

City of Flint, Michigan
Department of Purchasing & Supplies
Chemical Systems Feed Building
City of Flint Bid No. P20000550

Addendum No. #1

Addendum Issue Date: November 11, 2019

Bidders of this Chemical Systems Feed Building project are hereby notified that this Addendum shall be attached to and made a part of the above-named Bidding and Contract Documents.

The following items add to, modify, and clarify the Bidding and Contract Documents and shall have the full force and effect of the original Documents. Bids shall conform with those items and the cost change, if any, of these items shall be included in this Bid Price. This Addendum shall be acknowledged by the Bidder on the Bid Form, Page 1.

This Addendum is being issued prior to the acceptance of Bids to allow for the following changes, additions, clarifications, and/or answers to questions:

MODIFICATIONS AND ADDITIONS:

IN THE SPECIFICATIONS

Table of Contents

1. **DELETE** Section 463341, Liquid Chemical Feed System Coordination and Integration.

Section 00 21 13 - Instructions to Bidders

1. **REVISE Article 3 - Qualifications of Bidders** Section 3.2 last sentence from “All Bidders shall be prepared to submit within five days of Owner’s or Engineer’s request, written evidence of such information and data necessary to make this determination.” to “All Bidders are required to submit with the bid written evidence of such information and data necessary to make this determination.”

Section 00 41 13 - Bid Form

1. **REVISE Article 6 – Time of Completion** Section 6.1 first sentence from “Bidder agrees that the Work is anticipated to be substantially complete on or before **December 31, 2020** and will be completed and ready for final.....” to “Bidder agrees that the Work is anticipated to be substantially complete on or before **March 31, 2021** and will be completed and ready for final.....”

Section 01213, Measurement and Payment

1. **DELETE** entire Section and **REPLACE** with the attached updated version.

Section 014540 – Disinfection of Potable Water Facilities

1. **DELETE** entire Section.

Section 015100 – Temporary Facilities

1. **DELETE** Paragraph 2.1 Materials: Item A. Temporary Fence in its entirety.

Section 055000 – Metal Fabrications

1. **DELETE** Paragraph 3.3 Rooftop Guardrail System in its entirety.

ON THE DRAWINGS

Drawing G-1

1. Drawing Sheet Index, **DELETE** reference to following Drawings as they do not exist:
 - a. Drawings M-17 Process Mechanical Standard Details
 - b. Drawings M-18 Process Chemical Standard Details

2. Drawing Sheet Index, **ADD** reference to following Drawing:
 - a. Drawings E-6 Electrical Existing MCC-CS2 Single-Line Diagram and Elevations Modifications

1. Drawing Sheet Index, **REVISE** Sheet No. as follows:
 - a. Change E-6 to E-7
 - b. Change E-7 to E-8
 - c. Change E-8 to E-9
 - d. Change E-9 to E-10
 - e. Change E-10 to E-11
 - f. Change E-11 to E-12
 - g. Change E-12 to E-13
 - h. Change E-13 to E-14
 - i. Change E-14 to E-15
 - j. Change E-15 to E-16
 - k. Change E-16 to E-17
 - l. Change E-17 to E-18
 - m. Change E-18 to E-19

Drawing G-3

1. **REVISE** 4" Water Supply to 6" Water Supply.

Drawing P-1

1. Plumbing Fixture Connection Schedule - **REVISE** Basis of Design for Tag ESEW-3005 from Bradley S19-310PVC to Bradley S19-304GAT.

Drawing I-10

1. **REVISE** 4"-TW-DIP-L10W08 to 6"-TW-DIP-L10W08

2. Tank Control House (TCH) Building P&ID, **ADD** one (1) ¾" backflow preventor and one (1) pressure reducing valve downstream of GLV-0220 and before pipe branch to Chlorine Analyzer.

3. The Retractable Injection Quill assemble (Provided through the Secondary Water Supply Contract) includes a ball valve and a check valve; however, the order of the valves is shown incorrectly. **REVISE** the order of the ball and check valves: The ball valve is located next to the 48" water main and the ball check valve is located upstream of the ball valve.

QUESTIONS AND ANSWERS:

1. After reviewing the bidding documents for this project, I noticed section 463341 Liquid Chemical Feed System Coordination and Integration is missing from the Specifications. Also, pages M-17 Process Mechanical Standard Details and M-18 Process Mechanical Chemical Standard Details are missing from the Plans. Will these sections be forthcoming in an addendum?

Answer: The Specifications Table of Contents and Drawing Index have been updated. Specification Section 463341 Liquid Chemical Feed System Coordination and Integration and Drawings M-17 Process Mechanical Standard Details and M-18 Process Mechanical Chemical Standard Details are not be part of the Contract Documents. The Contract Documents have been modified through this Addendum.

2. Specification section 015100; Part 2.1(A) provides material requirements for temporary fencing. Is temp. fencing required due to the fact the plant is already a secure location and there are requirements to maintain access to all existing roads and buildings? If so, please provide a location of temp. fence.

Answer: After further consideration, it has been determined that a temporary fence around the construction site is not required. The Water Treatment Plant is fenced. However, the Contractor is responsible for on-site safety and security including excavation safety protection, etc. The Contractor is reminded that another contractor will be working in very close proximity to this contract and coordination of safety is mandatory. The Contract Documents have been modified through this Addendum.

3. Please confirm the general contractor is to provide a printer, paper, monthly ink supplies, and a 500 GB portable hard drive per specification section 015100.

Answer: The project will have a full-time Resident Project Representative (RPR) on site. This equipment and supplies will be required. No change required to the Contract Documents.

4. Specification Section 406100, E, 6, indicates the successful contractor will be responsible to reconfigure the existing HMI system in the Operations Center. Does the City have an existing or preferred Instrumentation/controls contractor?

Answer: The City of Flint has used MAK controls for some projects. Contact Info: Mike Lancina at 734-770-8785. No change required to the Contract Documents.

5. Specification 055000 article 3.3 calls for a rooftop guard rail system, but a specific system is not specified. Additionally, the guard rail system is not shown on the drawings. Is a guardrail system in fact required? If so, please provide specifications and drawings so it can be priced out.

Answer: There is no rooftop guard rail system in the project. The Contract Documents have been modified through this Addendum.

6. Drawing G-3 shows a 4" water line running to the new chemical feed building. Drawings C-4 and C-5 shows a 6" water line from the chemical feed building to existing control station #2. Are these two lines one in the same, if so, please clarify line size, if not please provide more detail on the civil drawings to show both lines.

Answer: Drawing G-3 is incorrect and Drawings C-4 and C-5 are correct. Please refer to G-3 Drawing changes indicated above in this Addendum. The Contract Documents have been modified through this Addendum.

7. There is a window that needs brick infill on drawing A-7. The drawing notes the location of this window is on the civil, however, no notes on the civil drawings regarding this window can be found. Please clarify.

Answer: Reference to Drawing C-4 was intended to indicate location of Tank Control House and window location which is on north side of building. No note regarding window is provided. No change required to the Contract Documents.

8. Article 5.06 of the supplemental conditions indicates a builder risk policy will be required. However; the coverage limits are not provided. Will a builder's risk policy be required? If so, what are the required limits?

Answer: Article 5.06 A. indicates "Contractor shall purchase and maintain property insurance upon the Work at the Site in the amount of full replacement cost thereof". A description of insurance requirements is listed in items 1 through 8. No change required to the Contract Documents.

9. Supplemental conditions Article 6.10 does clarify identify if this project is sales tax exempt. Is this project Sales tax exempt? Is so will the owner provide a sales tax exemption certificate to the awarded Contractor?

Answer: Purchases made by the City of Flint are exempt from sales tax when approved by the State of Michigan. The attached City form(s) do not confirm, nor can it be guaranteed that purchases made by the contractor will be exempt from sales tax. No change required to the Contract Documents.

10. We request the following points of clarification regarding "the Checklist for Bid Submission" (Exhibit A):

- a. What specifically is required by the capacity information? If the bidder believes that the information furnished by Exhibits D, E and F adequately addresses the required information, can this requirement be waived?

Answer: Exhibits D, E and F are standard City of Flint forms and must be completed and submitted with the bid. Please provide information as described in the two bullets. Qualifications are important to the success of this project. No change required to the Contract Documents.

- b. The second bullet item under "Other" requires us to identify the landfill or proposed disposal site for excavation spoil, waste and debris for the period of the Contract. Environmentally impacted soils are not expected for this site. It will be difficult to get the trucking vendors to commit to a disposal price prior to the bid and as such, is expected to limit the ability to secure pricing. Hence, we respectfully request that this information not be provided with the bid but rather post bid.

Answer: The language indicates "The City may request financial information of said landfill or disposal site at a later date." Only a name of the landfill or approved

disposal site is required to be submitted with the bid. No change required to the Contract Documents.

- c. If the information provided by Exhibit F adequately addresses the information required by the 3rd bullet item under "Other", can the 3rd bullet item submission requirement be waived?

Answer: Qualifications are important to the success of this project and must be submitted with the bid. Please refer to Section 00 21 13 - Instructions to Bidders changes indicated above in this Addendum. The Contract Documents have been modified through this Addendum.

11. Check list A indicates that the supplemental information required by Instruction to Bidders Article 3 is to be submitted with the bid. However, Article 3 indicates it is to be submitted post bid if requested by the Engineer. We request the checklist be revised so that the information is supplied post bid.

Answer: Qualifications are important to the success of this project and must be submitted with the bid. Section 00 21 13 - Instructions to Bidders has been revised. Please refer to Section 00 21 13 - Instructions to Bidders changes indicated above in this Addendum. The Contract Documents have been modified through this Addendum.

12. Per note #10 of drawing M-4, any drain outlet on process piping must be piped to the closest floor drain. Per drawing P-2, all floor drains in rooms 102, 103, and 104 are located in the center of their respective rooms. Please clarify intent as the drawings do not show these process drains extending to the floor drain. Please note that the additional length and slope of these drain lines would compromise the required air-gap distance from floor and would require multiple drain lines running through the center portion of the room.

Answer: Note #10 on Drawing M-4 is a general note and allows for some flexibility. If in the opinion of the Engineer, the drainpipe presents a trip hazard, drainpipe routing will be modified as directed by the Engineer. However, for bidding purposes, assume all drains will be routed to the floor drains. No change required to the Contract Documents.

13. Note #1 on Drawing C-4 shows a PRV and a backflow for the new 3/4" sample tubing inside the new tank control house, however, the detail on Drawing I-10 does not show a PRV or backflow. Please clarify.

Answer: Drawing I-10 is incorrect and Drawings C-4 is correct. Please refer to I-10 Drawing changes indicated above in this Addendum. The Contract Documents have been modified through this Addendum.

14. Per the plumbing drawings water is fed to the emergency showers through a tempered water line, however, no hot water/tempered water recirculation lines are shown. Please confirm this is correct.

Answer: Your understanding is correct; there are no recirculation lines. No change required to the Contract Documents.

15. Would it be possible to provide MSDS sheets of the anticipated chemicals stored, especially the caustic soda?

Answer: MSDS sheet are attached for reference. No change required to the Contract Documents.

16. We would like to submit a substitution request for spec 434113 2.1 (A), as all listed manufactures are out of state and do not have unanimous interest in the project. Would highland tank be an acceptable manufacturer, information on their company/product has been sent in a separate attachment. Highland tank would like to use a Novolac Epoxy liner in lieu of a baked on coating.

Answer: Section 00 21 13 Instructions to Bidders - Article 11 - Substitution and "Or-Equal" Items (Page 6) does not permit the consideration or acceptance of substituted or equal items. No change required to the Contract Documents.

17. Where, per this contract, is the contractor to terminate the chemical lines in the GCDC vault? Drawings C-11 and I-10 appear to have contradicting information as I-10 shows final connections, various ball valves, and solenoid valves by others. Please clarify.

Answer: The chemical lines on Drawings C-11 and I-10 are indicated correctly and indicate the contractor shall connect chemical lines to existing retractable quill located in GDDC vault. The retractable quill includes a check valve and ball valve as part of the quill model number: SAF-T-FLO EB-191-B-S-24-0-05. The retractable quill is provided through the Secondary Water Supply Contract. No change required to the Contract Documents.

18. Would Hayward valve be considered an approved equal for specification 400563 2.1A, as these valves are stocked locally. General product information has been included in a separate attachment.

Answer: Section 00 21 13 Instructions to Bidders - Article 11 - Substitution and "Or-Equal" Items (Page 6) does not permit the consideration or acceptance of substituted or equal items. No change required to the Contract Documents.

19. Specification 434113 1.10.E.2.a requires factory testing in accordance with ASME Section VIII Div.1. Normally this code section only applies to a pressure vessel with a minimum design pressure of 15 PSI. I did the calculations and per this code using a flat steel head at 15 PSI the thickness of the heads would require 2" thick steel plate. Typically, if this is a storage tank an API code of construction and not ASME pressure vessels would be referenced. Please provide clarification as this is not a pressure rated vessel.

Answer: While this is not a pressure vessel, the Contractor shall follow the requirements noted in ASME and requirements noted in the Specifications. No change required to the Contract Documents.

20. 434113 2.3.K.1 requires ASTM A285 Grade C steel minimum 3/8". I did the calculations and steel thickness will be fine only my calculations used a modern steel plate using SA-516 Grade 70 having an allowable stress value of 20,000. The SA-516-70 plate is a more modern readily available steel and cost half as much compared to buying the ASTM A285 Grade C steel. Would this be acceptable?

Answer: No this is not acceptable. Please comply with the requirements of the specification. No change required to the Contract Documents.

21. Specification 220532 A (2) h calls for a vented ball - ball valve in plumbing systems. As this specification is not for process systems, please confirm that vented ball – ball valves are not required.

Answer: Vented ball valves are not required in the plumbing systems. No change required to the Contract Documents.

22. Does the GWH expansion tank have to be ASME rated as the water heater (150 mbh) does not require an ASME rating.

Answer: The GWH expansion tank does not need to be ASME rated. No change required to the Contract Documents.

23. We have concerns with the project schedule duration. We have composed a preliminary bid schedule, see attached, and feel that this project would take 16 months with no weather delays. We therefore feel that an 18 month duration from NTP to substantial completion would be more suitable, please confirm that this extension request is possible.

Answer: The Substantial Completion has been changed from Dec 31, 2020 to March 31, 2021. Please refer to specification changes indicated above in this Addendum. The Contract Documents have been modified through this Addendum.

24. The emergency shower and eyewash combination ESEW-3005, a Bradley S19-310PVC per the fixture schedule on P-1, located on the exterior of the building, is not rated for outdoor use in freezing conditions, please advise.

Answer: The Bradley S19-310PVC is the basis of design for the indoor unit. Please omit the S19-310PVC. The correct basis of design for the outdoor is Bradley S19-304GAT. Please refer to P-1 Drawing changes indicated above in this Addendum. The Contract Documents have been modified through this Addendum.

25. Would Snyder Industries Inc (SII) be considered as an approved equal 434143 2.2 A, their tank literature has been attached.

Answer: Section 00 21 13 Instructions to Bidders - Article 11 - Substitution and “Or-Equal” Items (Page 6) does not permit the consideration or acceptance of substituted or equal items. No change required to the Contract Documents.

26. The specs on the fiber runs do not call out the amount of strands required.

Answer: Twelve (12) strands will be sufficient for the fiber optics between the new chemical building and the existing CS-2 building. No change required to the Contract Documents.

27. Notes on drawing page HD-18 (AE2, note 3) - states “run new multi-conductor fiber cables from scada control room to pump station no. 4 scada panel. Number of fibers and cable to be the same as existing cable.”

Answer: This is not a Contract drawing. It is from an existing contract and is for reference only. No response will be provided. No change required to the Contract Documents.

28. How many fibers strands are current in the “existing cables”?

Answer: This is not a Contract drawing. It is from an existing contract and is for reference only. No response will be provided. No change required to the Contract Documents.

Other:

1. Prebid agenda and sign-in sheets are attached. During Pre-Bid meeting all agenda items were discussed.
2. Site visit followed Pre-bid meeting. All attendees were welcome.

All other terms and conditions will remain the same.

**END OF ADDENDUM NO. 1
SEE BELOW FOR ATTACHMENTS LIST**

Attachments:

1. Section 01213, Measurement and Payment
2. Pre-Bid Agenda and Sign in sheets
3. Material Safety Data Sheets (MSDS)
4. Michigan Sales and Use Tax Certificate of Exception
5. City of Flint W-9 Request for Taxpayer Identification Number and Certification

Michigan Sales and Use Tax Certificate of Exemption

INSTRUCTIONS: DO NOT send to the Department of Treasury. Certificate must be retained in the seller's records. This certificate is invalid unless all four sections are completed by the purchaser.

SECTION 1: TYPE OF PURCHASE

A. One-Time Purchase
Order or Invoice Number: _____

C. Blanket Certificate
Expiration Date (maximum of four years): 07/23/23

B. Blanket Certificate. Recurring Business Relationship

The purchaser hereby claims exemption on the purchase of tangible personal property and selected services made from the vendor listed below. This certifies that this claim is based upon the purchaser's proposed use of the items or services, OR the status of the purchaser.

Vendor's Name and Address

SECTION 2: ITEMS COVERED BY THIS CERTIFICATE

Check one of the following:

- All items purchased.
- Limited to the following items: _____

SECTION 3: BASIS FOR EXEMPTION CLAIM

Check one of the following:

- For Lease. Enter Use Tax Registration Number: _____
- For Resale at Retail. Enter Sales Tax License Number: _____

The following exemptions DO NOT require the purchaser to provide a number:

- Agricultural Production. Enter percentage: _____%
- Church, Government Entity, Nonprofit School, or Nonprofit Hospital (Circle type of organization).
- Contractor (must provide *Michigan Sales and Use Tax Contractor Eligibility Statement (Form 3520)*).
- For Resale at Wholesale.
- Industrial Processing. Enter percentage: _____%
- Nonprofit Internal Revenue Code Section 501(c)(3) or 501(c)(4) Exempt Organization.
- Nonprofit Organization with an authorized letter issued by the Michigan Department of Treasury prior to June 1994.
- Rolling Stock purchased by an Interstate Motor Carrier.
- Qualified Data Center
- Direct Pay - Authorized to pay use tax on qualified transactions directly to the State of Michigan under Account Number _____
- Other (explain): _____

SECTION 4: CERTIFICATION

I declare, under penalty of perjury, that the information on this certificate is true, that I have consulted the statutes, administrative rules and other sources of law applicable to my exemption, and that I have exercised reasonable care in assuring that my claim of exemption is valid under Michigan law. In the event this claim is disallowed, I accept full responsibility for the payment of tax, penalty and any accrued interest, including, if necessary, reimbursement to the vendor for tax and accrued interest.

Business Name City of Flint, A Municipal Corp.		Type of Business (see codes on page 2) Municipal Govt 05
Business Address 1101 S. Saginaw St.	City, State, ZIP Code Flint, MI 48502	
Business Telephone Number (include area code) (810) 766-7266	Name (Print or Type) Tamar A. Lewis	
Signature and Title <i>Tamar A. Lewis Dep. Fin Dir.</i>	Date Signed 07/23/19	

PA-5900 Safety Data Sheet

SECTION 1: IDENTIFICATION

Product Identifier

Product Form: Mixture

Product Name: PA-5900

Intended Use of the Product

Control of Heavy Metals, NSF Certified

Manufacturer/Importer/Supplier/Distributor

Company name Chemrite, Inc.
Address 5202 Belle Wood Ct., Ste 104
Buford, GA 30518 USA
Telephone 877-248-0017
E-mail info@chemrite.com
Website www.chemrite.com
Contact person Aaron Opp
Emergency Telephone For Hazardous Materials [or Dangerous Goods] Incidents ONLY
(spill, leak, fire, exposure or accident), call CHEMTREC at CHEMTREC®,
USA: 001 (800) 424-9300
CHEMTREC®, Canada: 001 (703) 527-3887

SECTION 2: HAZARDS IDENTIFICATION

Classification of the Substance or Mixture

Classification (GHS-US)

Met. Corr. 1 H290

Skin Corr. 1B H314

Eye Dam. 1 H318

Full text of H-phrases: see section 16

Label Elements

GHS-US Labeling

Hazard Pictograms (GHS-US)

:



GHS05

Signal Word (GHS-US)

: Danger

Hazard Statements (GHS-US)

: H290 - May be corrosive to metals
H314 - Causes severe skin burns and eye damage
H318 - Causes serious eye damage

Precautionary Statements (GHS-US)

: P234 - Keep only in original container.
P260 - Do not breathe vapors, mist, spray.
P264 - Wash hands, forearms, and exposed areas thoroughly after handling.
P280 - Wear eye protection, protective clothing, protective gloves, face protection.
P301+P330+P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P303+P361+P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340 - IF INHALED: Remove person to fresh air and keep at rest in a position comfortable for breathing.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 - Immediately call a POISON CENTER/doctor.
P321 - Specific treatment (see Section 4).
P363 - Wash contaminated clothing before reuse.

P390 - Absorb spillage to prevent material damage.
 P405 - Store locked up.
 P406 - Store in corrosive resistant container with a resistant inner liner.
 P501 - Dispose of contents/container in accordance with local, regional, national, territorial, provincial, and international regulations.

Other Hazards

Other Hazards Not Contributing to the Classification: Not available

Unknown Acute Toxicity (GHS-US) Not available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Name	Product identifier	% (w/w)	Classification (GHS-US)
Water	(CAS No) 7732-18-5	40 - 70	Not classified
Phosphoric acid	(CAS No) 7664-38-2	30 - 60	Met. Corr. 1, H290 Acute Tox. 4 (Oral), H302 Skin Corr. 1B, H314 Eye Dam. 1, H318

More than one of the ranges of concentration prescribed by Controlled Products Regulations has been used where necessary, due to varying composition. The specific chemical identity and/or exact percentage of composition has been withheld as a trade secret within the meaning of the OSHA Hazard Communication Standard [29 CFR 1910.1200].

Full text of H-phrases: see section 16

SECTION 4: FIRST AID MEASURES

Description of First Aid Measures

General: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label if possible).

Inhalation: Remove to fresh air and keep at rest in a position comfortable for breathing. Obtain medical attention if breathing difficulty persists.

Skin Contact: Immediately flush skin with plenty of water for at least 60 minutes. Remove contaminated clothing. Immediately call a POISON CENTER or doctor. Wash contaminated clothing before reuse.

Eye Contact: Rinse cautiously with water for at least 60 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention.

Ingestion: Do NOT induce vomiting. Rinse mouth. Immediately call a POISON CENTER or doctor/physician.

Most Important Symptoms and Effects Both Acute and Delayed

General: Causes severe skin burns and eye damage.

Inhalation: Contact may cause immediate severe irritation progressing quickly to chemical burns.

Skin Contact: Corrosive. Causes burns.

Eye Contact: Causes serious eye damage.

Ingestion: May cause burns or irritation of the linings of the mouth, throat, and gastrointestinal tract.

Chronic Symptoms: None expected under normal conditions of use.

Indication of Any Immediate Medical Attention and Special Treatment Needed

If you feel unwell, seek medical advice (show the label where possible).

SECTION 5: FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media: Use extinguishing media appropriate for surrounding fire.

Unsuitable Extinguishing Media: Do not use a heavy water stream. Use of heavy stream of water may spread fire.

Special Hazards Arising From the Substance or Mixture

Fire Hazard: Not flammable.

Explosion Hazard: Product is not explosive.

Reactivity: May be corrosive to metals. Contact with metals may evolve flammable hydrogen gas.

Advice for Firefighters

Precautionary Measures Fire: Exercise caution when fighting any chemical fire.

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

Protection During Firefighting: Do not enter fire area without proper protective equipment, including respiratory protection.

Hazardous Combustion Products: Corrosive vapors. Phosphorous oxide.

Reference to Other Sections

Refer to section 9 for flammability properties.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

General Measures: Avoid all contact with skin, eyes, or clothing. Avoid breathing (vapor, mist, spray).

For Non-Emergency Personnel

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

Emergency Procedures: Evacuate unnecessary personnel.

For Emergency Personnel

Protective Equipment: Equip cleanup crew with proper protection.

Emergency Procedures: Stop leak if safe to do so. Ventilate area.

Environmental Precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

Methods and Material for Containment and Cleaning Up

For Containment: Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. Collect spillage.

Methods for Cleaning Up: Clear up spills immediately and dispose of waste safely. Cautiously neutralize spilled liquid. Spills should be contained with mechanical barriers. Transfer spilled material to a suitable container for disposal. Contact competent authorities after a spill.

Reference to Other Sections

See Heading 8. Exposure controls and personal protection. For further information refer to section 13.

SECTION 7: HANDLING AND STORAGE

Precautions for Safe Handling

Hygiene Measures: Handle in accordance with good industrial hygiene and safety procedures. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

Conditions for Safe Storage, Including Any Incompatibilities

Technical Measures: Comply with applicable regulations.

Storage Conditions: Store in a dry, cool and well-ventilated place. Keep container closed when not in use. Keep/Store away from direct sunlight, extremely high or low temperatures and incompatible materials.

Incompatible Materials: Strong bases. Strong oxidizers. Metals.

Special Rules on Packaging: Store in original container or corrosive resistant and/or lined container.

Specific End Use(s)

For professional use only.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

For substances listed in section 3 that are not listed here, there are no established Exposure limits from the manufacturer, supplier, importer, or the appropriate advisory agency including: ACGIH (TLV), NIOSH (REL), OSHA (PEL), Canadian provincial governments, or the Mexican government.

Phosphoric acid (7664-38-2)		
Mexico	OEL TWA (mg/m ³)	1 mg/m ³
Mexico	OEL STEL (mg/m ³)	3 mg/m ³
USA ACGIH	ACGIH TWA (mg/m ³)	1 mg/m ³
USA ACGIH	ACGIH STEL (mg/m ³)	3 mg/m ³
USA OSHA	OSHA PEL (TWA) (mg/m ³)	1 mg/m ³
USA NIOSH	NIOSH REL (TWA) (mg/m ³)	1 mg/m ³
USA NIOSH	NIOSH REL (STEL) (mg/m ³)	3 mg/m ³
USA IDLH	US IDLH (mg/m ³)	1000 mg/m ³
Alberta	OEL STEL (mg/m ³)	3 mg/m ³
Alberta	OEL TWA (mg/m ³)	1 mg/m ³
British Columbia	OEL STEL (mg/m ³)	3 mg/m ³
British Columbia	OEL TWA (mg/m ³)	1 mg/m ³

PA-5900 Safety Data Sheet

Manitoba	OEL STEL (mg/m ³)	3 mg/m ³
Manitoba	OEL TWA (mg/m ³)	1 mg/m ³
New Brunswick	OEL STEL (mg/m ³)	3 mg/m ³
New Brunswick	OEL TWA (mg/m ³)	1 mg/m ³
Newfoundland & Labrador	OEL STEL (mg/m ³)	3 mg/m ³
Newfoundland & Labrador	OEL TWA (mg/m ³)	1 mg/m ³
Nova Scotia	OEL STEL (mg/m ³)	3 mg/m ³
Nova Scotia	OEL TWA (mg/m ³)	1 mg/m ³
Nunavut	OEL STEL (mg/m ³)	3 mg/m ³
Nunavut	OEL TWA (mg/m ³)	1 mg/m ³
Northwest Territories	OEL STEL (mg/m ³)	3 mg/m ³
Northwest Territories	OEL TWA (mg/m ³)	1 mg/m ³
Ontario	OEL STEL (mg/m ³)	3 mg/m ³
Ontario	OEL TWA (mg/m ³)	1 mg/m ³
Prince Edward Island	OEL STEL (mg/m ³)	3 mg/m ³
Prince Edward Island	OEL TWA (mg/m ³)	1 mg/m ³
Québec	VECD (mg/m ³)	3 mg/m ³
Québec	VEMP (mg/m ³)	1 mg/m ³
Saskatchewan	OEL STEL (mg/m ³)	3 mg/m ³
Saskatchewan	OEL TWA (mg/m ³)	1 mg/m ³
Yukon	OEL STEL (mg/m ³)	3 mg/m ³
Yukon	OEL TWA (mg/m ³)	1 mg/m ³

Exposure Controls

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

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

Materials for Protective Clothing: Acid-resistant clothing.

Hand Protection: Wear chemically resistant protective gloves.

Eye Protection: Chemical safety goggles and faceshield.

Skin and Body Protection: Wear suitable protective clothing.

Respiratory Protection: In case of insufficient ventilation, wear suitable respiratory equipment.

Environmental Exposure Controls: Do not allow the product to be released into the environment.

Consumer Exposure Controls: Do not eat, drink or smoke during use

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on Basic Physical and Chemical Properties

Physical State	: Liquid
Appearance	: Water white
Odor	: None
Odor Threshold	: Not available
pH	: 0 - 2
Melting Point	: Not available
Freezing Point	: Not available
Boiling Point	: 220°F
Flash Point	: Not applicable
Auto-ignition Temperature	: Not applicable
Decomposition Temperature	: Not available
Flammability (solid, gas)	: Not applicable
Lower Flammable Limit	: Not applicable

Upper Flammable Limit	:	Not applicable
Vapor Pressure	:	Similar to water
Relative Vapor Density at 20 °C	:	Not available
Specific Gravity	:	1.22
Solubility	:	Soluble in water
Partition Coefficient: N-Octanol/Water	:	Not available
Viscosity	:	Not available
Explosion Data – Sensitivity to Mechanical Impact	:	Not expected to present an explosion hazard due to mechanical impact.
Explosion Data – Sensitivity to Static Discharge	:	Not expected to present an explosion hazard due to static discharge.

SECTION 10: STABILITY AND REACTIVITY

Reactivity: May be corrosive to metals. Contact with metals may evolve flammable hydrogen gas.

Chemical Stability: Stable under recommended handling and storage conditions (see section 7).

Possibility of Hazardous Reactions: Hazardous polymerization will not occur.

Conditions to Avoid: Direct sunlight. Extremely high or low temperatures. Incompatible materials.

Incompatible Materials: Strong bases. Strong oxidizers. Metals.

Hazardous Decomposition Products: Thermal decomposition generates corrosive vapors, phosphorus oxide.

SECTION 11: TOXICOLOGICAL INFORMATION

Information on Toxicological Effects - Product

Acute Toxicity: Not classified

LD50 and LC50 Data: Not available

Skin Corrosion/Irritation: Causes severe skin burns and eye damage. (pH: 0 -2)

Serious Eye Damage/Irritation: Causes serious eye damage. (pH: 0 - 2)

Respiratory or Skin Sensitization: Not classified

Germ Cell Mutagenicity: Not classified

Teratogenicity: Not classified

Carcinogenicity: Not classified

Specific Target Organ Toxicity (Repeated Exposure): Not classified

Reproductive Toxicity: Not classified

Specific Target Organ Toxicity (Single Exposure): Not classified

Aspiration Hazard: Not classified

Symptoms/Injuries After Inhalation: Contact may cause immediate severe irritation progressing quickly to chemical burns.

Symptoms/Injuries After Skin Contact: Corrosive. Causes burns.

Symptoms/Injuries After Eye Contact: Causes serious eye damage.

Symptoms/Injuries After Ingestion: May cause burns or irritation of the linings of the mouth, throat, and gastrointestinal tract.

Chronic Symptoms: None expected under normal conditions of use.

Information on Toxicological Effects - Ingredient(s)

LD50 and LC50 Data:

Phosphoric acid (7664-38-2)	
LD50 Oral Rat	1530 mg/kg
LD50 Dermal Rabbit	2740 mg/kg
LC50 Inhalation Rat (mg/l)	> 850 mg/m ³ (Exposure time: 1 h)

SECTION 12: ECOLOGICAL INFORMATION

Toxicity Not classified

Persistence and Degradability Not available

Bioaccumulative Potential Not available

Mobility in Soil Not available

Other Adverse Effects

Other Information: Avoid release to the environment.

SECTION 13: DISPOSAL CONSIDERATIONS

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

Ecology – Waste Materials: Avoid release to the environment.

SECTION 14: TRANSPORT INFORMATION

14.1 In Accordance with DOT

Proper Shipping Name : PHOSPHORIC ACID SOLUTION
Hazard Class : 8
Identification Number : UN1805
Label Codes : 8
Packing Group : III
ERG Number : 154



14.2 In Accordance with IMDG

Proper Shipping Name : PHOSPHORIC ACID SOLUTION
Hazard Class : 8
Identification Number : UN1805
Packing Group : III
Label Codes : 8
EmS-No. (Fire) : F-A
EmS-No. (Spillage) : S-B



14.3 In Accordance with IATA

Proper Shipping Name : PHOSPHORIC ACID SOLUTION
Packing Group : III
Identification Number : UN1805
Hazard Class : 8
Label Codes : 8
ERG Code (IATA) : 8L



14.4 In Accordance with TDG

Proper Shipping Name : PHOSPHORIC ACID, LIQUID
Packing Group : III
Hazard Class : 8
Identification Number : UN1805
Label Codes : 8



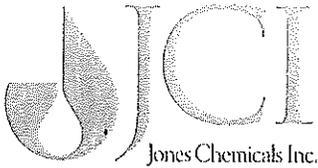
SECTION 15: REGULATORY INFORMATION

US Federal Regulations

PA-5900	
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard
Phosphoric acid (7664-38-2)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Water (7732-18-5)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	

US State Regulations

Phosphoric acid (7664-38-2)
U.S. - Massachusetts - Right To Know List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List
U.S. - Pennsylvania - RTK (Right to Know) List



SAFETY DATA SHEET



RESPONSIBLE CARE[®]
OUR COMMITMENT TO SUSTAINABILITY

1. Identification

Product identifier Sodium Hydroxide Solution 5 - 30%

Other means of identification

SDS number 14020000

Synonyms Caustic Soda, Caustic, Caustic Soda Solution, Sodium Hydroxide, Caustic Alkali, Lye, Caustic Lye.

Recommended use Neutralization of acids, pH control, gas scrubbing, catalyst. Used in manufacture of pulp and Paper, petroleum and natural gas, soap and detergents, and cellulose. Also used in water Treatment, food processing, mining, and metal processing.

Recommended restrictions None known.

Manufacturer / Importer / Supplier / Distributor information

Company name JCI Jones Chemicals, Inc.

Address 1765 Ringling Boulevard
Sarasota, FL 34236

General Information

Telephone (800) 477-1078

Website www.jcichem.com

Emergency phone number CHEMTREC
US: 1-800-424-9300
Canada: 1-800-567-7455

2. Hazard(s) identification

Physical hazards Corrosive to metals Category 1

Health hazards Acute toxicity, oral Category 4

Skin corrosion/irritation Category 1

Serious eye damage/eye irritation Category 1

OSHA defined hazards Not classified.

Label elements



Signal word Danger

Hazard statement May be corrosive to metals. Harmful if swallowed. Causes severe skin burns and eye damage.

Precautionary statement

Prevention Keep only in original container. Wear protective gloves/protective clothing/eye protection/face protection. Do not eat, drink or smoke when using this product. Do not breathe mist or vapor. Wash thoroughly after handling.

Response If swallowed: Rinse mouth. Do NOT induce vomiting. If inhaled: Remove person to fresh air and keep comfortable for breathing. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor/. Wash contaminated clothing before reuse. Absorb spillage to prevent material damage.

Storage Store locked up.

Disposal Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC) Not classified.

Environmental hazards Hazardous to the aquatic environment, acute hazard. Category 3

Supplemental information	
Hazard statement	Harmful to aquatic life.
Precautionary statement	
Prevention	Avoid release to the environment.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Sodium hydroxide	1310-73-2	5 - 30

4. First-aid measures

Inhalation	Move to fresh air. If breathing is difficult, give oxygen. If breathing stops, provide artificial respiration. Do not use mouth-to-mouth method if victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Call a physician or poison control center immediately.
Skin contact	Take off immediately all contaminated clothing. Wash off IMMEDIATELY with plenty of water for at least 15-20 minutes. Get medical attention immediately! Wash clothing separately before reuse. Destroy or thoroughly clean contaminated shoes.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician or poison control center immediately.
Ingestion	Call a physician or poison control center immediately. Do not induce vomiting. Immediately rinse mouth and drink plenty of water. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Never give anything by mouth to an unconscious person. Do not use mouth-to-mouth method if victim ingested the substance.
Most important symptoms/effects, acute and delayed	Burning pain and severe corrosive skin damage. Permanent eye damage including blindness could result. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Shortness of breath.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Symptoms may be delayed. Keep victim under observation.
General information	In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2). Use extinguishing agent suitable for type of surrounding fire.
Unsuitable extinguishing media	Do not use a solid water stream as it may scatter and spread fire. Do not use halogenated extinguishing agents.
Specific hazards arising from the chemical	The product itself does not burn. May decompose upon heating to produce corrosive and/or toxic fumes. Contact with metal may release flammable hydrogen gas.
Special protective equipment and precautions for firefighters	Fire fighters should enter the area only if they are protected from all contact with the material. Full protective clothing, including self-contained breathing apparatus, coat, pants, gloves, boots and bands around legs, arms, and waist, should be worn. No skin surface should be exposed.
Fire-fighting equipment/instructions	In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk. Use water spray to cool unopened containers.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Local authorities should be advised if significant spillages cannot be contained.
Methods and materials for containment and cleaning up	Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb spill with inert material (e.g., dry sand or earth), then place in a chemical waste container. Following product recovery, flush area with water. Small Spills: Absorb spill with vermiculite or other inert material. Clean surface thoroughly to remove residual contamination.
Environmental precautions	Never return spills in original containers for re-use. For waste disposal, see Section 13 of the SDS. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling

Use caution when combining with water; DO NOT add water to caustic; ALWAYS add caustic to water while stirring to minimize heat generation. Do not get in eyes, on skin, or on clothing. Do not taste or swallow. Do not breathe mist or vapor. Use only with adequate ventilation. Wear appropriate personal protective equipment. Transfer and storage systems should be compatible and corrosion resistant. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Keep container tightly closed. Store in a cool, dry, well-ventilated place. Store in corrosive resistant container with a resistant inner liner. Store away from incompatible materials (See Section 10). Store at temperatures not exceeding 40°C/104°F. Compatible storage materials may include, but not be limited to, the following: nickel and nickel alloys, steel, plastics, plastic or rubber-lined steel, FRP, or Derakane vinyl ester resin. Do not allow material to freeze.

8. Exposure controls/personal protection

Occupational exposure limits

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

Components	Type	Value
Sodium hydroxide (CAS 1310-73-2)	PEL	2 mg/m ³

US. ACGIH Threshold Limit Values

Components	Type	Value
Sodium hydroxide (CAS 1310-73-2)	Ceiling	2 mg/m ³

US NIOSH Pocket Guide to Chemical Hazards: Ceiling Limit Value and Time Period (if specified)

Components	Type	Value
Sodium hydroxide (CAS 1310-73-2)	Ceiling	2 mg/m ³

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product.

Individual protection measures, such as personal protective equipment

Eye/face protection

Wear chemical goggles and face shield.

Skin protection

Hand protection

Wear appropriate chemical resistant gloves.

Other

Wear appropriate chemical resistant clothing.

Respiratory protection

If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Respirator type: Chemical respirator with organic vapor cartridge and full facepiece.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

When using, do not eat, drink or smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance	Viscous liquid.
Physical state	Liquid.
Form	Liquid.
Color	Water white.
Odor	Odorless.
Odor threshold	Not available.
pH	14 (77 °F (25°C)) (0.5% solution)
Melting point/freezing point	35 °F (1.67 °C) (30% solution)
Initial boiling point and boiling range	235 °F (112.78 °C) (30% solution)
Flash point	Not available.

Evaporation rate	Not available.
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	23.76 mm Hg (approximately) (77 °F (25 °C))
Vapor density	Not available.
Relative density	1.33 (30% solution)
Relative density temperature	68 °F (20 °C)
Solubility(ies)	Completely miscible with water.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Density	1.33 g/cm3 (68 °F (20 °C)) (30% solution)
Molecular formula	NaOH

10. Stability and reactivity

Reactivity	Contact with metal may release flammable hydrogen gas.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Reacts violently with strong acids. This product may react with oxidizing agents. Do not mix with other chemicals. Corrosive to aluminum, tin, zinc, copper and most alloys in which they are present including brass and bronze. Corrosive to steels at elevated temperatures above 40°C (104°F).
Incompatible materials	Oxidizing agents. Acids. Phosphorus. Aluminum. Zinc. Tin. Initiates or catalyzes violent polymerization of acetaldehyde, acrolein or acrylonitrile.
Hazardous decomposition products	Contact with metals (aluminum, zinc, tin) and sodium tetrahydroborate liberates hydrogen gas.

11. Toxicological information

Information on likely routes of exposure

Ingestion	Causes digestive tract burns. Harmful if swallowed.
Inhalation	May cause irritation to the respiratory system.
Skin contact	Causes severe skin burns.
Eye contact	Causes severe eye burns. Causes serious eye damage.

Symptoms related to the physical, chemical and toxicological characteristics
 Burning pain and severe corrosive skin damage. Permanent eye damage including blindness could result.

Information on toxicological effects

Acute toxicity Harmful if swallowed.

Product	Species	Test Results
Sodium Hydroxide Solution 10 - 30%		
Acute		
<i>Dermal</i>		
LD50	Rabbit	> 2 g/kg
<i>Oral</i>		
LD50	Rat	300 - 500 mg/kg

Product	Species	Test Results
Other LD50	Mouse	40 mg/kg, Intraperitoneal
Skin corrosion/irritation	Causes severe skin burns and eye damage. Standard Draize Test: 500 mg/24 hour(s) skin - rabbit severe.	
Serious eye damage/eye irritation	Causes severe eye burns. Causes serious eye damage. Standard Draize Test: 400 µg eyes - rabbit mild; 1 percent eyes - rabbit severe.	
Respiratory sensitization	No data available.	
Skin sensitization	No data available.	
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.	
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.	
Reproductive toxicity	No data available.	
Specific target organ toxicity - single exposure	Not available.	
Specific target organ toxicity - repeated exposure	Not available.	
Aspiration hazard	Droplets of the product aspirated into the lungs through ingestion or vomiting may cause a serious chemical pneumonia.	
Chronic effects	Prolonged exposure may cause chronic effects.	

12. Ecological information

Product	Species	Test Results
Ecotoxicity Harmful to aquatic life.		
Sodium Hydroxide Solution 10 - 30%		
Aquatic		
Fish	LC50	
	Bluegill (<i>Lepomis macrochirus</i>)	99 mg/l, 48 hours
	Mosquitofish (<i>Gambusia affinis affinis</i>)	125 mg/l, 96 hours
Persistence and degradability	Expected to degrade rapidly in air.	
Bioaccumulative potential	The product is not expected to bioaccumulate.	
Mobility in soil	Not available.	
Other adverse effects	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.	

13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. This material and its container must be disposed of as hazardous waste. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

UN number	UN1824
UN proper shipping name	Sodium hydroxide solution
Transport hazard class(es)	8
Subsidiary class(es)	-
Packing group	II
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Special provisions	B2, IB2, N34, T7, TP2

Packaging exceptions 154
Packaging non bulk 202
Packaging bulk 242

IATA

UN number UN1824
UN proper shipping name Sodium hydroxide solution
Transport hazard class(es) 8
Subsidiary class(es) -
Packaging group II
Environmental hazards No
Labels required 8
ERG Code 8L
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number UN1824
UN proper shipping name SODIUM HYDROXIDE SOLUTION
Transport hazard class(es) 8
Subsidiary class(es) -
Packaging group II
Environmental hazards
Marine pollutant No
Labels required 8
EmS F-A, S-B
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

Transport in bulk according to
Annex II of MARPOL 73/78 and
the IBC Code

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

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

Not regulated.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)

Sodium hydroxide (CAS 1310-73-2) LISTED

Superfund Amendments and Reauthorization Act of 1986 (SARA)

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

SARA 302 Extremely hazardous substance No

SARA 311/312 Hazardous chemical Yes

SARA 313 (TRI reporting)
Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

Food and Drug Administration (FDA) Not regulated.

US state regulations

US. Massachusetts RTK - Substance List

Sodium hydroxide (CAS 1310-73-2)

Sodium Hydroxide Solution 5 - 30%

14020000 Version #: 01 Revision date: - Issue date: 3-March-2015

SDS US

6 / 7

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

Not regulated.

US. Pennsylvania RTK - Hazardous Substances

Sodium hydroxide (CAS 1310-73-2)

US. Rhode Island RTK

Sodium hydroxide (CAS 1310-73-2)

US. California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance

Not listed.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

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

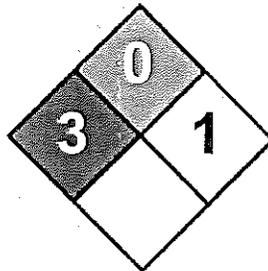
16. Other information, including date of preparation or last revision

Issue date 3-March-2015

Revision date -

Version # 01

NFPA Ratings



List of abbreviations LD50: Lethal Dose, 50%.
LC50: Lethal Concentration, 50%.
EC50: Effective concentration, 50%.
TWA: Time weighted average.

References EPA: AQUIRE database
HSDB® - Hazardous Substances Data Bank
US. IARC Monographs on Occupational Exposures to Chemical Agents
IARC Monographs. Overall Evaluation of Carcinogenicity
ACGIH Documentation of the Threshold Limit Values and Biological Exposure Indices
Olin Chlor Alkali Products Safety Data Sheet

Disclaimer This information is provided without warranty. The information is believed to be correct. This information should be used to make an independent determination of the methods to safeguard workers and the environment.



SIGN IN SHEET

CITY OF FLINT DEPARTMENT OF PURCHASES & SUPPLIES

PLEASE PRINT CLEARLY

NAME	COMPANY	PHONE # & FAX #	EMAIL ADDRESS
Tim VanOverloop	Windemuller	616-877-8770	TVANOVERLOOP@windemuller.com
DAN MUSZYNSKI	LA SAGES	734.394.0650	DMUSZYNSKI@LASAGES.COM
Glenn Kline	Kerr Pump	248-543-3880	glenn@kerrpump.com
Jim Schoenfeld	WALKER ELECTRIC	810-233-5111/5112	JIM@WALKERELECTRIC.BIZ
Eric Bessole	Z70 Construction Co.	(810) 695-9025 (810) 695-4996	Eric.Bessole@z70construction.com
JOE MATHVILLE	Mess Construction	313-567-9500	JMATHVILLE@MESS-CONSTRUCTION.COM
TIM BEST	DF BEST CO	248-882-3742	TBEST@DFCONAST.NET
LYNN WATZIC	Reliance Bldg Co	248-374-3210 FAX 3213	Lynn@RelianceBldg.com
Jason Ortiz	Pro Pump	586-823-9212	jortiz@proffsionarpump.com

MANDATORY PRE-BID DATE: October 30, 2019 @ 10:00 AM -

PROPOSAL 20-0000550 - CHEMICAL SYSTEMS FEED BUILDING

Joyce McClane, Purchasing Manager



SIGN IN SHEET

CITY OF FLINT DEPARTMENT OF PURCHASES & SUPPLIES

*****PLEASE PRINT CLEARLY*****

NAME	COMPANY	PHONE # & FAX #	EMAIL ADDRESS
Dan Schmidt	Newkirk Electric	810.742.4400	dlschmidt@newkirkelectric.com
Shawn Toslin	Outbound Tech	248-500-9090	stoslin@outboundtech.com
Mack Loren	LVT Systems	910.241.9881	mcloren@lvt-systems.com
Gene Haeks	KES electric	810-240-0725	gene@keselectric.net
Bob Dmytro	Fibergrate composite structure	248-2767-4346	bdmytro@fibergrate.com
Joe Ash	Kern Pump	734-787-0956	joeash@kernpump.com
Joe Pursey	Goyette Mechanical	810.743.6883	jpursey@goyette-mechanical.com
Rob Binsick	GF	810-766-7202	rbinsick@cityofflint.com

**MANDATORY PRE-BID DATE: October 30, 2019 @ 10:00 AM -
 PROPOSAL 20-0000550 - CHEMICAL SYSTEMS FEED BUILDING**

Joyce McClane, Purchasing Manager

City of Flint
Chemical Systems Feed Building
Pre-Bid Meeting - Sign-in Sheet
October 30, 2019 10AM

	Name	Company	Phone Number	Email Address
1	Jason Axelson	Weiss Construction	313-567-4500	JAxelson@weiss-construction.com
2	JOE PARKS	GOYETTE MECH	810-743-6883	JPARKS@GOYETTEMECHANICAL.COM
3	Kellogg Dipzinski	IBEW	810-280-7030	kdipzinski@loc1988.com
4	AL MARSHALL	LANG	810-938-4745	AL@LANGCONSTRUCTORS.COM
5	Dan JANISKI	Great Lakes Fire Prot	810-687-1414	djaniski@speednetllc.com
6	Craig Hamilton	COF		
7	Joyce McClane	COF		
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Request for Taxpayer Identification Number and Certification

**Give Form to the
 requester. Do not
 send to the IRS.**

▶ Go to www.irs.gov/FormW9 for instructions and the latest information.

Print or type. See Specific Instructions on page 3.	<p>1 Name (as shown on your income tax return). Name is required on this line; do not leave this line blank. City of Flint, A Municipal Corp.</p> <p>2 Business name/disregarded entity name, if different from above</p> <p>3 Check appropriate box for federal tax classification of the person whose name is entered on line 1. Check only one of the following seven boxes.</p> <p> <input type="checkbox"/> Individual/sole proprietor or single-member LLC <input type="checkbox"/> C Corporation <input type="checkbox"/> S Corporation <input type="checkbox"/> Partnership <input type="checkbox"/> Trust/estate <input type="checkbox"/> Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=Partnership) ▶ _____ Note: Check the appropriate box in the line above for the tax classification of the single-member owner. Do not check LLC if the LLC is classified as a single-member LLC that is disregarded from the owner unless the owner of the LLC is another LLC that is not disregarded from the owner for U.S. federal tax purposes. Otherwise, a single-member LLC that is disregarded from the owner should check the appropriate box for the tax classification of its owner. <input checked="" type="checkbox"/> Other (see instructions) ▶ Government </p> <p>4 Exemptions (codes apply only to certain entities, not individuals; see instructions on page 3): Exempt payee code (if any) _____ Exemption from FATCA reporting code (if any) _____ <i>(Applies to accounts maintained outside the U.S.)</i></p> <p>5 Address (number, street, and apt. or suite no.) See instructions. 1101 S. Saginaw Street</p> <p>6 City, state, and ZIP code Flint, MI 48502</p> <p>7 List account number(s) here (optional)</p> <p>Requester's name and address (optional)</p>
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Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on line 1 to avoid backup withholding. For individuals, this is generally your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the instructions for Part I, later. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN*, later.

Note: If the account is in more than one name, see the instructions for line 1. Also see *What Name and Number To Give the Requester* for guidelines on whose number to enter.

Social security number										
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-	-	-	-							
OR										
Employer identification number										
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3	8	-	6	0	0	4	6	1	1	

Part II Certification

Under penalties of perjury, I certify that:

- The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me); and
- I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding; and
- I am a U.S. citizen or other U.S. person (defined below); and
- The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions for Part II, later.

Sign Here	Signature of U.S. person ▶ <i>James A. Lewis</i>	Date ▶ <i>7-24-19</i>
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General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

Future developments. For the latest information about developments related to Form W-9 and its instructions, such as legislation enacted after they were published, go to www.irs.gov/FormW9.

Purpose of Form

An individual or entity (Form W-9 requester) who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) which may be your social security number (SSN), individual taxpayer identification number (ITIN), adoption taxpayer identification number (ATIN), or employer identification number (EIN), to report on an information return the amount paid to you, or other amount reportable on an information return. Examples of information returns include, but are not limited to, the following.

- Form 1099-INT (interest earned or paid)

- Form 1099-DIV (dividends, including those from stocks or mutual funds)
- Form 1099-MISC (various types of income, prizes, awards, or gross proceeds)
- Form 1099-B (stock or mutual fund sales and certain other transactions by brokers)
- Form 1099-S (proceeds from real estate transactions)
- Form 1099-K (merchant card and third party network transactions)
- Form 1098 (home mortgage interest), 1098-E (student loan interest), 1098-T (tuition)
- Form 1099-C (canceled debt)
- Form 1099-A (acquisition or abandonment of secured property)
 Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN.
If you do not return Form W-9 to the requester with a TIN, you might be subject to backup withholding. See What is backup withholding, later.

SECTION 012213 – MEASUREMENT AND PAYMENT

PART 1 - GENERAL

1.1 GENERAL

- A. This Section defines the Work to be included in each Bid Item of the Proposal (Bid Schedule) of these Contract Documents. Payment will be made based on the specified items included in the description for each Bid Item.
- B. All Work under this Contract shall be complete, in-place, fully tested, ready for continuous uninterrupted service and Final Acceptance by the Owner. Required items of Work and incidentals necessary for the satisfactory completion of the Work which are not specifically listed in the Bid Schedule, and which are not specified in this Section to be measured or included in one of the items listed in the Bid Schedule, shall be considered as incidental to the Work.
- C. All costs including all such items as freight, taxes, and overhead and profit, shall be included in the lump sum or unit prices bid for the various Bid Items unless specifically noted otherwise. All Contract prices included within the Bid Schedule will be full compensation for all labor, materials, tools, equipment, overhead and incidentals necessary to complete the Work as shown on the Contract Drawings and/or as specified in the Contract Documents unless specifically noted otherwise.
- D. Measurement of an item of Work shall be by the units indicated within the Bid Schedule.
- E. Payment for all Bid Items listed in the Bid Schedule shall constitute full compensation for all Work shown and/or specified to be performed under each Bid Item and shall include all necessary and incidental Work not specified to be included in any other Bid Item listed in the Bid Schedule.
- F. Payment for materials and equipment that are not yet incorporated into the Work but delivered and suitably stored at the Site or at another location agreed to in writing shall be processed when procedures identified in Section 14.02.A.1 of Section 00 72 13 – General Conditions are followed.

PART 2 - PRODUCTS AND MATERIALS (NOT USED)

PART 3 - EXECUTION (NOT USED)

PART 4 - MEASUREMENT AND PAYMENT

4.1 PAY ITEMS

- A. Item 1 – All Work to Complete the Chemical Systems Feed Building Contract per the Drawings and Specifications Except as Provided Separately in the Pay Items Defined Below.
 - 1. Measurement for Item 1 is the cost for furnishing all labor, materials, equipment and incidentals required to complete the Chemical Systems Feed Building Contract per the Drawing and Specifications except as provided for separately in the Items below.
 - 2. The Contractor will not be paid for any additional costs associated with the bid item beyond the lump sum value in the Bid Forms.

- B. Item 2 – Allowance – Owner’s Allowance to Reimburse Contractor for City of Flint Building Permit.
 - 1. Measurement for Item 2 is an Owner controlled allowance use to pay the City of Flint’s Building Department fee for review and issuance of the Building Permit.
 - 2. The Contractor is responsible for completing the Permit application, submitting the application package and responding to Building Department requests. The cost associated with these efforts shall be included in Item 1.

- C. Item 3 – Allowance – Owner’s Allowance to Reimburse Contractor for Genesee County’s Fee for the Review and Issuance of a Soil Erosion and Sediment Control Permit.
 - 1. Measurement for Item 3 is an Owner controlled allowance use to pay Genesee County’s fee for review and issuance of the Soil Erosion and Sediment Control Permit, if required.
 - 2. The Contractor is responsible for completing the Permit application, submitting the application package and responding to Genesee County requests. The cost associated with these efforts shall be included in Item 1.

- D. Item 4 – Allowance – Owners’ Allowance to Pay the Private Utility (CMS Energy) to Extend Natural Gas Service to the New Chemical Systems Feed Building Up to and Including the Meter.
 - 1. Measurement for Item 4 is an Owner controlled allowance to pay Utility costs to extend the natural gas service to the new Chemical Systems Feed building up to and including the meter.
 - 2. The Contractor shall be responsible for working with Utility, coordinating the installation and furnishing and installing the remainder of the system downstream of the meter. The cost associated with these efforts shall be included in Item 1.

- E. Item 5 – Allowance – Owner’s General Allowance for Unknowns.
 - 1. Measurement for Item 5 is an Owner controlled allowance to use as required to accomplish project objectives.
 - 2. The Contractor shall be responsible for coordinating with the Owner to accomplish these objectives and will be compensated through the Change Order process as described in the Contract should additional work be required.

- F. Item 6 – Excavation and Disposal of Unsuitable Building Foundation and Slab Subgrade Material Beyond Contract Limits
 - 1. Measurement for Item 6 is the cost of the Contractor to removal and dispose of unsuitable native material (i.e., subgrade) located beneath the building foundation and floor slab subbase beyond the limits indicated in the Contract Documents. Removal quantities will be based on in-place (in-situ) cubic yards confirmed through survey, standard measurement or as agreed to by the Engineer and Contractor. Cost to remove and dispose of native material to the limits indicated in the Contract Documents shall be included in Item 1.

2. The Engineer or independent geotechnical laboratory will determine limits of removal per Section 312000 – Earthwork. Disposal will be per Contract requirements.
- G. Item 7 – Furnish and Install Structural Fill (MDOT 21AA per Section 1 through 6 on Sheet S-3) to Replace Unsuitable Material Beyond Contract Limits.
1. Measurement for Item 7 is the cost by the Contractor for furnishing all labor, materials, equipment and incidentals required to install per in-place (in-situ) cubic yard of structural fill to replace unsuitable native material (i.e., subgrade) located beneath the building foundation and floor slab beyond the limits indicated in the Contract Documents. Installed quantities can be confirmed through survey, standard measurement or as agreed to by the Engineer and Contractor.
 2. Installation of the new material will be per Section 312000 – Earthwork and confirmed by the Engineer or independent geotechnical laboratory.
- H. Item 8 – Excavation and Disposal of Unsuitable Pavement Subgrade Material Beyond Contract Limits
1. Measurement for Item 8 is the cost of the Contractor to removal and dispose of unsuitable native material (i.e. subgrade) located beneath pavement subbase beyond what is indicated in the Contract Documents. Removal quantities below the subbase will be based on in-place (in-situ) cubic yards confirmed through survey, standard measurement or as agreed to by the Engineer and Contractor. Cost to remove and dispose of native material to the limits indicated in the Contract Documents shall be included in Item 1.
 2. The Engineer or independent geotechnical laboratory will determine limits of removal per Section 312000 – Earthwork. Disposal will be per Contract requirements.
- I. Item 9 – Furnish and Install Stone Backfill (1” x 3” Stone Backfill per Details F through H on Sheet C-9) to Replace Unsuitable Material Beyond Contract Limits.
1. Measurement for Item 9 is the cost by the Contractor for furnishing all labor, materials, equipment and incidentals required to install per in-place (in-situ) cubic yard of backfill to replace unsuitable native material (i.e., subgrade) located beneath the building foundation and floor slab beyond the limits indicated in the Contract Documents. Installed quantities can be confirmed through survey, standard measurement or as agreed to by the Engineer and Contractor.
 2. Installation of the new material will be per Section 312000 – Earthwork and confirmed by the Engineer or independent geotechnical laboratory.
- J. Item 10 – Clean 8-inch Sanitary Sewer (Assume Heavy Amount of Debris)
1. Measurement for Item 10 is the cost for furnishing all labor, materials, equipment and incidentals required for cleaning the existing 8-inch sanitary sewer.
 2. The Contractor shall be paid for actual linear footage cleaned as measured by the Contractor and verified by the Resident Project Representative.
- K. Item 11 – Televis 8-inch Sanitary Sewer
1. Measurement for Item 11 is the cost for furnishing all labor, materials, equipment and incidentals required for cleaning the existing 8-inch sanitary sewer.
 2. The Contractor shall be paid for actual linear footage televised as measured by the Contractor and verified by the Resident Project Representative.

END OF SECTION 012213

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**CITY OF FLINT
CHEMICAL SYSTEMS FEED BUILDING
PRE-BID MEETING**

**FLINT CITY HALL
OCTOBER 30, 2019
10:00AM – 11:00AM**

MEETING AGENDA

1. Introductions
2. Sign Attendance Record (copies will be made and distributed at close of meeting).
3. City of Flint Procurement Department
 - a. General Bidding Requirements
 - b. Document Access
 - c. Questions
 - d. Other
4. Bidding/Project Overview
 - a. Important Dates
 - i. Questions Period Ends: Tuesday, Nov. 5, 2019
 - ii. Final Addendum Issue: Tuesday, Nov. 12, 2019
 - iii. Bid Due: Wednesday, November 20, 2019 at 3pm
 1. Hard copy(s) submittal at Flint City Hall – Department of Purchases
 - iv. Tentative Notice to Proceed: Tuesday January 7, 2020
 - v. Substantial Completion: Dec. 31, 2019
 - vi. Final Completion: May 31, 2019
 - b. Qualifications
 - c. Subsurface and Physical Conditions Report
 - d. Prevailing Wages
 - e. American Iron and Steel Requirement
 - f. Addendum(s)
 - g. Bid Form – Lump Sum Bid
 - h. Important Construction Dates
 - i. Substantial Completion: Dec 31, 2019
 - ii. Final Completion: May 31, 2020
 - i. Liquidated Damages
 - j. Insurance Requirements

- k. Excess Soil Disposal Form
 - l. Summary of Work
 - m. Permits
 - i. Dewatering Water Disposal Variance City of Flint WWTP
 - ii. City of Flint Building
 - iii. Genesee County Soil Erosion and Sediment Control
 - iv. Michigan Department of Environment, Great Lakes and Energy (EGLE)
 - n. Work by Others and Other on-site contractors
 - i. Consumers Power new gas service
 - ii. Materials Testing and Laboratory Work
 - iii. Secondary Water Supply from GCDC
 - iv. Underground Utility confirmation (hydro-vac)
 - o. Measurement and Payment Definitions
 - p. Underground Utilities
 - q. Site Access (i.e. Front gate Dort HWY, Back gate West Boulevard Drive, etc.)
 - r. Project Schedule (computer based)
 - s. Work Hours (8-5 unless approved by Owner)
 - t. Operation of Existing Utilities (i.e. pipelines when tapping, existing chemical feed, etc.)
 - u. Maintenance of Traffic
5. Site visit to follow this meeting
6. Questions
7. Sign-in Sheet
8. Pre-bid Conference Notes will be distributed with Addendum No. 1. Addendum No. 1 is tentatively scheduled to be issued by COB Friday, November 1, 2019. There may be no responses to questions received after 5:00 p.m. Tuesday, November 5, 2019.