COUNTY OF ROCKLAND
Department of General Services
Purchasing Division

Contract Award Notification

Title: **Struvite Control – Non-Hazardous Mineral Prevention & Removal Additives**

Contract Period: February 28, 2024, through February 27, 2025, w/ (4) 1-year options

Original Date of Issue: 02/07/2024

Date of Revision:

BID No: **RFB-RC-2024-010**

Catalog: **Wastewater**

Authorized Users: County Agencies, All Political Subdivisions

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Description

This contract is to furnish and deliver nonhazardous, water soluble mineral preventative additives (preventative solution) and organomodified non-hazardous mineral removing agents (removal solution) to be use for the prevention and removal of struvite.

Contract #	Vendor Number	Contractor & Address	Telephone No.
BID 24-010	0000020528	Koester Associates, Inc. 3101 Seneca Turnpike Canastota, NY 13032 Contact: Kyle Buckles kbuckles@koesterassociates.com	315-697-3800 Fax: 315-697-3888

COUNTY OF ROCKLAND
DGS – PURCHASING DEPARTMENT
BLDG. A, 6TH FLOOR, 50 SANATORIUM ROAD
POMONA, NY 10970
TELEPHONE NO.: 845-364-3820
FAX NO.: 845-364-3809

VENDOR: Koester Associates, Inc.

LINE NO.	DESCRIPTION	ITEM NUMBER	EST. QTY.	UNIT	UNIT PRICE	EXTENDED PRICE	BRAND NAME & PRODUCT CODE
1	**Furnish and Deliver Non Hazardous soluble mineral preventative additive (Preventive Solution)** - Mfg. Grignard Struvicide O PM or equivalent - Quantity based on 10 each 275 Gallon Totes - bidder shall enter mfg. product code and tote size offered. This product shall be ordered on an as needed basis, FOB Destination	88570000005	2750	Gallon	**$ 30.13**	**$ 82,875.50**	**Struvicide O PM**

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LINE NO.	DESCRIPTION	ITEM NUMBER	EST. QTY.	UNIT	UNIT PRICE	EXTENDED PRICE	BRAND NAME & PRODUCT CODE
2	**Furnish and Deliver STRUVICIDE SOAK-** Non Hazardous, Dissolves blockages of minerals, including struvite, vivianite and other mineral build up in porcess equipment, heat exchangers, pipes, centrifuges, and other areas of contamination, can be diluted with water and stilll maintain a high efficiency rate, non-corrosive, fast acting, can be utilized for soak or recirculate processes. **Mfg. Grignard Struvicide Soak INGCSVWWXSTSOAT T01** or equivalent- estimated quantity based on 7 each 275 Gallon Totes- bidder must enter mfg. product code and tote size offered. This product will be ordered on an as need basis. FOB destination	19090350004	1925	Gallon	**$ 8.00**	**$ 15,400.00**	**Struvicide Soak**
	TOTAL BID						
	TOTAL BID WRITTEN IN WORDS						

Upon receipt of all required approvals a Contract shall be deemed executed and created with the successful Bidder(s) upon the Commissioner's mailing or electronic communication to the address on the bid of: (i) a Letter of Acceptance; or (ii) a fully executed contract; or (iii) a Purchase Order authorized by the Commissioner

COUNTY OF ROCKLAND - DGS-PURCHASING
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Struvite Control – Non-Hazardous Mineral Prevention and Removal Additives	**RFB-RC-2024-010**

PURCHASES BY OTHER

LOCAL GOVERNMENTS, SCHOOL DISTRICTS, AND NON PROFIT AGENCIES

As per the New York State General Municipal Law, all political subdivisions of New York State are allowed to make purchases through the resulting contract(s). As per Rockland County Procurement Policy, Non Profit Agencies approved to participate in New York State's Contract Extension Program are authorized to make purchases through the resulting contract(s).

1. The County of Rockland shall make all contract award information available to other political subdivisions and non profit agencies through our website: **www.rcpurchasing.com**
2. Any other political subdivision or Rockland County non profit agency will issue purchase orders directly to vendors within the specified contract period referencing the County's contract and shall be liable for any payments due on such purchase orders; and shall accept sole responsibility for any payment due.
3. All purchases shall be subject to audit and inspection by the other political subdivisions and Rockland County non profit agencies for which the purchase was made.
4. No officer, board or agency of a county, town, village, or school district shall make any purchase through the County when bids have been received for such purchase by such officer, board or agency, unless such purchase may be made upon the same terms, conditions and specifications at a lower price through the County.
5. All Bidders shall be on notice that as a condition of the award of a County contract, the successful bidder shall accept the award of a similar contract with any other political subdivision in New York State and Rockland County non profit agencies authorized to use New York State's contracts, if called upon to do so. A listing of approved Rockland County non profit agencies is available on the Purchasing Division's website at www.rcpurchasing.com. The County, however, will not be responsible for any debts incurred by the participants pursuant to this or any other agreement.
6. Necessary deviations from the County's specifications in the award of a participant contract, whether such deviations relate to quantities, or delivery points shall be resolved between the successful bidder and the other political subdivisions and Rockland County non profit agencies.

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SPECIFICATIONS

1. SCOPE

This specification is to furnish and deliver a nonhazardous, water soluble mineral preventative additive (Preventative Solution) and an organomodified non-hazardous mineral removing agent (Soak Solution). Deliveries shall be made to the Rockland County Sewer District #1 (RCSD) Plant Facility located at 4 Rt. 340 Orangeburg, NY 10962.

The Solutions are utilized as a single component system for the prevention and removal of struvite – vivianite – limestone and various other forms of mineral buildup in various systems including pipes, dewatering equipment, anaerobic sludge digestion facilities and other process equipment when dosed at the appropriate level to the sludge and centrate systems.

The solutions shall be compatible with all equipment utilized during the treatment process including but not limited to steel, aluminum, HDPE, PVC, pipe and tank coatings, gaskets. This specification outlines the requirements that must be met by the Preventative Solution, for use on all equipment owned and operated by the Authority including, but not limited to dewatering equipment, piping, valves, pumps, mixers, centrifuges, heat exchangers, and anaerobic digesters.

The solutions must meet the technical specifications detailed in this specification and have results verified by an approved independent third-party verification laboratory for product characteristics as defined in this specification.

The piping being treated for both maintenance and preventive product are mostly 6” in diameter. Flows and pressures vary depending. Additional consideration should be given to the flows treated have high solids and organic matter.

2. QUANTITIES AND DELIVERIES

2.1. The RCSD#1 has previously used both the Preventative and Removal additive as Mfg. by Grignard. Struvicide O PM. 275-gallon totes and Struvicide Soak 275-gallon totes.

2.2. Listed quantities are estimated.

2.3. Deliveries shall be made at the date and time specified by the authorized representative of the RCSD#1.

2.3.1. Deliveries shall be made no later than seven (7) days ARO.

2.4. Unless otherwise specified, all deliveries to Rockland County Sewer District Facilities shall be conducted between normal business hours of 7:00 AM – 2:30 PM Monday – Friday. Deliveries outside these times may be denied at the district’s discretion, at no additional cost to the County of Rockland.

2.5. All deliveries shall be verified via telephone at least 24 hours prior to arrival at the County of Rockland Facilities. The contact telephone number is (845) 365-6111.

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3. BRAND NAME

The use of a brand name is for the purpose of describing a standard of quality, performance, and characteristics desired and is not intended to limit or restrict competition.

4. SITE DAMAGE

Any damage to buildings, equipment, utilities, finished surfaces, or the property of the County of Rockland resulting from the performance of this contract shall be repaired by the Contractor at the Contractor's expense at no cost to the County of Rockland. Completed repairs shall be accepted and approved by the authorized representative of the County of Rockland.

5. EQUIVALENT OR APPROVED EQUAL

5.1. If the bidder is bidding an approved equal, they must provide five (5) references showing locations using the offered product.

5.2. If offering alternate product, bidder must upload brochures, specifications and any other pertinent information, with the bid, otherwise bidder may be deemed non-responsive for that item.

5.3. SDS sheets for all items submitted, must be uploaded with bid, otherwise bidder may be deemed non-responsive for that item.

5.4. In the event that an alternate is bid, the County of Rockland reserves the right to request a demonstration of the specific product bid. Failure to furnish the demonstration within 5 days of request may render the bid for that item as non-responsive.

5.5. The Rockland County Sewers districts decision on an approved equal will be final.

6. CHEMICAL AND PHYSICAL PROPERTIES REQUIREMENTS PREVENTATIVE SOLUTION

The Preventative Solution shall be delivered in form which is completely miscible with the County water supply.

The Preventative Solution shall effectively retard the mineral structure of struvite, vivianite, or calcium carbonate whereas it does not form hard crystalline structures and does not build-up in piping and on equipment or become abrasive to centrifuges and other working equipment.

The Preventative Solution must not require pre-blending and be able to be applied directly to the sludge – centrate lines and or wells as required by the District's system design.

Demonstrating the Preventative Solution's performance – testing must indicate at a site-specific location the ability to prevent hardened minerals from attaching to centrifuges and pumps causing grove wear in the centrifuge at 250 hours.

Chemical Composition – All vendors must supply to the wastewater treatment facility, the nominal composition and material inspection criteria of the Preventative Solution products. The material

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inspection criteria will be required with each delivery and recorded in the Certificate of Analysis (COA). At a minimum the COA will include pH, specific gravity, viscosity at 35 F and 75F and other such parameters to determine product conformance.

The Preventative Solution will not contain the use of free alkali, amines, amides, silicates, inorganic acids – hydrochloric, hydrofluoric acid, phosphoric acid, or sulfuric acid, phenols, cresylic type acids or their salts, EDTA, chromates and their salts, chlorine, sulfate, magnesium, calcium salts, and butyls. The products should contain no mineral seal oils or petroleum distillates. The concentration of elemental phosphorus and nitrilotriacetic acid are limited to 0.05% in accordance with local, state and federal regulations. No filler ingredients will be utilized in the formulation, such as sodium chloride or sugars. In addition, the formulation may not contain any watch list or restricted substances per Federal (EPA), State and Local regulations. The product must contain no abrasives. The Preventative Solution will be considered noncorrosive (Skin Category 1) by having a pH above 4 and less than 11.5.

The Preventative Solution will be furnished in liquid form which is completely miscible with the County water supply.

The Preventative Solution shall not emit offensive odor or harmful or irritating vapors when used at temperatures ranging from 35°F to 150°F.

The Preventative Solution shall not damage the equipment which has mineral buildup including but not limited to piping (metal, glass, PVC), valves, gaskets, centrifuges, pumps, heat exchangers, and dewatering equipment.

The Preventative Solution shall be free rinsing and dilutable with County water. The Preventative Solution shall not cause out-gassing.

7. PREVENTATIVE SOLUTION PRODUCT QUALIFICATIONS

The proposed product must meet both the laboratory testing for required technical characteristics and performance as well as a field demonstration utilizing representative equipment at the RCSD#1 for not less than 500 hours.

The product is required to be manufactured at a location meeting the requirements of the Manufacturer Qualifications.

The Preventative Solution must be non-toxic and non-hazardous. The product must be stable in storage for a period of not less than 2 years as certified by the manufacturer when stored in conditions from 35°F to 105°F. The chemical and physical property tests listed in Table 1 are required and shall be performed by a third-party independent laboratory. Results shall be submitted with the bid.

COUNTY OF ROCKLAND - DGS-PURCHASING
BLDG. A., 6TH FLOOR, 50 SANATORIUM RD, POMONA, NY 10970
TELEPHONE: 845-364-3820 / TELEFAX: 845-364-3809

Struvite Control – Non-Hazardous Mineral Prevention and Removal Additives	**RFB-RC-2024-010**

Table 1. Chemical and Physical Property Test Requirements Preventative Solution

Parameter	Test Method	Requirements
Visual (as received)	Visually inspect 100ml product in 200ml beaker	Clear, homogenous solution
Odor –Neat (as received)	Open sealed container. Waft / sniff for offensive odor.	No obtrusive odor
Flash point (as received)	ASTM D93	No flash observed to 212 F
pH (as received)	ASTM E70	4.0 – 11.5
Accelerated storage stability, (as received)	Note 1	No layering, separation or precipitation after 3 freeze- thaw cycles from 20°F to 105°F
Heat Stability (as received)	Note 2	No layering, separation or precipitation
Cold Stability (as received)	Note 2	No layering, separation or precipitation
Sudsing Test, (10% v/v)	Note 3	Foam Level (10%v/v)
Insoluble Matter (as received)	Note 4	Concentrate < 0.1%
Effect on PVC, 48 hours (as received)	White PVC immersed halfway in fluid at 100F for 48 hours	No degradation or discoloring of immersed portion after exposure
Effect on Neoprene O-rings 24 hours @ 100F, as received	Note 5	No degradation or swelling compared to control sample
Effect on Viton O-rings 24 hours @100F, as received	Note 5	No degradation or swelling compared to control sample
Viscosity at 50F	ASTM D2196	< 300 cps
Viscosity at 77F	ASTM D2196	< 150 cps
Viscosity at 100F	ASTM D2196	< 100 cps
Struvite anti-precipitation with Centrate water	Note 6	Samples should not have any precipitate after 40 minutes of mixing. Orthophosphate level with treatment after 40 minutes must be at least 4x higher than control (no treatment)
Field Testing Centrisys Centrifuges	250 hours observation and measure wear on equipment	No measurable wear in groves

COUNTY OF ROCKLAND - DGS-PURCHASING
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TELEPHONE: 845-364-3820 / TELEFAX: 845-364-3809

Struvite Control – Non-Hazardous Mineral Prevention and Removal Additives	**RFB-RC-2024-010**

Note 1:

Accelerated Storage Stability: Place a 50ml portion of thoroughly mixed Preventative Solution, as received, in each of three (3) stoppered 100 ml graduated cylinders. Put all three samples in a low temperature environment @ 20 ± 2°F (2 ± 1°C) for 30 min. Remove cylinders; allow them to return to room temperature. Then place all three samples in a hot environment @ 105 ± 2°F (44 ± 1°C) for 30 min; allow to air cool to room temperature. Repeat this freeze-thaw cycle two more times. Record all visible changes including layering, separation and precipitation.

Note 2:

Heat Stability: Fifty (50) ml of the concentrated Preventative Solution shall be placed in a 50 ml graduate mixing cylinder, the cylinder shall be stoppered. The cylinder shall be placed in a 60°C +/- 2 C (140°F +/-3°F) water bath and maintained at that temperature for six (6) hours. The water bath shall be sufficient depth to cover at least 30 ml of the Preventative Solution. At the end of the test period, no separation or layering of the Preventative Solution shall be evident.

Cold Stability: Fifty (50) ml of the concentrated Preventative Solution shall be placed in a 50 ml graduated cylinder, the cylinder shall be stoppered and cooled to a -18°C +/-5°C (0°F – 9°F).
This temperature shall be maintained for one (1) hour. The Preventative Solution shall then be allowed to return to room temperature (75°F – 80°F). At the end of this test period, no separation, precipitation or layering of the Preventative Solution will be evident.

Note 3:

Test Preventative Solution as received. Place 45 ml of filtered centrate water in graduated cylinder. Add 5ml concentrated Preventative Solution and conduct 30 pivotal movements in 30 seconds. Read foam level immediately, at 3 minutes, and 5-minute intervals.

Note 4:

Insoluble Matter: The concentrated Preventative Solution shall be thoroughly agitated and a 200 mg test sample withdrawn. The insoluble matter shall be collected with the aid of a vacuum filtering apparatus consisting of a water tap filter pump, a 2,000 ml Erlenmeyer flask, a size 4 (126-millimeter (mm)) Whatman No. 5 filter paper, or its equivalent. The filter paper shall be dried at 60°C (140°F) for 30 minutes in a gravity convection oven, cooled for three (3) minutes in a desiccator and weighed to the nearest 0.1 mg. The filter paper shall be laced in the Buchner funnel so that its circumference coincides with the circumference of the funnel. The vacuum shall be started and filter paper wetted with approximately 10cc of distilled water in order to secure it properly in place. The test sample shall be weighed to the nearest .1 mg then filtered. The sides of the beaker, which contained the test sample shall be rinsed with 25 cc of distilled water from a wash bottle and the rinse transferred to the funnel, ensuring that any remaining insoluble matter is completely transferred with the rinse. When all the initial liquid and the rinse have been transferred through the filter, the sides of the funnel shall be washed with 25 cc of distilled water from a wash bottle and the rinse allowed to filter. The vacuum on the flask shall be relieved and the filter paper removed from the funnel. The filter paper shall be

dried for one hour at 60°C (140°F) in a gravity convection oven, cooled for three (3) minutes in a desiccator, and weighed to the nearest 0.1 mg. The percent insoluble shall be calculated as follows:

Final filter paper weight – initial filter paper weight x 100 = % insoluble
Weight of Sample

Care should be exercised throughout the final drying and weighing cycles to maintain the flat surface of the filter paper in a horizontal position in order that none of the insoluble matter will be lost. Insoluble matter determinations shall be made on a minimum of two samples. The average of these samples must be less than 0.1%.

Note 5:
Immerse (3) neoprene O ring and Viton O ring specimens in a 200ml concentrated Preventative Solution, as received, in a 250 ml beaker for 24 hrs. @ 100 F, and immerse another (3) neoprene O ring and Viton O ring specimens in distilled water in same way as a control. The test conforms if no degradation of or swelling of the specimens is evident as compared to the distilled water control.

Note 6:

Struvite precipitation will be tested in filtered Centrate Water sample with Magnesium to Phosphate molar ratio of 2:1

Magnesium Chloride Solution (1.0M): MW of $MgCl_2.6H_2O$ = 202.3. Add 40.66g $MgCl_2.6H_2O$ to 100ml DI water and make to 200mL with DI.

Preventative Solution: 10mg/mL: Make 200mg neat product to 20mL with DI. Run at 0 (Control), 40 and 60ppm Preventative Solution

1. Filter centrate water using a 10-micron filter bag.
2. Measure pH of water and raise to 8.5 if required using NaOH.
3. Measure filtered centrate water per table below.
4. Add required amount of Preventative Solution to sample i.e. 0 (Control), 40 and 60 ppm.
5. Stir on high for 1 minute to ensure proper mixing of product in filtered centrate water.
6. Add 101.25uL of 1.0M $MgCl_2$ and let samples mix for 40 minutes.
7. After 40 minutes, observe samples for turbidity.
8. Filter samples using Whatman Filter Paper #5 (150mm).
9. Further filter filtrate using 0.45um syringe filter.
10. Using MC500 Colorimeter, Method 321, measure o-PO_4 by diluting 2ml filtered sample with 10mL DI and analyze sample.

Solution	Target Preventative Solution (ppm product)	mL filtered Centrate Water for 50mL total volume	uL of 10mg/mL product to add for 50mL total volume
1	0	49.9	0
2	40	49.7	200
3	60	49.6	300

8. CHEMICAL AND PHYSICAL PROPERTIES REQUIREMENTS FOR REMOVAL SOLUTION

The Removal Solution shall effectively remove struvite at a 1:3 w/w or 1:4 w/w basis when utilized with agitation provided by circulation or soak processes. Demonstrating the Removal Solution's performance – testing must indicate on a site-specific struvite or mineral sample performance of 2x that of ferric chloride on a 1:4w/w in 6 hours and an overall dissolving capability on a 1:4 w/w basis >95% effectiveness.

Chemical Composition – All vendors must supply to the wastewater treatment facility, the nominal composition and material inspection criteria of the Removal Solution products to be tested. The material inspection criteria will be required with each delivery and recorded in the Certificate of Analysis (COA).

The Removal Solution will not contain the use of free alkali, amines, amides, silicates, inorganic acids – hydrochloric, hydrofluoric acid, phosphoric acid, or sulfuric acid, phenols, cresylic type acids or their salts, EDTA, chromates and their salts, chlorine, sulfate, magnesium, calcium salts, and butyls. The products should contain no mineral seal oils or petroleum distillates. The concentration of elemental phosphorus and nitrilotriacetic acid are limited to 0.05% in accordance with local, state and federal regulations. No filler ingredients will be utilized in the formulation, such as sodium chloride or sugars. In addition, the formulation may not contain any watch list or restricted substances per Federal (EPA), State and Local regulations. The product must be readily biodegradable and contain no abrasives. The Removal Solution will be considered noncorrosive (Skin Category 1) by having a pH above 2 and less than 11.5 per OSHA 1910.1200.

The Soak Solution will be furnished in liquid form which is completely miscible with the city water supply.

The Removal Solution shall not emit offensive odor or harmful or irritating vapors when used at temperatures ranging from 30°F to 212°F.

9. SOAK SOLUTION PRODUCT QUALIFICATION

The proposed product must meet both the laboratory testing for required technical characteristics and performance as well as a field demonstration utilizing representative equipment on piping that has a minimum of 50% accumulated mineral blockage at the Authority.

The product is required to be manufactured at a location meeting the requirements of the Manufacturer Qualifications.

The Soak Solution must be non-toxic and non-hazardous. The product must be stable in storage for a period of not less than 2 years as certified by the manufacturer when stored in conditions from 28°F to 105°F. The chemical and physical property tests listed in Table 1 are required and shall be performed by an approved independent laboratory.

Table 1. Chemical and Physical Property Test Requirements for Removal Solution

Parameter	Test Method	Requirements
Visual (as received)	Visually inspect 100ml product in 200ml beaker	Clear, homogenous solution
Odor –Neat (as received)	Open sealed container. Waft / sniff for offensive odor.	No Obtrusive odor
Odor –during application	Note 1	No Obtrusive odor or off-gassing
Specific Gravity (as received)	ASTM D891-09	1.09 – 1.12
Flash point, as received	ASTM D93	No flash observed to 212 F
pH, (as received)	ASTM E70	>2.0
pH, 1:1000	ASTM E70 diluted with DI Water	>3.0
Accelerated storage stability, (as received)	Note 2	No layering, separation or precipitation after 3 freeze-thaw cycles from 20°F to 105°F
Heat Stability (as received)	Note 3	No layering, separation or precipitation
Cold Stability (as received)	Note 3	No layering, separation or precipitation

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TELEPHONE: 845-364-3820 / TELEFAX: 845-364-3809

TITLE: Struvite Control- Non Hazardous Mineral Prevention	**RFB #: RFB-RC-2024-010**

Freeze point (as received)	ASTM D1177	< 27F
Pour Point (as received)	ASTM D97-93	< 23F
Sudsing Test, (10% v/v)	Note 4	Foam Level (10%v/v) Immediate - >25 mls After 3 minutes > 20 mls After 5 minutes < = 20 mls
Insoluble Matter (as received)	Note 5	Concentrate < 0.1%
Effect on PVC, 48 hours (as received)	White PVC immersed halfway in fluid at 100F for 48 hours	No degradation or discoloring of immersed portion after exposure
Effect on Neoprene O-rings 24 hours @ 100F, as received	Note 6	No degradation or swelling compared to control sample
Effect on HNBR O-rings 24 hours @100F, as received	Note 6	No degradation or swelling compared to control sample
Effect on Viton O-rings 24 hours @100F, as received	Note 6	No degradation or swelling compared to control sample
Foam Properties, (tested using a 10% v/v solution with distilled water)	D1173	1 minutes > 12 cm 3 minutes ≤ 5 cm 5 minutes ≤ 1cm
Non-Volatile Matter as received	ASTM D800, determined from volatile content at 105C	>20%

COUNTY OF ROCKLAND - DGS-PURCHASING
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TELEPHONE: 845-364-3820 / TELEFAX: 845-364-3809

TITLE: Struvite Control- Non Hazardous Mineral Prevention	**RFB #: RFB-RC-2024-010**

Note 1:

Combine 50g of struvite with 200g of mineral Removal Solution in covered beaker. Mix for 20 minutes, remove cover and whaft/sniff for any odors. No obtrusive odors.

Note 2:

Place a 50ml portion of thoroughly mixed SOAK Solution, as received, in each of three (3) stoppered 100 ml graduated cylinders. Put all three samples in a low temperature environment @ 20 ± 2°F (2 ± 1°C) for 30 min. Remove cylinders; allow them to return to room temperature.
Then place all three samples in a hot environment @ 105 ± 2°F (44 ± 1°C) for 30 min; allow to air cool to room temperature. Repeat this freeze-thaw cycle two more times. Record all visible changes including layering, separation and precipitation.

Note 3:

Heat Stability: Fifty (50) ml of the concentrated Removal Solution shall be placed in a 50 ml graduate mixing cylinder, the cylinder shall be stoppered. The cylinder shall be placed in a 60°C +/- 2 C (140°F +/-3°F) water bath and maintained at that temperature for six (6) hours. The water bath shall be sufficient depth to cover at least 30 ml of the Removal Solution. At the end of the test period, no separation or layering of the Removal Solution shall be evident.

Cold Stability: Fifty (50) ml of the concentrated Removal Solution shall be placed in a 50 ml graduated cylinder, the cylinder shall be stoppered and cooled to a -18°C +/-5°C (0°F – 9°F). This temperature shall be maintained for one (1) hour. The Removal Solution shall then be allowed to return to room temperature (75°F – 80°F). At the end of this test period, no separation, precipitation or layering of the Removal Solution will be evident.

Note 4:

Test Removal Solution as received. Place 45 ml of DI Water in graduated cylinder. Add 5ml concentrated Removal Solution and conduct 30 pivotal movements in 30 seconds. Read foam level immediately, at 3 minutes, and 5-minute intervals.

Note 5:

Insoluble Matter: The concentrated Removal Solution shall be thoroughly agitated and a 200 mg test sample withdrawn. The insoluble matter shall be collected with the aid of a vacuum filtering apparatus consisting of a water tap filter pump, a 2,000 ml Erlenmeyer flask, a size 4 (126-millimeter (mm)) Whatman No. 5 filter paper, or its equivalent. The filter paper shall be dried at 60°C (140°F) for 30 minutes in a gravity convection oven, cooled for three (3) minutes in a desiccator and weighed to the nearest 0.1 mg. The filter paper shall be laced in the Buchner funnel so that its circumference coincides with the circumference of the funnel. The

vacuum shall be weighed to the nearest .1 mg then filtered. The sides of the beaker, which contained the test sample shall be rinsed with 25 cc of distilled water from a wash bottle and the rinse transferred to the funnel, ensuring that any remaining insoluble matter is completely transferred with the rinse. When all the initial liquid and the rinse have been transferred through the filter, the sides of the funnel shall be washed with 25 cc of distilled water from a wash bottle and the rinse allowed to filter. The vacuum on the flask shall be relieved and the filter paper removed from the funnel. The filter paper shall be dried for one (1) hour at 60°C (140°F) in a gravity convection oven, cooled for three (3) minutes in a desiccator, and weighed to the nearest 0.1 mg. The percent insoluble shall be calculated as follows:

Final filter paper weight – initial filter paper weight x 100 = % insoluble
Weight of Sample

Care should be exercised throughout the final drying and weighing cycles to maintain the flat surface of the filter paper in a horizontal position in order that none of the insoluble matter will be lost. Insoluble matter determinations shall be made on a minimum of two samples. The average of these samples must be less than 0.1%.

Note 6:

Immerse (3) neoprene O ring, HNBR O ring and Viton O ring specimens in a 200ml concentrated Removal Solution, as received, in a 250 ml beaker for 24 hr. @ 100 F, and immerse another (3) neoprene O ring, HBNR O ring and Viton O ring specimens in distilled water in same way as a control. The test conforms if no degradation of or swelling of the specimens is evident as compared to the distilled water control.

10. PREVENTATIVE AND SOAK SOLUTION COMPATIBILITY WITH EQUIPMENT

The Solutions shall not damage the equipment which has mineral buildup including but not limited to piping (metal, glass, PVC), valves, gaskets, centrifuges, pumps, heat exchangers, and dewatering equipment.

The Solutions shall be free rinsing and dilutable with city water. Solutions shall not

cause out-gassing.

11. MANUFACTURER QUALIFICATION FOR SOLUTIONS

The manufacturers shall maintain a plant of adequate size and facilities to properly service the WWTP with respect to inventory warehousing requirements, accounting, laboratory quality control area, and production facilities; in compliance with 49 U.S.C 5325 (j) (2) (D).

The manufacturer shall be properly registered ISO-9001 organization. If the manufacturer is not ISO-9001 certified, they are required to be ISO-9001 or ANSI/ASQ C1-1985 compliant. At time of bid, the

proposed manufacturer shall provide a copy of its Quality Control system for review to assure the Preventative Solution is produced within specification.

The manufacturer has sufficient financial resources to perform the contract, as required by 49 U.S.C. Section 5325 (j) (2) (D).

Timeless – manufacturer is able to comply with the required delivery or performance schedule, taking into consideration all existing commercial and governmental business commitments.

12. SERVICE REQUIREMENTS

A qualified representative, from the manufacturer of the solutions, may visit the District's WWTP to assess the site conditions for the use of the solutions.

Upon request of an authorized RCSD#1 representative, the manufacturer (contractor) will conduct an Environmental Health & Safety presentation at the District's WWTP to the people that will be utilizing the material and answer any questions raised regarding the Preventative Solution and best practices to achieve optimum efficiency.

At the request of the District and at no additional cost, the manufacturer (contractor) shall render chemical and technical consulting service to the District.

13. QUALIFICATION PROCESS

In the procurement of products requiring pre-qualification, the Authority will reject bids for products that have not been subjected to the required laboratory tests contained in this specification and successful field demonstration.

Failure to supply the required information in this or any other Section will be deemed sufficient cause for rejection of bid. The steps required for qualification are as follows:

The Bidder shall be fully responsible for providing the qualification laboratory tests in Section 2.0 to the Authority. The Bidder / Contractor must utilize a qualified independent commercial laboratory such as SMI Inc., 12219 SW 131 Ave., Miami, FL 33186-6401- Phone 305-971-7047 to conduct the qualification testing.

Bidder shall furnish a 16 section Globally Harmonized System (GHS) compliant Safety Data Sheet (SDS) as part of their bid submission and with each delivery. The SDS shall be reviewed by the District's Health and Safety Department for review for approval. The pH of the product shall comply with the physical properties stated in Table 1.

The apparent low bidder for the preventative solution shall provide enough material to conduct a 500-hour test to conduct a field test insuring that the mineral buildup will not cause harm to the

centrifuges, pumps, piping, or any other device or equipment downstream of chemical injection point. The centrifuges, pumps, piping, devices, and equipment will be checked every 250 hours for hard mineral build up that becomes abrasive. Any change to the identified test centrifuges grove wear will be grounds for disqualification at which time the County reserves the right to consider an award to the next lowest responsible responsive bidder.

The apparent low bidder for the removal solution shall perform a field demonstration utilizing representative equipment on piping that has a minimum of 50% accumulated mineral blockage. In the event a 50% blockage is unavailable the maximum piping currently blocked would suffice. Additionally, as a substitute test at the discretion of RCSD#1 A pump, or any restricted piece of equipment due to struvite buildup may be used. Any change to the identified test centrifuges grove wear will be grounds for disqualification at which time the County reserves the right to consider an award to the next lowest responsible responsive bidder. . Any damage caused by vendor product will be vendor's responsibility to restore RCSD#1 Whole both financially and productively. This includes, but not limited to, Damage to centrifuges, pipes, pumps, loss of production, process upset, and any regulatory fines as a contributing result of harm caused by vendor chemical.

Bidder shall provide a minimum of at least three (3) documented successful cleaning operations at representative Wastewater Treatment Plants (WWTP). (see Certification of Experience Form).

14. INSPECTION REQUIREMENTS

Manufacturers of the qualified Solutions are required to present a documented quality assurance program which is acceptable to the Authority. The documented quality system must meet or exceed the requirements of American Standard ANSI/ASQ C1-1985 or ISO 9001.

Distributor / Supplier quality program. In addition to the Manufacturer's documented quality control program, Distributors are required to maintain a quality program acceptable to the Authority. Distributors are fully responsible for the quality of the materials and must actively take precautions by working with the manufacturer to guarantee the quality of the product.

15. LABELING

All cleaning compound shall be labeled in accordance with the following:

Tote Labeling

All labels shall contain the following information:

- The chemical name and the common name or trade name.
- A hazard warning, by symbols and words.
- The name, address, and telephone number of the manufacturer.
- All labels shall be affixed to the front and back of the tote.

- Labels shall be places approximately midway on the side of the tote.
- Labels shall be plastic coated or sprayed with a clear sealant that will render the label waterproof and compatible with the contents of the tote.
- Should the label be painted onto the side of the tote, the color of the label's lettering shall be in contrast with the color of the tote.
- Each tote shall be stenciled with the following information:
- Batch number with reference to the specific bath or mix of the cleaning compound supplied.
- All stenciled lettering shall be a minimum of 1½" high, upper case,

  letters and numerals. Color stenciling shall be in contrast with the color of the tote.
- Any totes delivered and identified as having improper labels or stenciling at the time of delivery or subsequent to delivery shall be returned to the Contractor at the sole cost and expense of the Contractor.

16. PRICE ADJUSTMENT

The County recognizes this product or service has a price component that may have a commodity with changing costs. The Contractor/Supplier may request a Price Adjustment at the end of each six-month term.

A Price Adjustment request must be made in writing and include the reason for the request, documentation supporting the request (ie, commodity increases), the current pricing, and the requested revised pricing.

The County will review the Price Adjustment request. If the Price Adjustment is deemed reasonable the Price Adjustment request will be accepted by written acknowledgement. If the request is not accepted the County may entirely reject the request or may counter with revised pricing. In either case the County will provide a written explanation in support of the decision.

The Director of Purchasing may use available indexes (e.g. CPI or PPI) to determine if the requested Price Adjustment is reasonable. Typically, a Price Adjustment that exceeds 5% will not be approved unless very unusual and significant changes have occurred in the industry.

In the event industry costs decline, the County shall have the right to receive, from the Contractor, a reasonable reduction in prices/pricing that reflect such cost changes in the industry. The County will make a written request to the Contractor for a Price Adjustment in writing with supporting documentation.

COUNTY OF ROCKLAND - DGS-PURCHASING
BLDG. A., 6TH FLOOR, 50 SANATORIUM RD, POMONA, NY 10970
TELEPHONE: 845-364-3820 / TELEFAX: 845-364-3809

TITLE: Struvite Control- Non Hazardous Mineral Prevention	RFB #: RFB-RC-2024-010

17. AWARD

This contract is intended to be awarded as a whole to the lowest responsible responsive bidder meeting the stated requirements. The county reserves the right to award this contact on a line-by-line basis to the lowest responsible bidder(s) if it is in the best interest of the county.

The apparent low bidder for the preventative solution shall provide enough material to conduct a 500-hour test to conduct a field test insuring that the mineral buildup will not cause harm to the centrifuges, pumps, piping, or any other device or equipment downstream of chemical injection point. The centrifuges will be checked every 250 hours for hard mineral build up that becomes abrasive. Any change to the identified test centrifuges grove wear will be grounds for disqualification at which time the County reserves the right to consider an award to the next lowest responsible responsive bidder.

The apparent low bidder for the removal solution shall perform a field demonstration utilizing representative equipment on piping that has a minimum of 50% accumulated mineral blockage. In the event a 50% blockage is unavailable the maximum piping currently blocked would suffice. Additionally, as a substitute test at the discretion of RCSD#1 A pump, or any restricted piece of equipment due to struvite buildup may be used. Any change to the identified test centrifuges grove wear will be grounds for disqualification at which time the County reserves the right to consider an award to the next lowest responsible responsive bidder. . Any damage caused by vendor product will be vendor's responsibility to restore RCSD#1 Whole both financially and productively. This includes, but not limited to, Damage to centrifuges, pipes, pumps, loss of production, process upset, and any regulatory fines as a contributing result of harm caused by vendor chemical.

In an effort to expedite the award of this contract, bidders may submit, with their bid, a valid Certificate of Liability (see sample Certificate for coverage and limits required and sample language for naming the County of Rockland as additionally insured), valid NYS Worker's Compensation and NYS Disability Certificates or Attestation of Exemption.

Rockland County
Ed Day, Rockland County Executive

DEPARTMENT OF GENERAL SERVICES, PURCHASING DIVISION
Dr. Robert L. Yeager Health Center
50 Sanatorium Rd, Building A
Pomona, New York 10970
Phone: (845) 364-3820 Fax: (845) 364-3809
Email: purchasing@co.rockland.ny.us

Paul Brennan, FNIGP, NIGP-CPP, CPPO
Director of Purchasing

ADDENDUM # 1

RFB #: RFB-RC-2024-010
Struvite Control- Non-Hazardous Mineral Prevention and Removal Additives

The information in this addendum supersedes any contradictory information set forth in the contract documents. Acknowledge receipt of this addendum in the space provided on the signature page of the bid proposal. Failure to do so, may subject the bidder to disqualification. This addendum forms a part of the contract documents.

The closing date for this bid is being revised.

Current Closing Date: January 18, 2024 at 3:00PM

NEW Closing Date: February 1, 2024 at 3:00PM

SIGNED:

Paul J. Brennan

PAUL J. BRENNAN, FNIGP, NIGP-CPP, CPPO
DIRECTOR OF PURCHASING

ADDENDUM

1/16/24

Rockland County
Ed Day, Rockland County Executive

DEPARTMENT OF GENERAL SERVICES, PURCHASING DIVISION
Dr. Robert L. Yeager Health Center
50 Sanatorium Rd, Building A
Pomona, New York 10970
Phone: (845) 364-3820 Fax: (845) 364-3809
Email: purchasing@co.rockland.ny.us

Paul Brennan, FNIGP, NIGP-CPP, CPPO
Director of Purchasing

ADDENDUM # 2

RFB #: RFB-RC-2024-010
Struvite Control- Non-Hazardous Mineral Prevention and Removal Additives

The information in this addendum supersedes any contradictory information set forth in the contract documents. Acknowledge receipt of this addendum in the space provided on the signature page of the bid proposal. Failure to do so, may subject the bidder to disqualification. This addendum forms a part of the contract documents.

Question #1: Is the Performance test run after the bid opening or need to be qualified prior to bid submission? Is the Performance run carried out by your operator where the chemical supplier just ships the product?
Response #1. *Performance testing will be performed by the Rockland County Sewer District #1, at their facility, after the bid opening.*

Question #2: Can you please furnish approved third-party list to get our product verified?
Response #2 *See section 13. Qualification Process. The Bidder shall be fully responsible for providing the qualification laboratory tests in Section 2.0 to the Authority. The Bidder / Contractor must utilize a qualified independent commercial laboratory such as SMI Inc., 12219 SW 131 Ave., Miami, FL 33186-6401- Phone 305-971-7047 to conduct the qualification testing.*

Question #3: Section 6- "*The concentration of elemental phosphorus and nitrilotriacetic acid are limited to 0.05% in accordance with local, state and federal regulations*". Is it refer to restriction of < 0.05% of total phosphorous or < 0.05% of o-PO4?
Response #3: *Total Phosphorus and o-PO4 must both be in compliance with Local, State and Federal regulations.*

Question #4: Section 6 -"*Demonstrating the Preventative Solution's performance – testing must indicate at a site-specific location the ability to prevent hardened minerals from attaching to centrifuges and pumps causing grove wear in the centrifuge at 250 hours*", while in section 7 it is reported: "*The proposed product must meet both the laboratory testing for required technical characteristics and performance as well as a field demonstration utilizing representative equipment at the RCSD#1 for not less than 500 hours*".What's the correct trial time and protocol to be considered for the product qualification?-
Response #4: *250 run time hours for each centrifuge unit. In addition to 250 run hour Centrifuge performance test, the proposed product must meet a field demonstration for not less than 500 total run hours (not combined hours) for all Centrifuges showing no significant struvite buildup in any Feed Pumps, Feed pipes (suction and*

discharge), Centrate box, Centrate discharge piping, drainage piping from centrifuge to plant drain lines, and all drain lines of centrate and spillage to the head of plant.

Question #5: In Section 8- "*CHEMICAL AND PHYSICAL PROPERTIES REQUIREMENTS FOR REMOVAL SOLUTION*", it is requested that "The product must be readily biodegradable.
Any OECD XXX reference tests to be considered? Declaration of biodegradability has to come from third party lab?
Response #5: *Product must not be harmful to wastestream when discharged to our drain lines. There must be 3rd party lab results prior to application.*

Question #6*:* In Section 8 - "The Removal Solution shall effectively remove struvite at a 1:3 w/w or 1:4 w/w basis when utilized with agitation provided by circulation or soak processes".
Does the ratio 1:3 w/w or 1:4 w/w is referred to removal solution: centrate water or removal solution: demineralized water or something else?
Response #6: *Effectiveness ratio is based on struvite buildup density being treated.*

Question #7: Table 1. Chemical and Physical Property Test Requirements for Removal Solution- Foam Properties has to be assessed according to method D1173, does it refer to ASTM D1173?
Response #7: *Yes, ASTMD1173*

REMINDER: BID CLOSING DATE IS FEBRUARY 1, 2024 at 3:00PM

SIGNED:

Paul J. Brennan

PAUL J. BRENNAN, FNIGP, NIGP-CPP, CPPO
DIRECTOR OF PURCHASING

ADDENDUM

1/22/24

Safety Data Sheet

May be used to comply with
OSHA's Hazard Communication Standard,
29 CFR 1910.1200. Standard must be
consulted for specific requirements.

U.S. Department of Labor

Occupational Safety and Health Administration
(Non-Mandatory Form)
Form Approved
OMB No. 1218-0072

IDENTITY *(As Used on Label and List)* **STRUVICIDE™ O PM**	Note: Blank spaces are not permitted. If any item is not applicable, or no information is available, the space must be marked to indicate that.

Section I: Product and Company Identification

Manufacturer's Name Grignard Company LLC	24 hour Emergency Telephone Contact Number CHEMTREC Domestic North America: **800-424-9300**
Address *(Number, Street, City, State, and ZIP Code)* 505 Capobianco Plaza Rahway, NJ 07065	**Telephone Number for Information** 732-340-1111
Date Prepared June, 2017	**Date Updated** July, 2019

Section II: Hazard(s) Identification

Hazardous Components (Specific Chemical Identity; Common Name(s)) No hazardous ingredients	**OSHA PEL**	**ACGIH TLV**	**Other Limits Recommended**
This material is not considered to be hazardous according to regulatory guidelines.			
HMIS Rating: Health – 1, **Flammability** – 0, **Reactivity** – 0			
Routes of Exposure: Eye contact, Skin Contact, Ingestion, Inhalation			
Health Hazards *(Acute and Chronic)* May cause irritation to the eyes, skin, and respiratory system. **Hazard Statements** – H315+H320: Causes skin and eye irritation H335: May cause respiratory irritation **Precautionary Statements** – P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing. P302+352: IF ON SKIN: Wash with plenty of water. P304+340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.			
Signs and Symptoms of Exposure None known			
Medical Conditions Generally Aggravated by Exposure Skin disorders, Respiratory disorders			

STRUVICIDE™ O PM

Section III – Composition / Information on Ingredients

No reportable Hazardous Substance(s) or Complex Substance(s).
Grignard Company LLC withholds the specific chemical identity and/or exact percentages of the composition of our products due to this information being a part of our Intellectual Property.

Section IV: First Aid Measures

Eyes: Flush eyes with water for at least 15 minutes. If irritation persists, seek medical assistance
Skin: Wash contact areas with soap and water. Take off contaminated clothing. Seek medical attention if irritation persists.
Inhalation: Move victim to fresh air. If symptoms persist, get medical attention.
Ingestion: Do NOT induce vomiting. Seek medical attention.

Section V: Fire – Fighting Measures

Flash Point (Method Used)	**Flammable Limits**	**LEL**	**UEL**
> 212°F (Closed cup)	N/A	N/A	N/A

Extinguishing Media
Use water fog, foam, CO_2 or dry chemical powder.

Special Fire Fighting Procedures
Wear self-contained breathing apparatus and full protective clothing

Unusual Fire and Explosion Hazards
None

Section VI: Accidental Release Measures

Personal Precautions:
Isolate area. Keep unnecessary personnel away.

Environmental precautions:
Prevent further leakage or spillage if safe to do so.

Method for Clean Up:
Small spills: Use a non-combustible material to soak up the product and place into well labelled container for later disposal.
Large Spills: Dike area to contain spill

STRUVICIDE™ O PM

Section VII: Handling and Storage

Handling Avoid contact with skin and eyes. Wash hands thoroughly after handling.
Storing Store in a cool and dry place. Keep in a well-ventilated place.

Section VIII: Exposure Controls/Personal Protection

<table>
<tr><td colspan="3">Respiratory Protection (Specify Type)
Generally not required. If ventilation is not sufficient to effectively prevent buildup of aerosols, appropriate NIOSH/MSHA respiratory protection must be provided.</td></tr>
<tr><td>Ventilation
General</td><td>Local Exhaust
To capture hot fumes.</td><td>Special</td></tr>
<tr><td></td><td>Mechanical (General)</td><td>Other</td></tr>
<tr><td colspan="2">Protective Gloves
Nitrile/Latex</td><td>Eye Protection
Chemical googles.</td></tr>
<tr><td colspan="3">Other Protective Clothing or Equipment
Suitable protective clothing.</td></tr>
<tr><td colspan="3">Work/Hygienic Practices:
Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking</td></tr>
</table>

Section IX: Physical and Chemical Properties

Boiling Point	N/A	**Specific Gravity (H_2O = 1)**	1.055 – 1.075
Vapor Pressure (mm Hg.)	N/A	**pH**	> 3.5
Vapor Density (AIR = 1)	N/A	**Evaporation Rate (Butyl Acetate = 1)**	N/A
Solubility in Water: Complete			
Physical State: Liquid			
Appearance: Clear, Transparent			
Odor: Odorless			

STRUVICIDE™ O PM

Section X: **Stability and Reactivity**

Stability:	Stable	**Hazardous Polymerization:**	Will Not Occur
Incompatibility (Materials to Avoid): Strong alkalis			
Conditions to Avoid: Stable under normal conditions			
Possibility of Hazardous Reactions: Will not occur			
Hazardous Decomposition Products: None			

Section XI: Toxicological Information

Carcinogenicity/Other Information: None of the components are listed by: **NTP, IARC, ACGIH, OSHA**

Section XII: Ecological Information

Toxicity: Not available
Biodegradability: Readily biodegradable
Bio-accumulative potential: Not available
Other Adverse Effects: Not available

Section XIII: Disposal Considerations

Disposal Recommendations: Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable laws and regulations.

STRUVICIDE™ O PM

Section XIV: Transportation

Land (DOT): Not regulated for Land Transport
Land (TDG): Not regulated for Land Transport
Sea (IMDG): Not regulated for Sea Transport according to IMDG-Code
Air (IATA): Not regulated for Air Transport

Section XV: Regulatory Information

OSHA Hazard Communication Standard: When used for its intended purposes, this material is not classified as hazardous in accordance with OSHA 29 CFR 1910.1200.
EPCRA: This material contains no extremely hazardous substances.
SARA (311/312) Reportable Hazard Categories: None
SARA (313) Toxic Release Inventory: This material contains no chemicals subject to the supplier notification requirements of the SARA 313 Toxic Release Program.
The Following Ingredients are Cited on the Lists Below: None

Section XVI: Other Information

Other Special Considerations: None

Disclaimer: This information is to the best of our knowledge and belief, accurate and reliable as of the date complied. However, no representation, warranty or guarantee is made as to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for his own particular use. We do not accept liability for any loss or damage that may occur from the use of this information nor do we offer warranty against patent infringement.

Safety Data Sheet

May be used to comply with
OSHA's Hazard Communication Standard,
29 CFR 1910.1200. Standard must be
consulted for specific requirements.

U.S. Department of Labor

Occupational Safety and Health Administration
(Non-Mandatory Form)
Form Approved
OMB No. 1218-0072

IDENTITY *(As Used on Label and List)* **STRUVICIDE™ Soak**	Note: Blank spaces are not permitted. If any item is not applicable, or no information is available, the space must be marked to indicate that.

Section I: Product and Company Identification

Manufacturer's Name Grignard Company LLC	24 hour Emergency Telephone Contact Number CHEMTREC Domestic North America: **800-424-9300**
Address *(Number, Street, City, State, and ZIP Code)* 505 Capobianco Plaza Rahway, NJ 07065	**Telephone Number for Information** 732-340-1111
Date Prepared September, 2018	**Date Updated** August, 2022

Section II: Hazard(s) Identification

Hazardous Components (Specific Chemical Identity; Common Name(s)) Hydrochloric Acid CAS#7647-01-0	**OSHA PEL**	**ACGIH TLV**	**Other Limits Recommended**
Routes of Exposure: Eye contact, Skin Contact, Ingestion, Inhalation			
Health Hazards *(Acute and Chronic)* **Hazard Statements** – H303: May be harmful if swallowed H314: Causes severe skin burns and eye damage when exposed for > 3 minutes to 60 minutes H335: May cause respiratory irritation **Precautionary Statements** – **P280:** Wear protective gloves and eye protection **P281:** Use personal protective equipment as required			
Signs and Symptoms of Exposure None known			
Medical Conditions Generally Aggravated by Exposure Not known			

STRUVICIDE™ Soak

Section III – Composition / Information on Ingredients

CAS	Ingredient Name	% by Weight
7647-01-0	Hydrochloric Acid	5 – 7
Proprietary	Non-Hazardous Components	93 - 95

Grignard Company LLC withholds the specific chemical identity and/or exact percentages of the composition of our products due to this information being a part of our Intellectual Property.

Section IV: First Aid Measures

Eyes: Flush eyes with water for at least 15 minutes. If irritation persists, seek medical assistance
Skin: Wash contact areas with soap and water. Take off contaminated clothing. Seek medical attention if irritation persists.
Inhalation: Move victim to fresh air. If symptoms persist, get medical attention.
Ingestion: Do NOT induce vomiting. Seek medical attention.

Section V: Fire – Fighting Measures

Flash Point (Method Used)	**Flammable Limits**	**LEL**	**UEL**
Not flammable	N/A	N/A	N/A
Extinguishing Media Use water fog, foam, CO_2 or dry chemical powder.			
Special Fire Fighting Procedures Wear self-contained breathing apparatus and full protective clothing			
Unusual Fire and Explosion Hazards None			

Section VI: Accidental Release Measures

Personal Precautions: Isolate area. Keep unnecessary personnel away.
Environmental precautions: Prevent further leakage or spillage if safe to do so.
Method for Clean Up: **Small spills:** Rinse area with copious amounts of water to dilute. Sodium bicarbonate may also be used to absorb/neutralize liquid. Place into well labelled container for later disposal. **Large Spills:** Dike area to contain spill

STRUVICIDE™ Soak

Section VII: Handling and Storage

Handling Avoid contact with skin and eyes. Wash hands thoroughly after handling.
Storing Store in a cool and dry place in closed containers. Keep in a well-ventilated place.

Section VIII: Exposure Controls/Personal Protection

Respiratory Protection *(Specify Type)* None required under normal operating conditions. If ventilation is not sufficient to effectively prevent buildup of aerosols, appropriate NIOSH/MSHA respiratory protection must be provided.		
Ventilation General	**Local Exhaust**	**Special**
	Mechanical *(General)*	**Other**
Protective Gloves Chemical resistant gloves	**Eye Protection** Chemical goggles	
Other Protective Clothing or Equipment Suitable protective clothing.		
Work/Hygienic Practices: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking		

Section IX: Physical and Chemical Properties

Boiling Point	N/A	**Specific Gravity (H_2O = 1)**	1.05 – 1.07
Vapor Pressure (mm Hg.)	N/A	**pH**	< 2.0
Vapor Density (AIR = 1)	N/A	**Evaporation Rate (Butyl Acetate = 1)**	N/A
Solubility in Water: Complete			
Physical State: Liquid			
Appearance: Clear, Yellow liquid			
Odor: Slight Acidic			

STRUVICIDE™ Soak

Section X: **Stability and Reactivity**

Stability:	Stable	**Hazardous Polymerization:**	Will Not Occur
Incompatibility (Materials to Avoid): Strong alkalis, oxidizing agents			
Conditions to Avoid: Extreme temperatures, Contact with incompatible materials			
Possibility of Hazardous Reactions: Will not occur			
Hazardous Decomposition Products: Carbon oxides, chlorine			

Section XI: Toxicological Information

No toxicity tests have been carried out for this product. Acute toxicity data was determined based on toxicity of individual components contained for this product

Acute oral toxicity: May result in gastrointestinal irritation
Acute inhalation: May cause irritation to upper respiratory tract.
Acute dermal toxicity: Not been determined
Skin irritation: Prolonged contact may cause burns
Eye irritation: May cause severe eye irritation

Carcinogenicity/Other Information:
None of the components are listed by: **NTP, IARC, ACGIH, OSHA**

Section XII: Ecological Information

Toxicity: May affect aquatic organisms if it lowers aquatic system pH < 5
Biodegradability: Not applicable
Bio-accumulative potential: Not expected
Other Adverse Effects: Not available

Section XIII: Disposal Considerations

Disposal Recommendations: Disposal must be in accordance with current applicable laws and regulations. Pure dissolved material is calcium chloride when used as directed.

STRUVICIDE™ Soak

Section XIV: Transportation

Land (DOT): UN1789, Hydrochloric Acid, 8, II
Land (TDG): UN1789, Hydrochloric Acid, 8, II
Sea (IMDG): UN1789, Hydrochloric Acid, 8, II
Air (IATA): UN1789, Hydrochloric Acid, 8, II

Section XV: Regulatory Information

OSHA Hazard Communication Standard: When used for its intended purposes, this material is not classified as hazardous in accordance with OSHA 29 CFR 1910.1200.
EPCRA: This material contains no extremely hazardous substances.
SARA (311/312) Reportable Hazard Categories: Acute health hazard, Chronic health hazard
SARA (313) Toxic Release Inventory: This material contains no chemicals that are subject to the reporting requirements of the SARA 313 Toxic Release Program
The Following Ingredients are Cited on the Lists Below: None

Section XVI: Other Information

Other Special Considerations: None

Disclaimer: This information is to the best of our knowledge and belief, accurate and reliable as of the date complied. However, no representation, warranty or guarantee is made as to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for his own particular use. We do not accept liability for any loss or damage that may occur from the use of this information nor do we offer warranty against patent infringement.