

**CAMBRIDGE WATER, SEWER AND STORMWATER COMMITTEE
AMUNDSON COMMUNITY CENTER
200 SPRING STREET – COMMUNITY ROOM
AGENDA
6:30 PM
JANUARY 18, 2022**

THIS IS AN IN-PERSON MEETING. DUE TO INCREASE CASES OF COVID AND ITS VARIANTS, DANE COUNTY HAS REINSTATED A MASK MANDATE SO MASKS WILL BE REQUIRED AT THE MEETING. THE MEETING ROOM WILL BE SET UP FOR SOCIAL DISTANCING. THANK YOU!

- 1. Call to Order/Roll Call**
- 2. Proof of Posting**
- 3. Approval of consent agenda**
 - a. Meeting Minutes from 12-21-2021
- 4. Approval of Bills**
- 5. Reports**
 - a. Utility Clerk
 - b. Director of Public Works
- 6. Old Business:**
 - a. Discussion and Possible Action Regarding Swalheim (309 E.North St) Prior High Water Usage-Return Per Committee Request
 - b. Update on Water System Maintenance
 1. Media Replacement Update
 - c. Discussion and Possible Action Regarding Well #3 Water Treatment Facilities
 - d. Discussion and Possible Action Regarding SCADA System Replacement
 - e. Discussion and Possible Action Regarding Generator at Well #3
 - f. Discussion and Possible Action Regarding Camera Purchase
 - g. Discussion and Possible Action Regarding Dancing Goat Effluent Meter: MSA Report
 - h. Update on F650 Truck Purchase
- 7. New Business:**
 - a. Update on Tonka Water Maintenance on Well #2
 - b. Discussion and Possible Action Regarding Material Safety Data Sheets for Businesses in the Village/Notification of Cleaning Cycles
 - c. Discussion Regarding COWC Updates as a Recurring Agenda Item
- 8. Public Comment**

9. Questions, Referrals to Staff or Future Agenda Items

10. Adjournment

- a) Persons needing special accommodations should call 608-423-3712 at least 24 hours prior to the meeting.
- b) More specific information about agenda items may be obtained by calling 608- 423-3712.
- c) A quorum of the Water & Sewer committee will attend this meeting for the purpose of gathering information relevant to their responsibilities as Water & Sewer committee members.
- d) Final Agendas are typically posted by 4 PM on the Friday preceding the regular meeting at the Amundson Community Center, Cambridge Post Office, Hometown Bank and Village of Cambridge Web site at www.ci.cambridge.wi.us

**CAMBRIDGE WATER, SEWER AND STORMWATER COMMITTEE
AMUNDSON COMMUNITY CENTER
200 SPRING STREET – COMMUNITY ROOM
AGENDA
6:30 PM
DECEMBER 21, 2021**

THIS IS AN IN-PERSON MEETING. DUE TO INCREASE CASES OF COVID AND ITS VARIANTS, DANE COUNTY HAS REINSTATED A MASK MANDATE SO MASKS WILL BE REQUIRED AT THE MEETING. THE MEETING ROOM WILL BE SET UP FOR SOCIAL DISTANCING. THANK YOU!

- 1. Call to Order/Roll Call:** Ted Kumbier called the meeting to order at 6:34pm. Members present: Chuck Franklin, Larry Gunseor, Steve Struss, and Ted Kumbier. Members absent: Blake Sollenberger. Others present: Dan Greve from MSA. Nick Maas, and Sean Dotson from Dancing Goat Distillery. Laura Demmerly Village Resident, and Mark McNally Village President. Village Staff: Lisa Moen, Chrissie Brynwood, Kris Breunig, and Vicki Redford.
- 2. Proof of Posting:** Agendas were posted in the upper and lower levels of the Amundson Community Center, Hometown Bank, Cambridge Post Office, and the Village Website.
- 3. Approval of consent agenda**
 - a. Meeting Minutes from 11-16-2021

Franklin made a motion to accept the consent agenda as presented. Struss seconded the motion. Motion carried on a 4-0 vote.

4. Approval of Bills:

Kumbier made a motion to accept the bills in the amount of \$83,836.27 Gunseor seconded the motion. Motion carried on a 4-0 roll call vote.

5. Public Appearance: None

6. Reports

- a. Utility Clerk: Doing usual daily, weekly, and monthly duties. We received the tax bills. They went out in the mail on Friday December 17th. We have started receiving payments.
- b. Director of Public Works: Director Breunig said most of what his report are agenda items. He let the Committee know that Lee Farrar is licensed until May of 2024. Public works department is working hard on the media replacement. Heat is not working in well #3. DPW put space heaters in until the heater is replaced. Struss asked if leaf pick up is done for the year. Breunig said leaf pick up is done for this year. They removed 130 tons of leaves this fall.

Kumbier moved 8a. up in the agenda.

7. Old Business:

- a. Update on Water System Maintenance
 1. Update on Media Softener Replacement: Breunig said there were shipment issues. The Media came first and then the gravel. Media came from the East Coast and the rock from Iowa. Breunig had a meeting to prepare the DPW to work slow and do layers of the sand & gravel to do the best job possible.
- b. Discussion Regarding Including Generator and SCADA System for well #2, add to well #3 Project: MSA: Dan Greve recommended consideration of a standby generator with automatic transfer switch. 150kW generator to accommodate a potential future larger well pump motor. Generator will be outdoors so a sound enclosure would be necessary. This project should be publicly bid. DNR approval would be needed. The cost is less than the threshold required for PSC. We do not need PSC authorization. This should be bid to electrical contractors for complete installation. Including this with well #3 project would cost much less than if it were done separately. The Committee discussed using a smaller generator and asked if that would work, or if our emergency generator that we currently have could be used instead. Greve said he would check into both alternatives and let the Committee know. MSA could assist the Village by providing permitting, bidding, and construction-related services for the generator if we choose this option. The fee for MSA to provide these services is \$8,000 for design and \$2,000 for construction related services. It is MSA's recommendation to include the well #2 generator to the well #3 project.

After touring the water/wastewater sites on November 15th, 2021, MSA discovered various hardware and software components of the SCADA system that are past their expected life and need replacement. The equipment that we have now is obsolete. MSA recommends that all system software be replaced and upgraded to the newest Windows platform. There are five sites that need equipment and would cost around \$20,000 each for a total of \$100,000. We may need a second master computer as well. Greve said tablets are an option instead of maintaining all the panel views. There was discussion about cell system and other alternatives as well as cost comparisons. Greve said he will check into these other options and give the Committee an update. MSA could assist the Village in providing design, bidding, and construction related services for the SCADA system. MSA's fee for these services are \$6,500 for design and \$4,500 for construction related services. It is recommended by MSA and the Committee to update the SCADA system along with the well #3 project.
- c. Well #3 – Review Proposed Site Plan, Floor Plan, Building Materials for Construction: Greve brought handouts to give the Committee for the Site Plan. There were pictures with elevations and plans. The Water Treatment building will be separate from the wellhouse. This allows for well #3 to remain in service during most of the Water Treatment Construction. This also allows for better periodic chemical cleaning of the well. Filter backwash will be routed to buried precast concrete detention tanks. Softener regeneration wastewater and floor drains will flow directly to sanitary sewer (Potter Rd. and Blue Jay Way). Soil borings are scheduled for Tuesday December 28, 2021.

The Water Treatment Building dimensions are 57'-4" x 40'-0" with ceiling height at 14'-0". Main room will have filter and softener vessels, piping, and electrical controls. It will have two chemical rooms – liquid chlorine and fluoride. Including an office, lab, and storage room. The Committee discussed heated floor options for the building. They talked about getting a bid with heated floors for the building. The brine room has no doorway to the rest of the building. The Treatment capacity is 600gpm. Filter tank is 10-foot diameter x 22 feet long, four cells. Softener vessels = 3 each @ 7-foot diameter x 12 feet high. Most cost-effective option for Wellhouse #3 is renovation.

- d. Discussion and Possible Recommendation for Purchase of Camera Versus Contracting for Services: The Committee asked Breunig if our camera is working well. He said the camera is inoperable. The committee would like Breunig to get a quote on a new camera. Breunig has been working with Dave Magnussen from MSA on this.
- e. Discussion and Possible Action for Replacement of F250 Truck: Breunig included pictures in the packet of a truck he found for the Committee to look over. The truck is a 2008 Ford F-650 diesel rear wheel drive. The truck has only 39,822 miles on it and the cost is \$37,500. Breunig feels that it is a great deal. There are additions on the truck as well. There was discussion if this truck is what the Village needs. They discussed putting chains on the tires and adding a plow. Also, selling the backhoe that is on the truck could be an option. The truck would be good for hydrant flushing. There was talk about the possibility that the COWC truck may be up for replacement. And their truck would be a great truck for the Village to purchase. However, the truck is not currently for sale. The Committee agreed that the truck presented by Breunig is a good buy. After long discussion about the truck:

Struss made a motion to purchase the truck presented to the Committee pending an inspection from a licensed mechanic. Franklin seconded the motion. Motion carried on a 4-0 roll call vote.

8. New Business

- a. Discussion and Possible Action Regarding High Water Usage: Laura Demmerly – 311 N. Pleasant St.: Treasurer Brynwood started by explaining to the Committee that the MXU at Demmerly's apartment was not hooked up. The MXU is how our reading equipment calculates water usage. There were three months that Demmerly's were not charged for their water usage, because the MXU was not attached. Brynwood sent a letter to Demmerly in October regarding the MXU issue. There was no response, so Brynwood sent a certified letter in November. Demmerly called Brynwood and set up a time for the Water Department to come and hook up the MXU. After the MXU was hooked up properly, the usage read 30,000 gallons of consumption. Brynwood said this is the amount added up since the last proper reading. Demmerly said it is much higher than their typical usage. I said that 30,000 usage is 10,000 a month for the three months a reading was received. After much Committee discussion they agreed to issue a one-time sewer credit for Laura Demmerly.

Franklin made a motion to give Laura Demmerly a sewer credit in the amount of \$430.11. Struss seconded the motion. Motion carried on a 4-0 roll call vote.

- b. Dancing Goat Distillery – Initial Discussion Regarding Installation of Effluent Meter/Payment Structure: Nick Maas told the Committee that the Dancing Goat may decide to have water trucked in, and no longer purchase their water from the Village. Maas voiced his disapproval of the Village Water System, and other issues he has with the Village. Therefore, they are hoping to install a meter or sampler to measure the amount of actual sewer system usage, versus the amount of water trucked in. Administrator Moen said we will have to ask the engineers at MSA what would work best with our system. Greve of MSA said we would need to figure out a way of billing them as well. After much discussion the Committee would like MSA to check into the best option for the Village and the Dancing Goat.

9. Public Comment: Committee Member Struss showed the door knockers that COWC paid for, to be placed on Residents doors. The door knocker is to educate our Cambridge residents about what things can go down our sewer system and what should not.

10. Questions, Referrals to Staff or Future Agenda Items:

1. MSA – Report on Dancing Goat Effluent Meter
2. Truck Purchase
3. Camera Purchase
4. Update on Media Replacement

11. Adjournment:

Struss made a motion to adjourn the meeting. Gunseor seconded the motion. Kumbier adjourned the meeting at 9:15pm.

Vicki Redford

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1/14/2022 10:25 AM

In Progress Checks - Quick Report - ALL
ALL Checks by Payee
HOMETOWN BANK GENERAL OPERATING

Page: 1
ACCT

Dated From:
Thru:

From Account:
Thru Account:

Voucher Nbr	Check Date	Payee	Amount
	1/18/2022	1901 Inc. Mechanical & Plumbing WELL #2 HEATER INSTALLED	3,004.01
	1/18/2022	ABT Mailcom JANUARY BILLS	953.04
Previous Year Expense	1/18/2022	CAMBRIDGE/OAKLAND WASTEWATER COMMISSION JANUARY 2022	57,812.80
	1/18/2022	Core & Main T-HEAD B&N COR BLUE/MEGALUG BLK PIPE	3,908.75
Previous Year Expense	1/18/2022	DIGGERS HOTLINE INC DECEMBER 2021	13.92
Previous Year Expense	1/18/2022	FARRAR, LEE STATE LAB MADISON	116.56
Previous Year Expense	1/18/2022	MARTELLE WATER TREATMENT SODIUM HYPOCH BULK	276.74
	1/18/2022	NAPA AUTO PARTS BLINDER BULB/SERP BELT/TENS BELT	101.38
Previous Year Expense	1/18/2022	OAKLAND SANITARY DISTRICT DECEMBER 2021	453.50
	1/18/2022	PIGGLY WIGGLY - DAYS FAMILY FOODS DISTILLED WATER X 2	2.18
	1/18/2022	SJE ELEC SENIOR SERVICE/MILEAGE	654.35
	1/18/2021	SPRINGLAKE CONTRACTING INC MEDIA REPLACEMENT	86,000.00
Previous Year Expense	1/18/2022	USA BLUE BOOK EDTA CARTRIDGE	1,546.31
Previous Year Expense	1/18/2022	WISCONSIN STATE LABORATORY OF HYGIENE FLUORIDE/FLDFLUOR	26.00
Grand Total			154,869.54

1/14/2022 10:25 AM

In Progress Checks - Quick Report - ALL
ALL Checks by Payee
HOMETOWN BANK GENERAL OPERATING

Page: 2
ACCT

Dated From:
Thru:

From Account:
Thru Account:

	Amount
Total Expenditure from Fund # 100 - VILLAGE GENERAL FUND	76,062.25
Total Expenditure from Fund # 500 - WATER UTILITY	19,856.31
Total Expenditure from Fund # 600 - SEWER UTILITY	58,633.30
Total Expenditure from Fund # 800 - STORMWATER UTILITY	317.68
Total Expenditure from all Funds	154,869.54

SUBJECT: Andrew Swalheim

FROM: Vicki Redford, Utility Clerk

MEETING DATE: January 18,2022

BACKGROUND/ANALYSIS: Andy Swalheim called the Village Office and talked to me about the water usage at 309 E. North St. He noticed there has been much larger usage in the past several months and only his dad is living there. I had the Water Department check the meter reading a couple of times and followed up with calls to Andy. The Water Department had told Andy that the water meter would not be the problem. He told me he had a plumber come and check out the house and everything seemed ok. After the reading in July, it was decided that we would send the meter in to make sure it was working properly. The Water Department sent the meter in to be tested and it came back faulty. The usage changed in January of 2020 and has increased since. Andy is looking for a sewer credit for the time the meter was faulty.

CONTINUED: The Water and Sewer Committee decided in September to have Swalheim come back in January. They wanted to have meter readings on his new meter so an average water use could be determined.

ACTION REQUIRED: Committee decision for a sewer credit.

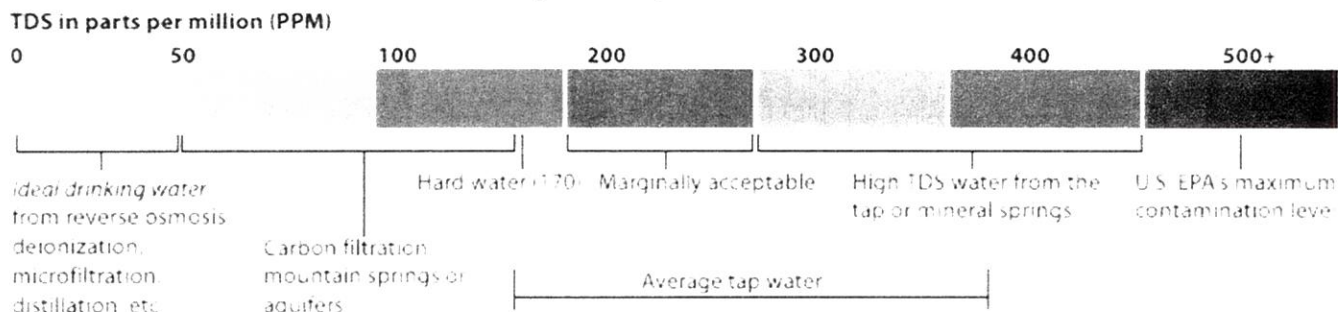
Vicki Redford
Utility Clerk



better water. pure and simple.

Total Dissolved Solids (TDS)

What is TDS? Total Dissolved Solids are a measure of calcium, phosphates, nitrates, sodium, potassium, chloride, and harmful pesticides. TDS is a measure of water quality and an indicator of chemical contaminants. Water with moderate to high TDS may taste bitter, salty or metallic and may have unpleasant odors.



WATER HARDNESS

The U.S. Department of the Interior quantifies hard water in the following way:

Soft	Less than 1.0 gpg, less than 17.1 ppm
Slightly Hard	1 to 3.5 gpg, 17.1 to 60 ppm
Moderately Hard	3.5 to 7.0 gpg, 60 to 120 ppm
Hard	7.0 to 10.5 gpg, 120 to 180 ppm
Very Hard	10.5 and over gpg, 180 and over ppm

The EPA Secondary Regulations advise a maximum contamination level (MCL) of 500mg/liter (500 parts per million (ppm)) for TDS. Numerous water supplies exceed this level. When TDS levels exceed 1000mg/L, it is generally considered unfit for human consumption. A high level of TDS is an indicator of potential concerns, and warrants further investigation. Most often, high levels of TDS are caused by the presence of potassium, chlorides and sodium. These ions have little or no short-term effects, but toxic ions (lead, arsenic, cadmium, nitrate and others) may also be dissolved in the water.

TDS: 375 ppm

HARDNESS HOT: 21 gpg

HARDNESS COLD: 21 gpg

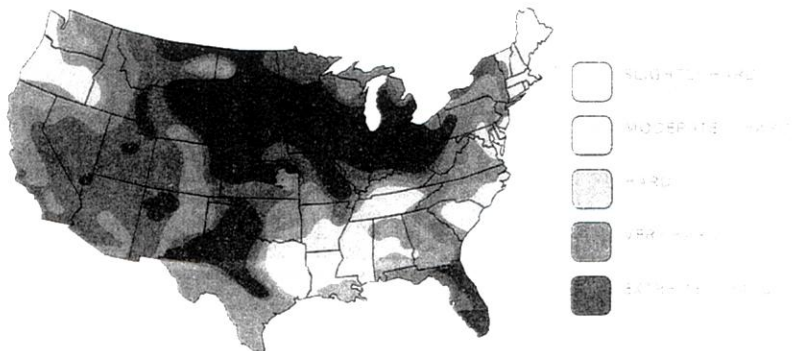
IRON: 0

NITRATES: 0

CHLORINE: 10 ppm

pH: 7.5

Water Hardness Levels in the U.S.



TREVOR DOYLE | LICENSED WATER SPECIALIST
608-516-8953 | tdoyle@total-water.com



TREVOR DOYLE
LICENSED WATER CONSULTANT
 TDOYLE@TOTAL-WATER.COM
 CELL: 608-516-8953 FAX: 608-226-5286
 WWW.CULLIGANTOTALWATER.COM

DATE: 12/30/21

<u>WATER SOFTENER OPTIONS</u>	<u>Rent</u>	<u>Purchase</u>
AQUASENTIAL HE SMART SENSOR SOFTENER: _____ <i>INCLUDES A FREE FILL UP WITH ASD SIGN UP</i>	\$45	\$1,995
AQUASENTIAL SMART HE METER SOFTENER: _____ <i>INCLUDES A FREE FILL UP WITH ASD SIGN UP</i>	\$40	\$1,795
AQUASENTIAL SELECT/SELECT PLUS SOFTENER: _____	\$33	\$1,349

DRINKING WATER OPTIONS

AQUASENTIAL SMART RO/
 AQUASENTIAL TANKED/TANKLESS RO/CLEER LINK (BUTTON): \$30 \$949

PROBLEM WATER FILTRATION:

IRON CLEER/SULFUR CLEER/BIRM FILTER/ACIDIC WATER/CARBON: \$30 \$1,119
INCLUDES ANNUAL MAINTENANCE WITH RENTAL

AUTOMATIC SALT DELIVERY/BOTTLED WATER DELIVERY: _____

COMBO PACKAGE

\$48 Select+ + RO, \$55 HE Meter + RO, \$60 HE Sensor + RO

\$25 added for whole home carbon

*UP TO 12 MONTHS OF RENTAL CREDIT CAN BE USED TOWARD A PURCHASE PRICE. YOU CAN RENT FOR AS LONG AS YOU WANT, OR PURCHASE AT ANYTIME. RENTAL CREDIT IS LIMITED TO 12 MONTHS.

To: Cambridge Water & Sewer Committee
Lisa Moen, Administrator/Clerk/Treasurer
Kris Breunig, Director of Public Work

From: Dan Greve, MSA

Subject: Wellhouse #2 Generator

Date: January 13, 2022

This memo is to follow up on the discussions at the December 21, 2021 Water & Sewer Committee meeting. We are requesting input on several items below, to inform MSA as to how the Village would like to proceed with these items. Perhaps final decisions on these items can be made at the January 18, 2022 Committee meeting.

Generator at Wellhouse #2

MSA presented a preliminary estimate for the cost of a generator and automatic transfer switch to handle all electrical loads at the Wellhouse #2 facility, with a recommendation that this work be incorporated into the Well #3 Water Treatment Facilities project. At the December 21 meeting there was discussion of instead providing a much smaller generator and manual transfer switch for the Wellhouse #2 single-phase loads only. This arrangement would power the chemical feed pumps, some heat, ventilation, controls, and lights. The disadvantages of this arrangement include:

- The Village operating staff would need to connect the right-angle drive and start the standby engine.
- The Village operating staff would need to start the chemical feed pumps manually (it would only be necessary to run the sodium hypochlorite (chlorine) pump, not the fluoride pump).
- The unit heaters in the chemical rooms would not be functional, as they are three-phase. If low temperature became a concern in the chemical rooms a small portable single-phase unit heater could be utilized in each chemical room by plugging it into a receptacle to energize it.
- The pressure aerator for the iron filter would not be functional, as it is provided air from the air compressor which operates with a three-phase motor. The chlorination provided may provide sufficient oxidation of iron to get adequate removal in the iron filter.
- It would not be possible to regenerate the softener vessels, because the brine pumps have three-phase motors. The need to regenerate the softeners would depend on when the softeners have last been regenerated prior to the power outage, and the duration of the power outage.
- It would be difficult at best to backwash the iron filter because the various valves on the facepiping are air-operated, using air from the compressor which has a three-phase motor.

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It might be possible for the Village operating staff to operate these valves manually, but this would require diligence to obtain backwashing of all four filter cells. The need to backwash the filters would depend on when the filters had last been backwashed prior to the power outage, and the duration of the power outage.

The preliminary estimated construction cost for the standby generator facility project is \$18,000. MSA can develop plans and specifications for the Village to distribute to electrical contractors to get proposals for the equipment, installation, and startup, and provide construction-related services, at a cost of \$6,000.

Action Requested: Please indicate whether MSA should proceed with development of plans and specifications for the generator, manual transfer switch, and various power and control wiring and conduit.

SCADA System Replacement

MSA presented a preliminary estimate for the cost of replacing the supervisory control and data acquisition (SCADA) system at the four Village water/wastewater sites (Village shop, Well #2, Elevated Water Storage Tank, Main Lift Station, and Kenseth Lift Station), with a recommendation that this work be incorporated into the Well #3 Water Treatment Facilities project. At the December 21 meeting there was a discussion of the potential for utilizing cell phone rather than radios for the SCADA system telemetry, and the scope and timing of the SCADA system replacement.

It is MSA's recommendation that the SCADA system continue to utilize radio-based telemetry. Having a SCADA system that communicates by cell phone may provide some relatively small initial cost savings, but those savings would be reduced and perhaps eliminated over the life of the system due to the monthly cost for data as charged by the cell phone provider. The biggest potential disadvantage to a cell phone-based system is that the level of service and promptness of service provided to address problems may be significantly less. A systems integration firm can generally be relied upon to provide a higher level of service.

With respect to the timing and scope of the SCADA system replacement, MSA continues to recommend that the SCADA system be replaced as part of the Well #3 Water Treatment Facility Project. The reasons for this recommendation include:

- The existing dedicated SCADA computer as a Windows 7 operating system, which is no longer supported and represents a security risk.
- The existing SCADA software runs on Windows 7 and will be obsolete when Windows 10 or 11 are provided with the new computer.
- The programmable logic controller (PLC) at three of the five sites are no longer supported by the manufacturer. These PLCs do not have an ethernet port, requiring serial communication at significantly lower transmission speed (see below). It is expected that the PLC at the other two sites will not be supported beyond 2-3 years from now (i.e., shortly after the Well #3 Water Treatment Facilities project is complete).
- The existing radios represent a security vulnerability and are expected to be obsolete in the near future. The radios are currently running serial communications which limits the transmission speed. The transmission speed could be increased by a factor of approximately four if the radios were put on ethernet communication, but ethernet is not possible unless the three obsolete PLCs are replaced as indicated above. The new radios

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recommended as part of the SCADA upgrade have the best known available security and would increase transmission speeds by a factor of approximately eight.

The preliminary estimated cost for the complete SCADA system replacement is \$100,000. As indicated at the December 21 meeting, MSA can develop plans and specifications and incorporate these into the Well #3 Water Treatment Facility Project at a cost of \$6500 and provide construction-related services for the SCADA system replacement at a cost of \$4500.

Action Requested: Please indicate whether MSA should proceed with development of plans and specifications for the SCADA system replacement, for incorporation into the Well #3 Water Treatment Facilities project.

Well #3 Water Treatment Facilities

MSA provided information regarding the proposed design for the Well #3 Water Treatment Facilities with respect to the site plan, the new Water Treatment Building, and renovation of the existing wellhouse. A preliminary site plan, preliminary floor plan and exterior elevations for the Water Treatment Building, and preliminary exterior elevations for the renovated Wellhouse #3 were provided and discussed, along the materials of construction for the buildings. The Committee seemed to agree with the preliminary design based on the information MSA provided.

There was discussion of the use of brick veneer with stone cap and accent engineered wood siding, versus split block masonry, for the Water Treatment Building. MSA recommends the brick veneer with stone cap and accent engineered wood siding based on the building appearance and long-term maintenance. The brick veneer with stone cap and accept engineered wood siding provides more opportunity for architectural enhancement of the building appearance. With respect to maintenance, masonry block is concrete and because it can retain water, there can be freeze/thaw degradation over time. This can be prevented with the use of a water repellent, but the repellent needs to be re-applied every 5-10 years. There would be some additional cost for the use of brick, mostly in labor because the brick is smaller than masonry block. But the plan is to use larger brick (4" tall x 16" long), so the labor cost will be similar to that for masonry block.

The preliminary design provides for one window, on the west wall of the building in the Lab/Office space. There is an opportunity to provide additional windows. One or more windows might be provided on the east wall of the building for viewing to the outside, but for the most part the only function of additional windows would be to provide natural light. Because of the water treatment equipment (filter and softener vessels) along the north and south walls, any windows in those walls would be high, near the ceiling.

There was discussion of the use of radiant in-floor heating in the Water Treatment Building. Radiant heating was not included in the preliminary design because of the need for a boiler (and a location for that boiler) and insulation under the entire slab. The two chemical rooms would each require a unit heater regardless, to address the volume of cold air that will be introduced into the rooms in the winter during ventilation at the required rate of air changes per minute. The estimated additional cost for radiant in-floor heating is approximately \$17,000 after eliminating the unit heaters in the treatment room. Because the building will be mostly unoccupied, it's the opinion of MSA that the additional cost is not warranted and would have a long payback period in terms of energy savings.

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Action Requested: Please provide input on the following:

- Is the Village in agreement with the preliminary site plan, building floor plan, building exterior elevations, and materials of construction, as presented by MSA at the December 21 meeting?
- Does the Village want to include additional windows in the Water Treatment Building?
- Does the Village want to include radiant in-floor heating in the Water Treatment Building?

I will be at the January 18, 2022 Water & Sewer Committee meeting for further discussion of the above items. In the meantime, if there are questions or comments please contact me by email at dgreve@msa-ps.com or by telephone at (608) 355-8873. Thank you.



Sales Quote

Kurita America Inc.
6600 94th Ave North
Minneapolis, MN 55445

Sales Quote Number: SLSQ30589
Sales Quote Date: 1/3/2022
Quote Expiration Date: 3/4/2022
Quote Prepared by: T.SKAROLID

Bill
To: Cambridge WI
Po Box 99
Cambridge, WI 53523-0099
USA

Sell
To: Cambridge WI
Po Box 99
Cambridge, WI 53523-0099
USA

Ship
To: Cambridge WI
Po Box 99
Cambridge, WI 53523-0099
USA

Tax Ident. Type Legal Entity

Customer ID TW00113

Ship Via Parcel
Terms Net 30

SalesPerson Tyler Skarolid

Item No.	Description	Unit	Quantity	Unit Price	Total Price
EQUIP-FIELDSERVTR-HR	Field Service Travel Time	Hour	10	150.00	1,500.00
EQUIP-FIELDSERV-HR	Field Service - Hours on Site	Hour	8	150.00	1,200.00
EQUIP-PERDIEM	Per Diem	Each	1	200.00	200.00

Notes:

- This quote is valid for 60 days.
- For your convenience, this quote may be used as your order for this equipment. To use this quote to submit an order, please complete the following and return to your Sales Representative.

PO Number: _____

Company/Firm Name: _____

Print Name: _____

Signature: _____

Unless otherwise specified, freight is not included.

Amount Subject to Sales Tax 0.00
Amount Exempt from Sales Tax 2,900.00

Subtotal: **2,900.00**
Invoice Discount: 0.00
Total Sales Tax: 0.00

Total: **2,900.00**



Sales Quote

Kurita America Inc.
6600 94th Ave North
Minneapolis, MN 55445

Sales Quote Number: SLSQ30589
Sales Quote Date: 1/3/2022
Quote Expiration Date: 3/4/2022
Quote Prepared by: T.SKAROLID

KURITA AMERICAS STANDARD WARRANTY POLICY & PROCEDURES

Kurita America Inc. will cover under warranty all parts sold to be free of defects in material or workmanship. Liability under this policy extends for 15 months from ship date or one year from the installation, whichever occurs first. Kurita Americas' liability is limited to replace and/or repair the failed equipment or part which has been proven defective in material or workmanship upon Kurita Americas' and/or the manufacturer's examination. This warranty does not include removal, installation, labor costs or freight charges incurred and in no event shall Kurita Americas liability exceed the selling price of such equipment or part.

EXCEPTIONS:

- Parts that have not been installed by Kurita Americas technicians and were not installed per the manufacturer specifications.
- Parts that were not used, operated and/or maintained per the manufacturer specifications or use instructions.
- OEM parts and accessories are subject to the terms and conditions of each manufacturer.
- Analytical sensors (conductivity, pH, ORP, etc.) are all considered consumable parts not covered under warranty.
- Pump tube assemblies and rubber components are considered perishable and not covered under warranty.
- Gaskets, seals, pump seals, O-rings, etc. are considered perishable and not covered under warranty.
- Used and/or refurbished parts purchased will have a 90 day warranty from ship date.
- Damage to circuit boards is not warranted if caused by failure to seal the controller door after servicing, (if service was not performed by a Kurita Americas technician) and/or if the top of enclosure conduit entries are not sealed.

Only new, unused and undamaged parts/equipment will be accepted for return. Any part returned to Kurita Americas for evaluation, repair or replacement must have a Return Material Authorization number assigned before it is returned. Kurita Americas is not responsible for parts returned without an RMA number. Contact your sales or customer service representative to obtain an RMA number.

A 25% re-stocking/evaluation fee will be applied to all non-warranty returned parts. Returned parts covered under warranty will not be credited to the customer until Kurita Americas has received credit from the part supplier.

The RMA number must be clearly noted on the outside of the return package. Kurita Americas will not provide replacement parts for use during the warranty evaluation/repair process. Replacement parts will require a PO for order processing and will be invoiced accordingly.

****NOTE****

OEM evaluation processes can take up to 6 weeks to determine if a part is covered under warranty. Kurita Americas strongly recommends purchasing spare parts for critical applications.

Section V—Reactivity Data

Stability	Unstable		Conditions to Avoid
	Stable		

Incompatibility (*Materials to Avoid*)

Hazardous Decomposition or Byproducts

Hazardous Polymerization	May Occur		Conditions to Avoid
	Will Not Occur		

Section VI—Health Hazard Data

Route(s) of Entry	Inhalation?	Skin?	Ingestion?
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Health Hazards (*Acute and Chronic*)

Carcinogenicity	NTP?	IARC Monographs?	OSHA Regulated?
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Signs and Symptoms of Exposure

Medical Conditions
Generally Aggravated by Exposure

Emergency and First Aid Procedures

Section VII—Precautions for Safe Handling and Use

Steps to Be Taken in Case Material Is Released or Spilled

Waste Disposal Method

Precautions to Be Taken in Handling and Storing

Other Precautions

Section VIII—Control Measures

Respiratory Protection (*Specify Type*)

Ventilation	Local Exhaust	Special
	Mechanical (<i>General</i>)	Other

Protective Gloves	Eye Protection
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Other Protective Clothing or Equipment

Work/Hygienic Practices

SAFETY DATA SHEET

GREASE-X NO. 367
Product ID: FP036701
Revised: 03-10-2015
Replaces: 01-09-2015

1. IDENTIFICATION

Product Identifier: GREASE-X NO. 367
Other Identifiers: N.A.
CAS Number: Mixture
Recommended Use: No data available.
Restrictions on Use: No data available.

Hydrite Chemical Co.
300 N. Patrick Blvd.
Brookfield, WI 53008-0948
(262) 792-1450

EMERGENCY RESPONSE NUMBERS:
24 Hour Emergency #: (414) 277-1311
CHEMTREC Emergency #: (800) 424-9300

2. HAZARD(S) IDENTIFICATION

GHS Classification(s): Substance or mixture corrosive to metals Category 1
Skin Corrosion/Irritation Category 1B
Serious Eye Damage/Eye Irritation Category 1

GHS Label Elements:

GHS Hazard Symbols:



Signal Word: Danger

Hazard Statements: May be corrosive to metals.
Causes severe skin burns and eye damage.

Precautionary Statements:

Prevention: Keep only in original container.
Do not breathe dust/fume/gas/mist/vapours/spray.
Wash thoroughly after handling.
Wear protective gloves/protective clothing/eye protection/face protection.

Response: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a POISON CENTER or doctor/physician.
Specific treatment (see First Aid on SDS or on this label).
Wash contaminated clothing before reuse.
Absorb spillage to prevent material damage.

Storage: Store in a secure manner.
Store in corrosive resistant container with a resistant inner liner.

Disposal: Dispose of in accordance with local, regional and international regulations.

Hazards Not Otherwise Classified: Potential peroxide former. May react with various food sugars to form

carbon monoxide.

Percentage of Components with Unknown Acute Toxicity:

Dermal: 12.8 %
Inhalation Vapor: 22.7 %
Inhalation Dust/Mist: 22.7 %

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substances/Mixtures:

<u>Chemical or Common Name/Synonyms</u>	<u>CAS Number</u>	<u>% by Wt.</u>
Diethylene Glycol Monobutyl Ether	112-34-5	< 15 %
Sodium Xylene Sulfonate	1300-72-7	< 10 %
Potassium Hydroxide	1310-58-3	< 5 %
Secondary Alcohol Ethoxylate	84133-50-6	< 5 %
Potassium Silicate	1312-76-1	< 3 %

Note: Any chemical identity and/or exact percentage not expressly stated is being withheld as a trade secret or is due to batch variation.

4. FIRST-AID MEASURES

Description of Necessary Measures:

Eye Contact: If in eyes: Immediately flush eyes with plenty of water for at least 15 minutes while holding eyelids open. Tilt head to avoid contaminating unaffected eye. Get immediate medical attention. Remove contact lens if easy to do. Continue flushing eye for at least 15 minutes. Washing eyes within several seconds is essential to achieve maximum effectiveness.

Skin Contact: If on skin: Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately. Do not reuse clothing and shoes until cleaned. Wash with soap and water. If skin feels slippery, caustic may still be present in sufficient quantities to cause rash or burn. Continue washing skin until slick feeling is gone. Discard footwear which cannot be decontaminated. Discard contaminated leather articles such as shoes and belt.

Inhalation: If inhaled: Remove to fresh air. If breathing is difficult, administer oxygen. If not breathing, give artificial respiration, preferably mouth-to-mouth. GET MEDICAL ATTENTION IMMEDIATELY.

Ingestion: If swallowed: If fully conscious, drink a quart of water. DO NOT induce vomiting. CALL A PHYSICIAN IMMEDIATELY. If unconscious or in convulsions, take immediately to a hospital or a physician. NEVER induce vomiting or give anything by mouth to an unconscious victim. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into the lungs.

Most Important Symptoms/Effects, Acute and Delayed:

Eye Contact: CORROSIVE-Causes severe irritation and burns. May cause: corneal damage. impaired vision. eye damage. permanent eye damage. blindness.

Skin Contact: CORROSIVE-Causes severe irritation and burns. Contact may cause: redness. swelling. dermatitis (inflammation of the skin). scab formation. ulceration. permanent skin damage. Effects from chronic skin exposure would be similar to those from single exposure and may include effects secondary to tissue destruction.

Skin Absorption: Material can penetrate to deeper layers of skin and corrosion will continue until removed. The severity of injury depends on the concentration and duration of exposure.

Inhalation: CORROSIVE-Causes severe irritation and burns. May irritate or damage: nose. mouth. throat. lungs. respiratory tract. May cause: shortness of breath. wheezing. coughing. sneezing. choking. chest pain. ulceration and perforation of the nasal septum. impaired lung function. pulmonary edema. pneumonitis. death.

Ingestion: CORROSIVE-Causes severe irritation and burns. May cause damage to the: mouth. throat. stomach. gastrointestinal tract. May cause: nausea. vomiting. diarrhea. vomiting (bloody). abdominal pain. bleeding. ulcerations. severe gastrointestinal damage. perforation of the intestinal tract. death. Blood loss through

damaged tissue can lead to low blood pressure and shock. Effects from chronic exposure would be similar to those from single exposure and may include effects secondary to tissue destruction. Aspiration into the lungs may cause chemical pneumonia and lung damage.

Indication of Immediate Medical Attention and Special Treatment Needed: Probable mucosal damage may contraindicate the use of gastric lavage. The absence of visible signs or symptoms of burns does not reliably exclude the presence of actual tissue damage. Respiratory symptoms, including pulmonary edema, may be delayed. Persons receiving significant exposure should be observed 24-48 hours for signs of respiratory distress.

5. FIRE-FIGHTING MEASURES

Extinguishing Media: Water spray. Dry chemical. Carbon dioxide. Alcohol foam.

Specific Hazards Arising from the Chemical:

Fire and Explosion Hazards: Product may react with some metals (ex.: Aluminum, Zinc, Tin, etc.) to release flammable hydrogen gas. Container may rupture from gas generation in a fire situation. Forms peroxides of unknown stability. Product generates heat upon addition of water, with possible spattering. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids.

Hazardous Combustion Products: During a fire, smoke may contain the original material in addition to combustion products of varying composition, which may be toxic and/or irritating. Combustion products may include and are not limited to: Carbon monoxide. Carbon dioxide. Carbon oxides. Sulfur oxides. Irritating gases. Irritating vapors.

Special Protective Equipment and Precautions for Fire-Fighters: Evacuate area of unprotected personnel. Wear protective clothing including NIOSH-approved self-contained breathing apparatus. Remain upwind of fire to avoid hazardous vapors and decomposition products. Use water spray to cool fire-exposed containers. If container is not properly cooled, it can rupture in the heat of a fire. Move containers from fire area if possible without hazard. Run-off from fire control may cause pollution.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment, Emergency Procedures: Eliminate all sources of ignition. Evacuate unprotected personnel from area. Maintain adequate ventilation. Follow personal protective equipment recommendations found in Section 8. Never exceed any occupational exposure limit.

Methods and Materials for Containment and Clean Up: Contain spill, place into drums for proper disposal. Soak up residue with non-flammable absorbent material. Place in non-leaking containers for immediate disposal. Flush remaining area with water to remove trace residue and dispose of properly. **CAUTION:** This product may react violently with acids and water. Avoid direct discharge to sewers and surface waters. Notify authorities if entry occurs.

7. HANDLING AND STORAGE

Precautions for Safe Handling: Avoid contact with eyes, skin, and clothing. Use with adequate ventilation. Do not swallow. Avoid breathing vapors, mists, or dust. Do not eat, drink, or smoke in work area. Wash thoroughly after handling. Empty containers retain product residue (vapor, dust, or liquid) and can be dangerous. **DO NOT** pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other source of ignition. They may explode and cause injury or death. Distill with caution. When mixing, slowly add to water to minimize heat generation and spattering. Do not add large quantities of water, excessive heat formation will cause boiling and spattering.

Conditions for Safe Storage, Including any Incompatibilities: **CORROSIVE MATERIAL.** Store in a cool, well ventilated area, out of direct sunlight. Store in a dry location away from heat. Keep away from incompatible materials. Keep containers tightly closed. Do not store in unlabeled or mislabeled containers. Keep away from all sources of ignition. Minimize exposure to air. Do not allow to evaporate to near dryness. If peroxide formation is suspected, do not open or move container. Do not store in aluminum container or use aluminum fittings or transfer lines. Highly corrosive to most metals with evolution of hydrogen gas. Never enter a pit or tank without

following safety procedures-never alone, always with a lifeline and positive pressure supplied air. Contact of caustic potash cleaning solutions with food and beverage products (in enclosed vessels or spaces) can produce lethal concentrations of carbon monoxide gas.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

OSHA Exposure Guidelines:

Component	Limits
No components found.	

ACGIH Exposure Guidelines:

Component	Limits
Diethylene Glycol Monobutyl Ether	10 ppm TWA (inhalable fraction and vapor)
Potassium Hydroxide	2 mg/m ³ Ceiling

Engineering Controls: General room ventilation and local exhaust are required. Local exhaust ventilation, process enclosures or other engineering controls may be needed to maintain airborne levels below recommended exposure limits. Use explosion-proof ventilation equipment. Avoid creating dust or mist. Maintain adequate ventilation. Do not use in closed or confined spaces. Keep levels below exposure limits. To determine exposure levels, monitoring should be performed regularly.

Individual Protection Measures:

Eye/Face Protection: Wear chemical safety goggles and a full face shield while handling this product. Wear a full-face respirator, if needed.

Skin Protection: Prevent contact with this product. Wear gloves and protective clothing depending on condition of use. Protective gloves: Chemical-resistant. Rubber. Neoprene.

Respiratory Protection: Respiratory protection must be worn if ventilation does not eliminate symptoms or keep levels below recommended exposure limits. NIOSH-Approved self-contained breathing apparatus. DO NOT exceed limits established by the respirator manufacturer. All respiratory protection programs must comply with OSHA 29 CFR 1910.134 and ANSI Z88.2 requirements and must be followed whenever workplace conditions require a respirator's use.

Other Protective Equipment: Eye-wash station. Safety shower. Protective clothing. Full chemical suit. Rubber apron. Rubber boots. Full body suit.

General Hygiene Conditions: Food, beverages, and tobacco products should not be carried, stored or consumed where this material is in use. Wash with soap and water before meal times and at the end of each work shift. Good manufacturing practices require gross amounts of any chemical be removed from skin as soon as practical, especially before eating or smoking.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Liquid.

Color: Clear. Light yellow.

Odor: Mild odor.

Odor Threshold: N.D.

pH: > 12 (as is)

Freezing Point (deg. F): N.D.

Melting Point (deg. F): N.D.

Initial Boiling Point or Boiling Range: N.D.

Flash Point: NONE.

Flash Point Method: N.A.

Evaporation Rate (nBuAc = 1): N.D.

Flammability (solid, gas): N.D.

Lower Explosion Limit: N.A.

Upper Explosion Limit: N.A.

Vapor Pressure (mm Hg): N.D.
Vapor Density (air=1): N.D.
Specific Gravity or Relative Density: 1.075 @ 25 Deg. C
Solubility in Water: Complete
Partition Coefficient (n-octanol/water): N.D.
Autoignition Temperature: No Data
Decomposition Temperature: N.D.
Viscosity: N.D.
% Volatile (wt%): N.D.
VOC (wt%): ~10
VOC (lbs/gal): ~0.9
Fire Point: N.D.

10. STABILITY AND REACTIVITY

Reactivity: No dangerous reaction known under conditions of normal use.

Chemical Stability: Stable under normal conditions.

Possibility of Hazardous Reactions: Hazardous polymerization will not occur under normal conditions. Produces Chloroacetylene with chlorinated alkenes and heat. Reactions with various food sugars may form carbon monoxide. May react with ammonium salts resulting in evolution of ammonia gas. Flammable hydrogen gas may be produced on contact with aluminum, tin, lead, and zinc.

Conditions to Avoid: Product can oxidize at elevated temperatures. Forms peroxides of unknown stability. Avoid excess exposure to air. Do not distill to dryness. Generation of gas during decomposition can cause pressure in closed systems. Contact with water may cause violent reaction with evolution of heat. To dilute: Add product slowly to lukewarm water; not water to product. Contact with acid or incompatible materials may cause a violent reaction with evolution of heat. Product may react with some metals (ex.: Aluminum, Zinc, Tin, etc.) to release flammable hydrogen gas. Corrosive to steels at elevated temperatures. Contact of caustic potash cleaning solutions with food and beverage products (in enclosed vessels or spaces) can produce lethal concentrations of carbon monoxide gas.

Incompatible Materials: Strong oxidizing agents. Strong acids. Strong bases. Acids. Acrolein. Acrylonitrile. Chlorinated hydrocarbons. Chlorine dioxide. Maleic anhydride. Nitroethane. Nitroparaffins. 2-Nitrophenol. Nitropropane. Phosphorus. Potassium persulfate. Tetrahydrofuran. Organic nitro compounds. Explosives. Organic peroxides. Halogenated compounds. Chlorinated alkenes. Carbohydrates. Metals such as aluminum, zinc, tin, etc. Brass. Bronze. Oxidizing agents. Flammable liquids. Copper. Lead. Other alkali sensitive metals or alloys. Acetaldehyde. Can attack some forms of plastics. Sodium borohydride. Food sugars. Deadly carbon monoxide gas can form in enclosed or poorly ventilated areas or tanks when alkaline products contact food, beverage, or dairy products. Do not enter such areas until they have been well ventilated and carbon monoxide and oxygen levels have been determined to be within OSHA acceptable limits. If carbon monoxide and oxygen levels cannot be measured, wear NIOSH-approved, self-contained breathing apparatus. Ammonium salts. Aluminum. Tin. Zinc.

Hazardous Decomposition Products: Aldehydes. Ketones. Organic acids. Potassium dioxide. May react with certain metals to produce flammable hydrogen gas. Carbon monoxide. Hydrogen gas.

11. TOXICOLOGICAL INFORMATION

Routes of Exposure: Eyes. Ingestion. Inhalation. Skin. Absorption.

Symptoms/Effects: Acute, Delayed and Chronic:

Eye Contact: CORROSIVE-Causes severe irritation and burns. May cause: corneal damage. impaired vision. eye damage. permanent eye damage. blindness.

Skin Contact: CORROSIVE-Causes severe irritation and burns. Contact may cause: redness. swelling. dermatitis (inflammation of the skin). scab formation. ulceration. permanent skin damage. Effects from chronic

skin exposure would be similar to those from single exposure and may include effects secondary to tissue destruction.

Skin Absorption: Material can penetrate to deeper layers of skin and corrosion will continue until removed. The severity of injury depends on the concentration and duration of exposure.

Inhalation: CORROSIVE-Causes severe irritation and burns. May irritate or damage: nose. mouth. throat. lungs. respiratory tract. May cause: shortness of breath. wheezing. coughing. sneezing. choking. chest pain. ulceration and perforation of the nasal septum. impaired lung function. pulmonary edema. pneumonitis. death.

Ingestion: CORROSIVE-Causes severe irritation and burns. May cause damage to the: mouth. throat. stomach. gastrointestinal tract. May cause: nausea. vomiting. diarrhea. vomiting (bloody). abdominal pain. bleeding. ulcerations. severe gastrointestinal damage. perforation of the intestinal tract. death. Blood loss through damaged tissue can lead to low blood pressure and shock. Effects from chronic exposure would be similar to those from single exposure and may include effects secondary to tissue destruction. Aspiration into the lungs may cause chemical pneumonia and lung damage.

Numerical Measures of Toxicity:

Component	Oral LD50	Dermal LD50	Inhalation LC50
Diethylene Glycol	Rat: 3384 mg/kg	Rabbit: 2700 mg/kg	No Data
Monobutyl Ether			
Sodium Xylene Sulfonate	Rat: 1000 mg/kg	No Data	No Data
Potassium Hydroxide	Rat: 214 mg/kg	No Data	No Data
Secondary Alcohol Ethoxylate	Rat: 2100 mg/kg	No Data	No Data
Potassium Silicate	Rat: 1300 mg/kg	No Data	No Data

Acute Toxicity Estimate (ATE):

Oral: 5388 mg/kg
Inhalation Vapor: 24.7501 mg/L
Inhalation Dust/Mist: 24.7501 mg/L

Cancer Information:

This product does not contain 0.1% or more of the known or potential carcinogens listed in NTP, IARC, or OSHA.

Medical Conditions Aggravated by Exposure to Product: Dermatitis. Asthma. Respiratory system disorders. Eye disorders. Cardiovascular disorders.

Other: In animals, effects have been reported on the following organs: Blood. Kidney. Liver. This material will affect all tissues with which it comes into contact. The severity of the tissue damage is a function of concentration, the length of tissue contact time, and local tissue conditions. After exposure, there may be a time delay before irritation and other effects occur.

12. ECOLOGICAL INFORMATION

Ecotoxicological Information: No data available.

Chemical Fate Information: No data available.

13. DISPOSAL CONSIDERATIONS

Hazardous Waste Number: D002

Disposal Method: Dispose of in a permitted hazardous waste management facility following all local, state and federal regulations. Since emptied containers retain product residue, follow label warnings even after container is emptied. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. Do NOT dump into any sewers, on the ground, or into any body of water. The information offered here is for the product as shipped. Use and/or alteration to the product such as

mixing with other materials may significantly change the characteristics of the material and alter the RCRA classification and the proper disposal method.

14. TRANSPORT INFORMATION

DOT (Department of Transportation):

Identification Number: UN3266
Proper Shipping Name: Corrosive Liquid, Basic, Inorganic, N.O.S. (Contains Potassium Hydroxide)
Hazard Class: 8
Packing Group: II
Reportable Quantity (RQ): 1000# (Potassium Hydroxide)

15. REGULATORY INFORMATION

TSCA Inventory Status: All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements.

SARA Title III Section 311/312 Category Hazards:

<u>Immediate (Acute)</u>	<u>Delayed (Chronic)</u>	<u>Fire Hazard</u>	<u>Pressure Release</u>	<u>Reactive</u>
Yes	Yes	No	No	No

<u>Regulated Components:</u>	<u>CAS</u>	<u>CERCLA</u>	<u>SARA</u>	<u>SARA</u>	<u>U.S.</u>	<u>WI</u>	<u>Prop</u>
<u>Component</u>	<u>Number</u>	<u>RQ</u>	<u>EHS</u>	<u>313</u>	<u>HAP</u>	<u>HAP</u>	<u>65</u>
Diethylene Glycol Monobutyl Ether	112-34-5	No	No	Yes	Yes	No	No
Potassium Hydroxide	1310-58-3	Yes	No	No	No	Yes	No

*Prop 65 - May Contain the Following Trace Components:

This product may contain a detectable level of (a) chemical(s) subject to California's Proposition 65.

16. OTHER INFORMATION

Hazard Rating System

Health: 3*

Flammability: 0

Reactivity: 0

* = Chronic Health Hazard

NFPA Rating System

Health: 3

Flammability: 0

Reactivity: 0

Special Hazard: None

SDS Abbreviations

N.A. = Not Applicable

N.D. = Not Determined

HAP = Hazardous Air Pollutant

VOC = Volatile Organic Compound

C = Ceiling Limit

N.E./Not Estab. = Not Established

SDS Prepared by: JAK

Reason for Revision: Product formulation change. Changes made throughout the SDS.

Revised: 03-10-2015

Replaces: 01-09-2015

GREASE-X NO. 367
Product ID: FP036701

The data in this Safety Data Sheet relates to the specific material designated and does not relate to its use in combination with any other material or process. The data contained is believed to be correct. However, since conditions of use are outside our control it should not be taken as warranty or representation for which HYDRITE CHEMICAL CO. assumes legal responsibility. This information is provided solely for your consideration, investigation, and verification.



SAFETY DATA SHEET

1. Identification

Product identifier Citric Acid Anhydrous
Other means of identification None.
Recommended use Food additive. Industrial.
Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Company name Cargill, Incorporated
Address Minneapolis, MN 55440
Telephone 1-800-215-7868
E-mail Not available.

Emergency phone number 1-800-424-9300

2. Hazard(s) identification

Physical hazards Not classified.
Health hazards Skin corrosion/irritation Category 2
 Serious eye damage/eye irritation Category 2A
 Specific target organ toxicity, single exposure Category 3 respiratory tract irritation
OSHA defined hazards Combustible dust

Label elements



Signal word Warning

Hazard statement May form combustible dust concentrations in air. Causes skin irritation. Causes serious eye irritation. May cause respiratory irritation.

Precautionary statement

Prevention Prevent dust accumulation to minimize explosion hazard. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Avoid breathing dust. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area. Wear protective gloves/eye protection/face protection.

Response If skin irritation occurs: Get medical advice/attention. If eye irritation persists: Get medical advice/attention. Take off contaminated clothing and wash before reuse. In case of fire: Use appropriate media to extinguish.

Storage Store in a well-ventilated place. Keep container tightly closed. Store locked up.

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

Hazard(s) not otherwise classified (HNOC) None known.

Supplemental information None.

3. Composition/information on ingredients

Substances

Chemical name	Common name and synonyms	CAS number	%
Citric acid		77-92-9	100

Composition comments All concentrations are in percent by weight unless otherwise indicated.

4. First-aid measures

Inhalation	If dust from the material is inhaled, remove the affected person immediately to fresh air. Call a POISON CENTER or doctor/physician if you feel unwell.
Skin contact	Wash with plenty of soap and water. Take off contaminated clothing and wash before reuse. If skin irritation occurs: Get medical advice/attention.
Eye contact	Do not rub eyes. Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
Ingestion	Get medical attention if symptoms occur.
Most important symptoms/effects, acute and delayed	Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Dusts may irritate the respiratory tract, skin and eyes. Skin irritation. May cause redness and pain.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.
General information	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 (CO ₂). Apply extinguishing media carefully to avoid creating airborne dust.
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	Explosion hazard: Avoid generating dust; fine dust dispersed in air in sufficient concentrations and in the presence of an ignition source is a potential dust explosion hazard.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
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.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	May form combustible dust concentrations in air.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Use only non-sparking tools. Keep out of low areas. Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Avoid inhalation of dust. Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Take precautionary measures against static discharge. Use only non-sparking tools. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Minimize dust generation and accumulation. If sweeping of a contaminated area is necessary use a dust suppressant agent which does not react with the product. Collect dust using a vacuum cleaner equipped with HEPA filter. This product is miscible in water. Prevent entry into waterways, sewer, basements or confined areas. Stop the flow of material, if this is without risk. Large Spills: Wet down with water and dike for later disposal. Following product recovery, flush area with water. Small Spills: Sweep up or vacuum up spillage and collect in suitable container for disposal. Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.
Environmental precautions	Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling

Minimize dust generation and accumulation. Avoid significant deposits of material, especially on horizontal surfaces, which may become airborne and form combustible dust clouds and may contribute to secondary explosions. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. Dry powders can build static electricity charges when subjected to the friction of transfer and mixing operations. Provide adequate precautions, such as electrical grounding and bonding, or inert atmospheres. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Explosion-proof general and local exhaust ventilation. Avoid contact with skin and eyes. Avoid breathing dust. Avoid contact with clothing. Avoid prolonged exposure. In case of insufficient ventilation, wear suitable respiratory equipment. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Store locked up. Keep away from heat, sparks and open flame. Keep containers tightly closed in a dry, cool and well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-3 (29 CFR 1910.1000)

Components	Type	Value	Form
Dust	TWA	5 mg/m ³	Respirable fraction.
		15 mg/m ³	Total dust.
		50 mppcf	Total dust.
		15 mppcf	Respirable fraction.

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Dust	TWA	3 mg/m ³	Respirable particles.
		10 mg/m ³	Inhalable particles.

Biological limit values

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

Appropriate engineering controls

Explosion-proof general and local exhaust ventilation. 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. Ventilation should be sufficient to effectively remove and prevent buildup of any dusts or fumes that may be generated during handling or thermal processing. If engineering measures are not sufficient to maintain concentrations of dust particulates below the Occupational Exposure Limit (OEL), suitable respiratory protection must be worn. 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 safety glasses with side shields (or goggles).

Skin protection

Hand protection

Wear appropriate chemical resistant gloves.

Skin protection

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. Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits.

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

Physical state

Solid.

Form

Granules.

Color

White.

Odor

Not available.

Odor threshold	Not available.
pH	2.2
Melting point/freezing point	307.4 °F (153 °C)
Initial boiling point and boiling range	Not available.
Flash point	Not available.
Evaporation rate	Not available.
Flammability (solid, gas)	Combustible dust.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Soluble
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	1011°C (1852°F)
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Molecular formula	C6-H8-O7
Molecular weight	192.12 g/mol

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Keep away from heat, sparks and open flame. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Contact with incompatible materials. Minimize dust generation and accumulation.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Inhalation of dusts may cause respiratory irritation.
Skin contact	Causes skin irritation. Dust may irritate skin.
Eye contact	Causes serious eye irritation. Dust in the eyes will cause irritation.
Ingestion	Expected to be a low ingestion hazard.

Symptoms related to the physical, chemical and toxicological characteristics Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Dusts may irritate the respiratory tract, skin and eyes. Skin irritation. May cause redness and pain.

Information on toxicological effects

Acute toxicity	Not expected to be acutely toxic.
Skin corrosion/irritation	Causes skin irritation.
Serious eye damage/eye irritation	Causes serious eye irritation.

Respiratory or skin sensitization**Respiratory sensitization** Not a respiratory sensitizer.**Skin sensitization** This product is not expected to cause skin sensitization.**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.**IARC Monographs. Overall Evaluation of Carcinogenicity**

Not listed.

NTP Report on Carcinogens

Not listed.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not regulated.

Reproductive toxicity This product is not expected to cause reproductive or developmental effects.**Specific target organ toxicity - single exposure** May cause respiratory irritation.**Specific target organ toxicity - repeated exposure** Due to lack of data the classification is not possible.**Aspiration hazard** Not classified.**Chronic effects** Prolonged inhalation may be harmful.**12. Ecological information****Ecotoxicity** The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.**Persistence and degradability** No data is available on the degradability of this product.**Bioaccumulative potential** No data available.**Mobility in soil** Expected to be slightly to moderately mobile in soil.**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** Dispose of contents/container in accordance with local/regional/national/international regulations.**Local disposal regulations** Dispose of in accordance with local 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.**Contaminated packaging** Empty containers should be taken to an approved waste handling site for recycling or disposal.**14. Transport information****DOT**

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.**15. Regulatory information****US federal regulations** This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.**TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)**

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)**SARA 302 Extremely hazardous substance**

Not listed.

SARA 311/312 Hazardous chemical

Yes

Classified hazard categories

Combustible dust
 Skin corrosion or irritation
 Serious eye damage or eye irritation
 Specific target organ toxicity (single or repeated exposure)

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)

Total food additive
 Direct food additive
 GRAS food additive

US state regulations

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. Massachusetts RTK - Substance List

Not regulated.

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

Not listed.

US. Pennsylvania Worker and Community Right-to-Know Law

Not listed.

US. Rhode Island RTK**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
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	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 19-June-2014

Revision date

22-November-2017

Version #

04

Further information

Refer to NFPA 654, Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing, and Handling of Combustible Particulate Solids, for safe handling.

HMIS® ratings

Flammability: 1

NFPA ratings**Disclaimer**

The information contained herein is believed to be true and accurate. However, all statements, recommendations or suggestions are made without any guarantee, representation or warranty, express or implied, on our part. Therefore, no warranty is made or to be implied that the information set out in this document is accurate or complete, and we accordingly exclude all liability in connection with the use of this information or the products referred to herein. All such risks are assumed by the purchaser/user. For the avoidance of doubt, however, nothing in this document excludes or limits our liability for death or personal injury caused by our negligence or for fraudulent misrepresentation.

SAFETY DATA SHEET

CHELATED CAUSTIC MG

Product ID: FP001101

Revised: 06-20-2019

Replaces: 11-26-2018

1. IDENTIFICATION

Product Identifier: CHELATED CAUSTIC MG
Other Identifiers: 91384-R
CAS Number: MIXTURE
Recommended Use: No data available.
Restrictions on Use: No data available.

Hydrite Chemical Co.
300 N. Patrick Blvd.
Brookfield, WI 53008-0948
(262) 792-1450

EMERGENCY RESPONSE NUMBERS:
24 Hour Emergency #: (414) 277-1311
CHEMTREC Emergency #: (800) 424-9300

2. HAZARD(S) IDENTIFICATION

GHS Classification(s): Substance or mixture corrosive to metals Category 1
Skin Corrosion/Irritation Category 1B
Serious Eye Damage/Eye Irritation Category 1
Specific Target Organ Systemic Toxicity (STOT) - Single Exposure Category 1

GHS Label Elements:

GHS Hazard Symbols:



Signal Word: Danger

Hazard Statements: May be corrosive to metals.
Causes severe skin burns and eye damage.
Causes damage to organs (respiratory system by inhalation).

Precautionary Statements:

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

Response: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a POISON CENTER or doctor/physician.
Specific treatment (see First Aid on SDS or on this label).
Wash contaminated clothing before reuse.
Absorb spillage to prevent material damage.

Storage: Store in a secure manner.
Store in corrosive resistant container with a resistant inner liner.

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Disposal: Dispose of in accordance with local, regional and international regulations.
Hazards Not Otherwise Classified: Reacts with most metals to form explosive/flammable hydrogen gas. May react violently with water. May react with various food sugars to form carbon monoxide.

Percentage of Components with Unknown Acute Toxicity:

Oral: 50 %
Inhalation Vapor: 50 %
Inhalation Dust/Mist: 50 %

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substances/Mixtures:

<u>Chemical or Common Name/Synonyms</u>	<u>CAS Number</u>	<u>% by Wt.</u>
Sodium Hydroxide	1310-73-2	< 55 %

Note: Any chemical identity and/or exact percentage not expressly stated is being withheld as a trade secret or is due to batch variation.

4. FIRST-AID MEASURES

Description of Necessary Measures:

Eye Contact: If in eyes: Immediately flush eyes with plenty of water for at least 15 minutes while holding eyelids open. Tilt head to avoid contaminating unaffected eye. Get immediate medical attention. Washing eyes within several seconds is essential to achieve maximum effectiveness. Do not attempt to neutralize with chemical agents. Oils or ointments should not be used at this time. Remove contact lenses after the first 5 minutes and continue flushing.

Skin Contact: If on skin: Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately. Do not reuse clothing and shoes until cleaned. If skin feels slippery, caustic may still be present in sufficient quantities to cause rash or burn. Continue washing skin until slick feeling is gone. Do not apply oils or ointments unless ordered by the physician. Discard footwear which cannot be decontaminated. Discard contaminated leather articles such as shoes and belt.

Inhalation: If inhaled: Remove to fresh air. If breathing is difficult, administer oxygen. If not breathing, give artificial respiration, preferably mouth-to-mouth. GET MEDICAL ATTENTION IMMEDIATELY. Symptoms of pulmonary edema can be delayed up to 48 hours after exposure.

Ingestion: If swallowed: If fully conscious, drink a quart of water. DO NOT induce vomiting. CALL A PHYSICIAN IMMEDIATELY. If unconscious or in convulsions, take immediately to a hospital or a physician. NEVER induce vomiting or give anything by mouth to an unconscious victim. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into the lungs. If vomiting occurs spontaneously, keep airway clear and give more water.

Most Important Symptoms/Effects, Acute and Delayed:

Eye Contact: CORROSIVE-Causes severe irritation and burns. Small amounts may cause: blistering. disintegration. scarring. clouding. ulcerations. permanent eye damage. blindness. corneal damage. Mist may cause: irritation. High mist concentrations may cause: tissue destruction. Glaucoma and cataracts are possible late developments. Effects may vary depending on length of exposure, solution concentration and first aid measures.

Skin Contact: CORROSIVE-Causes severe irritation and burns. Corrosive action causes burns and frequently deep ulceration with ultimate scarring. Note that irritation may follow an initial latency. The latency may vary as much as hours for dilute solutions to minutes for more concentrated solutions. Prolonged contact, even with dilute concentrations, can cause tissue destruction and permanent skin damage. Repeated exposure may cause: dermatitis (inflammation of the skin).

Skin Absorption: No absorption hazard expected under normal use.

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Inhalation: CORROSIVE-Causes severe irritation and burns. Dusts or mists may irritate: nose, mouth, throat, respiratory tract. Dusts or mists may cause damage to the: upper respiratory tract, lungs. May cause: coughing, sneezing, running nose, sore throat, shortness of breath, wheezing, tightness of the chest, chest pain, choking, impaired lung function, pneumonitis, pulmonary edema. Effects may be delayed.

Ingestion: CORROSIVE-Causes severe irritation and burns. May cause damage to the: mouth, throat, stomach, esophagus, gastrointestinal tract. Ingestion can cause severe burns and complete tissue perforation of the mucous membranes of the mouth, throat and stomach. May be fatal if swallowed. May cause: abdominal pain, nausea, vomiting, diarrhea, bleeding, fall in blood pressure, shock, collapse, gastrointestinal ulceration. Damage may appear days after exposure. Aspiration into the lungs may occur during ingestion or vomiting resulting in mild to severe pulmonary injury and possibly death.

Indication of Immediate Medical Attention and Special Treatment Needed: The absence of visible signs or symptoms of burns does not reliably exclude the presence of actual tissue damage. Probable mucosal damage may contraindicate the use of gastric lavage. There is no specific antidote. Treatment of overexposure should be directed at the control of symptoms and the clinical condition of the patient.

5. FIRE-FIGHTING MEASURES

Extinguishing Media: Not combustible. For fires in area use appropriate media. For example: Water spray, Dry chemical, Carbon dioxide, Foam, Halon.

Specific Hazards Arising from the Chemical:

Fire and Explosion Hazards: Product may react with some metals (ex.: Aluminum, Zinc, Tin, etc.) to release flammable hydrogen gas.

Hazardous Combustion Products: Carbon dioxide, Carbon monoxide, Sodium oxides, Irritating and/or toxic gases.

Special Protective Equipment and Precautions for Fire-Fighters: Evacuate area of unprotected personnel. Wear protective clothing including NIOSH-Approved self-contained breathing apparatus. Remain upwind of fire to avoid hazardous vapors and decomposition products. Use water spray to cool fire-exposed containers, but avoid getting water into containers. Product generates heat upon addition of water, with possible spattering. Run-off from fire control may cause pollution.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment, Emergency Procedures: CORROSIVE MATERIAL. Evacuate unprotected personnel from area. Maintain adequate ventilation. Follow personal protective equipment recommendations found in Section 8. Never exceed any occupational exposure limit.

Methods and Materials for Containment and Clean Up: Contain spill, place into drums for proper disposal. Neutralize remaining residue with dilute Hydrochloric Acid solution and dispose of properly. Flush remaining area with water to remove trace residue and dispose of properly. Avoid direct discharge to sewers and surface waters. Notify authorities if entry occurs. CAUTION: This product may react violently with acids and water.

7. HANDLING AND STORAGE

Precautions for Safe Handling: Avoid contact with eyes, skin, and clothing. Use with adequate ventilation. Do not swallow. Avoid breathing vapors, mists, or dust. Do not eat, drink, or smoke in work area. Wash thoroughly after handling. CORROSIVE MATERIAL. Avoid dust or mist formation. Add product very slowly while stirring constantly. If product is added too rapidly or without stirring and becomes concentrated at the bottom of the mixing vessel, excessive heat may be generated resulting in dangerous boiling and spattering and possible immediate violent irruption of highly caustic solution.

Conditions for Safe Storage, Including any Incompatibilities: CORROSIVE MATERIAL. Store in a cool, well ventilated area, out of direct sunlight. Store in a dry location away from heat. Keep away from incompatible materials. Keep containers tightly closed. Do not store in unlabeled or mislabeled containers. Highly corrosive to most metals with evolution of hydrogen gas. Do not freeze. Do not expose sealed containers to temperatures

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above 104 Deg. F. Deadly carbon monoxide gas can form in enclosed or poorly ventilated areas or tanks when alkaline products contact food, beverage, or dairy products. Do not enter such areas until they have been well ventilated and carbon monoxide and oxygen levels have been determined to be within OSHA acceptable limits. If carbon monoxide and oxygen levels cannot be measured, wear NIOSH-approved, self-contained breathing apparatus.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

OSHA Exposure Guidelines:

Component	Limits
Sodium Hydroxide	2 mg/m3 TWA

ACGIH Exposure Guidelines:

Component	Limits
Sodium Hydroxide	2 mg/m3 Ceiling

Engineering Controls: General room ventilation is required. To keep exposure below established limits, local exhaust may be necessary. Avoid creating dust or mist. Maintain adequate ventilation. Do not use in closed or confined spaces. Keep levels below exposure limits. To determine exposure levels, monitoring should be performed regularly. NOTE: Where carbon monoxide may be generated, special ventilation may be required.

Individual Protection Measures:

Eye/Face Protection: Wear chemical safety goggles and a full face shield while handling this product. Do not wear contact lenses.

Skin Protection: Prevent contact with this product. Wear gloves and protective clothing depending on condition of use. Protective gloves: Chemical-resistant.

Respiratory Protection: Respiratory protection may be required to avoid overexposure when handling this product. If exposure limits are exceeded, wear: NIOSH-Approved respirator for dusts and mists. NIOSH-Approved Supplied Air Respirator (SAR). NIOSH-Approved self-contained breathing apparatus. DO NOT exceed limits established by the respirator manufacturer. All respiratory protection programs must comply with OSHA 29 CFR 1910.134 and ANSI Z88.2 requirements and must be followed whenever workplace conditions require a respirator's use.

Other Protective Equipment: Eye-wash station. Safety shower. Rubber apron. Rubber boots. Protective clothing.

General Hygiene Conditions: Wash with soap and water before meal times and at the end of each work shift.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Liquid.

Color: Clear to hazy. Light yellow to light brown.

Odor: No odor.

Odor Threshold: N.D.

pH: > 12 (as is)

Freezing Point (deg. F): 40

Melting Point (deg. F): N.D.

Initial Boiling Point or Boiling Range: > 212 °F

Flash Point: NONE.

Flash Point Method: N.A.

Evaporation Rate (nBuAc = 1): N.D.

Flammability (solid, gas): N.D.

Lower Explosion Limit: N.A.

Upper Explosion Limit: N.A.

Vapor Pressure (mm Hg): N.D.

Vapor Density (air=1): N.D.

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Specific Gravity or Relative Density: 1.528 @ 25C
Solubility in Water: Complete
Partition Coefficient (n-octanol/water): N.D.
Autoignition Temperature: No Data
Decomposition Temperature: N.D.
Viscosity: N.D.
% Volatile (wt%): N.D.
VOC (wt%): 0
VOC (lbs/gal): 0
Fire Point: N.D.

10. STABILITY AND REACTIVITY

Reactivity: No data available.

Chemical Stability: Stable under normal conditions.

Possibility of Hazardous Reactions: Hazardous polymerization will not occur under normal conditions. Sodium hydroxide can induce hazardous polymerization of acetaldehyde, acrolein, and acrylonitrile. Contact with water may cause violent reaction with evolution of heat. To dilute: Add product slowly to lukewarm water; not water to product. Contact with acid or incompatible materials may cause a violent reaction with evolution of heat. May react with certain metals to produce flammable hydrogen gas. Contact with acids, halogenated organics, organic nitro compounds, glycols, or sodium tetrahydroborate may produce flammable hydrogen gas. Contact with 1,2-dichloroethylene, trichloroethylene, tetrachloroethane, or phosphorous can form spontaneously flammable chemicals. Reactions with various food sugars may form carbon monoxide.

Conditions to Avoid: Avoid moisture. Avoid extreme temperatures. Keep away from incompatibles.

Incompatible Materials: Acids. Metals such as aluminum, zinc, tin, etc. Magnesium. Chromium. Brass. Bronze. Copper. Lead. Other alkali sensitive metals or alloys. Organic materials. Organic nitro compounds. Chlorinated hydrocarbons. Fluorinated hydrocarbons. Acetaldehyde. Chlorine trifluoride. Hydroquinone. Maleic anhydride. Tetrahydrofuran. Acrolein. Phosphorous. Trichloroethylene. Leather. Wool. Phosphorous pentoxide. Halogenated compounds. Glycols. Explosives. Acrylonitrile. 1,2-Dichloroethylene. Tetrachloroethane. Organic peroxides. Sodium tetrahydroborate. Food sugars. Silver nitrate. Ammonia. Chloroform. Methanol. Zirconium.

Hazardous Decomposition Products: Hydrogen gas. Carbon monoxide. Flammable dichloroacetylene. Phosphine. Sodium oxide.

11. TOXICOLOGICAL INFORMATION

Routes of Exposure: Eyes. Skin. Inhalation. Ingestion.

Symptoms/Effects: Acute, Delayed and Chronic:

Eye Contact: CORROSIVE-Causes severe irritation and burns. Small amounts may cause: blistering. disintegration. scarring. clouding. ulcerations. permanent eye damage. blindness. corneal damage. Mist may cause: irritation. High mist concentrations may cause: tissue destruction. Glaucoma and cataracts are possible late developments. Effects may vary depending on length of exposure, solution concentration and first aid measures.

Skin Contact: CORROSIVE-Causes severe irritation and burns. Corrosive action causes burns and frequently deep ulceration with ultimate scarring. Note that irritation may follow an initial latency. The latency may vary as much as hours for dilute solutions to minutes for more concentrated solutions. Prolonged contact, even with dilute concentrations, can cause tissue destruction and permanent skin damage. Repeated exposure may cause: dermatitis (inflammation of the skin).

Skin Absorption: No absorption hazard expected under normal use.

Inhalation: CORROSIVE-Causes severe irritation and burns. Dusts or mists may irritate: nose. mouth. throat. respiratory tract. Dusts or mists may cause damage to the: upper respiratory tract. lungs. May cause: coughing.

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sneezing, running nose, sore throat, shortness of breath, wheezing, tightness of the chest, chest pain, choking, impaired lung function, pneumonitis, pulmonary edema. Effects may be delayed.

Ingestion: CORROSIVE-Causes severe irritation and burns. May cause damage to the: mouth, throat, stomach, esophagus, gastrointestinal tract. Ingestion can cause severe burns and complete tissue perforation of the mucous membranes of the mouth, throat and stomach. May be fatal if swallowed. May cause: abdominal pain, nausea, vomiting, diarrhea, bleeding, fall in blood pressure, shock, collapse, gastrointestinal ulceration. Damage may appear days after exposure. Aspiration into the lungs may occur during ingestion or vomiting resulting in mild to severe pulmonary injury and possibly death.

Numerical Measures of Toxicity:

<u>Component</u>	<u>Oral LD50</u>	<u>Dermal LD50</u>	<u>Inhalation LC50</u>
Sodium Hydroxide	No Data	Rabbit: 1350 mg/kg	No Data

Acute Toxicity Estimate (ATE):

Dermal: 2250 mg/kg

Cancer Information:

This product does not contain 0.1% or more of the known or potential carcinogens listed in NTP, IARC, or OSHA.

Medical Conditions Aggravated by Exposure to Product: Skin disorders, Lung disorders, Cardiovascular disorders, Eye disorders, Respiratory system disorders.

Other: None known.

12. ECOLOGICAL INFORMATION

Ecotoxicological Information: No data available.

Chemical Fate Information: No data available.

13. DISPOSAL CONSIDERATIONS

Hazardous Waste Number: D002

Disposal Method: Dispose of in a permitted hazardous waste management facility following all local, state and federal regulations. If approved, neutralize material and flush to sewer. DO NOT pressurize, cut, weld, solder, drill, grind or expose empty containers to heat, flame, sparks or other sources of ignition.

14. TRANSPORT INFORMATION

DOT (Department of Transportation):

Identification Number: UN3266
Proper Shipping Name: CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S. (CONTAINS SODIUM HYDROXIDE)
Hazard Class: 8
Packing Group: II
Label Required: CORROSIVE
Reportable Quantity (RQ): 1000# (Sodium Hydroxide).

15. REGULATORY INFORMATION

TSCA Inventory Status: This product or all components of this product are listed on the EPA/TSCA Inventory of Chemical Substances.

SARA Title III Section 311/312 Category Hazards:

<u>Immediate (Acute)</u>	<u>Delayed (Chronic)</u>	<u>Fire Hazard</u>	<u>Pressure Release</u>	<u>Reactive</u>
Yes	No	No	No	Yes

CHELATED CAUSTIC MG
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Regulated Components: Component	CAS Number	CERCLA RQ	SARA EHS	SARA 313	U.S. HAP	WI HAP	Prop 65
Sodium Hydroxide	1310-73-2	Yes	No	No	No	Yes	No

***Prop 65 - May Contain the Following Trace Components:**

This product may contain a detectable level of (a) chemical(s) subject to California proposition 65.

16. OTHER INFORMATION

Hazard Rating System

Health: 3

Flammability: 0

Reactivity: 1

* = Chronic Health Hazard

NFPA Rating System

Health: 3

Flammability: 0

Reactivity: 1

Special Hazard: None

SDS Abbreviations

N.A. = Not Applicable

N.D. = Not Determined

HAP = Hazardous Air Pollutant

VOC = Volatile Organic Compound

C = Ceiling Limit

N.E./Not Estab. = Not Established

SDS Prepared by: csh

Reason for Revision: Minor change in section 9.

Revised: 06-20-2019

Replaces: 11-26-2018

The data in this Safety Data Sheet relates to the specific material designated and does not relate to its use in combination with any other material or process. The data contained is believed to be correct. However, since conditions of use are outside our control it should not be taken as warranty or representation for which HYDRITE CHEMICAL CO. assumes legal responsibility. This information is provided solely for your consideration, investigation, and verification.

SAFETY DATA SHEET

CITRIC ACID SOLUTION 50% F.G.

Product ID: AC509501

Revised: 11-18-2020

Replaces: 03-20-2014

1. IDENTIFICATION

Product Name: CITRIC ACID SOLUTION 50% F.G.
Synonyms: 2-hydroxy-1,2,3-propanetricarboxylic acid; Beta-hydroxytricarballic acid
CAS Number: MIXTURE
Recommended Use: For use in food processing.
Restrictions on Use: No data available.

Hydrite Chemical Co.
300 N. Patrick Blvd.
Brookfield, WI 53008-0948
(262) 792-1450

EMERGENCY RESPONSE NUMBERS:
24 Hour Emergency #: (414) 277-1311
CHEMTREC Emergency #: (800) 424-9300

2. HAZARD(S) IDENTIFICATION



Signal Word: Warning

GHS Classification: Substance or mixture corrosive to metals Category 1
Skin Corrosion/Irritation Category 2
Serious Eye Damage/Eye Irritation Category 2A

Hazard Statements: May be corrosive to metals.
Causes skin irritation.
Causes serious eye irritation.

Precautionary Statements:

Prevention: Keep only in original container.
Wash thoroughly after handling.
Wear gloves, eye and face protection and protective clothing.

Response: IF ON SKIN: Wash with plenty of soap and water.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Specific treatment (see First Aid on SDS or on this label).
If skin irritation occurs: Get medical advice or attention.
If eye irritation persists: Get medical advice or attention.
Take off contaminated clothing and wash before reuse.
Absorb spillage to prevent material damage.

Storage: Store in corrosive resistant container with a resistant inner liner.

Hazards Not Otherwise Classified: None known.

Percentage of Components with Unknown Acute Toxicity:

Inhalation Dust/Mist: 50.0 %

3. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Component</u>	<u>CAS Number</u>	<u>% by Wt.</u>
Citric Acid	77-92-9	50 %

4. FIRST-AID MEASURES

Eye Contact: If in eyes: Immediately flush eyes with plenty of water for at least 15 minutes while holding eyelids open. Tilt head to avoid contaminating unaffected eye. Get immediate medical attention.

Skin Contact: If on skin: Immediately flush skin with plenty of water while removing contaminated clothing and shoes. Do not reuse clothing or shoes until cleaned. If irritation develops or persists, get medical attention.

Inhalation: If inhaled: Remove to fresh air. If breathing is difficult, administer oxygen. If not breathing, give artificial respiration, preferably mouth-to-mouth. GET MEDICAL ATTENTION IMMEDIATELY.

Ingestion: If swallowed: Call a physician immediately. DO NOT induce vomiting unless directed to do so by a physician. Never give anything by mouth to an unconscious person. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into the lungs.

Note to Physicians:

There is no specific antidote. Treatment of overexposure should be directed at the control of symptoms and the clinical condition of the patient.

Most Important Symptoms/Effects:

Eye Contact: Causes severe irritation. Symptoms may include: redness. burning sensation.

Skin Contact: May cause severe irritation. Prolonged and repeated exposure may cause: drying. cracking. itching. redness. burning sensation. severe irritation.

Skin Absorption: No absorption hazard expected under normal use.

Inhalation: Causes moderate irritation. May irritate: mucous membranes. respiratory tract. May cause: coughing.

Ingestion: May cause severe irritation. May irritate or burn: mucous membranes. May cause: vomiting (bloody). pain. burning sensation. Erosion of teeth is possible.

5. FIRE-FIGHTING MEASURES

Extinguishing Media: For fires in area use appropriate media. For example: Water spray. Dry chemical. Carbon dioxide. Alcohol foam.

Fire Fighting Methods: Evacuate area of unprotected personnel. Wear protective clothing including NIOSH-Approved self-contained breathing apparatus. Use water spray to cool fire exposed containers and disperse vapors.

Fire and Explosion Hazards: Product may react with some metals (ex.: Aluminum, Zinc, Tin, etc.) to release flammable hydrogen gas.

Hazardous Combustion Products: Carbon dioxide. Carbon monoxide.

6. ACCIDENTAL RELEASE MEASURES

Spill Clean-Up Procedures: CORROSIVE MATERIAL. Evacuate unprotected personnel from area. Maintain adequate ventilation. Follow personal protective equipment recommendations found in Section 8. Never exceed any occupational exposure limit. Contain spill, place into drums for proper disposal. Flush remaining area with water and neutralize with soda ash and dispose of properly. Avoid direct discharge to sewers and surface waters. Notify authorities if entry occurs.

7. HANDLING AND STORAGE

Handling: Avoid contact with eyes, skin, and clothing. Use with adequate ventilation. Do not swallow. Avoid breathing vapors, mists, or dust. Do not eat, drink, or smoke in work area. Wash thoroughly after handling. Empty containers retain product residue (vapor, dust, or liquid) and can be dangerous. DO NOT pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other source of ignition. They may explode and cause injury or death. Avoid breathing mists or dusts. Avoid generating mist or aerosol during use.

Storage: CORROSIVE MATERIAL. Store in a cool, well ventilated area, out of direct sunlight. Store in a dry location away from heat. Keep away from incompatible materials. Keep containers tightly closed. Do not store in unlabeled or mislabeled containers. Keep away from metals. Corrosive to metals (as aqueous solution). See Section 10 for incompatible materials.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

OSHA Exposure Guidelines:

<u>Component</u>	<u>Limits</u>
No components found.	

ACGIH Exposure Guidelines:

<u>Component</u>	<u>Limits</u>
No components found.	

Engineering Controls: General room ventilation and local exhaust are required. Avoid creating dust or mist. Use explosion-proof ventilation equipment. Maintain adequate ventilation. Do not use in closed or confined spaces. Keep levels below exposure limits. To determine exposure levels, monitoring should be performed regularly.

Eye/Face Protection: Wear chemical safety goggles while handling this product.

Skin Protection: Prevent contact with this product. Wear gloves and protective clothing depending on condition of use. Protective gloves: Chemical-resistant. Nitrile.

Respiratory Protection: Respiratory protection must be worn if ventilation does not eliminate symptoms or keep levels below recommended exposure limits. If dust or mist is present, wear: NIOSH-Approved respirator. NIOSH-Approved respirator for dusts and mists. NIOSH-Approved air-purifying respirator with: Dust/mist filter. NIOSH-Approved self-contained breathing apparatus. DO NOT exceed limits established by the respirator manufacturer. All respiratory protection programs must comply with OSHA 29 CFR 1910.134 and ANSI Z88.2 requirements and must be followed whenever workplace conditions require a respirator's use.

Other Protective Equipment: Eye-wash station. Safety shower. Rubber apron. Protective clothing.

General Hygiene Conditions: Wash with soap and water before meal times and at the end of each work shift. Good manufacturing practices require gross amounts of any chemical be removed from skin as soon as practical, especially before eating or smoking.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Liquid.

Color: Clear. Colorless to slightly yellow.

Odor: Mild odor.

Odor Threshold: N.D.

pH: < 1.00 (as is)

Freezing Point (deg. F): 45

Melting Point (deg. F): N.D.

Initial Boiling Point or Boiling Range: ~ 219 °F

Flash Point: N.A.

Flash Point Method: N.A.

CITRIC ACID SOLUTION 50% F.G.

Product ID: AC509501

Evaporation Rate (nBuAc = 1): N.D.
Flammability (solid, gas): N.D.
Lower Explosion Limit: N.A.
Upper Explosion Limit: N.A.
Vapor Pressure (mm Hg): N.D.
Vapor Density (air=1): N.D.
Specific Gravity or Relative Density: 1.237 @ 25C
Solubility in Water: Complete
Partition Coefficient (n-octanol/water): N.D.
Autoignition Temperature: No Data
Decomposition Temperature: N.D.
Viscosity: 10 cPs @ 25 Deg. C
% Volatile (wt%): N.D.
VOC (wt%): N.D.
VOC (lbs/gal): N.D.
Fire Point: N.D.

10. STABILITY AND REACTIVITY

Reactivity: No data available.

Chemical Stability: Stable under normal conditions.

Possibility of Hazardous Reactions: Hazardous polymerization will not occur under normal conditions.

Conditions to Avoid: Prolonged contact with metals such as aluminum, tin, lead and zinc may produce flammable hydrogen gas. Avoid mist formation. Avoid elevated temperatures.

Incompatible Materials: Alkalies. Strong oxidizing agents. Bases. Sulfides. Carbonates. Acetates. Potassium Tartrate. Metal Nitrates. Reducing agents. Bicarbonates. Amines. Alkali metals. Copper, aluminum, zinc and their alloys. Lead. Oxides of sulfur. Fiber-reinforced Polyester. Steel. Brass. Cast Iron. Reactive Metals.

Hazardous Decomposition Products: Carbon dioxide. Carbon monoxide.

11. TOXICOLOGICAL INFORMATION

<u>Component</u>	<u>Oral LD50</u>	<u>Dermal LD50</u>	<u>Inhalation LC50</u>
Citric Acid	Rat: 3000 mg/kg	Rat: > 2000 mg/kg	No Data

Routes of Exposure: Eyes. Skin. Ingestion. Inhalation.

Eye Contact: Causes severe irritation. Symptoms may include: redness. burning sensation.

Skin Contact: May cause severe irritation. Prolonged and repeated exposure may cause: drying. cracking. itching. redness. burning sensation. severe irritation.

Skin Absorption: No absorption hazard expected under normal use.

Inhalation: Causes moderate irritation. May irritate: mucous membranes. respiratory tract. May cause: coughing.

Ingestion: May cause severe irritation. May irritate or burn: mucous membranes. May cause: vomiting (bloody). pain. burning sensation. Erosion of teeth is possible.

Medical Conditions Aggravated by Exposure to Product: Eye disorders. Respiratory system disorders. Skin disorders.

Other: None known.

Cancer Information:

This product does not contain 0.1% or more of the known or potential carcinogens listed in NTP, IARC, or OSHA.

12. ECOLOGICAL INFORMATION

Ecotoxicological Information: No data available.

Chemical Fate Information: No data available.

13. DISPOSAL CONSIDERATIONS

Hazardous Waste Number: D002

Disposal Method: Dispose of in a permitted hazardous waste management facility following all local, state and federal regulations. DO NOT pressurize, cut, weld, solder, drill, grind or expose empty containers to heat, flame, sparks or other sources of ignition. Since emptied containers retain product residue, follow label warnings even after container is emptied. Disposal methods identified are for the product as sold. For proper disposal of used material, an assessment must be completed to determine the proper and permissible waste management options permitted under applicable rules, regulations and/or laws governing your location.

14. TRANSPORT INFORMATION

DOT (Department of Transportation):

Identification Number: UN3265
Proper Shipping Name: Corrosive Liquid, Acidic, Organic, N.O.S. (Contains Citric Acid)
Hazard Class: 8
Packing Group: III
Label Required: CORROSIVE

IMDG: UN3265, CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (CONTAINS CITRIC ACID), 8, PGIII

15. REGULATORY INFORMATION

TSCA Inventory Status: All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements.

SARA Title III Section 311/312 Category Hazards:

	<u>Immediate (Acute)</u>	<u>Delayed (Chronic)</u>	<u>Fire Hazard</u>	<u>Pressure Release</u>			<u>Reactive</u>		
	Yes	No	No	No			No		
Regulated Components:									
Component			CAS	CERCLA	SARA	SARA	U.S.	WI	Prop
			Number	RQ	EHS	313	HAP	HAP	65

No components found.

***Prop 65 - May Contain the Following Trace Components:**

No data available.

16. OTHER INFORMATION

Hazard Rating System

Health: 2
Flammability: 0
Reactivity: 0

* = Chronic Health Hazard

NFPA Rating System

Health: 2
Flammability: 0
Reactivity: 0
Special Hazard: None

MSDS Abbreviations

CITRIC ACID SOLUTION 50% F.G.
Product ID: AC509501

N.A. = Not Applicable

N.D. = Not Determined

HAP = Hazardous Air Pollutant

VOC = Volatile Organic Compound

C = Ceiling Limit

N.E./Not Estab. = Not Established

MSDS Prepared by: csh

Reason for Revision: Changes made in section 9.

Revised: 11-18-2020

Replaces: 03-20-2014

The data in this Safety Data Sheet relates to the specific material designated and does not relate to its use in combination with any other material or process. The data contained is believed to be correct. However, since conditions of use are outside our control it should not be taken as warranty or representation for which HYDRITE CHEMICAL CO. assumes legal responsibility. This information is provided solely for your consideration, investigation, and verification.

SAFETY DATA SHEET

D-SCALE NO. 556
Product ID: FP0556
Revised: 12-04-2019
Replaces: 09-11-2013

1. IDENTIFICATION

Product Identifier: D-SCALE NO. 556
Other Identifiers: N.A.
CAS Number: MIXTURE
Recommended Use: No data available.
Restrictions on Use: No data available.

Hydrite Chemical Co.
300 N. Patrick Blvd.
Brookfield, WI 53008-0948
(262) 792-1450

EMERGENCY RESPONSE NUMBERS:
24 Hour Emergency #: (414) 277-1311
CHEMTREC Emergency #: (800) 424-9300

2. HAZARD(S) IDENTIFICATION

GHS Classification(s): Substance or mixture corrosive to metals Category 1
Serious Eye Damage/Eye Irritation Category 1
Skin Corrosion/Irritation Category 2
Specific Target Organ Systemic Toxicity (STOT) - Repeated Exposure Category 2
Acute Toxicity - Inhalation Dust / Mist Category 4

GHS Label Elements:

GHS Hazard Symbols:



Signal Word: Danger

Hazard Statements: May be corrosive to metals.
Causes skin irritation.
Causes serious eye damage.
Harmful if inhaled.
May cause damage to organs (respiratory system) through prolonged or repeated exposure (by inhalation).

Precautionary Statements:

Prevention: Keep only in original container.
Do not breathe dust/fume/gas/mist/vapours/spray.
Wash thoroughly after handling.
Use only outdoors or in a well-ventilated area.
Wear protective gloves/protective clothing/eye protection/face protection.

Response: IF ON SKIN: Wash with plenty of water
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a POISON CENTER or doctor/physician.
Specific treatment (see First Aid on SDS or on this label).
If skin irritation occurs: Get medical advice or attention.
Absorb spillage to prevent material damage.

Storage: Store in corrosive resistant container with a resistant inner liner.
Disposal: Dispose of in accordance with local, regional and international regulations.
Hazards Not Otherwise Classified: Reacts with most metals to form explosive/flammable hydrogen gas. May react violently with water. May react with various food sugars to form carbon monoxide.

Percentage of Components with Unknown Acute Toxicity:

Dermal: 42 %
Inhalation Vapor: 43.9 %

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substances/Mixtures:

<u>Chemical or Common Name/Synonyms</u>	<u>CAS Number</u>	<u>% by Wt.</u>
Tetrasodium EDTA	64-02-8	>= 25.0 - < 50.0 %
Sodium Hydroxide	1310-73-2	>= 0.0 - < 1.9%
Sodium Glycolate	2836-32-0	>= 0.0 - < 1.0 %

Note: Any chemical identity and/or exact percentage not expressly stated is being withheld as a trade secret or is due to batch variation.

4. FIRST-AID MEASURES

Description of Necessary Measures:

Eye Contact: If in eyes: Immediately flush eyes with plenty of water for at least 15 minutes while holding eyelids open. Tilt head to avoid contaminating unaffected eye. Get immediate medical attention. Remove contact lenses after the first 5 minutes and continue flushing.

Skin Contact: If on skin: Immediately flush skin with plenty of water while removing contaminated clothing and shoes. Do not reuse clothing or shoes until cleaned. If irritation develops or persists, get medical attention. Wash with soap and water.

Inhalation: If inhaled: Remove to fresh air. If breathing is difficult, administer oxygen. If not breathing, give artificial respiration, preferably mouth-to-mouth. GET MEDICAL ATTENTION IMMEDIATELY.

Ingestion: If swallowed: If fully conscious, drink a quart of water. DO NOT induce vomiting. CALL A PHYSICIAN IMMEDIATELY. If unconscious or in convulsions, take immediately to a hospital or a physician. NEVER induce vomiting or give anything by mouth to an unconscious victim. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into the lungs.

Most Important Symptoms/Effects, Acute and Delayed:

Eye Contact: May cause severe irritation. May cause: corneal injury. permanent impairment of vision. blindness.

Skin Contact: May cause mild to moderate irritation. Prolonged contact may cause: local redness. burns. Symptoms may include: pain. swelling. tissue damage. May cause more severe response if skin is abraded (scratched or cut). May cause more severe response on covered skin (under clothing, gloves). Mist may cause skin irritation.

Skin Absorption: No absorption hazard expected under normal use.

Inhalation: May cause moderate irritation. High mist concentrations may cause: respiratory irritation. discomfort. difficulty breathing. Prolonged excessive exposure to mist may cause serious adverse effects, even death. Mists may irritate: mucous membranes. nose. throat.

Ingestion: May cause moderate irritation. May cause: gastrointestinal disturbances. gastrointestinal ulceration. Aspiration into the lungs may occur during ingestion or vomiting resulting in mild to severe pulmonary injury and possibly death.

Indication of Immediate Medical Attention and Special Treatment Needed: Chemical eye burns may require extended irrigation. Obtain prompt consultation, preferably from an ophthalmologist. If burn is present, treat as any thermal burn, after decontamination. Due to irritant properties, swallowing may result in burns/ulceration of

mouth, stomach and lower GI tract with subsequent stricture. Aspiration of vomitus may cause lung injury. Suggest endotracheal/esophageal control if lavage is done. There is no specific antidote. Treatment of overexposure should be directed at the control of symptoms and the clinical condition of the patient.

5. FIRE-FIGHTING MEASURES

Extinguishing Media: For fires in area use appropriate media. For example: Water spray. Dry chemical. Carbon dioxide. Foam.

Specific Hazards Arising from the Chemical:

Fire and Explosion Hazards: Product may react with some metals (ex.: Aluminum, Zinc, Tin, etc.) to release flammable hydrogen gas.

Hazardous Combustion Products: Nitrogen oxides. Carbon dioxide. Carbon monoxide. Metal oxides.

Special Protective Equipment and Precautions for Fire-Fighters: Evacuate area of unprotected personnel. Wear protective clothing including NIOSH-Approved self-contained breathing apparatus. Remain upwind of fire to avoid hazardous vapors and decomposition products.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment, Emergency Procedures: Evacuate unprotected personnel from area. Maintain adequate ventilation. Follow personal protective equipment recommendations found in Section 8. Never exceed any occupational exposure limit.

Methods and Materials for Containment and Clean Up: Contain spill, place into drums for proper disposal. Soak up residue with inert absorbent material. Place in non-leaking containers for immediate disposal. Avoid direct discharge to sewers and surface waters. Notify authorities if entry occurs. CAUTION: Spilled material may be slippery.

7. HANDLING AND STORAGE

Precautions for Safe Handling: Avoid contact with eyes, skin, and clothing. Use with adequate ventilation. Do not swallow. Avoid breathing vapors, mists, or dust. Do not eat, drink, or smoke in work area. Wash thoroughly after handling.

Conditions for Safe Storage, Including any Incompatibilities: Store in a cool, dry place. Keep away from incompatible materials. Avoid contact with aluminum, copper, copper alloys, nickel and zinc. Store below 86 Deg. F. Store above 32 Deg. F. Avoid prolonged storage at high temperatures.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

OSHA Exposure Guidelines:

Component	Limits
Sodium Hydroxide	2 mg/m ³ TWA

ACGIH Exposure Guidelines:

Component	Limits
Sodium Hydroxide	2 mg/m ³ Ceiling

Engineering Controls: General room ventilation is required. Use local exhaust to control vapors/mists. Maintain adequate ventilation. Do not use in closed or confined spaces. Avoid creating dust or mist.

Individual Protection Measures:

Eye/Face Protection: Wear chemical safety goggles while handling this product. Wear additional eye protection such as a face shield when the possibility exists for eye contact with splashing or spraying liquid, or airborne material. Do not wear contact lenses.

Skin Protection: Prevent contact with this product. Wear gloves and protective clothing depending on condition of use. Protective gloves: Chemical-resistant. Impervious.

Respiratory Protection: Respiratory protection may be required to avoid overexposure when handling this product. If vapors or mists are generated, wear: NIOSH/MSHA-Approved organic vapor/mist respirator. NIOSH-Approved Supplied Air Respirator (SAR). DO NOT exceed limits established by the respirator manufacturer. All respiratory protection programs must comply with OSHA 29 CFR 1910.134 and ANSI Z88.2 requirements and must be followed whenever workplace conditions require a respirator's use.

Other Protective Equipment: Eye-wash station. Safety shower. Protective clothing. Rubber apron. Rubber boots.

General Hygiene Conditions: Wash with soap and water before meal times and at the end of each work shift. Food, beverages, and tobacco products should not be carried, stored or consumed where this material is in use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Liquid.

Color: Clear. Yellow.

Odor: Slight ammonia odor.

Odor Threshold: N.D.

pH: 11 - 12 (1%)

Freezing Point (deg. F): < -13

Melting Point (deg. F): < 0

Initial Boiling Point or Boiling Range: 224 °F

Flash Point: N.A.

Flash Point Method: N.A.

Evaporation Rate (nBuAc = 1): < 0.8 (estimated)

Flammability (solid, gas): N.D.

Lower Explosion Limit: N.A.

Upper Explosion Limit: N.A.

Vapor Pressure (mm Hg): Same as water

Vapor Density (air=1): Same as water

Specific Gravity or Relative Density: 1.15 - 1.38

Solubility in Water: Miscible

Partition Coefficient (n-octanol/water): - 13

Autoignition Temperature: No Data

Decomposition Temperature: N.D.

Viscosity: 19 mPa.s @ 20 Deg. C (Dynamic); 13.8 - 16.5 mm²/s @ 20 Deg. C (Kinematic)

% Volatile (wt%): N.D.

VOC (wt%): N.D.

VOC (lbs/gal): N.D.

Fire Point: N.D.

10. STABILITY AND REACTIVITY

Reactivity: No data available.

Chemical Stability: Stable under normal conditions.

Possibility of Hazardous Reactions: Hazardous polymerization will not occur under normal conditions. Reacts with aluminum to produce flammable hydrogen gas.

Conditions to Avoid: Avoid heat or high temperatures.

Incompatible Materials: Strong oxidizing agents. Aluminum. Zinc. Metals. Nickel. Copper or copper alloys.

Hazardous Decomposition Products: Carbon oxides. Nitrogen oxides. Ammonia.

11. TOXICOLOGICAL INFORMATION

Routes of Exposure: Eyes. Skin. Inhalation. Ingestion.

Symptoms/Effects: Acute, Delayed and Chronic:

Eye Contact: May cause severe irritation. May cause: corneal injury. permanent impairment of vision. blindness.

Skin Contact: May cause mild to moderate irritation. Prolonged contact may cause: local redness. burns. Symptoms may include: pain. swelling. tissue damage. May cause more severe response if skin is abraded (scratched or cut). May cause more severe response on covered skin (under clothing, gloves). Mist may cause skin irritation.

Skin Absorption: No absorption hazard expected under normal use.

Inhalation: May cause moderate irritation. High mist concentrations may cause: respiratory irritation. discomfort. difficulty breathing. Prolonged excessive exposure to mist may cause serious adverse effects, even death. Mists may irritate: mucous membranes. nose. throat.

Ingestion: May cause moderate irritation. May cause: gastrointestinal disturbances. gastrointestinal ulceration. Aspiration into the lungs may occur during ingestion or vomiting resulting in mild to severe pulmonary injury and possibly death.

Numerical Measures of Toxicity:

<u>Component</u>	<u>Oral LD50</u>	<u>Dermal LD50</u>	<u>Inhalation LC50</u>
Tetrasodium EDTA	Rat: 1658 mg/kg	No Data	No Data
Sodium Hydroxide	Rat: 325 mg/kg	Rabbit: 1350 mg/kg	No Data
Sodium Glycolate	Rat: 7110 mg/kg	No Data	No Data

Acute Toxicity Estimate (ATE):

Dermal: 41211 mg/kg

Cancer Information:

This product does not contain 0.1% or more of the known or potential carcinogens listed in NTP, IARC, or OSHA.

Medical Conditions Aggravated by Exposure to Product: Skin disorders. Lung disorders. Cardiovascular disorders. Eye disorders. Respiratory system disorders.

Other: Birth Defects/Developmental Effects: EDTA and its sodium salts have been reported to cause birth defects in laboratory animals only at exaggerated doses that were toxic to the mother. These effects are likely associated with zinc deficiency due to chelation.

12. ECOLOGICAL INFORMATION

Ecotoxicological Information: No data available.

Chemical Fate Information: No data available.

13. DISPOSAL CONSIDERATIONS

Hazardous Waste Number: D002

Disposal Method: Dispose of in accordance with all local, state and federal regulations. Since emptied containers retain product residue, follow label warnings even after container is emptied. DO NOT pressurize, cut, weld, solder, drill, grind or expose empty containers to heat, flame, sparks or other sources of ignition.

14. TRANSPORT INFORMATION

DOT (Department of Transportation):

Proper Shipping Name: Not regulated by the DOT.

Reportable Quantity (RQ): 1000# (Sodium Hydroxide).

Note: Not DOT Regulated under exception in Section 173.154 (d) for materials corrosive to metals (steel)

and/or aluminum).

15. REGULATORY INFORMATION

TSCA Inventory Status: All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements.

SARA Title III Section 311/312 Category Hazards: Please see Section 2 of this SDS.

<u>Regulated Components:</u> <u>Component</u>	<u>CAS</u> <u>Number</u>	<u>CERCLA</u> <u>RQ</u>	<u>SARA</u> <u>EHS</u>	<u>SARA</u> <u>313</u>	<u>U.S.</u> <u>HAP</u>	<u>WI</u> <u>HAP</u>	<u>Prop</u> <u>65</u>
Sodium Hydroxide	1310-73-2	Yes	No	No	No	Yes	No

16. OTHER INFORMATION

Hazard Rating System

Health: 3

Flammability: 0

Reactivity: 0

* = Chronic Health Hazard

NFPA Rating System

Health: 3

Flammability: 0

Reactivity: 0

Special Hazard: None

SDS Abbreviations

N.A. = Not Applicable

N.D. = Not Determined

HAP = Hazardous Air Pollutant

VOC = Volatile Organic Compound

C = Ceiling Limit

N.E./Not Estab. = Not Established

SDS Prepared by: JAK

Reason for Revision: Changes made throughout the SDS.

Revised: 12-04-2019

Replaces: 09-11-2013

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