PROPOSAL FORM
Mid-Michigan Drinking Water Consortium Bulk Chemicals

Note: This form may be completed using MS Word®

Provide the following business and contact information:

Legal Name: JCI Jones Chemicals, Inc.		Federal ID or Social Security Number: 16-0809645
Address: 18000 Payne Street		State of Incorporation New York
City: Riverview	State & Zip: Michigan 48193	Primary E-Mail: pnowaske@jcichem.com
Type of Organization: X Corporation __ LLC __ LLP __ Sole Proprietor __ Partnership __ S-Corporation __ Other (Explain)		
Office Phone: 734.283.0677	Alternate Office Phone: 734.283.0678	Office Fax: 734.283.0979
Primary Contact: Pam Nowaske	Contact Phone: 734.283.0677	Contact Fax: 734.283.0979
Contact Mobile:	Contact E-Mail: pnowaske@jcichem.com	Website URL: www.jcichem.com

Provide responses to the following questions:

How many years has your firm been in business under the present ownership?	85 years
Have you done business with the Board of Water and Light? If so, furnish specifics.	Yes, current Hypo contract
Have you done business with the City of Lansing? If so, furnish specifics.	Yes, current Hypo contract
Have you ever defaulted on a contract or been involved in litigation with the Board of Water and Light or the City of Lansing? If so, furnish specifics.	none
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.	none
List any relationships between your firm's staff and any current BWL 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.	85 years' experience in chemical repackage, distributor and manufacturer *see attached training letter
List at least three (3) references for similar work you have performed for other clients. Include Client name, contact name, title and phone number.	Macomb County Brent Avery 586.772.3425 Wayne County Duane Russo 313.468.0087 Grayling Generating Brenda Hipps 989.348.4575 x14
List subcontractors that you plan to use on this project.	none
Indicate any exceptions to the enclosed General Requirements.	none
Include any additional information you may deem helpful in evaluating your proposal.	

Safety Training Program
Drivers
JCI Jones Chemicals, Inc.

This document serves as written certification relative to the training provided to and the capabilities of each of JCI Jones Chemicals, Inc.'s drivers as it pertains to the delivery of chlorine ton containers.

JCI is subject to the requirements of OSHA's Process Safety Management (PSM) program requirements in accordance with 29 CFR 1910.119 as well as the EPA's Risk Management Program (RMP) under 40 CFR Part 68. As such and as part of this, we have an extremely comprehensive Safety Training Program in accordance with DOT regulations under 49 CFR 172.704 based on a three year cycle encompassing not only the operating procedures applicable to the processes and systems in place at the facility but training for emergency responders, hazmat employee training under 49 CFR 171.8, security training in accordance with both the DOT's HM 232 regulations (Hazardous Materials: Security Requirements for Offerors and Transporters of Hazardous Materials) dated March 25th, 2003 and the DHS's 6 CFR 27 regulations under their Chemical Facility Anti-Terrorism Standards.

General Awareness/Familiarization Training is provided to all JCI employees, to include our drivers based again, on a three year training cycle. This training is comprised of but is not limited to:

*JCI's Safety Policy
*General and Plant Safety Rules
*Operation of Emergency Eyewash & Safety Showers
*Personal Protective Equipment
*Eye, face, and head protection program and policy
*Respiratory Protection Program
*Hazard Communication Program (includes MSDSs for all products)
*JCI's Contingency Plan, Fire Prevention (includes fire extinguisher training), and Evacuation Plan
*Accident prevention and reporting programs
*Hazard Reporting Procedures
*Electrical Safety
*Material Handling Training Program
*First Aid Procedures
*Spill, Leak or Release Guidelines
*Off-the-Job Safety
*Ladder Safety and Fall Prevention
*Forklift Training
*Dot Special Permits Review

Function Specific Training relevant to each employee's duties and responsibilities is provided to all employees to both reinforce previous training and to ensure that all new processes, procedures, systems, regulations, and etc. are covered. Function Specific Training provided to JCI's drivers consists of the following:

*Pre-Trip Inspections & Logs
*Driver Specific Paperwork
*SOP for Loading & Unloading Tank Trucks – All Products
*SOP for Filling Delboys, Drums & Totes – All Products
*Cargo Tank Inspections (V, I, K, L, T, UC & P)
*SOP for Loading and Unloading Storage Tanks
*Conducting Customer Site Assessments
*Boom Truck Operations – If Applicable
*Driver's Rules and Regulations

Hazmat Employee (Transporting Hazardous Materials) Training provided to our drivers in accordance with 49 CFR 172.704 (a)(1), (a)(2), and (a)(3) is conducted every three years, is certified by the trainer, and includes the following:

*General Information, regulations and definitions
*Carriage by public highway
*Specifications for packagings
*General Security Awareness Training
*Shipping Papers
*Marking, Labeling and Placarding
*Loading and Unloading (All tankers and trailers)
*Segregation
*Packaging (all containers)
*All Special Permits (Formerly Exemptions)

Our drivers understand their responsibility for the safety and security of not only themselves and emergency responders but the employees at the delivery site and the residents in the surrounding community and as such, under no circumstances will they take any actions that can potentially impact the safety and security of any individuals. They have received extensive training on the procedures to be followed in the event of a release of chlorine, regardless of when or where it occurs; i.e., a. a release from a chlorine ton while the driver is en-route to the delivery location; b. a release from a chlorine ton on the delivery trailer while the driver is at the customer's site off-loading chlorine tons; and or c. a release from a chlorine ton at the customer's site at any other time and under any circumstances other than the aforementioned and will take actions specifically designed to ensure the safety and security of all concerned.

In response to information requested specifically applicable to 'handling chlorine leaks and/or spills of ton containers', while it can be seen in reviewing the above that our drivers receive extensive training on a myriad of job functions to include emergency response procedures in

accordance with DOT regulations, OSHA regulations applicable to emergency response procedures are extremely stringent and as such, no individual driver is either qualified and or authorized to respond to a leaking chlorine ton container. A response to a chlorine emergency would be initiated by contacting the local Fire Department who would then either respond or notify CHEMTREC at 1-800-424-9300 as indicated at the bottom of each of JCI's Bills of Lading. CHEMTREC would initiate the most expeditious response to the incident by contacting the closest CHLOREP (CHLORine Emergency Plan) team and the release would be addressed.

Any question regarding the above should be directed to JCI's Executive VP for Safety, Security & Regulatory Compliance at 1-330-825-4521.

PROPOSAL FORM
Mid-Michigan Drinking Water Consortium Bulk Chemicals

The undersigned Bidder hereby acknowledges receipt of the following addenda:

Addendum No.	Date	
1	03/03/15	Enter addenda numbers and received dates if applicable
2	03/06/15	
3	03/11/15	

Provide pricing:

Activity	Unit Pricing
Pebble Quick Lime	
Chemical:	$ no bid / ton
Demurrage:	$_____ / hour *first 4 hours free
Sodium Hypochlorite	
Chemical:	$.628 / gal
Demurrage:	$100.00 / hour *first 4 hours free
Hydrofluosilic Acid	
Chemical in minimum 40,000 lbs. shipments:	$ no bid / ton
Chemical in minimum 30,000 lbs. shipments:	$_____ / ton
Chemical split between Dye and Wise Plants minimum 40,000 lbs. shipments:	$_____ / ton
Demurrage:	$_____ / hour *first 4 hours free
Ferric Chloride	
Dry Chemical:	$ no bid / ton
Liquid Chemical:	$_____ / ton
Demurrage:	$_____ / hour *first 4 hours free

PROPOSAL FORM
Mid-Michigan Drinking Water Consortium Bulk Chemicals

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.

Company Name: JCI Jones Chemicals, Inc
Signature: Donald Skidmore Jr
Name: Donald Skidmore Jr.
Title: Branch Manager
Date: 03/13/2015

END OF PROPOSAL FORM

Hometown People. Hometown Power.

March 03, 2015

Potential Bidders
Street No. and Suite #
City, State - Zip

Attn: Sales Engineer/Manager

Subject: **Mid-Michigan Drinking Water Consortium Bulk Chemicals Lansing, MI.**

Dear Bidder,

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

This Addendum:

1. Clarifies questions submitted.

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.

Proposal deadline will not be changed.

Please direct any questions to the undersigned.

Sincerely,

Rachelle Hall
Purchasing & Warehousing Department
(517) 702-6192
(517) 702-6042 Fax
rah2@lbwl.com

Hometown People. Hometown Power.

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.

Hometown People. Hometown Power.

ADDENDUM ACKNOWLEDGEMENT

The undersigned Bidder acknowledges receipt of **Addendum No. 01,** dated 03/03/2015, to Request for Proposal for Mid –Michigan Drinking Water Consortium Bulk Chemicals, and certifies that it has considered same in formulating its proposal.

Name of Bidder: JCI Jones Chemicals, Inc.

Address of Bidder: 18000 Payne Street

Riverview, MI 48193

Acknowledged By: Donald Skidmore Jr

Signature

Donald Skidmore Jr.

Name

Branch Manager

Title

03/13/15

Date

ADDENDUM NO. 01

CONTENTS

Question	Answer
Are we to bid only one price for all the locations, or the base price for lime and the freight to different locations?	You are to bid one price for all locations per chemical.
On the bid form do you want the **unit price per ton** or the total **delivered price per ton**?	Please bid the total delivered price as one unit.

Hometown People. Hometown Power.

March 06, 2015

Potential Bidders
Street No. and Suite #
City, State - Zip

Attn: Sales Engineer/Manager

Subject: **Mid-Michigan Drinking Water Consortium Bulk Chemicals Lansing, MI.**

Dear Bidder,

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

This Addendum:

1. Removes Delhi Township from the Scope of Work.

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.

Proposal deadline will not be changed.

Please direct any questions to the undersigned.

Sincerely,

Rachelle Hall
Purchasing & Warehousing Department
(517) 702-6192
(517) 702-6042 Fax
rah2@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. 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.

Hometown People. Hometown Power.

ADDENDUM ACKNOWLEDGEMENT

The undersigned Bidder acknowledges receipt of **Addendum No. 02,** dated 03/06/2015, to Request for Proposal for Mid –Michigan Drinking Water Consortium Bulk Chemicals, and certifies that it has considered same in formulating its proposal.

Name of Bidder: JCI Jones Chemicals, Inc

Address of Bidder: 18000 Payne Street

Riverview, MI 48193

Acknowledged By: Donald Skidmore Jr

Signature

Donald Skidmore Jr.

Name

Branch Manager

Title

03/13/15

Date

ADDENDUM NO. 02

CONTENTS

1. Delhi Township will **not** be participating in this contract. Please do not quote pricing for Delhi Township chemicals.

Hometown People. Hometown Power.

March 11, 2015

Potential Bidders
Street No. and Suite #
City, State - Zip

Attn: Sales Engineer/Manager

Subject: **Mid-Michigan Drinking Water Consortium Bulk Chemicals**
Lansing, MI.

Dear Bidder,

Attached to this letter is **Addendum No. 03** to subject Request for Proposal.

This Addendum:

1. Answers questions submitted

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.

Proposal deadline will not be changed.

Please direct any questions to the undersigned.

Sincerely,

Rachelle Hall
Purchasing & Warehousing Department
(517) 702-6192
(517) 702-6042 Fax
rah2@lbwl.com

Hometown People. Hometown Power.

NOTICE TO BIDDERS

ADDENDUM NO. 03

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.

Hometown People. Hometown Power.

ADDENDUM ACKNOWLEDGEMENT

The undersigned Bidder acknowledges receipt of **Addendum No. 03,** dated 03/11/2015, to Request for Proposal for Mid –Michigan Drinking Water Consortium Bulk Chemicals, and certifies that it has considered same in formulating its proposal.

Name of Bidder: JCI Jones Chemicals, Inc.

Address of Bidder: 18000 Payne Street

Riverview, MI 48193

Acknowledged By: Donald Skidmore Jr

Signature

Donald Skidmore Jr.

Name

Branch Manager

Title

03/13/15

Date

ADDENDUM NO. 03

CONTENTS

	Lansing Board of Water & Light	City of Jackson	City of Ann Arbor	City of Lansing	City of Adrian	East Lansing – Meridian Water & Sewer Authority
City of Ann Arbor - What is their typical load size for sodium hypochlorite?			4,000 gallons			
Will any or all of the locations require split deliveries of sodium hypochlorite within the facilities?	Not typically, unless the need arises	Only once per year. Two tanks at 1,000 gallons each	No	No	No	No
How many tanks at each facility of sodium hypochlorite?	Four	Typically one	Two	Two	Four	We have two tanks that are equalized, so they act as one
What are the tank sizes at each facility for sodium hypochlorite?	(2) 7,200 gallon tanks at Dye Water (2) 2,200 gallon tanks at Wise Facility	6,000 gallons	12,000 gallons per tank	About 6,000 gallons	2,000 gallons each tank	Each tank is 4,500 gallons
For the facilities that list shipments at 4,000 gals of sodium hypochlorite - Can they take minimum 4,600 gals per shipment?	No, 3,800 gallon deliveries for Wise is what is typical with a maximum of 4,000 gallon deliveries.	Yes, normal delivery is between 5,600 and 6,000 gallons	Yes, they can take 4,600 gallon loads	Deliveries are 4,800 gallons	4,000 gal. is the minimum amount needed. Delivery is usually around 4,800 gallons	We can take a maximum of 4,600 gal., so long as the shipper will delive within two days o notification

Jones Chemicals Inc.

EQUAL EMPLOYMENT OPPORTUNITY POLICY

41 C.F.R. Section 60-1.4;60-2.13 (a), 60-2.20

January 1st, 2015

The employment policy of JCI is to provide equal opportunity to all persons. Our company therefore has made a commitment to equal employment opportunity through a positive and continuing Affirmative Action Program. No employee or applicant for employment will be discriminated against because of race, color, religion, sex, national origin, age, marital status, citizenship status, otherwise qualified disability or veteran status.

To implement these policies, JCI will continue to:

A. Recruit, hire, train, and promote persons in all job classifications without regard to race, color, religion, sex, national origin, citizenship status, otherwise qualified disability or veteran status. JCI does not discriminate on the basis of national origin or citizenship status as provided under the Immigration Reform and Control Act of 1986;

B. Base decisions on employment so as to further the principle of equal employment opportunity;

C. Insure that promotion decisions are in accord with the principles of equal employment opportunity by imposing only valid requirements for promotional opportunities;

D. Insure that all personnel actions (including but not limited to compensation, benefits, transfers, layoffs, return from layoffs, company sponsored training, education, tuition assistance, social and recreational programs) are administered without regard to race, color, religion, sex, national origin, age, marital status, citizenship status, otherwise qualified disability or veteran status.

Susan Jones has been designated as EEO coordinator and is responsible for compliance with state and federal equal employment opportunity laws and for implementing the affirmative action program, including equal employment practices, monitoring, and internal reporting. If you would like to see the plan or have questions, comments, complaints, please contact the above listed EEO coordinator at (941)330-1537, during regular business hours (EST).

The continued success of our Affirmative Action Program requires maximum cooperation from every employee throughout the organization. Equal employment opportunity is not only the law, but is a principle of JCI. Your cooperation is expected to achieve this goal and I personally stand behind this principle.

Jeffrey W. Jones
President/CEO

Corporate Offices • *1819* Main St., Suite 1100 • Sarasota, Florida 34236 • *telephone:* 941.330.1537 • *facsimile:* 941.330.9657 • 800.477.1078
Branch Locations • Warwick, NY • Caledonia, NY • Barberton, OH • Riverview, MI • Merrimack, NH • Charlotte, NC
Jacksonville, FL • Beech Grove, IN • Milford, VA • Tacoma, WA • Torrance, CA
www.jcichemicals.com

RCMS® Verification

JCI Jones Chemicals Inc.

Sarasota, Florida

*has been verified by Midland Engineering, Ltd, an independent third party, as conforming to the **2011-2013 cycle** requirements of the*

American Chemistry Council's Responsible Care Management System®

Technical Specification RC101.03

JCI Jones Chemicals Inc. – Doc # MELRL0413-01

April 20, 2013
Issue Date

Ronald E. Lund

Ronald E. Lund, Vice President – Auditing Services

ABEAC®

Midland Engineering, Ltd.

MEL asp-005

DRINKING WATER TREATMENT ADDITIVES
ANSI/NSF 60
8N76

Maximum Use Level:

Sunny Sol 150	80 mg/l
Sunny Sol 100 Plus	100 mg/l
Sunny Sol 100	108 mg/l
Sunny Sol Bleach	190 mg/l

Manufactured by: JCI JONES CHEMICALS, INC.
18000 Payne Avenue, Riverview, MI 48192

March 13, 2015

Lansing Board of Water & Light
1232 Haco Drive
Lansing, MI 48901

Dear Sir/Madam:

AFFIDAVIT OF COMPLIANCE

SODIUM HYPOCHLORITE

JCI Jones Chemicals, Inc. hereby guarantees that the sodium hypochlorite solution comprising each shipment or other delivery made to the buyer complies with all applicable requirements of the AWWA Standard for Hypochlorites, AWWA B300-10.

We believe the above certification holds true until such a time as the AWWA Standard for Hypochlorites is amended or the above certification is revoked in writing.

In addition, this product is certified under the ANSI/NSF Standard 60.

Very truly yours,

JCI JONES CHEMICALS, INC.
Donald Skidmore Jr.
Donald Skidmore Jr.
Branch Manager

CERTIFICATE OF COMPLIANCE

Certificate Number	20140416-MH18026
Report Reference	MH18026-20020829
Issue Date	2014-APRIL-16

Issued to:	JCI JONES CHEMICALS INC 1765 RINGLING BLVD SARASOTA FL 34236
This is to certify that representative samples of	DRINKING WATER TREATMENT CHEMICALS Sunny Sol® 150", "Sunny Sol® 100 Plus", Sunny Sol® 100", "Sunny Sol® Bleach
	Have been investigated by UL in accordance with the Standard(s) indicated on this Certificate.
Standard(s) for Safety:	NSF/ANSI 60 - Drinking Water Treatment Chemicals - Health Effects
Additional Information:	See the UL Online Certifications Directory at www.ul.com/database for additional information

Only those products bearing the UL Classification Mark for the U.S. and Canada should be considered as being covered by UL's Classification and Follow-Up Service and meeting the appropriate U.S. and Canadian requirements.

The UL Classification Mark includes: the UL in a circle symbol: with the word "CLASSIFIED" (as shown); a control number (may be alphanumeric) assigned by UL; a statement to indicate the extent of UL's evaluation of the product; and the product category name (product identity) as indicated in the appropriate UL Directory. The UL Classification Mark for Canada includes: the UL Classification Mark for Canada: with the word "CLASSIFIED" (as shown); a control number (may be alphanumeric) assigned by UL; a statement to indicate the extent of UL's evaluation of the product; and the product category name (product identity) in English, French, or English/French as indicated in the appropriate UL Directory.

Look for the UL Classification Mark on the product.

This is to certify that representative samples of the product as specified on this certificate were tested according to the current UL requirements.

William R. Carney

William R. Carney, Director, North American Certification Programs

UL LLC

SAFETY DATA SHEET

Jones Chemicals Inc.

RESPONSIBLE CARE®
OUR COMMITMENT TO SUSTAINABILITY

1. Identification

Product identifier	**Sunny Sol® 150**
Other means of identification	
SDS number	1201001
Synonyms	Sodium Hypochlorite Solution, Bleach.
Recommended use	Disinfection of Drinking Water, Sewage & Wastewater Effluent Treatment, Swimming Pool Water Disinfection. Please contact JCI Jones Chemicals, Inc. for additional recommended uses.
Recommended restrictions	None known.
Company name	JCI Jones Chemicals, Inc.
Address	1765 Ringling Boulevard Sarasota, FL 34236
General Information	
Telephone	(800) 477-1078
Website	www.jcichem.com
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	Skin corrosion/irritation	Category 1
	Serious eye damage/eye irritation	Category 1
	Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation
Environmental hazards	Hazardous to the aquatic environment, acute hazard	Category 1
	Hazardous to the aquatic environment, long-term hazard	Category 2
OSHA defined hazards	Not classified.	

Label elements

Signal word	Danger
Hazard statement	May be corrosive to metals. Causes severe skin burns and eye damage. May cause respiratory irritation. Very toxic to aquatic life. Toxic to aquatic life with long lasting effects.
Precautionary statement	
Prevention	Wear protective gloves/protective clothing/eye protection/face protection. Do not breathe mist or vapor. Use only outdoors or in a well-ventilated area. Wash thoroughly after handling. Keep only in original container. Avoid release to the environment.
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. Collect spillage.
Storage	Store in a well-ventilated place. Keep container tightly closed. 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.

Supplemental Information

Contact with acids liberates toxic gas.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Sodium hypochlorite	7681-52-9	12.5 - 15.6
Sodium hydroxide	1310-73-2	0.1 - 2.0

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. Wash off IMMEDIATELY with plenty of water for at least 15-20 minutes. Get medical attention immediately. Wash contaminated clothing before reuse. Call a physician or poison control center immediately.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.
Ingestion	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	Corrosive effects. 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	Treat symptomatically. Chemical burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. With eye exposure, continue flushing during transport to hospital.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

5. Fire-fighting measures

Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire. Do not use dry extinguishing media that contains ammonium compounds.
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	In case of fire and/or explosion do not breathe fumes. Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	No unusual fire or explosion hazards noted.

6. Accidental release measures

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

7. Handling and storage

Precautions for safe handling	Wear appropriate personal protective equipment. Do not get in eyes, on skin, on clothing. Use with adequate ventilation. Observe good industrial hygiene practices. Do not apply heat or direct sunlight. Temperature and product concentration affect product quality and decomposition rates.

Conditions for safe storage, including any incompatibilities	Keep container tightly closed. Store in a cool and well-ventilated place. Store in a corrosive resistant container. Consult container manufacturer for additional guidance. Store away from and do not mix with incompatible materials such as acids, oxidizers, organics, reducing agents, and all metals except titanium.

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. Wear a full-face respirator, if needed.
Skin protection	
Hand protection	Wear appropriate chemical resistant gloves.
Other	Wear appropriate chemical resistant clothing. Reports indicate that sodium hypochlorite can react with various fabrics usually increasing with concentration. Reactions vary significantly depending on strength of chemical, material, fabric treatment and color of dyes. FRC treated cotton has a stronger response than plain cotton. Poly blend fabrics and meta aramid fabric have a weaker response than natural fibers. Contact the Personal Protective Equipment manufacturer for specific information about their products.
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.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Physical state	Liquid.
Form	Liquid.
Color	Not available.
Odor	Pungent.
Odor threshold	0.9 mg/m³
pH	12 - 14 (25 °C/77 °F)
Melting point/freezing point	-11 °F (-24 °C) (12.5% solution)
Initial boiling point and boiling range	Not available.
Flash point	Not applicable

Evaporation rate	No data available
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not applicable
Flammability limit - upper (%)	Not applicable
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	12 mm Hg (20°C/68°F)
Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Completely miscible
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not applicable
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Bulk density	Not applicable
Molecular formula	NaOCl
Molecular weight	74.5 g/mol

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Contact with incompatible materials. Avoid ultraviolet (UV) light sources. Excessive heat. Reacts violently with strong acids. Acid contact will produce chlorine gas. Amine contact will produce chloramines.
Incompatible materials	Strong oxidizing agents. Acids. Metals. Organic compounds. Ammonia.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Ingestion	Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Ingestion may produce burns to the lips, oral cavity, upper airway, esophagus and possibly the digestive tract.
Inhalation	Vapors and spray mist may irritate throat and respiratory system and cause coughing.
Skin contact	Causes skin burns.
Eye contact	Causes eye burns.
Symptoms related to the physical, chemical and toxicological characteristics	Corrosive effects. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result.

Information on toxicological effects

Acute toxicity Occupational exposure to the substance or mixture may cause adverse effects.

Product	Species	Test Results
Sodium Hypochlorite, 5 - 17% (CAS Mixture)		
Acute		
Dermal		
LD50	Rabbit	> 2 g/kg
Oral		
LD50	Rat	3 - 5 g/kg

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

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

IARC Monographs. Overall Evaluation of Carcinogenicity

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

Reproductive toxicity	No data available.
Specific target organ toxicity - single exposure	May cause respiratory irritation.
Specific target organ toxicity - repeated exposure	No data available.
Aspiration hazard	Not classified, however droplets of the product may be aspirated into the lungs through ingestion or vomiting and may cause a serious chemical pneumonia.
Chronic effects	Prolonged or repeated overexposure causes lung damage.
Further information	Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity Very toxic to aquatic life. Toxic to aquatic life with long lasting effects.

Product		Species	Test Results
Sodium Hypochlorite, 5 - 17% (CAS Mixture)			
Aquatic			
Crustacea	LC50	Daphnia	1 mg/l
Fish	LC50	Bluegill (Lepomis macrochirus)	0.6 mg/l, 48 hours

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

Persistence and degradability	No data is available on the degradability of this product.
Bioaccumulative potential	No data available for this product.
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	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT

UN number	UN1791
UN proper shipping name	Hypochlorite solutions
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Packing group	III
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Special provisions	IB3, N34, T4, TP2, TP24

Packaging exceptions	154
Packaging non bulk	203
Packaging bulk	241

IATA

UN number	UN1791
UN proper shipping name	Hypochlorite solution
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Label(s)	8
Packing group	III
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	III
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

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
Sodium hypochlorite (CAS 7681-52-9)	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 - 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

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)*
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

USEPA Registration Number 1744-20001

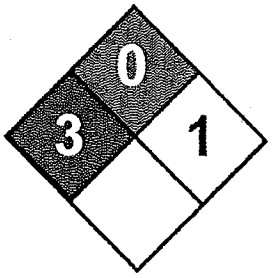
ANSI/NSF Standard 60 Certified Maximum Use Level: 80 mg/L

AWWA Standard AWWA B300-10

USDA Authorized Uses 3D, B1, D2, L1, Q4

Issue date December 1, 2014 **Revision date** N/A

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
HSDB® - 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
Olin Chlor Alkali Products Safety Data Sheet

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.