BAY AREA CHEMICAL CONSORTIUM
BID FORM FOR BID NO. 05-2026
FOR SUPPLY AND DELIVERY OF CITRIC ACID

Sealed bids must be submitted in a PDF format and bidders must enter bid prices into the electronic bid platform (Line Item page)
https://bacwa.org/about-bacc/

No later than 4:00 PM. PT
Thursday, February 19, 2026

Legal Name of Bidder:
Northstar Chemical as a dba of Pacific Star Chemical, LLC

Business Address
1333 S. Mayflower Ave, Suite 300
Monrovia, CA 91016

Telephone Number: 503-625-3770
Facsimile Number: 503-625-1478
Email Address: bidsca@northstarchemical.com

Authorized Representative (Please Print):
Matt Werger - Executive Vice President
Signature:
Date: 2/4/2026

I. **All costs except California State sales tax and tariffs for the purchase of CITRIC ACID must be included in the amount shown entered into the electronic bid platform (Line Item page), including any and all mill assessments, fees, excise taxes, transportation charges, etc. Any exceptions to the bid must be noted under Specific Deviations on the Standard Agreement. Bidders shall submit bids per unit of measure as specified in the electronic bid platform (Line Item page).**

II. **Bidders must submit all of the following, attached to this Bid Form:**
   a. All requirements listed in Section 2.21 Manufacturer's Info.
   b. If applicable, the name, address, and contact information for the third party hauling company as well as an affidavit signed by the Bidder that the third party hauler can and will deliver the chemical to each and every participating BACC Agency.

III. **Bidder Obligations**
By signing this Bid Form and entering into individual purchase orders, purchase agreements and /or contracts with BACC agencies, the bidder expressly agrees to be bound by all the provisions of the bid solicitation, including Sections I-IV.

872 Codoni Avenue
Modesto, CA 95357
Phone: (855) 355 - 7014
Fax: (844) 211 - 6665
docteam@northstarchemical.com

CITRIC ACID 50%

FCC Grade

Technical Data Sheet

Parameter	Specification Limits
Identification	Pass Test
Clarity & Color of Solution	Pass Test
Citric Acid ($C_6H_8O_7$)	49% - 51%
Purity of Citric Acid Raw Material (granular raw material)	99.5% - 100.5%
Lead (Pb)	≤ 0.25 ppm
Arsenic (As)	≤ 0.5 ppm
Aluminum (Al)	≤ 0.1 ppm
Iron (Fe)	≤ 2.5 ppm
Heavy Metals (as Pb)	≤ 2.5 ppm
Oxalate	≤ 50 ppm
Sulfate (SO_4)	≤ 75 ppm
Chloride (Cl)	≤ 25 ppm
Barium (Ba)	Pass Test
Residue on Ignition / Sulfate ASH	≤ 0.025%
Readily Carbonisable Substances	Pass Test
Bacterial Endotoxins	≤ 0.5 EU/mg

This product meets the specification of the Food Chemicals Codex, 14th Edition. Meeting the specification of the Food Chemical Codex does not guarantee that the product is suitable in a food-related application. Users of this product should carefully assess this product to determine if it is suitable for the intended application

NSF
Certified to NSF/ANSI/CAN 60

WARRANTY

The Public Health and Safety Organization

NSF Product and Service Listings

These NSF Official Listings are current as of **Wednesday, February 4, 2026** at 12:15 a.m. Eastern Time. Please contact NSF to confirm the status of any Listing, report errors, or make suggestions.

Alert: NSF is concerned about fraudulent downloading and manipulation of website text. Always confirm this information by clicking on the below link for the most accurate information:
http://info.nsf.org/Certified/PwsChemicals/Listings.asp?Company=C0052176&Standard=060&

NSF/ANSI/CAN 60
Drinking Water Treatment Chemicals - Health Effects

Northstar Chemical

14200 Southwest Tualatin Sherwood Road
Sherwood, OR 97140
United States
888-793-9476
503-625-3770
Visit this company's website
(http://www.northstarchemical.com)

Facility : #1 Santa Fe Springs, CA

Blended Coagulation Chemicals[AL] [PY]

Trade Designation	*Product Function*	*Max Use*
MP-1483	Coagulation & Flocculation	50mg/L
MP-1683	Coagulation & Flocculation	100mg/L

[AL] Based on an evaluation of health effects data, the level of aluminum in the finished drinking water shall not exceed 2 mg/L.
[PY] Polyamines Certified by NSF International comply with 40 CFR 141.111 requirements for percent monomer and dose.

Citric Acid

Trade Designation	*Product Function*	*Max Use*

Citric Acid[2] [3]	Membrane Cleaner	NA

[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.

Hydrochloric Acid

Trade Designation	*Product Function*	*Max Use*
Hydrochloric Acid 10%	pH Adjustment	140mg/L
Hydrochloric Acid 15%	pH Adjustment	93mg/L
Hydrochloric Acid 20%	pH Adjustment	70mg/L
Hydrochloric Acid 25%	pH Adjustment	56mg/L
Hydrochloric Acid 28%	pH Adjustment	50mg/L
Hydrochloric Acid 31%	pH Adjustment	45mg/L
Hydrochloric Acid 35%	pH Adjustment	40mg/L

Miscellaneous Treatment Chemical

Trade Designation	*Product Function*	*Max Use*
Vitec 4000	Reverse Osmosis Antiscalant	7mg/L
Vitec 4000 11%	Reverse Osmosis Antiscalant	63mg/L

Phosphoric Acid

Trade Designation	*Product Function*	*Max Use*
Phosphoric Acid 15%	Corrosion & Scale Control	68mg/L
Phosphoric Acid 36%	Corrosion & Scale Control	28mg/L
Phosphoric Acid 75%	Corrosion & Scale Control	14mg/L
Phosphoric Acid 85%	Corrosion & Scale Control	12mg/L

Polymer Blends[AL]

Trade Designation	*Product Function*	*Max Use*
MD-1883	Coagulation & Flocculation	250mg/L

[AL] Based on an evaluation of health effects data, the level of aluminum in the finished drinking water shall not exceed 2 mg/L.

Potassium Hydroxide

Trade Designation	*Product Function*	*Max Use*
Potassium hydroxide 10%	Corrosion & Scale Control pH Adjustment	450mg/L
Potassium hydroxide 45%	Corrosion & Scale Control pH Adjustment	100mg/L

Potassium hydroxide 50%	Corrosion & Scale Control pH Adjustment	100mg/L

Sodium Bisulfite[1]

Trade Designation	*Product Function*	*Max Use*
Sodium Bisulfite 25%	Dechlorination	46mg/L
Sodium Bisulfite 38%	Dechlorination	29mg/L

[1] This product contains sulfite.
Sulfites have been known to cause potentially lethal allergic reactions in sulfite-sensitive individuals.
The maximum recommended allowable residual sulfite level in the finished drinking water is 100 ppb (0.1 mg/L).

Sodium Hydroxide

Trade Designation	*Product Function*	*Max Use*
Sodium Hydroxide 15%	Corrosion & Scale Control	333mg/L
Sodium Hydroxide 20%	Corrosion & Scale Control	250mg/L
Sodium Hydroxide 25%	Corrosion & Scale Control	200mg/L
Sodium Hydroxide 30%	Corrosion & Scale Control	167mg/L
Sodium Hydroxide 33%	Corrosion & Scale Control	152mg/L
Sodium Hydroxide 50%	Corrosion & Scale Control	100mg/L

Sodium Hypochlorite[HY]

Trade Designation	*Product Function*	*Max Use*
Sodium Hypochlorite 12.5%	Disinfection & Oxidation	84mg/L

[HY] The residual levels of chlorine (hypochlorite ion and hypochlorous acid), chlorine dioxide, chlorate ion, chloramine and disinfection by-products shall be monitored in the finished drinking water to ensure compliance to all applicable regulations. Also, reference the AWWA B300 (Hypochlorites) standard's Recommendations for the Handling and Storage of Hypochlorite Solutions appendix for information on preservation techniques for hypochlorite bleach in transit and storage.

Sodium Polyphosphates, Glassy

Trade Designation	*Product Function*	*Max Use*
Sodium Hexametaphosphate Solution 16%	Corrosion & Scale Control	56mg/L

Sulfuric Acid

Trade Designation	*Product Function*	*Max Use*
Sulfuric Acid 20%	Corrosion & Scale Control pH Adjustment	233mg/L

Sulfuric Acid 25%	Corrosion & Scale Control pH Adjustment	186mg/L
Sulfuric Acid 30%	Corrosion & Scale Control pH Adjustment	153mg/L
Sulfuric Acid 33%	Corrosion & Scale Control pH Adjustment	141mg/L
Sulfuric Acid 36%	Corrosion & Scale Control pH Adjustment	129mg/L
Sulfuric Acid 50%	Corrosion & Scale Control pH Adjustment	93mg/L
Sulfuric Acid 70%	Corrosion & Scale Control pH Adjustment	66mg/L
Sulfuric Acid 78%	Corrosion & Scale Control pH Adjustment	60mg/L
Sulfuric Acid 93%	Corrosion & Scale Control pH Adjustment	50mg/L

Facility : Distribution Center - San Pedro, CA

Sodium Hydroxide

Trade Designation	*Product Function*	*Max Use*
Sodium Hydroxide 15%	pH Adjustment	333mg/L
Sodium Hydroxide 20%	pH Adjustment	250mg/L
Sodium Hydroxide 25%	pH Adjustment	200mg/L
Sodium Hydroxide 30%	pH Adjustment	167mg/L
Sodium Hydroxide 33%	pH Adjustment	152mg/L
Sodium Hydroxide 50%	pH Adjustment	100mg/L

Facility : Modesto, CA

Blended Coagulation Chemicals[AL] [PY]

Trade Designation	*Product Function*	*Max Use*
MP-1483	Coagulation & Flocculation	50mg/L
MP-1683	Coagulation & Flocculation	100mg/L

[AL] Based on an evaluation of health effects data, the level of aluminum in the finished drinking water shall not exceed 2 mg/L.

[PY] Polyamines Certified by NSF International comply with 40 CFR 141.111 requirements for percent monomer and dose.

Citric Acid

Trade Designation	*Product Function*	*Max Use*
Citric Acid[2] [3]	Membrane Cleaner	NA

[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.

Hydrochloric Acid

Trade Designation	*Product Function*	*Max Use*
Hydrochloric Acid 10%	pH Adjustment	140mg/L
Hydrochloric Acid 15%	pH Adjustment	93mg/L
Hydrochloric Acid 20%	pH Adjustment	70mg/L
Hydrochloric Acid 25%	pH Adjustment	56mg/L
Hydrochloric Acid 28%	pH Adjustment	50mg/L
Hydrochloric Acid 31%	pH Adjustment	45mg/L
Hydrochloric Acid 35%	pH Adjustment	40mg/L

Phosphoric Acid

Trade Designation	*Product Function*	*Max Use*
Phosphoric Acid 15%	Corrosion & Scale Control	68mg/L
Phosphoric Acid 36%	Corrosion & Scale Control	28mg/L
Phosphoric Acid 75%	Corrosion & Scale Control	14mg/L
Phosphoric Acid 85%	Corrosion & Scale Control	12mg/L

Polymer Blends[AL]

Trade Designation	*Product Function*	*Max Use*
MD-1883	Coagulation & Flocculation	250mg/L

[AL] Based on an evaluation of health effects data, the level of aluminum in the finished drinking water shall not exceed 2 mg/L.

Potassium Hydroxide

Trade Designation	*Product Function*	*Max Use*
Potassium hydroxide 10%	Corrosion & Scale Control pH Adjustment	450mg/L
Potassium hydroxide 45%	Corrosion & Scale Control pH Adjustment	100mg/L
Potassium hydroxide 50%	Corrosion & Scale Control pH Adjustment	100mg/L

Sodium Bisulfite[1]

Trade Designation	*Product Function*	*Max Use*
Sodium Bisulfite 25%	Dechlorination	46mg/L
Sodium Bisulfite 38%	Dechlorination	29mg/L

[1] This product contains sulfite.
Sulfites have been known to cause potentially lethal allergic reactions in sulfite-sensitive individuals.
The maximum recommended allowable residual sulfite level in the finished drinking water is 100 ppb (0.1 mg/L).

Sodium Hydroxide

Trade Designation	*Product Function*	*Max Use*
Sodium Hydroxide 15%	Corrosion & Scale Control	333mg/L
Sodium Hydroxide 20%	Corrosion & Scale Control	250mg/L
Sodium Hydroxide 25%	Corrosion & Scale Control	200mg/L
Sodium Hydroxide 30%	Corrosion & Scale Control	167mg/L
Sodium Hydroxide 33%	Corrosion & Scale Control	152mg/L
Sodium Hydroxide 50%	Corrosion & Scale Control	100mg/L

Sodium Hypochlorite[HY]

Trade Designation	*Product Function*	*Max Use*
Sodium Hypochlorite 12.5%	Disinfection & Oxidation	84mg/L

[HY] The residual levels of chlorine (hypochlorite ion and hypochlorous acid), chlorine dioxide, chlorate ion, chloramine and disinfection by-products shall be monitored in the finished drinking water to ensure compliance to all applicable regulations. Also, reference the AWWA B300 (Hypochlorites) standard's Recommendations for the Handling and Storage of Hypochlorite Solutions appendix for information on preservation techniques for hypochlorite bleach in transit and storage.

Sodium Polyphosphates, Glassy

Trade Designation	*Product Function*	*Max Use*
Sodium Hexametaphosphate Solution 16%	Corrosion & Scale Control	56mg/L

Sulfuric Acid

Trade Designation	*Product Function*	*Max Use*
Sulfuric Acid 20%	Corrosion & Scale Control pH Adjustment	233mg/L
Sulfuric Acid 25%	Corrosion & Scale Control pH Adjustment	186mg/L

Sulfuric Acid 30%	Corrosion & Scale Control pH Adjustment	153mg/L
Sulfuric Acid 33%	Corrosion & Scale Control pH Adjustment	141mg/L
Sulfuric Acid 36%	Corrosion & Scale Control pH Adjustment	129mg/L
Sulfuric Acid 50%	Corrosion & Scale Control pH Adjustment	93mg/L
Sulfuric Acid 70%	Corrosion & Scale Control pH Adjustment	66mg/L
Sulfuric Acid 78%	Corrosion & Scale Control pH Adjustment	60mg/L
Sulfuric Acid 93%	Corrosion & Scale Control pH Adjustment	50mg/L

Facility : Charlotte, NC

Hydrochloric Acid

Trade Designation	*Product Function*	*Max Use*
Hydrochloric Acid 10%	pH Adjustment	140mg/L
Hydrochloric Acid 15%	pH Adjustment	93mg/L
Hydrochloric Acid 20%	pH Adjustment	70mg/L
Hydrochloric Acid 25%	pH Adjustment	56mg/L
Hydrochloric Acid 28%	pH Adjustment	50mg/L
Hydrochloric Acid 31%	pH Adjustment	45mg/L
Hydrochloric Acid 35%	pH Adjustment	40mg/L

Sodium Bisulfite[1]

Trade Designation	*Product Function*	*Max Use*
Sodium Bisulfite 25%	Dechlorination	46mg/L
Sodium Bisulfite 38%	Dechlorination	46mg/L

[1] This product contains sulfite.
Sulfites have been known to cause potentially lethal allergic reactions in sulfite-sensitive individuals.
The maximum recommended allowable residual sulfite level in the finished drinking water is 100 ppb (0.1 mg/L).

Sodium Hydroxide

Trade Designation	*Product Function*	*Max Use*
Sodium Hydroxide 15%	pH Adjustment	333mg/L
Sodium Hydroxide 20%	pH Adjustment	250mg/L

Sodium Hydroxide 25%	pH Adjustment	200mg/L
Sodium Hydroxide 30%	pH Adjustment	166mg/L
Sodium Hydroxide 33%	pH Adjustment	151mg/L
Sodium Hydroxide 50%	pH Adjustment	100mg/L

Sodium Hypochlorite[HY]

Trade Designation	*Product Function*	*Max Use*
Sodium Hypochlorite 12.5%	Disinfection & Oxidation	84mg/L

[HY] The residual levels of chlorine (hypochlorite ion and hypochlorous acid), chlorine dioxide, chlorate ion, chloramine and disinfection by-products shall be monitored in the finished drinking water to ensure compliance to all applicable regulations. Also, reference the AWWA B300 (Hypochlorites) standard's Recommendations for the Handling and Storage of Hypochlorite Solutions appendix for information on preservation techniques for hypochlorite bleach in transit and storage.

Sulfuric Acid

Trade Designation	*Product Function*	*Max Use*
Sulfuric Acid 93%	Corrosion & Scale Control pH Adjustment	50mg/L

Facility : Sherwood, OR

Aluminum Chlorohydrate[AL]

Trade Designation	*Product Function*	*Max Use*
Aluminum Chlorohydrate Solution	Coagulation & Flocculation	250mg/L
M-1883	Coagulation & Flocculation	250mg/L

[AL] Based on an evaluation of health effects data, the level of aluminum in the finished drinking water shall not exceed 2 mg/L.

Aluminum Sulfate[AL]

Trade Designation	*Product Function*	*Max Use*
A-0800	Coagulation & Flocculation	150mg/L
Aluminum Sulfate	Coagulation & Flocculation	150mg/L

[AL] Based on an evaluation of health effects data, the level of aluminum in the finished drinking water shall not exceed 2 mg/L.

Blended Coagulation Chemicals[AL] [PY]

Trade Designation	*Product Function*	*Max Use*
MP-1483	Coagulation & Flocculation	50mg/L

[AL] Based on an evaluation of health effects data, the level of aluminum in the finished drinking water shall not exceed 2 mg/L.
[PY] Polyamines Certified by NSF International comply with 40 CFR 141.111 requirements for percent monomer and dose.

Citric Acid

Trade Designation	*Product Function*	*Max Use*
Citric Acid[1] [2]	Membrane Cleaner	NA

[1] 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.
[2] 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

Polymer Blends[AL] [PY]

Trade Designation	*Product Function*	*Max Use*
CP-0954	Coagulation & Flocculation	100mg/L
ND 0948	Coagulation & Flocculation	200mg/L
Polyaluminum Hydroxychlorosulfate	Coagulation & Flocculation	100mg/L

[AL] Based on an evaluation of health effects data, the level of aluminum in the finished drinking water shall not exceed 2 mg/L.
[PY] Polyamines Certified by NSF International comply with 40 CFR 141.111 requirements for percent monomer and dose.

Sodium Hydroxide

Trade Designation	*Product Function*	*Max Use*
Sodium Hydroxide Solutions 25%	Corrosion Control pH Adjustment	200mg/L
Sodium Hydroxide Solutions 50%	Corrosion Control pH Adjustment	100mg/L

Sodium Hypochlorite[HY]

Trade Designation	*Product Function*	*Max Use*
Sodium Hypochlorite 12.5%	Disinfection & Oxidation	84mg/L
Starchlor	Disinfection & Oxidation	84mg/L

[HY] The residual levels of chlorine (hypochlorite ion and hypochlorous acid), chlorine dioxide, chlorate ion, chloramine and disinfection by-products shall be monitored in the finished drinking water to ensure compliance to all applicable regulations. Also, reference the AWWA B300 (Hypochlorites) standard's Recommendations for the Handling and Storage of Hypochlorite Solutions appendix for information on preservation techniques for hypochlorite bleach in transit and storage.

Sulfuric Acid

Trade Designation	*Product Function*	*Max Use*
Sulfuric Acid 36%	pH Adjustment	129mg/L
Sulfuric Acid 50%	pH Adjustment	93mg/L
Sulfuric Acid 93%	pH Adjustment	50mg/L

Facility : Tacoma, WA

Sodium Hydroxide

Trade Designation	*Product Function*	*Max Use*
Sodium Hydroxide Solution 25%	Corrosion Control pH Adjustment	200mg/L
Sodium Hydroxide Solution 50%	Corrosion Control pH Adjustment	100mg/L

Sodium Hypochlorite[HY]

Trade Designation	*Product Function*	*Max Use*
Sodium Hypohclorite 12.5%	Disinfection & Oxidation	40mg/L

[HY] The residual levels of chlorine (hypochlorite ion and hypochlorous acid), chlorine dioxide, chlorate ion, chloramine and disinfection by-products shall be monitored in the finished drinking water to ensure compliance to all applicable regulations. Also, reference the AWWA B300 (Hypochlorites) standard's Recommendations for the Handling and Storage of Hypochlorite Solutions appendix for information on preservation techniques for hypochlorite bleach in transit and storage.

Facility : Vancouver, WA

Sodium Hydroxide

Trade Designation	*Product Function*	*Max Use*

Sodium Hydroxide Solution 25%	Corrosion Control pH Adjustment	200mg/L
Sodium Hydroxide Solution 50%	Corrosion Control pH Adjustment	100mg/L

Number of matching Manufacturers is 1

Number of matching Products is 120

Processing time was 0 seconds

SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: **Citric Acid Solution (Technical, FCC Grade)**

CHEMICAL NAME/CLASS: Citric Acid
PRODUCT USE: Crop Management tool and production aid

SUPPLIER/MANUFACTURER'S NAME: **Northstar Chemical, Inc.**

ADDRESS: 1333 S. Mayflower Avenue Suite 300

Monrovia, CA 91016

BUSINESS PHONE: (626) 574 - 3111

EMERGENCY PHONE: **CHEMTREC**: 800-424-9300

DATE OF PREPARATION: March 30, 2021

DATE OF REVISION: July 10, 2025

DATE OF REVIEW: July 10, 2025

2. HAZARD IDENTIFICATION

Hazard classification
Skin corrosion / irritation - Category 2
Serious eye damage / eye irritation – Category 2

Signal Word: Warning

Hazard statements

H290 May be corrosive to metals.
H315 Causes skin irritation.
H319 Causes serious eye irritation.

GHS Labels

Irritant

Precautionary statements

Prevention

P234 Keep only in original packaging.
P264 Wash affected body parts thoroughly after handling.
P280 Wear protective gloves, eye protection, face protection

Response

P305 P351 P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact
P337 P313	lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice or attention.
P390	Absorb spillage to prevent material damage.

Hazards Not Otherwise Classified
Not available

Supplemental Information
Not available

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical name	CAS number	Concentration (w/w%)
Citric acid	77-92-9	1% - 51%

4. FIRST-AID MEASURES

General: Move out of dangerous area. Perform first aid measures as indicated. Seek medical attention and show this safety data sheet to attending physician.

Inhalation: Move to fresh air and keep at rest in a position comfortable for breathing. If breathing difficulty occurs or persists, seek medical attention. If not breathing give artificial respiration and seek immediate medical attention.

Skin Contact: Immediately flush exposed skin with water for at least 15 minutes while removing contaminated clothing and/or shoes. Thoroughly wash with soap and water. Seek medical attention if irritation develops or persists.

Eye Contact: Immediately flush eyes with water for at least 15 minutes, lifting the upper and lower eyelids intermittently. Check for and remove any contact lenses if easy to do. Seek immediate medical attention.

Ingestion: Rinse mouth with water. Do not induce vomiting. Seek medical attention if symptoms develop.

Most important symptoms and effects both acute and delayed: No information available.

Indication of any immediate medical attention and special treatment needed: No information available.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media: Extinguish fire using extinguishing agents suitable for the surrounding fire.

Unsuitable extinguishing media: Water jets are not recommended in fires involving chemicals.

Specific hazards arising from the chemical: Reacts with many metals to liberate hydrogen gas that can form explosive mixtures. In the event of a fire oxides of carbon may be released. Thermal decomposition occurs at 175 °C.
Special protective equipment for fire-fighters: Wear NIOSH-approved self-contained breathing apparatus and chemical-protective clothing.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Avoid direct contact with skin, eyes and clothing. Avoid inhalation of mist, vapor or dust. Wear appropriate personal protective equipment as outlined in Section 8 of this SDS.

Environmental Precautions: Prevent further leakage or spillage if safe to do so. Contain spilled material and prevent run-off onto ground or into water sources or sewers.

Methods and material for containment and clean up: Neutralize with appropriate alkaline material if possible. Absorb

on inert material and place in containers for disposal. Dispose of spilled/collected material in accordance with all federal, state and local regulations.

7. HANDLING and STORAGE

Precautions for Safe Handling: Avoid contact with skin and eyes. Avoid inhalation of mist, vapor and dust. Ensure adequate ventilation. Do not eat, drink or smoke while handling. Wear appropriate personal protective equipment as outlined in Section 8 of this SDS.

Conditions for Safe Storage, including Incompatibilities: Store in original container. Keep container tightly closed. Store at room temperature (50-90°F) in a dry well-ventilated area.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION

Exposure limits
There are no known exposure limits for this product.

Engineering controls

Ventilation Requirements Mechanical ventilation (dilution or local exhaust), process or personnel enclosure and control of process conditions should be provided in accordance with all fire codes and regulatory requirements. Supply sufficient replacement air to make up for air removed by exhaust systems.

Other A soak hose and eyewash station or emergency shower and eyewash station should be available, tested, and be in close proximity to the product being handled in accordance with provincial regulations.

Protective equipment
The following are recommendations only. It is the responsibility of the employer / user to conduct a hazard assessment of the process in which this product being used and determine the proper engineering controls and PPE for their process. Additional regulatory and safety information should be sought from local authorities and, if needed, a professional industrial hygienist.

Eye and face protection Where there is potential eye or face exposure, tightly fitting chemical goggles are recommended. Contact lenses are not recommended; they may contribute to severe eye injury.

Hand and body protection Where handling this product it is recommended that skin contact is avoided. Disposable latex or nitrile gloves are recommended to prevent incidental contact. Butyl rubber, neoprene, or PVC skin protection is recommended for extended contact. Leather gloves are not recommended for chemical protection. Refer to manufacturer's specifications for breakthrough times and permeability information; note that breakthrough times and permeability vary with temperature, application, and age of material. Continued use of contaminated safety gear or clothing is not recommended, wash before reuse or discard.

Respiratory protection In case of insufficient ventilation wear suitable respiratory equipment.

Thermal hazards Not available

9. PHYSICAL and CHEMICAL PROPERTIES

Physical state	Liquid
Color	Clear
Odor	Odorless
pH	1.5 (50% solution)
Melting/freezing point	Not available
Initial boiling point	Not available
Flash point	Not available
Evaporation rate	Not available
Flammability (solid, gas)	Not available
Lower flammability limit	Not available

Upper flammability limit	Not available
Lower explosive limit	Not available
Upper explosive limit	Not available
Vapor pressure	Not available
Vapor density	Not available
Relative density	Not available
Solubility in water	Complete
PC: n-octanol/water	Not available
Auto-Ignition temperature	Not available
Decomposition temperature	Not available
Viscosity	Not available
Density	Not available
Specific gravity	1.24 (50%)

10. STABILITY and REACTIVITY

Reactivity: Not reactive under normal use conditions.

Chemical Stability: Material is stable under normal handling and storage conditions.

Hazardous Reactions: Hazardous polymerization will not occur under normal handling and storage. **Conditions to Avoid:** Avoid excessive heating, freezing and chemical contamination.

Decomposition Products: No decomposition products are expected under normal storage and handling conditions.

Incompatible Materials: Avoid contact with oxidizers and strong bases

11. TOXICOLOGICAL INFORMATION

Acute Toxicity (LD50 / LC50 values)

Component	Route	Species	Value	Exposure time
citric acid	Oral	mouse	5400 mg/kg	
	Dermal	rat	>2000 mg/kg	24 hours

Toxic Health Effect Summary

Chemical characteristics	Citric acid is a metabolic intermediate vital to the TCA respiration pathway found in all animal and plant cells. There is little evidence that citric acid and the citrate salts have deleterious effects, even in large doses. Indeed there is some support for the fact that citric acid in the human diet is favorable by inhibiting the formation of calcium oxalate kidney and bladder stones. This statement is applicable to the citrate salts since once absorbed citrate salts will dissociate into citric acid and their counter-ion.
Skin	Causes skin irritation. Not irritating to skin.
Ingestion	May cause discomfort or nausea.
Inhalation	May cause respiratory irritation.
Eye contact	Causes serious eye irritation.
Sensitization	This product and its components at their listed concentration have no known sensitizing effects.
Mutagenicity	This product and its components at their listed concentration have no known mutagenic effects.
Carcinogenicity	This product and its components at their listed concentration have no known carcinogenic effects.

Reproductive toxicity	This product and its components at their listed concentration have no known reproductive effects.
Specific organ toxicity	This product and its components at their listed concentration have no known effects on specific organs.
Aspiration hazard	Not available

12. ECOLOGICAL INFORMATION

Ecotoxicity:
No information available.

Numerical Measures of Ecotoxicity:

Components	Type	Species	Dose
citric acid:			
Fish	LC50	Leuciscus idus	440 mg/l
Invertebrate	EC50	Daphnia magna	1535 mg/l
Algae	NOEC	Fresh Water Algae	425 mg/l

Persistence and Degradability:
No information available.

Bioaccumulative Potential:
No information available.

Mobility in Soil:
No information available.

Other Adverse Effects:
No information available.

13. DISPOSAL CONSIDERATIONS

Disposal Instructions:
Dispose of material in accordance with all federal, state and local regulations.

Contaminated Packaging:
Triple rinse container and offer for recycling. Dispose of container following all federal, state and local regulations.

14. TRANSPORTATION INFORMATION

DOT: Not classified.

15. REGULATORY INFORMATION

Federal Regulations:
SARA 311/312 Hazard Categories:
None.
SARA 302 Extremely Hazardous Substance:
Not listed. SARA 304

Emergency Release Notification:
Not regulated.

SARA 313 Toxic Release Inventory (TRI) Report:

Not regulated.

CERCLA Hazardous Substance List:
Not Listed.

Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA):
This chemical is not a pesticide product.

Clean Air Act Regulated Substances:
None.

Clean Water Act Regulated Substances:
None.

U.S. State Regulations:
None.

Federal and State Regulations:
TSCA 8(b) Inventory: Citric Acid

Canadian Regulations:
Canadian Ingredient Disclosure List Substances:
None listed.

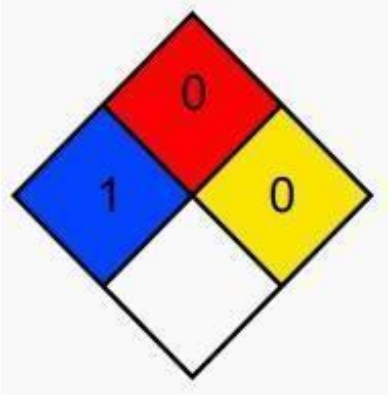
WHMIS Classification:
Not classified.

16. OTHER INFORMATION

HMIS Hazard ID:

Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe; *-Chronic Health Effect

NFPA Hazard ID:



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

Disclaimer: The Manufacturer believes that the information contained in the Safety Data Sheet is accurate. The suggested procedures are based on experience as of the date of the publication. They are not necessarily all inclusive nor fully adequate in every circumstance. Also, the suggestions should not be confused with, nor followed in violation of applicable laws, regulations, rules or insurance requirements.

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PRODUCT SPECIFICATION
Citric Acid Anhydrous Granular 12-40 Mesh
(USP/BP/FCC/E330/EP)

Characters	Colorless Crystals or White Crystalline powder
Identification	Pass Test
Clarity & color of Solution	Pass Test
Barium	Pass Test
Assay %	99.5-100.5
Moisture %	≤0.3
Calcium mg/kg	≤100
Iron mg/kg	≤5
Arsenic mg/kg	≤1
Oxalate mg/kg	≤100
Heavy Metals (as Pb) mg/kg	≤5
Readily Carbonisable Substances	Pass Test
Sulphate mg/kg	≤150
Sulphate ASH/Residue on Ignition %	≤0.05
Chloride mg/kg	≤50
Bacterial Endotoxins I.U./MG	≤0.5
Nickel mg/kg	≤1
Cobalt mg/kg	≤1
Mercury mg/kg	≤1
Lead mg/kg	≤0.5
Chromium mg/kg	≤1
Aluminum mg/kg	≤0.2
GMO Status	Non GMO
Mesh Size	12-40