

Meeting Date: 6/21/2016

Report Type: Consent

Report ID: 2016-00644

Title: Contracts: Chemical Purchases with Olin Chlor Alkali Products, Sierra Chemical, Chemtrade and Polydyne

Location: Citywide

Recommendation: Pass a Motion awarding one-year contracts to: 1) Olin Chlor Alkali Products, for the purchase of Sodium Hypochlorite in an amount not-to-exceed \$150,000; 2) Sierra Chemical, for the purchase of Liquid Chlorine in an amount not-to-exceed \$160,000; 3) Chemtrade, for the purchase of Aluminum Sulfate in an amount not-to-exceed \$400,000; and 4) Polydyne, Inc., for the purchase of Polymers in an amount not-to-exceed \$35,000.

Contact: Michael Malone, Operations Manager, (916) 808-6226; Dave Phillips, O&M Superintendent, (916) 808-5652, Department of Utilities

Presenter: None

Department: Department Of Utilities

Division: Water Production Operations

Dept ID: 14001111

Attachments:

- 1-Description/Analysis
- 2-Contract (Chemtrade)
- 3-Contract (Sierra Chemical)
- 4-Contract (Polymers)
- 5-Contract (Olin)

City Attorney Review

Approved as to Form
Joe Robinson
6/13/2016 11:56:44 AM

Approvals/Acknowledgements

Department Director or Designee: Bill Busath - 6/3/2016 11:48:25 AM

Description/Analysis

Issue Detail: The Department of Utilities (DOU) operates two water treatment plants and various facilities for wastewater treatment. As part of the treatment process, multiple chemicals are used, including Aluminum Sulfate (Alum), Liquid Chlorine, Polymers, and Sodium Hypochlorite. DOU has an ongoing need to maintain sufficient inventory of these chemicals to ensure uninterrupted service to its customers.

Policy Considerations: On January 26, 2016, the City Council suspended the City's standard competitive bidding process for chemical purchases to allow procurement of chemicals at prices obtained through the Bay Area Chemical Consortium (BACC) competitive bidding process bid process. BACC is an informal cooperative effort among approximately 60 water and wastewater agencies working together to purchase chemicals by combining their bid solicitations for various chemicals into one bidding process conducted on behalf of the BACC participating agencies. That process is now complete and the lowest responsible and responsive bidders have been identified. DOU is recommending the award of four one-year contracts for chemicals to the lowest responsible bidders for these chemicals.

Economic Impacts: None.

Environmental Considerations: The use of chemicals, including Aluminum Sulfate (Alum), Liquid Chlorine, Polymers, and Sodium Hypochlorite, is an ongoing activity at the City's water and wastewater plants. The use of these chemicals is regulated by State permit requirements.

California Environmental Quality Act (CEQA): The Community Development Department, Environmental Services Manager has determined that the proposed activity is not a project pursuant to the California Environmental Quality Act (CEQA). CEQA Guidelines Section 15378(b). The activity is a continuing administrative or maintenance activity, such as the purchase of supplies, and is not subject to CEQA. CEQA Guidelines Section 15060(c)(3).

Sustainability: Chemicals purchased under these contracts comply with Section 8 of the City's Sustainability Master Plan to continue to protect the City's sources of water.

Commission/Committee Action: Not applicable.

Rationale for Recommendation: The lowest responsible bidders and proposed contract amounts are shown below. In staff's judgment, the prices for these chemicals obtained through the Bay Area Chemical Consortium (BACC) bid process are lower than prices the City would have been able to obtain on its own.

Contractor	Chemical	Contract Amount
Olin Chlor Alkali Products	Sodium Hypochlorite 12.5%	\$150,000
Sierra Chemical Company	Liquid Chlorine (1-ton containers and 150 lb. cylinders)	\$160,000
Chemtrade Chemical US LLC	Aluminum Sulfate (Alum)	\$400,000
Polydyne	Polymers	\$35,000

Financial Considerations: Sufficient funds are available in the approved FY2016/17 Department of Utilities Operating Budget.

Local Business Enterprise (LBE): The City's LBE bid requirements do not apply because the City did not conduct the bidding process.

STANDARD AGREEMENT, PAGE 1 OF 2
BAY AREA CHEMICAL CONSORTIUM
BID NO. 01-2016
SUPPLY AND DELIVERY OF ALUMINUM SULFATE

Bay Area Chemical Consortium (BACC)
c/o Dublin San Ramon Services District
Regional Wastewater Treatment Facility
7399 Johnson Drive
Pleasanton, CA 94588

Dear Sirs:

I hereby agree to furnish aluminum sulfate identified in the attached bid forms, as solicited by the Bay Area Chemical Consortium (BACC), to one or more of the participating BACC Agencies.

Company: CHEMTRADE CHEMICALS US LLC
Address: 90 EAST HALSEY ROAD
City, State, ZIP: PARSIPPANY, NJ 07054
Phone: 800 441 2659
Email: bids@chemtradelogistics.com
Authorized Representative: ELIZABETH RYNO, MARKETING SPECIALIST
Signature: 
Date: MARCH 16, 2016

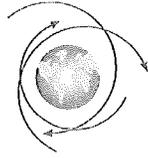
WE ACKNOWLEDGE RECEIVING ADDENDUM/ADDENDA NUMBER 1 THROUGH 1.

SPECIFIC DEVIATIONS (if applicable, attach additional sheets if necessary):

NONE

STANDARD AGREEMENT, PAGE 2 OF 2**BIDDER INFORMATION**

1. Legal Name of Bidder:
CHEMTRADE CHEMICALS US LLC
2. Bidder's Street Address:
90 EAST HALSEY ROAD, PARSIPPANY, NJ 07054
3. Mailing Address:
90 EAST HALSEY ROAD, PARSIPPANY, NJ 07054
4. Business Telephone: 800 441 2659 Fax Number: 973 515 4461
5. Type of Supplier:
 Sole Proprietor Partnership Corporation (LLC)
 If Corporation, indicate State where incorporated: DELAWARE
6. Business License Number issued by the City where the Supplier's principal place of business is located.
 Number: 003910 Issuing City: COUNTY OF CONTRA COSTA
7. Supplier Federal Tax Identification Number: 74 3104940
8. Emergency Contact: Name: JIM WOODRUFF
 Phone Number: 415 999 9169
9. Order Contact: Name: JESSICA BUCHANAN
 Address: 155 GORDON BAKER ROAD, SUITE 300, TORONTO, ONTARIO M2H 3N5
 Phone Number: 800 811 6602 Fax Number: 514 640 4858
 Email: css_orders@chemtradelogistics.com
10. References: PLEASE SEE ATTACHED
- | <u>Company/Agency Name</u> | <u>Contact Name</u> | <u>Phone Number</u> |
|----------------------------|---------------------|---------------------|
| 1) _____ | _____ | _____ |
| 2) _____ | _____ | _____ |
| 3) _____ | _____ | _____ |
11. Chemical Manufacturer's name and address (if different from Bidder):
CHEMTRADE SOLUTIONS LLC (SAME COMPANY)
501 NICHOLS ROAD
PITTSBURG, CA 94565



CHEM TRADE

Water Chemicals Group

90 East Halsey Road
Parsippany, NJ 07054
Tel: 973-515-0900
Fax: 973-515-4461

REFERENCES:

The following is a list of 3 customers Chemtrade Chemicals US LLC currently supplies with Liquid Aluminum Sulfate for the 2015 and 2016 calendar years (and prior).

If more specific information is needed please contact our office at 1-800-441-2659.

City of Antioch
1307 W. Fourth Street
Antioch, CA 94509
Contact: Debra Joseph
Purchasing
Phone: (925) 779-6995
Fax: (925) 779-6817

City of Martinez
525 Henrietta St
Martinez, CA 94553-2394
Contact: Hiren Patel
Water Superintendent
Phone: (925) 372-3588
Email Address: hpatel@cityofmartinez.org

City of Pittsburg
65 Civic Ave, 3rd Fl
Pittsburg, CA 94565
Contact: Jason Moser
Water Plant Supervisor
Phone: (925)252-6997
Email: jmoser@ci.pittsburg.ca.us

Non-Collusion Affidavit
To Be Executed By Bidder and Submitted With Bid

State of California NEW JERSEY)
) SS= FEIN: 74 3104940
County of MORRIS)

ELIZABETH RYNO, being first duly sworn, deposes and says that he or she is
(Contractor's Authorized Representative)

MARKETING SPECIALIST of CHEMTRADE CHEMICALS US LLC the party making the
(Title of Representative) (Contractor's Name)

Foregoing bid that the bid is not made in the interest of, or on behalf of, any undisclosed person,
partnership, company, association, organization, or corporation; that the bid is genuine and
not collusive or sham; that the bidder has not directly or indirectly induced or solicited any
other bidder to put in a false or sham bid, and has not directly or indirectly colluded,
conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or
that anyone shall refrain from bidding; that the bidder has not in any manner,
directly or indirectly, sought by agreement, communication, or conference with anyone to
fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost
element of the bid price, or of that of any other bid, or to secure any advantage against
the public body awarding the contract of anyone interested in the proposed contract; that
all statements contained in the bid are true; and, further, that the bidder has not, directly
or indirectly, submitted his or her bid price or any breakdown thereof, or the contents
thereof, or divulged information or data relative thereto, or paid, and will not pay, any fee
to any corporation, partnership, company association, organization, bid depository, or to
any member or agent thereof to effectuate a collusive or sham bid.

I declare under penalty of perjury under the laws of the state of California that the
foregoing is true and correct.

Elizabeth Ryno
Signature of: President, Secretary,
Manager, Owner, or Representative
ELIZABETH RYNO, MARKETING SPECIALIST

Subscribed and sworn to before me this, 16TH Day of MARCH, 20 16

Mary F. Culver
Signature of Notary Public In and For

MARY F. CULVER
NOTARY PUBLIC
STATE OF NJ
MY COMM. EXR 10-21-16
The County of
State of

All Signatures Must Be Witnessed By Notary

**BAY AREA CHEMICAL CONSORTIUM
BID FORM FOR BID NO. 01-2016, PAGE 1 OF 2**

Sealed bids must be enclosed in an envelope clearly marked:

**“BID FOR ALUMINUM SULFATE
BACC BID NO. 01-2016”**

And delivered to:

Louanne Ivy
Administrative Analyst – Operations
Dublin San Ramon Services District
Regional Wastewater Treatment Facility
7399 Johnson Drive
Pleasanton, CA 94588

No later than 9:00 A.M. PDT
Tuesday, April 5, 2016

Business Name: CHEMTRADE CHEMICALS US LLC

Business Address: 90 EAST HALSEY ROAD
PARSIPPANY, NJ 07054

Telephone Number: 800 441 2659

Facsimile Number: 973 515 4461

Email Address: bids@chemtradelogistics.com

Authorized Representative (Please Print):
ELIZABETH RYNO, MARKETING SPECIALIST

Date: MARCH 16, 2016

- I. All costs except California State sales tax for the purchase of aluminum sulfate must be included in the amount shown below on this Bid Form, including any and all mill assessments, fees, excise taxes, transportation charges, etc. Any exceptions to the bid must be noted under Specific Deviations on the Standard Agreement. Bidders shall submit bids in \$/gallon.**

BACC Agencies: North Bay Locations

Central Contra Costa Sanitary District, City of Antioch, City of Martinez, City of Pittsburg, Contra Costa Water District, and Delta Diablo

Unit Price for Aluminum Sulfate:

* \$ 0.5944 /gallon *FOR CONVERSION PURPOSE ONLY PRICE EQUATES TO \$218.75/DRY TON OR \$0.1094/DRY LB

OPTIONAL BID ITEM: Ironhouse Sanitary District

Unit Price for Aluminum Sulfate in totes:

* \$ NO BID /gallon

BACC Agencies: South Bay Locations

City of San Jose and Santa Clara Valley Water District

Unit Price for Aluminum Sulfate:

* \$ 0.6143 /gallon *FOR CONVERSION PURPOSE ONLY PRICE EQUATES TO \$226.08/DRY TON OR \$0.1130/DRY LB

BACC Agencies: Marin-Sonoma-Napa Locations

Marin Municipal Water District

Unit Price for Aluminum Sulfate

* \$ 0.6171 /gallon *FOR CONVERSION PURPOSE ONLY PRICE EQUATES TO \$227.08/DRY TON OR \$0.1135/DRY LB

**BAY AREA CHEMICAL CONSORTIUM
BID FORM FOR BID NO. 01-2016, PAGE 2 OF 2**

BACC Agencies: Sacramento Area Locations

City of Roseville, City of Sacramento, City of Yuba City, Nevada Irrigation District, Placer County Water Agency, and Rancho Murieta Community Services District

Unit Price for Aluminum Sulfate:

\$ *0.5401 /gallon *FOR CONVERSION PURPOSE
ONLY PRICE EQUATES TO
\$198.75/DRY TON

II. Bidders must submit all of the following, attached to this Bid Form:

- a. An affidavit of compliance to the appropriate American Water Works Association (AWWA) and/or National Sanitation Foundation (NSF) standard is required for all chemicals and polymers being provided for potable water treatment. Bidders must include a statement by the chemical manufacturer, signed by an authorized representative on letterhead stationery, attesting to the affidavit's validity. In lieu of submitting an affidavit of compliance with AWWA/NSF standards and a letter attesting to the affidavit's validity, a current printout from NSF.org is acceptable.
- b. A representative analysis of the chemical to be supplied, as prepared by a reputable outside laboratory or Bidder's in-house laboratory if ISO certified.
- c. Product Bulletin and Typical Properties.
- d. Safety Data Sheet (SDS).
- e. If applicable, the name, address, and contact information for the third party hauling company as well as an affidavit signed by the Bidder that the third party hauler can and will deliver the chemical to each and every participating BACC Agency.



Water Chemicals Group

90 East Halsey Road
Parsippany, NJ 07054
Tel: 973-515-0900
Fax: 973-515-4461

Bay Area Chemical Consortium

Bid Number: 01-2016

Opening Date: April 5, 2016 @ 9:00 a.m.

SUBCONTRACTOR UTILIZATION

Please note that Chemtrade Chemical's Liquid Aluminum Sulfate manufacturing plant located in Pittsburg, CA. Product is typically shipped through our third-party carrier. Their information is as follows:

Chemical Transfer
1033 Stokes Avenue
Stockton, CA 95215
Ph: (209) 943-2639

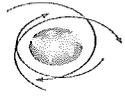
Chemical Transfer has a long-standing relationship with Chemtrade Chemicals (formerly General Chemical) and meets all of our security and safety standards and due diligence in performing personnel background checks is in compliance. We further certify that this 3rd party carrier can haul and deliver the required chemicals to every participating BACC Agency.

Should you have any questions or concerns, please feel free to contact me.

Sincerely,

A handwritten signature in cursive script that reads "Elizabeth Ryno".

Elizabeth Ryno
Marketing Specialist
Ph: (973) 515-1858
Email: bids@ChemtradeLogistics.com



CHEMTRADE

Water Chemicals Group

90 East Halsey Road
Parsippany, NJ 07054
Tel: 973-515-0900
Fax: 973-515-4461

Bay Area Chemical Consortium
Bid Number: 01-2016 Liquid Aluminum Sulfate
Opening: April 5, 2016 @ 9:00 a.m.

MANUFACTURING & SHIPPING INFORMATION:

Please note that the products included in this bid are manufactured in the United States of America. Chemtrade Chemicals will be manufacturing and shipping this material from our USA plant. Please see below for the exact address:

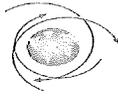
Bay Point Works
501 Nicholas Road
Pittsburg, CA 94565

Ph: (925) 458-7300
Fax: (925) 458-7352

If you have any questions or concerns please feel free to contact me.

Sincerely,

Elizabeth Ryno
Marketing Specialist
Ph: (973) 515-1858
bids@ChemtradeLogistics.com



CHEMTRADE

Water Chemicals Group

90 East Halsey Road
Parsippany, NJ 07054
Tel: 973-515-0900
Fax: 973-515-4461

**ORDER CONTACT, EMERGENCY CONTACT AND TECHNICAL
SERVICE INFORMATION**

Normal operating business hours are Monday – Friday 8:00 AM to 5:00 PM E.S.T.

To place orders, contact your Customer Service Representative:

Krish Thirukumaran
1-844-204-9675
E-mail: cssorders@chemtradelogistics.com
Fax: (647) 255-3655

*After normal business hours, for emergencies and orders please call
1-647-531-9709 and the on-call Customer Service Representative will be
available to assist you. This number will also be provided if you call the regular
Customer Service line.*

**For Technical Service please call (315) 478-2323 or visit our website at:
<http://www.chemtradelogistics.com>**

Corporate/Sales Office

Chemtrade Chemicals US LLC.
90 East Halsey Road
Parsippany, NJ 07054

Michelle Schroeder, Business Manager
Phone: (973) 515-1841
Email:
MSchroeder@chemtradelogistics.com

Jim Woodruff, Sales Manger
Phone: (415) 999-9169
Email:
JWoodruff@chemtradelogistics.com

For Bid/Contract Information:

Elizabeth Ryno
Phone: (800) 441-2659 Direct: (973) 515-1858
Fax: 973-515-4461
bryno@chemtradelogistics.com
BIDS@chemtradelogistics.com



CHEMTRADE

DELEGATION OF AUTHORITY

I, Mark Davis, President and Chief Executive Officer of Chemtrade Chemicals US LLC, a Delaware limited liability company ("Chemtrade"), do hereby delegate and appoint the following agents of Chemtrade to execute all municipal contracts and instruments, including bids, proposals and quotations, which in the ordinary course of business are processed by the Marketing Group of the company:

Parul Kachhia-Patel	Lisa Brownlee	Paul Peters	Elizabeth Ryno
Leilina Gossa	Ann Hopler	Rizlene Idrissi-Kaitouni	
Andrew Hoffman	Michele Schroeder		

Set forth below is a certified copy of the resolution of Chemtrade authorizing such action.

Dated as of the 9th day of September, 2015



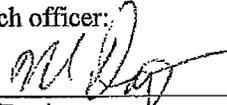
 Mark Davis
 President and Chief Executive Officer

CERTIFICATE OF SECRETARY

I, Susan Paré, hereby certify that I am the Corporate Secretary of Chemtrade Chemicals US LLC ("Chemtrade") and that set forth below is a true and correct copy of the resolution of the Board of Managers of Chemtrade, adopted by unanimous written consent as of the 10th day of November, 2003 and that the same has not been modified or revoked and is on the date hereof in full force and effect:

RESOLVED that any officer of the Company be, and he hereby is, authorized to delegate, with the right of further delegation, to any other officer, employee or agent of the Company, all or any part of the authority granted to them by the Board of Managers; and that any such delegations may be general or specific and subject to such limitations and restrictions as the delegating officer shall determine.

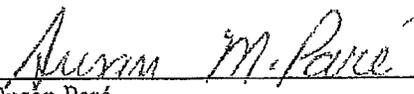
I FURTHER CERTIFY that Mark Davis is the duly elected President and Chief Executive Officer of Chemtrade and holds such offices on the date hereof, that Mr. Davis, in his capacity as President and Chief Executive Officer is authorized to represent and bind Chemtrade in all matters including, but not limited to, contracts and that set forth below is the genuine signature of such officer:



 Mark Davis
 President and Chief Executive Officer

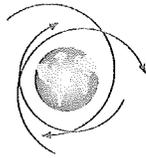
IN WITNESS WHEREOF, I have hereunto set my hand and have caused the seal of the Company to be affixed effective this 9th day of September, 2015.

Seal



 Susan Paré
 Corporate Secretary

90 East Halsey Road
Parsippany, NJ 07054
Tel: 800-441-2659



CHEMTRADE

WATER TREATMENT GROUP

**90 EAST HALSEY ROAD,
PARSIPPANY, NJ 07054
TEL: (973) 515-0500
FAX: (973) 515-4461**

LIQUID ALUMINUM SULFATE

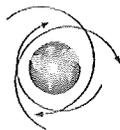
Chemtrade Chemicals certifies that all grades of Aluminum Sulfate as produced by our manufacturing locations will meet National Sanitation Foundation Standard 60 and ANSI/AWWA B 403-09 standard in every respect.

Additionally we certify that the product meets or exceeds the specifications as set forth in the Bay Area Chemical Consortium (BACC) bid.

Material Safety Data Sheet, NSF Certification and related technical information is attached for review.

Elizabeth Ryno
Marketing Specialist

T



CHEMTRADE

http://www.chemtradelogistics.com

Liquid Alum PRODUCT DATA SHEET

CHARACTERISTICS

Liquid Alum is a clear, light green, slight yellow, brown, amber or orange-like tinted solution. It is a cationic inorganic coagulant and flocculant suitable for industrial and municipal water and wastewater treatment applications.

NSF/ANSI Standard 60: Drinking Water Chemicals - Health Effects; Certified

TYPICAL PROPERTIES

Formula:	Aqueous solution of aluminum sulfate		
C.A.S.	10043-01-3 (Aluminum sulfate)		
	pH (neat)		1.4 - 2.6
	Specific Gravity @ 21°C (70°F)		1.30 - 1.35
	Freezing Point		-16°C (4°F)
	Density, lbs./gal., US		10.8 - 11.3
	Aluminum as Al, %		4.2 - 4.5
	Aluminum as Al ₂ O ₃ , %		8.0 - 8.4
	Aluminum as Al ₂ (SO ₄) ₃ •14H ₂ O (Dry Alum), %		46 - 49

PRODUCT USES

Municipal and industrial water and wastewater treatment for the removal of turbidity, color, suspended solids and phosphorus. Sludge compaction and volume reduction. Lagoon treatment. Oily wastewater clarification and dissolved air flotation. Emulsion breaking. Fixing rosin sizes on paper fibers. Paper machine drainage and retention aid. Paper machine pitch control.

SHIPPING CONTAINERS

Bulk transport Bulk car 275 US gal. one way container 55 US gal. plastic drum

SHIPPING REGULATIONS (US DOT / TDG)

Proper Shipping Name: Corrosive Liquid, Acidic, Inorganic, N.O.S. (Contains Aluminum Sulfate)

Hazard Class: 8 ID Number: UN3264 Packing Group: III

The US EPA reportable quantity (RQ) for aluminum sulfate is 5,000 lbs.

PRODUCT SAFETY INFORMATION

Causes serious eye damage. Do not breathe vapors, mist or spray. Wash hands, forearms, and other exposed areas thoroughly after handling. Wear eye protection, protective clothing, and protective gloves. Anyone procuring, using or disposing of these products or their containers must be familiar with the appropriate safety and handling precautions. Such information may be found in the **Safety Data Sheets (SDS)** for these products or you may contact Chemtrade at 416-496-5856. In the event of an emergency with these products, call the 24 hour **Emergency Number: USA (CHEMTREC) 800-424-9300** or **Canada (CANUTEC) 613-996-6666**. For additional information contact:

Syracuse Technical Center
315-478-2323 or 800-255-7589

Water Treatment Chemicals
Customer Service 844-204-9675

CHE-5001P-1

Revision Date: October 27, 2015

All information, statements, data, advice and/or recommendations, including, without limitation, those relating to storage, loading/unloading, piping and transportation (collectively referred to herein as "information") are believed to be accurate and reliable. However, no representation or warranty, express or implied, is made as to its completeness, accuracy, fitness for a particular purpose or any other matter, including, without limitation, that the practice or application of any such information is free of patent infringement or other intellectual property misappropriation. Chemtrade Logistics Inc. and its affiliates (collectively, "Chemtrade") are not engaged in the business of providing technical, operational, engineering or safety information for a fee, and, therefore, any such information provided herein has been furnished as an accommodation and without charge. All information provided herein is intended for use by persons having requisite knowledge, skill and experience in the chemical industry. Chemtrade shall not be responsible or liable for the use, application or implementation of the information provided herein, and all such information is to be used at the risk, and in the sole judgment and discretion, of such persons, their employees, advisors and agents.

**WATER CHEMICALS ANALYTICAL SERVICES
REPORT OF ANALYSIS**

To: BAY AREA CONSORTIUM - Bid
cc: Beth Ryno

Req. Date: 12/5/2014
Lab. Log # 4120519

SAMPLES: Liquid Alum, Standard - Semi Annual audit
Lot# BY41119LAS

ORIGIN: Baypoint

All analyses are reported as PPM unless stated otherwise

PARAMETER	Concentration	PARAMETER	Concentration
As	<2	% Al ₂ O ₃ (total by wt)	8.0
Ba	<1	% Al ₂ O ₃ (free by wt)	0.15
Be	<1	% Insolubles (by wt)	0.004
Ca	25	% Fe ₂ O ₃ (total soluble by w	0.002
Cd	<1	Turbidity (NTU)	2.71
Co	<1	Appearance	clear / slight tint
Cr	<1		
Cu	<1		
Fe	15		
Hg	<0.5		
K	2		
Mg	8		
Mn	<1		
Mo	<1		
Na	147		
Ni	<1		
P	<1		
Pb	<1.5		
Sb	<1.5		
Se	<2		
Si	6		
Sn	<1		
Sr	<1		
Ti	<1		
Tl	<1.5		
V	<1		
Zn	<1		
Zr	<1		

Notes:

Product within specification for all parameters analyzed.

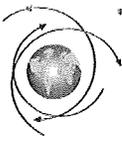
Analysts
Stephanie Ulman
Andrew Carr

Record
TCESL06/96
011315-1420

Report Date
4/7/2015
BR - 3/14/2016

Chemtrade Chemicals is not engaged in the business of consulting or providing technical, operational or safety advice for a fee. Any such advice provided herein has been furnished as an accommodation and without charge and is made without any warranty of representation as to its completeness, accuracy, fitness for a particular purpose or any other matter. The recipient's use or non-use of such advice is made solely at the discretion and risk of the recipient.

3/14/2016;
4120519 Baypoint LAS



Liquid Alum PRODUCT DATA SHEET

CHARACTERISTICS

Liquid Alum is a clear, light green, slight yellow, brown, amber or orange-like tinted solution. It is a cationic inorganic coagulant and flocculant suitable for industrial and municipal water and wastewater treatment applications.

NSF/ANSI Standard 60: Drinking Water Chemicals - Health Effects; Certified

TYPICAL PROPERTIES

Formula:	Aqueous solution of aluminum sulfate		
C.A.S.	10043-01-3 (Aluminum sulfate)		
	pH (neat)	1.4 - 2.6	
	Specific Gravity @ 21°C (70°F)	1.30 - 1.35	
	Freezing Point	-16°C (4°F)	
	Density, lbs./gal., US	10.8 - 11.3	
	Aluminum as Al, %	4.2 - 4.5	
	Aluminum as Al ₂ O ₃ , %	8.0 - 8.4	
	Aluminum as Al ₂ (SO ₄) ₃ •14H ₂ O (Dry Alum), %	46 - 49	

PRODUCT USES

Municipal and industrial water and wastewater treatment for the removal of turbidity, color, suspended solids and phosphorus. Sludge compaction and volume reduction. Lagoon treatment. Oily wastewater clarification and dissolved air flotation. Emulsion breaking. Fixing rosin sizes on paper fibers. Paper machine drainage and retention aid. Paper machine pitch control.

SHIPPING CONTAINERS

Bulk transport Bulk car 275 US gal. one way container 55 US gal. plastic drum

SHIPPING REGULATIONS (US DOT / TDG)

Proper Shipping Name: Corrosive Liquid, Acidic, Inorganic, N.O.S. (Contains Aluminum Sulfate)

Hazard Class: 8 ID Number: UN3264 Packing Group: III

The US EPA reportable quantity (RQ) for aluminum sulfate is 5,000 lbs.

PRODUCT SAFETY INFORMATION

Causes serious eye damage. Do not breathe vapors, mist or spray. Wash hands, forearms, and other exposed areas thoroughly after handling. Wear eye protection, protective clothing, and protective gloves. Anyone procuring, using or disposing of these products or their containers must be familiar with the appropriate safety and handling precautions. Such information may be found in the **Safety Data Sheets (SDS)** for these products or you may contact Chemtrade at 416-496-5856. In the event of an emergency with these products, call the 24 hour **Emergency Number: USA (CHEMTREC) 800-424-9300** or **Canada (CANUTEC) 613-996-6666**. For additional information contact:

Syracuse Technical Center
315-478-2323 or 800-255-7589

Water Treatment Chemicals
Customer Service 844-204-9675

CHE-5001P-1

Revision Date: October 27, 2015

All information, statements, data, advice and/or recommendations, including, without limitation, those relating to storage, loading/unloading, piping and transportation (collectively referred to herein as "information") are believed to be accurate and reliable. However, no representation or warranty, express or implied, is made as to its completeness, accuracy, fitness for a particular purpose or any other matter, including, without limitation, that the practice or application of any such information is free of patent infringement or other intellectual property misappropriation. Chemtrade Logistics Inc. and its affiliates (collectively, "Chemtrade") are not engaged in the business of providing technical, operational, engineering or safety information for a fee, and, therefore, any such information provided herein has been furnished as an accommodation and without charge. All information provided herein is intended for use by persons having requisite knowledge, skill and experience in the chemical industry. Chemtrade shall not be responsible or liable for the use, application or implementation of the information provided herein, and all such information is to be used at the risk, and in the sole judgment and discretion, of such persons, their employees, advisors and agents.



Liquid Alum

Safety Data Sheet

According to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
Revision Date: 10/22/15 Date of Issue: 05/01/15

Version: 1.2

SECTION 1: IDENTIFICATION

Product Identifier

Product Form: Mixture

Product Name: Liquid Alum

Formula: $Al_2(SO_4)_3 \cdot 14 H_2O$ (Dry Equivalent)

Intended Use of the Product

Alum is used as a coagulating agent in municipal and industrial water and wastewater treatment and as an additive in papermaking.

Name, Address, and Telephone of the Responsible Party

Manufacturer

CHEMTRADE LOGISTICS INC.

155 Gordon Baker Road

Suite 300

Toronto, Ontario M2H 3N5

For SDS Info: (416) 496-5856

www.chemtradelogistics.com

Emergency Telephone Number

Emergency Number : Canada: CANUTEC +1-613-996-6666 / US: CHEMTREC +1-800-424-9300

Chemtrade Emergency Contact: (866) 416-4404

For Chemical Emergency, Spill, Leak, Fire, Exposure, or Accident, call CHEMTREC – Day or Night

SECTION 2: HAZARDS IDENTIFICATION

Classification of the Substance or Mixture

Classification (GHS-US)

Met. Corr. 1 H290

Skin Corr. 1A H314

Eye Dam. 1 H318

Aquatic Acute 3 H402

Full text of H-phrases: see section 16

Label Elements

GHS-US Labeling

Hazard Pictograms (GHS-US)



GHS05

Signal Word (GHS-US)

: Danger

Hazard Statements (GHS-US)

: H290 - May be corrosive to metals
H314 - Causes severe skin burns and eye damage
H318 - Causes serious eye damage
H402 - Harmful to aquatic life

Precautionary Statements (GHS-US)

: P234 - Keep only in original container.
P260 - Do not breathe vapors, mist, or spray.
P264 - Wash hands, forearms, and other exposed areas thoroughly after handling.
P273 - Avoid release to the environment.
P280 - Wear eye protection, protective clothing, protective gloves.
P301+P330+P331 - If swallowed: rinse mouth. Do NOT induce vomiting.
P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340 - IF INHALED: Remove person to fresh air and keep at rest in a position comfortable for breathing.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

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- P310 - Immediately call a doctor.
- P321 - Specific treatment (see section 4 on this SDS).
- P363 - Wash contaminated clothing before reuse.
- P390 - Absorb spillage to prevent material damage.
- P405 - Store locked up.
- P406 - Store in corrosive resistant container with a resistant inner liner.
- P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations.

Other Hazards

Other Hazards Not Contributing to the Classification: Exposure may aggravate those with pre-existing eye, skin, or respiratory conditions.

Unknown Acute Toxicity (GHS-US) Not available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Name	Product identifier	% (w/w)	Classification (GHS-US)
Water	(CAS No) 7732-18-5	30 - 60	Not classified
Sulfuric acid, aluminum salt (3:2)	(CAS No) 10043-01-3	30 - 60	Met. Corr. 1, H290 Eye Dam. 1, H318 Aquatic Acute 3, H402

*As $\text{Al}_2(\text{SO}_4)_3 \cdot 14 \text{H}_2\text{O}$ (Dry Aluminum Sulfate).

The specific chemical identity and/or exact percentage of composition have been withheld as a trade secret [29 CFR 1910.1200]. A range of concentration as prescribed by the Controlled Products Regulations has been used where necessary, due to varying composition.

Full text of H-phrases: see section 16

SECTION 4: FIRST AID MEASURES

Description of First Aid Measures

General: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label if possible).

Inhalation: Remove to fresh air and keep at rest in a position comfortable for breathing. Obtain medical attention if breathing difficulty persists.

Skin Contact: Rinse immediately with plenty of water. Obtain medical attention if irritation develops or persists.

Eye Contact: Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention.

Ingestion: Do NOT induce vomiting. Rinse mouth. Immediately call a POISON CENTER or doctor/physician.

Most Important Symptoms and Effects Both Acute and Delayed

General: Causes severe skin burns and eye damage.

Inhalation: May cause respiratory irritation.

Skin Contact: Redness. Pain. Serious skin burns. Blisters.

Eye Contact: Redness. Pain. Blurred vision. Severe burns. Causes permanent damage to the cornea, iris, or conjunctiva.

Ingestion: Ingestion is likely to be harmful or have adverse effects.

Chronic Symptoms: None expected under normal conditions of use.

Indication of Any Immediate Medical Attention and Special Treatment Needed

If you feel unwell, seek medical advice (show the label where possible).

SECTION 5: FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media: Use extinguishing media appropriate for surrounding fire.

Unsuitable Extinguishing Media: Do not use a heavy water stream. Use of heavy stream of water may spread fire.

Special Hazards Arising From the Substance or Mixture

Fire Hazard: Not considered flammable but may burn at high temperatures.

Explosion Hazard: Product is not explosive.

Reactivity: Hazardous reactions will not occur under normal conditions. Liquid alum may react with some metals, to give flammable, potentially explosive hydrogen gas. Hydrogen gas can accumulate to explosive concentrations inside confined spaces.

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Advice for Firefighters

Precautionary Measures Fire: Not available

Firefighting Instructions: Use water spray or fog for cooling exposed containers. In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.

Protection During Firefighting: Do not enter fire area without proper protective equipment, including respiratory protection.

Hazardous Combustion Products: Forms aluminum oxide, sulfur dioxide and/or sulfur trioxide at temperatures above 760°C (1400°F) or when dry alum is encompassed in a fire involving other burning materials.

Other Information: Refer to Section 9 for flammability properties.

Reference to Other Sections

Refer to section 9 for flammability properties.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

General Measures: Avoid all contact with skin, eyes, or clothing. Avoid breathing (dust, vapor, mist, gas).

For Non-Emergency Personnel

Protective Equipment: Use appropriate personal protection equipment (PPE).

Emergency Procedures: Evacuate unnecessary personnel.

For Emergency Personnel

Protective Equipment: Equip cleanup crew with proper protection.

Emergency Procedures: Stop leak if safe to do so. Eliminate ignition sources. Ventilate area.

Environmental Precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

Methods and Material for Containment and Cleaning Up

For Containment: Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.

Methods for Cleaning Up: Collect spillage. Dispose in a safe manner in accordance with local/national regulations.

Reference to Other Sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: HANDLING AND STORAGE

Precautions for Safe Handling

Hygiene Measures: Handle in accordance with good industrial hygiene and safety procedures. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Use good housekeeping practices during storage, transfer, handling, to avoid excessive dust accumulation. Protect from moisture.

Conditions for Safe Storage, Including Any Incompatibilities

Technical Measures: Comply with applicable regulations.

Storage Conditions: Store in a dry, cool and well-ventilated place. Keep container closed when not in use. Keep/Store away from direct sunlight, extremely high or low temperatures and incompatible materials.

Incompatible Materials: Strong bases.

Special Rules on Packaging: Store in original container or corrosive resistant and/or lined container.

Specific End Use(s)

For professional use only.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

For substances listed in section 3 that are not listed here, there are no established Exposure limits from the manufacturer, supplier, importer, or the appropriate advisory agency including: ACGIH (TLV), NIOSH (REL), OSHA (PEL), Canadian provincial governments, or the Mexican government.

Exposure Controls

Appropriate Engineering Controls: Ensure adequate ventilation, especially in confined areas. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Ensure all national/local regulations are observed.

Personal Protective Equipment: Protective goggles. Gloves. Protective clothing.

Materials for Protective Clothing: Chemically resistant materials and fabrics.

Hand Protection: Wear chemically resistant protective gloves.

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Eye Protection: Chemical goggles or safety glasses.

Skin and Body Protection: Wear suitable protective clothing.

Respiratory Protection: Use NIOSH-approved dust mask if dust has the potential to become airborne.

Environmental Exposure Controls: Do not allow the product to be released into the environment.

Consumer Exposure Controls: Do not eat, drink or smoke during use

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on Basic Physical and Chemical Properties

Physical State	: Liquid
Appearance	: Clear, light green, slight yellow, brow, amber, or orange like tint
Odor	: Odorless
Odor Threshold	: Not available
pH	: 1.4 - 2.6
Melting Point	: Not applicable
Freezing Point	: -15.56 °C (4°F)
Boiling Point	: 101 °C (213.80 °F)
Flash Point	: Not flammable
Auto-ignition Temperature	: Not available
Decomposition Temperature	: Not available
Flammability (solid, gas)	: Not applicable
Lower Flammable Limit	: Not available
Upper Flammable Limit	: Not available
Vapor Pressure	: Not available
Relative Vapor Density at 20 °C	: Not available
Relative Density	: Not available
Specific Gravity	: 1.30-1.35
Solubility	: Water: Completely miscible in water.
Partition Coefficient: N-Octanol/Water	: Not available
Viscosity	: Not available
Explosion Data – Sensitivity to Mechanical Impact	: Not expected to present an explosion hazard due to mechanical impact.
Explosion Data – Sensitivity to Static Discharge	: Not expected to present an explosion hazard due to static discharge.

SECTION 10: STABILITY AND REACTIVITY

Reactivity: Hazardous reactions will not occur under normal conditions. Liquid alum may react with some metals, to give flammable, potentially explosive hydrogen gas. Hydrogen gas can accumulate to explosive concentrations inside confined spaces.

Chemical Stability: Stable under recommended handling and storage conditions (see section 7).

Possibility of Hazardous Reactions: Hazardous polymerization will not occur.

Conditions to Avoid: Direct sunlight. Extremely high or low temperatures. Ignition sources. Incompatible materials. Moisture.

Incompatible Materials: Strong bases. Metals.

Hazardous Decomposition Products: Oxides of aluminum. The decomposition products are corrosive and hazardous to health.

SECTION 11: TOXICOLOGICAL INFORMATION

Information on Toxicological Effects - Product

Acute Toxicity: Not classified

LD50 and LC50 Data: Not available

Skin Corrosion/Irritation: Causes severe skin burns and eye damage.

pH: 1.5 - 2.5

Serious Eye Damage/Irritation: Causes serious eye damage.

pH: 1.5 - 2.5

Respiratory or Skin Sensitization: Not classified

Germ Cell Mutagenicity: Not classified

Teratogenicity: Not available

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Carcinogenicity: Not classified

Specific Target Organ Toxicity (Repeated Exposure): Not classified

Reproductive Toxicity: Not classified

Specific Target Organ Toxicity (Single Exposure): Not classified

Aspiration Hazard: Not classified

Symptoms/Injuries After Inhalation: May cause respiratory irritation.

Symptoms/Injuries After Skin Contact: Redness. Pain. Serious skin burns. Blisters.

Symptoms/Injuries After Eye Contact: Redness. Pain. Blurred vision. Severe burns. Causes permanent damage to the cornea, iris, or conjunctiva.

Symptoms/Injuries After Ingestion: Ingestion is likely to be harmful or have adverse effects.

Chronic Symptoms: None expected under normal conditions of use.

Information on Toxicological Effects - Ingredient(s)

LD50 and LC50 Data:

Water (7732-18-5)	
LD50 Oral Rat	> 90000 mg/kg

SECTION 12: ECOLOGICAL INFORMATION

Toxicity Not classified

Persistence and Degradability Not available

Bioaccumulative Potential Not available

Mobility in Soil Not available

Other Adverse Effects

Other Information: Avoid release to the environment.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Disposal Recommendations: Dispose of waste material in accordance with all local, regional, national, and international regulations.

Ecology – Waste Materials: Avoid release to the environment.

SECTION 14: TRANSPORT INFORMATION

14.1 In Accordance with DOT

Proper Shipping Name : CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (CONTAINS ALUMINUM SULFATE)
Hazard Class : 8
Identification Number : UN3264
Label Codes : 8
Packing Group : III
ERG Number : 154



14.2 In Accordance with IMDG

Proper Shipping Name : CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (CONTAINS ALUMINUM SULFATE)
Hazard Class : 8
Identification Number : UN3264
Packing Group : III
Label Codes : 8
EmS-No. (Fire) : F-A
EmS-No. (Spillage) : S-B



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14.3 In Accordance with IATA

Proper Shipping Name : CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (CONTAINS ALUMINUM SULFATE)
Packing Group : III
Identification Number : UN3264
Hazard Class : 8
Label Codes : 8
ERG Code (IATA) : 8L



14.4 In Accordance with TDG

Proper Shipping Name : CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (CONTAINS ALUMINUM SULFATE)
Packing Group : III
Hazard Class : 8
Identification Number : UN3264
Label Codes : 8



SECTION 15: REGULATORY INFORMATION

US Federal Regulations

Liquid Alum	
Clean Water Act	
Ingredient Name	Reportable Quantities
Aluminum sulfate (10043-01-3)	5000 lb (2270 kg)

Liquid Alum	
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard

Water (7732-18-5)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Sulfuric acid, aluminum salt (3:2) (10043-01-3)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	

US State Regulations

Liquid Alum	
Sulfuric acid, aluminum salt (3:2) (10043-01-3)	
U.S. - Massachusetts - Right To Know List	
U.S. - New Jersey - Right to Know Hazardous Substance List	
U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List	
U.S. - Pennsylvania - RTK (Right to Know) List	

Canadian Regulations

Liquid Alum	
WHMIS Classification	Class D Division 2 Subdivision B - Toxic material causing other toxic effects Class E - Corrosive Material
Water (7732-18-5)	
Listed on the Canadian DSL (Domestic Substances List)	
WHMIS Classification	Uncontrolled product according to WHMIS classification criteria
Sulfuric acid, aluminum salt (3:2) (10043-01-3)	
Listed on the Canadian DSL (Domestic Substances List)	

Liquid Alum

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WHMIS Classification	Class E - Corrosive Material
----------------------	------------------------------

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all of the information required by CPR.

SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

- Revision Date** : 10/22/15
- Revision Summary** : Sections 9 and 16
- Other Information** : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200.

GHS Full Text Phrases:

Aquatic Acute 3	Hazardous to the aquatic environment - Acute Hazard Category 3
Eye Dam. 1	Serious eye damage/eye irritation Category 1
Met. Corr. 1	Corrosive to metals Category 1
Skin Corr. 1A	Skin corrosion/irritation Category 1A
H290	May be corrosive to metals
H314	Causes severe skin burns and eye damage
H318	Causes serious eye damage
H402	Harmful to aquatic life

Party Responsible for the Preparation of This Document

CHEMTRADE LOGISTICS, INC.
For SDS Info: (416) 496-5856

Handle product with due care and avoid unnecessary contact. This information is supplied under U.S. OSHA'S "Right to Know" (29 CFR 1910.1200) and Canada's WHMIS regulations. Although certain hazards are described herein, we cannot guarantee these are the only hazards that exist. The information contained herein is based on data available to us and is believed to be true and accurate but it is not offered as a product specification. No warranty, expressed or implied, regarding the accuracy of this data, the hazards connected with the use of the product, or the results to be obtained from the use thereof, is made and Chemtrade and its affiliates assume no responsibility. Chemtrade is a member of the CIAC (Chemistry Industry Association of Canada) and adheres to the codes and principles of Responsible Care™.



Chemtrade North America SDS Template



The Public Health and Safety Organization

NSF Product and Service Listings

These NSF Official Listings are current as of **Monday, March 14, 2016** 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?CompanyName=chemtrade&PlantState=California+CA&>

NSF/ANSI 60 Drinking Water Treatment Chemicals - Health Effects

Chemtrade Solutions LLC (formerly General Chemical LLC)

1421 Willis Avenue
Syracuse, NY 13204
United States

315-478-2323

Visit this company's website

(<http://www.chemtradelogistics.com/main/>)

Facility : Richmond, CA

Sulfuric Acid

Trade Designation

Sulfuric Acid (All Grades)

Product Function

Corrosion & Scale Control
pH Adjustment

Max Use

50mg/L

Chemtrade Solutions LLC (formerly General Chemical LLC)

1421 Willis Avenue
Syracuse, NY 13204
United States

315-478-2323

Visit this company's website

(<http://www.chemtradelogistics.com/main/>)

Facility : Pittsburg, CA**Aluminum Chloride[AL]**

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Gen+Pac® 1000	Coagulation & Flocculation	250mg/L
Hyper+Ion® 1000	Coagulation & Flocculation	250mg/L
Hyper+Ion® 1520	Coagulation & Flocculation	250mg/L
PAC® 1000	Coagulation & Flocculation	250mg/L

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

Aluminum Chlorohydrate[AL]

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Gen+Pac® 2370	Coagulation & Flocculation	250 mg/L
Hyper+Ion® 1090	Coagulation & Flocculation	250 mg/L
PAC® 2370	Coagulation & Flocculation	250 mg/L

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

Aluminum Sulfate[AL] [CP]

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Alum	Coagulation & Flocculation	400 mg/L
Aluminum Sulfate	Coagulation & Flocculation	400 mg/L
Clar+Ion® A1	Coagulation & Flocculation	400 mg/L
Clar+Ion® A10	Coagulation & Flocculation	400 mg/L
Clar+Ion® A15	Coagulation & Flocculation	263 mg/L
Clar+Ion® A20	Coagulation & Flocculation	208 mg/L
Clar+Ion® A3	Coagulation & Flocculation	400 mg/L
Clar+Ion® A5	Coagulation & Flocculation	400 mg/L
Clar+Ion® A7	Coagulation & Flocculation	400 mg/L
Gen+Pas® 701	Coagulation & Flocculation	400 mg/L
Gen+Pas® 703	Coagulation & Flocculation	400 mg/L
Gen+Pas® 705	Coagulation & Flocculation	400 mg/L
Gen+Pas® 707	Coagulation & Flocculation	400 mg/L
Gen+Pas® 710	Coagulation & Flocculation	400 mg/L
Gen+Pas® 715	Coagulation & Flocculation	263 mg/L
Gen+Pas® 720	Coagulation & Flocculation	208 mg/L
Liquid Alum	Coagulation & Flocculation	400mg/L
Liquid Alum Acidized 0.5-10.0%	Coagulation & Flocculation	400 mg/L

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

[CP] The finished drinking water shall be monitored to ensure that levels of copper do not exceed 1.3 mg/L.

Polyaluminum Chloride[AL]

Trade Designation	Product Function	Max Use
Gen+Pac® 1010	Coagulation & Flocculation	250 mg/L
Gen+Pac® 1030	Coagulation & Flocculation	250 mg/L
Gen+Pac® 1050	Coagulation & Flocculation	250 mg/L
Gen+Pac® 1050S	Coagulation & Flocculation	250 mg/L
Gen+Pac® 1070	Coagulation & Flocculation	250 mg/L
Gen+Pac® 1230	Coagulation & Flocculation	250 mg/L
Gen+Pac® 1270	Coagulation & Flocculation	250 mg/L
Gen+Pac® 2370	Coagulation & Flocculation	250 mg/L
Hyper+Ion® 1020	Coagulation & Flocculation	250 mg/L
Hyper+Ion® 1021	Coagulation & Flocculation	250 mg/L
Hyper+Ion® 1023	Coagulation & Flocculation	250 mg/L
Hyper+Ion® 1026	Coagulation & Flocculation	250 mg/L
Hyper+Ion® 1030	Coagulation & Flocculation	250 mg/L
Hyper+Ion® 1033	Coagulation & Flocculation	250 mg/L
Hyper+Ion® 1050	Coagulation & Flocculation	250 mg/L
Hyper+Ion® 1090	Coagulation & Flocculation	250 mg/L
Hyper+Ion® 2021	Coagulation & Flocculation	250 mg/L
PAC® 1050	Coagulation & Flocculation	250 mg/L
PAC® 2370	Coagulation & Flocculation	250 mg/L
Polyaluminum Chloride	Coagulation & Flocculation	250 mg/L

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

Polymer Blends[AL] [PY]

Trade Designation	Product Function	Max Use
Clar+Ion® 4050	Coagulation & Flocculation	400 mg/L
Clar+Ion® 4055	Coagulation & Flocculation	400 mg/L
Clar+Ion® 4100	Coagulation & Flocculation	250 mg/L
Clar+Ion® 5100	Coagulation & Flocculation	200 mg/L
Clar+Ion® A401P	Coagulation & Flocculation	400mg/L
Clar+Ion® A402.5P	Coagulation & Flocculation	400mg/L
Clar+Ion® A405P	Coagulation & Flocculation	400 mg/L
Clar+Ion® A407.5P	Coagulation & Flocculation	333mg/L
Clar+Ion® A410P	Coagulation & Flocculation	250 mg/L
Clar+Ion® A415P	Coagulation & Flocculation	167 mg/L
Clar+Ion® A420P	Coagulation & Flocculation	125 mg/L
Clar+Ion® A505P	Coagulation & Flocculation	400 mg/L
Clar+Ion® A510P	Coagulation & Flocculation	200 mg/L
Clar+Ion® A515P	Coagulation & Flocculation	133 mg/L
Clar+Ion® A520P	Coagulation & Flocculation	100 mg/L

Gen+Pac® 1000-10A	Coagulation & Flocculation	150 mg/L
Gen+Pac® 1000-10B	Coagulation & Flocculation	200 mg/L
Gen+Pac® 1000-5A	Coagulation & Flocculation	150 mg/L
Gen+Pac® 1000-5B	Coagulation & Flocculation	150 mg/L
Gen+Pac® 1270-15A	Coagulation & Flocculation	167 mg/L
Gen+Pac® 1270-15B	Coagulation & Flocculation	133 mg/L
Gen+Pac® 1270-35A	Coagulation & Flocculation	71 mg/L
Gen+Pac® 1270-35B	Coagulation & Flocculation	57 mg/L
Gen+Pac® 1270-5A	Coagulation & Flocculation	479 mg/L
Gen+Pac® 1270-5B	Coagulation & Flocculation	250 mg/L
Gen+Pas® 1010A	Coagulation & Flocculation	250 mg/L
Gen+Pas® 1010B	Coagulation & Flocculation	200 mg/L
Gen+Pas® 105A	Coagulation & Flocculation	400 mg/L
Gen+Pas® 10A	Coagulation & Flocculation	250 mg/L
Gen+Pas® 10B	Coagulation & Flocculation	200 mg/L
Gen+Pas® 15A	Coagulation & Flocculation	167 mg/L
Gen+Pas® 15B	Coagulation & Flocculation	133 mg/L
Gen+Pas® 2.5A	Coagulation & Flocculation	400mg/L
Gen+Pas® 20A	Coagulation & Flocculation	125 mg/L
Gen+Pas® 20B	Coagulation & Flocculation	100 mg/L
Gen+Pas® 55A	Coagulation & Flocculation	400 mg/L
Gen+Pas® 5A	Coagulation & Flocculation	400 mg/L
Gen+Pas® 5B	Coagulation & Flocculation	400 mg/L
Gen+Pas® 7.5A	Coagulation & Flocculation	333mg/L
Hyper+Ion® 11027	Coagulation & Flocculation	150 mg/L
Hyper+Ion® 1527	Coagulation & Flocculation	150 mg/L
Hyper+Ion® 1530	Coagulation & Flocculation	250 mg/L
Hyper+Ion® 21027	Coagulation & Flocculation	150 mg/L
Hyper+Ion® 2527	Coagulation & Flocculation	150 mg/L
Hyper+Ion® 2530	Coagulation & Flocculation	479 mg/L
Hyper+Ion® 3530	Coagulation & Flocculation	71 mg/L
Hyper+Ion® 4530	Coagulation & Flocculation	57 mg/L
Hyper+Ion® 5515	Coagulation & Flocculation	133 mg/L
Hyper+Ion® 6515	Coagulation & Flocculation	167 mg/L
Hyper+Ion® 702	Coagulation & Flocculation	256mg/L
Hyper+Ion® 705	Coagulation & Flocculation	263mg/L
Hyper+Ion® 710	Coagulation & Flocculation	200mg/L
Hyper+Ion® 720	Coagulation & Flocculation	100mg/L
Hyper+Ion® 735	Coagulation & Flocculation	57mg/L
Hyper+Ion® 802	Coagulation & Flocculation	256mg/L
Hyper+Ion® 805	Coagulation & Flocculation	263mg/L
Hyper+Ion® 810	Coagulation & Flocculation	250mg/L
Hyper+Ion® 835	Coagulation & Flocculation	71mg/L

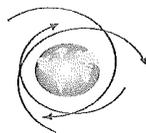
[AL] Based on an evaluation of health effects data, the level of aluminum in the finished drinking water shall not exceed 2 mg/L.

[PY] Polyamines Certified by NSF International comply with 40 CFR 141.111 requirements for percent monomer and dose.

Number of matching Manufacturers is 2

Number of matching Products is 104

Processing time was 0 seconds



CHEMTRADE

Water Chemicals Group

90 East Halsey Road
Parsippany, NJ 07054
Tel: 800-441-2659
Fax: 973-515-4461

WARRANTY INFORMATION

Chemtrade Chemicals will accept return of material and replace material. Samples will be taken of material and analyzed. Any material that is off-spec as a result of a Chemtrade's production error will be replaced without cost to customer. If product damage is a result of transportation, we will then partner with our carrier to pursue the cause of the problem and develop a resolution in the best interest of the customer.

Manual: Safety-06	Subject: Hazard Communication Program	Reviewed by: EH&S
Effective: March 24, 2016	Supersedes: June 5, 2014	Page 1 of 8

I. Purpose

This program has been developed to inform all employees of the hazardous chemicals produced and used in their work environment. This program is written in compliance with 29 CFR 1910.1200 and 8 CCR 5194.

II. Program Elements

The program includes the following elements:

- A. Development of written hazard communication program
- B. Safety Data Sheets (SDS's)
- C. Container labeling and other forms of warning
- D. Methods used for hazard determination
- E. Methods used for non-routine tasks
- F. Employee training and information
- G. Contractor Safety Orientation
- H. List of hazardous chemicals
- I. Document Revision History

A. Development of Written Hazard Communication Program

The following document describes Bay Point written Hazard Communication (Globally Harmonized System) Program. The Hazard Communication Program is reviewed during the Corporate EHS audit to determine its completeness and effectiveness.

B. Safety Data Sheets (SDS's)

A master set of SDS's are maintained by corporate EHS. Copies are available for employees 24 hours per day.

The purchasing agent will obtain SDS's for chemicals purchased by the company. To assure the integrity of our SDS system, all purchases will be routed through the facility's purchasing agent.

As updated SDSs are received from suppliers, the updated copy will take the place of the old copy. Old copies may be archived

Should an SDS not be available at the time the employee requests it, every effort should be made to provide safe handling precautions until the chemical manufacturer can provide a copy. Any employee may request a hard copy of the manufacturer's original SDS. A hard copy must be provided within 15 days of written request.

Manual: Safety	Subject: Hazard Communication Program	Reviewed by: EH&S
Effective: March 24, 2016	Supersedes: June 5, 2014	Page 2 of 8

C. Container Labeling and Other Forms of Warning

The Shipping & Receiving Clerk or his designee will verify that all incoming containers of chemicals:

1. Are clearly labeled as to the identity of the contents
2. Display the appropriate hazard warning(s)
3. List the name and address of the chemical's manufacturer.

All contractors will be required to verify the labels on all containers of contractor owned chemicals to assure that they are labeled in accordance with the requirements of the hazard communications standard.

The Project Manager or other individual responsible for the contractor will periodically check labels on contractor owned chemicals to assure that the contractor is adequately performing their labeling function.

Delivery will be refused for all unlabeled containers and containers bearing illegible labels.

All portable in-plant containers will be labeled with the chemical's identity and its appropriate hazard warnings.

All process piping is labeled with piping labels:

Stationary tanks of chemicals will be labeled with the identity of the contents and its appropriate hazard warnings. Bay Point utilizes the National Fire Protection Association's hazard warning system for all stationary storage vessels.

All outgoing containers of hazardous chemicals will be clearly labeled as to:

1. The identity of the contents
2. Required hazard warnings/labels
3. Our name and address

D. Methods Used for Hazard Determination

No chemical shall be purchased, or otherwise brought into the plant unless a SDS has been received, reviewed, and approved for said product.

The EHS Supervisor or their delegate will review incoming SDS's to determine if a particular chemical may pose physical and/or health hazards to our employees. In addition, each SDS will be evaluated to assure that it contains the information specified by 29 CFR 1910.1200.

Manual: Safety-06	Subject: Hazard Communication Program	Reviewed by: EH&S
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Should a deficient SDS be found during the evaluation process, the manufacturer will be notified in writing and a corrected copy will be requested.

E. Methods Used for Non-Routine Tasks

Periodically, employees will be required to perform non-routine tasks such as cleaning of tanks, vessels, opening of pipes, entry of confined spaces, and other maintenance operations which could result in an exposure to a hazardous chemical. Prior to starting work on such projects, each affected employee will be informed by their supervisor about the hazards of all chemicals to which they might be exposed to and protective measures they can take to minimize potential exposure.

This information will include:

1. Specific chemical identities.
2. The physical and health hazards posed by these chemicals.
3. Protective measures that the employee can take to minimize potential exposure such as use of ventilation, personal protective equipment, and emergency procedures.

F. Employee Training and Information

All employees are trained on all of the potential hazards of the chemicals used in the plant. Audio-Visual materials and classroom lecture are used to present the training program. The following elements of the training program are presented by the EHS Supervisor, or delegate:

1. An overview of the requirements contained in OSHA Hazard Communication Standard.
2. Location and availability of list of chemicals, copies of material safety data sheets, and our written Hazard Communication Program.
3. Physical and health effects of the hazardous chemicals listed in the Chemical's SDS.
4. Methods and observation techniques that can be used to determine the presence or release of hazardous chemicals in the work area.

Smell (Odor, Data on SDS)
Sight (Appearance, Data on SDS)
Sound (High Pressure Leak, Etc)

5. How to lessen or prevent exposure to these hazardous chemicals through usage of control equipment, work practices, and personal protective equipment.
6. Steps the company has taken to lessen or prevent exposure to these chemicals.

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7. Emergency procedures to follow in the event of a chemical release.
8. How to read labels and SDS's to obtain appropriate hazard information.
9. Questions and answer session.

A copy of the training record for each employee is filed in order to verify that they attended the training, understood the training and our policies on hazard communication.

In addition, all employees receive additional information from their supervisors regarding the identities of hazardous chemicals used in their specific work areas.

Records of training are kept for a minimum of three years and are available, on site, for review by administering agencies.

Each new employee of Bay Point attends a health and safety orientation and receives information and training on the above mentioned items. This new employee training is conducted by the immediate supervisor or the EHS Department as outlined in the previous section on Employee Training and Information. At the end of the training session, new employees have an opportunity to have any questions answered by the instructor.

Each new employee signs a training record to verify that he/she attended the training, and understood the company's policies on the Hazard Communication Standard.

New employees receive additional information from their supervisors regarding the locations of hazardous chemicals used in their specific work area.

Prior to a new chemical or physical hazard being introduced into any work area, all company employees will be trained and quizzed on the new hazard as outlined above. A written training record will be signed by the employees.

In the event that a new chemical or physical hazard is discovered for a chemical we are using, and communicated to us by the chemical's manufacturer on an updated SDS, employees in the affected work area will be notified. If the chemical or physical hazard is totally new to our operations, all employees will be informed and trained as specified above.

All employee training records will be maintained by Document Control.

G. Contractor Safety Orientation

A qualified management employee will inform all on-site contractors of the hazards their employees may face while performing work at the Bay Point

Manual: Safety-06	Subject: Hazard Communication Program	Reviewed by: EH&S
Effective: March 24, 2016	Supersedes: June 5, 2014	Page 5 of 8

Works. The contractor will be provided with copies of the SDS's for the chemicals his/her employees may be exposed to.

Each contractor shall sign a statement acknowledging the receipt of the specific SDS's. Prior to starting work, each contractor shall sign a statement acknowledging that their employees have received training on the hazards of the chemicals that they may be exposed to while working at our facility. The contractor may also be required to provide Bay Point with copies of individual employee training records verifying that said training was given to the contractor's employees.

Prior to beginning work, each contractor shall provide the Bay Point Works with SDS's and a list of all chemicals that will be used by the contractor's employees, or manufactured by the contractor's employees at our site. The list of chemicals and SDS's will be evaluated by the qualified management employee to determine if they pose any new or significant risks to our employees. General Chemical reserves the right to refuse to let a contractor use or manufacture a specific chemical if it poses an excessive risk or would necessitate additional training of our employees.

Contractors will verify that each container of hazardous chemicals they bring into our workplace is properly labeled in accordance with the requirements of 29 CFR 1910.1200 and T8 CCR Section 5194.

H. Storage of Hazardous Chemicals

All hazardous chemicals at Bay Point are only stored in designated locations. All incompatible materials shall be segregated by one of the following methods per the Uniform Fire Code:

- a) Minimum separation of 20 feet;
- b) Isolating incompatible materials storage by noncombustible partition extending not less than 18 inches above and to the side if the stored material;
- c) Storing liquid and solid hazardous materials in approved storage cabinets.

I. List of Hazardous Chemicals

Chemical	Manufacturer
Acetone (various grades)	General Chemical
Acetylene	Airgas
Aluminum Trihydrate	Alcoa

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Chemical	Manufacturer
Argon, compressed	Praxair
Barium chloride Anyhydrous	Fisher
Bayowet FT-248	Bayer
Boric Acid, ACS	Fisher
Brucine sulfate hptahydrate	Fisher
Buffer solution pH 10	Fisher
Buffer solution pH 4	Fisher
Buffer solution pH 7.0	Fisher
Buffer solution TISAB 03488	Fisher
Chloride IC Standard	CPI International
Chloride standard, 1000 ppm	Lab Chem
Clorox Household bleach	Clorox
Color standard, 500 units APHA (Pt-Co)	Lab Chem
Compressor Oil	Royal mfg Co
Custom Plasma Standard- Multi Elements. 10%nitric	SPEX Certiprep Inc.
Custom Plasma Standard- Multi Elements. 2%nitric	SPEX Certiprep Inc.
CWT3 Cooling Water Treatment	Terlyn Industries
Electrodes	The ESAB Group, Inc.
Ethylene glycol	General Chemical
Formaldehyde, 37% w/w	Fisher
Formaldehyde, 4-37%	Lab Chem
Hydrated Alumina	Reynolds Metals Co.
Hydrogen Peroxide	General Chemical
ICP standard	CPI
ICP standard in 5% HN03, 2% HCl, 0.2% HF	CPI
ICP-MS standard	CPI
Iodine solution 0.1N	Fisher
Iodine Solutions, 0.10-1.0	RICCA chemical Co.
Isopropyl Alcohol	General Chemical
Limestone	Columbus Chemical
Liquid Alum	General Chemical
Liquid Alum. Acidized	General Chemical
Mortar	H B FULLER CO
Nessler's reagent	Fisher
Nitrate (as nitrogen standard), 1000 ppm	Lab Chem
Nitrate standard, 1000 mg/L	CPI
Nitrogen, Compressed Gas	Praxair
NIT Etch (Acetic, Nitric, HF mix)	KMG
Nitrogen, liquid	Praxair
Octanoic Acid, 99.5+%	Sigma-Aldrich
Oxygen	Praxair
Phenolphthalein Indicator	BETZDearborn
Potassium chloride	Fisher
Potassium hydrogen phthalate, ACS	Fisher
Potassium Hydroxide	J.T. Baker/Mallinckrodt, General Chemical
Potassium iodide, ACS	Fisher
Propane	Suburban Propane
Propylene Glycol Methyl Ether Acetate (PGMEA)	General Chemical
Salt (Sodium chloride)	Cargill Inc
SeBreeze Aerosol	Rubbermaid Commercial Product
Silicone Rubber Sealant (RTV 108)	GE Silicons
Silicone Rubber Compound (SCS 1203)	GE Silicons

Manual: Safety-06	Subject: Hazard Communication Program	Reviewed by: EH&S
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Chemical	Manufacturer
Silver nitrate	Fisher Scientific
Silver/Silver chloride Sure-Flow Reference electrode fill solution	
Soda Ash	General Chemical
Sodium acetate trihydrate crystals	Fisher
Sodium Hydroxide Solutions	General Chemical
Sodium Hydroxide, 1.0 N	Science Lab, J.T. Baker
Sodium Hydroxide, 50% w/w certified	PPG Industries
Sodium Phosphate Monobasic	Fisher, JT Baker
Sodium Thiosulfate	J.T. Baker
Spec Etch	General Chemical
Starch Indicator, Acid	Taylor Technologies
Starch soluble (for iodometry), ACS	Fisher
Steamate NA 715 (BETZ)	GE
Steel, Galvanized	Reynolds Metals
Sulfuric Acid <51%	General Chemical
Sulfuric Acid >51%	General Chemical
Tetrafluoroboric acid, 48%	Aldrich
TISAB II	Fisher
TISAB II w/ CDTA	Thermo Scientific
Trisodium Phosphate	Univar, Astaris
Urea, ACS	Fisher
WD-40 Co.	WD-40 Co.
Yttrium standard, 1000 ppm	CPI
Zephiran (Benzakonium Chloride)	Medical Chemical Corp
Behr Premium Plus Exterior Semi- Gloss Deep Base No. 2-	Behr
Behr Premium Plus Ultra Semi Gloss	Behr
Brake Fluid	Scholle Corp
Break Free Industrial PCL	Break Free Inc
C6 Epoxy Adhesive	ITW Redhead
Chisel Gasket remover	Loctite
Chisel paint Stripper	Loctite
CLOROX CLEAN-UP CLEANER WITH BLEACH	Clorox
Conqueror 103 Odor Counteractant	Fresh Products
CONQUEST AEROSOL Rust Inhibitor	Chemsearch
CPVC Cement	Marsh Lab
Cutting Oil	CRC Industries
Fast Dry hard hat industrial coating	Rustoleum
Food Grade Anti-Seize Lubricant	Loctite
High Performance Flat Gray Primer	Rustoleum
High Performance Enamel	Rustoleum
HUSKEY RUST RELEASE AEROSOL	Husk-ITT Corp
Hydraulic Jack oil	Lubriplate
Industrial Belt Dressing	CRC Industries
Knock'er Loose	CRC Industries
Krylon OSHA Yellow Paint	Krylon
LA-CO SLIC-TITE PASTE with PTFE	LA-CO Industries
LOCTITE 1 GASKET SEALANT	Loctite
LOCTITE PIPE JOINT COMPOUND	Loctite
LOCTITE THREAD SEALANT WITH PTFE	

Manual: Safety-06	Subject: Hazard Communication Program	Reviewed by: EH&S
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Marking Paint (Solvent Based)	Ace Hardware
Multipurpose Acrylic enamel (Sierra Performance)	Rustoleum
Never-Seez anti-seize Lubricant	Bostik
Never-Seez white food grade grease	Bostik
Oatey Low V.O.C purple primer	Oatey Company
One Shot Ink cartridge (Black)	Diaphragm
One Shot Ink cartridge (White)	Diaphragm
Plastic pipe Cement	Hercules Chemical Company
PVC & CPVC Primer	Hercules Chemical Company
Quick Dry Primer	Aervoe
Rust-Oleum Stops Rust Enamel	
Spray on lubricant	Diversified Brands
SPRAYON RUST BREAKER Penetrant	
Steel Blue Layout Fluid	ITW Dykem
Stencil systems ink (Black)	Diaphragm
Stencil systems ink (white)	Diaphragm
SuperTak general purpose adhesive	Bostik
TAP MAGIC CUTTING FLUID	Steco Corporation
ThermaPlex Multi-Purpose Bearing	
Transmission Fluid	Chevron
WD-40	WD-40 Company
WET PATCH ROOF CEMENT	Henry Company

J. Document Revision History

- 2/17/2003: Revised to conform to Richmond's procedure.
- 9/25/2003: General Update
- 1/6/2009: Revised to include list of Hazardous Chemicals at Bay Point
- 1/14/2009: Update employee training record maintenance, updated hazardous chemical list, switched sections H&I.
- 9/2/2009 Annual review.
- 3/31/2010 Annual review. Modified SDS Review and record keeping requirements.
- 6/5/2014 Annual review and approval. Added section "H" Storage of Hazardous Chemicals. Updated hazardous chemical list.
- 3/24/16 Annual review and approval. Updated chemical list. Revised company name to Chemtrade.

STANDARD AGREEMENT, PAGE 1 OF 2
BAY AREA CHEMICAL CONSORTIUM
BID NO. 10-2016
SUPPLY AND DELIVERY OF LIQUID CHLORINE

Bay Area Chemical Consortium (BACC)
c/o Dublin San Ramon Services District
Regional Wastewater Treatment Facility
7399 Johnson Drive
Pleasanton, CA 94588

Dear Sirs:

I hereby agree to furnish liquid chlorine identified in the attached bid forms, as solicited by the Bay Area Chemical Consortium (BACC), to one or more of the participating BACC Agencies.

Company: Sierra Chemical Co.
Address: 2302 Larkin Circle
City, State, ZIP: Sparks, NV 89431
Phone: 775-358-0888
Email: bids@sierrachem.com
Authorized Representative: Ronald Espalin, Commercial Manager
Signature: 
Date: March 24, 2016

WE ACKNOWLEDGE RECEIVING ADDENDUM/ADDENDA NUMBER / THROUGH / .

SPECIFIC DEVIATIONS (if applicable, attach additional sheets if necessary):

3 Ton deliveries will be assessed a \$175.00 per ton delivery upcharge fee.
1 - 2 Ton deliveries will be assessed a \$250.00 per ton delivery upcharge fee.

STANDARD AGREEMENT, PAGE 2 OF 2**BIDDER INFORMATION**

1. Legal Name of Bidder:
Sierra Chemical Co.
2. Bidder's Street Address:
2302 Larkin Circle, Sparks, NV 89431
3. Mailing Address:
2302 Larkin Circle, Sparks, NV 89431
4. Business Telephone: 775-358-0888 Fax Number: 775-358-0987
5. Type of Supplier:
 Sole Proprietor Partnership Corporation
 If Corporation, indicate State where incorporated: Nevada
6. Business License Number issued by the City where the Supplier's principal place of business is located.
 Number: 054693 Issuing City: Sparks, NV
7. Supplier Federal Tax Identification Number: 88-0086174
8. Emergency Contact: Name: Chemtrec/Jim Novak
 Phone Number: 800-494-9300/423-367-0125
9. Order Contact: Name: Stephanie Watson
 Address: 2302 Larkin Circle, Sparks, NV 89431
 Phone Number: 800-777-8965 Fax Number: 775-358-7799
 Email: orders@sierrachem.com
10. References:
- | <u>Company/Agency Name</u> | <u>Contact Name</u> | <u>Phone Number</u> |
|---|------------------------|---------------------------|
| 1) <u>Placer County Water Agency</u> | <u>Ms. Pam Neuer</u> | <u>530-823-4887</u> |
| 2) <u>City of Folsom</u> | <u>Mr. Phil Carter</u> | <u>916-355-8337</u> |
| 3) <u>Los Angeles County Sanitation</u> | <u>Mr. Cheryl Shea</u> | <u>562-908-4288 x1401</u> |
11. Chemical Manufacturer's name and address (if different from Bidder):

**Non-Collusion Affidavit
To Be Executed By Bidder and Submitted With Bid**

State of ~~California~~ Nevada)
) ss.
County of Washoe)

Ronald Espalin, being first duly sworn, deposes and says that he or she is
(Contractor's Authorized Representative)

Commercial Manger of Sierra Chemical Co. the party making the
(Title of Representative) (Contractor's Name)

Foregoing bid that the bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation; that the bid is genuine and not collusive or sham; that the bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or that anyone shall refrain from bidding; that the bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bid, or to secure any advantage against the public body awarding the contract of anyone interested in the proposed contract; that all statements contained in the bid are true; and, further, that the bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid, and will not pay, any fee to any corporation, partnership, company association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid.

I declare under penalty of perjury under the laws of the state of California that the foregoing is true and correct.

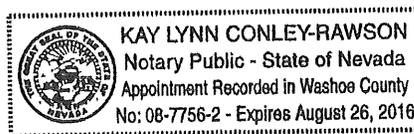
Ronald Espalin
Signature of: President, Secretary,
Manager, Owner, or Representative

Subscribed and sworn to before me this, 24 Day of March, 20 16

[Signature]
Signature of Notary Public In and For

The County of Washoe

State of Nevada



All Signatures Must Be Witnessed By Notary

BAY AREA CHEMICAL CONSORTIUM
BID FORM FOR BID NO. 10-2016, PAGE 1 OF 2

Sealed bids must be enclosed in an envelope clearly marked:

**"BID FOR LIQUID CHLORINE
BACC BID NO. 10-2016"**

And delivered to:

Louanne Ivy
Administrative Analyst – Operations
Dublin San Ramon Services District
Regional Wastewater Treatment Facility
7399 Johnson Drive
Pleasanton, CA 94588

No later than 9:00 A.M. PDT
Tuesday, April 5, 2016

Business Name: Sierra Chemical Co.

Business Address
2302 Larkin Circle
Sparks, NV 89431

Telephone Number: 775-358-0888

Facsimile Number: 775-358-0987

Email Address: bids@sierrachem.com

Authorized Representative (Please Print):
Ronald Espalin, Commercial Manager

Date: March 24, 2016

- I. **All costs except California State sales tax for the purchase of [CHEMICAL NAME] must be included in the amount shown below on this Bid Form, including any and all mill assessments, fees, excise taxes, transportation charges, etc. Any exceptions to the bid must be noted under Specific Deviations on the Standard Agreement. Bidders shall submit bids in \$/ton.**

BACC Agencies: North Bay Locations
City of Antioch, City of Pittsburg, and Contra Costa Water District
Unit Price for Liquid Chlorine by One-Ton Cylinders: \$ 616.00 /ton

BACC Agencies: South Bay Locations
City of Sunnyvale
Unit Price for Liquid Chlorine by One-Ton Cylinders: \$ 636.00 /ton

BACC Agencies: Sacramento Area Locations
City of Sacramento, City of Yuba City, and Rancho Murieta Community Services District
Unit Price for Liquid Chlorine by One-Ton Cylinders: \$ 505.00 /ton



**BAY AREA CHEMICAL CONSORTIUM
BID FORM FOR BID NO. 10-2016, PAGE 2 OF 2**

- II. Bidders must submit all of the following, attached to this Bid Form:**
- a. An affidavit of compliance to the appropriate American Water Works Association (AWWA) and/or National Sanitation Foundation (NSF) standard is required for all chemicals and polymers being provided for potable water treatment. Bidders must include a statement by the chemical manufacturer, signed by an authorized representative on letterhead stationery, attesting to the affidavit's validity. In lieu of submitting an affidavit of compliance with AWWA/NSF standards and a letter attesting to the affidavit's validity, a current printout from NSF.org is acceptable.
 - b. A representative analysis of the chemical to be supplied, as prepared by a reputable outside laboratory or Bidder's in-house laboratory if ISO certified.
 - c. Product Bulletin and Typical Properties.
 - d. Safety Data Sheet (SDS).
 - e. If applicable, the name, address, and contact information for the third party hauling company as well as an affidavit signed by the Bidder that the third party hauler can and will deliver the chemical to each and every participating BACC Agency.

BAY AREA CHEMICAL CONSORTIUM

REQUEST FOR BIDS FOR SUPPLY AND DELIVERY OF LIQUID CHLORINE BID NO. 10-2016

ADDENDUM NO. 1

March 8, 2016

BID DUE DATE: APRIL 5, 2016 at 9:00 A.M. PDT

BIDDERS MUST ACKNOWLEDGE RECEIPT OF THIS ADDENDUM WITH YOUR BID PROPOSAL

**Dublin San Ramon Services District
Louanne Ivy, Administrative Analyst II - Operations
Regional Wastewater Treatment Facility
7399 Johnson Drive
Pleasanton, CA 94568**

ADDENDUM NO. 1
REQUEST FOR BIDS
BAY AREA CHEMICAL CONSORTIUM (BACC) BID NO. 10-2016
FOR SUPPLY AND DELIVERY OF LIQUID CHLORINE
Addendum Issue Date: March 8, 2016

TO ALL BIDDERS: The purpose of this Addendum is to make changes, additions, deletions, revisions, and clarifications to the Bid No. 10-2016 for the supply and delivery of liquid chlorine. The changes incorporated in the Addendum shall be considered as a part of the document and shall supersede, amend, add to, and/or subtract from those conditions shown in the original Bid No. 10-2016.

Acknowledgement: Bidders must acknowledge receipt of any and all Addenda in the space provided on page 37 of 41 Standard Agreement of the bid document. Failure to do so may subject the Bidder to disqualification. All requirements of the bid documents remain unchanged except as cited herein.

ADDENDUM ITEMS:

I. Section / Page

Bay Area Chemical Consortium Bid Form for Bid No. 10-2016, Page 1 of 2 / Page 40 of 41

The last sentence in Section I. has been **REVISED** as follows: Bidders shall submit bids in \$/ton and \$/lb. as indicated below.

The bid form has been revised to **ADD** a unit price for Liquid Chlorine by 150 lb. cylinders for the Sacramento Area Locations.

ALL BIDDERS MUST SUBMIT THEIR BIDS USING THE REVISED BID FORM ATTACHED.

END OF ADDENDUM NO. 1

**REVISED BID FORM
BAY AREA CHEMICAL CONSORTIUM
BID FORM FOR BID NO. 10-2016, PAGE 1 OF 2**

<p>Sealed bids must be enclosed in an envelope clearly marked:</p> <p>“BID FOR LIQUID CHLORINE BACC BID NO. 10-2016”</p> <p>And delivered to:</p> <p>Louanne Ivy Administrative Analyst – Operations Dublin San Ramon Services District Regional Wastewater Treatment Facility 7399 Johnson Drive Pleasanton, CA 94588</p> <p>No later than 9:00 A.M. PDT Tuesday, April 5, 2016</p>	<p>Business Name: <u>Sierra Chemical Co.</u></p> <p>Business Address <u>2302 Larkin Circle</u> <u>Sparks, NV 89431</u></p> <p>Telephone Number: <u>775-358-0888</u></p> <p>Facsimile Number: <u>775-358-0987</u></p> <p>Email Address: <u>bids@sierrachem.com</u></p> <p>Authorized Representative (Please Print): <u>Ronald Espalin, Commercial Manager</u></p> <p>Date: <u>March 24, 2016</u></p>
---	---

I. All costs except California State sales tax for the purchase of Liquid Chlorine must be included in the amount shown below on this Bid Form, including any and all mill assessments, fees, excise taxes, transportation charges, etc. Any exceptions to the bid must be noted under Specific Deviations on the Standard Agreement. Bidders shall submit bids in \$/ton and \$/lb. as indicated below.

BACC Agencies: North Bay Locations
 City of Antioch, City of Pittsburg, and Contra Costa Water District
 Unit Price for Liquid Chlorine by One-Ton Cylinders: \$ 616.00 /ton

BACC Agencies: South Bay Locations
 City of Sunnyvale
 Unit Price for Liquid Chlorine by One-Ton Cylinders: \$ 636.00 /ton

BACC Agencies: Sacramento Area Locations
 City of Sacramento, City of Yuba City, and Rancho Murieta Community Services District
 Unit Price for Liquid Chlorine by One-Ton Cylinders: \$ 505.00 /ton
 Unit Price for Liquid Chlorine by 150 lb. Cylinders: \$ 0.8366 /lb.

**BAY AREA CHEMICAL CONSORTIUM
BID FORM FOR BID NO. 10-2016, PAGE 2 OF 2**

II. Bidders must submit all of the following, attached to this Bid Form:

- a. An affidavit of compliance to the appropriate American Water Works Association (AWWA) and/or National Sanitation Foundation (NSF) standard is required for all chemicals and polymers being provided for potable water treatment. Bidders must include a statement by the chemical manufacturer, signed by an authorized representative on letterhead stationery, attesting to the affidavit's validity. In lieu of submitting an affidavit of compliance with AWWA/NSF standards and a letter attesting to the affidavit's validity, a current printout from NSF.org is acceptable.
- b. A representative analysis of the chemical to be supplied, as prepared by a reputable outside laboratory or Bidder's in-house laboratory if ISO certified.
- c. Product Bulletin and Typical Properties.
- d. Safety Data Sheet (SDS).
- e. If applicable, the name, address, and contact information for the third party hauling company as well as an affidavit signed by the Bidder that the third party hauler can and will deliver the chemical to each and every participating BACC Agency.



The Public Health and Safety Organization

NSF Product and Service Listings

These NSF Official Listings are current as of **Thursday, April 21, 2016** 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?>

[CompanyName=Sierra+Chemical+Co%2E&ChemicalName=Chlorine&PlantCountry=UNITED+STATES&](http://info.nsf.org/Certified/PwsChemicals/Listings.asp?CompanyName=Sierra+Chemical+Co%2E&ChemicalName=Chlorine&PlantCountry=UNITED+STATES&)

NSF/ANSI 60 Drinking Water Treatment Chemicals - Health Effects

Sierra Chemical Company

2302 Larkin Circle
Sparks, NV 89431
United States
800-777-8965
775-358-0888

Facility : Stockton, CA

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.

Facility : Sparks, NV

Chlorine[CL]

Trade Designation

Chlorine

Product Function

Disinfection & Oxidation

Max Use

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.

Number of matching Manufacturers is 1

Number of matching Products is 2

Processing time was 0 seconds



SAFETY DATA SHEET

1. Identification

Product identifier Chlorine - Chlorine Liquefied Gas Under Pressure

Other means of identification Not available.

Recommended use Chlorine is primarily used as a water treatment chemical as a disinfectant. Also used as a bleaching agent and in the manufacture of many consumer products.

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Company name Carus Corporation
Address 315 5th Street
 Peru, Illinois 61354, USA
Telephone (815) 223-1500
Toll Free (800) 435-6856
Fax (815) 224-6816
E-mail salesmkt@caruscorporation.com
Website www.caruscorporation.com

Company name Alexander Chemical Corporation, a Carus Group Inc. Company
Address 7593 S. First Road,
 Kingsbury Industrial Park, Kingsbury, Indiana 46345, USA
Website www.alexanderchemical.com

Company name Sierra Chemical Co, a Carus Group Inc. Company
Address 2302 Larkin Circle
 Sparks, Nevada 89431, USA
Website www.sierrachemsales.com

Contact person Dr. Chithambarathanu Pillai
Telephone (800) 348-8827 - All other non-emergency inquiries about the product should be directed to the company

Emergency telephone number For Hazardous Materials [or Dangerous Goods] Incidents ONLY

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

2. Hazard(s) identification

Physical hazards Oxidizing gases Category 1
 Gases under pressure Liquefied gas

Health hazards Acute toxicity, inhalation Category 2
 Skin corrosion/irritation Category 2
 Serious eye damage/eye irritation Category 2
 Specific target organ toxicity, single exposure Category 3 respiratory tract irritation

Environmental hazards Hazardous to the aquatic environment, acute hazard Category 1

OSHA defined hazards Not classified.

Label elements



Signal word Danger

Hazard statement	May cause or intensify fire; oxidizer. Contains gas under pressure; may explode if heated. Fatal if inhaled. Causes skin irritation. Causes serious eye irritation. May cause respiratory irritation. Very toxic to aquatic life.
Precautionary statement	
Prevention	Keep/Store away from clothing and other combustible materials. Keep reduction valves/valves and fittings free from oil and grease. Do not breathe gas. Use only outdoors or in a well-ventilated area. In case of inadequate ventilation wear respiratory protection. Wash hands thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection. Avoid release to the environment.
Response	In case of fire: Stop leak if safe to do so. If inhaled: Remove person to fresh air and keep comfortable for breathing. Immediately call a poison center/doctor. If on skin: Wash with plenty of water. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. Get medical advice/attention if you feel unwell.
Storage	Store locked up. Protect from sunlight. Store in a well-ventilated place. Keep container tightly closed.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	None known.

3. Composition/information on ingredients

Substances

Chemical name	Common name and synonyms	CAS number	%
Chlorine		7782-50-5	> 99

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

4. First-aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Oxygen or artificial respiration if needed. Do not use mouth-to-mouth method if victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Call a physician or poison control center immediately.
Skin contact	Frostbite: Do not remove clothes, but flush with copious amounts of lukewarm water. Get medical attention immediately.
Eye contact	Frostbite: Immediately and briefly flush with lukewarm, gently flowing water. Cover both eyes with a sterile dressing. Immediately obtain medical attention. GAS: Not applicable. No effects expected.
Ingestion	Not likely, due to the form of the product.
Most important symptoms/effects, acute and delayed	May cause central nervous system effects. Dizziness. Headache. Nausea, vomiting. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause respiratory irritation. Coughing. Burning pain and severe corrosive skin damage. May cause redness and pain.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.
General information	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	Foam. Dry chemical powder. Carbon dioxide (CO ₂).
Unsuitable extinguishing media	None known.
Specific hazards arising from the chemical	Contents under pressure. Greatly increases the burning rate of combustible materials. Containers may explode when heated. During fire, gases hazardous to health may be formed. Hydrogen chloride gas.
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

Allow gas to burn if flow cannot be shut off immediately. Apply water from safe distance to cool container and protect surrounding area. In case of fire: Stop leak if safe to do so. Do not move cargo or vehicle if cargo has been exposed to heat. ALWAYS stay away from tanks engulfed in flame. Move containers from fire area if you can do so without risk. Do not direct water at source of leak or safety devices as icing may occur. Use water spray to cool unopened containers. Do not get water inside containers. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire. For massive fire in cargo area, use unmanned hose holder or monitor nozzles, if possible. If not, withdraw and let fire burn out.

Specific methods

Cool containers exposed to flames with water until well after the fire is out.

General fire hazards

May intensify fire; oxidizer.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Wear appropriate protective equipment and clothing during clean-up. Avoid breathing gas. Emergency personnel need self-contained breathing equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. 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

If this gas leaks without igniting, extreme caution must be used; flammable or explosive mixtures with air may be formed. Extinguish all flames in the vicinity. This product is miscible in water. Stop leak if you can do so without risk. Use water spray to reduce vapors or divert vapor cloud drift. Isolate area until gas has dispersed. Dike far ahead of spill for later disposal. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water. For waste disposal, see section 13 of the SDS.

Environmental precautions

Avoid release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground. Runoff from fire control or dilution water may cause pollution.

7. Handling and storage

Precautions for safe handling

Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Keep away from combustible material. Contents under pressure. Keep reduction valves free from grease and oil. Valve protection caps must remain in place unless container is secured with valve outlet piping to use point. Close valve after each use and when container is empty. Do not drop, drag, slide or roll cylinders on their sides. Use a suitable hand truck to move gas containers. Use a pressure reducing regulator when connecting container to piping or systems. Never insert an object (e.g. wrench, screwdriver, pry bar) into cap openings. Use an adjustable strap wrench to remove over-tight or rusted caps. Open valve slowly. Do not use gas directly from containers. Do not heat container by any means to increase the discharge rate of product from the container.

Avoid breathing gas. Use only outdoors or in a well-ventilated area. Avoid contact with eyes, skin, and clothing. Wash hands thoroughly after handling. Avoid release to the environment. Observe good industrial hygiene practices. Wear appropriate personal protective equipment. Use personal protection as recommended in Section 8 of the SDS.

Conditions for safe storage, including any incompatibilities

Store locked up. Store in a cool, dry place out of direct sunlight. Store in original tightly closed container. Store in a well-ventilated place. Store in cool place. Refrigeration recommended. Do not store near combustible materials. Keep away from food, drink and animal feedingstuffs. Store away from incompatible materials (see Section 10 of the SDS). Store in accordance with NFPA 430 requirements for Class II oxidizers.

8. Exposure controls/personal protection

Occupational exposure limits

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

Components	Type	Value
Chlorine (CAS 7782-50-5)	Ceiling	3 mg/m3
		1 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value
Chlorine (CAS 7782-50-5)	STEL	1 ppm
	TWA	0.5 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Chlorine (CAS 7782-50-5)	Ceiling	1.45 mg/m ³ 0.5 ppm
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).	
Skin protection		
Hand protection	Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier. Be aware that the liquid may penetrate the gloves. Frequent change is advisable.	
Other	Wear appropriate chemical resistant clothing.	
Respiratory protection	In case of insufficient ventilation, wear suitable respiratory equipment.	
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.	
General hygiene considerations	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	Gas.
Form	Compressed liquefied gas.
Color	Greenish yellow.
Odor	Pungent.
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	-150 °F (-101.11 °C)
Initial boiling point and boiling range	-29 °F (-33.89 °C)
Flash point	Not available.
Evaporation rate	Not available.
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	72 psig (60 °F)
Vapor density	Not available.
Relative density	1.47 ±0.03 (Liquid) (32 °F (0 °C)) 2.49 ±0.03 (Gas) (32 - 39 °F (0 - 3.89 °C))
Solubility(ies)	
Solubility (water)	Completely soluble in water.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.

10. Stability and reactivity

Reactivity	Greatly increases the burning rate of combustible materials.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Reacts violently with water or moist air to form hydrogen chloride.
Conditions to avoid	Keep away from combustible material. Contact with incompatible materials.
Incompatible materials	Combustible material. Reducing agents. Ammonia. Alcohols. Water.
Hazardous decomposition products	Chlorine reacts with water and generate hydrogen chloride.

11. Toxicological information

Information on likely routes of exposure

Ingestion	Expected to be a low ingestion hazard.
Inhalation	Toxic if inhaled.
Skin contact	Causes skin irritation.
Eye contact	Causes serious eye irritation.
Symptoms related to the physical, chemical and toxicological characteristics	Dizziness. Headache. Nausea, vomiting. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Coughing. Skin irritation. May cause redness and pain.

Information on toxicological effects

Acute toxicity Fatal if inhaled.

Components	Species	Test Results
Chlorine (CAS 7782-50-5)		
Acute <i>Inhalation</i> LC50	Mouse	137 ppm, 1 Hours
	Rat	293 ppm, 1 Hours

Skin corrosion/irritation Causes skin irritation.

Serious eye damage/eye irritation Causes serious eye irritation.

Respiratory or skin sensitization

Respiratory sensitization	Not available.
Skin sensitization	This product is not expected to cause skin sensitization.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure	May cause respiratory irritation.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration hazard	Not available.

12. Ecological information

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

13. Disposal considerations

Disposal instructions	Consult authorities before disposal. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products	Dispose of in accordance with local regulations.
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

UN number	UN1017
UN proper shipping name	Chlorine
Transport hazard class(es)	
Class	2.3
Subsidiary risk	5.1, 8
Label(s)	2.3, 5.1, 8
Packing group	Not applicable.
Environmental hazards	
Marine pollutant	Yes
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Special provisions	2, B9, B14, N86, T50, TP19
Packaging exceptions	None
Packaging non bulk	304
Packaging bulk	314, 315

IATA

UN number	UN1017
UN proper shipping name	Chlorine
Transport hazard class(es)	
Class	2.3
Subsidiary risk	5.1, 8
Label(s)	2.3, 5.1, 8
Packing group	Not applicable.
Environmental hazards	Yes
ERG Code	2CP
Special precautions for user	Passenger and Cargo Aircraft Quantity limitation: Forbidden.

IMDG

UN number	UN1017
UN proper shipping name	CHLORINE
Transport hazard class(es)	
Class	2.3
Subsidiary risk	5.1, 8
Label(s)	2.3, 5.1, 8
Packing group	Not applicable.
Environmental hazards	
Marine pollutant	Yes
EmS	F-C, S-U
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	Not applicable.

15. Regulatory information

US federal regulations	This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. All components are on the U.S. EPA TSCA Inventory List.
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TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)

Chlorine (CAS 7782-50-5) LISTED

Superfund Amendments and Reauthorization Act of 1986 (SARA)

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

SARA 302 Extremely hazardous substance

Chemical name	CAS number	Reportable quantity	Threshold planning quantity	Threshold planning quantity, lower value	Threshold planning quantity, upper value
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Chlorine 7782-50-5 10 100 lbs

SARA 311/312 Hazardous chemical Yes

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Chlorine	7782-50-5	> 99

Other federal regulations

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

Chlorine (CAS 7782-50-5)

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

Chlorine (CAS 7782-50-5)

Safe Drinking Water Act (SDWA) Not regulated.

US state regulations

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

DANGER / POISON
Keep out of reach of children.
Liquefied Gas Under Pressure.
Non-flammable.
Fatal if inhaled.
Liquid causes severe burns.
Hazardous to Humans and domestic animals.
Corrosive. Causes irreversible eye damage and skin burns.
Fatal if swallowed inhaled or absorbed through skin.
Harmful if swallowed.
Do not swallow or inhale.
This product is toxic or highly toxic to fish and aquatic invertebrates to fish and wildlife.
Chlorine is a Non-flammable gas, liquefied, under pressure.

US. Massachusetts RTK - Substance List

Chlorine (CAS 7782-50-5)

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

Chlorine (CAS 7782-50-5)

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

Chlorine (CAS 7782-50-5)

US. Rhode Island RTK

Chlorine (CAS 7782-50-5)

US. California Proposition 65

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

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

Not listed.

International Inventories

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

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

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

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

Issue date 05-August-2014

Revision date -

Version # 01

NFPA ratings



Disclaimer

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The Public Health and Safety Organization

NSF Product and Service Listings

These NSF Official Listings are current as of **Tuesday, March 31, 2015** at 12:15 a.m. Eastern Time. Please contact NSF International to confirm the status of any Listing, report errors, or make suggestions.

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NSF/ANSI 60 Drinking Water Treatment Chemicals - Health Effects

Sierra Chemical Company

2302 Larkin Circle
Sparks, NV 89431
United States
800-777-8965
775-358-0888

Facility : Stockton, CA

Aluminum Sulfate[AL]

Trade Designation

Alum

Aluminum Sulfate

Liquid Alum

Product Function

Coagulation & Flocculation

Coagulation & Flocculation

Coagulation & Flocculation

Max Use

400mg/L

400mg/L

400mg/L

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

Chlorine[CL]

Trade Designation

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.

Citric Acid[1] [2]

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Citric Acid, 50% Solution	Well Cleaning Aid Membrane Cleaner	NA
Citric Acid, Anhydrous	Well Cleaning Aid Membrane Cleaner	NA
Citric Acid, Liquid	Well Cleaning Aid Membrane Cleaner	NA
Citric Acid, Solution	Well Cleaning Aid Membrane Cleaner	NA

[1] This product is designed to be used off-line and flushed out prior to using the system for drinking water, following manufacturer's use instructions.

[2] The pH of the influent and effluent water should be monitored to ensure that all traces of the product have been removed before placing into service.

Ferric Chloride

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Ferric Chloride	Coagulation & Flocculation	250mg/L
Ferric Chloride, Liquid	Coagulation & Flocculation	250mg/L
Ferric Chloride, Solution	Coagulation & Flocculation	250mg/L

Fluorosilicic Acid

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Fluorosilicic Acid	Fluoridation	6mg/L
HFS Acid	Fluoridation	6mg/L
Hydrofluorosilicic Acid	Fluoridation	6mg/L

Hydrochloric Acid

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Sierra Muriatic Acid	pH Adjustment	40 mg/L

Polymer Blends[PY]

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Aries 293 PWG	Coagulation & Flocculation	176mg/L

[PY] Polyamines Certified by NSF International comply with 40 CFR 141.111 requirements for percent monomer and dose.

Sodium Hydroxide

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Sodium Hydroxide Solution	Corrosion & Scale Control pH Adjustment	100 mg/L

Sodium Hypochlorite[CL]

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Sierra Industrial Bleach	Disinfection & Oxidation	84mg/L
Sierra Pure Chlor	Disinfection & Oxidation	84 mg/L
Sierra Sani Chlor	Disinfection & Oxidation	84 mg/L

Sodium Hypochlorite[CL]

Trade Designation

Sierra Pure Chlor
Sierra Sani Chlor

Product Function

Disinfection & Oxidation
Disinfection & Oxidation

Max Use

84mg/L
84mg/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.

Number of matching Manufacturers is 1

Number of matching Products is 31

Processing time was 0 seconds

Sierra Chemical Co.

 A Carus Company

Customer Information Packet

Sierra Chemical Co.

 A Carus Company

Table of Contents

1. Introduction Letter
2. Credit References
3. Facility Locations
4. Emergency Phone List
5. Terms of Sales
6. Product List
7. Fax Order Form
8. General Liability Insurance Certificate
9. Affirmative Action Policy

Quality

10. NSF Product and Service Listing for our manufacturing plants' in Spark, Nevada and Stockton, California

SIERRA CHEMICAL Co.

 A CARUS COMPANY

2302 LARKIN CIRCLE
SPARKS, NEVADA 89431
PHONE (775) 358-0888
FAX (775) 358-0987
www.caruscorporation.com
www.sierrachemicals.com

Ladies and Gentlemen,

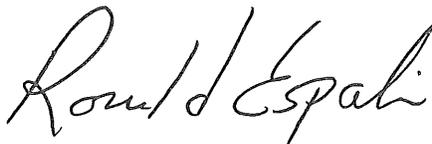
Sierra Chemical Co. has been in business of manufacturing and supplying chemicals for Water Treatment since 1959.

Our manufacturing facilities are located at 2302 Larkin Circle, Sparks, Nevada and 1010 Industrial Drive, Stockton, California. We product and distribute NSF products from these two locations.

We are registered with a State of California as Nevada Sierra Chemical Co. dba Sierra Chemical Co.

For references please advise.

Regards,



Ronald Espalin
Commercial Manager



Sierra Chemical Co.

 A Carus Company

315 5th Street

Peru, IL 61354

Phone: 800.777.8965

Fax: 775.358.0987

www.caruscorporation.com

www.sierrachemsales.com

CREDIT REFERENCES

FEDERAL TAX ID# 88-0086174

TRADE REFERENCES:

Western Industrial Parts Inc.
5355 Louie Lane
Reno, NV 89511
P: 775-358-9564 F: 775-358-9632
joan@wipi.com
Attn: Joan Karpchuk

Univar
17425 NE Union Hill Road
Redmond, WA 98052
P: 425-889-3994 F: 425-889-3440
john.dixon@univarusa.com
Attn: John Dixon

Reagent Chemical & Research, Inc.
P.O. Box 416228
Boston, MA 02241
P: 800-231-1807 F: 409-899-3402
klaginha@reagent.com
Attn: Karen Laginha

BANK REFERENCES:

Bank of America
Credit Inquiry Services
Mail Code: WA1-501-23-01
PO Box 34893
Seattle, WA 98124-1893
Account No. 8666319740
P: 803-832-7770 Option 2 F: 415-343-9301

Revised Jan 2014

Sierra Chemical Co.

 A Carus Company

SIERRA CHEMICAL CO. FACILITIES INFORMATION

FEDERAL I.D.# 88-0086174

Sierra Chemical Co. is incorporated in Nevada and California. In California we are registered under the name "Nevada Sierra Chemical Co."

Corporate Facility (Sparks, Nevada)

2302 Larkin Circle, Sparks, NV 89431

PO Box 50730, Sparks, NV 89435

www.seirrachemsales.com

Hours of Operation: 7:30am – 5:00pm

Toll Free Phone: (800) 777-8965

Local Phone: (775) 358-0888

Administrative Fax: (775) 358-0987 (i.e. Bids and Correspondence)

Customer Service Fax: (775) 358-7799 (i.e. Purchases Orders)

Accounting Fax: (775) 358-7704 (i.e. Payables, Receivables', Credit Checks)

Stockton Facility (Stockton, California)

1010 Industrial Drive, Stockton, CA 95206

Hours of Operation: 8:00am – 5:00pm

Local Phone: (209) 983-8298

Fax: (209) 983-8295 (i.e. all inquiries)

**Please be advised that all Bids and Correspondence pertaining to bids must be sent to our Corporate Facility or, you may send them via e-mail to bids@sierrachem.com*

SIERRA CHEMICAL Co.

 A CARUS COMPANY

2302 LARKIN CIRCLE
SPARKS, NEVADA 89431
PHONE (775) 358-0888
FAX (775) 358-0987
www.caruscorporation.com
www.sierrachemicals.com

STOCKTON FACILITY EMERGENCY CONTACT LIST FOR EVENINGS AND WEEKENDS

CHEMICAL SPILL AND/OR ACCIDENTS

CHEMTREC 24 HOUR EMERGENCY SERVICE NUMBER (800) 494-9300

1. **Jim Novak** Cell # (423) 367-0125
Plant Manager
2. **Tony Suever** Cell # (440) 503-4789
Process Engineer
3. **Dr. Chithambarathanu Pillai** Cell# (815) 228-0262
Regulatory Compliance, Carus

FOR ADDITIONAL NAMES AND PHONE NUMBERS

Stockton Facility (Stockton, CA) (209) 983-8298
Corporate Facility (Sparks, NV) (800) 777-8965



Sierra Chemical Co.

 A Carus Company

Sierra Chemical Co. Standard Terms of Sale

Payment Terms: Net 30 days from Date of Delivery upon Approval of Credit. Accounts over 45 days will be COD until the account is current.

Late Fee: 1.5% per month or 18% per year.

Regulatory Compliance Fee: \$7.50 per invoice on all shipments.

Sales Tax: Charged on each purchase UNLESS Tax Resale Card is on file.

California Pesticide Assessment: Collected for the State of California at a Rate of 2.10%

ALL RETURNS ARE SUBJECT TO A 20% RE-STOCKING CHARGE. No credit will be given for any products that are subject to degradation or contamination or have been opened, OR HAVE BEEN ON SITE FOR 90 days. Must have the invoice of item purchased.

Shipping Fees:

1. **Split Load Fee:** \$85.00
2. **Stop in Transit Fee:** \$85.00
3. **Additional Labor:** \$85.00 per hour, per person
4. **Demurrage:** 1.5 hours Load Time and 2 hours Unload Time – No charge; excess time billed at \$21.25 per quarter hour.
5. **Extra Hoses:** \$20.00 per Hose.
6. **Fuel Surcharge** will be charged and collected.

Delivery: For the best Service please allow a three (3) day Lead Time, "Order to Delivery." The Cut off Time is 2:00 p.m. for date of delivery and space available.

Emergency: What is prudent for safety.

Deposit Returns will be refunded if: **

1. They meet DOT shipping requirements. (Drip Dry and Proper Label)
2. They are returned within Demurrage time limitations. (90 Days)

Deposit credits will be issued at the time of return.**

Demurrage and Deposits:

Ton Tank	\$1,000.00/ea
150lb. Cylinder	\$150.00/ea

Demurrage on the above two (2) items: 120 days free use; \$1.00 per day thereafter up to one (1) year. No Refund beyond one (1) year.

Container Deposits:

4 x 1 Cases	\$6.00/ea
Case Only	\$3.00/ea
Bottle Only	\$0.50/ea
Pallet	\$5.00/ea
5 Gallon Carboy	\$10.00/ea
15 Gallon Carboy	\$20.00/ea
30 Gallon Drum	\$30.00/ea
55 Gallon Drum (poly)	\$40.00/ea
55 Gallon Drum (steel)	\$25.00/ea
275 Gallon Totes	\$825.00/ea
330 Gallon Totes	\$825.00/ea
550 Gallon Totes	\$1,000.00/ea

Environmental Drum Rinse Charge:

5 Gallon Carboy	\$0.50/ea
15 Gallon Carboy	\$1.00/ea
30 Gallon Drum	\$2.00/ea
55 Gallon Drum	\$3.00/ea

NOTE: NO REFUND for containers returned after 90 days or in poor condition.

CHEMICALS

ACETIC ACID
 ACETONE
 ALCOHOLS
 ALUMINUM SULFATE NSF
 AMMONIA, ANHYDROUS
 AMMONIUM BISULFITE
 AMMONIUM NITRATE
 AMMONIUM SULFATE
 AMMONIUM THIOSULFATE
 ANALYTICAL REAGENTS
 AQUA AMMONIA

BATTERY ACID
 BENTONITE
 BICARBONATE OF SODA
 BLEACH NSF
 BORAX, ANHYDROUS
 BORAX, PENTAHYDRATE
 BORAX, DECAHYDRATE
 BORIC ACID
 BUTYL CELLOSOLVE
 CALCIUM CHLORIDE
 CALCIUM HYPOCHLORITE
 CARBON, ACTIVATED
 CAUSTIC POTASH, DRY & LIQUID
 CAUSTIC SODA - DRY / LIQUID NSF
 CHLORINE NSF
 CITRIC ACID
 CITRUS SOLVENT / BLENDS
 COPPER SULFATE
 CUTRINE ALGAEICIDE

ETHANOL, DENATURED
 ETHYL ACETATE
 ETHYLENE GLYCOL

FERRIC CHLORIDE
 FERRIC SULFATE
 FERROUS SULFATE
 FERTILIZERS
 FILTER POWDERS
 (DIATOMACEOUS EARTH)
 FLOOR DRY
 FLOOR SWEEP
 FORMALDEHYDE

GRAPHITE
 GLYCOL ETHER

HEXANE
 HYDROCHLORIC ACID NSF
 HYDROGEN PEROXIDE

IRON OXIDE
 ISOPROPYL ACETATE
 ISOPROPYL ALCOHOL, 99%

KEROSENE, DEODORIZED

LAB CHEMICALS
 LACQUER THINNER
 LACTOL SPIRITS
 LEAD NITRATE
 LIME, HYDRATED
 LIME, PROCESSED

MAGNESIUM OXIDE
 MAGNESIUM SULFATE
 METHANOL
 METHYL ETHYL KETONE (MEK)
 METHYL ISOBUTYL CARBINOL
 (METHYL AMYL ALCOHOL) - (MAK)
 METHYL ISOBUTYL KETONE (MIBK)
 METHYLENE CHLORIDE
 MINERAL ACIDS
 MINERAL OIL
 MINERAL SPIRITS
 MINERAL SPIRITS (ODORLESS)
 MURIATIC ACID NSF

NITRIC ACID

OXALIC ACID

PETROLEUM BLENDS
 PHOSPHATES
 PHOSPHORIC ACID
 POTASSIUM CARBONATE
 POTASSIUM CHLORIDE
 POTASSIUM NITRATE
 POTASSIUM PERMANGANATE
 PRAMITOL SOIL STERILANT
 PROPYLENE GLYCOL
 PUMPS (TRANSFER / METERING)
 (LMI) - ARO / PULSAFEEDER)

REAGENT ACIDS
 REAGENT CHEMICALS

SALT, PELLETS
 SALT, IRON FIGHTER
 SALT, COARSE
 SCREEN WASH

SIERRA SLICK
 SILICA SAND 78 / 80 MESH
 SILICA FLOUR 200 / 300 MESH
 SNOW - N - ICE MELTER
 SODA ASH
 SODIUM BICARBONATE
 SODIUM BISULFITE
 SODIUM CITRATE
 SODIUM DICHROMATE
 SODIUM FLUORIDE
 SODIUM GLUCONATE
 SODIUM HEXAMETAPHOSPHATE
 SODIUM HYDROXIDE
 SODIUM HYPOCHLORITE (12.5%)
 SODIUM METASILICATE
 SODIUM NITRATE
 SODIUM SESQUICARBONATE
 SODIUM SILICATE
 SODIUM SULFATE
 SODIUM SULFITE
 SODIUM THIOSULFATE
 STYRENE MONOMER
 SULFAMIC ACID
 SULFUR
 SULFUR DIOXIDE
 SULFURIC ACID
 SWIMMING POOL CHEMICALS

TETRAPOTASSIUM PYROPHOSPHATE
 TOLUENE
 1,1,1 TRICHLOROETHANE
 TRICHLOROETHYLENE
 TRISODIUM PHOSPHATE (TSP)

VINYL WASH

WATER TREATMENT CHEMICALS
 WATER TREATMENT EQUIPMENT
 WATER TREATMENT TEST KITS
 WEED AND TREE KILLER
 (SOIL STERILANT)
 WINDSHIELD DE-ICER
 WINDSHIELD WASH FLUID

XYLENE

ZINC DUST

IF YOU DON'T SEE IT..ASK FOR IT



CALIFORNIA OFFICES:
 STOCKTON
 NEVADA OFFICES:
 SPARKS - BATTLE MOUNTAIN

2302 LARKIN CIRCLE
 SPARKS, NV 89431

OUR MISSION STATEMENT:

TO MANUFACTURE AND DELIVER
 COMPREHENSIVE, QUALITY PRODUCTS AT
 COMPETITIVE PRICES TO CUSTOMERS IN
 PURSUIT OF BUSINESS THAT ENHANCES THE
 QUALITY OF LIFE & THE ENVIRONMENT.



CERTIFIED TO ANS/NSF
 STANDARD 60



Sierra Chemical Co.

 A Carus Company

CUSTOMER ORDER FORM

SIERRA CHEMICAL CO.

2302 LARKIN CIRCLE
SPARKS, NEVADA 89435-0730
TELEPHONE (775) 358-0888 or (800) 777-8965
FAX (775) 358-7799

DATE:		CUSTOMER #	
CUSTOMER:		PO #	
NAME:		DEL HRS	
PHONE:		ALT PHONE #	

QUANTITY	ITEM	COMMENTS

PO #	DELIVERY DATE / INFORMATION	



CERTIFICATE OF LIABILITY INSURANCE

DATE(MM/DD/YYYY)
06/24/2015

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Aon Risk Services Central, Inc. Chicago IL Office 200 East Randolph Chicago IL 60601 USA	CONTACT NAME: PHONE (A/C, No, Ext): (866) 283-7122		FAX (A/C, No.): (800) 363-0105
	E-MAIL ADDRESS:		
INSURED Sierra Chemical Company 2302 Larkin Circle Sparks NV 89434-6587 USA	INSURER(S) AFFORDING COVERAGE		NAIC #
	INSURER A:	National Union Fire Ins Co of Pittsburgh	19445
	INSURER B:	Commerce & Industry Ins Co	19410
	INSURER C:	New Hampshire Ins Co	23841
	INSURER D:		
	INSURER E:		

COVERAGES

CERTIFICATE NUMBER: 570058360530

REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

Limits shown are as requested

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
B	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input checked="" type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC OTHER:			GL4406544	07/01/2015	07/01/2016	EACH OCCURRENCE	\$2,000,000
							DAMAGE TO RENTED PREMISES (Ea occurrence)	\$100,000
							MED EXP (Any one person)	\$10,000
							PERSONAL & ADV INJURY	\$2,000,000
							GENERAL AGGREGATE	\$4,000,000
							PRODUCTS - COMP/OP AGG	\$4,000,000
A	<input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> ALL OWNED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input checked="" type="checkbox"/> HIRED AUTOS <input checked="" type="checkbox"/> NON-OWNED AUTOS			CA 350-63-48	07/01/2015	07/01/2016	COMBINED SINGLE LIMIT (Ea accident)	\$2,000,000
							BODILY INJURY (Per person)	
							BODILY INJURY (Per accident)	
							PROPERTY DAMAGE (Per accident)	
							Comp & Collision Ded	\$1,000
B	<input checked="" type="checkbox"/> UMBRELLA LIAB <input checked="" type="checkbox"/> OCCUR <input type="checkbox"/> EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE DED <input checked="" type="checkbox"/> RETENTION \$10,000			BE24238268	07/01/2015	07/01/2016	EACH OCCURRENCE	\$5,000,000
							AGGREGATE	\$5,000,000
C	<input checked="" type="checkbox"/> WORKERS COMPENSATION AND EMPLOYERS' LIABILITY <input type="checkbox"/> ANY PROPRIETOR / PARTNER / EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	Y/N N	N/A	WC015883699 Workers Compensation(AOS) WC015883700 Workers Compensation (CA)	07/01/2015	07/01/2016	<input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTHER	
A					07/01/2015	07/01/2016	E.L. EACH ACCIDENT	\$1,000,000
							E.L. DISEASE-EA EMPLOYEE	\$1,000,000
							E.L. DISEASE-POLICY LIMIT	\$1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

The Auto Liability policy includes Form CA9948 (Pollution Liability - Broadened Coverage for Covered Autos)

CERTIFICATE HOLDER**CANCELLATION**Sierra Chemical Co.
2302 Larkin Circle
Sparks NV 89431 USA

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

Aon Risk Services Central, Inc.

Holder Identifier :

Certificate No : 570058360530

Affirmative Action Policy

Statement of Policy

It is the policy of Sierra Chemical Co. to prohibit discrimination in its employment practices and to conduct its employment practices without any discrimination based on race, color, sex, age, handicap or national origin. Sierra Chemical Co. unequivocally supports the principles and spirit of equal employment opportunity based upon qualification, related experience, job pertinence, and relevant individual differences and not on the basis of non-relevant individual differences such as race, religion, national origin, handicap, sex or age. The goal of this company is to continue to administer its employment policy so that all qualified person are afforded an equal opportunity for employment or promotion without regard to race, religion, national origin, handicap, sex or age.

Application of Policy

Affirmative action applies to all employment practices, including recruiting, hiring, firing, layoffs, transfers, promotions, pay and benefits and to all client services.

Customer Discrimination

Statement of Policy

It is the policy of Sierra Chemical Co. to serve all customers without regard to race, color, sex, age, national origin or handicap.

Complaint Procedure

In the event any client or any person on behalf of a client alleges discrimination based on race, color, national origin, sex, age or handicap, whether such complaint is written or oral, such person shall be advised as follows:

1. Any person (s) alleging discrimination has a right to file a complaint setting forth the alleged discriminatory action.

Such a complaint shall contain:

1. The name, address, telephone number or other means of contracting the complainant.
2. The specific location and name of the entity delivering the program, service or benefit.
3. The nature of the complaint or actions (s) that led the complainant to feel discrimination was a factor.
4. Basis on which the complainant feels the discrimination occurred.
5. Names, titles and addresses of the persons who may have knowledge of the discriminatory actions.
6. The date (s) during which the alleged discriminatory action (s) occurred or the duration of each such action.

STANDARD AGREEMENT, PAGE 1 OF 2
BAY AREA CHEMICAL CONSORTIUM
BID NO. 11-2016
SUPPLY AND DELIVERY OF
WATER AND WASTEWATER TREATMENT POLYMERS

Bay Area Chemical Consortium (BACC)
c/o Dublin San Ramon Services District
Regional Wastewater Treatment Facility
7399 Johnson Drive
Pleasanton, CA 94588

Dear Sirs:

I hereby agree to furnish water and wastewater treatment polymers identified in the attached bid forms, as solicited by the Bay Area Chemical Consortium (BACC), to one or more of the participating BACC Agencies.

Company: Polydyne Inc.
Address: 1 Chemical Plant Road
City, State, ZIP: Riceboro, GA 31323
Phone: (912) 880-2035
Email: PolyBidDpt@snfhc.com
Authorized Representative: Mark Schlag, Vice-President
Signature: 
Date: 4/1/2016

WE ACKNOWLEDGE RECEIVING ADDENDUM/ADDENDA NUMBER None Received THROUGH _____.

SPECIFIC DEVIATIONS (if applicable, attach additional sheets if necessary):

STANDARD AGREEMENT, PAGE 2 OF 2

BIDDER INFORMATION

1. Legal Name of Bidder: Polydyne Inc.

2. Bidder's Street Address: 1 Chemical Plant Road, Riceboro, GA 31323

3. Mailing Address: 1 Chemical Plant Road, Riceboro, GA 31323

4. Business Telephone: (912) 880-2035 Fax Number: (912) 880-2078

5. Type of Supplier:
 - Sole Proprietor
 - Partnership
 - Corporation
 If Corporation, indicate State where incorporated: Delaware

6. Business License Number issued by the City where the Supplier's principal place of business is located.

Number: 124940LGB Issuing City: City of Atlanta, GA

7. Supplier Federal Tax Identification Number: 34-1810283

8. Emergency Contact: Name: Rawlin Castro, Regional Manager
 Phone Number: (415) 218-6089

9. Order Contact: Name: James Addington, Customer Service Representative
 Address: 1 Chemical Plant Road, Riceboro, GA 31323
 Phone Number: (912) 880-2035 Fax Number: (912) 880-2078
 Email: PolyBidDpt@snfhc.com

10. References:

<u>Company/Agency Name</u>	<u>Contact Name</u>	<u>Phone Number</u>
1) <u>City of Fresno, CA</u>	<u>Glenn Holder</u>	<u>(559) 621-5170</u>
2) <u>City of Sunnyvale, CA</u>	<u>Bryan Berdeen</u>	<u>(408) 730-7261</u>
3) <u>City of Hayward, CA</u>	<u>Ray Busch</u>	<u>(510) 293-5212</u>

11. Chemical Manufacturer's name and address (if different from Bidder):
Polydyne Inc. is the chemical manufacturer.

**Non-Collusion Affidavit
To Be Executed By Bidder and Submitted With Bid**

State of GEORGIA)
~~California~~) ss.
County of LIBERTY)

Mark Schlag, being first duly sworn, deposes and says that he or she is
(Contractor's Authorized Representative)

Vice-President of Polydyne Inc. the party making the
(Title of Representative) (Contractor's Name)

Foregoing bid that the bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation; that the bid is genuine and not collusive or sham; that the bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or that anyone shall refrain from bidding; that the bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bid, or to secure any advantage against the public body awarding the contract of anyone interested in the proposed contract; that all statements contained in the bid are true; and, further, that the bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid, and will not pay, any fee to any corporation, partnership, company association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid.

I declare under penalty of perjury under the laws of the state of California that the foregoing is true and correct.


Signature of: President, Secretary, Vice-President
Manager, Owner, or Representative

Subscribed and sworn to before me this, 1st Day of April, 20 16

Heather James
Signature of Notary Public In and For

My Commission Expires Dec. 14, 2019

The County of LIBERTY,
State of GEORGIA

All Signatures Must Be Witnessed By Notary

**BAY AREA CHEMICAL CONSORTIUM
BID FORM FOR BID NO. 11-2016, PAGE 1 OF 5**

Sealed bids must be enclosed in an envelope clearly marked:

**“BID FOR WATER AND WASTEWATER TREATMENT POLYMERS
BACC BID NO. 11-2016”**

And delivered to:

Louanne Ivy
Administrative Analyst – Operations
Dublin San Ramon Services District
Regional Wastewater Treatment Facility
7399 Johnson Drive
Pleasanton, CA 94588

No later than 9:00 A.M. PDT
Tuesday, April 5, 2016

Business Name: Polydyne Inc.

Business Address
1 Chemical Plant Road
Riceboro, GA 31323

Telephone Number: (912) 880-2035

Facsimile Number: (912) 880-2078

Email Address: PolyBidDpt@snfhc.com

Authorized Representative (Please Print):
Mark Schlag, Vice-President

Date: 4/1/2016

- I. All costs except California State sales tax for the purchase of water and wastewater treatment polymers must be included in the amount shown below on this Bid Form, including any and all mill assessments, fees, excise taxes, transportation charges, etc. Any exceptions to the bid must be noted under Specific Deviations on the Standard Agreement. Bidders shall submit bids in both \$/gallon and \$/lb.**

BACC Agencies: North Bay Locations

BACC Agency	Qualified Product	Unit Price Per Gallon	Unit Price Per LB
Central Contra Costa Sanitary District	Polydyne Clarifloc WE-385	\$ <u>5.43</u> /gallon 8.5 Lbs/Gal.	\$ <u>0.639</u> /LB
Central Contra Costa Sanitary District	Zetag 8819	\$ <u>N/A</u> /gallon	\$ _____ /LB
City of Martinez	CLAR-ION A7	\$ <u>N/A</u> /gallon	\$ _____ /LB
Contra Costa Water District	Polydyne Clarifloc C4410 or Equivalent	\$ <u>3.315</u> /gallon 8.5 Lbs/Gal.	\$ <u>0.390</u> /LB
Contra Costa Water District	Polydyne N3300-P or Equivalent	\$ <u>N/A</u> /gallon *Dry Polymer	\$ <u>1.75</u> /LB
Delta Diablo	Polydyne WE-223 Dry Polymer	\$ <u>N/A</u> /gallon *Dry Polymer	\$ <u>1.75</u> /LB
Delta Diablo	Polydyne WE-363 Liquid Polymer	\$ <u>9.18</u> /gallon 8.5 Lbs/Gal.	\$ <u>1.08</u> /LB
Ironhouse Sanitary District	Polydyne WE-1265	\$ <u>9.18</u> /gallon 8.5 Lbs/Gal.	\$ <u>1.08</u> /LB
Town of Discovery Bay	Praestol K279FLX	\$ <u>N/A</u> /gallon	\$ _____ /LB

**BAY AREA CHEMICAL CONSORTIUM
BID FORM FOR BID NO. 11-2016, PAGE 2 OF 5**

BACC Agencies: East Bay Locations

BACC Agency	Qualified Product	Unit Price Per Gallon	Unit Price Per LB
City of Hayward	Polydyne WE-1265	\$ <u>5.78</u> /gallon 8.5 Lbs/Gal.	\$ <u>0.680</u> /LB
City of Hayward	Polydyne C-6292	\$ <u>5.78</u> /gallon 8.5 Lbs/Gal.	\$ <u>0.680</u> /LB
City of Hayward	Zetag 8818	\$ <u>N/A</u> /gallon	\$ _____ /LB
City of Hayward	Zetag 8816	\$ <u>N/A</u> /gallon	\$ _____ /LB
Oro Loma Sanitary District	Polydyne WE-200	\$ <u>7.225</u> /gallon 8.5 Lbs/Gal.	\$ <u>0.850</u> /LB
Oro Loma Sanitary District	Polydyne WE-1265	\$ <u>7.225</u> /gallon 8.5 Lbs/Gal.	\$ <u>0.850</u> /LB
Union Sanitary District	Polydyne C-6267	\$ <u>5.43</u> /gallon 8.5 Lbs/Gal.	\$ <u>0.6390</u> /LB
Union Sanitary District	Polydyne WE-539	\$ <u>0.723</u> /gallon 8.41 Lbs/Gal.	\$ <u>0.086</u> /LB
Union Sanitary District	Zetag 8819	\$ <u>N/A</u> /gallon	\$ _____ /LB

BACC Agencies: South Bay Locations

BACC Agency	Qualified Product	Unit Price Per Gallon	Unit Price Per LB
City of Sunnyvale	Polydyne WE-717	\$ <u>5.43</u> /gallon 8.5 Lbs/Gal.	\$ <u>0.639</u> /LB
City of Sunnyvale	Kemira Superfloc C-1599	\$ <u>N/A</u> /gallon	\$ _____ /LB
City of Sunnyvale	Zetag 8819	\$ <u>N/A</u> /gallon	\$ _____ /LB
Santa Clara Valley Water District	Polydyne Clarifloc A-6320	\$ <u>N/A</u> /gallon *Dry Polymer	\$ <u>1.40</u> /LB
Santa Clara Valley Water District	Polydyne Clarifloc C-308P	\$ <u>2.92</u> /gallon 8.6 Lbs/Gal.	\$ <u>0.340</u> /LB
Santa Clara Valley Water District	Polydyne Clarifloc N120P	\$ <u>12.25</u> /gallon 8.75 Lbs/Gal.	\$ <u>1.40</u> /LB

BACC Agencies: Tri- Valley Locations

City of Livermore	Kemira PAX-XL19	\$ <u>N/A</u> /gallon	\$ _____ /LB
City of Livermore	CalChem CC2000	\$ <u>N/A</u> /gallon	\$ _____ /LB

**BAY AREA CHEMICAL CONSORTIUM
BID FORM FOR BID NO. 11-2016, PAGE 3 OF 5**

BACC Agencies: Tri-Valley Locations Cont'd

BACC Agency	Qualified Product	Unit Price Per Gallon	Unit Price Per LB
City of Livermore	Zetag 8818	\$ <u> N/A </u> /gallon	\$ <u> </u> /LB
City of Livermore	Polydyne WE-200	\$ <u> 5.43 </u> /gallon 8.5 Lbs/Gal.	\$ <u> 0.639 </u> /LB
Dublin San Ramon Services District	Kemira PAX-XL8 - Bulk	\$ <u> N/A </u> /gallon	\$ <u> </u> /LB
Dublin San Ramon Services District	Jenfitch JC 1679	\$ <u> N/A </u> /gallon	\$ <u> </u> /LB
Zone 7 Water Agency	Aries Tek Ltd. Superflock A-100 Dry Anionic Polymer	N/A	\$ <u> </u> /55 LB BAG
Zone 7 Water Agency	Polydyne Clarifloc A-3310 Dry Anionic Polymer	\$ <u> N/A </u> /gallon * Dry Polymer	\$ <u> 1.75 </u> /LB
Zone 7 Water Agency	Nalco CatFloc LS - Bulk	\$ <u> N/A </u> /gallon	\$ <u> </u> /LB
Zone 7 Water Agency	Nalco CatFloc 8102 PLUS - Bulk	\$ <u> N/A </u> /gallon	\$ <u> </u> /LB
Zone 7 Water Agency	Polydyne Clarifloc C-308P 20%	\$ <u> 3.35 </u> /gallon 8.6 Lbs/Gal.	\$ <u> 0.390 </u> /LB
Zone 7 Water Agency	Kemira PAX-XL19	\$ <u> N/A </u> /gallon	\$ <u> </u> /LB
Zone 7 Water Agency	CalChem CC2000	\$ <u> N/A </u> /gallon	\$ <u> </u> /LB
Zone 7 Water Agency	Sumaclear 1000	\$ <u> N/A </u> /gallon	\$ <u> </u> /LB
Zone 7 Water Agency	Hyper+lon 1090	\$ <u> N/A </u> /gallon	\$ <u> </u> /LB
Zone 7 Water Agency	SWT 2000	\$ <u> N/A </u> /gallon	\$ <u> </u> /LB
Zone 7 Water Agency	Polydyne A210-P	\$ <u> 8.36 </u> /gallon 8.8 Lbs/Gal.	\$ <u> 0.950 </u> /LB
Zone 7 Water Agency	Nalclear 7766 Plus (totes)	\$ <u> N/A </u> /gallon	\$ <u> </u> /LB
Zone 7 Water Agency	General Electric AE1115P	\$ <u> N/A </u> /gallon	\$ <u> </u> /LB

**BAY AREA CHEMICAL CONSORTIUM
 BID FORM FOR BID NO. 11-2016, PAGE 4 OF 5**

BACC Agencies: Peninsula Locations

BACC Agency	Qualified Product	Unit Price Per Gallon	Unit Price Per LB
City of Daly City/North San Mateo County Sanitation District	Polydyne C-9530	\$ <u>9.18</u> /gallon 8.5 Lbs/Gal.	\$ <u>1.08</u> /LB
City of Daly City/North San Mateo County Sanitation District	Polydyne WE-267	\$ <u>N/A</u> /gallon * Dry Polymer	\$ <u>1.75</u> /LB
City of Daly City/North San Mateo County Sanitation District	Polydyne WE-289	\$ <u>6.048</u> /gallon 11.2 Lbs/Gal.	\$ <u>0.540</u> /LB
City of Daly City/North San Mateo County Sanitation District	Polydyne WE-526	\$ <u>9.18</u> /gallon 8.5 Lbs/Gal.	\$ <u>1.08</u> /LB
City of South San Francisco	Polydyne WE-527	\$ <u>5.78</u> /gallon 8.5 Lbs/Gal.	\$ <u>0.680</u> /LB
City of South San Francisco	Polydyne WE-984	\$ <u>8.096</u> /gallon 8.8 Lbs/Gal.	\$ <u>0.920</u> /LB
City of South San Francisco	Zetag 8819	\$ <u>N/A</u> /gallon	\$ _____ /LB
Sewer Authority Mid-Coastside	Polydyne Clarifloc WE-250	\$ <u>9.18</u> /gallon 8.5 Lbs.Gal.	\$ <u>1.08</u> /LB

BACC Agencies: Central Valley Locations

BACC Agency	Qualified Product	Unit Price Per Gallon	Unit Price Per LB
City of Fresno	Polydyne Clarifloc WE-200	\$ <u>6.12</u> /gallon 8.5 Lbs/Gal.	\$ <u>0.720</u> /LB
City of Merced	Polydyne WE-1338	\$ <u>5.78</u> /gallon 8.5 Lbs/Gal.	\$ <u>0.680</u> /LB
City of Merced	BASF Zetag 8868FS	\$ <u>N/A</u> /gallon	\$ _____ /LB
City of Merced	Kemira Superfloc 4518	\$ <u>N/A</u> /gallon	\$ _____ /LB
City of Stockton	Polydyne NW-127	\$ <u>1.01</u> /gallon 8.41 Lbs/Gal.	\$ <u>0.120</u> /LB
City of Stockton	Polydyne WE-906	\$ <u>9.18</u> /gallon 8.5 Lbs/Gal.	\$ <u>1.08</u> /LB
City of Stockton	CalChem CC2000	\$ <u>N/A</u> /gallon	\$ _____ /LB

**BAY AREA CHEMICAL CONSORTIUM
 BID FORM FOR BID NO. 11-2016, PAGE 5 OF 5**

BACC Agencies: Sacramento Area Locations

BACC Agency	Qualified Product	Unit Price Per Gallon	Unit Price Per LB
City of Sacramento	Polydyne N3300-P	\$ <u> N/A </u> /gallon *Dry Polymer	\$ <u> 1.54 </u> /LB
City of Yuba City	NTU Technologies ProPac 9810	\$ <u> N/A </u> /gallon	\$ _____ /LB
City of Yuba City	Polydyne Clarifloc R-C-9530	\$ <u> 9.18 </u> /gallon 8.5 Lbs.Gal.	\$ <u> 1.08 </u> /LB

II. Bidders must submit all of the following, attached to this Bid Form:

- a. An affidavit of compliance to the appropriate American Water Works Association (AWWA) and/or National Sanitation Foundation (NSF) standard is required for all chemicals and polymers being provided for potable water treatment. Bidders must include a statement by the chemical manufacturer, signed by an authorized representative on letterhead stationery, attesting to the affidavit's validity. In lieu of submitting an affidavit of compliance with AWWA/NSF standards and a letter attesting to the affidavit's validity, a current printout from NSF.org is acceptable.
- b. A representative analysis of the chemical to be supplied, as prepared by a reputable outside laboratory or Bidder's in-house laboratory if ISO certified.
- c. Product Bulletin and Typical Properties.
- d. Safety Data Sheet (SDS).
- e. If applicable, the name, address, and contact information for the third party hauling company as well as an affidavit signed by the Bidder that the third party hauler can and will deliver the chemical to each and every participating BACC Agency.

WARRANTY STATEMENT

Polydyne Inc. warrants that all goods and services offered as part of Bid No. 11-2016 are readily available from the date of award through all mutually agreed upon option periods, and further guarantees replacement of any defective materials during said periods in conjunction with the statements on the Product Data Sheet and Safety Data Sheet.

Polydyne Inc. is dedicated to providing our customers with quality material on a timely basis. If at any time there are questions about Polydyne Inc. products or if technical assistance is required, please contact the Polydyne representative below:

Mr. Rawlin Castro, Regional Manager

24-Hour Contact

PH: (415) 218-6089

Customer Service: (800) 848-7659

Monday – Friday, 8:00 A.M. – 5:00 P.M., EST

AFFIDAVIT OF COMPLIANCE

Polydyne Inc. ("Polydyne") headquartered at One Chemical Plant Road, in Riceboro, Georgia, 31323 is a wholly owned subsidiary of SNF Holding Company ("SNFHC"). Polydyne is the largest supplier of water-soluble polymers to the municipal market in the United States. In addition to Polydyne, SNFHC operates nine manufacturing plants across the United States.

Polydyne Inc. hereby certifies that all Clarifloc products offered as part of Bid No. 11-2016 comply with all bid requirements, including delivery. These products also comply with all applicable AWWA specifications for purity as well as chemical and physical requirements.



Mark Schlag, Vice-President

Date: 4/1/2016

**WRITTEN CONSENT OF THE BOARD OF DIRECTORS
OF POLYDYNE INC.**

The undersigned, being all of the directors of Polydyne, Inc., a Delaware corporation (the "Corporation"), hereby approve and adopt the following resolutions by written consent:

Municipal Contract Authorization

RESOLVED, that Boyd Stanley, René Pich, Peter Nichols, James R. Carlson, Mark Schlag, Bobby Wise and Ken Luke be and hereby are authorized, empowered and directed to bid, in the name of and on behalf of the Corporation, upon such municipal projects as he may deem appropriate; and further

RESOLVED, that Boyd Stanley, René Pich, Peter Nichols, James R. Carlson, Mark Schlag, Bobby Wise and Ken Luke be and hereby are authorized and empowered to execute and deliver, in the name of and on behalf of the Corporation, all documents, instruments, certificates, agreements and papers as he may deem advisable or necessary or proper to effect the Corporation's municipal bids or the transactions contemplated thereby; and further

RESOLVED, that the President, Senior Vice President, Vice President, Secretary, Treasurer, and Assistant Secretary or Director of the Corporation be and hereby is authorized and empowered, and to the extent necessary or advisable, directed, to attest the execution of any document executed pursuant to these resolutions, and to affix the seal of the Corporation thereto, and to certify under seal to any municipality the adoption of these resolutions; and further

RESOLVED, that the authorizations granted under these resolutions shall expire on January 28, 2017.

IN WITNESS WHEREOF, the undersigned, constituting all of the directors of the Corporation, have executed this Consent the 28th day of January, 2015.



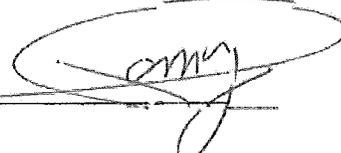
René Pich



Peter Nichols



René Hund

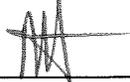


Pascal Remy



James R. Carlson

I attest to the authenticity of this copy of the Resolution of the Board of Directors. This resolution is still valid and in effect as of date signed.



Mark Schlag, Vice-President
Date: 4/1/2016

**Polydyne Inc.
General Information**

SS: 34-1810283

State of Incorporation: Delaware

Date of Incorporation: August 21, 1995

Administrative Offices: P.O. Box 279, 1 Chemical Plant Road
Riceboro, GA 31323

Payment Address: P.O. Box 404642
Atlanta, GA 30384-4642

Board of Directors

René Pich, Pascal Remy James R. Carlson, Peter Nichols, René Hund
--

Corporate Officers

President	Peter Nichols
Senior Vice-President, Secretary	James R. Carlson
Vice President Finance, Assistant Secretary, Treasurer	Mark Schlag

***Authorized Signers-Non Officers**

Boyd Stanley	Business Director
Bobby Wise	Controller
Ken Luke	Purchasing Director

Ownership Disclosure

Corporation	Percent Ownership	Owner
Polydyne Inc.	100	SNF Holding Company
SNF Holding Company	100	SPCM SA
SPCMSA	95	René Pich
	5	Other

Product Data

- NSF Listing
- Technical Bulletins
- Certificates of Analysis
- Safety Data Sheets



The Public Health and Safety Organization

NSF Product and Service Listings

These NSF Official Listings are current as of **Wednesday, March 30, 2016** 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?CompanyName=polydyne&>

NSF/ANSI 60 Drinking Water Treatment Chemicals - Health Effects

Polydyne Inc.

P.O. Box 279
Riceboro, GA 31323
United States
800-848-7659
724-728-1847

Facility : Newell, PA

Poly (Diallyldimethylammonium Chloride)(pDADMAC)

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
CLARIFLOC C-4410	Coagulation & Flocculation	100mg/L

Polydyne Incorporated

P.O. Box 279
Riceboro, GA 31323
United States
800-848-7659

Facility : # 88 USA

Polyaluminum Chloride[AL]

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Clarifloc® C-1100	Coagulation & Flocculation	250mg/L
Clarifloc® C-1200	Coagulation & Flocculation	250mg/L

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

Polymer Blends

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Clarifloc® C-1000	Coagulation & Flocculation	307mg/L
Clarifloc® C-1050	Coagulation & Flocculation	307mg/L
Clarifloc® C-1051	Coagulation & Flocculation	307mg/L
Clarifloc® C-1052	Coagulation & Flocculation	307mg/L
Clarifloc® C-1200	Coagulation & Flocculation	200mg/L
Clarifloc® C-1250	Coagulation & Flocculation	200mg/L
Clarifloc® C-1251	Coagulation & Flocculation	200mg/L
Clarifloc® C-1252	Coagulation & Flocculation	200mg/L
Clarifloc® C-1253	Coagulation & Flocculation	200mg/L
Clarifloc® C-1400	Coagulation & Flocculation	200mg/L
Clarifloc® C-1450	Coagulation & Flocculation	200mg/L
Clarifloc® C-1451	Coagulation & Flocculation	200mg/L
Clarifloc® C-1452	Coagulation & Flocculation	200mg/L
Clarifloc® C-1453	Coagulation & Flocculation	200mg/L
Clarifloc® C-1454	Coagulation & Flocculation	200mg/L
Clarifloc® C-1500	Coagulation & Flocculation	200mg/L
Clarifloc® C-1550	Coagulation & Flocculation	200mg/L
Clarifloc® C-1551	Coagulation & Flocculation	200mg/L
Clarifloc® C-1600	Coagulation & Flocculation	100mg/L
Clarifloc® C-1650	Coagulation & Flocculation	100mg/L
Clarifloc® C-1651	Coagulation & Flocculation	100mg/L
Clarifloc® C-1700	Coagulation & Flocculation	200mg/L
Clarifloc® C-1750	Coagulation & Flocculation	200mg/L
Clarifloc® C-1751	Coagulation & Flocculation	200mg/L
Clarifloc® C-1752	Coagulation & Flocculation	200mg/L
Clarifloc® C-1753	Coagulation & Flocculation	200mg/L
Clarifloc® C-1754	Coagulation & Flocculation	200mg/L
Clarifloc® C-5100	Coagulation & Flocculation	200mg/L
Clarifloc® PRXA01	Coagulation & Flocculation	307mg/L
Clarifloc® PRXA02	Coagulation & Flocculation	307mg/L
Clarifloc® PRXA03	Coagulation & Flocculation	307mg/L
Clarifloc® PRXA04	Coagulation & Flocculation	307mg/L
Clarifloc® PRXA05	Coagulation & Flocculation	307mg/L
Clarifloc® PRXA06	Coagulation & Flocculation	200mg/L
Clarifloc® PRXA07	Coagulation & Flocculation	200mg/L
Clarifloc® PRXA08	Coagulation & Flocculation	200mg/L
Clarifloc® PRXA09	Coagulation & Flocculation	200mg/L
Clarifloc® PRXA10	Coagulation & Flocculation	200mg/L
Clarifloc® PRXA11	Coagulation & Flocculation	100mg/L
Clarifloc® PRXA12	Coagulation & Flocculation	100mg/L
Clarifloc® PRXA13	Coagulation & Flocculation	100mg/L
Clarifloc® PRXA14	Coagulation & Flocculation	100mg/L
Clarifloc® PRXA15	Coagulation & Flocculation	100mg/L

Clarifloc® PRXA16	Coagulation & Flocculation	50mg/L
Clarifloc® PRXA17	Coagulation & Flocculation	50mg/L
Clarifloc® PRXA18	Coagulation & Flocculation	50mg/L
Clarifloc® PRXA19	Coagulation & Flocculation	50mg/L
Clarifloc® PRXA20	Coagulation & Flocculation	50mg/L
Clarifloc® PRXB01	Coagulation & Flocculation	200mg/L
Clarifloc® PRXB02	Coagulation & Flocculation	200mg/L
Clarifloc® PRXB03	Coagulation & Flocculation	200mg/L
Clarifloc® PRXB04	Coagulation & Flocculation	200mg/L
Clarifloc® PRXB05	Coagulation & Flocculation	200mg/L
Clarifloc® PRXB06	Coagulation & Flocculation	100mg/L
Clarifloc® PRXB07	Coagulation & Flocculation	100mg/L
Clarifloc® PRXB08	Coagulation & Flocculation	100mg/L
Clarifloc® PRXB09	Coagulation & Flocculation	100mg/L
Clarifloc® PRXB10	Coagulation & Flocculation	100mg/L
Clarifloc® PRXB11	Coagulation & Flocculation	60mg/L
Clarifloc® PRXB12	Coagulation & Flocculation	60mg/L
Clarifloc® PRXB13	Coagulation & Flocculation	60mg/L
Clarifloc® PRXB14	Coagulation & Flocculation	60mg/L
Clarifloc® PRXB15	Coagulation & Flocculation	60mg/L
Clarifloc® PRXB16	Coagulation & Flocculation	40mg/L
Clarifloc® PRXB17	Coagulation & Flocculation	40mg/L
Clarifloc® PRXB18	Coagulation & Flocculation	40mg/L
Clarifloc® PRXB19	Coagulation & Flocculation	40mg/L
Clarifloc® PRXB20	Coagulation & Flocculation	40mg/L
Clarifloc® PRXB21	Coagulation & Flocculation	40mg/L
Clarifloc® PRXB22	Coagulation & Flocculation	40mg/L
Clarifloc® PRXB23	Coagulation & Flocculation	40mg/L
Clarifloc® PRXB24	Coagulation & Flocculation	40mg/L
Clarifloc® PRXB25	Coagulation & Flocculation	200mg/L
Clarifloc® PRXB26	Coagulation & Flocculation	200mg/L
Clarifloc® PRXB27	Coagulation & Flocculation	200mg/L
Clarifloc® PRXB28	Coagulation & Flocculation	200mg/L
Clarifloc® PRXB29	Coagulation & Flocculation	200mg/L
Clarifloc® PRXB30	Coagulation & Flocculation	100mg/L
Clarifloc® PRXB31	Coagulation & Flocculation	100mg/L
Clarifloc® PRXB32	Coagulation & Flocculation	100mg/L
Clarifloc® PRXB33	Coagulation & Flocculation	100mg/L
Clarifloc® PRXB34	Coagulation & Flocculation	100mg/L
Clarifloc® PRXB35	Coagulation & Flocculation	100mg/L
Clarifloc® PRXC01	Coagulation & Flocculation	200mg/L
Clarifloc® PRXC02	Coagulation & Flocculation	200mg/L
Clarifloc® PRXC03	Coagulation & Flocculation	200mg/L
Clarifloc® PRXC04	Coagulation & Flocculation	200mg/L
Clarifloc® PRXC05	Coagulation & Flocculation	200mg/L
Clarifloc® PRXC06	Coagulation & Flocculation	100mg/L
Clarifloc® PRXC07	Coagulation & Flocculation	100mg/L
Clarifloc® PRXC08	Coagulation & Flocculation	100mg/L
Clarifloc® PRXC09	Coagulation & Flocculation	100mg/L
Clarifloc® PRXC10	Coagulation & Flocculation	100mg/L

Clarifloc® PRXC11	Coagulation & Flocculation	60mg/L
Clarifloc® PRXC12	Coagulation & Flocculation	60mg/L
Clarifloc® PRXC13	Coagulation & Flocculation	60mg/L
Clarifloc® PRXC14	Coagulation & Flocculation	60mg/L
Clarifloc® PRXC15	Coagulation & Flocculation	60mg/L
Clarifloc® PRXC16	Coagulation & Flocculation	40mg/L
Clarifloc® PRXC17	Coagulation & Flocculation	40mg/L
Clarifloc® PRXC18	Coagulation & Flocculation	40mg/L
Clarifloc® PRXC19	Coagulation & Flocculation	40mg/L
Clarifloc® PRXC20	Coagulation & Flocculation	40mg/L
Clarifloc® PRXD01	Coagulation & Flocculation	200mg/L
Clarifloc® PRXD02	Coagulation & Flocculation	200mg/L
Clarifloc® PRXD03	Coagulation & Flocculation	100mg/L
Clarifloc® PRXD04	Coagulation & Flocculation	100mg/L
Clarifloc® PRXD05	Coagulation & Flocculation	100mg/L
Clarifloc® PRXD06	Coagulation & Flocculation	100mg/L
Clarifloc® PRXD07	Coagulation & Flocculation	100mg/L
Clarifloc® PRXD08	Coagulation & Flocculation	200mg/L
Clarifloc® PRXD09	Coagulation & Flocculation	200mg/L
Clarifloc® PRXD10	Coagulation & Flocculation	200mg/L

Polydyne Incorporated

P.O. Box 279

Riceboro, GA 31323

United States

800-848-7659

Facility : # 88 USA

Polymer Blends[AL] [PY]

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Clarifloc® 12781	Coagulation & Flocculation	40mg/L
Clarifloc® 12976	Coagulation & Flocculation	40mg/L
Clarifloc® 12980	Coagulation & Flocculation	40mg/L
Clarifloc® 13276	Coagulation & Flocculation	250mg/L
Clarifloc® 13280	Coagulation & Flocculation	40mg/L
Clarifloc® 13281	Coagulation & Flocculation	31mg/L
Clarifloc® 14476	Coagulation & Flocculation	142mg/L
Clarifloc® 14480	Coagulation & Flocculation	50mg/L
Clarifloc® 14481	Coagulation & Flocculation	50mg/L
Clarifloc® 14681	Coagulation & Flocculation	125mg/L
Clarifloc® C-1005	Coagulation & Flocculation	155mg/L
Clarifloc® C-1010	Coagulation & Flocculation	163mg/L
Clarifloc® C-1015	Coagulation & Flocculation	118mg/L
Clarifloc® C-1020	Coagulation & Flocculation	91mg/L
Clarifloc® C-1025	Coagulation & Flocculation	74mg/L

Clarifloc® C-1150H	Coagulation & Flocculation	40mg/L
Clarifloc® C-1309H	Coagulation & Flocculation	250mg/L
Clarifloc® C-2005	Coagulation & Flocculation	155mg/L
Clarifloc® C-2010	Coagulation & Flocculation	163mg/L
Clarifloc® C-2015	Coagulation & Flocculation	147mg/L
Clarifloc® C-2020	Coagulation & Flocculation	114mg/L
Clarifloc® C-2110	Coagulation & Flocculation	50mg/L
Clarifloc® C-2220H	Coagulation & Flocculation	125mg/L
Clarifloc® C-2238	Coagulation & Flocculation	50mg/L
Clarifloc® C-2317	Coagulation & Flocculation	142mg/L
Clarifloc® C-5025	Coagulation & Flocculation	163mg/L

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

[PY] Polyamines Certified by NSF International comply with 40 CFR 141.111 requirements for percent monomer and dose.

Polydyne Incorporated

P.O. Box 279

Riceboro, GA 31323

United States

800-848-7659

[Visit this company's website \(http://www.polydyneinc.com\)](http://www.polydyneinc.com)

Facility : Los Angeles, CA

Poly (Diallyldimethylammonium Chloride)(pDADMAC)

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Clarifloc® C-308P	Coagulation & Flocculation	50 mg/L
Clarifloc® C-318	Coagulation & Flocculation	25 mg/L
Clarifloc® C-318P	Coagulation & Flocculation	25mg/L
Clarifloc® C-328	Coagulation & Flocculation	83mg/L
Clarifloc® C-338	Coagulation & Flocculation	50 mg/L
Clarifloc® C-348	Coagulation & Flocculation	25 mg/L
Clarifloc® C-358	Coagulation & Flocculation	50 mg/L
Clarifloc® C-368	Coagulation & Flocculation	29mg/L
Clarifloc® C-378	Coagulation & Flocculation	50mg/L
Clarifloc® C-388	Coagulation & Flocculation	100mg/L
Clarifloc® C-4410	Coagulation & Flocculation	100mg/L
Clarifloc® C-4411	Coagulation & Flocculation	91mg/L
Clarifloc® C-4412	Coagulation & Flocculation	83mg/L
Clarifloc® C-4413	Coagulation & Flocculation	77mg/L
Clarifloc® C-4414	Coagulation & Flocculation	72mg/L
Clarifloc® C-4415	Coagulation & Flocculation	67mg/L
Clarifloc® C-4416	Coagulation & Flocculation	62mg/L

Clarifloc® C-4417	Coagulation & Flocculation	59mg/L
Clarifloc® C-4418	Coagulation & Flocculation	56mg/L
Clarifloc® C-4419	Coagulation & Flocculation	53mg/L
Clarifloc® C-4420	Coagulation & Flocculation	50mg/L
Clarifloc® C-4422	Coagulation & Flocculation	46mg/L
Clarifloc® C-4424	Coagulation & Flocculation	42mg/L
Clarifloc® C-4426	Coagulation & Flocculation	39mg/L
Clarifloc® C-4428	Coagulation & Flocculation	36mg/L
Clarifloc® C-4430	Coagulation & Flocculation	33mg/L
Clarifloc® C-4435	Coagulation & Flocculation	29mg/L
Clarifloc® C-4440	Coagulation & Flocculation	25mg/L
Clarifloc® LF-3541	Coagulation & Flocculation	100 mg/L

Polyacrylamide[PC]

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Clarifloc® A-6320	Coagulation & Flocculation	3mg/L
Clarifloc® N-120P	Coagulation & Flocculation	3mg/L
Clarifloc® N-6310	Coagulation & Flocculation	3 mg/L
FLOPAM™ EM 230 PWG	Coagulation & Flocculation	3mg/L
FLOPAM™ EM 235 PWG	Coagulation & Flocculation	3mg/L

[PC] Polyacrylamide Products Certified by NSF International comply with 40 CFR 141.111 requirements for percent monomer and dose.

Facility : Riceboro, GA**Miscellaneous Water Supply Products[1] [2]**

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Floperse 30 S	Well Cleaning Aid Well Drilling Aid	NA

[1] This product is designed to be flushed out prior to using the system for drinking water. The well is to be properly flushed and drained before being placed into service. This product is to be used according to the manufacturer's use instructions.

[2] These products are designed to be flushed out prior to using the system for drinking water. Before being placed into service, the well is to be properly flushed according to the manufacturer's use instructions. Certification of these products is based on the well drilling model with the following assumptions:

- The amount of well drilling fluid used is 3780 L (1000 U.S. gallons) to which the drilling fluid has been added at the manufacturer's recommended level.
- The aquifer contains 3.1 million liters of water (815,000 gallons) based on a 0.5 acre aquifer of 6.1 meter depth (20 ft.) and 25% porosity.
- The bore hole is 61 meters in total depth (200 ft.), the screen is 6.1 meters in length (20 ft.), and the bore hole is 25.4 cm. in diameter (10 in.).
- The amount of well drilling fluid removed from the well during construction is equal to the combined volumes of the casing and the screen, plus an additional amount

removed through the well disinfection and development (90% removed).

- This product should not be used in constructing wells in highly porous formations, such as cavernous limestone.

Poly (Diallyldimethylammonium Chloride)(pDADMAC)

Trade Designation	Product Function	Max Use
Clarifloc® C-308P	Coagulation & Flocculation	50mg/L
Clarifloc® C-318	Coagulation & Flocculation	25mg/L
Clarifloc® C-328	Coagulation & Flocculation	83mg/L
Clarifloc® C-338	Coagulation & Flocculation	50mg/L
Clarifloc® C-348	Coagulation & Flocculation	25mg/L
Clarifloc® C-358	Coagulation & Flocculation	50mg/L
Clarifloc® C-368	Coagulation & Flocculation	29mg/L
Clarifloc® C-378	Coagulation & Flocculation	50mg/L
Clarifloc® C-388	Coagulation & Flocculation	100mg/L
Clarifloc® C-398	Coagulation & Flocculation	29mg/L
Clarifloc® C-4408	Coagulation & Flocculation	125mg/L
Clarifloc® C-4410	Coagulation & Flocculation	100mg/L
Clarifloc® C-4411	Coagulation & Flocculation	91mg/L
Clarifloc® C-4412	Coagulation & Flocculation	83mg/L
Clarifloc® C-4413	Coagulation & Flocculation	77mg/L
Clarifloc® C-4414	Coagulation & Flocculation	72mg/L
Clarifloc® C-4415	Coagulation & Flocculation	67mg/L
Clarifloc® C-4416	Coagulation & Flocculation	62mg/L
Clarifloc® C-4417	Coagulation & Flocculation	59mg/L
Clarifloc® C-4418	Coagulation & Flocculation	56mg/L
Clarifloc® C-4419	Coagulation & Flocculation	53mg/L
Clarifloc® C-4420	Coagulation & Flocculation	50mg/L
Clarifloc® C-4422	Coagulation & Flocculation	46mg/L
Clarifloc® C-4424	Coagulation & Flocculation	42mg/L
Clarifloc® C-4426	Coagulation & Flocculation	39mg/L
Clarifloc® C-4428	Coagulation & Flocculation	36mg/L
Clarifloc® C-4430	Coagulation & Flocculation	33mg/L
Clarifloc® C-4435	Coagulation & Flocculation	29mg/L
Clarifloc® C-4440	Coagulation & Flocculation	25mg/L
Clarifloc® LF-3541	Coagulation & Flocculation	100mg/L

Polyacrylamide[PC]

Trade Designation	Product Function	Max Use
Clarifloc® A-210P	Coagulation & Flocculation	3 mg/L
Clarifloc® A-3301	Coagulation & Flocculation	1 mg/L
Clarifloc® A-3308	Coagulation & Flocculation	1 mg/L
Clarifloc® A-3310	Coagulation & Flocculation	1 mg/L
Clarifloc® A-3320	Coagulation & Flocculation	1 mg/L
Clarifloc® A-3333P	Coagulation & Flocculation	1 mg/L
Clarifloc® A-3340	Coagulation & Flocculation	1 mg/L
Clarifloc® A-3360	Coagulation & Flocculation	1mg/L
Clarifloc® A-6270	Coagulation & Flocculation	3mg/L
Clarifloc® A-6320	Coagulation & Flocculation	3 mg/L

Clarifloc® A-6330	Coagulation & Flocculation	3 mg/L
Clarifloc® A-6335	Coagulation & Flocculation	3mg/L
Clarifloc® A-6340	Coagulation & Flocculation	1 mg/L
Clarifloc® A-6355	Coagulation & Flocculation	3mg/L
Clarifloc® A-6360	Coagulation & Flocculation	3 mg/L
Clarifloc® C-3203	Coagulation & Flocculation	1mg/L
Clarifloc® C-3205	Coagulation & Flocculation	1 mg/L
Clarifloc® C-3210	Coagulation & Flocculation	1 mg/L
Clarifloc® C-3223	Coagulation & Flocculation	1 mg/L
Clarifloc® C-3226	Coagulation & Flocculation	1mg/L
Clarifloc® C-3230	Coagulation & Flocculation	1 mg/L
Clarifloc® C-3257	Coagulation & Flocculation	1 mg/L
Clarifloc® C-3280	Coagulation & Flocculation	1 mg/L
Clarifloc® C-6203	Coagulation & Flocculation	1 mg/L
Clarifloc® C-6210	Coagulation & Flocculation	3 mg/L
Clarifloc® C-6215	Coagulation & Flocculation	3mg/L
Clarifloc® C-6220	Coagulation & Flocculation	3 mg/L
Clarifloc® C-6240	Coagulation & Flocculation	3 mg/L
Clarifloc® C-6260	Coagulation & Flocculation	3 mg/L
Clarifloc® C-6265 PWG	Coagulation & Flocculation	3mg/L
Clarifloc® C-6266 PWG	Coagulation & Flocculation	3mg/L
Clarifloc® N-120P	Coagulation & Flocculation	3 mg/L
Clarifloc® N-3300P	Coagulation & Flocculation	1 mg/L
Clarifloc® N-6310	Coagulation & Flocculation	3 mg/L

[PC] Polyacrylamide Products Certified by NSF International comply with 40 CFR 141.111 requirements for percent monomer and dose.

Polyamines[PY]

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Clarifloc® C-309P	Coagulation & Flocculation	20mg/L
Clarifloc® C-319	Coagulation & Flocculation	20mg/L
Clarifloc® C-329	Coagulation & Flocculation	13mg/L
Clarifloc® C-339	Coagulation & Flocculation	20mg/L
Clarifloc® C-349	Coagulation & Flocculation	13mg/L
Clarifloc® C-359	Coagulation & Flocculation	20mg/L
Clarifloc® C-379	Coagulation & Flocculation	13mg/L
Clarifloc® C-389	Coagulation & Flocculation	20mg/L
Clarifloc® C-399	Coagulation & Flocculation	20mg/L
FLOQUAT™ FL 3050 PWG	Coagulation & Flocculation	20mg/L
PRP 3050	Coagulation & Flocculation	20mg/L

[PY] Polyamines Certified by NSF International comply with 40 CFR 141.111 requirements for percent monomer and dose.

Sodium Polyacrylate[1] [2]

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
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Flosperse 30

Distillation Antiscalant
Reverse Osmosis Antiscalant

20mg/L

- [1] This product is designed to be flushed out prior to using the system for drinking water. The well is to be properly flushed and drained before being placed into service. This product is to be used according to the manufacturer's use instructions.
- [2] These products are designed to be flushed out prior to using the system for drinking water. Before being placed into service, the well is to be properly flushed according to the manufacturer's use instructions. Certification of these products is based on the well drilling model with the following assumptions:
- The amount of well drilling fluid used is 3780 L (1000 U.S. gallons) to which the drilling fluid has been added at the manufacturer's recommended level.
 - The aquifer contains 3.1 million liters of water (815,000 gallons) based on a 0.5 acre aquifer of 6.1 meter depth (20 ft.) and 25% porosity.
 - The bore hole is 61 meters in total depth (200 ft.), the screen is 6.1 meters in length (20 ft.), and the bore hole is 25.4 cm. in diameter (10 in.).
 - The amount of well drilling fluid removed from the well during construction is equal to the combined volumes of the casing and the screen, plus an additional amount removed through the well disinfection and development (90% removed).
 - This product should not be used in constructing wells in highly porous formations, such as cavernous limestone.

Facility : Dolton, IL**Poly (Diallyldimethylammonium Chloride)(pDADMAC)**

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Clarifloc® C-308P	Coagulation & Flocculation	46mg/L
Clarifloc® C-318	Coagulation & Flocculation	25mg/L
Clarifloc® C-328	Coagulation & Flocculation	76mg/L
Clarifloc® C-378	Coagulation & Flocculation	50mg/L
Clarifloc® C-4408	Coagulation & Flocculation	125mg/L
Clarifloc® C-4410	Coagulation & Flocculation	92mg/L
Clarifloc® C-4411	Coagulation & Flocculation	91mg/L
Clarifloc® C-4412	Coagulation & Flocculation	76mg/L
Clarifloc® C-4413	Coagulation & Flocculation	77mg/L
Clarifloc® C-4414	Coagulation & Flocculation	72mg/L
Clarifloc® C-4415	Coagulation & Flocculation	67mg/L
Clarifloc® C-4416	Coagulation & Flocculation	62mg/L
Clarifloc® C-4417	Coagulation & Flocculation	59mg/L
Clarifloc® C-4418	Coagulation & Flocculation	56mg/L
Clarifloc® C-4419	Coagulation & Flocculation	53mg/L
Clarifloc® C-4420	Coagulation & Flocculation	46mg/L
Clarifloc® C-4422	Coagulation & Flocculation	46mg/L
Clarifloc® C-4424	Coagulation & Flocculation	42mg/L
Clarifloc® C-4426	Coagulation & Flocculation	39mg/L
Clarifloc® C-4428	Coagulation & Flocculation	36mg/L
Clarifloc® C-4430	Coagulation & Flocculation	33mg/L

Clarifloc® C-4435	Coagulation & Flocculation	29mg/L
Clarifloc® C-4440	Coagulation & Flocculation	25mg/L
Clarifloc® LF-3541	Coagulation & Flocculation	100mg/L

Facility : Plaquemine, LA**Polyacrylamide[PC]**

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Clarifloc A-210P	Coagulation & Flocculation	3mg/L

[PC] Polyacrylamide Products Certified by NSF International comply with 40 CFR 141.111 requirements for percent monomer and dose.

Facility : Pearlinton, MS**Poly (Diallyldimethylammonium Chloride)(pDADMAC)**

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Clarifloc® C-308P	Coagulation & Flocculation	50mg/L
Clarifloc® C-318	Coagulation & Flocculation	25mg/L
Clarifloc® C-328	Coagulation & Flocculation	83mg/L
Clarifloc® C-338	Coagulation & Flocculation	50mg/L
Clarifloc® C-348	Coagulation & Flocculation	25mg/L
Clarifloc® C-358	Coagulation & Flocculation	50mg/L
Clarifloc® C-368	Coagulation & Flocculation	29mg/L
Clarifloc® C-378	Coagulation & Flocculation	50mg/L
Clarifloc® C-388	Coagulation & Flocculation	100mg/L
Clarifloc® C-398	Coagulation & Flocculation	29mg/L
Clarifloc® C-4135	Coagulation & Flocculation	29mg/L
Clarifloc® C-4408	Coagulation & Flocculation	125mg/L
Clarifloc® C-4410	Coagulation & Flocculation	100mg/L
Clarifloc® C-4411	Coagulation & Flocculation	91mg/L
Clarifloc® C-4412	Coagulation & Flocculation	83mg/L
Clarifloc® C-4413	Coagulation & Flocculation	77mg/L
Clarifloc® C-4414	Coagulation & Flocculation	71mg/L
Clarifloc® C-4415	Coagulation & Flocculation	67mg/L
Clarifloc® C-4416	Coagulation & Flocculation	62mg/L
Clarifloc® C-4417	Coagulation & Flocculation	59mg/L
Clarifloc® C-4418	Coagulation & Flocculation	56mg/L
Clarifloc® C-4419	Coagulation & Flocculation	53mg/L
Clarifloc® C-4420	Coagulation & Flocculation	50mg/L
Clarifloc® C-4422	Coagulation & Flocculation	46mg/L
Clarifloc® C-4424	Coagulation & Flocculation	42mg/L
Clarifloc® C-4426	Coagulation & Flocculation	39mg/L
Clarifloc® C-4428	Coagulation & Flocculation	36mg/L
Clarifloc® C-4430	Coagulation & Flocculation	33mg/L

Clarifloc® C-4435	Coagulation & Flocculation	29mg/L
Clarifloc® C-4440	Coagulation & Flocculation	25mg/L
Clarifloc® LF-3541	Coagulation & Flocculation	100mg/L

Polyamines[PY]

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Clarifloc® C-309D	Coagulation & Flocculation	32mg/L
Clarifloc® C-309P	Coagulation & Flocculation	20mg/L
Clarifloc® C-319	Coagulation & Flocculation	20mg/L
Clarifloc® C-329	Coagulation & Flocculation	20mg/L
Clarifloc® C-339	Coagulation & Flocculation	20mg/L
Clarifloc® C-349	Coagulation & Flocculation	8mg/L
Clarifloc® C-359	Coagulation & Flocculation	20mg/L
Clarifloc® C-379	Coagulation & Flocculation	20mg/L
Clarifloc® C-389	Coagulation & Flocculation	20mg/L
Clarifloc® C-399	Coagulation & Flocculation	20mg/L
FLOQUAT™ FL 3050 PWG	Coagulation & Flocculation	20mg/L
PRP 3050	Coagulation & Flocculation	20mg/L

[PY] Polyamines Certified by NSF International comply with 40 CFR 141.111 requirements for percent monomer and dose.

Polydyne, Incorporated

P.O. Box 279
Riceboro, GA 31323
United States
800-848-7659
800-848-7659

Facility : # 15 USA

Polymer Blends[AL] [PY]

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Clarifloc® C-2005	Coagulation & Flocculation	400mg/L
Clarifloc® C-2015	Coagulation & Flocculation	333mg/L

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

[PY] Polyamines Certified by NSF International comply with 40 CFR 141.111 requirements for percent monomer and dose.

Facility : # 25 USA

Polyaluminum Chloride[AL]

Trade Designation	Product Function	Max Use
Clarifloc® C-1252	Coagulation & Flocculation	250mg/L
Clarifloc® C-1253	Coagulation & Flocculation	250mg/L
Clarifloc® C-1254	Coagulation & Flocculation	250mg/L
Clarifloc® C-1310	Coagulation & Flocculation	250mg/L
Clarifloc® C-1400	Coagulation & Flocculation	250mg/L
Clarifloc® C-1452	Coagulation & Flocculation	250mg/L
Clarifloc® C-1550	Coagulation & Flocculation	250mg/L
Clarifloc® C-1552	Coagulation & Flocculation	250mg/L
Clarifloc® C-1650	Coagulation & Flocculation	250mg/L
Clarifloc® C-1651	Coagulation & Flocculation	250mg/L
Clarifloc® C-1700	Coagulation & Flocculation	250mg/L

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

Number of matching Manufacturers is 5

Number of matching Products is 334

Processing time was 1 seconds

STANDARD AGREEMENT, PAGE 1 OF 2
BAY AREA CHEMICAL CONSORTIUM
BID NO. 14-2016
SUPPLY AND DELIVERY OF 12.5% SODIUM HYPOCHLORITE

Bay Area Chemical Consortium (BACC)
c/o Dublin San Ramon Services District
Regional Wastewater Treatment Facility
7399 Johnson Drive
Pleasanton, CA 94588

Dear Sirs:

I hereby agree to furnish sodium hypochlorite identified in the attached bid forms, as solicited by the Bay Area Chemical Consortium (BACC), to one or more of the participating BACC Agencies.

Company: Olin Corporation, dba Olin Chlor Alkali Products

Address: 26700 South Banta Road

City, State, ZIP: Tracy, CA 95304

Phone: 209-835-7204

Email: JMSchabacker@olin.com

Authorized Representative: Frank W. Chirumbole, President, Chlor Alkali Products

Signature: *FW Chirumbole*

Date: *Mar 3, 2016*

WE ACKNOWLEDGE RECEIVING ADDENDUM/ADDENDA NUMBER _____ THROUGH _____.

SPECIFIC DEVIATIONS (if applicable, attach additional sheets if necessary):

See attached.

BACC Chemical Bid Specific Deviations

BACC Bid 14-2016 – Sodium Hypochlorite

Olin is the largest producer/supplier of bulk sodium hypochlorite to municipal water treatment in North America and the state of California. We have successfully serviced most of the requirements of the BACC membership at one time or another in recent years. We are committed to comply with the inclusive intent of this bid and shall make good faith efforts to mutually work together with any and all members of the BACC on servicing their unique requirements if recommended for award of their business. Since there are some individual physical requirements that we are unfamiliar with, we will need to review and mutually agree on these case by case with individual members as advised in the Q&A. These may possibly include such things as follow:

- Unattended deliveries at unmanned sites to be mutually agreed upon case by case.
- Delivery requirements at sites requiring metering or other non-standard specialized delivery equipment requirements.
- Product samples, when required for shipments, would need to be mutually agreed upon so as to provide a safe and secure process for samples to be supplied to protect drivers, attendants and the environment.

In addition, we would request consideration of the following issues:

- We would like to see the product specifications consistently align with meeting limits in current published NSF STD 60 and AWWA standards. Product is produced in a continuous manufacturing process and making product to individual specifications by customer is not reasonably possible for standard operations. There are a few specific member agencies whose individual product specifications may vary from these defined industry standards and we're willing to discuss our capabilities case by case.
- We would request "insoluble matter" be removed from individual COA's reporting as this component is already managed through the "Filtration Limitations" testing noted on page 20. It cannot be analyzed and reported on the COA for every individual load without interrupting processes and delivery of orders. We have SPC data on regular sampling available upon request.
- Acceptance of orders delivered within 48-72 hours as a standard and 24 hours in emergencies.
- Review and mutual agreement of member insurance requirements case by case.

Bid pricing is for a min. 2,000+ gals., one-stop bulk deliveries. Additional carrier charges for smaller shipments may apply as follow:

- Shipments < 2,000 gals. may incur up to a \$350 freight adder per shipment in addition to the bulk bid price.
- Shipments requiring more than one pump-off stop may incur multi-stop carrier charges of \$50/stop after one free stop per shipment.

**STANDARD AGREEMENT, PAGE 2 OF 2
BIDDER INFORMATION**

- 1. Legal Name of Bidder:
Olin Corporation, dba Olin Chlor Alkali Products

- 2. Bidder's Street Address:
26700 South Banta Road, Tracy, CA 95304

- 3. Mailing Address:
Same

- 4. Business Telephone: 209-835-7204 Fax Number: 209-835-9760

- 5. Type of Supplier:
 Sole Proprietor Partnership Corporation
 If Corporation, indicate State where incorporated: Virginia

- 6. Business License Number issued by the City where the Supplier's principal place of business is located.
 Number: 38090 Issuing City: Tracy, CA

- 7. Supplier Federal Tax Identification Number: 13-1872319

- 8. Emergency Contact: Name: Chemtrec
 Phone Number: 800-424-9300

- 9. Order Contact: Name: Customer Service
 Address: 26700 South Banta Road, Tracy, CA 95304
 Phone Number: 800-753-3669 Fax Number: 800-723-5423
 Email: TracyOrders@olin.com

- 10. References:

<u>Company/Agency Name</u>	<u>Contact Name</u>	<u>Phone Number</u>
1) <u>City & County of San Francisco</u>	<u>Abby Fard, Purchaser</u>	<u>415-551-2971</u>
2) <u>City of Santa Rosa</u>	<u>Jennifer Myles, Sr. Buyer</u>	<u>707-543-3709</u>
3) <u>Modesto Irrigation District</u>	<u>Sharon Garcia-Hazer, Buyer</u>	<u>209-526-7686</u>

- 11. Chemical Manufacturer's name and address (if different from Bidder):

**Non-Collusion Affidavit
To Be Executed By Bidder and Submitted With Bid**

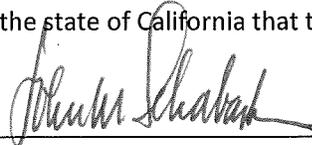
State of California)
) ss.
County of San Joaquin)

John M. Schabacker, being first duly sworn, deposes and says that he or she is
(Contractor's Authorized Representative)

Business Director of Olin Corporation the party making the
(Title of Representative) (Contractor's Name)

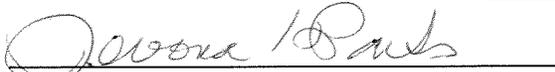
Foregoing bid that the bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation; that the bid is genuine and not collusive or sham; that the bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or that anyone shall refrain from bidding; that the bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bid, or to secure any advantage against the public body awarding the contract of anyone interested in the proposed contract; that all statements contained in the bid are true; and, further, that the bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid, and will not pay, any fee to any corporation, partnership, company association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid.

I declare under penalty of perjury under the laws of the state of California that the foregoing is true and correct.



Signature of: President, Secretary,
Manager, Owner, or Representative

Subscribed and sworn to before me this, 31st Day of March, 20 16



Signature of Notary Public In and For

SEE OFFICIAL CALIFORNIA JURAT (attached)

The County of San Joaquin,

State of California

All Signatures Must Be Witnessed By Notary

BAY AREA CHEMICAL CONSORTIUM
BID FORM FOR BID NO. 14-2016, PAGE 1 OF 3

Sealed bids must be enclosed in an envelope clearly marked:

"BID FOR 12.5% SODIUM HYPOCHLORITE BACC BID NO. 14-2016"

And delivered to:

Louanne Ivy
Administrative Analyst – Operations
Dublin San Ramon Services District
Regional Wastewater Treatment Facility
7399 Johnson Drive
Pleasanton, CA 94588

No later than 9:00 A.M. PDT
Tuesday, April 5, 2016

Business Name: Olin Corporation, dba Olin Chlor Alkali Products

Business Address
26700 South Banta Road
Tracy, CA 95304

Telephone Number: 209-835-7204

Facsimile Number: 209-835-9760

Email Address: JMSchabacker@olin.com

Authorized Representative (Please Print):
John M. Schabacker, Business Director

Date: 4/1/16

I. All costs except California State sales tax for the purchase of 12.5% sodium hypochlorite must be included in the amount shown below on this Bid Form, including any and all mill assessments, fees, excise taxes, transportation charges, etc. Any exceptions to the bid must be noted under Specific Deviations on the Standard Agreement. Bidders shall submit bids in \$/gallon.

BACC Agencies: North Bay Locations
Central Contra Costa Sanitary District, City of Antioch, City of Brentwood, City of Martinez, City of Pinole, Contra Costa Water District, Delta Diablo, Diablo Water District, Ironhouse Sanitary District, Pleasant Hill Recreation and Park District, Rodeo Sanitary District, Town of Discovery Bay, and West County Wastewater District

Unit Price for 12.5% Sodium Hypochlorite \$ 0.474 /gallon

OPTIONAL BID ITEM: Town of Discovery Bay Community Center/Pool

Unit Price for 12.5% Sodium Hypochlorite in drums: \$ No bid /gallon

BACC Agencies: East Bay Locations
Alameda County Water District, City of Hayward, City of San Leandro, Oro Loma Sanitary District, and Union Sanitary District

Unit Price for 12.5% Sodium Hypochlorite \$ 0.434 /gallon

BACC Agencies: Tri-Valley Locations
City of Livermore, Dublin San Ramon Services District, and Zone 7 Water Agency

Unit Price for 12.5% Sodium Hypochlorite \$ 0.434 /gallon

**BAY AREA CHEMICAL CONSORTIUM
BID FORM FOR BID NO. 14-2016, PAGE 2 OF 3**

BACC Agencies: South Bay Locations
 City of San Jose, City of Sunnyvale, and Santa Clara Valley Water District
 Unit Price for 12.5% Sodium Hypochlorite \$ 0.464 /gallon
OPTIONAL BID ITEM: City of Gilroy
 Unit Price for 12.5% Sodium Hypochlorite in carboys: \$ No bid /gallon
OPTIONAL BID ITEM: City of Morgan Hill
 Unit Price for 12.5% Sodium Hypochlorite in drums: \$ No bid /gallon

BACC Agencies: Peninsula Locations
 City of Burlingame, City of Daly City/North San Mateo County Sanitation District, City of South San Francisco, Sewer Authority Mid-Coastside, and Silicon Valley Clean Water
 Unit Price for 12.5% Sodium Hypochlorite \$ 0.464 /gallon

BACC Agencies: Marin-Sonoma-Napa Locations
 Central Marin Sanitation Agency, City of Mill Valley/Sewerage Agency of Southern Marin, Las Gallinas Valley Sanitary District, Marin Municipal Water District, Napa Sanitation District, North Marin Water District, Sanitary District No. 5 of Marin County, and Sausalito Marin City Sanitary District
 Unit Price for 12.5% Sodium Hypochlorite \$ 0.474 /gallon

BACC Agencies: Sacramento Area Locations
 Carmichael Water District, City of Folsom, City of Roseville, City of Sacramento, City of Yuba City, El Dorado Irrigation District, Nevada Irrigation District, Sacramento County Water Agency, and Woodland Clean Water Agency
 Unit Price for 12.5% Sodium Hypochlorite \$ 0.444 /gallon
OPTIONAL BID ITEM: Placer County Water Agency
 Unit Price for 12.5% Sodium Hypochlorite in carboys: \$ No bid /gallon

BACC Agencies: Central Valley Locations
 City of Fresno, City of Merced and City of Stockton
 Unit Price for 12.5% Sodium Hypochlorite \$ 0.444 /gallon

II. Bidders must submit all of the following, attached to this Bid Form:

- a. An affidavit of compliance to the appropriate American Water Works Association (AWWA) and/or National Sanitation Foundation (NSF) standard is required for all chemicals and polymers being provided for potable water treatment. Bidders must include a statement by the chemical manufacturer, signed by an authorized representative on letterhead stationery, attesting to the affidavit's validity. In lieu of submitting an affidavit of compliance with AWWA/NSF standards and a letter attesting to the affidavit's validity, a current printout from NSF.org is acceptable.
- b. A representative analysis of the chemical to be supplied, as prepared by a reputable outside laboratory or Bidder's in-house laboratory if ISO certified.
- c. Product Bulletin and Typical Properties.
- d. Safety Data Sheet (SDS).

**BAY AREA CHEMICAL CONSORTIUM
BID FORM FOR BID NO. 14-2016, PAGE 3 OF 3**

- e. If applicable, the name, address, and contact information for the third party hauling company as well as an affidavit signed by the Bidder that the third party hauler can and will deliver the chemical to each and every participating BACC Agency.



CHLOR ALKALI
P R O D U C T S

26700 S. Banta Road, Tracy, CA 95304
209/835-7204 • 209/835-9760

Affidavit of Compliance

Olin Chlor Alkali Products guarantees that the Sodium Hypochlorite to be furnished under this Proposal is of the highest industry standard and complies with all bid specifications including current ANSI/AWWA Standards and NSF Standard 60.

OLIN

A handwritten signature in black ink, appearing to read "John M. Schabacker".

John M. Schabacker
Business Director

OLIN EMERGENCY RESPONSE TRAINING AND PROCEDURES Tracy Bleach Plant

Safety Equipment Carried On Our Delivery Trucks:

- Escape respirator
- Two bottles of potable saline eyewash
- Emergency Response Guide Book
- Goggles, hard hat, safety glasses
- PVC polyester acid slicker suit, boots, gloves
- Fire extinguisher
- Radio equipment/GPS

Equipment Inspection:

- Tractors, vans, flats, dollies: "B" Inspection (12 point) every 90 days
- Tankers: "B" Inspection (12 point) every 60 days
- All equipment: "A" Inspection (37 point-critical) annually

Emergency Training Received By Our Drivers:

<u>Name of Course</u>	<u>Initial Training</u>	<u>Refresher Course</u>
HM-126F/HM-181F	4 hours	2 hours every 3 years
Hazardous Communication	4 hours	2 hours every 3 years
Emergency Response and S.O.P.'s	1 hour	1 hour annually

Procedures For Chemical Emergencies:

- Drivers are instructed to call 911 (First)
- Contact Chemtrec (Second)
- Contact OLIN Technical Support (Third)

OLIN Contact For Emergencies:

- | | |
|--|---------------------------|
| - 24 hour emergency phone number: | Chemtrec - (800) 424-9300 |
| - Patrick Hollingsworth - Tech Service | (702) 564-0339 - office |
| | (706) 830-1934 - cell |
| - Trey Woodruff Plant Manager(Tracy) | (209) 221-8206 - office |



Chlorine/Bleach Plant Locations

Tracy, CA

(Northern & Central CA, Northern NV)

26700 S. Banta Road

Tracy, CA 95376

Plant Manager: Trey Woodruff

Sales Rep: Chuck Hogan

Customer Service (orders):

Tele: (800) 753-3669

Fax: (800) 723-5423

TracyOrders@olin.com

Caustic Soda Terminal (orders):

Tele: (800) 334-9503

Fax: (713) 570-3333

Santa Fe Springs, CA

(Southern CA)

11600 Pike Street

Santa Fe Springs, CA 90670

Plant Manager: John Bilac

Sales Rep: Nick Pregman/Chuck Hogan

Customer Service (orders):

Tele: (562) 692-0510

(800) 435-6310

Fax: (562) 695-2441

SantaFeSpringsOrders@olin.com

Henderson, NV

(AZ, NM, NV, UT, Mexico)

350 Fourth Street

Henderson, NV 89015

Plant Manager: Tom Gathright

Sales Rep: Nick Pregman

Customer Service (orders):

Tele: (702) 565-8781

(800) 334-9503

Fax: (702) 565-7145

HendersonOrders@olin.com

Remit to Address:

OLIN Corporation

P. O. Box 402766

Atlanta, GA 30384-2766

Procedures For Chemical Emergencies:

- Drivers are instructed to call 911 (First)
- Contact Chemtrec (Second)
- Contact Olin Technical Support (Third)

OLIN Contact For Emergencies:

- 24 hour emergency phone number: Chemtrec - (800) 424-9300
- Charles Burgess, Tech Services: (702) 564-0477 office
(209) 207-2113 cell

Sales Specification

12.5 wt% Sodium Hypochlorite Solution

West Coast Water Treatment Specification



Characteristics	Units	Min	Max
Sodium Hypochlorite, NaOCl	wt%	12.5	15.6
Available Chlorine	wt%	11.9	14.8
Total Alkalinity ¹	wt%	0.1	1.5
Chlorate (12.5% Basis) ²	ppm	N/A	3,570
Bromate (12.5% Basis) ²	ppm	N/A	39
Insolubles ¹	wt%	N/A	0.15
Iron, Fe	ppm	N/A	1.5
Nickel, Ni	ppm	N/A	0.1
Copper, Cu	ppm	N/A	0.1
Cobalt, Co	ppm	N/A	0.1

1 – Limit set to meet ANSI/AWWA B300-10

2 – Limit set to meet NSF/ANSI Standard 60

Meets the Following

ANSI/AWWA B300-10

EPA Pesticide Registration

NSF/ANSI Standard 60 Certification

Olin Document Information

Specification No: NaOCl-S4	Revision: 1	Issue Date: 10/28/2014	Supersedes: 06/06/2013	Review Date: 10/27/2019	Sheet No.: 1 of 1
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OLIN TRANSPORTATION EMERGENCY SPILL RESPONSE PLAN

Should a spill or incident occur while at a Customer’s site, the following procedure shall be used:

- If applicable, immediately utilize the on-board spill kit to contain small spills
- Immediately report the spill/incident to your Supervisor no matter how minor it may seem. (Olin Transportation will then immediately contact the Customer)
- Notify the Customer at the site.
- Protect the spill site and keep all unauthorized people away and up-wind from the spill site.

EMERGENCY RESPONSE CONTACT PHONE NUMBERS

Emergency Response Agencies (Fire, Law and Medical)	911
National Response Center	800-424-9300
Chemtrec Emergency Response	800-424-8802

USEFUL EMERGENCY NUMBERS FOR OLIN EMPLOYEES

Dave Keltz	Office	702-564-0448
	Cell	702-727-0769
Nathan Myers	Office	702-564-0211
	Cell	702-664-3110
Bruce Williams	Office	702-564-0460
	Cell	702-427-0093
Tom Carlson	Office	562-692-0591
	Cell	562-324-5894
Greg Manfredini	Office	800-677-8335
	Cell	630-774-5267

Each delivery unit shall have the following Emergency Spill Control Equipment on-board:

- Complete Driver PPE as Olin specified.

- Emergency Spill Kit including mats & snake
- Buckets

* The above items should be inspected on a monthly basis and immediately replaced after any use.

1. Identification

Product identifier	Sodium Hypochlorite, 5 - 17%	
Other means of identification		
SDS number	10000022	
Synonyms	L.T. Sanitizer 5.25%, Hypo, Liquid Bleach, Bleach, Hypochlorite, Javel Water.	
Recommended use	Swimming pool chlorinator, hard surface cleaner, mildicide, Water treatment chemical, Biocides, bleach solutions and bleach fixer solutions	
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) 658-6SDS (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	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 Causes severe skin burns and eye damage. May cause respiratory irritation. Very 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	5-17
Sodium hydroxide	1310-73-2	0.10-4.25

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.
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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.

Environmental precautions

Never return spills in original containers for re-use. For waste disposal, see Section 13 of the SDS. 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/m ³
pH	12 - 14 (25 °C/77 °F)
Melting point/freezing point	-4 °F (-20 °C) (7% 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

Inhalation	Vapors and spray mist may irritate throat and respiratory system and cause coughing.
Skin contact	Causes skin burns.
Eye contact	Causes eye burns.
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.

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		
<i>Dermal</i>		
LD50	Rabbit	> 2 g/kg
<i>Oral</i>		
LD50	Rat	3 - 5 g/kg

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

Serious eye damage/eye irritation Causes serious eye damage.

Respiratory or skin sensitization

Respiratory sensitization This product is not expected to cause respiratory sensitization.

Skin sensitization This product is not expected to cause skin sensitization.

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

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

IARC Monographs. Overall Evaluation of Carcinogenicity

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

NTP Report on Carcinogens

Not listed.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

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

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

Specific target organ toxicity - repeated exposure Not classified.

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 with long lasting effects.

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

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	-
Label(s)	8
Packing group	III
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling. 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. 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. 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.
All components are on the U.S. EPA TSCA Inventory List.

CERCLA Hazardous Substance: Sodium Hypochlorite, CAS # 7681-52-9, RQ = 100 lbs
CERCLA Hazardous Substance: Sodium Hydroxide, CAS # 1310-73-2, RQ = 1000 lbs.

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

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)

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

Superfund Amendments and Reauthorization Act of 1986 (SARA)

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

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical	Yes
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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.
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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

This product is not listed, but it may contain elements known to the State of California to cause cancer or reproductive toxicity as listed under Proposition 65 Safe Drinking Water and Toxic Enforcement Act. For additional information, contact Olin Technical Services (800-299-6546).

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 27-February-2014
Revision date 04-August-2015
Version # 05
HMIS® ratings Health: 3
 Flammability: 0
 Physical hazard: 0

List of abbreviations

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

References

EPA: ACQUIRE 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

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 **Thursday, March 03, 2016** 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]

<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 Degree Baume)	Corrosion & Scale Control	40mg/L
Hydrochloric Acid (22 Degree Baume)	Corrosion & Scale Control	40mg/L

Sodium Hydroxide

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

Sodium Hydroxide

<i>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

Sodium Hydroxide

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

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

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

NOTE: Only products bearing the NSF Mark on the product, product packaging, and/or

documentation shipped with the product are Certified.

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>
High Strength Sodium Hypochlorite	Disinfection & Oxidation Algicide	67mg/L
L.T. Sanitizer 5.25%	Disinfection & Oxidation Algicide	200mg/L
Sodium Hypochlorite 10	Disinfection & Oxidation Algicide	105mg/L
Sodium Hypochlorite 11	Disinfection & Oxidation Algicide	96mg/L
Sodium Hypochlorite 12.5 Bacticide [Del@14]	Disinfection & Oxidation Algicide	75mg/L
Sodium Hypochlorite 12.5-Bacticide	Disinfection & Oxidation Algicide	84mg/L
Sodium Hypochlorite 9	Disinfection & Oxidation	117mg/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 : Augusta, GA**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

Sodium Hydroxide

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Caustic Soda 49%-52% Commercial Grade	Corrosion & Scale Control	100 mg/L
Caustic Soda 49%-52% Membrane Grade	Corrosion & Scale Control	100 mg/L
Dilute Caustic	Corrosion & Scale Control	100mg/L
Sodium Hydroxide 30-49%	Corrosion & Scale Control	100mg/L
Sodium Hydroxide 49%-52% Commercial Grade	Corrosion & Scale Control	100 mg/L
Sodium Hydroxide, Membrane Grade	Corrosion & Scale Control	100 mg/L
Weak Caustic	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 Algicide	67mg/L
Sodium Hypochlorite 10	Disinfection & Oxidation Algicide	105mg/L
Sodium Hypochlorite 11	Disinfection & Oxidation Algicide	96mg/L
Sodium Hypochlorite 12.5-Bacticide	Disinfection & Oxidation Algicide	84mg/L
Sodium Hypochlorite 12.5-Bacticide [Del@14]	Disinfection & Oxidation Algicide	75 mg/L
Sodium Hypochlorite 9	Disinfection & Oxidation Algicide	117mg/L

[1] High Strength Sodium Hypochlorite is 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 : Plaquemine, LA**Sodium Hydroxide**

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

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

Facility : St. Gabriel, LA**Chlorine[CL]**

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

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Caustic 50% Commercial Grade	Corrosion & Scale Control pH Adjustment	100mg/L
Caustic 50% Membrane Grade	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]**

<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

[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**

<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 Soda 50% (all grades)	Corrosion & Scale Control	100mg/L

NOTE: Only products bearing the NSF Mark are Certified.

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

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
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.

Hydrochloric Acid

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
18 Baume Hydrochloric Acid	Corrosion & Scale Control pH Adjustment	40mg/L
20 Baume Hydrochloric Acid	Corrosion & Scale Control pH Adjustment	40mg/L
22 Baume Hydrochloric Acid	Corrosion & Scale Control pH Adjustment	40mg/L

Sodium Hydroxide

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Caustic Soda Liquid, All Grades	Corrosion & Scale Control pH Adjustment	100 mg/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
High Strength Sodium Hypochlorite[1]	Disinfection & Oxidation	67mg/L

High Strength Sodium Hypochlorite Delivered at 17[1]	Algicide Disinfection & Oxidation	62mg/L
HyPure® Bleach MP3[1]	Algicide Disinfection & Oxidation	62mg/L
HyPure® Sodium Hypochlorite[1]	Disinfection & Oxidation Algicide	62mg/L
HyPure® Sodium Hypochlorite MP3[1]	Disinfection & Oxidation	62mg/L
L.T. Sanitizer 5.25%	Disinfection & Oxidation Algicide	200 mg/L
Sodium Hypochlorite 12.5 Bacticide	Disinfection & Oxidation Algicide	84mg/L
Sodium Hypochlorite 12.5%	Disinfection & Oxidation Algicide	84 mg/L
Sodium Hypochlorite 9%	Disinfection & Oxidation Algicide	114mg/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 : 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>
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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>
18 Baume Hydrochloric Acid	Corrosion & Scale Control pH Adjustment	40 mg/L
20 Baume Hydrochloric Acid	Corrosion & Scale Control pH Adjustment	40mg/L
22 Baume Hydrochloric Acid	Corrosion & Scale Control pH Adjustment	40mg/L
23 Baume Hydrochloric Acid	Corrosion & Scale Control pH Adjustment	40mg/L

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>
49%-52% Caustic Soda Commercial Grade	Corrosion & Scale Control	100 mg/L
49%-52% Caustic Soda Membrane Grade	Corrosion & Scale Control	100mg/L
49%-52% Caustic Soda Rayon Grade	Corrosion & Scale Control	100 mg/L
49%-52% Commercial Grade	Corrosion & Scale Control	100 mg/L
49%-52% Rayon Grade	Corrosion & Scale Control	100 mg/L

Sodium Hypochlorite [CL]

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Sodium Hypochlorite	Disinfection & Oxidation	84 mg/L
Sodium Hypochlorite 10%	Disinfection & Oxidation	105mg/L
Sodium Hypochlorite 11%	Disinfection & Oxidation	95mg/L
Sodium Hypochlorite 12.5	Disinfection & Oxidation	84 mg/L
Sodium Hypochlorite 14%	Disinfection & Oxidation	75mg/L
Sodium Hypochlorite 9%	Disinfection & Oxidation	117mg/L
Sodium Hypochlorite High Strength[1]	Disinfection & Oxidation	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**Sodium Hydroxide**

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

NOTE: Only products bearing the NSF Mark are Certified.

Facility : Freeport, TX**Sodium Hydroxide**

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Caustic 50% Commercial Grade	Corrosion & Scale Control	100mg/L

Caustic 50% Membrane Grade	pH Adjustment Corrosion & Scale Control pH Adjustment	100mg/L
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NOTE: Only products bearing the NSF Mark on the product, product packaging, and/or documentation shipped with the product are Certified.

Facility : Distribution Center - Hopewell, VA

Sodium Hydroxide

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
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]

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
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	Corrosion Control pH Adjustment	40mg/l

Sodium Hydroxide

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
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]

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
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 176

Processing time was 0 seconds



NSF International

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TEST REPORT

Send To: 35770

Ms. Vickie Ray
Olin Chlor Alkali Products
P.O. Box 248
Charleston, TN 37310

Facility: 35777

Olin Chlor Alkali Products
26700 South Banta Road
Tracy CA 95376
United States

Result	PASS	Report Date	01-SEP-2015
Customer Name	Olin Chlor Alkali Products		
Tested To	NSF/ANSI 60		
Description	High Strength Sodium Hypochlorite Sodium Hypochlorite		
Trade Designation	High Strength Sodium Hypochlorite		
Test Type	Annual Collection		
Job Number	A-00161080		
Project Number	W0179400		
Project Manager	Laurel Wightman		

This report documents the testing of the referenced product to the requirements of NSF/ANSI Standard 60 (Drinking Water Treatment Chemicals - Health Effects). This standard establishes minimum requirements for chemicals, the chemical contaminants, and impurities that are added to drinking water from drinking water treatment chemicals. Contaminants produced as by-products through reaction of the treatment chemical with a constituent of the drinking water are not covered by this Standard. Reference the "About the Standard" section at the end of this report for additional information about NSF/ANSI Standard 60 and the products covered under this Standard.

Thank you for having your product tested by NSF International.

Please contact your Project Manager if you have any questions or concerns pertaining to this report.

Report Authorization

Amanda Phelka - Director, Toxicology Services

Date 01-SEP-2015

General Information

Standard: NSF/ANSI 60
 DCC Number: DA05772
 Lot Number/Product Identifier: Storage T #1
 Maximum Use Level: 67 mg/L
 Monitor Code: A
 Physical Description of Sample: Sodium Hypochlorite
 Trade Designation/Model Number: High Strength Sodium Hypochlorite

Sample Id: **S-0001172282**
 Description: Sodium Hypochlorite | Sodium Hypochlorite
 Sampled Date: 04-Aug-2015
 Received Date: 09-Jul-2015

Tox Normalization Information:		Lab Normalization Information:	
Calculated NF	0.149	Date exposure completed	04-AUG-2015
Preparation method used	B	Final volume of solution	0.5 L
MUL	117 mg/L	Mass of material used	393 mg
Compound Reference Key:	SPAC		

Normalization Calculation:

Normalized Result = Test Result (ug/L) * NF Where NF = $MUL (mg/L) * \frac{Final Volume Of Solution (L)}{Mass of Material Used (mg)}$

- MUL = Maximum Use Level;
- Mass of Material Used = The mass of sample analyzed in the laboratory;
- Final Volume of Solution = The volume of water used to dilute the sample;
- An additional factor may be used to adjust the analytical result to field use conditions to account for product carryover, flushing, or other assumptions stipulated with the use of the product. If an additional factor is used, it is included in the information above.

Testing Parameter	Units	Sample	Control	Result	Norm. Result	Acceptance Criteria(1)	Evaluation Status
Chemistry Lab							
Arsenic	ug/L	ND(1)	ND(1)	ND(1)	ND(0.1)	1	Pass
Barium	ug/L	ND(1)	ND(1)	ND(1)	ND(0.1)	200	Pass
Beryllium	ug/L	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.07)	0.4	Pass
Cadmium	ug/L	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.03)	0.5	Pass
Chromium	ug/L	ND(1)	ND(1)	ND(1)	ND(0.1)		
Copper	ug/L	ND(1)	ND(1)	ND(1)	ND(0.1)	130	Pass
Mercury	ug/L	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.03)	0.2	Pass
Lead	ug/L	ND(1)	ND(1)	ND(1)	ND(0.07)	1.5	Pass
Antimony	ug/L	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.07)	0.6	Pass
Selenium	ug/L	ND(2)	ND(2)	ND(2)	ND(0.3)	5	Pass
Thallium	ug/L	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.03)	0.2	Pass
Volatile Organic Compounds (Ref: EPA 524.2)							
Dichlorodifluoromethane	ug/L	ND(1)	ND(0.5)	ND(1)	ND(0.1)		
Chloromethane	ug/L	ND(1)	ND(0.5)	ND(1)	ND(0.1)	3	Pass
Vinyl Chloride	ug/L	ND(1)	ND(0.5)	ND(1)	ND(0.1)	0.2	Pass
Bromomethane	ug/L	ND(1)	ND(0.5)	ND(1)	ND(0.1)	1	Pass
Chloroethane	ug/L	ND(1)	ND(0.5)	ND(1)	ND(0.1)	0.04	Pass



Sample Id: S-0001172282

Testing Parameter	Units	Sample	Control	Result	Norm. Result	Acceptance Criteria(1)	Evaluation Status
Chemistry Lab (Continued)							
Trichlorofluoromethane	ug/L	ND(1)	ND(0.5)	ND(1)	ND(0.1)	50	Pass
Trichlorotrifluoroethane	ug/L	ND(1)	ND(0.5)	ND(1)	ND(0.1)	0.3	Pass
Methylene Chloride	ug/L	ND(1)	ND(0.5)	ND(1)	ND(0.1)	0.5	Pass
1,1-Dichloroethylene	ug/L	ND(1)	ND(0.5)	ND(1)	ND(0.1)	0.7	Pass
trans-1,2-Dichloroethylene	ug/L	ND(1)	ND(0.5)	ND(1)	ND(0.1)	10	Pass
1,1-Dichloroethane	ug/L	ND(1)	ND(0.5)	ND(1)	ND(0.1)	0.3	Pass
2,2-Dichloropropane	ug/L	ND(1)	ND(0.5)	ND(1)	ND(0.1)		
cis-1,2-Dichloroethylene	ug/L	ND(1)	ND(0.5)	ND(1)	ND(0.1)	7	Pass
Chloroform	ug/L	ND(1)	0.7	ND(1)	ND(0.1)	[TTHM]	
Bromochloromethane	ug/L	ND(1)	ND(0.5)	ND(1)	ND(0.1)	0.3	Pass
1,1,1-Trichloroethane	ug/L	ND(1)	ND(0.5)	ND(1)	ND(0.1)	20	Pass
1,1-Dichloropropene	ug/L	ND(1)	ND(0.5)	ND(1)	ND(0.1)		
Carbon Tetrachloride	ug/L	ND(1)	ND(0.5)	ND(1)	ND(0.1)	0.5	Pass
1,2-Dichloroethane	ug/L	ND(1)	ND(0.5)	ND(1)	ND(0.1)	0.5	Pass
Trichloroethylene	ug/L	ND(1)	ND(0.5)	ND(1)	ND(0.1)	0.5	Pass
1,2-Dichloropropane	ug/L	ND(1)	ND(0.5)	ND(1)	ND(0.1)	0.5	Pass
Bromodichloromethane	ug/L	ND(1)	ND(0.5)	ND(1)	ND(0.1)	[TTHM]	
Dibromomethane	ug/L	ND(1)	ND(0.5)	ND(1)	ND(0.1)		
cis-1,3-Dichloropropene	ug/L	ND(1)	ND(0.5)	ND(1)	ND(0.1)	0.2	Pass
trans-1,3-Dichloropropene	ug/L	ND(1)	ND(0.5)	ND(1)	ND(0.1)	0.2	Pass
1,1,2-Trichloroethane	ug/L	ND(1)	ND(0.5)	ND(1)	ND(0.1)		
1,3-Dichloropropane	ug/L	ND(1)	ND(0.5)	ND(1)	ND(0.1)		
Tetrachloroethylene	ug/L	ND(1)	ND(0.5)	ND(1)	ND(0.1)	0.5	Pass
Chlorodibromomethane	ug/L	ND(1)	ND(0.5)	ND(1)	ND(0.1)	[TTHM]	
Chlorobenzene	ug/L	ND(1)	1.5	ND(1)	ND(0.1)	10	Pass
1,1,1,2-Tetrachloroethane	ug/L	ND(1)	ND(0.5)	ND(1)	ND(0.1)	1	Pass
Bromoform	ug/L	ND(1)	ND(0.5)	ND(1)	ND(0.1)	[TTHM]	
1,1,1,2,2-Tetrachloroethane	ug/L	ND(1)	ND(0.5)	ND(1)	ND(0.1)	0.2	Pass
1,2,3-Trichloropropane	ug/L	ND(1)	ND(0.5)	ND(1)	ND(0.1)	5	Pass
1,3-Dichlorobenzene	ug/L	ND(1)	ND(0.5)	ND(1)	ND(0.1)	60	Pass
1,4-Dichlorobenzene	ug/L	ND(1)	ND(0.5)	ND(1)	ND(0.1)	7.5	Pass
1,2-Dichlorobenzene	ug/L	ND(1)	ND(0.5)	ND(1)	ND(0.1)	60	Pass
Carbon Disulfide	ug/L	ND(2)	ND(1)	ND(2)	ND(0.3)	70	Pass
Methyl-tert-Butyl Ether (MTBE)	ug/L	ND(1)	ND(0.5)	ND(1)	ND(0.1)	10	Pass
tert-Butyl ethyl ether	ug/L	ND(1)	ND(0.5)	ND(1)	ND(0.1)	2000	Pass
Methyl Ethyl Ketone	ug/L	ND(10)	ND(5)	ND(10)	ND(1.5)	400	Pass
Methyl Isobutyl Ketone	ug/L	ND(10)	ND(5)	ND(10)	ND(1.5)	700	Pass
Toluene	ug/L	ND(1)	ND(0.5)	ND(1)	ND(0.1)	100	Pass



Sample Id: S-0001172282

Testing Parameter	Units	Sample	Control	Result	Norm. Result	Acceptance Criteria(1)	Evaluation Status
Chemistry Lab (Continued)							
Ethyl Benzene	ug/L	ND(1)	ND(0.5)	ND(1)	ND(0.1)	70	Pass
m+p-Xylenes	ug/L	ND(2)	ND(1)	ND(2)	ND(0.3)	[Xylenes]	
o-Xylene	ug/L	ND(1)	ND(0.5)	ND(1)	ND(0.1)	[Xylenes]	
Styrene	ug/L	ND(1)	ND(0.5)	ND(1)	ND(0.1)	10	Pass
Isopropylbenzene (Cumene)	ug/L	ND(1)	ND(0.5)	ND(1)	ND(0.1)	400	Pass
n-Propylbenzene	ug/L	ND(1)	ND(0.5)	ND(1)	ND(0.1)	0.3	Pass
Bromobenzene	ug/L	ND(1)	ND(0.5)	ND(1)	ND(0.1)		
2-Chlorotoluene	ug/L	ND(1)	ND(0.5)	ND(1)	ND(0.1)		
4-Chlorotoluene	ug/L	ND(1)	ND(0.5)	ND(1)	ND(0.1)		
1,3,5-Trimethylbenzene	ug/L	ND(1)	ND(0.5)	ND(1)	ND(0.1)		
tert-Butylbenzene	ug/L	ND(1)	ND(0.5)	ND(1)	ND(0.1)	10	Pass
1,2,4-Trimethylbenzene	ug/L	ND(1)	ND(0.5)	ND(1)	ND(0.1)		
sec-Butylbenzene	ug/L	ND(1)	ND(0.5)	ND(1)	ND(0.1)	0.3	Pass
p-Isopropyltoluene (Cymene)	ug/L	ND(1)	ND(0.5)	ND(1)	ND(0.1)		
1,2,3-Trimethylbenzene	ug/L	ND(1)	ND(0.5)	ND(1)	ND(0.1)		
n-Butylbenzene	ug/L	ND(1)	ND(0.5)	ND(1)	ND(0.1)	0.3	Pass
1,2,4-Trichlorobenzene	ug/L	ND(1)	ND(0.5)	ND(1)	ND(0.1)	7	Pass
Hexachlorobutadiene	ug/L	ND(1)	ND(0.5)	ND(1)	ND(0.1)	0.4	Pass
1,2,3-Trichlorobenzene	ug/L	ND(1)	ND(0.5)	ND(1)	ND(0.1)		
Naphthalene	ug/L	ND(1)	ND(0.5)	ND(1)	ND(0.1)	10	Pass
Benzene	ug/L	ND(1)	ND(0.5)	ND(1)	ND(0.1)	0.5	Pass
Total Trihalomethanes	ug/L	ND(0.5)	0.7	ND(0.5)	ND(0.07)	8	Pass
Total Xylenes	ug/L	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.07)	1000	Pass
1 - If the acceptance criteria is blank and the evaluation status is "Fail", then the criteria used will be noted on the letter accompanying these results.							
[Xylenes] - Acceptance based on Total Xylenes							
[TTHM] - Acceptance based on Total Trihalomethanes							

Sample Id: S-0001172283

Description: Sodium Hypochlorite | Sodium Hypochlorite

Sampled Date: 01-Jul-2015

Received Date: 09-Jul-2015

Quenched Date: 1-JUL-2015 03:00

Tox Normalization Information:		Lab Normalization Information:	
Calculated NF	0.000001	Date exposure completed	09-JUL-2015
MUL	117 mg/L		
Density Value Applied	1.21 g/mL		
Compound Reference Key:	SPAC		



Sample Id: S-0001172283

Normalization Calculation:

Normalized Result = Test Result * NF * (10³ ug/L mg)

Where NF = MUL (mg/L) * Malonic Acid Dilution Correction (ml/ml) * (1/Product Density (g/ml)) * $\frac{1 \text{ L}}{10^3 \text{ ml}} * \frac{1 \text{ g}}{10^3 \text{ mg}}$

- Malonic Acid Dilution Correction = ((Volume of Hypochlorite Sampled + Malonic Acid) / Volume of Hypochlorite Sampled)
- Volume of Hypochlorite Sampled = (Volume of Hypochlorite Sample Received(ml) - (Malonic Acid (g) * (1 / Density of Malonic Acid (g/ml))))
- Volume of Hypochlorite Sample Received = Volume of Hypochlorite Sampled + Malonic Acid
- Unit conversion: 1 L = 10 ml, 1 g = 10 mg;

Testing Parameter	Units	Sample	Result	Norm. Units	Norm. Result	Acceptance Criteria(1)	Evaluation Status
Chemistry Lab							
Oxyhalides in Bleach by LCMS							
Perchlorate	mg/L	1	1	ug/L	0.1 ug/L	5	
Chlorate	mg/L	2400	2400	ug/L	260 ug/L	300	
Bromate	mg/L	5	5	ug/L	0.5 ug/L	3.3	
1 - If the acceptance criteria is blank and the evaluation status is "Fail", then the criteria used will be noted on the letter accompanying these results.							

Job Notes:

It was unclear which trade name and associated product strength was received. Subsequently, the most conservative conditions were used for toxicology review. The MUL can be updated if the client provides the specific trade name information.



Common Terms and Acronyms Used:

- Sample..... Test result on the submitted product sample after prepared or exposed in accordance with the standard.
- Control..... Test result on a laboratory blank sample analyzed in parallel with the sample.
- Result..... Sample test result minus the Control test result.
- Normalized Result... Result normalized in accordance with the test standard to reflect potential at-the-tap concentrations
- ND()..... Result is below the detection level of the analytical procedure as identified in the parenthesis.
- DCC Number..... NSF document control code of the registered formulation of the product tested
- ug/L..... Microgram per liter = 0.001 milligram per liter (mg/L)
- SPAC..... Acceptance criteria of the standard (Single Product Allowable Concentration)

References to Testing Procedures:

NSF Reference	Parameter / Test Description
C0931	Oxyhalides in Bleach by LCMS
C3035	Total Arsenic in Drinking Water by ICPMS (Ref: EPA 200.8)
C3038	Barium in Drinking Water by ICPMS (Ref: EPA 200.8)
C3041	Beryllium in Drinking Water by ICPMS (Ref: EPA 200.8)
C3046	Cadmium in Drinking Water by ICPMS (Ref: EPA 200.8)
C3052	Chromium in Drinking Water by ICPMS (Ref: EPA 200.8)
C3058	Copper in Drinking Water by ICPMS (Ref: EPA 200.8)
C3071	Mercury in Drinking Water by ICPMS (Ref: EPA 200.8)
C3100	Lead in Drinking Water by ICPMS (Ref: EPA 200.8)
C3113	Antimony in Drinking Water by ICPMS (Ref: EPA 200.8)
C3115	Selenium in Drinking Water by ICPMS (Ref: EPA 200.8)
C3127	Thallium in Drinking Water by ICPMS (Ref: EPA 200.8)
C4662	Volatile Organic Compounds (Ref: EPA 524.2)

Test descriptions preceded by an asterisk "*" indicate that testing has been performed per NSF International requirements but is not within its scope of accreditation.

Testing Laboratories:

	Id	Address
All work performed at: →	NSF_AA	NSF International 789 N. Dixboro Road Ann Arbor MI 48105



About the Standard:

NSF/ANSI Standard 60: Drinking Water Treatment Chemicals - Health Effects

NSF/ANSI 60 establishes minimum health effects requirements for the chemicals, the chemical contaminants, and the impurities that are directly added to drinking water from drinking water treatment chemicals. It does not establish performance or taste and odor requirements. The standard contains requirements for chemicals that are directly added to water and are intended to be present in the finished water as well as other chemical products that are added to water but are not intended to be present in the finished water. Chemicals covered by this Standard include, but are not limited to, coagulation and flocculation chemicals, softening, precipitation, sequestering, pH adjustment, and corrosion/scale control chemicals, disinfection and oxidation chemicals, miscellaneous treatment chemicals, and miscellaneous water supply chemicals.

The testing performed to this standard is done to estimate the level of contaminants or impurities added to drinking water when the chemical is used at the "Maximum Use Level" under attestation. Prior to testing, information is obtained on the formulation and sources of supply used to manufacture the chemical. This information is then reviewed along with the minimum requirements of the standard to establish the potential contaminants of concern. A representative sample of chemical is obtained for testing. The chemical sample is prepared for analysis through specific methods established in the standard based on the type of chemical and then is analyzed for potential contaminants determined during the formulation review. The laboratory results are normalized to represent potential at-the-tap values and then compared to the "single product allowable concentration" (SPAC) established by the standard. The product is found in compliance with the standard if the normalized value is less than or equal to the allowable concentration.

CERTIFIED LABORATORY REPORT

Olin Chlor Alkali Products
350 Fourth St. Henderson, NV 89015
1-800-334-9503 (FAX) 1-702-565-7145

Product: Sodium Hypochlorite
Production Facility: Olin - Tracy Plant

Sample ID: T-1 Storage tank
Sample Date: 2/17/2016

<u>Parameter</u>	<u>Specification</u>		<u>Analysis</u>	<u>Units</u>	<u>Analyst</u>
	BACC				
NaOCl Wt %			13.00	%(wt.)	Olin Tracy
Available Chlorine wr%	12.5		12.38	%(wt.)	calc
Available Chlorine gpl	125		148.8	g/L	calc
Density @ 20°C	1.19 - 1.26		1.202	g/mL	Olin Tracy
Insoluble matter wt%	0.15		<0.01	%(wt.)	Olin-Henderson
Total free alkali (NaOH) wt %	0.1-1.5		0.33	%(wt.)	Olin-Henderson
Carbonate as Na2CO3 wt%	none		0.14	%(wt.)	Olin Tracy
Chlorate Ion ClO ₃ ppm	1983		1450	mg/Kg	Olin-Henderson
Chlorate Ion in mg/L	2380		1743	mg/L	calc
Copper mg/kg	0.6		<0.1	mg/kg	Olin-Henderson
mg/L	<0.7		<0.12	calc	
Iron mg/kg	0.98		0.13	mg/kg	Olin-Henderson
mg/L	<1.0		0.16	calc	
Nickel mg/kg	0.08		<0.1	mg/kg	Olin-Henderson 0.1 mg/Kg limit of detection
mg/l.	<0.1		<0.12	calc	
Cobalt mg/kg	0.08		<0.1	mg/kg	Olin-Henderson 0.1 mg/Kg limit of detection
mg/L	<0.1		<0.12	calc	
Timed filtration				seconds	Olin Tracy
1 liter thru 0.8 micron @ 25 mm Hg			61		

Signature:  3-7-16
 Barbara L. Muniz Quality Supervisor

Henderson Laboratory is an ISO Certified facility. Olin - Tracy Facility is also ISO certified.
 Tracy is a NSF certified supplier.