

Richard Healey (adpce.ad)

From: Terry Long <eswwtp@yahoo.com>
Sent: Thursday, September 7, 2023 3:16 PM
To: Thomas Harrington (adpce.ad); Butch Berry; Simon Wiley
Cc: Richard Healey (adpce.ad); Leslie Allen-Daniel (adpce.ad); Kerri McCabe (adpce.ad); Jason Bolenbaugh (adpce.ad); Stacie Wassell (adpce.ad); Joe Martin (adpce.ad); Bryan Leamons (adpce.ad); Uniqika Marshall (adpce.ad)
Subject: Re: AR0021865 Eureka Spring Complaint Follow Up
Attachments: 15047 SDS.pdf; Effluent.jfif; Creek #1.jfif; Creek #2.jfif; Chemical feed #1.jfif; Chemical feed #2.jfif

Mr. Harrington,

Please allow me to address the complaint of raw sewage leaving our facility and entering Leatherwood Creek. There was not a discharge of raw sewage from our facility. I am not saying that would be impossible for raw sewage to accidentally or inadvertently escape our treatment facility, but that was not the case as all the evidence found was brown to indicate that we experienced a "solids washout" and nothing was found with a grey color indicating raw or untreated sewage. We take all complaints seriously and investigate every complaint. On a daily basis, we strive to produce an effluent discharge with a quality well below the limits established by our NPDES permit.

As soon as we were notified about the possible discharge of raw sewage, I came to the plant and performed a complete walk-through of the facility looking for any signs of raw sewage and found nothing to indicate that we had experienced a discharge of raw sewage. In our post-aeration basin I found an indication (water with straggler floc) that we might have had an instance of "solids washout" from one of our Sequential Batch Reactor (SBR) basins. As a preventative measure, I raised the bottom level for the decant cycle of the SBR basins which causes more vertical space to be between the top of the sludge blanket and the bottom of the decanter tube, thus making it more difficult for solids to exit or "wash out" of the SBR basins.

It is believed that if in fact this was a solids wash out event, that it was the result of a combination of issues, all of which have been addressed at this time. The SBR basins were carrying more solids than desired due to being unable to waste enough sludge from the system to keep up with the growth of new micro-organisms. This happened at a time when the temperature was very high and the micro-organisms were reproducing at a higher than normal rate and we were unable to waste a sufficient quantity of micro-organisms to keep up with their reproduction due to lack of storage space for the waste sludge. During this same time, the mixed liquor settleable solids (MLSS) in the SBR basins was not settling properly which resulted in a larger than normal (typically none) amount of straggler floc in the SBR supernatant to be discharged. In the SBR basins the sludge blanket appeared to be fluffy or feathery which was allowing the top layer of the sludge blanket to be siphoned off during decant cycles. Also during this time, apparently due to the sludge particles having the same electrical charge as the polymer, it was difficult to get a good cake to form on our belt press, so we had decreased the feed rate of sludge to the press to help deal with the problem of no cake forming on the belt press, which compounded the lack of storage space for waste sludge.

On August 11, 2023 we changed the chemistry being used to aid with settling the mixed liquor in the SBR basins. On August 11, we stopped using an *Aluminum Sulfate Solution* and started using a *Polyaluminum Chloride Solution* named **AQUA HAWK 15047** (SDS attached). This change resulted in almost immediate positive changes with the settling characteristics of the mixed liquor in the basins. The **15047** product is continuing to give good results with the settling characteristics of our mixed liquor and as a side benefit has began reducing the amount of foam being generated by FOG entering our treatment plant resulting in a more aesthetically pleasing look to our SBR basins.

As a result of better cake formation at our belt press, we have been able to increase the sludge feed rate going to our belt press which has resulted in freeing up some storage space for waste sludge. It is thought that the belt press is producing a better cake due to a decrease in the ambient temperatures and a slight change in the electrical charges on the sludge molecules. The resulting storage space has allowed us to waste more sludge on a daily basis which is causing the MLSS concentration to decrease, thus decreasing the chances of experiencing another solids washout event.

I have attached a picture of our effluent during a decant event that was taken yesterday September 6, 2023, along with pictures of the receiving stream just downstream from our discharge. I have also attached a picture of the chemical feed system which is feeding the new 15047 product.

I trust the information contained in this email is satisfactory and explains what appears to have happened and what we have done since this incident to avoid future problems. If you need any additional information, please feel to contact us.

Best regards,

Terry R. Long, Plant Manager
Eureka Springs Wastewater Treatment Plant
100 Highway 23 N.
Eureka Springs, AR 72632
479-253-7410 - Office
479-738-7035 - Cell
479-253-6974 - Fax
eswwtp@yahoo.com

Eureka Springs WWTP
Eureka Springs Public Works Department
3174 E. Van Buren
Eureka Springs, AR 72632
479-253-9600 - Office
479-253-6974 - Fax

On Wednesday, September 6, 2023 at 10:27:05 AM CDT, Simon Wiley <swiley@eurekaspringsar.gov> wrote:

Thomas,

Received. I will have my Plant Manager (Terry Long) reply back to everyone with the complete information that you need.

If you have any questions, please know we are always available to address them.

Sincerely,

Simon Wiley, CPM

Director of Public Works

City of Eureka Springs, Arkansas

3174 East Van Buren

Eureka Springs, AR 72632

P: 479.253.9600

C: 479.981.0707

swiley@eurekaspringsar.gov

“Unless someone like you cares a whole awful lot, nothing is going to get better. It’s not.” – **Dr. Seuss**

From: Thomas Harrington (adpce.ad) <Thomas.Harrington@adeq.state.ar.us>
Sent: Wednesday, September 6, 2023 10:14 AM
To: Simon Wiley <swiley@eurekaspringsar.gov>; Butch Berry <mayor@eurekaspringsar.gov>
Cc: Richard Healey (adpce.ad) <Richard.Healey@adeq.state.ar.us>; Leslie Allen-Daniel (adpce.ad) <Leslie.Allen-Daniel@adeq.state.ar.us>; Kerri McCabe (adpce.ad) <Kerri.McCabe@adeq.state.ar.us>; Jason Bolenbaugh (adpce.ad) <Jason.Bolenbaugh@adeq.state.ar.us>; Stacie Wassell (adpce.ad) <Stacie.Wassell@adeq.state.ar.us>; Joe Martin (adpce.ad) <Joe.M.Martin@adeq.state.ar.us>; Bryan Leamons (adpce.ad) <Bryan.Leamons@adeq.state.ar.us>; Uniqika Marshall (adpce.ad) <Uniqika.Marshall@adeq.state.ar.us>
Subject: AR0021865 Eureka Spring Complaint Follow Up

Mr. Wiley,

Thank you for taking time to speak with me today. As I stated in our conversation, there was a complaint about the raw sewage in Leatherwood Creek. You said that the plant operator had looked into this and the water at the outfall was cloudy but not over the limits for TSS. The City has changed to a synthetic alum to try to fix this. Please, investigate this again and send me the information by close of business on Thursday September 7, 2023. Please include photographs and the date that you changed to the new product. If you have any questions please contact me.

Please respond to this email to verify that you have received it.

Thank you,

Thomas Harrington | Enforcement Analysts

Division of Environmental Quality | **Office of Water Quality**

Enforcement Branch

5301 Northshore Drive | North Little Rock, AR 72118

t: 501.682.0736 | e: thomas.harrington@adeq.state.ar.us



ARKANSAS
ENERGY & ENVIRONMENT











SAFETY DATA SHEET

Issue Date: 13-Jul-2020

Revision Date: 05-Jul-2023

Version 1.03

1. Identification

Product identifier

Product Name: Aqua Hawk® 15047

Other means of identification

Product Code: 57638

UN/ID No: UN3264

Recommended use of the chemical and restrictions on use

Recommended Use: Industrial, Manufacturing or Laboratory use.

Restrictions on Use: None known

Details of the supplier of the safety data sheet

Manufacturer: Hawkins, Inc.
2381 Rosegate
Roseville, MN 55113
(612) 331-6910

Emergency telephone number

Emergency Telephone: CHEMTREC: 1-800-424-9300 (US) / +1 703-741-5970 (International)

2. Hazard(s) identification

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity - Oral	Category 4
Acute toxicity - Inhalation (Dusts/Mists)	Category 4
Skin corrosion/irritation	Category 1 Sub-category A
Serious eye damage/eye irritation	Category 1
Corrosive to metals	Category 1

Hazards not otherwise classified (HNOC)

Not applicable

Label elements

Signal word: Danger

Hazard statements:

Harmful if swallowed or if inhaled

Causes severe skin burns and eye damage

May be corrosive to metals



Precautionary Statements - Prevention:

Wash face, hands and any exposed skin thoroughly after handling
 Do not eat, drink or smoke when using this product
 Use only outdoors or in a well-ventilated area
 Do not breathe dusts or mists
 Wear protective gloves/protective clothing/eye protection/face protection
 Keep only in original container

Precautionary Statements - Response:

Immediately call a POISON CENTER or doctor
 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
 Immediately call a POISON CENTER or doctor
 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower
 Wash contaminated clothing before reuse
 IF INHALED: Remove person to fresh air and keep comfortable for breathing
 Immediately call a POISON CENTER or doctor
 IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell
 Rinse mouth
 Do NOT induce vomiting
 Absorb spillage to prevent material damage

Precautionary Statements - Storage:

Store locked up
 Store in corrosion resistant container with a resistant inner liner

Precautionary Statements - Disposal:

Dispose of contents/container to an approved waste disposal plant

Unknown Acute toxicity:

0 % of the mixture consists of ingredient(s) of unknown acute oral toxicity
 37 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

Other Information

Not applicable

3. Composition/information on ingredients

Chemical name	CAS No	Weight-%
Trade Secret 1	Trade secret	Proprietary
Trade Secret 2	Trade secret	Proprietary
Trade Secret 3	Trade secret	Proprietary
Trade Secret 4	Trade secret	Proprietary
Trade Secret 5	Trade secret	Proprietary

Any concentration shown as a range is due to batch variation or the exact percentage has been withheld as a trade secret.

4. First-aid measures**Description of first aid measures****General advice**

Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

Inhalation

Remove to fresh air. If breathing has stopped, give artificial respiration. Get medical attention immediately. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If breathing is difficult, (trained personnel should) give oxygen. Delayed pulmonary edema may occur. Get immediate medical

advice/attention.

Eye contact	In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Keep eye wide open while rinsing. Do not rub affected area. Get immediate medical advice/attention. The corneas of the eyes are especially sensitive and exposure to it or its vapors immediately causes severe irritation. If the eyes are not quickly and thoroughly irrigated with water, partial or total visual impairment or blindness can occur.
Skin contact	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Thoroughly clean or destroy contaminated shoes. No oils, ointments, or neutralizing chemicals should be applied unless specified by a physician. Get immediate medical advice/attention.
Ingestion	Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Get immediate medical advice/attention. If vomiting occurs spontaneously, keep head below hips to prevent aspiration. If vomiting occurs spontaneously, rinse mouth and give water again.
Self-protection of the first aider	Avoid contact with skin, eyes or clothing. Wear personal protective clothing (see section 8). Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation.

Most important symptoms and effects, both acute and delayed

Symptoms Redness. Burning. May cause blindness. Coughing and/ or wheezing.

Indication of any immediate medical attention and special treatment needed

Note to physicians Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure. Chronic occupational exposure to hydrochloric acid has been reported to cause chronic bronchitis. Prolonged exposure to low concentrations may also cause dental discoloration and erosion.

5. Fire-fighting measures

Suitable Extinguishing Media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Adding water to concentrated product generates large amounts of heat. Water may be used to cool containers and to knock down vapors in a fire situation.
Large Fire	CAUTION: Use of water spray when fighting fire may be inefficient.
Unsuitable extinguishing media	Do not scatter spilled material with high pressure water streams.
Specific hazards arising from the chemical	The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating gases and vapors. Thermal decomposition can lead to release of toxic and corrosive gases/vapors. Most vapors are heavier than air. Vapors may spread along ground and collect in low or confined areas (sewers, basements, tanks). Do not allow run-off from fire-fighting to enter drains or water courses. Contact with metals may evolve flammable hydrogen gas.
Hazardous combustion products	Oxides of sulfur. Carbon oxides. Phosphorus oxides. Sodium oxides. Hydrogen gas. Hydrogen chloride (HCl). Chlorine. Hydrochloric acid fumes. Aluminum oxides.
Explosion Data	
Sensitivity to mechanical impact	None.
Sensitivity to static discharge	None.
Special protective equipment for	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear.

fire-fighters Use personal protection equipment.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Corrosive material. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

Other information Refer to protective measures listed in Sections 7 and 8.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so. Keep out of drains, sewers, ditches and waterways.

Methods for cleaning up Dike far ahead of liquid spill for later disposal. Soak up with inert absorbent material. Pick up and transfer to properly labeled containers. Clean contaminated surface thoroughly. After cleaning, flush away traces with water. Neutralization using basic chemicals causes hazardous gases such as carbon dioxide (CO₂).

7. Handling and storage

Precautions for safe handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. In case of insufficient ventilation, wear suitable respiratory equipment. Handle product only in closed system or provide appropriate exhaust ventilation. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse. When diluting, always add the product to water. Never add water to the product.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from moisture. Store locked up. Keep out of the reach of children. Store away from other materials.

Incompatible Materials Oxidizing agent. Acids. Bases. Iron. Brass. Aluminum. Copper. Mild steel. Stainless steel. Caustic. Amines. Alkali. Metals. Reducing agent. Sulfides. Sulfites. Cyanide compounds. Carbides. Formaldehyde.

Packaging materials Do not store in aluminum container or use aluminum fittings or transfer lines.

8. Exposure controls/personal protection

Control parameters

Exposure Limits The following ingredients are the only ingredients of the product above the cut-off level (or level that contributes to the hazard classification of the mixture) which have an exposure limit applicable in the region for which this safety data sheet is intended or other recommended limit. At this time, the other relevant constituents have no known exposure limits from the sources listed here.

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Trade Secret 1	TWA: 1 mg/m ³ respirable particulate matter	-	-
Trade Secret 2	Ceiling: 2 ppm	(vacated) Ceiling: 5 ppm (vacated) Ceiling: 7 mg/m ³ Ceiling: 5 ppm Ceiling: 7 mg/m ³	IDLH: 50 ppm Ceiling: 5 ppm Ceiling: 7 mg/m ³
Trade Secret 3	-	(vacated) TWA: 2 mg/m ³ Al Aluminum	TWA: 2 mg/m ³ Al
Trade Secret 4	STEL: 3 mg/m ³	TWA: 1 mg/m ³	IDLH: 1000 mg/m ³

	TWA: 1 mg/m ³	(vacated) TWA: 1 mg/m ³ (vacated) STEL: 3 mg/m ³	TWA: 1 mg/m ³ STEL: 3 mg/m ³
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Appropriate engineering controls

Engineering controls
Showers
Eyewash stations
Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection Face protection shield. Tight sealing safety goggles.

Hand protection Wear suitable gloves. Impervious gloves.

Skin and body protection Wear suitable protective clothing. Long sleeved clothing. Chemical resistant apron.

Respiratory protection No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced and ventilation is insufficient, a suitable respirator or evacuation may be required.

Environmental exposure controls Do not allow into any sewer, on the ground or into any body of water. Local authorities should be advised if significant spillages cannot be contained.

General hygiene considerations Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Regular cleaning of equipment, work area and clothing is recommended. Avoid contact with skin, eyes or clothing. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Contaminated work clothing should not be allowed out of the workplace. Wash hands before breaks and immediately after handling the product.

9. Physical and chemical properties**Information on basic physical and chemical properties**

Physical State: Liquid
Appearance: Clear
Color: Colorless to light yellow
Odor: No information available
Odor Threshold: No information available

pH: No information available
Salt Out Point: No information available
Melting Point/Freezing Point: No information available
Boiling Point/Boiling Range: No information available
Flash Point: No information available
Evaporation Rate (BuAc=1): No information available
Flammability (solid, gas): No information available
Flammability Limits in Air: No information available
Vapor Pressure (mm Hg): No information available
Vapor density (Air =1): No information available
Specific Gravity (H₂O=1): 1,330
Water Solubility: No information available
Solubility(ies): No information available
Partition Coefficient (n-octanol/water): No information available
Autoignition Temperature: No information available
Decomposition Temperature: No information available
Kinematic Viscosity: No information available
Dynamic Viscosity: No information available

Other information

Explosive properties No information available
Oxidizing properties No information available

Molecular Weight: N/A

10. Stability and reactivity

Reactivity	Reacts with caustics forming aluminum hydroxides. Reacts vigorously with strong acid, alkalis, and organic solvents by releasing large amounts of heat. Reacts with strong oxidizing materials causing the release of chlorine. Contact with most metals will generate flammable hydrogen gas. Releases heat and toxic, irritating vapors when mixed with water.
Chemical stability	Stable under normal conditions.
Possibility of hazardous reactions	Can react with formaldehyde to form human carcinogen bis(chloromethyl) ether. Excessive heating after water evaporation for long periods of time can result in the evolution of hydrogen chloride (HCl). Product may react with cyanide, forming lethal concentrations of hydrocyanic acid. Reacts violently with a wide variety of organic and inorganic chemicals including alcohol, carbides, chlorates, picrates, nitrates and metals. Aldehydes and epoxides in the presence of hydrochloric acid cause violent polymerization. Alcohol and glycols in the presence of hydrochloric acid lead to dehydration reactions.
Conditions to avoid	Exposure to air or moisture over prolonged periods. Excessive heating after water evaporation for long periods of time can result in the evolution of hydrogen chloride (HCl).
Incompatible Materials	Oxidizing agent. Acids. Bases. Iron. Brass. Aluminum. Copper. Mild steel. Stainless steel. Caustic. Amines. Alkali. Metals. Reducing agent. Sulfides. Sulfites. Cyanide compounds. Carbides. Formaldehyde.
Hazardous decomposition products	Carbon oxides. Sodium oxides. Sulfur oxides. Aluminum oxides. Phosphorus oxides. Hydrogen chloride (HCl). Chlorine. Hydrogen.

11. Toxicological information

Information on likely routes of exposure

Product Information

Inhalation

Specific test data for the substance or mixture is not available. Corrosive by inhalation. (based on components). Inhalation of corrosive fumes/gases may cause coughing, choking, headache, dizziness, and weakness for several hours. Pulmonary edema may occur with tightness in the chest, shortness of breath, bluish skin, decreased blood pressure, and increased heart rate. Inhaled corrosive substances can lead to a toxic edema of the lungs. Pulmonary edema can be fatal.

Eye contact

Specific test data for the substance or mixture is not available. Causes burns. (based on components). Corrosive to the eyes and may cause severe damage including blindness. Causes serious eye damage. May cause irreversible damage to eyes.

Skin contact

Specific test data for the substance or mixture is not available. Causes severe burns.

Ingestion

Specific test data for the substance or mixture is not available. Causes burns. (based on components). Ingestion causes burns of the upper digestive and respiratory tracts. May cause severe burning pain in the mouth and stomach with vomiting and diarrhea of dark blood. Blood pressure may decrease. Brownish or yellowish stains may be seen around the mouth. Swelling of the throat may cause shortness of breath and choking. May cause lung damage if swallowed. May be fatal if swallowed and enters airways.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms

Redness. Burning. May cause blindness. Coughing and/ or wheezing.

Numerical measures of toxicity

Acute Toxicity:

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral) 1,424.70 mg/kg
 ATEmix (dermal) 5,074.90 mg/kg
 ATEmix (inhalation-dust/mist) 2.10 mg/l

Component Information

Chemical name	Oral LD ₅₀ :	Dermal LD ₅₀ :	LC ₅₀ (Lethal Concentration):
Trade Secret 1	= 9187 mg/kg (Rat)	> 2000 mg/kg (Rat)	-
Trade Secret 2	238 - 277 mg/kg (Rat)	> 5010 mg/kg (Rabbit)	= 1.68 mg/L (Rat) 1 h
Trade Secret 3	= 1930 mg/kg (Rat)	> 5000 mg/kg (Rabbit)	-
Trade Secret 4	= 1530 mg/kg (Rat)	= 2740 mg/kg (Rabbit)	> 850 mg/m ³ (Rat) 1 h
Trade Secret 5	> 90 mL/kg (Rat)	-	-

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation Causes severe burns.

Serious eye damage/eye irritation Classification based on data available for ingredients. Causes burns. Risk of serious damage to eyes.

Respiratory or skin sensitization No information available.

Germ cell mutagenicity No information available.

Carcinogenicity See section 2 for classified hazards based on component information.

The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical name	ACGIH	IARC	NTP	OSHA
Trade Secret 2	-	Group 3	-	-

IARC (International Agency for Research on Cancer)

Group 3 - Not Classifiable as to Carcinogenicity in Humans

Reproductive toxicity No information available.

STOT - single exposure No information available.

STOT - repeated exposure No information available.

Aspiration hazard No information available.

Other Adverse Effects: No information available.

12. Ecological information

Ecotoxicity The environmental impact of this product has not been fully investigated.

Product Information

Method EPA method 2000, EPA-821-R-02-012,
 Test Type: Static Renewal
 Control Response: >90% survival

Species Fathead Minnow

Endpoint type LC50
Exposure time 96 h
Effective dose 286.3 mg/L

Method EPA method 2002, EPA-821-R-02-012,
 Test Type: Static Renewal
 Control Response: >90% survival

Species Ceriodaphnia dubia
Endpoint type LC50
Exposure time 48 h
Effective dose 353.5 mg/L

Chemical name	Toxicity to algae	Toxicity to fish	Toxicity to microorganisms	Toxicity to daphnia and other aquatic invertebrates
Trade Secret 1	-	100 - 500 mg/L (LC50 96 h static - Brachydanio rerio)	-	-
Trade Secret 3	-	27.9 mg/L (LC50 96 h static - Pimephales promelas)	-	-

Persistence and Degradability: No information available.

Bioaccumulation: There is no data for this product.

Chemical name	Partition Coefficient:
Trade Secret 4	-0.9

Mobility: No information available.

Other Adverse Effects: No information available.

13. Disposal considerations

Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local, state, and national regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging Do not reuse empty containers.

14. Transport information

DOT

UN/ID No UN3264
Proper shipping name CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (POLYALUMINUM CHLORIDE SOLUTION)
Hazard Class 8
Packing Group III
Description UN3264, CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (POLYALUMINUM CHLORIDE SOLUTION), 8, PG III



15. Regulatory information

International Inventories

Chemical name	TSCA	AICS	DSL	NDSL	EINECS	ELINCS	ENCS	IECSC	KECL	PICCS
Trade Secret 1	Present ACTIVE	Present	Present	-	Present	-	Present	Present	Present	Present
Trade Secret 2	Present ACTIVE	Present	Present	-	Present	-	Present	Present	Present	Present
Trade Secret 3	Present ACTIVE	Present	Present	-	Present	-	Present	Present	Present	Present
Trade Secret 4	Present ACTIVE	Present	Present	-	Present	-	Present	Present	Present	Present
Trade Secret 5	Present ACTIVE	Present	Present	-	Present	-	Present	Present	Present	Present

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

AICS - Australian Inventory of Chemical Substances

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

Chemical name	SARA 313 - Threshold Values %
Trade Secret 2	1.0

SARA 311/312 Hazard Categories

Under the amended regulations at 40 CFR 370, EPCRA 311/312 Tier II reporting for the 2017 and later calendar years will need to be consistent with updated hazard classifications.

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302).

Chemical name	Hazardous Substances RQs	Extremely Hazardous Substances RQs	SARA Extremely Hazardous Substances TPQ
Trade Secret 2	5000 lb	5000 lb	500 lb TPQ
Trade Secret 3	5000 lb	-	
Trade Secret 4	5000 lb	-	

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Clean Water Act (CWA)

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

Chemical name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Trade Secret 2	5000 lb	-	-	X
Trade Secret 3	5000 lb	-	-	X
Trade Secret 4	5000 lb	-	-	X

OSHA - Process Safety Management - Highly Hazardous Chemicals

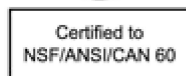
This product contains one or more substances regulated under Process Safety Management (29 CFR 1910.119).

Chemical name	OSHA - Process Safety Management - Highly Hazardous Chemicals
Trade Secret 2	5000 lb TQ 5000 lb TQ anhydrous

Department of Homeland Security - Chemical Facility Anti-Terrorism Standards (CFATS)

This product contains one or more substances regulated under the Chemical Facility Anti-Terrorism Standards (6 CFR 27).

Chemical name	Department of Homeland Security - Chemical Facility Anti-Terrorism Standards (CFATS)
Trade Secret 2	Release - Toxic concentration $\geq 37\%$ Release - Toxic anhydrous Theft - Weapons of Mass Effect anhydrous

16. Other information**NSF/ANSI 60 Certification**

Maximum Use (mg/L unless otherwise indicated): 250

Prepared By: HSE Department
Issue Date: 13-Jul-2020
Revision Date: 05-Jul-2023

Revision Note: Updated section(s) 8, 15, 16.

Disclaimer:

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet