) Not regulated.

US state regulations

US. Massachusetts RTK - Substance List

Sodium hydroxide (CAS 1310-73-2)

Sodium Hydroxide Solution 30 - 54%

915752 Version #: 01 Revision date: - Issue date: 20-December-2013

SDS US

6 / 7

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

Not regulated.

US. Pennsylvania RTK - Hazardous Substances

Sodium hydroxide (CAS 1310-73-2)

US. Rhode Island RTK

Sodium hydroxide (CAS 1310-73-2)

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

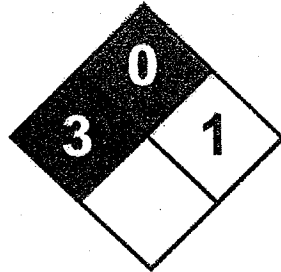
Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
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 20-December-2013
Revision date -
Version # 01
NFPA Ratings



List of abbreviations LD50: Lethal Dose, 50%.
LC50: Lethal Concentration, 50%.
EC50: Effective concentration, 50%.
TWA: Time weighted average.

References EPA: AQUIRE database
HSD&O - Hazardous Substances Data Bank
US. IARC Monographs on Occupational Exposures to Chemical Agents
IARC Monographs. Overall Evaluation of Carcinogenicity
ACGIH Documentation of the Threshold Limit Values and Biological Exposure Indices

Disclaimer This information is provided without warranty. The information is believed to be correct. This information should be used to make an independent determination of the methods to safeguard workers and the environment.



The Public Health and Safety Organization

NSF Product and Service Listings

These NSF Official Listings are current as of **Tuesday, November 18, 2014** at 12:15 a.m. Eastern Time. Please contact NSF International 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=35770&Standard=060&>

NSF/ANSI 60 Drinking Water Treatment Chemicals - Health Effects

Olin Chlor Alkali Products

490 Stuart Road Northwest
Cleveland, TN 37312
United States
423-336-4489

Facility : McIntosh, AL

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.

Hydrochloric Acid

Trade Designation

Hydrochloric Acid (20 Degree Baume)
Hydrochloric Acid (22 Degree Baume)

Product Function

Corrosion & Scale Control
Corrosion & Scale Control

Max Use
40mg/L
40mg/L

Sodium Hydroxide

Trade Designation

Caustic Soda 50%
Membrane Grd Caustic Soda, 50%
Sodium Hydroxide 50%

Product Function

Corrosion & Scale Control
Corrosion & Scale Control
Corrosion & Scale Control

Max Use
100 mg/L
100 mg/L
100 mg/L

Sodium Hypochlorite [CL]

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
High Strength Sodium Hypochlorite Delivered at 15.5[1]	Disinfection & Oxidation	67mg/L
High Strength Sodium Hypochlorite Delivered at 17[1]	Disinfection & Oxidation	62mg/L
HyPure® Bleach MP1 Delivered at 22[1]	Disinfection & Oxidation	48mg/L
HyPure® Bleach MP1 Delivered at 25[1]	Disinfection & Oxidation	42mg/L
HyPure® Bleach MP2 Delivered at 19[1]	Disinfection & Oxidation	55mg/L
HyPure® Bleach MP2 Delivered at 20[1]	Disinfection & Oxidation	53mg/L
HyPure® Bleach MP3[1]	Disinfection & Oxidation	62mg/L
HyPure® Sodium Hypochlorite Delivered at 22[1]	Disinfection & Oxidation	48mg/L
HyPure® Sodium Hypochlorite Delivered at 25[1]	Disinfection & Oxidation	42mg/L
HyPure® Sodium Hypochlorite MP3[1]	Disinfection & Oxidation	62mg/L
Sodium Hypochlorite	Disinfection & Oxidation	84 mg/L
Sodium Hypochlorite 12.5	Disinfection & Oxidation	84 mg/L
Sodium Hypochlorite 12.5 Bacticide	Disinfection & Oxidation	84mg/l
Sodium Hypochlorite 12.5 Bacticide HA	Disinfection & Oxidation	84mg/l
Sodium Hypochlorite Delivered at 14	Disinfection & Oxidation	75mg/L

[1] Certified to NSF/ANSI Standard 60 but is a manufacturing use product and cannot be used directly for end use treatment of drinking water. This product can be diluted and used in the manufacture of other products that are certified to NSF/ANSI Standard 60.

[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.

NOTE: Only products bearing the NSF Mark are Certified.

Facility : Distribution Center - Richmond, CA

<i>Sodium Hydroxide Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Caustic Soda Solution, 20% - 27% - All Grades	Corrosion & Scale Control pH Adjustment	185mg/L
Caustic Soda Solution, 50% - All Grades	Corrosion & Scale Control pH Adjustment	100mg/L
Sodium Hydroxide Solution, 20% - 27% - All Grades	Corrosion & Scale Control pH Adjustment	185mg/L
Sodium Hydroxide Solution, 50% - All Grades	Corrosion & Scale Control pH Adjustment	100mg/L

NOTE: Only products bearing the NSF Mark are Certified.

Facility : Distribution Center - Wilmington, CA

<i>Sodium Hydroxide Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
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Caustic Soda Solution, 20% - 27% - All Grades	pH Adjustment	185mg/L
	Corrosion & Scale Control	
Caustic Soda Solution, 50% - All Grades	pH Adjustment	100mg/L
	Corrosion & Scale Control	
Sodium Hydroxide Solution, 20% - 27% - All Grades	Corrosion & Scale Control	185mg/L
	pH Adjustment	
Sodium Hydroxide Solution, 50% - All Grades	pH Adjustment	100mg/L
	Corrosion & Scale Control	

NOTE: Only products bearing the NSF Mark are Certified.

Facility : Santa Fe Springs, CA

Chlorine[CL]

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Chlorine Gas	Disinfection & Oxidation	30 mg/L
	Algicide	

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

Sodium Hydroxide

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Caustic 50% Chemical Grade	Corrosion & Scale Control	100mg/L
	pH Adjustment	
Caustic 50% Commercial Grade	Corrosion & Scale Control	100mg/L
	pH Adjustment	
Caustic 50% Membrane Grade	Corrosion & Scale Control	100mg/L
	pH Adjustment	
Dilute Caustic Soda	Corrosion & Scale Control	100mg/L
	pH Adjustment	
Sodium Hydroxide	Corrosion & Scale Control	100mg/L
	pH Adjustment	

Sodium Hypochlorite[CL]

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Bacti-Chlor 11%	Disinfection & Oxidation	96 mg/L
	Algicide	
Bacticide 12.5%	Disinfection & Oxidation	84 mg/L
	Algicide	
L.T. Sanitizer 5.25%	Disinfection & Oxidation	200 mg/L
	Algicide	
Sodium Hypochlorite 12.5%	Disinfection & Oxidation	84 mg/L
	Algicide	
Sodium Hypochlorite 9%	Disinfection & Oxidation	114mg/L
	Algicide	

[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.

NOTE: Only products bearing the NSF Mark are Certified.

Facility : South Gate, CA

Potassium Hydroxide

Trade Designation

Potassium Hydroxide 45% Solution MB

Product Function

Corrosion & Scale Control
pH Adjustment

Max Use

100mg/L

Potassium Hydroxide 50% Solution MB

Corrosion & Scale Control
pH Adjustment

100mg/L

Sodium Hydroxide

Trade Designation

Caustic 50% Chemical Grade

Product Function

Corrosion & Scale Control
pH Adjustment

Max Use

100mg/L

Caustic 50% Commercial Grade

Corrosion & Scale Control
pH Adjustment

100mg/L

Caustic 50% Membrane Grade

Corrosion & Scale Control
pH Adjustment

100mg/L

Dilute Caustic Soda

Corrosion & Scale Control
pH Adjustment

100mg/L

Sodium Hydroxide

Corrosion & Scale Control
pH Adjustment

100mg/L

Sodium Hypochlorite [CL]

Trade Designation

High Strength Sodium Hypochlorite Delivered at 15.5[1]

Product Function

Disinfection & Oxidation

Max Use

67mg/L

High Strength Sodium Hypochlorite Delivered at 17[1]

Disinfection & Oxidation

62mg/L

HyPure® Bleach MP1 Delivered at 22[1]

Disinfection & Oxidation

48mg/L

HyPure® Bleach MP1 Delivered at 25[1]

Disinfection & Oxidation

42mg/L

HyPure® Bleach MP2 Delivered at 19[1]

Disinfection & Oxidation

55mg/L

HyPure® Bleach MP2 Delivered at 20[1]

Disinfection & Oxidation

53mg/L

Sodium Hypochlorite 12.4 Bacticide Delivered at 14

Disinfection & Oxidation

75mg/L

Sodium Hypochlorite 12.5 Bacticide

Disinfection & Oxidation

84mg/L

[1] Certified to NSF/ANSI Standard 60 but are manufacturing use products and cannot be used directly for end use treatment of drinking water. These products can be diluted and used in the manufacture of other products that are certified to NSF/ANSI Standard 60.

[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.

[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.

Facility : Tracy, CA

Chlorine[CL]

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Chlorine Gas	Disinfection & Oxidation Algicide	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.

Potassium Hydroxide

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Potassium Hydroxide 45% Solution MB	pH Adjustment Corrosion & Scale Control	100mg/L
Potassium Hydroxide 50% Solution MB	pH Adjustment Corrosion & Scale Control	100mg/L

Sodium Hydroxide

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Caustic 50% Chemical Grade	Corrosion & Scale Control pH Adjustment	100mg/L
Caustic 50% Commercial Grade	Corrosion & Scale Control pH Adjustment	100mg/L
Caustic 50% Membrane Grade	Corrosion & Scale Control pH Adjustment	100mg/L
Dilute Caustic Soda	Corrosion & Scale Control pH Adjustment	100mg/L
Sodium Hydroxide	Corrosion & Scale Control pH Adjustment	100mg/L

Sodium Hypochlorite[CL]

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Bacti-Chlor 11%	Disinfection & Oxidation Algicide	96 mg/L
Bacticide 12.5%	Disinfection & Oxidation Algicide	84 mg/L
L.T. Sanitizer 5.25%	Disinfection & Oxidation Algicide	200 mg/L
Sodium Hypochlorite 12.5%	Disinfection & Oxidation Algicide	84 mg/L
Sodium Hypochlorite 9%		114mg/L

Disinfection & Oxidation
Algicide

[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.

NOTE: Only products bearing the NSF Mark are Certified.

Facility : Augusta, GA

Hydrochloric Acid

Trade Designation

Hydrochloric Acid (20, 22, or 23 deg. Baume)

Product Function

Corrosion & Scale Control

Max Use

40 mg/L

Sodium Hydroxide

Trade Designation

Caustic Soda 49%-52% Commercial Grade

Caustic Soda 49%-52% Membrane Grade

Dilute Caustic

Sodium Hydroxide 30-49%

Sodium Hydroxide 49%-52% Commercial Grade

Sodium Hydroxide, Membrane Grade

Weak Caustic

Product Function

Corrosion & Scale Control

Corrosion & Scale Control

Corrosion & Scale Control

Corrosion & Scale Control

Corrosion & Scale Control

Corrosion & Scale Control

Corrosion & Scale Control

Max Use

100 mg/L

100 mg/L

100mg/L

100mg/L

100 mg/L

100 mg/L

100mg/L

Sodium Hypochlorite [CL]

Trade Designation

High Strength Sodium Hypochlorite Delivered at 15.5[1]

Sodium Hypochlorite 12.5 Bacticide

Sodium Hypochlorite 12.5%

Sodium Hypochlorite 14%

Sodium Hypochlorite Delivered at 14

Sodium Hypochlorite, High Strength[1]

Product Function

Disinfection & Oxidation

Disinfection & Oxidation

Disinfection & Oxidation

Disinfection & Oxidation

Disinfection & Oxidation

Disinfection & Oxidation

Max Use

67mg/L

84mg/L

84 mg/L

75mg/L

75mg/L

67mg/L

[1] High Strength Sodium Hypochlorite Delivered at 15.5 and Sodium Hypochlorite, High Strength are certified to NSF/ANSI Standard 60 but are manufacturing use products and cannot be used directly for end use treatment of drinking water. These products can be diluted and used in the manufacture of other products that are certified to NSF/ANSI Standard 60.

[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.

NOTE: Only products bearing the NSF Mark are Certified.

Facility : Distribution Center - Augusta, GA

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

NOTE: Only products bearing the NSF Mark are Certified.

Facility : St. Gabriel, LA

Chlorine[CL]	Product Function	Max Use
Trade Designation Chlorine, Liquid - Technical Grade	Disinfection & Oxidation	30 mg/L

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

Sodium Hydroxide	Product Function	Max Use
Trade Designation Caustic Soda-Liquid, All Grades	Corrosion & Scale Control pH Adjustment	100 mg/L

NOTE: Only products bearing the NSF Mark are Certified.

Facility : Distribution Center - Westborough, MA

Sodium Hypochlorite [CL]	Product Function	Max Use
Trade Designation High Strength Sodium Hypochlorite Delivered at 15.5[1]	Disinfection & Oxidation	67mg/L
High Strength Sodium Hypochlorite Delivered at 17[1]	Disinfection & Oxidation	62mg/L

[1] Certified to NSF/ANSI Standard 60 but is a manufacturing use product and cannot be used directly for end use treatment of drinking water. This product can be diluted and used in the manufacture of other products that are Certified to NSF/ANSI Standard 60.

[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.

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

Facility : Distribution Center - Detroit, MI**Potassium Hydroxide****Trade Designation**

Potassium Hydroxide 45% Solution MB

Product FunctionpH Adjustment
Corrosion & Scale Control**Max Use**

100mg/L

Potassium Hydroxide 50% Solution MB

pH Adjustment
Corrosion & Scale Control

100mg/L

Sodium Hydroxide**Trade Designation**

Caustic Soda 50% (all grades)

Product Function

Corrosion & Scale Control

Max Use

100mg/L

NOTE: Only products bearing the NSF Mark are Certified.

Facility : Henderson, NV**Chlorine[CL]****Trade Designation**

Chlorine, Liquid - Technical Grade

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.

Hydrochloric Acid**Trade Designation**

Hydrochloric Acid - All Grades

Product FunctionCorrosion & Scale Control
pH Adjustment**Max Use**

40 mg/L

Sodium Hydroxide**Trade Designation**

Caustic Soda Liquid, All Grades

Product FunctionCorrosion & Scale Control
pH Adjustment**Max Use**

100 mg/L

Sodium Hypochlorite [CL]**Trade Designation**

Bacti-Chlor 11%

Product FunctionDisinfection & Oxidation
Algicide**Max Use**

96 mg/L

Bacticide 12.5%

Disinfection & Oxidation
Algicide

84 mg/L

High Strength Sodium Hypochlorite[1]

Disinfection & Oxidation
Algicide

67mg/L

High Strength Sodium Hypochlorite Delivered at 17[1]

Disinfection & Oxidation
Algicide

62mg/L

HyPure® Bleach MP3[1]	Disinfection & Oxidation	62mg/L
HyPure® Sodium Hypochlorite[1]	Disinfection & Oxidation	62mg/L
	Algicide	
HyPure® Sodium Hypochlorite MP3[1]	Disinfection & Oxidation	62mg/L
L.T. Sanitizer 5.25%	Disinfection & Oxidation	200 mg/L
	Algicide	
Sodium Hypochlorite 12.5 Bacticide	Disinfection & Oxidation	84mg/L
	Algicide	
Sodium Hypochlorite 12.5%	Disinfection & Oxidation	84 mg/L
	Algicide	
Sodium Hypochlorite 9%	Disinfection & Oxidation	114mg/L
	Algicide	

[1] Certified to NSF/ANSI Standard 60 but is a manufacturing use product and cannot be used directly for end use treatment of drinking water. This product can be diluted and used in the manufacture of other products that are certified to NSF/ANSI Standard 60.

[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.

NOTE: Only products bearing the NSF Mark are Certified.

Facility : Niagara Falls, NY

Chlorine[CL]

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Liquid Chlorine	Disinfection & Oxidation	30mg/L

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

Hydrochloric Acid

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Hydrochloric Acid (20, 22 or 23 deg. Baume)	Corrosion & Scale Control	40mg/L

Sodium Hydroxide

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Liquid Caustic Soda	Corrosion & Scale Control	100mg/L
Membrane Grade Caustic Soda	Corrosion & Scale Control	100mg/L
Sodium Hydroxide	Corrosion & Scale Control	100mg/L
Sodium Hydroxide 50%	Corrosion & Scale Control	100mg/L

Sodium Hypochlorite [CL]

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
High Strength Sodium Hypochlorite[1]	Disinfection & Oxidation	67mg/L

High Strength Sodium Hypochlorite Delivered at 17[1]	Disinfection & Oxidation	62mg/L
HyPure® Bleach MP1 delivered at 22[1]	Disinfection & Oxidation	48mg/L
HyPure® Bleach MP1 delivered at 25[1]	Disinfection & Oxidation	42mg/L
HyPure® Bleach MP2 delivered at 19[1]	Disinfection & Oxidation	55mg/L
HyPure® Bleach MP2 delivered at 20[1]	Disinfection & Oxidation	53mg/L
HyPure® Bleach MP3[1]	Disinfection & Oxidation	62mg/L
HyPure® Sodium Hypochlorite[1]	Disinfection & Oxidation	67mg/L
HyPure® Sodium Hypochlorite MP2 delivered at 19[1]	Disinfection & Oxidation	55mg/L
HyPure® Sodium Hypochlorite MP2 delivered at 20[1]	Disinfection & Oxidation	53mg/L
HyPure® Sodium Hypochlorite MP3[1]	Disinfection & Oxidation	62mg/L
HyPure® Sodium Hypochlorite delivered at 22[1]	Disinfection & Oxidation	48mg/L
HyPure® Sodium Hypochlorite delivered at 25[1]	Disinfection & Oxidation	42mg/L
Sodium Hypochlorite	Disinfection & Oxidation	84mg/L
Sodium Hypochlorite 12.5	Disinfection & Oxidation	84mg/L
Sodium Hypochlorite 12.5 Bacticide	Disinfection & Oxidation	84mg/L
Sodium Hypochlorite Delivered at 14	Disinfection & Oxidation	75mg/L

[1] Certified to NSF/ANSI Standard 60 but is a manufacturing use product and cannot be used directly for end use treatment of drinking water. This product can be diluted and used in the manufacture of other products that are Certified to NSF/ANSI Standard 60.

[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.

NOTE: Only products bearing the NSF Mark are Certified.

Facility : Charleston, TN

Chlorine[CL]

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Chlorine	Disinfection & Oxidation	30 mg/L

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

Hydrochloric Acid

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Hydrochloric Acid (20, 22, or 23 deg. Baume)	Corrosion & Scale Control	40 mg/L

Potassium Hydroxide

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Potassium Hydroxide 45% Solution MB	pH Adjustment	100mg/L
	Corrosion & Scale Control	
Potassium Hydroxide 50% Solution MB	pH Adjustment	100mg/L
	Corrosion & Scale Control	

Sodium Hydroxide**Trade Designation**

49%-52% Caustic Soda Commercial Grade
 49%-52% Caustic Soda Membrane Grade
 49%-52% Caustic Soda Rayon Grade
 49%-52% Commercial Grade
 49%-52% Rayon Grade

Product Function

Corrosion & Scale Control
 Corrosion & Scale Control
 Corrosion & Scale Control
 Corrosion & Scale Control
 Corrosion & Scale Control

Max Use

100 mg/L
 100mg/L
 100 mg/L
 100 mg/L
 100 mg/L

Sodium Hypochlorite [CL]**Trade Designation**

Sodium Hypochlorite
 Sodium Hypochlorite 10%
 Sodium Hypochlorite 11%
 Sodium Hypochlorite 12.5
 Sodium Hypochlorite 14%
 Sodium Hypochlorite 9%
 Sodium Hypochlorite High Strength[1]

Product Function

Disinfection & Oxidation
 Disinfection & Oxidation
 Disinfection & Oxidation
 Disinfection & Oxidation
 Disinfection & Oxidation
 Disinfection & Oxidation
 Disinfection & Oxidation

Max Use

84 mg/L
 105mg/L
 95mg/L
 84 mg/L
 75mg/L
 117mg/L
 67mg/L

[1] Certified to NSF/ANSI Standard 60 but is a manufacturing use product and cannot be used directly for end use treatment of drinking water. This product can be diluted and used in the manufacture of other products that are certified to NSF/ANSI Standard 60.

[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.

NOTE: Only products bearing the NSF Mark are Certified.

Facility : Distribution Center - Chattanooga, TN**Potassium Hydroxide****Trade Designation**

Potassium Hydroxide 45% Solution MB
 Potassium Hydroxide 50% Solution MB

Product Function

pH Adjustment
 Corrosion & Scale Control
 pH Adjustment
 Corrosion & Scale Control

Max Use

100mg/L
 100mg/L

Sodium Hydroxide**Trade Designation**

Caustic Soda 50% (all grades)

Product Function

Corrosion & Scale Control

Max Use

100mg/L

NOTE: Only products bearing the NSF Mark are Certified.

Facility : Distribution Center - Hopewell, VA

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

NOTE: Only products bearing the NSF Mark are Certified.

Facility : Becancour, Québec, Canada

Chlorine[CL]	Product Function	Max Use
Trade Designation Chlorins	Disinfection & Oxidation	30mg/L

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

Hydrochloric Acid	Product Function	Max Use
Trade Designation Hydrochloric Acid	Corrosion Control pH Adjustment	40mg/l

Sodium Hydroxide	Product Function	Max Use
Trade Designation Caustic Soda Solution, 50% - Commercial Grade	Corrosion & Scale Control pH Adjustment	100mg/L
Caustic Soda Solution, 50% - Membrane Grade	Corrosion & Scale Control pH Adjustment	100mg/L
Sodium Hydroxide Solution, 50% - Commercial Grade	Corrosion & Scale Control pH Adjustment	100mg/L
Sodium Hydroxide Solution, 50% - Membrane Grade	Corrosion & Scale Control pH Adjustment	100mg/L

Sodium Hypochlorite [CL]	Product Function	Max Use
Trade Designation High Strength Hypochlorite [19 Trade][1]	Disinfection & Oxidation	67mg/L
High Strength Sodium Hypochlorite[1]	Disinfection & Oxidation	67mg/L
Sodium Hypochlorite 10	Disinfection & Oxidation	105mg/L
Sodium Hypochlorite 11 Wt% [12 Trade]	Disinfection & Oxidation	96mg/L
Sodium Hypochlorite 11% Bactichlor	Disinfection & Oxidation	96mg/L
Sodium Hypochlorite 12.5 Bacticide	Disinfection & Oxidation	84mg/L
Sodium Hypochlorite 12.5 Wt% [15 Trade]	Disinfection & Oxidation	84mg/L
Sodium Hypochlorite 12.5 Wt% [16 Trade]	Disinfection & Oxidation	75mg/L
Sodium Hypochlorite 12.5% Bacticide, Delivered at 14	Disinfection & Oxidation	75mg/L

[1] High Strength Sodium Hypochlorite and High Strength Hypochlorite [19 Trade] are certified to NSF/ANSI Standard 60 but are manufacturing use products and cannot be used

directly for end use treatment of drinking water. These products can be diluted and used in the manufacture of other products that are certified to NSF/ANSI Standard 60.

[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>
Sulfuric Acid	Corrosion & Scale Control pH Adjustment	40mg/L

NOTE: Only products bearing the NSF Mark are Certified.

Facility : Distribution Center - Pictou County, Nova Scotia, Canada

Sodium Hydroxide

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Caustic Soda Solution, 50% - All Grades	Corrosion & Scale Control pH Adjustment	100mg/L
Sodium Hydroxide Solution, 50% - All Grades	Corrosion & Scale Control pH Adjustment	100mg/L

NOTE: Only products bearing the NSF Mark are Certified.

Facility : Terminal - Concord, Ontario, Canada

Hydrochloric Acid

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Hydrochloric Acid	Corrosion & Scale Control	40mg/L

Sodium Hydroxide

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Caustic Soda Solution, 50% - All Grades	Corrosion & Scale Control pH Adjustment	100mg/L
Sodium Hydroxide Solution, 50% - All Grades	Corrosion & Scale Control pH Adjustment	100mg/L

NOTE: Only products bearing the NSF Mark are Certified.

Number of matching Manufacturers is 1

Number of matching Products is 168

Processing time was 6 seconds