

Control & Disposal Plan  
for  
Roulette Oil & Gas Co, LLC  
Well Clara #20 (37-105-21374-00-00)  
Conversion from Gas Producer to Class II-D Injection Well  
(EPA UIC Permit No. PAS2D050BPOT)  
  
Clara Township  
Potter County, PA

Prepared by  
Cary P. Kuminecz PG (NY & PA)  
StratResources Geologic Consulting, PLLC



*Cary P. Kuminecz*

8/9/2022

## **Introduction**

This Control & Disposal Plan is part of the Preparedness, Prevention, and Contingency (PPC) plan for the site described in the following paragraphs. The purpose of the PPC is to prevent and control the accidental discharge of polluting materials onto the surface or in the groundwater at the site. The publication *Guidelines for the Development and Implementation of Environmental Emergency Response Plans (400-2200-001)* was used in the development of these plans.

Relevant State regulations for these plans may be found in 25 Pa. Code Ch. 78, 91.34, 262a, 264a, 265a, 266a, 273, 277, 279, 281, 283, 284, 287, 288, 289, 293, 295, and 297.

## **Preparer's Experience**

The preparer of this plan, Cary P. Kuminecz, is a Professional Geologist, licensed in both Pennsylvania (License No. PG002142G) and New York (License No. 000357). Mr. Kuminecz has a Master's Degree in Geology from Indiana University and 42 years of experience as a petroleum geologist, the latest 32 years focusing on the Appalachian basin. His experiences includes study of and work in waterfloods of the northern Appalachian basin and successful preparation of the Clara #20 Class-II-D disposal UIC well permit for the EPA.

## **Description of the Operations**

Roulette Oil & Gas Co., LLC (ROGC), contingent upon DEP approval, will convert a production well, the Clara #20 (API No. 37-105-21374-00-00), to a Class II-D Underground Injection Control well. The Environmental Protection Agency (EPA) awarded an Underground Injection Control (UIC) permit to ROGC, effective January 14, 2022 (Permit PAS2D050BPOT). Brine water from nearby shallow, conventional wells operated by ROGC will be injected into the Cooper 5-0, Sheffield 3-1 and Kane 3-0 sandstone reservoirs. In addition to the well itself, the site will contain three one-hundred barrel brine storage tanks (12,600 gallons), a fluid separator, a small oil storage tank, a pressure pump, injectate filter, and meter. The brine intended for disposal comes from approximately 60 shallow conventional oil and gas wells on the lease and another approximately 50 shallow conventional oil and gas wells on ROGC operated leases in the general area.

The preparation of this injection facility will create an earth disturbance of approximately 0.22 acres according to the E&S Plan submitted as part of this permit application (Rosenberger,

2022). The plan calls for the physical upgrading of the access road to the site and of the pad itself. Injector pump, generator, and pipelines will be installed and buried at a depth of three feet in a trench. Silt fencing or compost filter socks will be installed during site upgrades until site stabilization. Drainage patterns will be optimized and maintained. Mulching and seeding will occur after construction. Several lined and diked secondary containment areas will be created. The site will be maintained by ROGC personnel. Specific details regarding all these alterations are found in the *Soil Erosion and Sedimentation Control Plan and Site Restoration Plan* (E&S Plan) submitted as part of the DEP permit application (Rosenberger, 2022).

To minimize noise at the site the operator is planning to inject into the Clara #20 only during daylight hours, unless fluid volumes need to be pressurized at other times. ROGC will be using a 30 hp natural gas engine with muffler to manage the injection rate. The natural gas generator will provide electric power at the site. The injection well will dispose of brine at an average anticipated rate of 20 BWPD, but can go as high as 500 BWPD, when appropriate. Injection pressures will range from 50-750 psi with an expected average of 400 psi. Surface pressures will always remain below the maximum allowed for this site of 974 psi.

To minimize light pollution at the site the operator is planning to inject into the Clara #20 only during daylight hours. Any night time operation, if required, will use a single spotlight for safety.

To minimize truck traffic the operator plans that there will be an estimated one tanker load of brine per day.

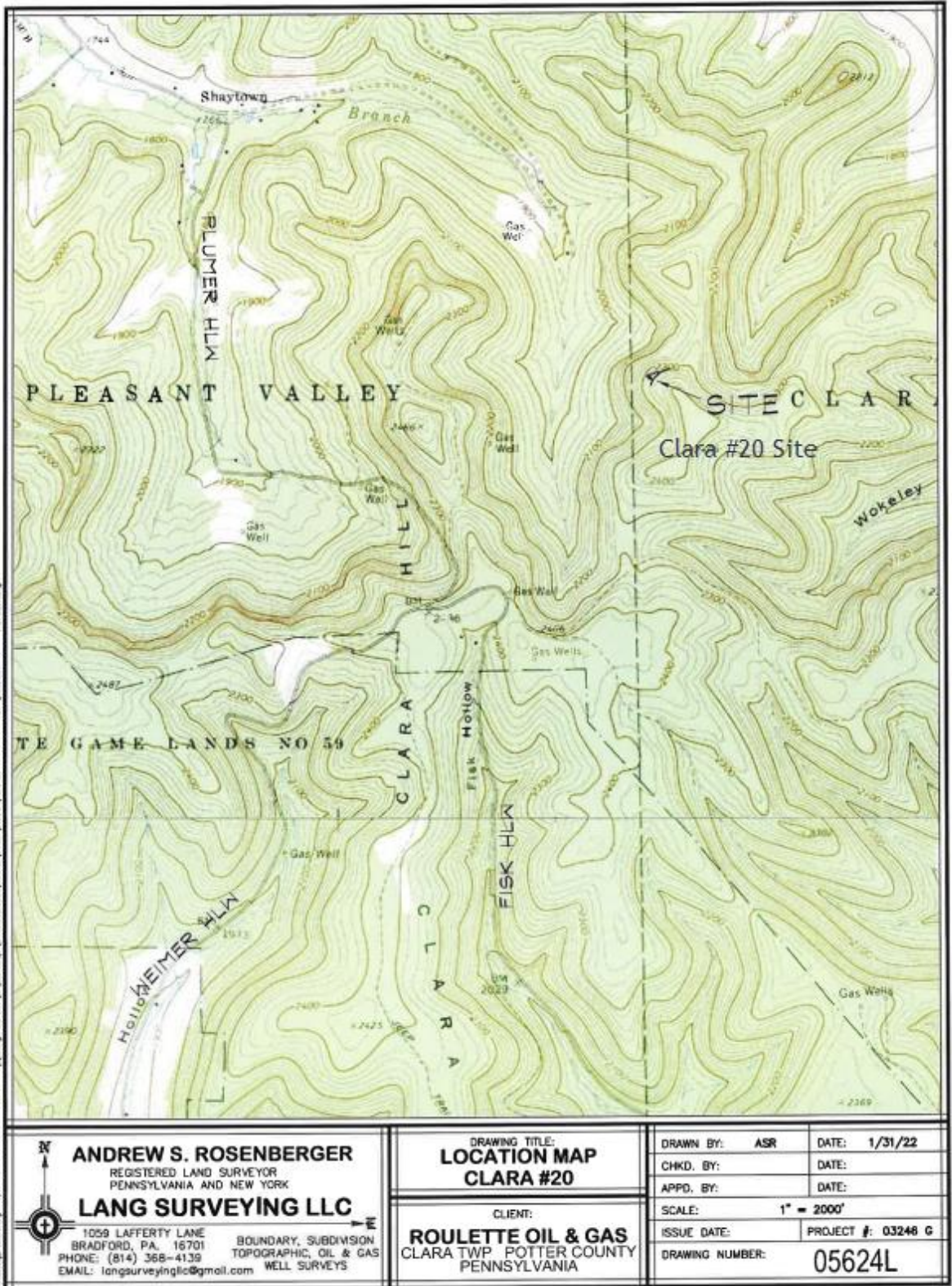
The operator's business and principal address are:

Roulette Oil & Gas Co, LLC (ROGC)  
1034 Route 44 North  
Shinglehouse, PA 16748


The 24-hour ROGC emergency contact numbers are:

James Reynolds, President  
716-378-4653 (mobile)

Pat Howard, Superintendent  
716-864-5535 (mobile)



Monday, January 31, 2022 -- 11:48am EST \\lang-server\pl\lang\Users\jaba\JOBS\03246 CLARA\03246 STATE PLANE.dwg

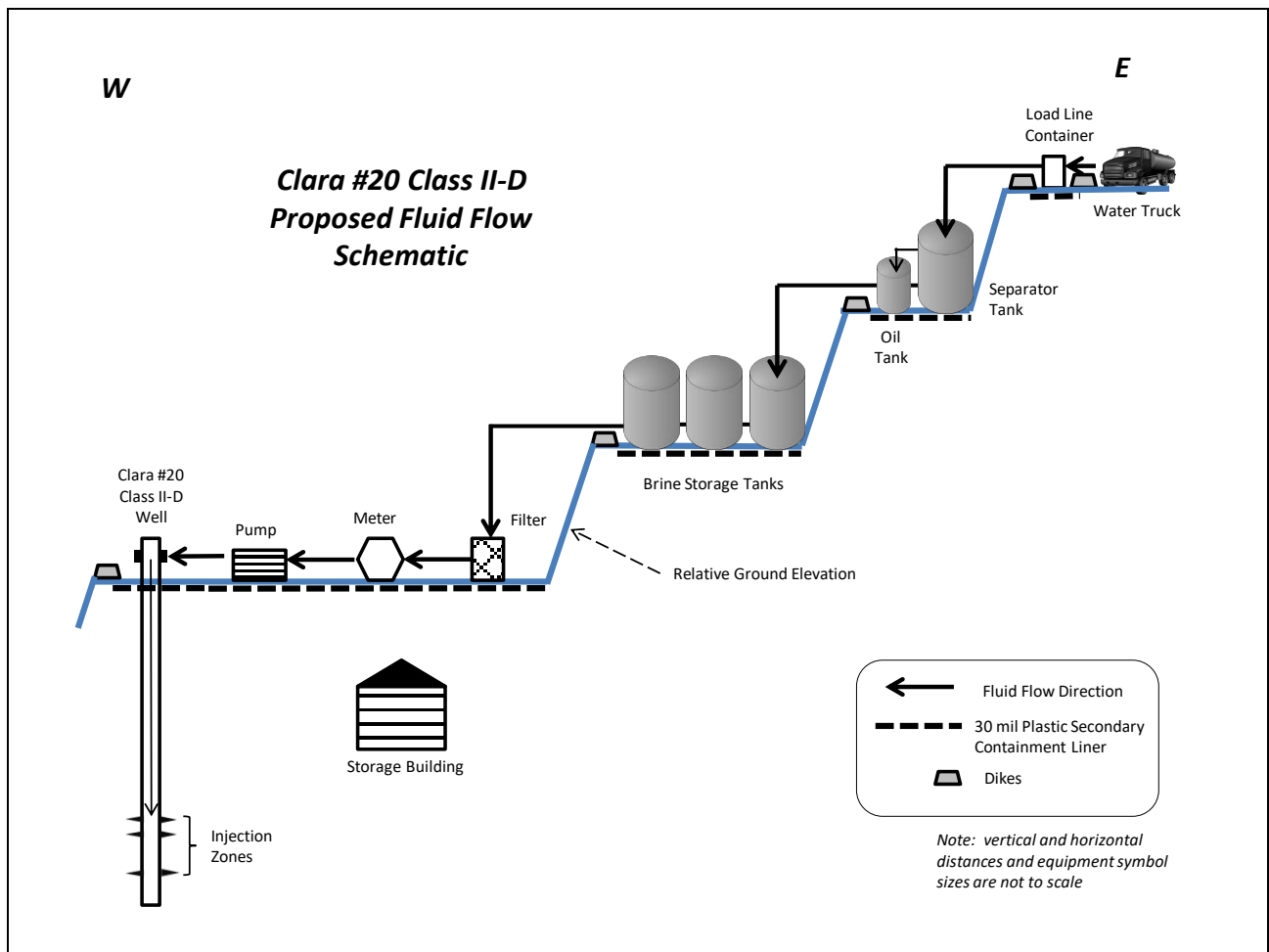
 <p><b>ANDREW S. ROSENBERGER</b> REGISTERED LAND SURVEYOR PENNSYLVANIA AND NEW YORK</p> <p><b>LANG SURVEYING LLC</b> 1059 LAFFERTY LANE BRADFORD, PA. 16701 PHONE: (814) 368-4139 EMAIL: langsurveyingllc@gmail.com</p> <p>BOUNDARY, SUBDIVISION TOPOGRAPHIC, OIL &amp; GAS WELL SURVEYS</p>	DRAWING TITLE: <b>LOCATION MAP                  CLARA #20</b>		DRAWN BY: ASR DATE: 1/31/22
	CLIENT: <b>ROULETTE OIL &amp; GAS</b> CLARA TWP POTTER COUNTY PENNSYLVANIA		CHKD. BY: DATE:
		SCALE: 1" = 2000'	APPD. BY: DATE:
		ISSUE DATE:	PROJECT #: 03246 G
		DRAWING NUMBER:	<b>05624L</b>

### **Pollution Prevention Measures**

1. The facility alteration and construction will be in accordance with the site specific Erosion and Sediment control plan designed by Andrew Rosenberger of Lang Surveying LLC.
2. Fluid will arrive on site in a 100 barrel water truck. The fluid will be transferred from the truck's discharge valve to the site's receiving pipeline going through a steel load line container (Pollution Control Corp. PCC-301) to contain and recover any spills during brine offloading where the truck's discharge connects to the facility's pipeline. The discharge manifold for unloading of the water trucks will be designed so any discharge from hoses will be contained using spill clean-up materials that will be stored on site. Any discharge from the water truck outside of the steel load line container (PPC-301) will be directed toward the diked containment area for cleanup. The appropriate regulatory agencies will be notified if a spill occurs during fluid transfer anywhere on the site beyond the containment areas.
3. Fluids arriving on the site will then pass through a single-walled, lined plastic 100-barrel separator tank to remove any residual oil from the brine. The oil will be transferred to an 80-barrel single-walled steel storage tank for eventual sale. The separated brine, sans oil, will then be temporarily stored in three, 100- barrel single-walled, lined plastic storage tanks prior to filtering, metering and injection.
4. All the storage and separator tanks will be surrounded by earthen dikes, lined with 30 mil plastic, that are designed to hold a minimum of 1.5 times the stored fluid volume of the tanks. The dikes will have three feet of free board. The liners will be underlain by six inches of sand and with two inches of sand over the liner. Two inches of washed gravel will provide the base for the tanks.
5. All tanks will have a fluid level monitor alarm.
6. The brine will be filtered and metered prior to its being pumped into the disposal well.
7. All piping will be pressure tested prior to operation.
8. A high/low pressure kick out switch will be installed on the injection pump.
9. The operator has designated the Clara #11 (37-105-21136-00-00) and the Clara #19 (37-105-21359-00-00), both within one-quarter mile of the Clara #20,, as monitor wells. The operator will pump off all fluid in the monitor wells and then monitor the fluid pumping time in these wells during injection into the Clara #20 to determine if there is excess fluid entry into the monitor wells. With respect to monitoring the Clara #20 itself, the annulus of the 2.375 inch tubing will be kept full of fluid and monitored with a pressure gauge for any pressure anomalies or changes in the fluid level due to packer or tubing failure. If that happens, injection will cease and the tubing will be pulled, inspected, and replaced, as needed.

10. A pressure relief valve will also be installed on the 2.375 inch tubing. The annulus of the 2.375 inch tubing in the well will be kept full of fluid and monitored with a pressure gauge. Pressure or fluid level anomalies noted at the surface will result in the shutdown of injection operations and pulling of the tubing for inspection. ROGC will install a float switch, with an indicator light, in the 4.5 inch casing to notify if fluid is rising in the casing, indicating a potential problem with the 2.375 inch tubing.
11. A visual inspection of the site will be made daily to insure environmental and mechanical problems do not exist.
12. A quarterly inspection will be made of the tanks filters, pumps, piping, and wellhead to verify their integrity.
13. Common chemical and physical absorbent materials will be kept on site as needed to cover spills. Most of the product flows in the field could be quickly controlled by shutting down the pumps used to transport the fluids.

A schematic of the proposed fluid flow and equipment at the injection facility is shown below.



### **Personnel Training**

Training in the normal operations of producing and injection wells is an ongoing process. Ongoing communication between office and field personnel (one to two) will generally be by cell phone using the nearest available cell tower. Cell coverage is good at the wellsite. The responsible individuals will be trained in implementation of the Erosion and Sediment Control plans, construction techniques for high pressure piping, and emergency procedures in case of spillage of pollutants.

### **Waste Disposal/Reuse Methods**

Waste products of this injection-disposal facility are expected to be minimal, but may include the following:

1. Solids collected from the separator and oil tanks and the injectate filter over time. These are likely to be clay-sized and fine- to coarse-grained, natural sediments from the original reservoir formations.
2. Oil separated from the brine and stored in its own tank, which will be sold later.
3. The injectate filter, when replaced.
4. Any contaminated soil following a spill, which will be removed per requirements of the PADEP and the EPA.
5. All these materials will be sent to solid waste landfills approved to take these items.
6. Any spilled brine will be collected by absorbent materials on site or by vacuum truck. These fluids will be disposed of in an environmentally-sound manner approved by the PADEP and EPA.

### **Pollution Incident Response**

A well failure procedure will be initiated if a failure is observed at the facility or if the monitor wells show fluid or pressure anomalies. If that happens, the operator will cease injection operations immediately and notify the PADEP Northcentral Regional Office in Williamsport, PA and EPA's Emergency Response number and/or the EPA Region 3 office in Philadelphia, PA and the Potter County Department of Emergency Services to assist in mitigating and investigating this occurrence. The relevant contact numbers are listed below. Producer wells in the area, with the possible exception of the monitor wells, will continue to operate, but injection operations will be suspended until the operator gains approval from all regulating agencies to continue operation.

**Primary Emergency Contact Phone Numbers**

James Reynolds, President ROGC ( <b>Emergency Coordinator</b> )	716-378-4653 (mobile) 814-697-7891 (office)
Pat Howard, Superintendent ROGC ( <b>Emergency Coordinator</b> )	716-864-5535 (mobile)
EPA National Response Center (NRC)	800-424-8802
EPA Region 3	215-814-5000 or 215-814-5122
Potter County Dept of Emergency Services	814-274-8900
PA Emergency Management Agency (PEMA)	717-651-2001
PADEP Northcentral Regional Office	570-327-3636

**Other Relevant Emergency Phone Numbers**

Potter County Sheriff's Office	814-274-9350
Shinglehouse Volunteer Fire Company Inc	814-697-6236
Coudersport Volunteer Fire Department	814-274-7012

Pumps, hoses, valves and facility equipment will be operated by ROGC and 3<sup>rd</sup> party employees, as appropriate. Hoses, fittings, and valves will have "duck ponds" for secondary containment. Company-owned equipment, including an onsite vacuum truck, are available for cleanup operations. The company employees are familiar with the operation of the equipment and are available on site or on an as-needed basis.

Commercial cleanup contractors are available on a call-as-needed basis with a quick response of less than one day's time.

The Appendix at the end of this plan includes an extensive list of equipment that may be needed quickly in an emergency situation.



## **Implementation**

A permanent identification sign will be installed at the entrance to the facility. The sign shall include the facility name, company name, well name and permit number and the 24-hour emergency number. The site has no postal address, but is located at coordinates 41.894586 and -78.148143 (NAD83).

A small building will be on the site to house the controls and any chemicals. Well records will be stored in the building or within an onsite postal box (non-US Postal Service). The building will be kept locked when the site is unmanned. Access to the site will be by locked gate. Natural barriers and pipe rails will also limit access to the site.

Although all employees are a part of the general preparedness necessary for any emergency response to the events covered by this plan, two individuals have been designated with the responsibility for developing and implementing this plan and will be designated as the Emergency Coordinators.

The Appendix at the end of this plan includes a list of the Emergency Coordinators' duties, responsibilities, and prevention practices often needed in an emergency situation.

In the event of an imminent or actual emergency, the Emergency Coordinator should activate alarm systems, notify emergency response agencies listed in this plan, identify the problems, assess the health or environmental hazards and take all reasonable measures to stabilize the situation. The Emergency Coordinator(s) are also responsible for follow-up activities after the incident such as treating, storing or disposing of residues and contaminated soil, decontamination and maintenance of emergency equipment and submission of any reports.

The Appendix to this plan contains the following information:

1. Emergency Coordinators' Duties
2. Pollution Incident Prevention Practices
3. Emergency Supplies and Equipment Likely to Be Needed
4. Material Data Safety Sheets for Potential Onsite Materials

## APPENDIX

1. Emergency Coordinator's Duties
2. Pollution Incident Prevention Practices
3. Emergency Supplies
4. Relevant Material Safety Data Sheets

### 1. Emergency Coordinator's Duties

Whenever there is an imminent or actual emergency situation, the Emergency Coordinator must immediately:

1. Activate facility alarms or communication systems, where applicable, to notify facility personnel.
2. Call 911 as well as notify local emergency response agencies (see Pages 7 and 8).
  - a. Identify the location, character, exact source, cause, quantity, areal extent, and current weather conditions at the location of any emitted or discharged materials. This may be done by observation or review of records, and if necessary, by chemical analysis.
  - b. Assess possible hazards to human health or the environment that may result from the emission or discharge of materials or from fire or explosion, including injuries or fatalities (if any) and any evacuations that may have taken place. The assessment must consider both direct and indirect effects of the emission, discharge, fire or explosion.
  - c. Report threats to human health or the environment by notifying the local authorities including the county emergency management agency, which in this case is the Potter County Department of Emergency Services, and indicate if evacuation of local areas may be advisable; and notify the National Response Center (NRC) and the Pennsylvania Emergency Management Agency (PEMA) and report the following:
    - i. Name of the person reporting the incident
    - ii. Name and location of the installation
    - iii. Phone number where the person reporting the spill can be reached
    - iv. Date, time, and location of the incident
    - v. Brief description of the incident, including nature of the materials or wastes involved, extent of injuries (if any), and possible hazards to human health or the environment
    - vi. The estimated quantity of the materials or wastes spilled
    - vii. The extent of contamination of land, water, or air, if known

If there is a release from an above ground storage tank, which threatens the water supply of downstream users. The downstream users must be notified as soon as possible. Priority for notification is by closest proximity to the release site.

The Clara #20 wellsite is within the Bell Run watershed a portion of the larger Potato-Oswago Creeks watershed. Downstream waterways within the one mile buffer around the Area of Interest include the Shaytown Branch and tributaries of Bell Run, the South Branch of Canada Run, and Wokeley Hollow and its tributaries; as well as any known water wells and springs.

During an emergency, the Emergency Coordinator must take all reasonable measures necessary to ensure that fire, explosion, emission, or discharge do not occur, reoccur, or spread to other materials or wastes at the installation. These measures shall include, where applicable, stopping all processes and operations, collecting and containing released materials or wastes, and removing or isolating containers.

If the installation stops operations in response to a fire, explosion, emission, or discharge, the Emergency Coordinator must ensure that adequate monitoring is conducted for leaks, pressure buildup, gas generation, or ruptures in valves, pipes, or other equipment, wherever this is appropriate.

Immediately after an emergency, the Emergency Coordinator, with Departmental approval must provide for treating, storing, or disposing of residues, contaminated soil, etc. from an emission, discharge, fire, or explosion at the installation.

The Emergency Coordinator must insure that in the affected areas of the installation, no material or waste incompatible with the emitted or discharged residues is processed, stored, treated, or disposed of until cleanup procedures are completed; and all emergency equipment listed in the plan is clean and fit for its intended use before operations are resumed.

Within 14 days after the incident, the installation must submit a written report on the incident, updating the initial report to PEMA using the link [hazmat@pa.gov](mailto:hazmat@pa.gov) (in PDF file format). The report must include the following:

- A. The name, address, and telephone number of the individual filing the report
- B. The name, address, and telephone number of the installation (if any). Otherwise use the geographic coordinates, if the installation does not have a postal address. Use the Emergency Coordinator's phone number for the Clara #20 installation
- C. The date, time, and location of the incident
- D. A brief description of the circumstances causing the incident

- E. A description and estimated quantity by weight or volume of materials or wastes involved
  
- F. An assessment of any contamination of land, water, or air that has occurred due to the incident
  
- G. The estimated quantity and disposition of recovered materials or wastes that resulted from the incident
  
- H. A description of what actions the installation intends to prevent a similar occurrence in the future

## 2. Pollution Incident Prevention Practices

Pollution incident prevention practices can be divided into the following four categories: prevention, containment, mitigation, and ultimate disposition. The listings below provide specific examples of each category that may be relevant to the Clara #20 facility.

### A. PREVENTION

- a. Visual Observation of:
  - i. Storage facilities
  - ii. Transfer pipelines
  - iii. Loading and unloading areas
  - iv. Waste handling and storage areas
  
- b. Detailed Inspections of:
  - i. Pipes, pumps, valves, and fittings for leaks
  - ii. Tanks for corrosion (internal and external)
  - iii. Dry material or waste stockpiles for wind blowing
  - iv. Tanks supports or foundations for deterioration
  - v. Walls for stains
  - vi. Drainage ditches and areas around old tanks for evidence of spilled materials
  - vii. Primary or secondary containment for deterioration
  - viii. Housekeeping practices
  - ix. Shipping containers for damage
  - x. Material or waste conveyance systems for leaks, spills, or overflows
  - xi. Integrity of stormwater collection systems
  - xii. Waste storage, treatment, or disposal sites for leaks, seeps, and overflows
  
- c. Monitoring of:
  - i. Liquid-level detectors (in well annulus and tanks)
  - ii. Alarm systems
  - iii. Pressure and temperature gauges
  - iv. Analytical testing instrumentation
  - v. Flow meters
  - vi. Valve positioning indicators
  - vii. Equipment operation lights
  - viii. Runoff diversion system
  - ix. Records (all monitoring results/findings)
  
- d. Non-destructive Testing:
  - i. Hydrostatic pressure tests
  - ii. Fluid level measurements in the Clara #20
  - iii. Monitor well measurements

**B. CONTAINMENT**

**a. Secondary Containment**

- i. Dikes
- ii. Depressed areas
- iii. Storage basins
- iv. Sumps
- v. Drip Pans
- vi. Liners

**b. Flow Diversion**

- i. Trenches
- ii. Drains
- iii. Graded pavement
- iv. Overflow structures

**c. Sealing**

- i. Foamed plastic compounds used for plugging leaks in tanks

**C. MITIGATION**

**a. Physical Clean-Up**

- i. Brooms
- ii. Shovels
- iii. Plows
- iv. Absorbent pads

**b. Labeling**

- i. Color coding of tanks and pipelines
- ii. Facility identification and warning signs including "No Trespassing"

**c. Vehicle Positioning**

- i. Designated loading and unloading areas

**d. Covering**

- i. Tarpaulins over outdoor dry waste or material stockpiles
- ii. Vegetation and rock as designated in E&S plan and covering surface impoundments

**e. Pneumatic and Vacuum Conveying**

- i. Loading and unloading by air pressure, vacuum, or gravity feed
- ii. Safety relief valves

- f. Preventative Maintenance
  - i. Periodic inspections
  - ii. Periodic testing to determine soundness of system
  - iii. Identification of equipment and systems that need to be upgraded, repaired, or replaced
  - iv. Appropriate adjustment, repair, or replacement of parts
  - v. Complete recordkeeping of all repairs, upgrading, replacements, and adjustments; and all testing findings/results after system modifications were made
  
- g. Good Housekeeping
  - i. Neat and orderly storage of chemicals
  - ii. Prompt removal of small spillage
  - iii. Regular garbage pickup and disposal
  - iv. Maintenance of dry, clean floors by use of brooms, vacuum cleaners, etc.
  - v. Stimulation of employee interest in good housekeeping
  
- h. Employee Training Programs
  - i. Material Inventory Systems
  - ii. Material Safety Data Sheets
  
- i. Mechanical Cleanup
  - i. Vacuum systems, including onsite vacuum truck
  - ii. Pumps
  - iii. Absorbent pads
  
- j. Chemical Cleanup (Sorbents)
  - i. Activated carbon
  - ii. Polyurethane and polyolefin spheres, beads, and foam belts
  - iii. Clay
  - iv. Sawdust
  
- k. Volatilization
  - i. Evaporation
  
- l. Other
  - i. Neutralization
  - ii. Ion exchange
  - iii. Chemical oxidation
  - iv. Biological treatment



- D. ULTIMATE DISPOSITION
  - a. Thermal oxidation
  - b. Land disposal
  - c. Recycle
  - d. Recover
  - e. Reuse

### 3. Emergency Supplies

Special equipment is often required and may be needed quickly in an emergency. Examples for the Clara #20 Class II-D facility include the following:

- a. Absorbent materials
- b. Assorted pumps and hoses
- c. Backhoe
- d. Bulldozer
- e. Camera
- f. Chain saw
- g. Cutters
- h. Decontamination equipment with a clean resuscitator water supply
- i. Excavator
- j. Firefighting equipment
- k. First aid supplies
- l. Fuel supply
- m. Generator trailer
- n. Gloves, suitable rubber and work types
- o. Heaters, portable
- p. Jacks
- q. Lighting equipment, portable
- r. Medical supplies
- s. Metal saw (power)
- t. Mini-hoe
- u. Safety glasses
- v. Sand supply
- w. Submersible pump
- x. Tool box
- y. Vacuum/water truck
- z. Water pump
- aa. Welding/cutting equipment

#### 4. Safety Data Sheets for Chemicals to Be Potentially Used at the Facility

<b><u>Chemical Type</u></b>	<b><u>Purpose</u></b>
<b>Biocide</b>	<b>(reduce bacterial growth and its byproducts in the well)</b>
<b>Clay Stabilizer</b>	<b>(reduce clay precipitation in the reservoir)</b>
<b>Corrosion Inhibitors</b>	<b>(reduce corrosion of pipelines and well equipment)</b>
<b>Iron Chelating Agent</b>	<b>(reduce iron scale by sequestering metal ions)</b>
<b>Iron-Oxygen Scavenger</b>	<b>(reduce dissolved iron and iron fines in brine)</b>

## Disclaimer

The following Safety Data Sheets (SDS) are for chemicals that will be or may be used at the Clara #20 Class II-D UIC facility. Any changes or additions to these chemicals will have the appropriate Safety Data Sheets located at the facility.

<u>Chemical Name</u>	<u>Chemical Purpose</u>
Bellacide 310	Biocide to prevent bacterial contamination of fluids and reservoirs
Clay Sta XP	Clay mineral control
EDTA	Iron chelating agent
Ethylene Glycol	Corrosion Inhibitor
Fe-OXCLEAR	Scale inhibitor



## SAFETY DATA SHEET BELLACIDE 301

### 1. IDENTIFICATION

<b>Product Name</b>	BELLACIDE 301
<b>Chemical Name</b>	Contains tributyltetradecylphosphonium chloride.
<b>Product No.</b>	101400, 101452
<b>Identification No.</b>	3082
<b>Identified uses</b>	Biocides for water treatment.
<b>Supplier</b>	BWA Water Additives US LLC 1979 Lakeside Parkway Suite 925, Tucker, GA30084 USA T: +1 800 600 4523 T: +1 678 802 3050 E: msds@wateradditives.com
<b>Emergency Telephone</b>	Chemtrec Phone: 1-800-424-9300

### 2. HAZARD(S) IDENTIFICATION

#### EMERGENCY OVERVIEW

EPA REGISTRATION No. 83451-22 EPA SIGNAL WORD: DANGER. EPA FIFRA Labelling information in Section 15 (PRN 2012-1)

<b>Appearance</b>	Clear liquid.
<b>Color</b>	Yellow to amber
<b>Odor</b>	Slight odor.
<b>GHS Pictogram</b>	



**Signal Word** Warning

#### Hazard Statements

H317	May cause an allergic skin reaction.
H332	Harmful if inhaled.
H410	Very toxic to aquatic life with long lasting effects.

#### Precautionary Statements

P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P302+352	IF ON SKIN: Wash with plenty of soap and water.
P304+340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P501	Dispose of contents/container in accordance with national regulations.

#### GHS Classification

Physical and Chemical Hazards	Not classified.
Human health	Acute Tox. 4 - H332;Skin Sens. 1 - H317
Environment	Aquatic Acute 1 - H400;Aquatic Chronic 1 - H410

**BELLACIDE 301****WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM - WHMIS****WHMIS Label**

Materials Causing Other  
Toxic Effects.

**Controlled Product Classification**

Canadian WHMIS Classification This Product has been classified according to the hazard criteria of the Controlled Products Regulations and the MSDS contains all required information. D2B

**Inhalation**

Harmful by inhalation.

**Ingestion**

May cause discomfort if swallowed.

**Skin Contact**

Non Irritant. May cause sensitization by skin contact.

**Eye Contact**

Irritation, burning, lachrymation, blurred vision after liquid splash.

**Route Of Entry**

Inhalation.

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Poly[oxyethylene(dimethyliminio)ethylene(dimethyliminio)ethylenedichloride]	2.22%
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CAS No.: 31512-74-0

EC No.:

GHS Classification

Acute Tox. 4 - H332; Skin Irrit. 2 - H315; Eye Irrit. 2 - H319; Aquatic Acute 1 - H400; Aquatic Chronic 1 - H410

SODIUM LAURIMINODIPROPIONATE	1-5%
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CAS No.: 14960-06-6

EC No.: 239-032-7

GHS Classification

Eye Irrit. 2 - H319

TRIBUTYLTETRADECYL PHOSPHONIUM CHLORIDE	2.78%
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CAS No.: 81741-28-8

EC No.: 279-808-2

GHS Classification

Acute Tox. 4 - H302; Acute Tox. 2 - H330; Skin Corr. 1B - H314; Aquatic Acute 1 - H400; Aquatic Chronic 1 - H410

**Composition Comments**

Aqueous solution containing tributyltetradecylphosphonium chloride

**4. FIRST-AID MEASURES****Description of first aid measures****Inhalation**

Provide fresh air, warmth and rest, preferably in a comfortable upright sitting position. For breathing difficulties oxygen may be necessary. Get medical attention.

## BELLACIDE 301

### Ingestion

NEVER MAKE AN UNCONSCIOUS PERSON VOMIT OR DRINK FLUIDS! Do not induce vomiting. If vomiting occurs, the head should be kept low so that stomach vomit doesn't enter the lungs. Rinse mouth thoroughly. Get medical attention immediately!

### Skin Contact

Immediately remove contaminated clothing. Rinse immediately with plenty of water. Continue to rinse for at least 15 minutes. Get medical attention promptly if symptoms occur after washing.

### Eye Contact

Immediately flush with plenty of water for up to 15 minutes. Remove any contact lenses and open eyes wide apart. Get medical attention immediately. Continue to rinse.

### Most important symptoms and effects, both acute and delayed

#### Inhalation

Congestion of the lungs may occur producing severe shortness of breath.

#### Ingestion

May cause chemical burns in mouth and throat. Nausea, vomiting.

#### Skin Contact

Prolonged or repeated contact with skin may cause redness, itching, irritation and eczema/chapping.

#### Eye Contact

May cause blurred vision and serious eye damage.

### Indication of any immediate medical attention and special treatment needed

#### Notes To The Physician

Probable mucosal damage may contraindicate the use of gastric lavage.

## 5. FIRE-FIGHTING MEASURES

#### Auto Ignition Temperature (°C)

Not available.

#### Flammability Limit - Lower(%)

Not available.

#### Flammability Limit - Upper(%)

Not available.

#### Flash point (°C)

Not available.

#### Extinguishing Media

This product is not flammable. Use: Water spray, fog or mist. Foam, carbon dioxide or dry powder.

#### Unusual Fire & Explosion Hazards

No unusual fire or explosion hazards noted. This material will not burn until the water has evaporated. Residue can burn.

#### Specific Hazards

Fire creates: Toxic gases/vapors/fumes of: Carbon monoxide (CO). Carbon dioxide (CO<sub>2</sub>). Oxides of: Phosphorus. Chlorine.

#### Special Fire Fighting Procedures

Move container from fire area if it can be done without risk. Cool containers exposed to flames with water until well after the fire is out. Keep run-off water out of sewers and water sources. Dike for water control.

#### Protective Equipment For Fire-Fighters

Self contained breathing apparatus and full protective clothing must be worn in case of fire. Leave danger zone immediately.

## 6. ACCIDENTAL RELEASE MEASURES

#### Personal Precautions

Follow precautions for safe handling described in this material safety data sheet. For personal protection, see section 8.

#### Environmental Precautions

Avoid release to the environment. To prevent release, place container with damaged side up.

#### Spill Clean Up Methods

Should be prevented from entering drains. Absorb in vermiculite, dry sand or earth and place into containers. Collect and reclaim or dispose in sealed containers in licensed waste. Containers with collected spillage must be properly labelled with correct contents and hazard symbol. Product is toxic to aquatic organisms. Minimise/prevent product from entering drains or water courses

#### Reference to other sections

For waste disposal, see section 13.

## BELLACIDE 301

### 7. HANDLING AND STORAGE

#### Handling

Avoid spilling, skin and eye contact. Avoid forming spray/aerosol mists. Observe good chemical hygiene practices.

#### Storage

Store in tightly closed original container in a dry, cool and well-ventilated place. Store at temperature below 50°C. Do not store for extended periods below freezing point or in direct sunlight. IF FROZEN: once fully thawed, agitate container vigorously to ensure the product is homogeneous. Keep separate from food, feedstuffs, fertilizers and other sensitive material.

#### Storage Class

Miscellaneous hazardous material storage.

#### Specific end use(s)

The identified uses for this product are detailed in Section 1.2.

### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### Ingredient Comments

No exposure limits noted for ingredient(s).

#### Protective Equipment



#### Process Conditions

Provide eyewash, quick drench.

#### Engineering Measures

Provide sufficient ventilation during operations which cause vapor formation.

#### Respiratory Equipment

If exposure to spray, mist or vapours is possible wear respirator face mask with appropriate cartridge.

A respiratory protection programme that meets OSHA 1910.134 and ANZI Z88.2 requirements must be followed whenever work place conditions warrant a respirator's use.

#### Hand Protection

Use protective gloves made of: Neoprene, nitrile, polyethylene or PVC. Selection of a suitable glove depends on work conditions and whether the product is present on its own or in combination with other substances. Be aware that the liquid may penetrate the gloves. Frequent change is advisable.

#### Eye Protection

Wear approved safety goggles. Use face shield in case of splash risk.

#### Other Protection

Wear appropriate clothing to prevent any possibility of skin contact.

#### Hygiene Measures

No specific hygiene procedures noted, but good personal hygiene practices are always advisable, especially when working with chemicals.

#### Skin Protection

Wear apron or protective clothing in case of contact.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance</b>	Clear liquid.
<b>Color</b>	Yellow to amber
<b>Odor</b>	Slight odor.
<b>Solubility</b>	Miscible with water
<b>Initial boiling point and boiling range (°C)</b>	Not available.
<b>Melting point (°C)</b>	Not available.
<b>Relative density</b>	0.90 - 1.10 20°C
<b>Vapor density (air=1)</b>	Not available.



## BELLACIDE 301

**Vapor pressure**

Not available.

**Evaporation rate**

Not available.

**pH-Value, Conc. Solution** 6.0 - 7.0**Viscosity** 1.40 - 1.60 cSt 20°C**Decomposition temperature (°C)**

Not available.

**Odour Threshold, Lower**

Not available.

**Odour Threshold, Upper**

Not available.

**Flash point (°C)**

Not available.

**Auto Ignition Temperature (°C)**

Not available.

**Flammability Limit - Lower(%)**

Not available.

**Flammability Limit - Upper(%)**

Not available.

**Partition Coefficient****(N-Octanol/Water)**

Not available.

**Explosive properties**

Scientifically unjustified.

**Oxidising properties**

Does not meet the criteria for oxidising.

Not available.

### 10. STABILITY AND REACTIVITY

**Reactivity**

No specific reactivity hazards associated with this product.

**Stability**

Stable under normal temperature conditions and recommended use.

**Hazardous Polymerisation**

Will not polymerise.

**Conditions To Avoid**

Avoid excessive heat for prolonged periods of time.

**Materials To Avoid**

Strong acids. Strong alkalis.

**Hazardous Decomposition Products**Carbon dioxide (CO<sub>2</sub>). Carbon monoxide (CO). Chlorine. Oxides of: Phosphorus.

### 11. TOXICOLOGICAL INFORMATION

**Acute toxicity:****Acute Toxicity (Oral LD50)**

&gt; 2000 mg/kg Rat

**Acute Toxicity (Dermal LD50)**

&gt; 2000 mg/kg Rat

**Acute Toxicity (Inhalation LC50)**

1.55 mg/l (dust/mist) Rat

### 12. ECOLOGICAL INFORMATION

**Ecotoxicity**

The product contains substances which are toxic to aquatic organisms and which may cause long term adverse effects in the aquatic environment.

# BELLACIDE 301

**Partition coefficient**

Not available.

**Mobility:**

The product is miscible with water. May spread in water systems.

**Results of PBT and vPvB assessment**

Not Classified as PBT/vPvB by current EU criteria.

**Other adverse effects**

Not available.

## 13. DISPOSAL CONSIDERATIONS

**Waste Management**

When handling waste, consideration should be made to the safety precautions applying to handling of the product.

**Disposal Methods**

Absorb in vermiculite or dry sand and dispose of at a licenced hazardous waste collection point.

Liquid material should be incinerated. Material absorbed onto sand or earth should be disposed of as solid waste in accordance with local regulations. Empty packaging may contain product residues and due consideration should be given prior to disposal.

## 14. TRANSPORT INFORMATION

<b>UN No. (DOT/TDG)</b>	3082
<b>UN No. (IMDG)</b>	3082
<b>UN No. (ICAO)</b>	3082
<b>DOT Proper Shipping Name</b>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., (Contains tributyltetradecylphosphonium chloride)
<b>TDG Proper Shipping Name</b>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., (Contains tributyltetradecylphosphonium chloride)
<b>DOT Hazard Class</b>	9
<b>DOT Hazard Label</b>	Class 9
<b>TDG Class</b>	9
<b>IMDG Class</b>	9
<b>ICAO Class</b>	9
<b>Transport Labels</b>	



<b>DOT Pack Group</b>	III
<b>TDG Pack Group</b>	III
<b>IMDG Pack Group</b>	III
<b>Air Pack Group</b>	III

**Environmentally Hazardous Substance/Marine Pollutant**



EMS

F-A, S-B

# BELLACIDE 301

## Markings

MARINE POLLUTANT

Classification Code (Adr) M6

## 15. REGULATORY INFORMATION

### Regulatory Status (US)

This Product is Hazardous under the OSHA Hazard Communication Standard. SECTION 313: This product does not contain toxic chemical subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR Part 372. PROPOSITION 65: This product does not contain chemicals considered by the State of California's Safe Drinking Water and Toxic Enforcement Act of 1986 as causing cancer or reproductive toxicity and for which warnings are now required.

### US Federal Regulations

#### SARA Section 302 Extremely Hazardous Substances Tier II Threshold Planning Quantities

None of the ingredients are listed.

#### CERCLA/Superfund, Hazardous Substances/Reportable Quantities (EPA)

None of the ingredients are listed.

#### SARA Extremely Hazardous Substances EPCRA Reportable Quantities

None of the ingredients are listed.

#### SARA 313 Emission Reporting

None of the ingredients are listed.

#### CAA Accidental Release Prevention

None of the ingredients are listed.

#### FDA – Essential Chemical

None of the ingredients are listed.

#### FDA – Precursor Chemical

None of the ingredients are listed.

#### OSHA Highly Hazardous Chemicals

None of the ingredients are listed.

### US State Regulations

#### California Proposition 65 Carcinogens and Reproductive Toxins

None of the ingredients are listed.

#### California Air Toxics "Hot Spots" (A-I)

None of the ingredients are listed.

#### California Air Toxics "Hot Spots" (A-II)

None of the ingredients are listed.

#### Massachusetts "Right To Know" List

None of the ingredients are listed.

#### Rhode Island "Right To Know" List

None of the ingredients are listed.

#### Minnesota "Right To Know" List

None of the ingredients are listed.

#### New Jersey "Right To Know" List

None of the ingredients are listed.

#### Pennsylvania "Right To Know" List

None of the ingredients are listed.

### Fifra Information

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

DANGER.

Corrosive.

Causes irreversible eye damage.

Harmful if swallowed or absorbed through the skin or inhaled.

### International Inventories

#### EU - EINECS/ELINCS

All ingredients are listed or exempt.

**BELLACIDE 301****Canada – DSL/NDSL**

All ingredients are listed or exempt.

**US - TSCA**

All ingredients are listed or exempt.

**US – TSCA 12(b) Export Notification**

None of the ingredients are listed.

**Australia - AICS**

The following ingredients are listed.

Poly[oxyethylene(dimethyliminio)ethylene(dimethyliminio)ethylenedichloride]

TRIBUTYLTETRADECYL PHOSPHONIUM CHLORIDE

WATER

**Japan – MITI**

The following ingredients are listed.

Poly[oxyethylene(dimethyliminio)ethylene(dimethyliminio)ethylenedichloride]

WATER

**Korea - KECI**

The following ingredients are listed.

Poly[oxyethylene(dimethyliminio)ethylene(dimethyliminio)ethylenedichloride]

TRIBUTYLTETRADECYL PHOSPHONIUM CHLORIDE

WATER

**China - IECSC**

The following ingredients are listed.

Poly[oxyethylene(dimethyliminio)ethylene(dimethyliminio)ethylenedichloride]

TRIBUTYLTETRADECYL PHOSPHONIUM CHLORIDE

WATER

**Phillippines – PICCS**

The following ingredients are listed.

TRIBUTYLTETRADECYL PHOSPHONIUM CHLORIDE

WATER

**New Zealand - NZIOC**

The following ingredients are listed.

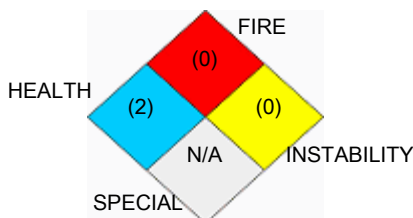
Poly[oxyethylene(dimethyliminio)ethylene(dimethyliminio)ethylenedichloride]

TRIBUTYLTETRADECYL PHOSPHONIUM CHLORIDE

WATER

**16. OTHER INFORMATION****HAZARDOUS MATERIAL INFORMATION SYSTEM (HMIS)**

HEALTH	2
FLAMMABILITY	0
PHYSICAL	0
PERSONAL PROTECTION	F

**NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)****General Information**

For advice on chemical emergencies, spillages, fires or first aid in relation to this product please contact the relevant emergency number below :

EU/English Speakers - +44 (0) 1235 239 670 (NCEC)

Arabic Speakers - +44 (0) 1235 239 671

Asia/Pacific countries - +65 3158 1074

For emergencies within China - +86 10 5100 3039

## BELLACIDE 301

### Revision Comments

Conversion to GHS (HCS 2012 / WHMIS 2015)

<b>Issued By</b>	BWA Water Additives Regulatory Group, +44(0)1618646699
<b>Revision Date</b>	3rd March, 2015
<b>Revision</b>	3
<b>Sds No.</b>	11375

### Disclaimer

For safety reasons it is IMPERATIVE that customers:-

1. Ensure that all those within their control who use the products are supplied with all relevant information contained within the Safety Data Sheet and Technical Bulletin concerning the applications for which the product is designed and any instructions and warnings contained therein.
2. Consult BWA Water Additives before using or supplying the product for any other applications. The information contained herein is based on the present state of our knowledge and is intended to describe our products from the point of view of safety requirements. It should not therefore be construed as guaranteeing specific properties.

## MATERIAL SAFETY DATA SHEET

**Product Trade Name:**           **CLA-STA XP ADDITIVE**

**Revision Date:**                   06-Nov-2014

### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Product Trade Name:**           CLA-STA XP ADDITIVE  
**Synonyms:**                       None  
**Chemical Family:**               Blend  
**Application:**                    Clay Stabilizer

**Manufacturer/Supplier**           Halliburton Energy Services  
  P.O. Box 1431  
  Duncan, Oklahoma 73536-0431  
  Emergency Telephone: (281) 575-5000

**Prepared By**                       Chemical Compliance  
  Telephone: 1-580-251-4335  
  e-mail: fdunexchem@halliburton.com

### 2. COMPOSITION/INFORMATION ON INGREDIENTS

Substances	CAS Number	PERCENT (w/w)	ACGIH TLV-TWA	OSHA PEL-TWA
Polyepichlorohydrin, trimethyl amine quaternized	51838-31-4	30 - 60%	Not applicable	Not applicable

### 3. HAZARDS IDENTIFICATION

**Hazard Overview**                   May cause eye, skin, and respiratory irritation. May be harmful if swallowed.

### 4. FIRST AID MEASURES

**Inhalation**                        If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Skin**                                 Wash with soap and water. Get medical attention if irritation persists.

**Eyes**                                In case of contact, or suspected contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention immediately after flushing.

**Ingestion**                         Do not induce vomiting. Slowly dilute with 1-2 glasses of water or milk and seek medical attention. Never give anything by mouth to an unconscious person.

**Notes to Physician**               Not Applicable

## 5. FIRE FIGHTING MEASURES

Flash Point/Range (F):	Not Determined <b>Min:</b> > 200
Flash Point/Range (C):	Not Determined <b>Min:</b> > 93
Flash Point Method:	PMCC
Autoignition Temperature (F):	Not Determined
Autoignition Temperature (C):	Not Determined
Flammability Limits in Air - Lower (%):	Not Determined
Flammability Limits in Air - Upper (%):	Not Determined

**Fire Extinguishing Media** Water fog, carbon dioxide, foam, dry chemical.

**Special Exposure Hazards** Product is not expected to burn unless all the water is boiled away. Decomposition in fire may produce toxic gases.

**Special Protective Equipment for Fire-Fighters** Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

**NFPA Ratings:** Health 2, Flammability 1, Reactivity 0  
**HMS Ratings:** Health 2, Flammability 1, Reactivity 0

## 6. ACCIDENTAL RELEASE MEASURES

**Personal Precautionary Measures** Use appropriate protective equipment.

**Environmental Precautionary Measures** Prevent from entering sewers, waterways, or low areas.

**Procedure for Cleaning / Absorption** Isolate spill and stop leak where safe. Contain spill with sand or other inert materials. Scoop up and remove.

## 7. HANDLING AND STORAGE

**Handling Precautions** Avoid contact with eyes, skin, or clothing. Avoid breathing vapors.

**Storage Information** Store away from oxidizers. Store in a cool well ventilated area. Keep container closed when not in use.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Engineering Controls** Use in a well ventilated area. Local exhaust ventilation should be used in areas without good cross ventilation.

**Respiratory Protection** Organic vapor respirator with a dust/mist filter. (A2P2/P3)

**Hand Protection** Impervious rubber gloves.

**Skin Protection** Rubber apron.

**Eye Protection** Chemical goggles; also wear a face shield if splashing hazard exists.

**Other Precautions** Eyewash fountains and safety showers must be easily accessible.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Physical State:** Liquid  
CLA-STA XP ADDITIVE  
Page 2 of 6

Color:	Clear amber
Odor:	Amine
pH:	4-8
Specific Gravity @ 20 C (Water=1):	1.13
Density @ 20 C (lbs./gallon):	9.41
Bulk Density @ 20 C (lbs/ft3):	Not Determined
Boiling Point/Range (F):	Not Determined
Boiling Point/Range (C):	Not Determined
Freezing Point/Range (F):	Not Determined
Freezing Point/Range (C):	Not Determined
Vapor Pressure @ 20 C (mmHg):	Not Determined
Vapor Density (Air=1):	Not Determined
Percent Volatiles:	Not Determined
Evaporation Rate (Butyl Acetate=1):	Not Determined
Solubility in Water (g/100ml):	Soluble
Solubility in Solvents (g/100ml):	Not Determined
VOCs (lbs./gallon):	Not Determined
Viscosity, Dynamic @ 20 C (centipoise):	40-55
Viscosity, Kinematic @ 20 C (centistokes):	Not Determined
Partition Coefficient/n-Octanol/Water:	Not Determined
Molecular Weight (g/mole):	Not Determined

## 10. STABILITY AND REACTIVITY

Stability Data:	Stable
Hazardous Polymerization:	Will Not Occur
Conditions to Avoid	None anticipated
Incompatibility (Materials to Avoid)	Strong oxidizers.
Hazardous Decomposition Products	Oxides of nitrogen. Carbon monoxide and carbon dioxide.
Additional Guidelines	Not Applicable

## 11. TOXICOLOGICAL INFORMATION

Principle Route of Exposure Eye or skin contact, inhalation.

### Symptoms related to exposure

#### Acute Toxicity

Inhalation	May cause respiratory irritation.
Eye Contact	May cause severe eye irritation.
Skin Contact	May cause skin irritation.
Ingestion	Irritation of the mouth, throat, and stomach. May cause abdominal pain, vomiting, nausea, and diarrhea.

Chronic Effects/Carcinogenicity No data available to indicate product or components present at greater than 1% are chronic health hazards.

### Toxicology data for the components

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
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Polyepichlorohydrin, trimethyl amine quaternized	51838-31-4	> 2000 mg/kg (Rat)	No data available	No data available
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## 12. ECOLOGICAL INFORMATION

### Ecotoxicological Information

#### Ecotoxicity Product

<b>Acute Fish Toxicity:</b>	Not determined
<b>Acute Crustaceans Toxicity:</b>	TLM96: 300 ppm (Mysidopsis Bahía)
<b>Acute Algae Toxicity:</b>	Not determined

#### Ecotoxicity Substance

Substances	CAS Number	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Toxicity to Invertebrates
Polyepichlorohydrin, trimethyl amine quaternized	51838-31-4	No information available	No information available	No information available	EC50 (48h) 13 mg/L (Daphnia magna) NOEC (48h) 5 mg/L (Daphnia magna)

#### 12.2. Persistence and degradability

Substances	CAS Number	Persistence and Degradability
Polyepichlorohydrin, trimethyl amine quaternized	51838-31-4	(5% @ 28d)

#### 12.3. Bioaccumulative potential

Substances	CAS Number	Log Pow
Polyepichlorohydrin, trimethyl amine quaternized	51838-31-4	No information available

#### 12.4. Mobility in soil

No information available

#### 12.5. Results of PBT and vPvB assessment

No information available.

Substances	PBT and vPvB assessment
Polyepichlorohydrin, trimethyl amine quaternized	No data available

#### 12.6. Other adverse effects

## 13. DISPOSAL CONSIDERATIONS

**Disposal Method** Disposal should be made in accordance with federal, state, and local regulations.

**Contaminated Packaging** Follow all applicable national or local regulations.

## 14. TRANSPORT INFORMATION

#### US DOT

<b>UN Number:</b>	Not restricted
<b>UN Proper Shipping Name:</b>	Not restricted
<b>Transport Hazard Class(es):</b>	Not applicable
<b>Packing Group:</b>	Not applicable

#### US DOT Bulk

**DOT (Bulk)** Not Applicable

#### Canadian TDG u10

**UN Number:** Not restricted  
**UN Proper Shipping Name:** Not restricted  
**Transport Hazard Class(es):** Not applicable  
**Packing Group:** Not applicable

#### IMDG/IMO

**UN Number:** Not restricted  
**UN Proper Shipping Name:** Not restricted  
**Transport Hazard Class(es):** Not applicable  
**Packing Group:** Not applicable

#### IATA/ICAO

**UN Number:** Not restricted  
**UN Proper Shipping Name:** Not restricted  
**Transport Hazard Class(es):** Not applicable  
**Packing Group:** Not applicable

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:** Not applicable  
**Special Precautions for User:** None

### **15. REGULATORY INFORMATION**

#### **US Regulations**

**US TSCA Inventory** All components listed on inventory or are exempt.

**EPA SARA Title III Extremely Hazardous Substances** Not applicable

**EPA SARA (311,312) Hazard Class** Acute Health Hazard

**EPA SARA (313) Chemicals** This product does not contain a toxic chemical for routine annual "Toxic Chemical Release Reporting" under Section 313 (40 CFR 372).

**EPA CERCLA/Superfund Reportable Spill Quantity** Not applicable.

**EPA RCRA Hazardous Waste Classification** If product becomes a waste, it does NOT meet the criteria of a hazardous waste as defined by the US EPA.

**California Proposition 65** All components listed do not apply to the California Proposition 65 Regulation.

**MA Right-to-Know Law** Does not apply.

**NJ Right-to-Know Law** Does not apply.

**PA Right-to-Know Law** Does not apply.

#### **Canadian Regulations**

**Canadian DSL Inventory** All components listed on inventory or are exempt.

**WHMIS Hazard Class** D2B Toxic Materials

### **16. OTHER INFORMATION**

**The following sections have been revised since the last issue of this SDS**

Not applicable

**Additional information**

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Compliance at 1-580-251-4335.

**Disclaimer Statement**

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

**\*\*\*END OF MSDS\*\*\***

## Safety Data Sheet

# ETHYLENE GLYCOL

Version 1.12

Revision Date: 07/14/2022

### SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

**Product name** : ETHYLENE GLYCOL

**Recommended use of the chemical and restrictions on use**

Recommended use : Industrial chemical

**Manufacturer or supplier's details**

**Company** : Univar Solutions USA, Inc.  
**Address** : 3075 Highland Pkwy Suite 200  
Downers Grove, IL 60515  
United States of America (USA)

**Emergency telephone number:**

Transport North America: CHEMTREC (1-800-424-9300)  
CHEMTREC INTERNATIONAL Tel # 703-527-3887

**Additional Information:** : Responsible Party: Product Compliance Department  
E-mail: SDSNA@univarsolutions.com  
SDS Requests: 1-855-429-2661  
Website: www.univarsolutions.com

### SECTION 2. HAZARDS IDENTIFICATION

**GHS Classification**

Acute toxicity (Oral) : Category 4

Specific target organ toxicity  
- repeated exposure : Category 2 (Kidney)

**GHS label elements**

Hazard pictograms :



Signal word : Warning

Hazard statements : H302 Harmful if swallowed.  
H373 May cause damage to organs through prolonged or repeated exposure.

Precautionary statements : **Prevention:**  
P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.  
P264 Wash skin thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
**Response:**  
P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth.  
P314 Get medical advice/ attention if you feel unwell.  
**Disposal:**  
P501 Dispose of contents/ container to an approved waste dis-

**Safety Data Sheet**  
**ETHYLENE GLYCOL**

Version 1.12

Revision Date: 07/14/2022

posal plant.

**Other hazards**

None known.

**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

Substance / Mixture : Substance

**Hazardous components**

CAS-No.	Chemical name	Weight percent
107-21-1	Ethylene glycol	90 - 100
111-46-6	Diethylene glycol	0 - 5

Any Concentration shown as a range is due to batch variation.

**Synonyms** : Ethylene glycol Industrial/Ethylene glycol Meglobal/Glycol/Solv Ethylene glycol,**SECTION 4. FIRST AID MEASURES**

- General advice : Move out of dangerous area.  
Show this safety data sheet to the doctor in attendance.  
Do not leave the victim unattended.
- If inhaled : If unconscious, place in recovery position and seek medical advice.  
If symptoms persist, call a physician.
- In case of skin contact : Wash off with soap and water.  
Wash clothing before reuse.  
If skin irritation persists, call a physician.
- In case of eye contact : Flush eyes with water as a precaution.  
Remove contact lenses.  
Protect unharmed eye.  
Keep eye wide open while rinsing.  
If eye irritation persists, consult a specialist.
- If swallowed : Do not induce vomiting without medical advice.  
Keep respiratory tract clear.  
Do not give milk or alcoholic beverages.  
Never give anything by mouth to an unconscious person.  
If symptoms persist, call a physician.  
Take victim immediately to hospital.

**SECTION 5. FIREFIGHTING MEASURES**Suitable extinguishing media : Foam  
Dry chemical

## Safety Data Sheet

# ETHYLENE GLYCOL

Version 1.12

Revision Date: 07/14/2022

	Carbon dioxide (CO <sub>2</sub> )
Unsuitable extinguishing media	: High volume water jet
Specific hazards during fire-fighting	: Do not allow run-off from fire fighting to enter drains or water courses.
Hazardous combustion products	: Carbon oxides toxic fumes
Further information	: Standard procedure for chemical fires. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Special protective equipment for firefighters	: Wear self-contained breathing apparatus for firefighting if necessary. Use personal protective equipment.

---

### SECTION 6. ACCIDENTAL RELEASE MEASURES

Environmental precautions	: Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.
Methods and materials for containment and cleaning up	: Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal.

---

### SECTION 7. HANDLING AND STORAGE

Advice on protection against fire and explosion	: Normal measures for preventive fire protection.
Advice on safe handling	: Do not breathe vapours/dust. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Dispose of rinse water in accordance with local and national regulations.
Conditions for safe storage	: Keep container tightly closed in a dry and well-ventilated place. Electrical installations / working materials must comply with the technological safety standards.

---

### SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### Components with workplace control parameters

## Safety Data Sheet

### ETHYLENE GLYCOL

Version 1.12

Revision Date: 07/14/2022

CAS-No.	Components	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
107-21-1	Ethylene glycol	C	50 ppm 125 mg/m <sup>3</sup>	OSHA P0
		C	100 mg/m <sup>3</sup>	ACGIH
		TWA (Vapour)	25 ppm	ACGIH
		STEL (Vapour)	50 ppm	ACGIH
		STEL (Inhalable fraction, Aerosol only)	10 mg/m <sup>3</sup>	ACGIH
		C (Vapour)	40 ppm 100 mg/m <sup>3</sup>	CAL PEL
111-46-6	Diethylene glycol	TWA	10 mg/m <sup>3</sup>	US WEEL

#### Personal protective equipment

Respiratory protection : General and local exhaust ventilation is recommended to maintain vapor exposures below recommended limits. Where concentrations are above recommended limits or are unknown, appropriate respiratory protection should be worn. Follow OSHA respirator regulations (29 CFR 1910.134) and use NIOSH/MSHA approved respirators. Protection provided by air purifying respirators against exposure to any hazardous chemical is limited. Use a positive pressure air supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstance where air purifying respirators may not provide adequate protection.

#### Hand protection

Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye protection : Eye wash bottle with pure water  
Tightly fitting safety goggles

Skin and body protection : Impervious clothing  
Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures : When using do not eat or drink.  
When using do not smoke.  
Wash hands before breaks and at the end of workday.

#### SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

Colour : Clear, Colorless

Odour : sweet, slight

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Odour Threshold	: No data available
pH	: 9
Freezing Point (Melting point/freezing point)	: -13 - -11.2 °C (9 - 11.8 °F)
Boiling Point (Boiling point/boiling range)	: 197.4 °C (387.3 °F)
Flash point	: 111 - 116 °C (232 - 241 °F) Method: closed cup
Evaporation rate	: 0.01 (Butyl Acetate = 1)
Flammability (solid, gas)	: No data available
Upper explosion limit	: 22 %(V)
Lower explosion limit	: 1.8 %(V)
Vapour pressure	: < 1 hPa @ 20 - 25 °C (68 - 77 °F)
Relative vapour density	: < 2.14 @ 20 - 25 °C (68 - 77 °F) (Air = 1.0)
Relative density	: 1.115 @ 20 °C (68 °F) Reference substance: (water = 1)
Density	: 1.11 g/cm <sup>3</sup> @ 20 °C (68 °F)
Solubility(ies) Water solubility	: soluble
Solubility in other solvents	: No data available
Partition coefficient: n-octanol/water	: log Pow: -1.36
Auto-ignition temperature	: 398 °C
Thermal decomposition	: No data available
Viscosity Viscosity, dynamic	: 19.83 - 21 mPa.s @ 20 - 25 °C (68 - 77 °F)
Viscosity, kinematic	: 145 mm <sup>2</sup> /s @ 25 °C (77 °F)

**SECTION 10. STABILITY AND REACTIVITY**



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Reactivity	: Stable under recommended storage conditions.
Chemical stability	: Stable under normal conditions.
Possibility of hazardous reactions	: No hazards to be specially mentioned.
Conditions to avoid	: Keep away from heat, flame, sparks and other ignition sources.
Incompatible materials	: Strong bases Strong oxidizing agents Strong acids Aldehydes Aluminium Plastics Reducing agents Peroxides
Hazardous decomposition products	: Aldehydes Ketones Organic acids Carbon oxides

## SECTION 11. TOXICOLOGICAL INFORMATION

### Acute toxicity

#### Product:

Acute oral toxicity : Acute toxicity estimate: 489.08 mg/kg

#### Components:

##### **107-21-1:**

Acute oral toxicity : Assessment: The component/mixture is moderately toxic after single ingestion.

##### **111-46-6:**

Acute oral toxicity : LD50 (Human): Calculated 1,120 mg/kg  
Assessment: The component/mixture is moderately toxic after single ingestion.

### Carcinogenicity

#### IARC

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

#### OSHA

No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

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**NTP** No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

**STOT - repeated exposure****Components:****107-21-1:**

Target Organs: Kidney

Assessment: The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 2.

**Further information****Product:**

Remarks: No data available

---

**SECTION 12. ECOLOGICAL INFORMATION****Ecotoxicity**

No data available

**Persistence and degradability**

No data available

**Bioaccumulative potential**

No data available

**Mobility in soil**

No data available

**Other adverse effects****Product:**

Ozone-Depletion Potential : Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances

Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

Additional ecological information : No data available

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**SECTION 13. DISPOSAL CONSIDERATIONS****Disposal methods**

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- Waste from residues : Dispose of in accordance with all applicable local, state and federal regulations.  
For assistance with your waste management needs - including disposal, recycling and waste stream reduction, contact Univar Solutions ChemCare: 1-800-637-7922
- Contaminated packaging : Empty remaining contents.  
Dispose of as unused product.  
Do not re-use empty containers.

### SECTION 14. TRANSPORT INFORMATION

#### DOT (Department of Transportation):

UN3082, Environmentally hazardous substances, liquid, n.o.s., (ETHYLENE GLYCOL), 9, III

**IATA (International Air Transport Association):** Not regulated as a dangerous good

**IMDG-Code:** Not regulated as a dangerous good

- Special Notes:** : This material is shipped as a Class 9, Packing Group III when each package meets or exceeds the reportable quantity, otherwise it may be shipped as not regulated.

### SECTION 15. REGULATORY INFORMATION

**WHMIS Classification** : : Not controlled.

#### EPCRA - Emergency Planning and Community Right-to-Know Act

##### CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Ethylene glycol	107-21-1	5000	5000
1,4-Dioxane	123-91-1	100	111234

##### SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

**SARA 311/312 Hazards** : Acute toxicity (any route of exposure)  
Specific target organ toxicity (single or repeated exposure)

**SARA 302** : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

**SARA 313** : The following components are subject to reporting levels established by SARA Title III, Section 313:

107-21-1 Ethylene glycol

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### Clean Air Act

The following chemical(s) are listed as HAP under the U.S. Clean Air Act, Section 112 (40 CFR 61):

107-21-1 Ethylene glycol

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

The following chemical(s) are listed under the U.S. Clean Air Act Section 111 SOCMII Intermediate or Final VOC's (40 CFR 60.489):

107-21-1 Ethylene glycol  
111-46-6 Diethylene glycol

### Clean Water Act

The following Hazardous Substances are listed under the U.S. CleanWater Act, Section 311, Table 116.4A:

75-07-0 Acetaldehyde

The following Hazardous Chemicals are listed under the U.S. CleanWater Act, Section 311, Table 117.3:

75-07-0 Acetaldehyde

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307


### Massachusetts Right To Know

107-21-1 Ethylene glycol  
123-91-1 1,4-Dioxane  
75-07-0 Acetaldehyde

### Pennsylvania Right To Know

107-21-1 Ethylene glycol  
111-46-6 Diethylene glycol  
123-91-1 1,4-Dioxane  
75-07-0 Acetaldehyde

### California Prop 65

 **WARNING:** This product can expose you to chemicals including 1,4-Dioxane, Acetaldehyde, which is/are known to the State of California to cause cancer, and Ethylene glycol, which is/are known to the State of California to cause birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

### The components of this product are reported in the following inventories:

TSCA : On TSCA Inventory  
DSL : All components of this product are on the Canadian DSL  
AICS : On the inventory, or in compliance with the inventory  
NZIoC : On the inventory, or in compliance with the inventory  
ENCS : On the inventory, or in compliance with the inventory  
KECI : On the inventory, or in compliance with the inventory  
PHIL : On the inventory, or in compliance with the inventory  
IECSC : On the inventory, or in compliance with the inventory

# Safety Data Sheet

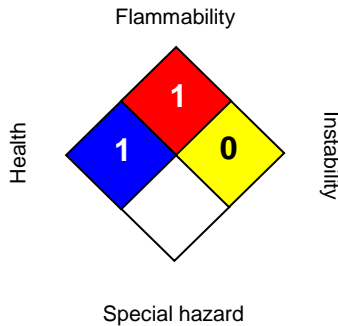
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### SECTION 16. OTHER INFORMATION

**NFPA:**



**HMIS III:**

<b>HEALTH</b>	<b>1*</b>
<b>FLAMMABILITY</b>	<b>1</b>
<b>PHYSICAL HAZARD</b>	<b>0</b>

0 = not significant, 1 = Slight,  
 2 = Moderate, 3 = High  
 4 = Extreme, \* = Chronic

The information accumulated is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made become available subsequently to the date hereof, we do not assume any responsibility for the results of its use. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances. This SDS has been prepared by Univar Solutions Product Compliance Department (1-855-429-2661) [SDSNA@univarsolutions.com](mailto:SDSNA@univarsolutions.com).

**Revision Date** : 07/14/2022

**Legacy SDS:** : R0000003

**Material number:**

16189599, 16186827, 16186690, 16184842, 16184845, 16177859, 16176884, 16174621, 16180818, 16170817, 16168889, 16168166, 16171113, 16172870, 16172917, 16163452, 16158593, 16151256, 16151226, 16145702, 16144747, 16144744, 16165888, 16138739, 16147189, 16137492, 16157140, 16146750, 16157069, 16146636, 16143997, 16136544, 16144139, 16145585, 16145582, 16144545, 16159015, 16158961, 16140174, 16140598, 16142534, 16142076, 16142365, 16134560, 16134526, 16141537, 16142192, 16132249, 16131855, 16129552, 16126165, 16114211, 16112352, 16105892, 16103638, 16086745, 16074387, 16072954, 16062967, 16062968, 16062969, 16062427, 16056075, 16056074, 16055096, 16051591, 16045661, 16041542, 16037771, 16037563, 16034406, 16033659, 16033181, 102641, 16030354, 16013884, 16013560, 16012467, 16012189, 16004457, 775747, 768004, 736726, 736570, 729076, 721550, 714457, 714015, 714153, 666370, 611623, 598441, 594558, 86147, 87305, 559851, 554069, 554044, 554070, 554370

Key or legend to abbreviations and acronyms used in the safety data sheet			
ACGIH	American Conference of Government Industrial Hygienists	LD50	Lethal Dose 50%
AICS	Australia, Inventory of Chemical Substances	LOAEL	Lowest Observed Adverse Effect Level

## Safety Data Sheet

# ETHYLENE GLYCOL

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DSL	Canada, Domestic Substances List	NFPA	National Fire Protection Agency
NDSL	Canada, Non-Domestic Substances List	NIOSH	National Institute for Occupational Safety & Health
CNS	Central Nervous System	NTP	National Toxicology Program
CAS	Chemical Abstract Service	NZIoC	New Zealand Inventory of Chemicals
EC50	Effective Concentration	NOAEL	No Observable Adverse Effect Level
EC50	Effective Concentration 50%	NOEC	No Observed Effect Concentration
EGEST	EOSCA Generic Exposure Scenario Tool	OSHA	Occupational Safety & Health Administration
EOSCA	European Oilfield Specialty Chemicals Association	PEL	Permissible Exposure Limit
EINECS	European Inventory of Existing Chemical Substances	PICCS	Philippines Inventory of Commercial Chemical Substances
MAK	Germany Maximum Concentration Values	PRNT	Presumed Not Toxic
GHS	Globally Harmonized System	RCRA	Resource Conservation Recovery Act
>=	Greater Than or Equal To	STEL	Short-term Exposure Limit
IC50	Inhibition Concentration 50%	SARA	Superfund Amendments and Reauthorization Act.
IARC	International Agency for Research on Cancer	TLV	Threshold Limit Value
IECSC	Inventory of Existing Chemical Substances in China	TWA	Time Weighted Average
ENCS	Japan, Inventory of Existing and New Chemical Substances	TSCA	Toxic Substance Control Act
KECI	Korea, Existing Chemical Inventory	UVCB	Unknown or Variable Composition, Complex Reaction Products, and Biological Materials
<=	Less Than or Equal To	WHMIS	Workplace Hazardous Materials Information System
LC50	Lethal Concentration 50%		



NORTH Metal and Chemical Co.

## 1. Company Identification and Product Hazard Overview:

**Product Name** : NorthQuest EDTA XL; Ethylenediaminetetraacetic Acid, Tetrasodium salt (40% aqueous solution)  
**Synonyms** : Tetrasodium EDTA  
**Recommended Use** : Chelating Agent; sequesters metal ions.  
**Manufactured for** : **NORTH Metal and Chemical Company**  
P. O. Box 1985 609 E. King St.  
York, PA USA 17405 York, PA USA 17403  
Tel: 717-845-8646 Fax: 717-846-7350  
Email: north@nmc-nic.com Website: www.nmc-nic.com

**In Case of Emergency: Call CHEMTREC (24H): 1-800-424-9300**

## 2. Hazard Identification:

### GHS Classification:

Acute Toxicity, Inhalation (Category 4)

Acute Toxicity, Oral (Category 4)

Skin Irritation (Category 5)

Respiratory Irritation (Category 3)

Eye Damage (Category 1)

Corrosive to metals (Category 1)

**Signal Word: DANGER**

**Pictograms:** Corrosion, Acute Toxicity, Health Hazard



### Hazard Statements:

H290	: May be corrosive to metals
H313	: May be harmful if in contact with skin
H332	: Harmful if inhaled
H302	: Harmful if swallowed
H305	: May be harmful if swallowed and enters airways
H318	: Causes serious eye damage
H335	: May cause respiratory irritation

### Precautionary Statements:

#### Prevention:

P233	: Keep container tightly closed
P261	: Avoid breathing dust/fume/gas/mist/vapors/spray
P264	: Wash contact area thoroughly after handling
P271	: Use only outdoors or in a well-ventilated area
P280	: Wear protective gloves/protective clothing/eye protection/face protection.
P281	: Use personal protective equipment as required

## 2. Hazard Identification:

### Precautionary Statements:

<b>P303 + P361 + P353</b>	: IF ON SKIN or hair: Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
<b>P333 + P313</b>	: IF skin irritation or rash occurs: Get medical advice/attention.
<b>P305 + P351 + P338</b>	: IF IN EYES: rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
<b>P301 + P330 + P331 + P311</b>	: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Call a POISON Center or doctor/physician.
<b>P304 + P340</b>	: IF INHALED: Remove person to fresh air and keep in position comfortable for breathing
<b>P332 + P313</b>	: If skin irritation occurs: Get medical advice/attention
<b>P337 + P313</b>	: If eye irritation persists: Get medical advice/attention
<b>P312</b>	: Call a POISON CENTER or doctor/physician if you feel unwell
<b>P403 + P235</b>	: Store in a well-ventilated place. Keep cool.
<b>P501</b>	: Dispose of contents/container in accordance with local/state/federal regulations.

## 3. Composition/Information on Ingredient:

**Chemical Name** : NorthQuest EDTA XL

**Chemical Family** : Chelating Agent

**Chemical Formula** :

Substance:	CAS Number:	Compo. (%)
Water	7732-18-5	balance
Tetrasodium ethylenediamine tetraacetate	64-02-8	38.0 - 41.0%
Ethylenediaminetriacetic acid, Trisodium salt (ED3ANa3)	19019-43-3	< 0.3
Sodium hydroxide	1310-73-2	0.1 - 1.9%

## 4. First Aid Measures:

<b>General Advice:</b>	: Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.
<b>Eyes</b>	: Flush skin with running water for at least fifteen minutes. Remove any contact lenses. Get medical aid/attention immediately. Continue to rinse eyes during transport to the hospital.
<b>Skin</b>	: Remove contaminated clothing. Wash skin with plenty of running water and soap. Take victim immediately to the hospital. Consult a physician.
<b>Ingestion</b>	: If the product is swallowed, first rinse mouth. Give small amount of water to drink. Call doctor/physician/poison center immediately. Do not induce vomiting. Never give anything by mouth to an unconscious person. If a person vomits, place him/her in recovery position so the vomit does not enter lungs.
<b>Inhalation</b>	: If safe to do so, remove individual from further exposure. Keep warm and at rest. If breathing has ceased, give artificial respiration. Do not give mouth to mouth resuscitation. Get medical attention/consult a physician immediately.
<b>Note to Physician</b>	: Treat symptomatically.

**PPE for first responders** : Gloves and safety goggles are highly recommended.

### Indication of immediate medical

**Attention needed** : Chemical eye burns may require extended irrigation. Obtain a prompt consultation, preferably from an ophthalmologist. If burn is present, treat as any thermal burn, after decontamination. Due to irritant properties, swallowing may result in burns/ulceration of mouth, stomach, and lower gastrointestinal tract with subsequent stricture. Aspiration of vomitus may cause lung injury. Suggest endotracheal/esophageal control if lavage is done. No specific antidote. Treatment of exposure should be directed at the control of the symptoms and the clinical condition of the patient.



## 5. Fire Fighting Measures:

- Flash Point (°C)** : Not applicable
- Flammable Limits** : Not applicable
- Auto ignition Temp.** : Not applicable
- Flammable Class** : Not applicable
- General Hazard** : Evacuate personnel downwind in-order to avoid inhalation of irritating and/or harmful fumes and smoke.
- Extinguishing Media** : Use water fog or spray, dry chemical, foam or carbon dioxide extinguishing agents.
- Special hazards arising from the substance** : Carbon monoxide, Carbon dioxide, metal oxides, and Nitrogen Oxides (NOx)
- Fire Fighting Procedures:** Hazardous decomposition and combustion products such as carbon/nitrogen oxides can be formed if product is burning. Cool exposed containers with water spray to prevent over heating.
- Fire Fighting Equipment:** Respiratory and eye protection are required for fire fighting personnel. Full protective equipment (bunker gear) and self-contained breathing apparatus (SCBA) should be used for all indoor fires and any significant outdoor fires. Evacuate area and fight fire from safe distance or a protected location. Move fire-exposed containers, if allowable without sacrificing the safety of the firefighters. If possible, firefighters should control run-off water to prevent environmental contamination.

## 6. Accidental Release Measures:

- Protective Gear for Personnel** : Wear respiratory protection. Avoid breathing vapors, mist, or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.
- Environmental Precaution** : Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.
- Methods and materials for containment and cleaning up** : Contain spillage. Soak up liquid residue with a suitable absorbent such as non-combustible material. Collect in suitable and properly labeled containers for disposal. Then flush the area with water. CAUTION: The spill area may be slippery.
- Release Notes** : If spill could potentially enter any waterway, including intermittent dry creeks, contact local authorities.

## 7. Handling and Storage:

- Handling** : Avoid contact with skin and eyes. Avoid inhalation of vapor or mist. Do not Swallow. Wash thoroughly after handling. Use with adequate ventilation Do not eat, drink, or smoke when handling this product.
- Storage** : Store in a cool, dry well-ventilated area. Keep containers closed and up right when not in use. Isolate from incompatible materials such as strong oxidizing agents. Store in PVC, PE, or stainless steel containers. Keep product isolated from incompatible materials/conditions. Avoid contact with aluminum , copper, copper alloys, nickel and zinc.
- Shelf life: Use within 24 months. Retest if stored more than 3 years.  
Storage Temperature: Below 85°F/35°C

## 8. Exposure Controls and Personal Protection:

### Exposure Limits

Component	List	Type	Value
Sodium Hydroxide	ACGIH	Ceiling	2 mg/m <sup>3</sup>
	OSHA	PEL	2 mg/m <sup>3</sup>
	NIOSH	Ceiling	2 mg/m <sup>3</sup>

### Immediately Dangerous To Life or Health Concentrations (IDLH/NIOSH):

Sodium Hydroxide = 10mg/m<sup>3</sup>

**Engineering Controls** : Use appropriate engineering controls to avoid contact with skin, eyes, and clothing. Wash hands before breaks and immediately after handling the product. Use local exhaust ventilation.

### Personal Protective Equipment

: **Eyes and face:** Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH.

**Skin:** Avoid direct contact with skin. Wear rubber gloves, apron, boots or whole bodysuit when handling this product. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of any contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

: **Body Protection:** Complete suit protecting against chemicals; flame retardant anti-static protective clothing. The type of protective equipment must be selected according to the concentration and amount of dangerous substance at the specific work place.

: **Respiratory:** Where risk assessment shows air-purifying respirators are appropriate, use full-face respirator with multi-purpose combination respirator cartridges as a back up to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH.

**Work Hygienic Practices** : Facilities storing or using this material should be equipped with emergency eyewash, and a safety shower. Good personal hygiene practices should always be followed.

### Control of Environmental Exposure

: Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

## 9. Chemical and Physical Properties:

<b>Appearance</b>	: Liquid	<b>Vapor Density</b>	: same as water
<b>Odor</b>	: Mild; slight ammonia	<b>Relative Density</b>	: Not available
<b>Odor threshold</b>	: Not available	<b>Solubility</b>	: completely miscible in water
<b>Color</b>	: Colorless to yellow	<b>Specific Gravity</b>	: 1.26 - 1.30
<b>pH</b>	: 11.0 - 11.8 (1% solution)	<b>Partition coefficient (n-octanol/water)</b>	: Log Pow < 0
<b>Melting Point</b>	: Not applicable	<b>Auto Ignition Temp.</b>	: Not available
<b>Freezing Point</b>	: ≤ -18°C	<b>Molecular Weight</b>	: 380.2 g/mol
<b>Boiling Range</b>	: 106°C	<b>Viscosity</b>	: ~ 19 mPas @ 20°C
<b>Flash Point</b>	: None	<b>Decomposition Temp</b>	: >392°F/200°C (solid); : >224.6°F/>107°C (water loss)
<b>Viscosity @ 20 °C</b>	: Not available		
<b>Evaporation Rate</b>	: < 0.8 estimated		
<b>Lower Explosive Limit</b>	: Not applicable		
<b>Upper Explosive Limit</b>	: Not applicable		
<b>Vapor Pressure</b>	: same as water		

## 10. Stability and Reactivity:

- Stability** : The product is stable under recommended storage conditions.
- Reactivity** : No dangerous reaction known under conditions of normal use.
- Possibility of Hazardous Reactions** : Polymerization will not occur
- Hazardous Decomposition Products** : Depends upon temperature, air supply, and the presence of other materials. Decomposition products can include and are not limited to Ammonia, Carbon oxides, Nitrogen Oxides, and water vapor.
- Incompatible Materials** : Avoid contact with Oxidizers. Flammable Hydrogen may be generated from contact with metals such as Aluminum. Avoid contact with aluminum, nickel, zinc, copper, and copper alloys.
- Conditions to Avoid** : Some components of this product can decompose at elevated temperatures.

## 11. Toxicological Information:

### Acute Toxicity Data:

LD50 Ingestion - Rat - 3,030 mg/kg  
LD50 Dermal - Rabbit - > 5,000 mg/kg

### Tetrasodium EDTA:

LD50 Oral = 1,780 mg/kg

### Related product Disodium EDTA

LC50 Inhalation: 4h; 1,000 - 5,000 mg/m<sup>3</sup> (maximum attainable concentration)

### Skin corrosion/irritation:

Prolonged contact may cause skin irritation with local redness. Repeated contact may cause skin burns. Symptoms may include pain, severe local redness, swelling, and tissue damage. May cause more severe response if skin is abraded (scratched or cut). May cause more severe response on covered skin (under clothing, gloves). Mist may cause skin irritation. Not classified as corrosive to the skin according to DOT guidelines. Sodium Hydroxide component is corrosive to the skin.

### Serious eye damage/eye irritation:

May cause severe irritation with corneal injury which may result in permanent impairment of vision, even blindness. Chemical burns may occur. Sodium Hydroxide component is severely irritating to the eyes.

### Respiratory or skin sensitization:

No data available. Sodium Hydroxide component is severely irritating to the respiratory tract.

### Chronic Toxicity:

No data available for this product  
NOAEL = 500 mg/kg (90-day oral study with Disodium EDTA)  
NOAEL ≥ 500 mg/kg (104-week oral study with Trisodium HEDTA)  
LOAEC = 30/ mg/m<sup>3</sup> (5-day inhalation test with Disodium EDTA)

### Carcinogenicity:

The Trisodium salt of EDTA did not cause cancer in laboratory animals.

**Developmental Toxicity:** EDTA and its sodium salts have been reported to cause birth defects in laboratory animals only at exaggerated doses that were toxic to the mother. These effects are likely associated with zinc deficiency due to chelation.

**Reproductive Toxicity:** No relevant data found

**Genetic Toxicology:** Most data indicate the EDTA and its salts are not mutagenic. Minimal effects are reported likely due to trace metal deficiencies resulting from chelating by EDTA.

## 11. Toxicological Information:

### Reproductive Toxicity

No data available for the mixture.

EDTA and its sodium salts have been reported, in some studies, to cause birth defects in laboratory animals only at exaggerated doses that were toxic to the mother. These effects are likely associated with zinc deficiency due to chelation. Exposures having no effect on the mother should have no effect on the fetus.

### Specific target organ toxicity - single exposure:

No data available

### Specific target organ toxicity - repeated exposure:

No data available

### Aspiration Hazard:

No data available

### Additional Information:

RTECS: NC3500000

Incoordination, Mydriasis, To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

## 12. Ecological Information:

All work practices must be aimed at eliminating environmental contamination.

### Ecotoxicity:

The following data is available for several related EDTA products.

Fish (bluegill): 96h LC50 > 1,000 mg/L

Fish (zebra fish): 35-day NOEC ≥ 25.7 mg/L

Daphnia magna: 48h EC50 = 140 mg/L; 21-day NOEC = 25 mg/L

Algae: 72h EC50 > 500 mg/L

Sodium Hydroxide: Fish (various species): 96h LC50 = 33 to 189 mg/L

### Biodegradability:

Inherently biodegradable - EDTA (acid form) and its salts are not readily biodegradable. Under special conditions like adaptation or slightly alkaline pH, which is realistic under environmental surface water conditions, the biodegradability of EDTA is considerably enhanced, and as such, EDTA is considered ultimately biodegradable.

### Bioaccumulative Potential:

Potential is low (BCF 1– 2; Log Pow < 0)

### Chemical Fate:

The substance is not expected to enter the atmosphere significantly due to its high water solubility. C.O.D. is approximately 260 mg/g

### Mobility in soil:

No adsorption expected onto soil due to ionic structure. The test substance will preferably distribute into the water compartment and not evaporate from the water surface.

## 13. Disposal Considerations:

### Disposal Method

: Dispose of waste at an appropriate waste disposal facility according to current applicable laws and regulations. DO NOT DUMP INTO ANY SEWERS OR INTO ANY BODY OF WATER.

### For Large Spills

: Contain material and call local authorities for emergency assistance.

### Product Disposal

: Dispose of at a supervised incineration facility or an appropriate waste disposal facility according to current applicable local, state and federal laws, regulations and product characteristics at time of disposal.

### Empty Container

: Contaminated container should be labeled and disposed in accordance to local, state and federal laws and regulations.

### General Comments

: Refer to section 6, accidental release measures for additional information.

## 14. Transport Information:

Regulatory Information	UN No.	Proper Shipping Name	UN Class	Packing Group	Labels
US DOT	3267	Corrosive Liquids, BASIC, Organic, N.O.S.	8	III	Corrosive Sticker
IMDG	3267	Corrosive Liquids, BASIC, Organic, N.O.S.	8	III	Corrosive Sticker
IATA	3267	Corrosive Liquids, BASIC, Organic, N.O.S.	8	III	Corrosive Sticker

## 15. Regulatory Information:

### U.S. Federal Regulations:

**SARA 302 Components:** No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

**SARA 313 Components:** This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313

**SARA 311/312:** Immediate (Acute) Health Hazard

Pennsylvania Right to know Components:	Component	CAS#	Amount
	Sodium Hydroxide	1310-73-2	≥ 1.0 - ≤ 1.7%

New Jersey Right to know Components:	Component	CAS#	Amount
	Sodium Hydroxide	1310-73-2	≥ 1.0 - ≤ 1.7%

**California Proposition 65 Components:** This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm at levels which would require a warning under the statute.

**OSHA Hazcom Standard Rating:** This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

**CEPA - Domestic Substances List (DSL):** All substances contained in this product are listed on the Canadian Domestic Substances list (DSL) or are not required to be listed.

**US Toxic Substances Control Act:** All components of this product are listed on the TSCA inventory or are exempt from TSCA inventory requirements under 40 CFR 720.30

**Canada - WHMIS:** Class D2B (Other Toxic effects); Class E (Corrosive to Metal)

**CERCLA:** Sodium Hydroxide is listed

## 16. Other Information:

### HMIS and NFPA Rating Scale:

#### HMIS: Hazardous Materials Identification System

#### Numeric Scale for Health (Blue), Flammability (Red), and Physical Hazard (Yellow):

#### HMIS Rating:\*

HEALTH	3
FLAMMABILITY	0
PHYSICAL HAZARD	0
PERSONAL PROTECTION	C

RATING	HEALTH	FIRE HAZARD	PHYSICAL HAZARD
0	No significant risk to health	Will not burn	Product stable under ambient temperature and condition.
1	Can cause irritation or minor reversible	Must be preheated to burn	Product can become unstable at high temperatures and pressures.
2	Can cause temporary or residual injury	Ignites when moderately heated	Product can become unstable and cause violent chemical reaction at normal pressures and temperatures
3	Can cause serious injury	Ignition occurs at normal temperature	Product capable of forming explosive mixtures and is capable of detonation in presence
4	Can be lethal from single or repeated exposure.	Extremely flammable	Product is highly explosive and unstable. Exothermic reactions possible with decomposition, polymerization, reaction with water or self reaction

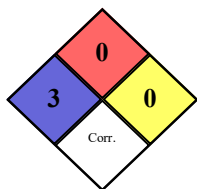
Personal Protection Code C: Gloves + Safety Goggles + Chemical Apron

#### NFPA: National Fire Protection Association

#### Numeric Scale for Health (Blue), Fire Hazard (Red), and Reactivity (Yellow):

Special (White)

#### NFPA Rating:\*



RATING	HEALTH	FIRE HAZARD	REACTIVITY
0	Minimal Hazard	Will not burn	Normally Stable
1	Can cause significant irritation	Must be preheated to burn	Unstable at high temperatures
2	Can cause temporary incapacitation or residual injury	Ignites when moderately heated	Normally unstable. Can readily go under violent chemical reaction but do not detonate.
3	Can cause permanent injury.	Ignition occurs at normal temperature	Capable of detonation, or of explosive reaction, but requires a strong ignition source.
4	Can be lethal.	Extremely flammable	May explode at normal temperatures and pressures

## 16. Other Information:

### Potential Health Effects:

**Eye Contact:** May cause severe irritation with corneal injury which may result in permanent impairment of vision, even blindness. Chemical burns may occur.

**Skin Contact:** Prolonged contact may cause skin irritation with local redness. Repeated contact may cause skin burns. Symptoms may include pain, severe local redness, swelling, and tissue damage. May cause severe response if skin is abraded (scratched or cut). May cause more severe response on covered skin (under clothing, gloves). Mist may cause skin irritation. Not classified as corrosive to the skin according to DOT guidelines.

**Skin Absorption:** Prolonged skin contact is unlikely to result in absorption of harmful amounts.

**Inhalation:** Vapors are primarily water; single exposure is not likely to be hazardous. Prolonged excessive exposure to mist may cause serious adverse effects, even death. Mist may cause irritation of upper respiratory tract (nose and throat).

**Ingestion:** Low toxicity if swallowed. Swallowing may result in gastrointestinal irritation or ulceration. Swallowing may result in burns of the mouth and throat.

**Aspiration Hazard:** Aspiration into the lungs may occur during ingestion or vomiting, causing tissue damage or lung injury.

**Effects of Repeated Exposure:** For the minor component(s): In animals, effects have been reported on the following organs: Kidney and Urinary tract. Repeated excessive exposure may alter concentrations of metals in the body. In animals, it has been shown to cause deposition of calcium salts in various urinary tract issues.

**Birth Defects/Developmental Effects:** EDTA and its sodium salts have been reported to cause birth defects in laboratory animals only at exaggerated doses that were toxic to the mother. These effects are likely associated with zinc deficiency due to chelation.

**Revision Date:** January 20, 2022

**Reason for Revision:** Revised Section 2 - Acute Toxicity, Oral to reflect Category 4

The information contained in this SDS was obtained from current and reliable sources. However, the data is provided without any warranty, expressed or implied, regarding its correctness or accuracy. Since the conditions or handling, storage and disposal of this product are beyond the control of the manufacturer/supplier, they are not held responsible for loss, injury, and expense arising out of the product's use. No warranty, expressed or inferred, regarding the product described in this SDS shall be created or inferred by any statement in this SDS.



# Material Safety Data Sheet FE OXCLEAR

HEALTH	2
FLAMMABILITY	0
REACTIVITY	0
PERSONAL PROTECTION	B

24 hr. Emergency Contact (CHEMTREC) US Tel: 1- 800 - 424-9300 - Int'l. Tel. 703 - 527 - 3887

## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**SUPPLIER:** CLEARWATER INTERNATIONAL L.L.C.  
515 POST OAK BLVD., SUITE 600  
HOUSTON, TX 77027

**MANUFACTURER:** CLEARWATER INTERNATIONAL L.L.C.  
100 INDUSTRIAL DRIVE  
LEETSDALE, PA 15056

**PRODUCT NAME:** FE OXCLEAR  
**PRODUCT CODE:** WAT6010A  
**PRODUCT USE/CLASS:** SCAVENGER

**MSDS REVISION DATE:** 05/26/04

**PREPARER:** MJW

**PHONE:** 724-318-1050

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

COMPONENT	EXPOSURE LIMITS	CAS#	% BY WEIGHT
AMMONIUM BISULFITE	NONE ESTABLISHED	10192-30-0	60-100%

## 3. HAZARD IDENTIFICATION

**EYE:** Corrosive, contact with eyes will cause burns and permanent tissue damage.

**SKIN:** Corrosive, contact with skin may cause burns. If not promptly removed, permanent tissue damage may occur.

**INGESTION:** This material may be harmful if swallowed. Material is corrosive to mouth, throat, and stomach and may cause burns.

**INHALATION:** Prolonged inhalation may be harmful. May cause severe irritation and even burns to mucous membranes and lung tissue.

**CHRONIC INFORMATION:** None known.

**PRIMARY ROUTE(S) OF ENTRY:** Ingestion, Skin contact, and Eye contact.

## 4. FIRST AID MEASURES

**EYE CONTACT:** Immediately flush eyes with plenty of water for at least 15 minutes while holding eyelids open. Get medical attention, if irritation persists.

**SKIN CONTACT:** Wash with soap and water. Get medical attention if irritation develops or persist.

**INHALATION:** Remove victim to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get immediate medical attention.

**INGESTION:** If swallowed, induce vomiting as directed by medical personal. Call a physician or poison control center immediately. Never give anything by mouth to an unconscious person.

## 5. FIRE FIGHTING MEASURES

**FLASH POINT:** \*\*\* °F  
(TAGLIABUE CLOSED CUP)

**LOWER EXPLOSIVE LIMIT:** N.D.  
**UPPER EXPLOSIVE LIMIT:** N.D.



# Material Safety Data Sheet

## FE OXCLEAR

**AUTOIGNITION TEMPERATURE:** N.D.

**EXTINGUISHING MEDIA:** Use media suitable for surrounding materials.

**UNUSUAL FIRE AND EXPLOSION HAZARDS:** None expected.

**SPECIAL FIRE FIGHTING PROCEDURES:** As in any fire, wear a self-contained breathing apparatus pressure-demand (MSHA/NIOSH approved or equivalent) and full protective gear.

### 6. ACCIDENTAL RELEASE MEASURES

**STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:** Sweep material into a pile and then place into a chemical waste container. Use caution to avoid creating dusty conditions. (See exposure controls / personal protection section) Spilled material should be disposed of according to applicable regulations.

### 7. HANDLING AND STORAGE

**HANDLING:** Handle all chemicals with care. Wear appropriate personnel protective equipment as outlined in section 8. Wash thoroughly after handling.

**STORAGE:** Keep container closed when not in use. Store in a cool, dry, well ventilated place away from incompatible materials.

### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**ENGINEERING CONTROLS:** Local exhaust ventilation may be necessary to control any air contaminants to within their exposure limits.

**RESPIRATORY PROTECTION:** No protection needed under normal use and conditions. Use a NIOSH/MSHA approved air purifying respirator with an ammonia/SO<sup>2</sup> vapor cartridge when airborne concentrations are expected to exceed exposure limits. Protection by air purifying respirators is limited.

**SKIN PROTECTION:** When contact is likely wear chemical resistant gloves and boots. Where splashing is possible, fully chemical resistant acid suit is required.

**EYE PROTECTION:** Wear safety glasses with side shields or goggles, and a full face shield

**OTHER PROTECTIVE EQUIPMENT:** Emergency eye wash stations and deluge showers should be available in the work area.

**HYGIENIC PRACTICES:** Wash hands before eating. Use only with adequate ventilation. Remove contaminated clothing and wash before reuse. Avoid contact with eyes, skin, and clothing.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

**APPEARANCE:** Yellow

**ODOR:** Sulfur Dioxide

**BOILING POINT (RANGE):** 180 °F

**FREEZE POINT:** N.D. °F

**VAPOR DENSITY:** N.D.

**VAPOR PRESSURE:** N/D

**PHYSICAL STATE:** Liquid

**SOLUBILITY IN WATER:** Complete

**pH (AS IS):** N.A.

**SPECIFIC GRAVITY:** 1.30

### 10. STABILITY AND REACTIVITY DATA

**CONDITIONS TO AVOID:** Avoid temperature extremes

**INCOMPATIBILITY:** Avoid contact with strong acids and heavy metals.

# Material Safety Data Sheet

## FE OXCLEAR

**HAZARDOUS DECOMPOSITION PRODUCTS:** Oxides of Carbon.

**HAZARDOUS POLYMERIZATION:** Will not occur under normal use and storage conditions.

**CHEMICAL STABILITY:** This product is stable under normal storage conditions.

### 11. TOXICOLOGICAL INFORMATION

**ORAL:** No product information is available.

**DERMAL:** No product information is available.

**INHALATION:** No product information is available.

### 12. ECOLOGICAL INFORMATION

**ECOTOXICITY:** No product information is available.

**CHEMICAL FATE INFORMATION:** No product information is available.

### 13. DISPOSAL CONSIDERATIONS

**WASTE DISPOSAL:** Consult local, state, or federal regulatory agencies for acceptable disposal procedures and disposal locations. Disposal in streams or sewers may be prohibited by federal, state, and local regulations.

**RCRA STATUS:** D002 –Characteristic of corrosivity.

### 14. TRANSPORTATION INFORMATION

#### (NON-BULK SHIPMENTS)

**D.O.T. PROPER SHIPPING NAME:** BISULFATES, AQUEOUS SOLUTIONS, N.O.S.,

**D.O.T. TECHNICAL NAME:** AMMONIUM BISULFATES

**D.O.T. HAZARD CLASS:** 8

**HAZARD SUBCLASS:** N/A

**D.O.T. UN NUMBER:** UN 2693

**PACKING GROUP:** III

**RESP. GUIDE PAGE:** 154

#### (BULK SHIPMENTS)

**D.O.T. PROPER SHIPPING NAME:** BISULFATES, AQUEOUS SOLUTIONS, N.O.S.,

**D.O.T. TECHNICAL NAME:** AMMONIUM BISULFATES

**D.O.T. HAZARD CLASS:** 8

**HAZARD SUBCLASS:** N/A

**D.O.T. UN NUMBER:** UN 2693

**PACKING GROUP:** III

**RESP. GUIDE PAGE:** 154

**T.D.G. PROPER SHIPPING NAME:** BISULFATES, AQUEOUS SOLUTIONS, N.O.S.,

**T.D.G. TECHNICAL NAME:** AMMONIUM BISULFATES

**T.D.G. HAZARD CLASS:** 8

**HAZARD SUBCLASS:** N/A

**T.D.G. UN NUMBER:** UN 2693

**PACKING GROUP:** III

**RESP. GUIDE PAGE:** 154

**IMDG PROPER SHIPPING NAME:** BISULFATES, AQUEOUS SOLUTIONS, N.O.S.,

**IMDG TECHNICAL NAME:** AMMONIUM BISULFATES

**IMDG HAZARD CLASS:** 8

**HAZARD SUBCLASS:** N/A

**IMDG UN NUMBER:** UN 2693

**PACKING GROUP:** III

**EmS No.:** F-A, S-B

### 15. REGULATORY INFORMATION

#### **CERCLA – SARA HAZARD CATEGORY:**

SECTION 311/312: This product has been reviewed according to the EPA 'Hazard Categories' promulgated under Sections 311 and 312 of the Superfund Amendments and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

# Material Safety Data Sheet

## FE OXCLEAR

**IMMEDIATE HEALTH HAZARD      CHRONIC HEALTH HAZARD      FIRE HAZARD**

SARA SECTION 313: This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372:

<b>COMPONENT</b>	<b>CAS#</b>	<b>% BY WEIGHT</b>
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No SARA Section 313 components exist in this product.

### **TSCA STATUS:**

All components of this product are listed on the Toxic Substance Control Act Inventory or are excluded from the listing requirements.

### **INTERNATIONAL REGULATIONS:**

CANADIAN WHMIS: This MSDS has been prepared in compliance with Controlled Product Regulations except for the use of the 16 headings.

**CANADIAN WHMIS CLASS:** D,2,B

### **CANADIAN ENVIRONMENTAL PROTECTION ACT:**

All components of this product are listed on the Canadian Domestic Substance List (DSL).

## **16. OTHER INFORMATION**

**HMIS RATING – HEALTH: 2      FLAMMABILITY: 0      REACTIVITY: 0      PERSONAL PROTECTIVE RATING: B**

**LEGEND:** N.A. – NOT APPLICABLE, N.E. - NOT ESTABLISHED, N.D. – NOT DETERMINED

THIS PRODUCT'S HEALTH AND SAFETY INFORMATION IS PROVIDED TO ASSIST OUR CUSTOMERS IN ASSESSING COMPLIANCE WITH HEALTH, SAFETY AND ENVIRONMENTAL REGULATIONS. THE INFORMATION CONTAINED HEREIN IS BASED ON DATA AVAILABLE TO US, AND IS BELIEVED TO BE ACCURATE, ALTHOUGH NO GUARANTEE OR WARRANTY IS PROVIDED OR IMPLIED BY THE COMPANY IN THIS RESPECT. SINCE THE USE OF THIS PRODUCT IS WITHIN THE EXCLUSIVE CONTROL OF THE USER, IT IS THE USER'S RESPONSIBILITY TO DETERMINE THE CONDITIONS OF SAFE USE. SUCH CONDITIONS MUST COMPLY WITH ALL GOVERNMENTAL REGULATIONS.