



**N3B-Los Alamos**  
 1200 Trinity Drive, Suite 150  
 Los Alamos, New Mexico 87544  
 (505) 661-5918

GROUND WATER

NOV 27 2019

BUREAU



**Environmental Management**  
 Los Alamos Field Office  
 P.O. Box 1663, MS M984  
 Los Alamos, New Mexico 87545  
 (505) 257-7950/FAX (505) 606-2132

Date: **NOV 26 2019**  
 Refer To: N3B-19-0381

Steve Pullen, Section Manager  
 Ground Water Quality Bureau  
 New Mexico Environment Department  
 P.O. Box 5469  
 Santa Fe, NM 87502-5469

**Subject: Notice of Intent to Conduct CrEX-3 Well Maintenance Activities at Los Alamos National Laboratory**

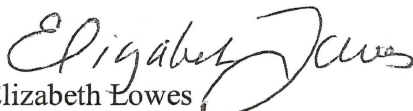
Dear Mr. Pullen:

In accordance with Subsection A of 20.6.2.1201 New Mexico Administrative Code, the U.S. Department of Energy Environmental Management Los Alamos Field Office (EM-LA) and Newport News Nuclear BWXT-Los Alamos, LLC (N3B) are filing this notice of intent (NOI) to perform well maintenance activities at extraction well CrEX-3 located at Los Alamos National Laboratory. Well maintenance activities will be conducted to remove scale and biofilm deposits and to disinfect the well casing and filter pack around the screened interval. Three phases of well rehabilitation maintenance will occur as follows: (1) mechanical pre-treatment (e.g., brushing of the well screens), (2) rehabilitation using low concentration/volumes of chemicals mixed with potable water, and (3) disinfection of the water column within the well bore and screened interval.

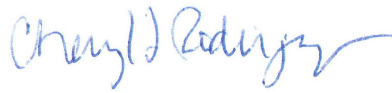
Enclosed is a completed New Mexico Environment Department Ground Water Quality Bureau NOI form. Attachments 1 and 2 provide information to support the NOI.

If you have any questions, please contact Christian Maupin at (505) 695-4281 (christian.maupin@em-la.doe.gov) or Cheryl Rodriguez at (505) 257-7941 (cheryl.rodriguez@em.doe.gov).

Sincerely,

  
Elizabeth Lowes  
Program Manager  
Environment, Safety and Health  
N3B-Los Alamos

Sincerely,

  
Cheryl L. Rodriguez,  
Program Manager, FPD-II  
Environmental Management  
Los Alamos Field Office

Enclosure(s): One hard copy – Completed New Mexico Environment Department Ground Water Quality Bureau Notice of Intent to Discharge form (EM2019-0457) and attachments to the form

cc (letter and enclosures[s] emailed):

Andrew Romero, NMED-GWQB  
David Cobrain, NMED-HWB  
Neelam Dhawan, NMED-HWB  
Brian Holton, NMED-HWB  
Shelly Lemon, NMED-SWQB  
Lee Bishop, EM-LA  
Selena Fox, EM-LA  
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Public Reading Room (EPRR)  
PRS Website



For Department use Only:

Agency Interest Number \_\_\_\_\_  
PRD Assigned \_\_\_\_\_

**1. Name and mailing address of person proposing to discharge (Responsible Person):**

Steve S. White  
N3B - Los Alamos  
1200 Trinity Drive, Suite 150  
Los Alamos, NM 87544

Work Phone: (505) 309-1370  
Cell/Home Phone: (505) 309-1370  
Fax: Not Applicable  
Email: steve.white@em-la.doe.gov

**2. Name and Position of person Completing Form:**

Christian Maupin  
Regulatory Compliance  
Environmental Professional  
\_\_\_\_\_

Work Phone: (505) 257-7421  
Cell/Home Phone: (505) 695-4281  
Fax: Not Applicable  
Email: christian.maupin@em-la.doe.gov

**3. Name of facility:**

Los Alamos National Laboratory (LANL)

**4. Physical location of the discharge (if applicable, give street address, township, range, section, distance from closest town or landmark, directions to facility, location map):**

LANL Technical Area 05 in Township 19N, Range 6E, Section 24. Attachment 1 contains a location map of the project site.

**5. Type of operation generating the discharge (e.g., agricultural facility, domestic wastewater discharge, industrial discharge, mining operation, etc.):**

Well maintenance activities will be conducted at extraction well CrEX-3 to remove scale and biofilm deposits and to disinfect the well casing and filter pack around the screened interval. Results from a well-fouling investigation at CrEX-3 in July 2019 indicate that the well produces groundwater containing an elevated amount of biomass and associated solid-phase iron oxides and silica. Three phases of well-rehabilitation maintenance will occur: (1) mechanical pre-treatment (e.g., brushing the well screen), (2) chemical rehabilitation using low concentration/volumes of phosphoric acid and biodispersant mixed with potable water, and (3) disinfection of the water column within the well bore and screened interval. The chemical and disinfectant solutions will be introduced using a tremie line. Aggressive post-rehabilitation purging is anticipated to remove >95% of introduced chemical and disinfectant solutions.

**6. Source(s) of the discharge. Describe how the wastewater, sludge, or other discharges processed and/or disposed at your facility are generated. Identify all sources. Attach additional pages if needed:**

Chemical solutions will not be discharged during mechanical pre-treatment activities. For the chemical rehabilitation phase, 100 gal. of potable water will be blended with 15 gal. of NW-120 phosphoric acid at 75% strength and 5 gal. of NW-310 biodispersant. This solution mixture will be introduced to the well-casing water column via tremie line followed by mechanical surging of the well column and screen zone using a surge block for an 8-hour period. After





New Mexico Environment Department  
Ground Water Quality Bureau

Ground Water Quality Bureau  
Notice of Intent to Discharge

For Department use Only:

Agency Interest Number \_\_\_\_\_  
PRD Assigned \_\_\_\_\_

surging, the well will be pumped until pH returns to 6.5 or greater and conductivity returns to near-baseline conditions. In the third phase, 400 gal. of potable water will be mixed with 1 gal. of sodium hypochlorite (12%) and 0.5 gal. of NW-410 chlorine enhancer. The disinfection solution will be introduced to the well through a tremie line. This solution will remain downhole overnight followed by evacuation of the water column from the bottom up until the residual chlorine measures approximately 50 ppm. At this point the dedicated extraction pump, column pipe, transducer, etc., will be placed back in CrEX-3 followed by additional pumping to remove any residual chlorine.

Attachment 2 provides the safety data sheet for the NW-120 phosphoric acid, NW-310 biodispersant, sodium hypochlorite, and NW-410 chlorine enhancer.

**7. Expected contaminants in the discharge (e.g., nitrate-nitrogen, metals, organic compounds, salts, etc.) Include estimated concentration if known, and copies of results of laboratory analyses, if available:**

No contaminants will be present in the discharge. All chemical additives will be introduced at the quantities specified in No. 6. An expected >95% of all chemicals introduced during this well-maintenance operation will be removed from the aquifer and managed in accordance with its waste classification and dispositioned accordingly.

**8. Describe all components of wastewater processing, treatment, storage, and disposal system (e.g., pre-treatment units, impoundments(s), septic tank/leachfield, etc.). Include sizes, site layout map, plans, and specifications, etc. if available:**

See No. 6 for specific details concerning the placement and removal of all chemical solutions.

**9. Estimated maximum daily discharge volume in gallons per day. Provide water usage records or system sizing criteria if available:**

Discharges at CrEX-3 will involve the introduction of 500 gal. of well-rehabilitation chemical solutions mixed with potable water and followed by well purging at volumes sufficient to remove >95% of the deployed solutions. All water purged from CrEX-3 during this rehabilitation effort will be managed in accordance with its waste classification and dispositioned accordingly.

**10. Estimated depth to ground water (ft): approximately 900 ft. Source of information: Recent water level data**

**11. Current Total Dissolved Solids Concentration in Groundwater: 250 mg/L (average)**

Signature: Elizabeth Jones

Date: 11-20-2019

Printed name: ELIZABETH JONES

Title: ES&H Program Manager

Please return this form to:  
NMED Ground Water Quality Bureau  
P.O. Box 5469  
Santa Fe, New Mexico 87502-5469

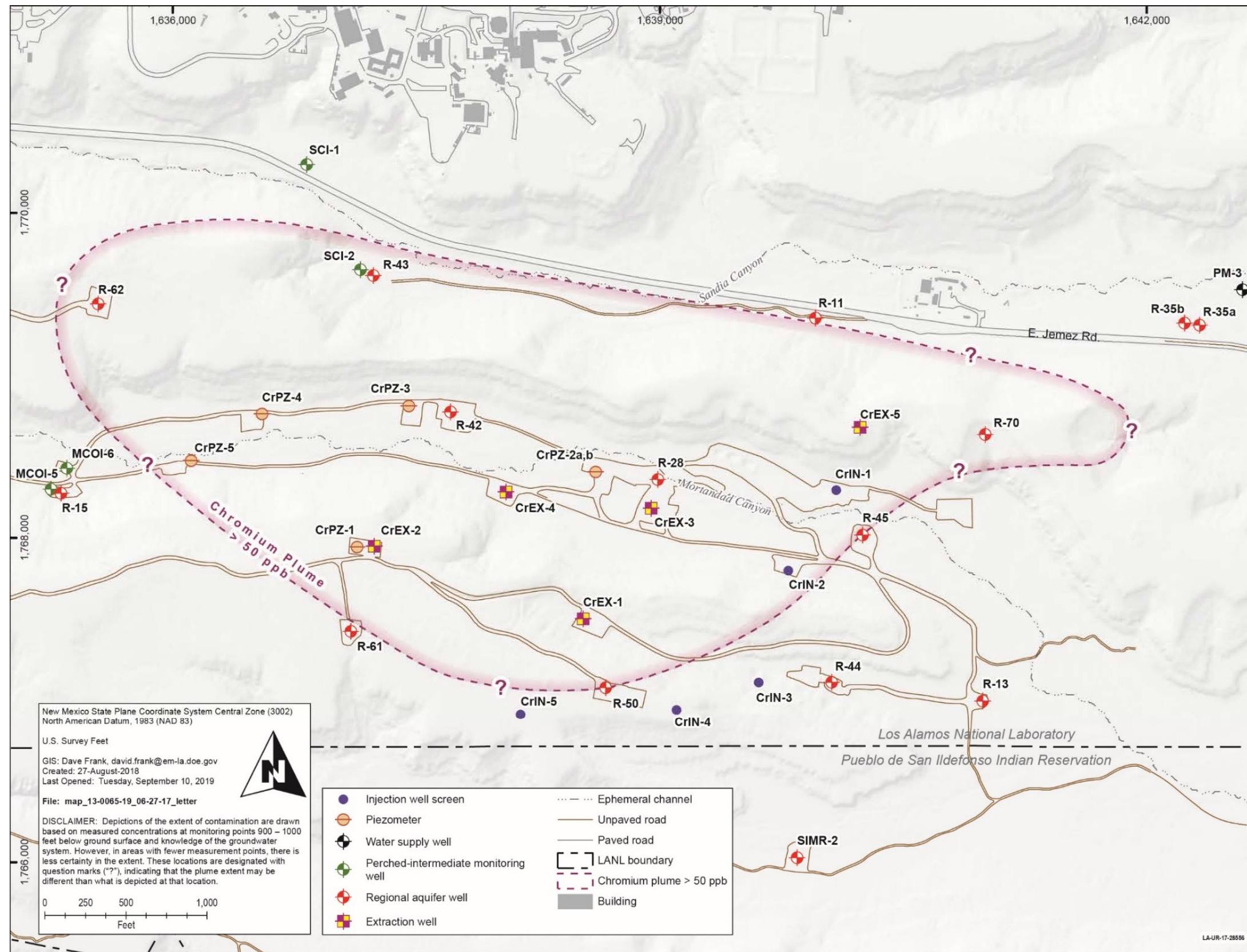
Telephone: 505-827-2900  
Fax: 505-827-2965

# **Attachment 1**

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*Location Map of Project Site*





Note: Locations of monitoring wells, piezometers, extraction wells, and injection wells are also shown.





## **Attachment 2**

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*Safety Data Sheets for CrEX-3 Well Maintenance*



# SAFETY DATA SHEET

## NW-120

### 1. Identification

**Product identifier** NW-120  
**Other means of identification**  
**SDS number** 321067-02  
**Recommended use** Acidulate, pH regulator, food and beverage additive.  
**Recommended restrictions** None known.

#### Manufacturer/Importer/Supplier/Distributor information

**Manufacturer**  
**Company name** Aqseptence Group, Inc.  
**Address** (Johnson Screens) P.O. Box 64118  
St. Paul, MN 55164  
  
**Main Telephone Number** 651-636-3900  
**Website** www.aqseptence.com  
**E-mail** www.customersupport.water@aqseptence.com  
**Emergency #: CHEMTREC** 1-800-424-9300  
**Emergency #: CHEMTREC** 1-703-527-3887 (call collect)

### 2. Hazard(s) identification

<b>Physical hazards</b>	Corrosive to metals	Category 1
<b>Health hazards</b>	Acute toxicity, oral	Category 4
	Acute toxicity, inhalation	Category 3
	Skin corrosion/irritation	Category 1A
	Serious eye damage/eye irritation	Category 1
	Carcinogenicity	Category 1A
	Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation
<b>Environmental hazards</b>	Not classified.	
<b>OSHA defined hazards</b>	Combustible dust	Not applicable
	Pyrophoric gas	Not applicable
	Simple asphyxiant	Not applicable

#### Label elements



**Signal word** Danger

**Hazard statement** May be corrosive to metals. Harmful if swallowed. Causes severe skin burns and eye damage. Causes serious eye damage. Toxic if inhaled. May cause respiratory irritation. May cause cancer.

**Precautionary statement**  
**Prevention** Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep only in original container. Do not breathe mist or vapor. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection.

<b>Response</b>	If swallowed: Rinse mouth. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Wash contaminated clothing before reuse. Absorb spillage to prevent material damage.
<b>Storage</b>	Store away from incompatible materials. Store in a well-ventilated place. Keep container tightly closed. Store in accordance with local/regional/national/international regulations.
<b>Disposal</b>	Dispose of contents/container in accordance with local/regional/national/international regulations.
<b>Hazard(s) not otherwise classified (HNOC)</b>	None known.
<b>Supplemental information</b>	0.5% of the mixture consists of component(s) of unknown acute oral toxicity. 79% of the mixture consists of component(s) of unknown acute inhalation toxicity.

### 3. Composition/information on ingredients

#### Mixtures

Chemical name	Common name and synonyms	CAS number	%
Phosphoric Acid		7664-38-2	70 - < 80
Sulfuric Acid		7664-93-9	1 - < 3
Fluoride compounds, as F		N/A	< 1
Other components below reportable levels			10 - < 20

\*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

### 4. First-aid measures

<b>Inhalation</b>	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 POISON CENTER or doctor/physician.
<b>Skin contact</b>	Take off immediately all contaminated clothing. Rinse skin with water/shower. Call a physician or poison control center immediately. Chemical burns must be treated by a physician. Wash contaminated clothing before reuse.
<b>Eye contact</b>	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician or poison control center immediately.
<b>Ingestion</b>	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.
<b>Most important symptoms/effects, acute and delayed</b>	Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause respiratory irritation.
<b>Indication of immediate medical attention and special treatment needed</b>	Provide general supportive measures and treat symptomatically. Chemical burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim warm. Keep victim under observation. Symptoms may be delayed.
<b>General information</b>	IF exposed or concerned: Get medical advice/attention. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

### 5. Fire-fighting measures

<b>Suitable extinguishing media</b>	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).
<b>Unsuitable extinguishing media</b>	Do not use water jet as an extinguisher, as this will spread the fire.
<b>Specific hazards arising from the chemical</b>	During fire, gases hazardous to health may be formed.
<b>Special protective equipment and precautions for firefighters</b>	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.



**Fire fighting equipment/instructions**

Move containers from fire area if you can do so without risk.

**Specific methods**

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

## 6. Accidental release measures

**Personal precautions, protective equipment and emergency procedures**

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

**Methods and materials for containment and cleaning up**

This product is miscible in water.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb spillage to prevent material damage. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water.

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

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

**Environmental precautions**

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

## 7. Handling and storage

**Precautions for safe handling**

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe mist or vapor. Do not get in eyes, on skin, or on clothing. Avoid prolonged exposure. Do not taste or swallow. When using, do not eat, drink or smoke. Should be handled in closed systems, if possible. Use only outdoors or in a well-ventilated area. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Observe good industrial hygiene practices.

**Conditions for safe storage, including any incompatibilities**

Store locked up. Store in a cool, dry place out of direct sunlight. Store in corrosive resistant container with a resistant inner liner. Keep only in the original container. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS).

## 8. Exposure controls/personal protection

**Occupational exposure limits**

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

Components	Type	Value
Phosphoric Acid (CAS 7664-38-2)	PEL	1 mg/m3
Sulfuric Acid (CAS 7664-93-9)	PEL	1 mg/m3

**US. ACGIH Threshold Limit Values**

Components	Type	Value	Form
Phosphoric Acid (CAS 7664-38-2)	STEL	3 mg/m3	
	TWA	1 mg/m3	
Sulfuric Acid (CAS 7664-93-9)	TWA	0.2 mg/m3	Thoracic fraction.

**US. NIOSH: Pocket Guide to Chemical Hazards**

Components	Type	Value
Phosphoric Acid (CAS 7664-38-2)	STEL	3 mg/m3
	TWA	1 mg/m3

**US. NIOSH: Pocket Guide to Chemical Hazards**

Components	Type	Value
Sulfuric Acid (CAS 7664-93-9)	TWA	1 mg/m3

<b>Biological limit values</b>	No biological exposure limits noted for the ingredient(s).
<b>Appropriate engineering controls</b>	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. It is recommended that users of this product perform a risk assessment to determine the appropriate PPE.
<b>Individual protection measures, such as personal protective equipment</b>	
<b>Eye/face protection</b>	Chemical respirator with organic vapor cartridge and full facepiece. Do not get in eyes. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.
<b>Skin protection</b>	
<b>Hand protection</b>	Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier.
<b>Other</b>	Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.
<b>Respiratory protection</b>	Chemical respirator with organic vapor cartridge and full facepiece.
<b>Thermal hazards</b>	Wear appropriate thermal protective clothing, when necessary.
<b>General hygiene considerations</b>	Keep away from food and drink. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

**9. Physical and chemical properties**

<b>Appearance</b>	Viscous.
<b>Physical state</b>	Liquid.
<b>Form</b>	Liquid.
<b>Color</b>	Green.
<b>Odor</b>	Acrid.
<b>Odor threshold</b>	Not available.
<b>pH</b>	Not available.
<b>Melting point/freezing point</b>	< 20 °F (< -6.67 °C) @56% P2O5
<b>Initial boiling point and boiling range</b>	268 - 380 °F (131.11 - 193.33 °C)
<b>Flash point</b>	Not available.
<b>Evaporation rate</b>	Not available.
<b>Flammability (solid, gas)</b>	Not applicable.
<b>Upper/lower flammability or explosive limits</b>	
<b>Flammability limit - lower (%)</b>	Not available.
<b>Flammability limit - upper (%)</b>	Not available.
<b>Explosive limit - lower (%)</b>	Not available.
<b>Explosive limit - upper (%)</b>	Not available.
<b>Vapor pressure</b>	Not available.
<b>Vapor density</b>	Not available.
<b>Relative density</b>	Not available.

<b>Solubility(ies)</b>	
<b>Solubility (water)</b>	Complete.
<b>Partition coefficient (n-octanol/water)</b>	Not available.
<b>Auto-ignition temperature</b>	Not available.
<b>Decomposition temperature</b>	Not available.
<b>Viscosity</b>	67 - 140 cP @25°C
<b>Other information</b>	
<b>Bulk density</b>	14 lbs/gal
<b>Flash point class</b>	Non-flammable.
<b>Molecular weight</b>	98
<b>pH in aqueous solution</b>	1 - 1.5 @1-10 g/L
<b>Specific gravity</b>	1.7 @25°C

## 10. Stability and reactivity

<b>Reactivity</b>	May be corrosive to metals.
<b>Chemical stability</b>	Material is stable under normal conditions.
<b>Possibility of hazardous reactions</b>	Hazardous polymerization does not occur.
<b>Conditions to avoid</b>	Contact with incompatible materials.
<b>Incompatible materials</b>	Bases. Strong oxidizing agents. Metals. Aluminum. Copper. Steel. Brasses. Bronze.
<b>Hazardous decomposition products</b>	Fluoride compounds. Oxides of phosphorus. Hydrogen gas can form when in contact with metals.

## 11. Toxicological information

### Information on likely routes of exposure

<b>Inhalation</b>	Toxic if inhaled.
<b>Skin contact</b>	Causes severe skin burns.
<b>Eye contact</b>	Causes serious eye damage.
<b>Ingestion</b>	Causes digestive tract burns. Harmful if swallowed.

<b>Symptoms related to the physical, chemical and toxicological characteristics</b>	Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause respiratory irritation.
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### Information on toxicological effects

<b>Acute toxicity</b>	Toxic if inhaled. Harmful if swallowed. May cause respiratory irritation.
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Product	Species	Test Results
Material name: NW-120		
<b><u>Acute</u></b>		
<b>Dermal</b>		
LD50	Rabbit	3490 mg/kg estimated
<b>Inhalation</b>		
LC50	Guinea pig	0.8182 mg/l, 8 Hours estimated
	Rat	15773 mg/l, 1 Hours estimated
<b>Oral</b>		
LD50	Rat	1911 mg/kg estimated

Components	Species	Test Results
Phosphoric Acid (CAS 7664-38-2)		
<b>Acute</b>		
<b>Dermal</b>		
LD50	Rabbit	2740 mg/kg
<b>Oral</b>		
LD50	Rat	1530 mg/kg
Sulfuric Acid (CAS 7664-93-9)		
<b>Acute</b>		
<b>Inhalation</b>		
LC50	Guinea pig	0.018 mg/l, 8 Hours
	Rat	347 mg/l, 1 Hours
<b>Oral</b>		
LD50	Rat	2140 mg/kg

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

<b>Skin corrosion/irritation</b>	Causes severe skin burns and eye damage.
<b>Serious eye damage/eye irritation</b>	Causes serious eye damage.
<b>Respiratory or skin sensitization</b>	
<b>Respiratory sensitization</b>	Not a respiratory sensitizer.
<b>Skin sensitization</b>	This product is not expected to cause skin sensitization.
<b>Germ cell mutagenicity</b>	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
<b>Carcinogenicity</b>	May cause cancer.
<b>IARC Monographs. Overall Evaluation of Carcinogenicity</b>	
Sulfuric Acid (CAS 7664-93-9)	1 Carcinogenic to humans.
<b>OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)</b>	
Not listed.	
<b>US. National Toxicology Program (NTP) Report on Carcinogens</b>	
Sulfuric Acid (CAS 7664-93-9)	Known To Be Human Carcinogen.
<b>Reproductive toxicity</b>	This product is not expected to cause reproductive or developmental effects.
<b>Specific target organ toxicity - single exposure</b>	May cause respiratory irritation.
<b>Specific target organ toxicity - repeated exposure</b>	Not classified.
<b>Aspiration hazard</b>	Not an aspiration hazard.
<b>Chronic effects</b>	Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects.

## 12. Ecological information

<b>Ecotoxicity</b>	The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
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Product	Species	Test Results
Material name: NW-120		
<b>Aquatic</b>		
Fish	LC50 Fish	1909.0909 mg/l, 96 hours estimated

Components	Species	Test Results
Sulfuric Acid (CAS 7664-93-9)		
<b>Aquatic</b>		
Fish	LC50	Western mosquitofish ( <i>Gambusia affinis</i> ) 42 mg/l, 96 hours

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

<b>Persistence and degradability</b>	No data is available on the degradability of this product.
<b>Bioaccumulative potential</b>	No data available.
<b>Mobility in soil</b>	No data available.
<b>Other adverse effects</b>	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

<b>Disposal instructions</b>	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.
<b>Local disposal regulations</b>	Dispose in accordance with all applicable regulations.
<b>Hazardous waste code</b>	D002: Waste Corrosive material [pH ≤2 or ≥12.5, or corrosive to steel] The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
<b>Waste from residues / unused products</b>	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).
<b>Contaminated packaging</b>	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

<b>UN number</b>	UN1805
<b>UN proper shipping name</b>	Phosphoric acid solution
<b>Transport hazard class(es)</b>	
Class	8
Subsidiary risk	-
Label(s)	8
<b>Packing group</b>	III
<b>Special precautions for user</b>	Read safety instructions, SDS and emergency procedures before handling.
<b>Special provisions</b>	A7, IB3, N34, T4, TP1
<b>Packaging exceptions</b>	154
<b>Packaging non bulk</b>	203
<b>Packaging bulk</b>	241
Reportable Quantity for Phosphoric Acid = 5000 lbs.	

#### IATA

<b>UN number</b>	UN1805
<b>UN proper shipping name</b>	Phosphoric acid, solution
<b>Transport hazard class(es)</b>	
Class	8
Subsidiary risk	-
<b>Packing group</b>	III
<b>Environmental hazards</b>	No.
<b>ERG Code</b>	8L
<b>Special precautions for user</b>	Read safety instructions, SDS and emergency procedures before handling.



#### Other information

Passenger and cargo aircraft Allowed.  
Cargo aircraft only Allowed.

#### IMDG

UN number UN1805  
UN proper shipping name PHOSPHORIC ACID SOLUTION  
Transport hazard class(es)  
Class 8  
Subsidiary risk -  
Packing group III  
Environmental hazards  
Marine pollutant No.  
EmS F-A, S-B  
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not established.

#### DOT



#### IATA; IMDG



## 15. Regulatory information

#### US federal regulations

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

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

Not regulated.

#### CERCLA Hazardous Substance List (40 CFR 302.4)

Phosphoric Acid (CAS 7664-38-2) Listed.  
Sulfuric Acid (CAS 7664-93-9) Listed.

#### SARA 304 Emergency release notification

Sulfuric Acid (CAS 7664-93-9) 1000 LBS

#### OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

**Superfund Amendments and Reauthorization Act of 1986 (SARA)**

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

**SARA 302 Extremely hazardous substance**

Chemical name	CAS number	Reportable quantity	Threshold planning quantity	Threshold planning quantity, lower value	Threshold planning quantity, upper value
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Sulfuric Acid	7664-93-9	1000	1000 lbs		
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**SARA 311/312 Hazardous chemical** Yes

**SARA 313 (TRI reporting)**

Chemical name	CAS number	% by wt.
Sulfuric Acid	7664-93-9	1 - < 3

**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)**

Sulfuric Acid (CAS 7664-93-9)

**Safe Drinking Water Act (SDWA)** Not regulated.

**DEA Essential Chemical Code Number**

Sulfuric Acid (CAS 7664-93-9) 6552

**Drug Enforcement Administration (DEA). List 1 & 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))**

Sulfuric Acid (CAS 7664-93-9) 20 %WV

**DEA Exempt Chemical Mixtures Code Number**

Sulfuric Acid (CAS 7664-93-9) 6552

**US state regulations****US - California Candidate Chemicals: Listed**

Phosphoric Acid (CAS 7664-38-2)

**US - California Candidate Chemicals: Listed on initial list**

Sulfuric Acid (CAS 7664-93-9)

**US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)**

Not listed.

**US. Massachusetts RTK - Substance List**

Phosphoric Acid (CAS 7664-38-2)

Sulfuric Acid (CAS 7664-93-9)

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

Phosphoric Acid (CAS 7664-38-2)

Sulfuric Acid (CAS 7664-93-9)

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

Phosphoric Acid (CAS 7664-38-2)

Sulfuric Acid (CAS 7664-93-9)

**US. Rhode Island RTK**

Phosphoric Acid (CAS 7664-38-2)

Sulfuric Acid (CAS 7664-93-9)

**US. California Proposition 65**

WARNING: This product contains a chemical known to the State of California to cause cancer.

**US - California Proposition 65 - CRT: Listed date/Carcinogenic substance**

Sulfuric Acid (CAS 7664-93-9)

Listed: March 14, 2003

**International Inventories**

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

\*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

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

**16. Other information, including date of preparation or last revision****Issue date** 12-12-2014**Revision date** 04-22-2015**Version #** 02**HMIS® ratings** Health: 3\*  
Flammability: 0  
Physical hazard: 0**NFPA ratings** Health: 3  
Flammability: 0  
Instability: 0

**Disclaimer** Harcros cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information provided in this Material Safety Data Sheet has been obtained from sources believed to be reliable. Harcros Chemicals Inc., provides no warranties, either expressed or implied and assumes no responsibility for the accuracy or completeness of the data contained herein. This information is offered for your information, consideration, and investigation. You should satisfy yourself that you have all current data relevant to your particular use. Harcros Chemicals Inc., knows of no medical condition, other than those noted on this Material Safety Data Sheet, which are generally recognized as being aggravated by exposure to this product.

**Revision Information** Product and Company Identification: Product and Company Identification

## SECTION 1: IDENTIFICATION

### 1.1 Product Identifier

Product Name: NW-310  
Synonyms: Bioacid dispersant, Biodispersant  
Product Form: Liquid, mixture  
Chemical Family: Polymeric acid solution.

### 1.2 Intended Use of the Product

Use of the substance: Solution used to enhance acid cleaning activity; used at a rate of 0.5 to 5% of the cleaning solution

Use of the substance: For professional use only

### 1.3 Contact Information of the Manufacturer

Aqseptence Group/Johnson Screens  
1950 Old Highway 8 NW  
New Brighton, MN 55112  
US

Telephone: 1 651 636 3900

www.aqseptence.com

### 1.4 Emergency Telephone Number

Emergency Number: +1-800-262-8200 USA  
+1-703-741-5500 International  
CHEMTREC

## SECTION 2: HAZARDOUS IDENTIFICATION

### 2.1. Classification of the Substance or Mixture

#### Classification (GHS-US)

Skin Irrit. 2 H315

Eye Irrit. 2A H319

Aquatic Chronic 3 H402

Full text of H-phrases: see Section 16

### 2.2. Label Elements

GHS-US Labelling

Hazard Pictograms (GHS-US):



Signal Word (GHS-US):

Warning

Hazard Statements:

H315 - Causes skin irritation.

(GHS-US)

H319 - Causes serious eye irritation.

Precautionary Statements:

P234 - Keep in original container.

(GHS-US)

P260 - Do not breathe vapors, mist, or spray.

P264 - Wash hands, forearms, and exposed areas thoroughly after handling.

P273 - Avoid release to the environment.

P280 - Wear eye protection, face 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.

P310 - Immediately call a POISON CONTROL CENTER, or a doctor.

P321 - Specific treatment (see Section 4 on this SDS).

P363 - Wash contaminated clothing before reuse.

P390 - Absorb spillage to prevent material damage.

P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations.

### 2.3. Other Hazards

Exposure may aggravate those with pre-existing eye, skin, or respiratory conditions. If involved in a fire and thermal decomposition occurs, potential toxic and acrid vapors may be released.

### 2.4 Unknown Acute Toxicity (GHS-US)

No data available

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1 Substance: Not Applicable

### 3.2 Mixture

Name	Product Identifier	Percentage	Classification (GHS-US)
Organic acid blend	CAS No. 26099-09-2	Proprietary	Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Inhalation: mist), H332 Skin Corr. 1B, H315 Eye Dam. 1, H319
Potassium hydroxide	CAS No. 1310-58-3	Proprietary	Acute Tox. 4 (Oral), H302 Skin Corr. 1A, H315 Eye Dam. 1, H319
Proprietary dispersant polymer	Proprietary	Proprietary	Not classified
Proprietary surfactant mixture	Proprietary	Proprietary	Not classified
Water	CAS No. 7732-18-5	Proprietary	Not classified

Note: If Chemical Name/CAS No. is "proprietary" and/or weight percentage is not listed, the specific chemical identity and/or percentage of composition has been withheld as a trade secret in accordance with CFR §1910.1200.

See Section 16 for the full text of H-phrases.

## SECTION 4: FIRST AID MEASURES

### 4.1 Description of First Aid Measures

**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).

**First-aid Measures after Inhalation:** Keep at rest and in a position comfortable for breathing. Seek medical attention. Symptoms may be delayed.

**First-aid Measures after Skin Contact:** Remove/Take off immediately all contaminated clothing. Immediately flush skin with plenty of water and mild soap for at least 30 minutes. Seek medical advice/attention. Wash contaminated clothing before reuse.

**First-aid Measures after Eye Contact:** Immediately rinse with water for a prolonged period while holding the eyelids wide open. Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing for at least 30 minutes. Immediately call a POISON CENTER or doctor/physician.

**First-aid Measures after Ingestion:** Rinse mouth thoroughly with water. Do NOT induce vomiting. Seek medical attention immediately.

### 4.2 Most Important symptoms and effects, both acute and delayed

**Symptoms/Injuries:** Causes mild skin irritation and possible severe eye irritation.

**Symptoms/Injuries after Inhalation:** Inhalation may cause immediate severe irritation progressing quickly to chemical burns. Corrosive to mucus membranes. Corrosive to the respiratory tract. Symptoms may be delayed.

**Symptoms/Injuries after Skin Contact:** Causes severe skin irritation.

**Symptoms/Injuries after Eye Contact:** Causes serious eye irritation.

**Symptoms/Injuries after Ingestion:** May cause irritation of the linings of the mouth, throat, and



gastrointestinal tract. Ingestion of a large quantity of this material could result in serious health hazard.

**Chronic Symptoms:** None expected under normal conditions of use.

#### 4.3 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

#### 5.1 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 product.

#### 5.2. Special Hazards Arising From the Substance or Mixture

**Fire Hazard:** Not flammable.

**Explosion Hazard:** Product is not explosive.

**Reactivity:** Reacts with (strong) oxidizers: (increased) risk of fire. Contact with metals may evolve flammable hydrogen gas.

#### 5.3. Advice for Firefighters Precautionary Measures Fire:

Exercise caution when fighting any chemical fire. Under fire conditions, hazardous fumes will be present.

**Firefighting Instructions:** Keep upwind. Use water spray or fog for cooling exposed containers.

**Protection During Firefighting:** Firefighters must use full bunker gear including NIOSH-approved positive pressure self-contained breathing apparatus to protect against potential hazardous combustion or decomposition products and oxygen deficiencies. Evacuate area and fight the fire from a maximum distance or use unmanned hose holders or monitor nozzles. Cover pooling liquid with foam. Containers can build pressure if exposed to radiant heat; cool adjacent containers with flooding quantities of water until well after the fire is out. Withdraw immediately from the area if there is a rising sound from a venting safety device or discoloration of vessels, tanks, or pipelines. Be aware that burning liquid will float on water. Notify appropriate authorities if liquid enter sewers or waterways.

**Other Information:** Do not allow the product to be released into the environment. Do not allow run-off from fire fighting to enter drains or water sources.

### SECTION 6: Accidental Release Measures

#### 6.1 Personal Precautions, Protective Equipment and Emergency Procedures

**General Measures:** Avoid all unnecessary exposure. Do not get in eyes, on skin, or on clothing. Do not breathe vapor, mist, or spray.

##### 6.1.1 For Non-emergency Personnel

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

**Emergency Procedures:** Evacuate unnecessary personnel. Keep upwind.

##### 6.1.2 For Emergency Responders

**Protective Equipment:** Equip cleanup crew with proper protection.

**Emergency Procedures:** Upon arrival at the scene, a first responder is expected to recognize the presence of dangerous goods, protect oneself and the public, secure the area, and call for the assistance of trained personnel as soon as conditions permit.

#### 6.2 Environmental Precautions

Avoid unnecessary release into the environment. Notify authorities if undiluted product enters sewers or public waters.

#### 6.3 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:** Ventilate area. Clean up spills immediately and dispose of waste safely. Small quantities of liquid spill: take up in non-combustible absorbent material and shovel into container for disposal. Collect absorbed material and place into a sealed, labeled container for proper disposal. Practice good housekeeping - spillage can be slippery on smooth surface either wet or dry.

#### 6.4 Reference to Other Sections

See Section 8, Exposure Controls and Personal Protection. Concerning disposal elimination after cleaning, see Section 13.

## SECTION 7: HANDLING AND STORAGE

### 7.1 Precautions for Safe Handling

**Additional Hazards When Processed:** Any proposed use of this product in an elevated temperature process should be thoroughly evaluated to assure that safe operating conditions are established and maintained.

**Hygiene Measures:** Handle in accordance with good industrial hygiene and safety procedures. Always wash your hands immediately after handling this product, and once again before leaving the workplace.

Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. Do not eat, drink, or smoke in areas where product is used.

**Storage Conditions:** Store in a dry, cool, and well-ventilated area. Keep container closed when not in use. Store away from oxidizers and caustic products. Storage areas should be periodically checked for damage and integrity.

**Incompatible Products:** Strong oxidizers. Strong bases.

### 7.2 Conditions for Safe Storage, Including Any Incompatibilities

**Technical Measures:** Observe all regulations and local requirements regarding storage of containers. Container remains hazardous when empty, unless properly cleaned. Continue to observe all precautions. Containers and equipment used to handle this product should be exclusively for this material.

### 7.3 Specific End Use(s)

Solution used to enhance acid cleaning activity; use at a rate of 0.5 to 5.0% of the cleaning solution; for professional use only.

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1 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), or OSHA (PEL).

**Potassium hydroxide (CAS No. 1310-58-3) (minor constituent, <3%)**

**USA ACGIH:** ACGIH Ceiling (mg/m<sup>3</sup>) 2 mg/m<sup>3</sup>

**USA NIOSH:** NIOSH REL (ceiling) (mg/m<sup>3</sup>) 2 mg/m<sup>3</sup>

### 8.2 Exposure Controls

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

**Personal Protective Equipment:** Face shield. Protective goggles. Protective clothing. Gloves. Insufficient ventilation: wear respiratory protection.



**Materials for Protective Clothing:**

**Hand Protection:**

**Eye Protection:**

**Skin and Body Protection:**

**Respiratory Protection:**

Corrosion proof materials and fabrics.

Impermeable protective gloves.

A full face shield is recommended. Chemical safety goggles.

Wear suitable protective clothing.

Use a NIOSH approved respirator or self-contained-breathing-apparatus whenever exposure may exceed established Occupational Exposure Limits.

**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

### 9.1 Information on Basic Physical and Chemical Properties

Physical State:	Liquid	Odor:	Slight chemical odor
Appearance:	Amber	Auto Ignition Temp:	Non-detect (none)
pH:	2.3	Specific Gravity:	1.19
Boiling point:	121 °C (249.8 °F)	Freezing point:	0 °C (32 °F) – clouding will occur
Vapor Density:	1.0 (water)	Vapor pressure:	Vapor is water
Solubility:	Water (complete)		

9.2 **Other Information:** No additional information

## SECTION 10: STABILITY AND REACTIVITY

**10.1 Reactivity:** Reacts with (strong) oxidizers: increased risk of fire. Undiluted products contact with metals may evolve release small quantities of hydrogen gas.

**10.2 Chemical Stability:** Stable under recommended handling and storage conditions (see Section 7).

**10.3 Possibility of Hazardous Reactions:** Hazardous polymerization will not occur.

**10.4 Conditions to Avoid:** Direct sunlight, extremely high or low temperatures, open flames, sources of ignition and incompatible materials.

**10.5 Incompatible Materials:** Strong oxidizers. Strong bases.

**10.6 Hazardous Decomposition Products:** Acrid smoke and irritating fumes.

## SECTION 11: TOXICOLOGICAL INFORMATION

### 11.1 Information on Toxicological Effects

**Acute Toxicity:** Not Classified.

**LD50 Oral Rat:** 1950 mg/kg

**LC50 Inhalation Rat:** 3.6 mg/l/4h

**Skin Contact – Acute:** Dermal LD<sub>50</sub> Rabbits > 3000 mg/kg

**Skin Contact – Chronic:** Skin irritation Rabbits (Draize Score 1.6 /8)

**Eye Contact – Acute:** Minimal Rabbits (Draize score 2.7 / 110)

**Skin Corrosion/Irritation:** May cause irritation to skin and serious eye irritation or damage. pH: 2.3

**Serious Eye Damage/Irritation:** May cause serious eye irritation or damage. pH: 2.3

**Respiratory or Skin Sensitization:** Not Classified.

**Germ Cell Mutagenicity:** Not Classified.

**Carcinogenicity:** Not Classified.

**Reproductive Toxicity:** Not Classified.

**Specific Target Organ Toxicity (single exposure):** Not Classified.

**Specific Target Organ Toxicity (repeated exposure):** Not Classified.

**Aspiration Hazard:** Not Classified.

**Symptoms/Injuries after Inhalation:** Inhalation of mist may cause severe irritation to lungs and nasal passages progressing to chemical burns with prolonged exposure. Mildly corrosive to mucus membranes and respiratory tract. Symptoms may be delayed.

**Symptoms/Injuries after Skin Contact:** May cause skin irritation. Prolonged exposure could result in more severe irritation or chemical burns.

**Symptoms/Injuries after Eye Contact:** May cause serious eye damage if not rinsed immediately.

**Symptoms/Injuries after Ingestion:** May cause burns or irritation of the linings of the mouth, throat, and gastrointestinal tract. Swallowing a large quantity of this material may pose a serious health hazard.

**Chronic Symptoms:** None expected under normal conditions of use.

## SECTION 12: ECOLOGICAL INFORMATION

### 12.1 Toxicity

**Ecology – General:** This material is hazardous to the aquatic environment in large quantities. Keep out of sewers and waterways unless neutralized and/or diluted.

**Ecology – Water:** This material is hazardous to the aquatic environment in large quantities. Keep out of sewers and waterways unless neutralized and/or diluted.

**LC50 Bluegill:** 186 mg/l

**EC50 Daphnia 1:** 44 mg/l

### 12.2 Persistence and Degradability

**BOD (5) 1.0% solution:** 7950 mg O<sub>2</sub>/L

**BOD (5) 0.1% solution:** 725 mg O<sub>2</sub>/L

**Total Organic Carbon:** 2.2%

**12.3 Bioaccumulation Potential:** Non-bioaccumulating

**12.4 Mobility in Soil:** Product is slightly viscous and has limited mobility in soils.

**12.5 Other Adverse Effects:** No additional information available

## SECTION 13: DISPOSAL CONSIDERATIONS

### 13.1 Waste Treatment Methods

**Sewage Disposal Recommendations:** Diluted product will not disrupt waste water treatment. Do not empty into drains; dispose of this material and its container in a safe way.

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

## SECTION 14: TRANSPORTATION INFORMATION

### 14.1 In Accordance with DOT

Not regulated as a hazardous material by the US Dept. of Transportation (DOT) 49CFR 172.101 Hazardous Materials Table

**Proper Shipping Name:** COMPOUND, LIQUID, CLEANING, CORROSIVE, POLYMALAEIC ACID BLEND

**Hazard Class:** Non-Hazardous

**Identification Number:** UN/NA1760

**Label Codes:** None Required

**Packing Group:** II

**ERG Number:** 154

### 14.2 In Accordance with IMDG

**Proper Shipping Name:** COMPOUND, LIQUID, CLEANING, CORROSIVE, POLYMALAEIC ACID BLEND

**Hazard Class:** Non-Hazardous

**Identification Number:** UN/NA1760

**Packing Group:** II

**Label Codes:** None Required

**EmS-No. (Fire):** F-A

**EmS-No. (Spillage):** S-B

### 14.3 In Accordance with IATA

**Proper Shipping Name:** COMPOUND, LIQUID, CLEANING, CORROSIVE, POLYMALAEIC ACID BLEND

**Packing Group:** II

**Identification Number:** UN/NA1760

**Hazard Class:** Non-Hazardous

**Label Codes:** None Required

**ERG Code (IATA):** 8L

### 14.4 In Accordance Canadian TDG

**Proper Shipping Name:** COMPOUND, LIQUID, CLEANING, CORROSIVE, POLYMALAEIC ACID BLEND

**Hazard Class:** Non-Hazardous

**Label Codes:** None Required

**Reportable Quantity:** None

## SECTION 15: REGULATORY INFORMATION

**15.1 RCRA Status:** Not a hazardous waste under RCRA 40 CFR 261. No reportable quantities.

**15.2 SARA/TITLE III-CERCLA List:** This product does not contain a "CERCLA" listed hazardous substance for emergency release notification under Sec. 304 (40CFR 302).

**15.3 SARA/TITLE III-Toxic Chemicals List:** This product does not contain a toxic chemical for routine annual "Toxic Chemical Release Reporting" under Sec. 313 (40CFR 372).

**15.4 TSCA Inventory Status:** Chemical components listed on TSCA Inventory.

**15.5 California Proposition 65:** This product does not contain any chemicals currently on the California list of known carcinogens and reproductive toxins.

**15.6 Canadian WHMIS Classification:** This product does not contain any hazardous materials under CPR and this MSDS discloses all information elements required by the CPR.

**15.7 NSF Standard 60:** Certified for use in potable water well cleaning, pipe line cleaning, and filter cleaning

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

**Date of Issue:** 06/01/1997

**Revision Date:** 07/15/2015 Version: 9.0 (English US)

**HS Tariff Classification Number:** 3402.90.5030 preference criterion B

**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:

Acute Tox. 4 (Inhalation: mist)	Acute toxicity (inhalation: mist) Category 4
Acute Tox. 4 (Oral)	Acute toxicity (oral) Category 4
Aquatic Acute 3	Hazardous to the aquatic environment - Acute Hazard Category 3
Eye Dam. 1	Serious eye damage/eye irritation Category 1
Skin Corr. 1A	Skin corrosion/irritation Category 1A
Skin Corr. 1B	Skin corrosion/irritation Category 1B
H302	Harmful if swallowed
H315	Causes skin irritation
H319	Causes serious eye irritation
H332	Harmful if inhaled

**Disclaimer:** The information contained in this SDS was compiled using the latest and most reliable information available at the time of printing. The information contained herein is based on data considered accurate and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product, and, no warranty is expressed or implied regarding the accuracy of this data or the results to be obtained from the user thereof.



## SECTION 1: IDENTIFICATION

### 1.1 Product Identifier

Product Name: NW-410  
Synonyms: Chlorine Enhancer  
Product Form: Liquid, mixture  
Chemical Family: Buffered acid and surfactant solution.

### 1.2 Intended Use of the Product

Use of the substance: Solution to enhance chlorine during disinfection activity; used at a rate of 0.1 to 0.5% by volume based on the alkalinity and chlorine usage.

Use of the substance: For professional use only

### 1.3 Contact Information of the Manufacturer

Aqseptence Group/Johnson Screens 1950 Old  
Highway 8 NW  
New Brighton, MN 55112  
USA  
Telephone: 1 651 636 3900  
www.aqseptence.com

### 1.4 Emergency Telephone Number

Emergency Number: +1-800-262-8200 USA  
+1-703-741-5500 International  
CHEMTREC

## SECTION 2: HAZARDOUS IDENTIFICATION

### 2.1. Classification of the Substance or Mixture

#### Classification (GHS-US)

Skin Irrit. 2 H315

Eye Irrit. 2A H319

Full text of H-phrases: see Section 16

### 2.2. Label Elements

GHS-US Labelling

Hazard Pictograms (GHS-US):



Signal Word (GHS-US):

Warning

Hazard Statements:

H315 - Causes skin irritation.

(GHS-US)

H319 - Causes serious eye irritation.

Precautionary Statements:

P234 - Keep in original container.

(GHS-US)

P264 - Wash hands, forearms, and exposed areas thoroughly after handling.

P273 - Avoid release to the environment.

P280 - Wear eye protection, face 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.

P310 - Immediately call a POISON CONTROL CENTER, or a doctor.

P321 - Specific treatment (see Section 4 on this SDS).

P363 - Wash contaminated clothing before reuse.

P390 - Absorb spillage to prevent material damage.

P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations.

### 2.3. Other Hazards

Exposure may aggravate those with pre-existing eye, skin, or respiratory conditions. If involved in a fire and thermal decomposition occurs; toxic and acid vapors may be released.

### 2.4 Unknown Acute Toxicity (GHS-US)

No data available

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1 Substance: Not Applicable

### 3.2 Mixture

Name	Product Identifier	Percentage	Classification (GHS-US)
Organic acid blend	CAS No. 26099-09-2	Proprietary	Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Inhalation: mist), H332 Skin Corr. 1B, H315 Eye Dam. 1, H319
N			
Water	(CAS No) 7732-18-5	Proprietary	Not classified
Proprietary surfactant mixture	Proprietary	Proprietary	Not classified
Proprietary dispersant polymer	Proprietary	Proprietary	Not classified

Note: If Chemical Name/CAS No. is "proprietary" and/or weight percentage is not listed, the specific chemical identity and/or percentage of composition has been withheld as a trade secret in accordance with CFR §1910.1200.

See Section 16 for the full text of H-phrases.

## SECTION 4: FIRST AID MEASURES

### 4.1 Description of First Aid Measures

**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).

**First-aid Measures after Inhalation:** Keep at rest and in a position comfortable for breathing. Seek medical attention. Symptoms may be delayed.

**First-aid Measures after Skin Contact:** Remove/Take off immediately all contaminated clothing. Immediately flush skin with plenty of water and mild soap for at least 30 minutes. Seek medical advice/attention. Wash contaminated clothing before reuse.

**First-aid Measures after Eye Contact:** Immediately rinse with water for a prolonged period while holding the eyelids wide open. Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing for at least 30 minutes. Immediately call a POISON CENTER or doctor/physician.

**First-aid Measures after Ingestion:** Rinse mouth thoroughly with water. Do NOT induce vomiting. Seek medical attention immediately.

### 4.2 Most Important symptoms and effects, both acute and delayed

**Symptoms/Injuries:** Causes mild skin irritation and possible severe eye irritation.

**Symptoms/Injuries after Inhalation:** Inhalation may cause immediate severe irritation progressing quickly to chemical burns. Corrosive to mucus membranes. Corrosive to the respiratory tract. Symptoms may be delayed.

**Symptoms/Injuries after Skin Contact:** Causes mild skin irritation.

**Symptoms/Injuries after Eye Contact:** Causes serious eye irritation.

**Symptoms/Injuries after Ingestion:** May cause irritation of the linings of the mouth, throat, and gastrointestinal tract. Ingestion of a large quantity of this material could result in serious health hazard.

**Chronic Symptoms:** None expected under normal conditions of use.

### 4.3 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

### 5.1 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 product.

### 5.2. Special Hazards Arising From the Substance or Mixture

**Fire Hazard:** Not flammable.

**Explosion Hazard:** Product is not explosive.

**Reactivity:** Reacts with (strong) oxidizers: (increased) risk of fire.

### 5.3. Advice for Firefighters Precautionary Measures **Fire:** Exercise caution when fighting any chemical fire. Under fire conditions, hazardous fumes will be present.

**Firefighting Instructions:** Keep upwind. Use water spray or fog for cooling exposed containers. In case of major fire and large quantities: evacuate area. Fight fire remotely due to risk.

**Protection During Firefighting:** Firefighters must use full bunker gear including NIOSH-approved positive pressure self-contained breathing apparatus to protect against potential hazardous combustion or decomposition products and oxygen deficiencies. Evacuate area and fight the fire from a maximum distance or use unmanned hose holders or monitor nozzles. Cover pooling liquid with foam. Containers can build pressure if exposed to radiant heat; cool adjacent containers with flooding quantities of water until well after the fire is out. Withdraw immediately from the area if there is a rising sound from a venting safety device or discoloration of vessels, tanks, or pipelines. Be aware that burning liquid will float on water. Notify appropriate authorities if liquid enter sewers or waterways.

**Other Information:** Do not allow the product to be released into the environment. Do not allow run-off from fire fighting to enter drains or water sources.

## SECTION 6: Accidental Release Measures

### 6.1 Personal Precautions, Protective Equipment and Emergency Procedures

**General Measures:** Avoid all unnecessary exposure. Do not get in eyes, on skin, or on clothing. Do not breathe vapor, mist, or spray.

#### 6.1.1 For Non-emergency Personnel

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

**Emergency Procedures:** Evacuate unnecessary personnel. Keep upwind.

#### 6.1.2 For Emergency Responders

**Protective Equipment:** Equip cleanup crew with proper protection.

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

### 6.2 Environmental Precautions

Avoid unnecessary release into the environment. Notify authorities if undiluted product enters sewers or public waters.

### 6.3 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:** Ventilate area. Clean up spills immediately and dispose of waste safely. Small quantities of liquid spill: take up in non-combustible absorbent material and shovel into container for disposal. Collect absorbed material and place into a sealed, labeled container for proper disposal. Practice good housekeeping - spillage can be slippery on smooth surface either wet or dry.

### 6.4 Reference to Other Sections

See heading 8, Exposure Controls and Personal Protection. See Section 13, Disposal Considerations.

## SECTION 7: HANDLING AND STORAGE

### 7.1 Precautions for Safe Handling

**Additional Hazards When Processed:** Any proposed use of this product in an elevated temperature process should be thoroughly evaluated to assure that safe operating conditions are established and maintained.

**Hygiene Measures:** Handle in accordance with good industrial hygiene and safety procedures. Always wash your hands immediately after handling this product, and once again before leaving the workplace.

Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before

reuse. Do not eat, drink, or smoke in areas where product is used.

**Storage Conditions:** Store in a dry, cool, and well-ventilated area. Keep container closed when not in use. Store away from oxidizers and caustic products. Storage areas should be periodically checked for damage and integrity.

**Incompatible Products:** Strong oxidizers. Strong bases.

## 7.2 Conditions for Safe Storage, Including Any Incompatibilities

**Technical Measures:** Observe all regulations and local requirements regarding storage of containers. Container remains hazardous when empty, unless properly cleaned. Continue to observe all precautions. Containers and equipment used to handle this product should be exclusively for this material.

## 7.3 Specific End Use(s)

Solution to enhance chlorine during disinfection activity; used at a rate of 0.1 to 0.5% by volume based on the alkalinity and chlorine usage.

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1 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), or OSHA (PEL).

### 8.2 Exposure Controls

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

**Personal Protective Equipment:** Face shield. Protective goggles. Protective clothing. Gloves. Insufficient ventilation: wear respiratory protection.



**Materials for Protective Clothing:**

Chemically resistant materials and fabrics.

**Hand Protection:**

Impermeable protective gloves.

**Eye Protection:**

Chemical safety goggles.

**Skin and Body Protection:**

Wear suitable protective clothing.

**Respiratory Protection:**

If exposure limits are exceeded or irritation is experienced, approved respiratory protection should be worn.

**Environmental Exposure Controls:**

Avoid release to the environment.

**Consumer Exposure Controls:**

Do not eat, drink, or smoke during use.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on Basic Physical and Chemical Properties

Physical State:	Liquid	Appearance:	Clear, light amber
Odor:	Slight chemical odor	Solubility:	Water (complete)
pH:	2.8	Specific Gravity:	1.12
Boiling point:	112 °C (233.6°F)	Freezing point:	0 °C (32 °F) – clouding will occur
Vapor Density:	1.0 (water)	Vapor pressure:	Vapor is water
Auto Ignition Temp:	Non-detect (none)		

**9.2 Other Information** No additional information

**SECTION 10: STABILITY AND REACTIVITY**

**10.1 Reactivity:** Reacts with (strong) oxidizers. Hazardous reactions will not occur under normal conditions.

**10.2 Chemical Stability:** Stable under recommended handling and storage conditions (see Section 7).

**10.3 Possibility of Hazardous Reactions:** Hazardous polymerization will not occur.

**10.4 Conditions to Avoid:** Direct sunlight, extremely high or low temperatures, open flames, sources of ignition and incompatible materials.

**10.1 Incompatible Materials:** Strong oxidizers.

**10.2 Hazardous Decomposition Products:** Carbon oxides (CO, CO<sub>2</sub>), oxides of nitrogen, oxides of sulfur.

**SECTION 11: TOXICOLOGICAL INFORMATION****11.1 Information on Toxicological Effects**

**Acute Toxicity:** Not Classified.

**LD50 Oral Rat:** >5000 mg/kg

**LC50 Inhalation Rat:** 20 mg/l/4h

**Skin Contact – Acute:** Dermal LD50 Rabbits > 3000 mg/kg

**Skin Contact – Chronic:** Skin irritation Rabbits (Draize Score 1.6 /8)

**Eye Contact – Acute:** Minimal Rabbits (Draize score 2.7 / 110)

**Skin Corrosion/Irritation:** May cause irritation to skin and serious eye irritation or damage. pH: 2.8

**Serious Eye Damage/Irritation:** May cause serious eye irritation or damage. pH: 2.8

**Respiratory or Skin Sensitization:** Not Classified.

**Germ Cell Mutagenicity:** Not Classified.

**Carcinogenicity:** Not Classified.

**Reproductive Toxicity:** Not Classified.

**Specific Target Organ Toxicity (single exposure):** Not Classified.

**Specific Target Organ Toxicity (repeated exposure):** Not Classified.

**Aspiration Hazard:** Not Classified.

**Symptoms/Injuries after Inhalation:** Inhalation of mist may cause severe irritation to lungs and nasal passages progressing to chemical burns with prolonged exposure. Mildly corrosive to mucus membranes and respiratory tract. Symptoms may be delayed.

**Symptoms/Injuries after Skin Contact:** May cause skin irritation. Prolonged exposure could result in more severe irritation or chemical burns.

**Symptoms/Injuries after Eye Contact:** May cause serious eye damage if not rinsed immediately.

**Symptoms/Injuries after Ingestion:** May cause burns or irritation of the linings of the mouth, throat, and gastrointestinal tract. Swallowing a large quantity of this material may pose a serious health hazard.

**Chronic Symptoms:** None expected under normal conditions of use.

**SECTION 12: ECOLOGICAL INFORMATION****12.1 Toxicity**

**Ecology – General:** This material is hazardous to the aquatic environment in large quantities. Keep out of sewers and waterways unless neutralized and/or diluted.

**Ecology – Water:** This material is hazardous to the aquatic environment in large quantities. Keep out of sewers and waterways unless neutralized and/or diluted.

**LC50 Bluegill:** 250 mg/l

**EC50 Daphnia 1:** 44 mg/l

**12.2 Persistence and Degradability**

**BOD (5) 1.0% solution:** 7950 mg O<sub>2</sub>/L

**BOD (5) 0.1% solution:** 725 mg O<sub>2</sub>/L

**Total Organic Carbon:** 15.2%

**12.3 Bioaccumulation Potential:** Non-bioaccumulating

**12.4 Mobility in Soil:** Undiluted product is slightly viscous and has limited mobility in soils.

**12.5 Other Adverse Effects:** Avoid release of undiluted product into the environment.

## SECTION 13: DISPOSAL CONSIDERATIONS

### 13.1 Waste Treatment Methods

**Sewage Disposal Recommendations:** Diluted product will not disrupt waste water treatment. Do not empty into drains; dispose of this material and its container in a safe way.

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

## SECTION 14: TRANSPORTATION INFORMATION

### 14.1 In Accordance with DOT

Not regulated as a hazardous material by the US Dept. of Transportation (DOT) 49CFR 172.101 Hazardous Materials Table

**Proper Shipping Name:** COMPOUND, LIQUID, CLEANING, CORROSIVE, POLYMALAEIC ACID BLEND

**Hazard Class:** Non-Hazardous

**Identification Number:** UN/NA1760

**Label Codes:** None Required

**Packing Group:** II

**ERG Number:** 154

### 14.2 In Accordance with IMDG

**Proper Shipping Name:** COMPOUND, LIQUID, CLEANING, CORROSIVE, POLYMALAEIC ACID BLEND

**Hazard Class:** Non-Hazardous

**Identification Number:** UN/NA1760

**Packing Group:** II

**Label Codes:** None Required

**EmS-No. (Fire):** F-A

**EmS-No. (Spillage):** S-B

### 14.3 In Accordance with IATA

**Proper Shipping Name:** COMPOUND, LIQUID, CLEANING, CORROSIVE, POLYMALAEIC ACID BLEND

**Packing Group:** II

**Identification Number:** UN/NA1760

**Hazard Class:** Non-Hazardous

**Label Codes:** None Required

**ERG Code (IATA):** 8L

### 14.4 In Accordance Canadian TDG

**Proper Shipping Name:** COMPOUND, LIQUID, CLEANING, CORROSIVE, POLYMALAEIC ACID BLEND

**Hazard Class:** Non-Hazardous

**Label Codes:** None Required

**Reportable Quantity:** None

## SECTION 15: REGULATORY INFORMATION

**15.1 RCRA Status:** Not a hazardous waste under RCRA 40 CFR 261. No reportable quantities.

**15.2 SARA/TITLE III-CERCLA List:** This product does not contain a "CERCLA" listed hazardous substance for emergency release notification under Sec. 304 (40CFR 302).

**15.3 SARA/TITLE III-Toxic Chemicals List:** This product does not contain a toxic chemical for routine annual "Toxic Chemical Release Reporting" under Sec. 313 (40CFR 372).

**15.4 TSCA Inventory Status:** Chemical components listed on TSCA Inventory.

**15.5 California Proposition 65:** This product does not contain any chemicals currently on the California list of known carcinogens and reproductive toxins.

**15.6 Canadian WHMIS Classification:** This product does not contain any hazardous materials under CPR and this MSDS discloses all information elements required by the CPR.

**15.7 NSF Standard 60:** Certified for use in potable water well cleaning, pipe line cleaning, and filter cleaning

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

**Date of Issue:** 01/10/2002

**Revision Date:** 07/15/2015 Version: 8.0 (English US)

**HS Tariff Classification Number:** 3402.90.5030 preference criterion A

**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:**

Acute Tox. 4 (Inhalation: mist)	Acute toxicity (inhalation: mist) Category 4
Acute Tox. 4 (Oral)	Acute toxicity (oral) Category 4
Aquatic Acute 3	Hazardous to the aquatic environment - Acute Hazard Category 3
Eye Irrit. 2A	Serious eye damage/eye irritation Category 2A
Skin Irrit. 2	Skin corrosion/irritation Category 2
H302	Harmful if swallowed
H315	Causes skin irritation
H319	Causes serious eye irritation
H332	Harmful if inhaled

**Disclaimer:** The information contained in this SDS was compiled using the latest and most reliable information available at the time of printing. The information contained herein is based on data considered accurate and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product, and, no warranty is expressed or implied regarding the accuracy of this data or the results to be obtained from the user thereof.





# HASA 12.5% SODIUM HYPOCHLORITE SOLUTION

## Safety Data Sheet

12.5% Sodium Hypochlorite

Emergency 24 Hour Telephone: **CHEMTREC 800.424.9300**




Corporate Headquarters: Hasa Inc.  
P.O. Box 802736  
Santa Clarita, CA 91355  
Telephone • 661.259.5848  
Fax • 661.259.1538

### SECTION 1: IDENTIFICATION

1.1	<b>Product Identification:</b>		
1.1.1	<b>Product Name:</b>	HASA 12.5% SODIUM HYPOCHLORITE SOLUTION	
1.1.2	<b>CAS #</b> (Chemical Abstracts Service):	7681-52-9	
1.1.3	<b>RTECS</b> (Registry of Toxic Effects of Chemical Substances):	NH3486300	
1.1.4	<b>EINECS</b> (European Inventory of Existing Commercial Substances):	231-668-3	
1.1.5	<b>EC Number:</b>	231-668-3	
1.1.6	<b>Synonym:</b>	Bleach, Hypo, Hypochlorite, Liquid Chlorine Solution	
1.1.7	<b>Chemical Name:</b>	Sodium Hypochlorite	
1.1.8	<b>Chemical Formula:</b>	NaOCl	
1.2	<b>Recommended Uses:</b>	Manufacturing Use Only Product (MUP). Industrial repackaging. Chemical intermediate or formulation.	
1.3	<b>Company Identification:</b>	Hasa Inc. P. O. Box 802736 Santa Clarita, CA 91355	
1.4	<b>Emergency Telephone Number:</b>	<b>CHEMTREC</b> 1-800-424-9300 (24 hour Emergency Telephone)	
1.5	<b>Non-Emergency Assistance:</b>	661-259-5848 (8 AM – 5 PM PST / PDT)	



## SECTION 2: HAZARD(S) IDENTIFICATION

<b>HEALTH HAZARD</b>	Skin corrosion / irritation:	Category 1
	Serious Eye damage / Eye Irritation	Category 1
	Specific target organ toxicity, single exposure	Category 3 (respiratory tract irritation)
<b>ENVIRONMENTAL HAZARD</b>	Hazardous to the aquatic environment, acute hazard	Category 1
<b>PHYSICAL HAZARD</b>	Corrosive to metals.	Category 1
<b>SYMBOLS</b>	<div style="display: flex; justify-content: space-around; align-items: center;">    </div>	
<b>SIGNAL WORD</b>	<b>DANGER</b>	
<b>HAZARD STATEMENT</b>	May be corrosive to metals. Causes severe skin burns and eye damage. May cause respiratory irritation. Very toxic to aquatic life.	
<b>PRECAUTIONARY STATEMENT</b>	<b>Prevention</b>	
	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.	
	<b>Response</b>	
	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.	
	<b>Storage and Disposal</b>	
	Store in a well-ventilated place. Keep container tightly closed. Store locked up. Store in corrosive resistant container. Dispose of container/contents in accordance with local, regional, national, international regulations as specified.	

## SECTION 3: COMPOSITION INFORMATION ON INGREDIENTS

	<b>Ingredient</b>	<b>Synonyms</b>	<b>CAS No.</b>	<b>Weight %</b>
3.1	Sodium Hypochlorite	Bleach	7681-52-9	12.5%
3.2	Sodium Hydroxide	Caustic Soda	1310-73-2	0.2%

## SECTION 4: FIRST AID MEASURES

4.1	<b>IF IN EYES</b>	<ul style="list-style-type: none"> <li>• Hold eye open and rinse slowly and gently with water for 15-20 minutes.</li> <li>• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
4.2	<b>IF ON SKIN OR CLOTHING</b>	<ul style="list-style-type: none"> <li>• Take off contaminated clothing.</li> <li>• Rinse skin immediately with plenty of water for 15-20 minutes.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
4.3	<b>IF INHALED</b>	<ul style="list-style-type: none"> <li>• Move person to fresh air.</li> <li>• If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible.</li> <li>• Call a poison control center or doctor for further treatment advice.</li> </ul>
4.4	<b>IF SWALLOWED</b>	<ul style="list-style-type: none"> <li>• Call a poison control center or doctor immediately for treatment advice.</li> <li>• Have person sip a glass of water if able to swallow.</li> <li>• Do not induce vomiting unless told to do so by a poison control center or doctor.</li> <li>• Do not give anything by mouth to an unconscious person.</li> </ul>

## HOT LINE NUMBER

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-424-9300 for emergency medical treatment information.

## NOTE TO PHYSICIAN

Probable mucosal damage may contraindicate the use of gastric lavage.

## SECTION 5: FIRE FIGHTING MEASURES

5.1	<b>Flash Point:</b>	Not applicable.
5.2	<b>Flammability:</b>	Nonflammable and noncombustible.
5.3	<b>Auto-Ignition Temperature:</b>	Not applicable.
5.4	<b>Products of Combustion:</b>	Not pertinent.
5.5	<b>Fire Hazards:</b>	May decompose, generating irritating chlorine gas.
5.6	<b>Explosion Hazards:</b>	Not explosive.
5.7	<b>Fire Fighting Media and Instructions:</b>	
	5.7.1 <b>Extinguishing Media:</b>	Water fog. Foam. Dry chemical powder. Carbon dioxide.
	5.7.2 <b>Small Fires:</b>	Use carbon dioxide, or water spray.
	5.7.3 <b>Large Fires:</b>	Use flooding quantities of water as fog.
5.8	<b>Special Remarks on Fire Hazards:</b>	Do not use Mono Ammonium Phosphate (MAP) fire extinguishers. Such use may cause explosion with release of toxic gases.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1	<b>Small Spill:</b>	Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.
6.2	<b>Large Spill:</b>	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. Never return spills in original containers for re-use. For waste disposal, see Section 13 of the SDS.
6.3	<b>Personal Precautions, Protective Equipment &amp; Emergency Procedures:</b>	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.
6.4	<b>Environmental Precautions:</b>	Do not discharge into drains, water courses or onto the ground. Environmental manager must be informed of all major releases.

## SECTION 7: HANDLING AND STORAGE

7.1	<b>Handling:</b>	<ul style="list-style-type: none"> <li>• Avoid contact with skin or eyes.</li> <li>• Do not ingest.</li> <li>• Avoid inhalation of vapor or mist.</li> <li>• Wear protective equipment if necessary.</li> <li>• Mix only with water in accordance with label directions.</li> <li>• Mixing this product with ammonia, acids, detergents, etc or with organic materials, e.g. feces, urine, etc. will release chlorine gas, which is irritating to eyes, lungs, and mucous membranes.</li> </ul>
7.2	<b>Hygiene Measures:</b>	<ul style="list-style-type: none"> <li>• Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet.</li> <li>• While handling this product, avoid eating, drinking or smoking.</li> </ul>
7.3	<b>Storage:</b>	<ul style="list-style-type: none"> <li>• Do not freeze.</li> <li>• Store in a cool, shaded outdoor area.</li> <li>• Inside storage should be in a cool, dry, well-ventilated area.</li> <li>• To maintain hypochlorite strength, do not store in direct or heated indoor areas.</li> <li>• Keep in original vented container.</li> <li>• Keep container closed when not in use.</li> <li>• Do not store adjacent to chemicals that may react if spillage occurs.</li> <li>• If closed containers become heated, vent to release decomposition products (mainly oxygen under normal decomposition).</li> </ul>

<b>SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION</b>			
8.1	<b>Engineering Controls:</b>	Local exhaust ventilation to maintain levels below STEL (Short Term Exposure Limit) of 1 ppm as chlorine.	
8.2	<b>Personal Protection:</b>		
8.2.1	<b>Eye / Face Protection:</b>	Wear safety glasses, goggles or face shield to prevent eye contact.	
8.2.2	<b>Skin Protection:</b>	Wear appropriate chemical resistant protective clothing and chemical resistant gloves to prevent skin contact. Butyl rubber, Neoprene, or Nitrile Gloves should be worn when handling this material. Wear chemical resistant clothing such as a rubber apron when splashing may occur. Rinse immediately if skin is contaminated. Remove contaminated clothing promptly and wash before reuse. Clean protective equipment before reuse.	
8.2.3	<b>Respiratory Protection:</b>	Avoid breathing vapor or mist. When airborne exposure limits are exceeded (see below), use NIOSH approved respiratory protection equipment appropriate to the material and/or its components. Full facepiece equipment is recommended and, if used, replaces need for face shield and chemical goggles. For emergency and other conditions where exposure limit may be significantly exceeded, use an approved full face positive-pressure, self-contained breathing apparatus.	
8.2.4	<b>Other Safety Equipment:</b>	Eye wash facility and emergency shower should be in close proximity.	
8.3	<b>Exposure Limits:</b>	<b>Sodium Hypochlorite</b>	<b>Chlorine*</b>
8.3.1	<b>AIHA</b> (American Industrial Hygiene Association) / <b>WEEL</b> (Workplace Environmental Exposure Level guides) 2010	2 mg/m <sup>3</sup> : 15 minute. (Short-term time weighted average)	Not established
8.3.2	<b>ACGIH</b> (American Conference of Governmental Industrial Hygienists) <b>TWA</b> (Time Weighted Average)	Not established.	0.5 ppm
8.3.3	<b>ACGIH STEL</b> (Short Term Exposure Limit)	Not established.	1 ppm
8.3.4	<b>OSHA PEL</b> (Permissible Exposure Limit)	Not established.	0.5 ppm
8.3.5	<b>ACGIH Ceiling</b>	Not established.	Not established
8.3.6	<b>NIOSH</b> (National Institute for Occupational Safety & Health) <b>IDLH</b> (Immediate Danger to Life & Health)	Not established.	10 ppm
8.3.7	<b>OSHA STEL</b> (Short Term Exposure Limit)	Not established.	1 ppm as Cl <sub>2</sub>
8.3.8	<b>NIOSH</b> (15 min. ceiling)	Not established.	0.5 ppm
* Chlorine is unlikely to be present as a decomposition product, but may be present in incidents of accidental mixing with other chemicals.			

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1	<b>Appearance:</b>	Greenish yellow liquid.
9.2	<b>Odor:</b>	Pungent.
9.3	<b>Odor Threshold:</b>	0.9 mg/m <sup>3</sup> .
9.4	<b>pH:</b>	11.2 – 11.4 (1% solution)
9.5	<b>Melting Point:</b>	Not pertinent.
9.6	<b>Freezing point:</b>	-23.3 °C (-10 °F)
9.7	<b>Boiling Point &amp; Boiling Range:</b>	Decomposes @ 110 °C (230 °F)
9.8	<b>Flash Point:</b>	No information available.
9.9	<b>Evaporation Rate:</b>	No information available.
9.10	<b>Flammability (solid, gas):</b>	Not flammable.
9.11	<b>Upper / Lower Flammability or Explosive Limits:</b>	No information available.
9.12	<b>Vapor Pressure:</b>	12.1 mm Hg @ 20 °C (68 °F)
9.13	<b>Vapor Density:</b>	2.61 (air=1)
9.14	<b>Relative Density (Specific Gravity):</b>	1.2 g/mL or 10 lb/gallon @ 20 °C (68 °F)
9.15	<b>Solubility in Water:</b>	Mixes infinitely with water.
9.16	<b>Partition Coefficient: (n-octanol / water):</b>	No information available.
9.17	<b>Auto-ignition Temperature:</b>	No information available.
9.18	<b>Decomposition Temperature:</b>	Decomposes @ 110 °C (230 °F)
9.19	<b>Molecular Weight:</b>	74.5 g/mole
9.20	<b>Viscosity:</b>	1.75 - 2.50 centipoises (varies with temperature)

## SECTION 10: STABILITY AND REACTIVITY

10.1	<b>Stability:</b>	Stable under normal conditions of storage, handling, and use.
10.2	<b>Instability / Decomposition Temperature:</b>	All bleach decomposition is dependant on temperature. For any given temperature, the higher the strength, the faster it decomposes. In summary, for every 10°C increase in storage temperature, the sodium hypochlorite will decompose at an increased rate factor of approximately 3.5.
10.3	<b>Conditions of Instability:</b>	High heat, ultraviolet light.
10.4	<b>Incompatibility with Various Substances:</b>	Oxidizing agents, acids, nitrogen containing organics, metals, iron, copper, nickel, cobalt, organic materials, and ammonia.
10.5	<b>Corrosivity:</b>	Corrosive to metals.
10.6	<b>Special Remarks on Reactivity:</b>	Rate of decomposition increases with heat. May develop chlorine if mixed with acidic solutions.
10.7	<b>Special Remarks on Corrosivity:</b>	None.
10.8	<b>Hazardous Polymerization:</b>	Will not occur.

## SECTION 11: TOXICOLOGICAL INFORMATION

11.1	<b>Routes of Entry:</b>	Eyes, skin, ingestion, dermal absorption.
11.2	<b>Acute Toxicity:</b>	
11.2.1	<b>Oral Toxicity (LD<sub>50</sub>):</b>	3-5 g/kg (rat)
11.2.2	<b>Dermal Toxicity (LD<sub>50</sub>):</b>	>2 g/kg (rabbit)
11.2.3	<b>Primary Eye Irritation:</b>	Corrosive
11.2.4	<b>Primary Skin Irritation:</b>	Corrosive
11.2.5	<b>Inhalation Toxicity (LC<sub>50</sub>):</b>	No data available.
11.3	<b>Chronic Effects (Human Risk Assessment):</b>	Based on the toxicity profile and exposure scenarios for sodium hypochlorite, EPA concludes that the risks from chronic and subchronic exposure to low levels of these pesticides are minimal and without consequence to human health.
11.4	<b>Tolerance Requirement:</b>	Exempt (EPA document "Index to Pesticide Chemical Names, Part 180 Tolerance Information, and Food and Feed Commodities (by Commodity)" July 2010)

## SECTION 12: ECOLOGICAL INFORMATION

12.1	<b>Ecotoxicity:</b>	Sodium hypochlorite is low in toxicity to avian wildlife, but it is highly toxic to freshwater fish and invertebrates.
12.1.1	<b>Freshwater Fish Toxicity:</b>	Atlantic Herring ( <i>clupea harengus</i> ) LC <sub>50</sub> = 0.033 - 0.097 mg/l/96 hr, flow through bioassay (pH: 8) Shiner Perch ( <i>cymatogaster aggregata</i> ) LC <sub>50</sub> = 0.045 - 0.098 mg/l/96 hr, flow through bioassay (pH: 8) Three Spine Stickleback ( <i>gasterosteus aculeatus</i> ) LC <sub>50</sub> = 0.141 - 0.193 mg/l/96 hr, flow through bioassay (pH: 8) Pink Salmon ( <i>oncorhynchus gorbuscha</i> ) LC <sub>50</sub> = 0.023 - 0.052 mg/l/96 hr, flow through bioassay (pH: 8) Coho Salmon ( <i>oncorhynchus kisutch</i> ) LC <sub>50</sub> = 0.026 - 0.038 mg/l/96 hr, flow through bioassay (pH: 8) English Sole ( <i>parophrys vetulus</i> ) LC <sub>50</sub> = 0.044 - 0.144 mg/l/96 hr, flow through bioassay (pH: 8) Fat Head Minnow ( <i>pimephales promelas</i> ) LC <sub>50</sub> = 0.22 - 0.62 mg/l/96 hr, flow through bioassay (pH: 7)
12.1.2	<b>Invertebrate Toxicity:</b>	Water Flea ( <i>ceriodaphnia</i> sp. 0) LC <sub>50</sub> = 0.006 mg/l/24 hr Water Flea ( <i>daphnia magna</i> ) LC <sub>50</sub> = 0.07 - 0.7 mg/l/24 hr Water Flea ( <i>daphnia magna</i> ) LC <sub>50</sub> = 2.1 mg/l/96 hr Fresh Water Shrimp ( <i>gammarus fasciatus</i> ) LC <sub>50</sub> = 0.4 mg/l/96 hr No common name ( <i>nitocra spinipes</i> ) LC <sub>50</sub> = 0.40 mg/l/96 hr Grass Shrimp ( <i>palaemonetes pugio</i> ) LC <sub>50</sub> = 0.52 mg/l/96 hr
12.2	<b>Persistence:</b>	No data available.
12.3	<b>Environmental Fate:</b>	In fresh water, sodium hypochlorite breaks down rapidly into non-toxic compounds when exposed to sunlight. In seawater, chlorine levels decline rapidly; however, hypobromite (which is acutely toxic to aquatic organisms) is formed. EPA believes that the risk of acute exposure to aquatic organisms is sufficiently mitigated by precautionary labeling and National Pollutant Discharge Elimination System (NPDES) permit requirements.
12.4	<b>Bioconcentration:</b>	This material is not expected to bioconcentrate in organisms.
12.5	<b>Biodegradation:</b>	This material is inorganic and not subject to biodegradation.

### SECTION 13: DISPOSAL CONSIDERATIONS

Do not contaminate food or feed by storage, disposal, or cleaning of equipment. Product or rinsates that cannot be used should be diluted with water before disposal in a sanitary sewer. This product can be neutralized with sodium bisulfite, sodium thiosulfate, sodium sulfite. Do not confuse these products with sulfates or bisulfates. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans, or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination system (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not contaminate water containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance, contact your State Water Board or Regional Office of the EPA. Dispose of in accordance with all applicable local, County, State, and Federal regulations.

### SECTION 14: TRANSPORT INFORMATION


		Inside containers ( <b>&lt; 1.3 gallons</b> )	Container ( <b>&gt;1.3 gallons</b> )
14.1	<b>UN Number</b>	Limited Quantity	UN 1791
14.2	<b>UN Proper Shipping Name</b>	--	Hypochlorite Solutions (Sodium Hypochlorite)
14.3	<b>Transport Hazard Class</b>	--	8
14.4	<b>Packing Group</b>	--	PG III
14.5	<b>Environmental Hazard (e.g. Marine Pollutant)</b>	Yes	Yes
14.6	<b>Reportable Quantity (RQ):</b>	100 lb (45.4 kg) or 80 gallons (based on 12.5% active ingredient)	100 lb (45.4 kg) or 80 gallons (based on 12.5% active ingredient)
14.7	<b>Materials of Trade (MOT) Exceptions.</b> Certain hazardous materials transported in small quantities as part of a business are subject to less regulation, because of the limited hazard they pose. These materials are known as Materials of Trade. The regulations that apply to MOTs are found in 49 CFR § 173.6.		
<i>This information is not intended to convey all specific regulatory or operational requirements / information relating to this product. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.</i>			

## SECTION 15: REGULATORY INFORMATION

15.1	<b>U.S. Regulations:</b>	
15.1.1	<b>OSHA HAZCOM</b> (Hazard Communication)	This material is considered hazardous under the HAZCOM Standard (29 CFR 1910.1200)
15.1.2	<b>OSHA PSM</b> (Process Safety Management)	Not regulated under PSM Standard (29 CFR 1910.119)
15.1.3	<b>EPA FIFRA</b> (Federal Insecticide, Fungicide and Rodenticide Act)	EPA Reg. No. :10897-22 (Registered pesticide under 40 CFR 152.10)
15.1.4	<b>EPA TSCA</b> (Toxic Substance Control Act)	All components are listed or exempted. TSCA 12(b): This product is not subject to export notification.
15.1.5	<b>EPA CERCLA</b> (Comprehensive Environmental Response, Compensation, and Liability Act)	Reportable Quantity (RQ): 45.4 kg (100 lbs) or 80 gallons (based on 12.5% active ingredient).
15.1.6	<b>EPA RMP</b> (Risk Management Plan)	Not listed. (40 CFR 68.130)
15.2	<b>State of California Regulations:</b>	
15.2.1	<b>Safe Drinking Water and Toxic Enforcement Act of 1986 [Proposition 65, California only]:</b> Small quantities – less than 100 ppm (parts per million) – of impurities, including bromates, may be found in all chlorinating products, including this product. Bromates are derived from bromides, which are present in sodium chloride (table salt) from which chlorine is manufactured. Additional small quantities of bromates may be generated during the disinfection process. Bromates are known by the State of California to cause cancer when administered by the oral (drinking or ingesting) route. Read and follow label directions and use care when handling or using this product. The US Environmental Protection Agency has established a maximum contaminant level (MCL) for bromates in drinking water at 10 ppb (parts per billion). Application of this product in accordance with label directions at use dilution will not exceed this level. This warning is provided pursuant to Proposition 65, Chapter 6.6 of the California Health and Safety Code, which requires the Governor of California to publish a list of chemicals “known to the State to cause cancer or reproductive toxicity.” This list is compiled in accordance with the procedures established under the proposition, and can be obtained on the internet from California’s Office of Environmental Health Hazard Assessment at <a href="http://www.oehha.ca.gov">http://www.oehha.ca.gov</a> .	
15.2.2	<b>CDPR</b> (California Department of Pesticide Regulation)	Registration No: 10897-22-AA
15.2.3	<b>CalARP</b> (California Accidental Release Prevention Program)	Not regulated.
15.3	<b>Canada Regulations:</b>	
15.3.1	<b>WHMIS</b> (Workplace Hazardous Materials Information System)	<ul style="list-style-type: none"> <li>Classification: E (Corrosive Materials)</li> <li>Health Effects Criteria Met by this Chemical: <ul style="list-style-type: none"> <li>E - Corrosive to skin</li> <li>E - TDG class 8 - corrosive substance</li> </ul> </li> <li>Ingredient Disclosure List: Included for disclosure at 1% or greater.</li> </ul>
15.3.2	<b>DSL</b> (Domestic Substances List)	All components of this product are on the DSL.
15.4	<b>International Inventory:</b>	
15.4.1	<b>AICS</b> (Australian Inventory of Chemical Substances)	On inventory or in compliance with inventory.
15.4.2	<b>KECI</b> (Korean Existing Chemicals Inventory)	On inventory or in compliance with inventory.
15.4.3	<b>PICCS</b> (Philippine Inventory of Chemicals and Chemical Substances)	On inventory or in compliance with inventory.
15.4.4	<b>IECSC</b> (Inventory of Existing Chemical Substances in China)	On inventory or in compliance with inventory.
15.4.5	<b>NZIoC</b> (New Zealand Inventory of Chemicals)	On inventory or in compliance with inventory.



## SECTION 16: OTHER INFORMATION

16.1	<b>HMIS III</b> (Hazardous Materials Identification System):		
	16.1.1	<b>HEALTH</b>	<b>2</b>
	16.1.2	<b>FLAMMABILITY</b>	<b>0</b>
	16.1.3	<b>PHYSICAL HAZARD</b>	<b>1</b>
	16.1.4	<b>PERSONAL PROTECTION</b>	See Section 8.
16.2	<b>NFPA 704</b> (National Fire Protection Association):		
	16.2.1	<b>HEALTH</b>	<b>2</b>
	16.2.2	<b>FLAMMABILITY</b>	<b>0</b>
	16.2.3	<b>INSTABILITY</b>	<b>0</b>
	16.2.4	<b>SPECIAL</b>	<b>None</b>
			
16.3	<b>International Fire Code / International Building Code:</b>		Irritant.
16.4	<b>ANSI</b> (American National Standards Institute):		
	16.4.1	<b>Hazardous Industrial Chemicals - SDS-Preparation:</b>	Complies with <b>ANSI Z400.1 – 2004.</b>
	16.4.2	<b>Hazardous Industrial Chemicals - Precautionary Labeling:</b>	Complies with <b>ANSI Z129.1 – 2006.</b>

**Note:** The information contained herein, while not guaranteed, was prepared by competent technical personnel and is true and accurate to the best of our knowledge and belief. **NO WARRANTY OR GUARANTEE**, express or implied, is made regarding the product performance, product stability, or as to any other condition of use, handling, transportation, and storage. Customer use, handling, transportation, and storage may involve additional safety and/or performance considerations. Our technical personnel will be happy to respond to questions regarding safe handling, storage, transportation, and use procedures. The safe handling, storage, transportation, and use procedures remain the sole responsibility of the customer. No suggestions for handling, storage, transportation, or use are intended as or to be construed as recommendations which may infringe on any existing patents or violate any Federal, State, and/or local law and/or regulation, ordinance, standard, etc. This Safety Data Sheet has been prepared by HASA, Inc. staff from test reports and other information available in the public domain.