

BIDDER'S CHECK LIST

ENVELOPE

Project Name, Time, & Date in  
accordance with advertisement

( )

BID SECURITY

Bid Bond with Power of Attorney

( )

or

Certified or Cashier's Check

(✓)

**NOTE:** Bid Security for successful electronic bidders shall be received by May 24, 2017. If an electronic bidder meets all criteria for being awarded the chemical bid, a formal notification shall be sent. May 24, 2017 is the deadline for Consolidated Waterworks District No. 1 receiving all Bid Security information and Resolution as required by the bid documents.

PROPOSAL

Addendums (if any) noted

(✓)

Tax Dept. I.D. Numbers

(✓)

Extensions checked and totaled

(✓)

Signed

(✓)

Resolution attached authorizing  
Bidder's Signature

(✓)

Acid Alum dry weight determination equation (as applicable)

MA ( )

**NOTE:** Attach this Bidder's Check List to your proposal to insure that bid is properly submitted. This is in addition to the Provisions included in the "General Specifications and Individual Chemical Specifications" and does not preclude any provisions thereof.

HOLD DOCUMENT UP TO THE LIGHT TO VIEW TRUE WATERMARK

# OFFICIAL CHECK

HOLD DOCUMENT UP TO THE LIGHT TO VIEW TRUE WATERMARK



**Bank**

61023497-5

RE: SHANNON CHEMICAL CORPORATION

DATE: 04/27/2017

52-0133  
112

PAY TO THE  
ORDER OF

Consolidated Waterworks District 1

Eight Thousand Five Hundred Thirty Eight AND 00/100

\$8,538.00

DRAWER: TD BANK, N.A.



MP

AUTHORIZED SIGNATURE

⑈610234975⑈ ⑆011201335⑆ 6265029404⑈

PROPOSAL OF:

Shannon Chemical Corporation

Supplier

P.O. Box 376, Malvern, PA 19355

Address

PROPOSAL "A" THROUGH PROPOSAL "J"

Consolidated Waterworks District No. 1  
CHEMICAL SUPPLIES


TO: Board of Commissioners  
Consolidated Waterworks District No. 1  
8814 Main St.  
Houma, Louisiana 70363

Gentlemen:

The undersigned, as Bidder, declares that only persons or parties interested in this proposal as principals are those named herein; that this proposal is made without collusion or combination of any kind or character with any other person, firm, association or corporation, or any member or officer thereof, that he has (or they have) carefully examined the specifications as prepared by Consolidated Waterworks District No. 1 Houma, Louisiana, and that he (or they) proposes and agrees, if this proposal is accepted, to furnish and deliver to the Consolidated Waterworks District No. 1 Water Treatment Plant, in Schriever, Louisiana, or in Houma, Louisiana FOB, all of the material as specified; and that he (or they) hereby proposes to accept as full compensation therefore the price given in the following bids.

Bidder further acknowledges that its signature upon this bid form constitutes full and complete acceptance of all the terms and conditions set forth in this bid proposal. Consolidated Waterworks District Number 1 of Terrebonne Parish, LA may or may not, in its discretion, submit a written contract form to the low bidder on each item bid under this proposal in order to confirm the terms set forth in this proposal, but its failure to do so shall not constitute a waiver of any terms set forth herein.

The undersigned bidder therefore acknowledges its binding commitment to the full and complete terms of the specifications in the event it is the low bidder, whether followed up with a confirming written document to be executed or not.

Daniel C. Flynn 

Name

Vice President-Operations

Title

# PROPOSAL SHEET for TWO-YEAR'S SUPPLY

PROPOSAL OF:

|                              |              |
|------------------------------|--------------|
| Shannon Chemical Corporation | 610-363-9090 |
| SUPPLIER                     | PHONE NUMBER |
| P.O. Box 376                 |              |
| STREET ADDRESS               |              |
| Malvern                      | PA           |
| 19355                        |              |
| CITY                         | STATE        |
|                              | ZIP CODE     |

STATE OF LOUISIANA TAX DEPARTMENT I. D. NO.  
TERREBONNE PARISH TAX DEPARTMENT I. D. NO.

| PROPOSAL   | AMOUNT IN WRITING  | AMOUNT IN NUMBERS  |
|--|--|--|
| <b>"A"</b><br>ALUMINUM SULFATE<br>In Aqueous Solution of<br>Sulfuric Acid<br>3200 TONS (DRY) | \$ _____<br>DOLLARS PER TON<br><br>\$ _____<br>DOLLARS FOR 3200 TONS (DRY)   | \$ No Bid<br>PER TON<br><br>\$ No Bid<br>FOR 3200 TONS (DRY) |
| <b>"B-1"</b><br>LIQUID CATIONIC POLYMER<br>110 TONS<br>BULK SHIPMENTS                        | \$ _____<br>DOLLARS PER POUND<br><br>\$ _____<br>DOLLARS PER 110 TONS  | \$ No Bid<br>PER POUND<br><br>\$ No Bid<br>PER 110 TONS      |
| <b>"B-2"</b><br>LIQUID CATIONIC POLYMER<br>25 TONS<br>275 GALLON TOTE<br>SHIPMENTS           | \$ _____<br>DOLLARS PER POUND<br><br>\$ _____<br>DOLLARS PER 25 TONS   | \$ No Bid<br>PER POUND<br><br>\$ No Bid<br>PER 25 TONS       |
| <b>"C"</b><br>FLUOROSILICIC ACID<br>(FLOURIDE)<br>23 PERCENT STRENGTH<br>260 TONS            | Zero Dollars and Twenty Six Hundredths<br>\$ and Four Thousandths Cents<br>DOLLARS PER POUND<br>One Hundred Thirty Seven Thousand<br>\$ Two Hundred Eighty Dollars<br>DOLLARS PER 260 TONS | \$ 0.264/#<br>PER POUND<br><br>\$ 137,280.00<br>PER 260 TONS |
| <b>"D"</b><br>LIQUID CHLORINE<br>1- TON CYLINDERS<br>310 TONS                                | \$ _____<br>DOLLARS PER POUND<br><br>\$ _____<br>DOLLARS PER 310 TONS  | \$ No Bid<br>PER POUND<br><br>\$ No Bid<br>PER 310 TONS      |



|   |   |  |
|---|---|--|
| <b>"E"</b><br>POTASSIUM PERMANGANATE<br>10 TONS           | One Dollar and Sixty Seven Hundredths<br><u>\$ and Four Thousandths Cents</u><br>DOLLARS PER POUND<br>Thirty Three Thousand Four<br><u>\$ Hundred Eighty Dollars</u><br>DOLLARS PER 10 TONS | <u>\$ 1.674/#</u><br>PER POUND<br><br><u>\$ 33,480.00</u><br>PER 10 TONS |
| <b>"F"</b><br>COPPER SULFATE<br>SOLUTION<br>8,250 GALLONS | \$ _____<br>DOLLARS PER GALLON<br><br>\$ _____<br>DOLLARS PER 8,250 GALLONS   | \$ No Bid<br>PER GALLON<br><br>\$ No Bid<br>PER 8,250 GALLONS            |
| <b>"G"</b><br>SODA ASH (DENSE)<br>60 TONS                 | \$ _____<br>DOLLARS PER TON<br><br>\$ _____<br>DOLLARS PER 60 TONS  | \$ No Bid<br>PER POUND<br><br>\$ No Bid<br>PER 60 TONS                   |
| <b>"H"</b><br>SODIUM HYPOCHLORITE<br>750 TONS             | \$ _____<br>DOLLARS PER POUND<br><br>\$ _____<br>DOLLARS FOR 750 TONS   | \$ No Bid<br>PER POUND<br><br>\$ No Bid<br>PER 750 TONS                  |
| <b>"I"</b><br>AMMONIUM SULFATE<br>450 TONS                | \$ _____<br>DOLLARS PER POUND<br><br>\$ _____<br>DOLLARS FOR 450 TONS   | \$ No Bid<br>PER POUND<br><br>\$ No Bid<br>PER 450 TONS                  |
| <b>"J"</b><br>SODIUM CHLORITE<br>650 TONS                 | \$ _____<br>DOLLARS PER POUND<br><br>\$ _____<br>DOLLARS FOR 650 TONS   | \$ No Bid<br>PER POUND<br><br>\$ No Bid<br>PER 650 TONS                  |

INDEMNIFICATION AGREEMENT

The Shannon Chemical Corporation agrees to  
SUPPLIER

defend, indemnify, save and hold harmless Consolidated Waterworks District No. 1 of Terrebonne Parish, LA, its officers, districts, sub-districts, officers, agents, directors, servants, employees, all of their departments, boards and commissions, and volunteers from and against any and all claims, demands, expenses, suits, losses, costs, fines, penalties, and liability arising out of injury, sickness, disease, or death to any person or the damage, loss or destruction of any property, including loss of use therefrom, which may occur or in any way grow out of any act or omission of

Shannon Chemical Corporation

SUPPLIER

its agents, servants, partners, officers, employees, and volunteers, and any and all costs, expenses and/or Attorney Fees incurred by Consolidated Waterworks District No. 1 of Terrebonne Parish, LA, all of their departments, agencies, Boards, Commissions, their agents representatives, and/or employees as a result of any such claim, demands, and/or causes of action except those claims, demands and/or causes of action arising out of the negligence of Consolidated Waterworks District No. 1 of Terrebonne Parish, LA, all of their departments, agencies, Boards, Commissions, their agents, representatives, and/or employees.

Shannon Chemical Corporation

SUPPLIER

shall investigate, adjust, defend, contest to resolution, settle, and/or resist claims, handle, respond to, provide defense for and defend any such claim, demand, or suit at its sole expense related thereto, even if it (claims, etc.) is groundless, false, or fraudulent.

Accepted by Shannon Chemical Corporation

SUPPLIER



Daniel C. Flynn

SIGNATURE

Vice President-Operations

TITLE

Date Accepted 04/27/17

Is certificate of Insurance attached? X Yes \_\_\_\_\_ No

PURPOSE OF CONTRACT: CHEMICAL NEEDS for WATER TREATMENT PLANTS (July 1, 2017 through June 30, 2019)



# CERTIFICATE OF LIABILITY INSURANCE

DATE(MM/DD/YYYY)  
6/2/2016

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

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

PRODUCER  
SASSA & CONCANNON INSURANCE  
PO Box 187  
Norwood, PA 19074-0187

CONTACT NAME: Steve Hollingsworth  
PHONE (A/C, No. Ext): (610) 583-3523 FAX (A/C, No.): (610) 583-3406  
E-MAIL ADDRESS: stevehinsurance@gmail.com

INSURED Shannon Chemical Corporation  
PO Box 376  
Malvern, PA 19355  
610-363-9090

| INSURER(S) AFFORDING COVERAGE                | NAIC# |
|--|-------|
| INSURER A: Nautilus Insurance Company        | 17370 |
| INSURER B: Great Divide Insurance Company    | 25224 |
| INSURER C: Aspen Specialty Insurance Company | 10717 |
| INSURER D: AIG Property Casualty Company     | 19402 |
| INSURER E:                                   |       |
| INSURER F:                                   |       |

## COVERAGES

CERTIFICATE NUMBER:

REVISION NUMBER:

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

| INSR LTR | TYPE OF INSURANCE   | ADDL INSD | SUBR WVD | POLICY NUMBER | POLICY EFF (MM/DD/YYYY) | POLICY EXP (MM/DD/YYYY) | LIMITS   |
|----------|---|-----------|----------|---------------|-------------------------|-------------------------|--|
| A        | <input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY  | Y         |          | GLP2018247-10 | 06/01/2016              | 06/01/2017              | EACH OCCURRENCE \$ 1,000,000   |
|          | <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR                                      |           |          |               |                         |                         | DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 300,000                           |
|          |   |           |          |               |                         |                         | MED EXP (Any one person) \$ 10,000   |
|          | GEN'L AGGREGATE LIMIT APPLIES PER:  |           |          |               |                         |                         | PERSONAL & ADV INJURY \$ 1,000,000   |
|          | <input checked="" type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC           |           |          |               |                         |                         | GENERAL AGGREGATE \$ 2,000,000   |
|          | OTHER:  |           |          |               |                         |                         | PRODUCTS - COM/OP AGG \$ 2,000,000   |
| B        | AUTOMOBILE LIABILITY  | Y         |          | BAF2018248-10 | 06/01/2016              | 06/01/2017              | COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000                               |
|          | <input checked="" type="checkbox"/> ANYAUTO   |           |          |               |                         |                         | BODILY INJURY (Per person) \$  |
|          | <input type="checkbox"/> ALL OWNED AUTOS  |           |          |               |                         |                         | BODILY INJURY (Per accident) \$  |
|          | <input checked="" type="checkbox"/> HIRED AUTOS <input checked="" type="checkbox"/> SCHEDULED AUTOS NON-OWNED AUTOS |           |          |               |                         |                         | PROPERTY DAMAGE (Per accident) \$  |
| C        | <input checked="" type="checkbox"/> UMBRELLA LIAB <input checked="" type="checkbox"/> EXCESS LIAB                   | Y         |          | EXAGH9X16     | 06/01/2016              | 06/01/2017              | EACH OCCURRENCE \$ 9,000,000   |
|          | <input type="checkbox"/> DED <input type="checkbox"/> RETENTIONS  |           |          |               |                         |                         | AGGREGATE \$ 9,000,000   |
|          | WORKERS COMPENSATION AND EMPLOYERS' LIABILITY   |           |          |               |                         |                         | <input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTHER |
|          | ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH)   |           |          |               |                         |                         | EL EACH ACCIDENT \$ 1,000,000  |
| D        | If yes, describe under DESCRIPTION OF OPERATIONS below  | N/A       |          | 012851739     | 06/01/2016              | 06/01/2017              | EL DISEASE - EA EMPLOYEE \$ 1,000,000  |
|          |   |           |          |               |                         |                         | EL DISEASE - POLICY LIMIT \$ 1,000,000   |
|          |   |           |          |               |                         |                         |  |
| A        | Site Pollution Liability  | Y         | Y        | SSP2018250-10 | 06/01/2016              | 06/01/2017              | \$1,000,000 per occurrence<br>\$2,000,000 Aggregate                            |

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

## CERTIFICATE HOLDER

## CANCELLATION

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

AUTHORIZED REPRESENTATIVE

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C O R P O R A T E   R E S O L U T I O N

BE IT RESOLVED by the Board of Directors of Shannon Chemical Corporation  
\_\_\_\_\_ in a meeting duly assembled that  
(Name) Daniel C. Flynn, V.P.-Operations (Title),  
of the Corporation, be, and he is hereby authorized, empowered and directed for  
and on behalf of the Corporation to negotiate for and sign any and all bid  
proposals and/or contracts which this corporation might enter into for the  
furnishing of services for the Corporation under such terms, conditions and  
stipulations, and for such consideration as he might deem to the best interest of  
the Corporation.

\*\*\*\*\*

I, Karl Spivak (Name)  
Secretary of Shannon Chemical Corporation do hereby  
certify that the above and foregoing is a true and correct copy of a Resolution  
unanimously adopted at a meeting of the Board of Directors of said Corporation held on  
the 23rd day of March, 2017, at which meeting all members of the Board  
of Directors were present and voted thereon and that said Resolution has been spread  
upon the minute books of the Corporation, and same is now in full force and effect.

WITNESS MY SIGNATURE this 27th day of April, 2017, at \_\_\_\_\_.

Karl Spivak Karl Spivak  
Secretary

END OF SPECIFICATIONS





# Shannon Chemical Corporation

*Specializing in **LEAD** and **COPPER** Corrosion Control*

## Corporate Resolution

At the meeting of directors of **SHANNON CHEMICAL CORPORATION**, duly noticed and held on March 23, 2017 a quorum being there present, on motion duly made and seconded. It was:

Resolved that Daniel C. Flynn, be and is hereby appointed, constituted and designated as agent and Attorney-in-Fact of the corporation with full power and authority to act on behalf of this corporation in all negotiations; bidding, concerns and transaction, including but not limited to the execution of all bids, papers, documents, affidavits, bonds, sureties, contracts and acts and to receive and receipt therefore all purchase orders and notices issued pursuant to the provisions of any such bid or contract. This corporation hereby ratifying, approving, confirming and accepting each and every such act performed by said agent and Attorney-in-Fact.

I hereby certify the foregoing to be a true and correct copy of an excerpt of the minutes of the above dated meeting of the board of directors of said corporation, and the same has not been revoked or rescinded.

Paul Spink

04/27/17

Date

Seal:



# Shannon Chemical Corporation

*Specializing in **LEAD** and **COPPER** Corrosion Control*

## Hydrofluorosilicic Acid (HFSA) SE-1900 L-25


### Affidavit of Compliance

SHANNON CHEMICAL CORPORATION certifies that SE-1900 L-25 complies in all aspects to the bid specifications for the Consolidated Waterworks District No. 1, LA.

SHANNON CHEMICAL CORPORATION certifies that SE-1900 L-25 is ANSI/NSF Certified to Standard 60 as a fluoride additive in potable drinking water. All raw materials used in the formulation of SE-1900 L-25 meet or exceed the specifications for additives to potable drinking water as stated in the Water Chemical Codex and the Water Chemical Codex; Supplementary Recommendations for Direct Additives.

SE-1900 L-25 has the following chemical and physical characteristics:

|                         |                   |
|-------------------------|-------------------|
| Specific Gravity:       | 1.2 - 1.3         |
| Color:                  | Less Than 10.0 CU |
| Odor:                   | Sharp; Pungent    |
| UN#:                    | 1778              |
| Packing Group:          | II                |
| Placards:               | Corrosive         |
| Percentage $H_2SiF_6$ : | 23 - 30%          |
| Percentage HF:          | Less Than 0.4%    |

  
Daniel C. Flynn  
Vice President-Operations  
SHANNON CHEMICAL CORPORATION





# Shannon Chemical Corporation

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*Specializing in **LEAD** and **COPPER** Corrosion Control*

## Potassium Permanganate SE-3955 F

### Affidavit of Compliance

SHANNON CHEMICAL CORPORATION certifies that **SE-3955 F** complies in all aspects to the bid specifications for the Consolidated Waterworks District No. 1, LA.

SHANNON CHEMICAL CORPORATION certifies that **SE-3955 F**, is ANSI/NSF Certified to Standard 60. All raw materials used in the formulation of **SE-3955 F** meet or exceed the specifications for additives to potable drinking water as stated in the Water Chemical Codex and the Water Chemical Codex; Supplementary Recommendations for Direct Additives.

---

Daniel C. Flynn  
Vice President-Operations  
SHANNON CHEMICAL CORPORATION



# Shannon Chemical Corporation

Specializing in **LEAD** and **COPPER** Corrosion Control

## Product Data Sheet

**SE-3955 F**

**Potassium Permanganate**

SHANNON CHEMICAL CORPORATION certifies SE-3955F is certified to ANSI/NSF standard 60 specifications.

Product specifications are as follows:

|                 |                                       |
|-----------------|---------------------------------------|
| Grade:          | Free flowing. Meets<br>AWWA B603-2003 |
| Color:          | Deep, dark purple fine<br>crystal     |
| ASSAY:          | > 97.5%                               |
| Formulation:    | KMnO <sub>4</sub>                     |
| Formula Weight: | 158 grs/mol                           |
| CAS #:          | 7722-64-7                             |
| UN #:           | 1490                                  |
| IMO Code:       | 5.1 oxidizer                          |
| HS Code:        | 28416100                              |

*DCF*

Daniel C. Flynn  
Vice President-Operations  
SHANNON CHEMICAL CORPORATION





# Shannon Chemical Corporation

*Specializing in **LEAD** and **COPPER** Corrosion Control*

## LETTER OF CERTIFICATION

### Hydrofluorosilicic Acid (HFSA)

#### SE-1900 L-25

**SHANNON CHEMICAL CORPORATION** certifies that our **HFSA, SE-1900 L-25**, has the following chemical and physical characteristics:

|                         |                   |
|-------------------------|-------------------|
| Specific Gravity:       | 1.2 - 1.3         |
| Color:                  | Less Than 10.0 CU |
| Odor:                   | Sharp; Pungent    |
| UN#:                    | 1778              |
| Packing Group:          | II                |
| Placards:               | Corrosive         |
| Percentage $H_2SiF_6$ : | 23 - 30%          |
| Percentage HF:          | Less Than 0.4%    |

DC77-  
Daniel C. Flynn  
Vice President-Operations  
**SHANNON CHEMICAL CORPORATION**



**Shannon Chemical Corp.**  
P.O. Box 376 Malvern, PA 19355 • Phone: (610) 363-9090 • Fax: (610) 524-6050

## Safety Data Sheet

### SECTION 1: IDENTIFICATION OF THE PRODUCT AND COMPANY

#### 1.1 Product Identifier

|                  |                            |
|------------------|----------------------------|
| Product Name     | • <b>SE-1900 L-25</b>      |
| Synonyms         | • Fluorosilicic acid; HFSA |
| CAS Number       | • N.A.                     |
| SDS Number/Grade | • 0045                     |

#### 1.2 Use of Substance/Mixture

|                 |                                  |
|-----------------|----------------------------------|
| Recommended use | • Fluoridation of drinking water |
|-----------------|----------------------------------|

#### 1.3 Company Identification

|         |                                     |
|---------|-------------------------------------|
| Name    | • Shannon Chemical Corporation      |
| Address | • P.O. Box 376<br>Malvern, PA 19355 |

#### 1.4 Contact Information

|               |                  |
|---------------|------------------|
| Information # | • (610) 363-9090 |
| Chem Tel #    | • (800) 255-3924 |
| Emergency #   | • (484) 354-9773 |

### SECTION 2: HAZARDS IDENTIFICATION

#### 2.1 Classification of the Substance or Mixture

|                                     |      |
|-------------------------------------|------|
| GHS-US Classification               |      |
| Acute Tox. 4 (Oral)                 | H302 |
| Acute Tox. 4 (Inhalation:dust,mist) | H332 |
| Skin Corr. 1A                       | H314 |
| Eye Dam. 1                          | H318 |
| Aquatic Acute 3                     | H402 |

#### 2.2 Label Elements

##### Hazard Statements:

- H302 – Harmful if swallowed
- H314 – Causes severe skin burns and eye damage
- H318 – Causes serious eye damage
- H332 – Harmful if inhaled
- H402 – Harmful to aquatic life

**Precautionary Statements:**

P260 – Do not breathe fume, mist, vapors, spray  
 P264 – Wash hands and forearms thoroughly after handling  
 P271 – Use only outdoors or in a well-ventilated area  
 P273 – Avoid release to the environment  
 P280 – Wear eye protection, face protection, protective gloves, protective clothing  
 P301+P330+P331 – IF SWALLOWED: Rinse mouth. Do NOT induce vomiting  
 P303+P361+P353 – IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower  
 P304+P340 – IF INHALED: Remove person to fresh air and keep comfortable for breathing  
 P305+P351+P338 – If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
 P310 – Immediately call a POISON CENTER or doctor  
 P363 – Wash contaminated clothing before reuse

**• Hazard Symbols****•Signal Word**

DANGER!

**2.3 Other Hazards**

Hazardous to the aquatic environment

**SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS****3.1 Substances**

Not Applicable

**3.2 Mixture**

| Name               | Product Identifier | %     | GHS-US Classification   |
|--------------------|--------------------|-------|---|
| Fluorosilicic acid | CAS: 16961-83-4    | 23-30 | Acute Tox. 3 (Oral), H301<br>Acute Tox. 2 (Inhalation: dust,mist), H330<br>Skin Corr. 1A, H314<br>Eye Dam. 1, H318<br>Aquatic Acute 3, H402 |
| Water              | CAS: 7732-18-5     | 70-77 | Not classified  |

## SECTION 4: FIRST AID MEASURES

### 4.1 Description of First Aid Measures

|                            |  |
|----------------------------|--|
| First-aid measures general | <ul style="list-style-type: none"> <li>• If exposed or concerned: Get medical advice/attention. If you feel unwell, seek medical advice (show the label where possible).</li> </ul>  |
| Inhalation                 | <ul style="list-style-type: none"> <li>• Using proper respiratory protection, immediately move the exposed person to fresh air. Keep at rest and in a position comfortable for breathing. Give oxygen or artificial respiration if necessary. Seek immediate medical advice. Symptoms may be delayed.</li> </ul>                             |
| Skin Exposure              | <ul style="list-style-type: none"> <li>• Remove/Take off immediately all contaminated clothing. Rinse immediately with plenty of water (for at least 15 minutes). Seek medical attention immediately if exposure is severe. Obtain medical attention if irritation develops or persists. Wash contaminated clothing before reuse.</li> </ul> |
| Eye Exposure               | <ul style="list-style-type: none"> <li>• Immediately rinse with water for a prolonged period (at least 15 minutes) while holding the eyelids wide open. Seek medical attention immediately if exposure is severe. Obtain medical attention if irritation develops or persists.</li> </ul>  |
| Ingestion                  | <ul style="list-style-type: none"> <li>• If swallowed, do not induce vomiting. Seek medical advice immediately and show this container or label.</li> </ul>  |

### 4.2 Most Important Symptoms and Effects, Acute & Delayed

|                     |  |
|---------------------|--|
| Symptoms/Injuries   | <ul style="list-style-type: none"> <li>• Corrosive. Causes burns. Harmful if swallowed. Harmful if inhaled.</li> </ul>   |
| After Inhalation    | <ul style="list-style-type: none"> <li>• Causes severe respiratory irritation if inhaled. Symptoms may include: Burning of nose and throat, constriction of airway, difficulty breathing, shortness of breath, bronchial spasms, chest pain, and pink frothy sputum. Contact may cause immediate severe irritation progressing quickly to chemical burns. May cause pulmonary edema. Symptoms may be delayed.</li> </ul> |
| After Skin Exposure | <ul style="list-style-type: none"> <li>• Exposure may cause immediate severe irritation progressing quickly to chemical burns.</li> </ul>  |
| After Eye Exposure  | <ul style="list-style-type: none"> <li>• Exposure may cause immediate severe irritation progressing quickly to chemical burns. Can cause blindness.</li> </ul>   |
| After Ingestion     | <ul style="list-style-type: none"> <li>• May cause burns or irritation of the linings of the mouth, throat, and gastrointestinal tract. Swallowing a small quantity of this material will result in serious health hazard.</li> </ul>  |
| Chronic Symptoms    | <ul style="list-style-type: none"> <li>• Repeated or prolonged inhalation may damage lungs. Prolonged and repeated contact will eventually cause permanent tissue damage. Repeated and prolonged exposure to fluorine containing compounds may cause fluorosis, a condition characterized by changes in bone density and strength, accompanied by stiffness and pain in joints.</li> </ul>                               |

## SECTION 5: FIREFIGHTING MEASURES

### 5.1 Extinguishing Media

|                                |   |
|--------------------------------|---|
| Suitable Extinguishing Media   | • Use extinguishing media appropriate for surrounding fire.   |
| Unsuitable Extinguishing Media | • Do not get water inside containers. Do not apply water stream directly at source of leak. Do not use a heavy water stream. A direct water stream will cause violent splattering and generation of heat. |

### 5.2 Special Hazards

|                  |  |
|------------------|--|
| Fire Hazard      | • Not flammable. Under conditions of fire this material may produce: Silicon oxides. Hydrogen fluoride. Tetrafluorosilane. Decomposes above 108°C (227°F). |
| Explosion Hazard | • Product is not explosive.  |

### 5.3 Advice for Firefighters

|                                |  |
|--------------------------------|--|
| Firefighting Instructions      | • Keep upwind. Use water spray or fog for cooling exposed containers.  |
| Protection during Firefighting | • Firefighters must use full bunker gear including NIOSH-approved positive-pressure self-contained breathing apparatus to protect against potential hazardous combustion and decomposition products. |
| Other Information              | • Do not allow run-off from firefighting to enter drains or water courses.   |

## SECTION 6: ACCIDENTAL RELEASE MEASURES

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

#### For non-emergency personnel

|                      |  |
|----------------------|--|
| Protective Equipment | • Use recommended respiratory protection. Wear suitable protective clothing, gloves and eye/face protection.           |
| Emergency Procedures | • Stop leak if safe to do so. Eliminate ignition sources. Evacuate unnecessary personnel. Ventilate area. Keep upwind. |

#### For emergency responders

|                      |  |
|----------------------|--|
| Protective Equipment | • Use recommended respiratory protection. Wear suitable protective clothing, gloves and eye/face protection. |
| Emergency Procedures | • Stop leak if safe to do so. Eliminate ignition sources. Evacuate unnecessary personnel. Ventilate area.    |



## 6.2 Methods and Material for Containment and Cleaning Up

|             |   |
|-------------|---|
| Containment | <ul style="list-style-type: none"> <li>• If possible, dike spill and/or contain. Do not allow into drains or water courses or dispose of where ground or surface waters may be affected.</li> </ul>   |
| Cleaning Up | <ul style="list-style-type: none"> <li>• Ventilate area. Small quantities of liquid spill: take up in non-combustible inert absorbent material and shovel into container for disposal. Collect absorbed material and place into sealed, labelled container to be disposed at an appropriate disposal facility according to current applicable laws and regulations and product characteristics at the time of disposal. Liquid spill: neutralize with powdered limestone or sodium bicarbonate. Practice good housekeeping – spillage can be slippery on smooth surface either wet or dry.</li> </ul> |

## 6.3 Environmental Precautions

If spill could enter any waterway, including intermittent dry creeks, contact the U.S. COAST GUARD NATIONAL RESPONSE CENTER at 800-424-8802.

## SECTION 7: HANDLING AND STORAGE

### 7.1 Precautions for Safe Handling

|                  |   |
|------------------|---|
| Handling         | <ul style="list-style-type: none"> <li>• Avoid all eyes and skin contact and do not breathe vapor and mist. Wear recommended personal protective equipment. Ensure there is adequate ventilation. Keep away from heat and open flame. Employ good maintenance practices to prevent leaks. Use good process control measures to prevent releases.</li> </ul> |
| Hygiene Measures | <ul style="list-style-type: none"> <li>• Handle in accordance with good industrial hygiene and safety procedures. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Wash contaminated clothing before reuse.</li> </ul>  |

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

|                               |  |
|-------------------------------|--|
| Incompatible Materials        | <ul style="list-style-type: none"> <li>• Reacts with many metals to produce flammable and explosive hydrogen gas.</li> </ul>   |
| Prohibitions on Mixed Storage | <ul style="list-style-type: none"> <li>• Keep away from strong acids and bases, chlorites, organic peroxides, combustible materials, and metals.</li> </ul>  |
| Storage Area                  | <ul style="list-style-type: none"> <li>• Store in dry, cool area. Store in well-ventilated place away from heat and sources of ignition. Large tanks should be beamed and electrically grounded. Keep away from combustible materials. Avoid using glass metal or stoneware containers.</li> </ul> |

## SECTION 8: EXPOSURE CONTROL/PERSONAL PROTECTION

### 8.1 Control Parameters

| Fluorides |     |                       |
|-----------|-----|-----------------------|
| USA ACGIH | TWA | 2.5 mg/m <sup>3</sup> |
| USA OSHA  | TWA | 2.5 mg/m <sup>3</sup> |
| USA NIOSH | TWA | 2.5 mg/m <sup>3</sup> |

### 8.2 Exposure Controls

Appropriate Engineering Controls

- Ensure adequate ventilation, especially in confined areas.

Personal Protective Equipment

- Protective goggles. Face shield. Gas mask at concentration in the air >> TLV. Protective clothing.



Hand Protection

- Impermeable protective gloves, such as; nitrile, neoprene, or PVC. Wear gauntlet gloves. Check glove manufacturer's permeation / degradation information.

Eye Protection

- Chemical safety goggles. Face shield. Do not wear contact lenses.

Skin and Body Protection

- Wear suitable protective clothing. Chemical resistant suit. Rubber apron, boots.

Respiratory Protection

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

Environmental Exposure Controls

- Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 General Information

Appearance  
Odor

- Water white to straw yellow; liquid
- Pungent

### 9.2 Important Health Safety and Environmental Information

pH:  
Freezing Point:

- 1.0 – 2.0
- No Data Available

|                            |                             |
|----------------------------|-----------------------------|
| Boiling Point:             | • 136 – 163°C (277 – 326°F) |
| Flash Point:               | • No Data Available         |
| Evaporation Rate:          | • No Data Available         |
| Flammability (solid, gas): | • No Data Available         |
| Vapor Pressure:            | • 24 mm Hg at 25°C (77°F)   |
| Relative Density:          | • 1.2 at 24°C (75°F)        |
| Solubility (ies):          | • Water: Miscible           |
| Auto-ignition Temperature: | • No Data Available         |
| Decomposition Temperature: | • 108°C (227°F)             |
| Viscosity:                 | • No Data Available         |
| Product Density:           | • 10.0 – 11.0 #/gallon      |

## SECTION 10: STABILITY AND REACTIVITY

### 10.1 Chemical Stability

- Stable under normal ambient conditions of temperature and pressure.

### 10.2 Conditions to Avoid

- Extreme heat. (Above 108°C)

### 10.3 Incompatible Materials

- Strong acids and bases, chlorites, organic peroxides, combustible materials, and metals. Attacks glass and stoneware.

### 10.4 Hazardous Decomposition Products

- Thermal decomposition generates: Silicon oxides, Hydrogen fluoride, and Tetrafluorosilane.

### 10.5 Hazardous Polymerization

- Will not occur

## SECTION 11: TOXICOLOGICAL INFORMATION

### 11.1 Information on Toxicological Effects

#### Acute Toxicity

- Harmful if swallowed. Harmful if inhaled.

|                    | CAS        |   |
|--------------------|------------|---|
| Fluorosilicic acid | 16961-83-4 | <b>Acute Toxicity:</b> Ingestion/Oral-Rat LD50 • 125 mg/kg;<br>Inhalation-Rat LC50 • 0.28 mg/l (reported as 1.11 mg/l/1h) |

#### Skin Corrosion/Irritation

- May cause severe skin burns and eye damage. (pH: 1.0 – 2.0)

#### Serious Eye Damage/Irritation

- Causes serious eye damage. (pH: 1.0 – 2.0)

#### Respiratory or Skin Sensitization

- Not classified

#### Germ Cell Mutagenicity

- Not classified

#### Carcinogenicity

- Not classified



|  |   |
|--|---|
| <b>Fluorosilicic Acid (16961-83-4)</b> |   |
| IARC group                             | 3 |

|   |                  |
|---|------------------|
| Reproductive Toxicity                                 | • Not classified |
| Specific Target Organ Toxicity<br>(single exposure)   | • Not classified |
| Specific Target Organ Toxicity<br>(repeated exposure) | • Not classified |
| Aspiration Hazard                                     | • Not classified |

## SECTION 12: ECOLOGICAL INFORMATION

|                            |                           |   |
|----------------------------|---------------------------|---|
| <b>Ecotoxicity</b>         | • No Data Available       |   |
| <b>Environmental Fate</b>  | <b>Stability in Water</b> | • Product is NSF certified to ANSI Standard 60 for the fluoridation of municipal water supplies |
| <b>Toxicity</b>            | • No Data Available       |   |
| <b>Degradation Product</b> | <b>Biodegradation</b>     | • No Data Available   |
|                            | <b>Photodegradation</b>   | • No Data Available   |

## SECTION 13: DISPOSAL CONSIDERATIONS

### 13.1 Waste Treatment Methods

|                                 |   |
|---------------------------------|---|
| Sewage Disposal Recommendations | • This material is hazardous to the aquatic environment. Keep out of sewers and waterways.                  |
| Waste Disposal Recommendations  | • Place in an appropriate container and dispose of the contaminated material at a licensed site.            |
| Additional Information          | • Dispose of waste material in accordance with all local, regional, national and international regulations. |

## SECTION 14: TRANSPORT INFORMATION

In accordance with DOT / TDG / ADR / RID / ADN / IMDG / ICAO / IATA

|   |   |
|---|---|
| <b>U.N. Number</b>                            | • 1778  |
| <b>Proper Shipping Name</b>                   | • Fluorosilicic acid                              |
| <b>Dept. of Transportation Hazard Classes</b> | • 8 – Class 8 – Corrosive material 49 CFR 173.136 |
| <b>Hazard Labels</b>                          | • 8 – Corrosive Substances                        |
| <b>Packing Group</b>                          | • II – Medium Danger                              |



|   |   |
|---|---|
| <b>DOT Special Provisions</b><br>(49 CFR 172.102)   | <ul style="list-style-type: none"> <li>• B2 – MC 300, MC 301, MC 302, MC 303, MC 305, and MC 306 and DOT 406 cargo tanks are not authorized.</li> <li>IB2 – Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1).</li> <li>TP12 – This material is considered highly corrosive to steel.</li> </ul> |
| <b>DOT Packaging Exceptions</b><br>(49 CFR 173.xxx) | <ul style="list-style-type: none"> <li>• None</li> </ul>  |
| <b>DOT Packaging Non Bulk</b><br>(49 CFR 173.xxx)   | <ul style="list-style-type: none"> <li>• 202</li> </ul>   |
| <b>DOT Packaging Bulk</b><br>(49 CFR 173.xxx)       | <ul style="list-style-type: none"> <li>• 242</li> </ul>   |
| <b>Emergency Response Guide</b><br>(ERG) Number     | <ul style="list-style-type: none"> <li>• 154</li> </ul>   |
| <b>Other Information</b>                            | <ul style="list-style-type: none"> <li>• No supplementary information available.</li> </ul>   |

## SECTION 15: REGULATORY INFORMATION

### 15.1 U.S. Federal Regulation

| <b>Hydrofluorosilicic Acid</b>      |  |
|-------------------------------------|--|
| SARA Section 311/312 Hazard Classes | Immediate (acute) health hazard<br>Delayed (chronic) health hazard |

| <b>Fluorosilicic Acid (16961-83-4)</b>                                    |
|---|
| Listed on the United States TSCA (Toxic Substances Control Act) inventory |

### 15.2 U.S. State Regulations

The following states have an OSH program approved by OSHA. If you are located in any of these states you may be under state jurisdiction rather than federal jurisdiction and your state may have more stringent requirements than OSHA. You should consult your state regulations to ensure compliance.

#### Phosphoric Acid (7664-38-2)

|              |          |             |                |                 |
|--------------|----------|-------------|----------------|-----------------|
| Alaska       | Indiana  | Minnesota   | North Carolina | Utah            |
| Arizona      | Iowa     | Nevada      | Oregon         | Vermont         |
| California   | Kentucky | New Mexico  | Puerto Rico    | *Virgin Islands |
| *Connecticut | Maryland | *New Jersey | South Carolina | Virginia        |
| Hawaii       | Michigan | *New York   | Tennessee      | Washington      |
| *Illinois    |          |             |                | Wyoming         |

\*The state plans in these states apply only to public sector employers. In these states private sector employers are subject to USOL – OSHA jurisdiction. All other state plans apply to both public and private sector employers.

**SECTION 16: OTHER INFORMATION**

## NFPA Health Hazard

- 3 – Short exposure could cause serious temporary or residual injury even though prompt medical attention was given.

## NFPA Fire Hazard

- 0 – Materials that will not burn

## NFPA Reactivity

- 1 – Normally stable, but can become unstable at elevated temperatures and pressures or may react with water with some release of energy, but not violently.



|  |  |
|--|--|
| Acute Tox. 2<br>(Inhalation:dust,mist) | Acute toxicity (inhalation:dust,mist) Category 2 |
| Acute Tox. 3 (Oral)                    | Acute toxicity (oral) Category 3                 |
| Acute Tox. 4<br>(Inhalation:dust,mist) | Acute toxicity (inhalation:dust,mist) Category 4 |
| Acute Tox. 4 (Oral)                    | Acute toxicity (oral) Category 4                 |
| Eye Dam. 1                             | Serious eye damage/eye irritation Category 1     |
| Skin Corr. 1A                          | Skin corrosion/irritation Category 1A            |
| H301                                   | Toxic if swallowed                               |
| H302                                   | Harmful if swallowed                             |
| H314                                   | Causes severe skin burns and eye damage          |
| H318                                   | Causes serious eye damage                        |
| H330                                   | Fatal if inhaled                                 |
| H332                                   | Harmful if inhaled                               |

Preparation Date: 01/01/2014

Last Revision Date: 06/01/2015

**Disclaimer/Statement of Liability**

- The information herein is given in good faith but no warranty, expressed or implied, is made.



**Shannon Chemical Corp.**  
P.O. Box 376 Malvern, PA 19355 • Phone: (610) 363-9090 • Fax: (610) 524-6050

## Safety Data Sheet

### SECTION 1: IDENTIFICATION OF THE PRODUCT AND COMPANY

#### 1.1 Product Identifier

Product Name: **SE-3955 F**  
Trade Name: SE-3955 F  
Synonyms : Potassium Permanganate  
CAS Number 7722-64-7  
SDS Number/Grade 0066

#### 1.2 Use of Substance/Mixture

Recommended use: Oxidizer

#### 1.3 Company Identification

Name Shannon Chemical Corporation  
Address P.O. Box 376  
Malvern, PA 19355

#### 1.4 Contact Information

Information #: (610) 363-9090  
Chem Tel #: (800) 255-3924  
Emergency #: (800) 860-9090

### SECTION 2: HAZARDS IDENTIFICATION

#### 2.1 Classification of the substance or mixture

##### • GHS – US Classification

|                                      |            |
|--------------------------------------|------------|
| Oxidizing Solid                      | Category 2 |
| Acute Toxicity                       | Category 4 |
| Aquatic Toxicity (acute and chronic) | Category 1 |

**HMIS Rating: Health- 1 Fire- 0 Reactivity- 0**

*0-Minimal; 1-Slight Hazard; 2-Moderate Hazard; 3-Serious Hazard; 4-Severe Hazard*

**Hazard Pictograms (GHS-US)**



**Signal word (GHS-US):**



**DANGER**

**Label Codes:**  
**Hazard Statements:**

**GHS03, GHS07, GHS09**  
**H272, H302, H400, H410**

|      |  |
|------|--|
| H272 | May intensify fire, oxidizer                         |
| H302 | Harmful, if swallowed                                |
| H400 | Acute aquatic hazard                                 |
| H410 | Very toxic to aquatic life with long lasting effects |

## 2.2 Potential Health Effects

|                    |   |
|--------------------|---|
| Inhalation:        | <ul style="list-style-type: none"> <li>Acute inhalation data are not available. Airborne concentrations of potassium permanganate in the form of dust or mist may cause irritation to the respiratory tract.</li> </ul> |
| Contact with Eyes: | <ul style="list-style-type: none"> <li>It may cause burns that result in damage to the eye.</li> </ul>  |
| Contact with Skin: | <ul style="list-style-type: none"> <li>Prolonged contact is damaging to the skin.</li> </ul>  |
| Ingestion          | <ul style="list-style-type: none"> <li><b>SE-3955 F</b> may cause burns to the mouth, throat, esophagus, and stomach.</li> </ul>  |

## 2.3 Other Hazards

Harmful if swallowed.  
 Contact with combustible material may cause fire.  
 Toxic to aquatic organisms. May cause long-term effects.

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

### Potassium Permanganate Component

|             |   |
|-------------|---|
| %           | <ul style="list-style-type: none"> <li>97.5 Minimum Assay</li> </ul>  |
| CAS-No.     | <ul style="list-style-type: none"> <li>7722-64-7</li> </ul>   |
| Hazard Data | <ul style="list-style-type: none"> <li>PEL/C 5.0mg/m<sup>3</sup></li> <li>TLV-TWA 0.20mg/m<sup>3</sup></li> </ul> |
| UN#         | <ul style="list-style-type: none"> <li>1490</li> </ul>  |

## SECTION 4: FIRST AID MEASURES

|                          |   |
|--------------------------|---|
| <b>4.1 Eye Exposure</b>  | <ul style="list-style-type: none"> <li>Flush eyes immediately with large amounts of water while holding eyelids apart and open for 15 minutes. Seek prompt medical attention.</li> </ul>  |
| <b>4.2 Skin Exposure</b> | <ul style="list-style-type: none"> <li>Wash contaminated area with water. Seek medical attention if irritation is severe or persistent. Note: Remove contaminated clothing and footwear thoroughly wash all contaminated clothing.</li> </ul> |
| <b>4.3 Inhalation</b>    | <ul style="list-style-type: none"> <li>If exposed, move to open fresh air. If breathing is difficult or stopped, administer oxygen, resuscitate, and call 911.</li> </ul>   |

#### 4.4 Ingestion

- Seek prompt medical attention. If an individual swallows product give copious amounts of water. NEVER give anything by mouth to an unconscious person.

### SECTION 5: FIREFIGHTING MEASURES

#### 5.1 Extinguishing Media

- |                                |   |
|--------------------------------|---|
| Suitable Extinguishing Media   | • Use large quantities of water.                            |
| Unsuitable Extinguishing Media | • Do not use foam, dry chemicals, carbon dioxide or Halon®. |

#### 5.2 Special Hazards

- |                                    |  |         |               |
|------------------------------------|--|---------|---------------|
| Unusual Fire and Explosion Hazards | • Extremely strong oxidizing agent. Keep away from heat. Do not allow contact with acids, peroxides, combustible materials, organics or any metals. May ignite wood and/or cloth |         |               |
| Special Fire Fighting Procedures   | • Apply excess water to any fire. Wear self-contained breathing apparatus.   |         |               |
| Flash Point                        | • None   |         |               |
| NFPA Rating:                       | Health- 1  | Fire- 0 | Reactivity- 0 |

### SECTION 6: ACCIDENTAL RELEASE MEASURES

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

- |                          |   |
|--------------------------|---|
| Personal Precaution      | • Ensure adequate ventilation. Avoid dust formation Personnel should wear protective clothing suitable for the task.          |
| Environmental Precaution | • Do not allow product to enter sewer system, drains, surface water, or well water. Notify proper state agencies immediately. |

#### 6.2 Methods and Material for Containment and Cleaning Up

- |                      |   |
|----------------------|---|
| Containment/Clean-up | <ul style="list-style-type: none"> <li>• Immediately try to contain or dike effected area. Use diatomaceous earth or cover floor with dry absorbent product. DO NOT USE SAW DUST or other incompatible materials.</li> </ul> <p>Dilute solution to 5% with water. Reduce with a thiosulfate, bisulfite, or iron salt. Neutralize solution using soda ash. Filter and decant solution. Deposit sludge in approved landfill and according to all Federal State and local regulations.</p> |
|----------------------|---|

## SECTION 7: HANDLING AND STORAGE

### 7.1 Precautions for Safe Handling

- |          |   |
|----------|---|
| Handling | <ul style="list-style-type: none"> <li>• Always wash hands with soap and water after handling. Provide proper ventilation. Do not eat, drink or smoke near <b>SE-3955 F</b>.</li> </ul> |
|----------|---|

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

- |             |  |
|-------------|--|
| Storage     | <ul style="list-style-type: none"> <li>• Do not store near combustible products. All containers need to be properly sealed. Store in accordance with NFPA 430 requirements for a Class II oxidizer.</li> </ul> |
| Ventilation | <ul style="list-style-type: none"> <li>• Allow sufficient ventilation (natural or mechanical) to maintain exposure below TLV/TWA.</li> </ul>   |

## SECTION 8: EXPOSURE CONTROL/PERSONAL PROTECTION

### 8.1 Personal Protections

- |                        |  |
|------------------------|--|
| Respiratory Protection | <ul style="list-style-type: none"> <li>• If the potential to exposure of dust exists, always use an approved NIOSH-MSHA dust respirator.</li> </ul>                    |
| Hand Protection        | <ul style="list-style-type: none"> <li>• Wear protective rubber or plastic gloves.</li> </ul>  |
| Eye Protection         | <ul style="list-style-type: none"> <li>• Wear protective eye protection. i.e. face shield, goggles, safety glasses.</li> </ul>   |
| Other Protection       | <ul style="list-style-type: none"> <li>• Wear chemical protective apron if the potential for splashing exists. Remove clothing immediately if contaminated.</li> </ul> |

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 General Information

- |            |   |
|------------|---|
| Appearance | <ul style="list-style-type: none"> <li>• Dark, deep purple color</li> </ul> |
| Odor       | <ul style="list-style-type: none"> <li>• None</li> </ul>                    |

### 9.2 Important Health Safety and Environmental Information

- |                   |   |
|-------------------|---|
| Density (at 20°C) | <ul style="list-style-type: none"> <li>• 2.7</li> </ul>                               |
| Specific Gravity  | <ul style="list-style-type: none"> <li>• N.A.</li> </ul>                              |
| Solubility        | <ul style="list-style-type: none"> <li>• 5% at 20°C</li> <li>• 20% at 65°C</li> </ul> |

|                  |        |
|------------------|--------|
| Boiling Point    | • N.A. |
| Freezing Point   | • N.A. |
| pH               | • N.A. |
| Vapor Pressure   | • N.A. |
| Percent Volatile | • N.A. |

## SECTION 10: STABILITY AND REACTIVITY

### 10.1 Chemical Stability

- **SE-3955 F** is stable under normal ambient conditions of temperature and pressure.

### 10.2 Conditions to Avoid

- Contact with incompatible materials or heat may result in violent exothermic chemical reaction.

### 10.3 Incompatible Materials

- Acids, peroxides, formaldehyde, anti-freeze, hydraulic fluids and all combustible organic or readily oxidizable inorganic materials including metal powders. Chlorine gas may be liberated .

### 10.4 Hazardous Decomposition Products

- **SE-3955 F** may liberate irritating, poisonous and/or corrosive fumes in the presence of hydrochloric acid (HCL). Oxides of potassium and manganese may be formed.

### 10.5 Hazardous Polymerization

- Will not occur

## SECTION 11: TOXICOLOGICAL INFORMATION

### 11.1 Acute Toxicity

|              |  |
|--------------|--|
| Ingestion    | • Harmful if swallowed. ALD: 10g. Ingestion may cause nausea, vomiting, sore throat, stomach-ache and eventually lead to a perforation of the intestine. |
| Skin Contact | • May be absorbed into the body through the skin. Major effects of exposure: severe irritation, damage to the skin and brown staining of skin.           |



## Inhalation

- The product may be absorbed into the body by inhalation. Major effects of exposure: respiratory disorder, cough.

## 11.2 Chronic Toxicity

No data or known cases of chronic poisoning due to over exposure to permanganates.

## 11.3 Carcinogenicity

SE-3955 F has not been classified as a carcinogen by ACGIH, NIOSH, OSHA, NTP, or IARC.

## SECTION 12: ECOLOGICAL INFORMATION

The toxicity data for potassium permanganate is given below:

|           |                           |                         |
|-----------|---------------------------|-------------------------|
| 96Hr LC50 | Rainbow trout             | 1.8mg/L                 |
| 96Hr LC50 | Bluegill sunfish          | 2.3mg/L                 |
| 96Hr LC50 | Mike fish (Chanos Chanos) | 1.4mg/L                 |
| 96Hr LC50 | Carassius auratus         | 3.3 – 3,93mg/L (static) |
| 96Hr LC50 | Cyprinus carpio           | 2.97 – 3.11mg/L         |
| 96Hr LC50 | Cyprinus carpio           | 3.16 – 3.77mg/L         |
| 96Hr LC50 | Lepomis macrochirus       | 2.3mg/L (flow-through)  |
| 96Hr LC50 | Lepomis macrochirus       | 1.8 – 5.6mg/L (static)  |
| 96Hr LC50 | Lepomis macrochirus       | 2.7mg/L (static)        |
| 96Hr LC50 | Oncorhynchus mykiss       | 1.08 – 1.38 mg/L        |

## SECTION 13: DISPOSAL CONSIDERATIONS

- Potassium Permanganate is a D001 hazardous (ignitable) waste. Follow all Federal, State and Legal regulations for proper disposal.

## SECTION 14: TRANSPORT INFORMATION

|                      |   |
|----------------------|---|
| Proper Shipping Name | • UN1490, potassium permanganate, 5.1, II |
| DOT Hazard Class     | • Oxidizer                                |
| U.N. Identification  | • 1490                                    |
| Packaging Group      | • II                                      |
| Division             | • 5.1                                     |

**SECTION 15: REGULATORY INFORMATION**

|                                      |   |         |   |           |   |        |   |            |   |
|--------------------------------------|---|---------|---|-----------|---|--------|---|------------|---|
| OSHA Status                          | • This product is hazardous according to the Regulation (EC) No. 1272/2008 on Classification, Labeling and Packaging of Substances and Mixtures (CLP)           |         |   |           |   |        |   |            |   |
| TSCA Status:                         | • Listed in the TSCA inventory  |         |   |           |   |        |   |            |   |
| SARA Extremely Hazardous Substances: | • This product does not contain any chemicals subject to reporting requirements.  |         |   |           |   |        |   |            |   |
| SARA Hazard Categories               | <table><tr><td>• Acute</td><td>Y</td></tr><tr><td>• Chronic</td><td>Y</td></tr><tr><td>• Fire</td><td>Y</td></tr><tr><td>• Pressure</td><td>Y</td></tr></table> | • Acute | Y | • Chronic | Y | • Fire | Y | • Pressure | Y |
| • Acute                              | Y   |         |   |           |   |        |   |            |   |
| • Chronic                            | Y   |         |   |           |   |        |   |            |   |
| • Fire                               | Y   |         |   |           |   |        |   |            |   |
| • Pressure                           | Y   |         |   |           |   |        |   |            |   |
| CERCLA Reportable Quantity           | • 100#  |         |   |           |   |        |   |            |   |
| RCRA Status:                         | • If discarded in this form the product is considered a D001 hazardous (ignitable) waste.   |         |   |           |   |        |   |            |   |

**SECTION 16: OTHER INFORMATION**

Preparation Date: 01/01/2014  
Last Revision Date: 06/01/2015



## OFFICIAL LISTING

NSF International Certifies that the products appearing on this Listing conform to the requirements of  
NSF/ANSI Standard 60 - Drinking Water Treatment Chemicals - Health Effects

This is the Official Listing recorded on March 15, 2017.

Shannon Chemical Corp.  
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Facility: Exton, PA

| Chemical/<br>Trade Designation | Function                  | Max Use |      |
|--------------------------------|---------------------------|---------|------|
| Blended Corrosion Inhibitor    |                           |         |      |
| SHAN-NO-CORR Lead Free         | Corrosion & Scale Control | 14.8    | mg/L |
| SNC-4442                       | Corrosion & Scale Control | 13      | mg/L |
|                                | Sequestering              |         |      |
| SNC-Lead Free                  | Corrosion & Scale Control | 14.8    | mg/L |
| SNC-N2                         | Corrosion & Scale Control | 10      | mg/L |
| SNC-NO LEAD                    | Corrosion & Scale Control | 14.8    | mg/L |
| Blended Phosphates             |                           |         |      |
| SLI-1226                       | Corrosion & Scale Control | 27      | mg/L |
| SLI-5215                       | Corrosion & Scale Control | 28      | mg/L |
|                                | Sequestering              |         |      |
| SLI-5225                       | Corrosion & Scale Control | 26      | mg/L |
|                                | Sequestering              |         |      |
| SLI-5230                       | Corrosion & Scale Control | 28      | mg/L |
|                                | Sequestering              |         |      |
| SLI-5240                       | Corrosion & Scale Control | 28      | mg/L |
|                                | Sequestering              |         |      |
| SLI-5250                       | Corrosion & Scale Control | 28      | mg/L |
|                                | Sequestering              |         |      |
| SLI-5260                       | Corrosion & Scale Control | 28      | mg/L |
|                                | Sequestering              |         |      |
| SLI-5270                       | Corrosion & Scale Control | 28      | mg/L |
|                                | Sequestering              |         |      |
| SLI-5275                       | Corrosion & Scale Control | 30      | mg/L |
|                                | Sequestering              |         |      |
| SLI-5285                       | Corrosion & Scale Control | 28      | mg/L |
|                                | Sequestering              |         |      |
| SLI-5370                       | Corrosion & Scale Control | 28      | mg/L |
|                                | Sequestering              |         |      |
| SLI-5385                       | Corrosion & Scale Control | 28      | mg/L |
|                                | Sequestering              |         |      |
| SLI-7150                       | Corrosion & Scale Control | 30      | mg/L |
| SLI-7275                       | Corrosion & Scale Control | 30      | mg/L |
|                                | Sequestering              |         |      |

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|                                   |                           |     |      |
|-----------------------------------|---------------------------|-----|------|
| SLI-7425                          | Corrosion & Scale Control | 28  | mg/L |
|                                   | Sequestering              |     |      |
| SLI-7450                          | Corrosion & Scale Control | 28  | mg/L |
|                                   | Sequestering              |     |      |
| SLI-7575                          | Corrosion & Scale Control | 36  | mg/L |
|                                   | Sequestering              |     |      |
| SLI-B                             | Corrosion & Scale Control | 27  | mg/L |
| SLI-DP                            | Corrosion & Scale Control | 30  | mg/L |
| SLI-HP                            | Corrosion & Scale Control | 30  | mg/L |
|                                   | Sequestering              |     |      |
| SLI-K200                          | Corrosion & Scale Control | 36  | mg/L |
|                                   | Sequestering              |     |      |
| SNC-1226                          | Corrosion & Scale Control | 14  | mg/L |
| SNC-5210                          | Corrosion & Scale Control | 10  | mg/L |
|                                   | Sequestering              |     |      |
| SNC-5220                          | Corrosion & Scale Control | 10  | mg/L |
|                                   | Sequestering              |     |      |
| SNC-5225                          | Corrosion & Scale Control | 10  | mg/L |
|                                   | Sequestering              |     |      |
| SNC-5230                          | Corrosion & Scale Control | 10  | mg/L |
|                                   | Sequestering              |     |      |
| SNC-5240                          | Corrosion & Scale Control | 10  | mg/L |
|                                   | Sequestering              |     |      |
| SNC-5250                          | Corrosion & Scale Control | 10  | mg/L |
|                                   | Sequestering              |     |      |
| SNC-5270                          | Corrosion & Scale Control | 10  | mg/L |
|                                   | Sequestering              |     |      |
| SNC-5275                          | Corrosion & Scale Control | 10  | mg/L |
|                                   | Sequestering              |     |      |
| SNC-5295                          | Corrosion & Scale Control | 10  | mg/L |
|                                   | Sequestering              |     |      |
| SNC-5420                          | Corrosion & Scale Control | 10  | mg/L |
|                                   | Sequestering              |     |      |
| SNC-5520                          | Corrosion & Scale Control | 10  | mg/L |
|                                   | Sequestering              |     |      |
| SNC-7220                          | Corrosion & Scale Control | 12  | mg/L |
|                                   | Sequestering              |     |      |
| SNC-7435                          | Corrosion & Scale Control | 10  | mg/L |
|                                   | Sequestering              |     |      |
| SNC-HW                            | Corrosion & Scale Control | 10  | mg/L |
| SNC-RS2                           | Corrosion & Scale Control | 10  | mg/L |
| SNC-TYPE B                        | Corrosion & Scale Control | 10  | mg/L |
| Citric Acid [2] [3]               |                           |     |      |
| SE-CA-50                          | Membrane Cleaner          | N/A |      |
|                                   | Well Cleaning Aid         |     |      |
| Hydrofluosilicic Acid             |                           |     |      |
| SE-1900 L-25                      | Fluoridation              | 6   | mg/L |
| Miscellaneous Corrosion Chemicals |                           |     |      |
| SHAN-NO-CORR [ZN]                 | Corrosion & Scale Control | 10  | mg/L |
| SHAN-NO-CORR Plus, SNC + [ZN]     | Corrosion & Scale Control | 10  | mg/L |

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|                                  |                                     |      |      |
|----------------------------------|-------------------------------------|------|------|
| SHAN-NO-CORR TYPE L [ZN]         | Corrosion & Scale Control           | 20   | mg/L |
| SHAN-NO-CORR TYPE N [ZN]         | Corrosion & Scale Control           | 10   | mg/L |
| SHAN-NO-CORR-ZOP [ZN]            | Corrosion & Scale Control           | 10   | mg/L |
| SLI-333 [ZN]                     | Corrosion Control                   | 25   | mg/L |
| SLI-444 S                        | Corrosion & Scale Control           | 25   | mg/L |
| SNC-444                          | Corrosion & Scale Control           | 10   | mg/L |
| SNC-444 S                        | Corrosion & Scale Control           | 18.6 | mg/L |
| SNC-ZOP 123 [ZN]                 | Corrosion & Scale Control           | 11   | mg/L |
| SNC-ZOP 321 [ZN]                 | Corrosion & Scale Control           | 11   | mg/L |
| Miscellaneous Treatment Chemical |                                     |      |      |
| RSC-100X [1]                     | Ion Exchange Supplement             | 750  | mg/L |
| Monosodium Orthophosphate        |                                     |      |      |
| SLI-5179                         | Corrosion Control                   | 25   | mg/L |
| SLI-SE 100                       | Corrosion Control                   | 25   | mg/L |
| SNC-5179                         | Corrosion & Scale Control           | 12.6 | mg/L |
|                                  | Sequestering                        |      |      |
| SNC-MSP                          | Corrosion & Scale Control           | 12.6 | mg/L |
|                                  | Sequestering                        |      |      |
| Phosphoric Acid                  |                                     |      |      |
| SLI-PHOS 36                      | Corrosion & Scale Control           | 25   | mg/L |
| SLI-PHOS 50                      | Corrosion & Scale Control           | 20.5 | mg/L |
| SLI-PHOS 75                      | Corrosion & Scale Control           | 12   | mg/L |
| Potassium Permanganate [PO]      |                                     |      |      |
| SE-3955 C                        | Disinfection & Oxidation<br>Oxidant | 50   | mg/L |
| SE-3955 F                        | Disinfection & Oxidation<br>Oxidant | 50   | mg/L |
| SE-3955 N                        | Disinfection & Oxidation<br>Oxidant | 50   | mg/L |
| Sodium Acid Pyrophosphate        |                                     |      |      |
| SNC-318                          | Corrosion & Scale Control           | 12   | mg/L |
| SNC-5185                         | Corrosion & Scale Control           | 12   | mg/L |
| Sodium Permanganate [PO]         |                                     |      |      |
| SE-2355-10                       | Disinfection & Oxidation<br>Oxidant | 352  | mg/L |
| SE-2355-15                       | Disinfection & Oxidation<br>Oxidant | 234  | mg/L |
| SE-2355-20                       | Disinfection & Oxidation<br>Oxidant | 176  | mg/L |
| SE-2355-25                       | Disinfection & Oxidation<br>Oxidant | 140  | mg/L |
| SE-2355-40                       | Disinfection & Oxidation<br>Oxidant | 88   | mg/L |
| Sodium Polyphosphates, Glassy    |                                     |      |      |
| SHAN-O-PHOS                      | Corrosion & Scale Control           | 10.7 | mg/L |
|                                  | Sequestering                        |      |      |
| SLI-5125                         | Corrosion & Scale Control           | 42.8 | mg/L |
|                                  | Sequestering                        |      |      |
| SLI-5130                         | Corrosion & Scale Control           | 35.6 | mg/L |
|                                  | Sequestering                        |      |      |

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|                              |                           |      |      |
|------------------------------|---------------------------|------|------|
| SLI-5135                     | Corrosion & Scale Control | 30.5 | mg/L |
|                              | Sequestering              |      |      |
| SLI-5140                     | Corrosion & Scale Control | 26.7 | mg/L |
|                              | Sequestering              |      |      |
| SLI-5145                     | Corrosion & Scale Control | 23.8 | mg/L |
|                              | Sequestering              |      |      |
| SLI-5150                     | Corrosion & Scale Control | 21.4 | mg/L |
|                              | Sequestering              |      |      |
| SLI-5155                     | Corrosion & Scale Control | 19.5 | mg/L |
|                              | Sequestering              |      |      |
| SLI-5160                     | Corrosion & Scale Control | 17.8 | mg/L |
|                              | Sequestering              |      |      |
| SLI-Quest 25                 | Corrosion & Scale Control | 42.8 | mg/L |
|                              | Sequestering              |      |      |
| SLI-Quest 30                 | Corrosion & Scale Control | 35.6 | mg/L |
|                              | Sequestering              |      |      |
| SLI-Quest 35                 | Corrosion & Scale Control | 30.5 | mg/L |
|                              | Sequestering              |      |      |
| SLI-Quest 40                 | Corrosion & Scale Control | 26.7 | mg/L |
|                              | Sequestering              |      |      |
| SLI-Quest 45                 | Corrosion & Scale Control | 23.8 | mg/L |
|                              | Sequestering              |      |      |
| SLI-Quest 50                 | Corrosion & Scale Control | 21.4 | mg/L |
|                              | Sequestering              |      |      |
| SLI-Quest 55                 | Corrosion & Scale Control | 19.5 | mg/L |
|                              | Sequestering              |      |      |
| SLI-Quest 60                 | Corrosion & Scale Control | 17.8 | mg/L |
|                              | Sequestering              |      |      |
| SNC-5190                     | Corrosion & Scale Control | 10.7 | mg/L |
|                              | Sequestering              |      |      |
| Sodium Tripolyphosphate      |                           |      |      |
| SHAN-O-POLY                  | Corrosion & Scale Control | 12   | mg/L |
|                              | Sequestering              |      |      |
| SNC-5177                     | Corrosion & Scale Control | 12   | mg/L |
|                              | Sequestering              |      |      |
| Tetrapotassium Pyrophosphate |                           |      |      |
| SLI-6120                     | Corrosion & Scale Control | 30   | mg/L |
|                              | Sequestering              |      |      |
| SLI-6134                     | Corrosion & Scale Control | 22.5 | mg/L |
|                              | Sequestering              |      |      |
| SLI-K100                     | Corrosion & Scale Control | 30   | mg/L |
|                              | Sequestering              |      |      |
| SLI-KPHOS                    | Corrosion & Scale Control | 22.5 | mg/L |
|                              | Sequestering              |      |      |
| SNC-6157                     | Corrosion & Scale Control | 14   | mg/L |
|                              | Sequestering              |      |      |
| SNC-KPHOS                    | Corrosion & Scale Control | 14   | mg/L |
|                              | Sequestering              |      |      |
| Zinc Chloride [ZN]           |                           |      |      |
| SLI-2125                     | Corrosion & Scale Control | 15   | mg/L |
| SLI-2150                     | Corrosion & Scale Control | 8    | mg/L |

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|                          |                           |    |      |
|--------------------------|---------------------------|----|------|
| SLI-2162                 | Corrosion & Scale Control | 6  | mg/L |
| Zinc Orthophosphate [ZN] |                           |    |      |
| SLI 3535                 | Corrosion & Scale Control | 24 | mg/L |
| SLI 4217                 | Corrosion & Scale Control | 28 | mg/L |
| SLI 5050                 | Corrosion & Scale Control | 17 | mg/L |
| SLI-1010                 | Corrosion & Scale Control | 20 | mg/L |
| SLI-1021                 | Corrosion & Scale Control | 22 | mg/L |
| SLI-1521-C               | Corrosion & Scale Control | 22 | mg/L |
| SLI-2020                 | Corrosion & Scale Control | 10 | mg/L |
| SLI-321                  | Corrosion & Scale Control | 10 | mg/L |
| SLI-321L                 | Corrosion & Scale Control | 10 | mg/L |
| SLI-5024                 | Corrosion & Scale Control | 16 | mg/L |
| SLI-5210                 | Corrosion & Scale Control | 20 | mg/L |
| SLI-5215                 | Corrosion & Scale Control | 40 | mg/L |
| SLI-5216                 | Corrosion & Scale Control | 29 | mg/L |
| SLI-5217                 | Corrosion & Scale Control | 28 | mg/L |
| SLI-5218                 | Corrosion & Scale Control | 25 | mg/L |
| SLI-5219                 | Corrosion & Scale Control | 22 | mg/L |
| SLI-7215                 | Corrosion & Scale Control | 28 | mg/L |
| SLI-932                  | Corrosion & Scale Control | 26 | mg/L |
| SLI-939                  | Corrosion & Scale Control | 25 | mg/L |

- [1] This product is designed to be used in conjunction with ion exchange resins for the purpose of reducing radium from drinking water.
- [2] This product is designed to be used off-line and flushed out prior to using the system for drinking water, following manufacturer's use instructions.
- [3] The pH of the influent and effluent water should be monitored to ensure that all traces of the product have been removed before placing into service.
- [PO] The finished drinking water shall be monitored to ensure that levels of manganese do not exceed 0.05 mg/L.
- [ZN] Based on an evaluation of health effects data, the level of zinc in the finished drinking water shall not exceed 2.0 mg/L.

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