

XII. EXHIBITS

**EXHIBIT "A"
A. BID FORM**

**RFB NO. 25-26-08
ANNUAL CONTRACT FOR THE SUPPLY AND DELIVERY OF FERRIC CHLORIDE**

TO: THE CITY OF VISALIA PURCHASING DIVISION:

In compliance with the City's Notice Inviting Sealed Bids No. 25-26-08 dated: _____, the undersigned BIDDER hereby proposes to furnish all materials, equipment, tools, services, and labor required for the above stated project as set forth in the RFB, including all Exhibits and related contract documents therefore.

BIDDER declares that this proposal is based upon careful examination of the Instructions to BIDDERS, and the contract requirements. If this bid is accepted for award, BIDDER agrees to enter into a contract with CITY at the unit and/or lump sum prices set forth in the following Bid Schedule. BIDDER understands that failure to enter into a contract in the time and manner prescribed, Purchasing Division may proceed to award the contract to others.

BIDDER understands that a bid is required for the product and that compensation under the contract will be based upon the product condition received as stated in the bid specifications. It is agreed that the unit and/or lump sum prices bid include all appurtenant expenses, royalties, delivery, freight, taxes and fees. In the case of discrepancies in amounts bid, unit prices shall govern over extended amounts.

Bidder understands that the quantities given on the Bid Proposal form are approximate only. They are given as a basis for comparison of Bids. The City of Visalia does not, expressly or impliedly agree that the actual amount of product purchased will correspond therewith.

BIDDER further declares that he/she has not either directly or indirectly entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free competitive bidding in connection with said bid.

LOWEST BID will be determined by the Lowest Total Bid Price. BIDDER shall calculate Total Bid Price as follows: Column A x Column B = Column C

BIDDER has read and hereby agrees to the conditions stated in this bid by affixing his/her signature below.

	A	B	C
Supply and Delivery of Ferric Chloride per specifications of RFB-25-26-08	Unit Price (Includes delivery, freight, sales tax and all costs)	Estimated Annual Quantity (dry tons)	Total Bid Price
	\$ <u>1,230.00/DT</u> per dry ton	120	\$ <u>147,600.00</u>

- (1) California Water Technologies, LLC
Bidding Firm
- (2) Joint Venture
Corporation, Partner, Joint Venture

(3) 8851 Dice Road Santa Fe Springs CA 90670
Business Address City State Zip Code

313-319-7868 313-571-6765
Telephone Number Fax Number

bids@pvschemicals.com
E-mail Address

(4)  August 21, 2025
Signature of Authorized Person (Date)

Tatyana Lipanovich Director of Sales Of its Member PVS Technologies, Inc.(member)
Type or Print Authorized Person's Name

PLEASE SEE THE FOLLOWING INSTRUCTIONS REGARDING SIGNATURE

(1) If the BIDDER is an individual, enter name here in style used in business; if a joint venture, exact name of entities joining in the venture; if a partnership, the correct trade style of the partnership; if a corporation, the exact name of the corporation.

(2) If BIDDER is other than an individual, identify here its character, i.e., joint venture, partnership, corporation, including the state of incorporation. If BIDDER is an individual operating under a trade name, state "an individual dba (trade name in full)".

(3) State on this line, the address to which all communications and notices regarding the Bid Proposal, and any contract awarded thereunder, are to be addressed.

(4) If BIDDER is a joint venture, signature must be by one of the joint venturers, and if one or both of the joint venturers is a partnership or a corporation, each participating partnership must sign by a general partner, and each corporation by an authorized officer or employee; if a partnership, by a general partner; if a corporation, by an authorized officer or employee. The title of the person signing must appear after his/her signature. Where BIDDER is a partnership or corporation, the names of all other general partners, or the president or secretary of the corporation and their business addresses must be shown below.

PVS Chemicals, Inc.
10900 Harper Avenue
Detroit, MI 48213
ATTN: Bid Department

Note: All names must be typewritten under written signature. All Addresses must be complete with street number, city, state and zip code.

Bidding Firm: California Water Technologies, LLC

CONTRACTOR'S PERMIT INFORMATION

License Classification: N/A
Expiration Date: _____

City of Visalia Business Tax Certificate No.: Will obtain if awarded bid

A City Business Tax Certificate (License) is not required to submit a bid; however, vendor is required to obtain a City License prior to commencement of work. Contact the Business Tax Division with any questions at (559) 713-4326.

Federal Tax I.D. No.: 43-1982968

REFERENCES

The following are the names, addresses, and telephone numbers for at least three (3) public agencies for which BIDDER has performed work similar in size and scope within the past two years.

<u>Company Name</u>	<u>Address</u>	<u>Tel. No.</u>	<u>Contact</u>
1. <u>Eastern Municipal Water District</u>	<u>2270 Trumble Road, Perris, CA 92101</u>	<u>951-928-3777</u>	<u>Arthur Olvera</u>
2. <u>Inland Empire Utilities Agency</u>	<u>6075 "A" Kimball Avenue Chino, CA 91710</u>	<u>909-993-1679</u>	<u>Roger Hughbanks</u>
3. <u>City of San Diego</u>	<u>1200 Third Avenue, San Diego, CA 92101</u>	<u>619-236-7131</u>	<u>Vanessa Delgado</u>

DESIGNATION OF SURETIES

The following are the names, addresses, and telephone numbers for all brokers and sureties from whom BIDDER intends to procure insurance.

<u>Company Name</u>	<u>Address</u>	<u>Tel. No.</u>	<u>Type</u>
<u>Lockton Companies, LLC</u>	<u>1183 Avenue of the America, Ste. 2010</u>	<u>646-572-7300</u>	<u>Brokers/Insurance</u>

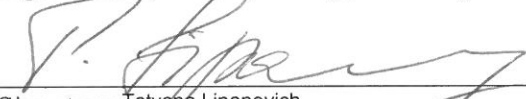
B. CERTIFICATIONS, AFFIDAVITS, ASSURANCES, STATEMENTS, WAIVERS, AND QUESTIONNAIRES WHICH MUST ACCOMPANY BID FORM

**EXHIBIT "B-1"
NON-COLLUSION AFFIDAVIT**

(Title 23 United States Code Section 112 and Public Contract Code Section 7106)

To Accompany Bid Form

In accordance with Title 23 United States Code section 112 and Public Contract Code 7106 the bidder declares that bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation; that the bid is genuine and not collusive or sham; the bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or that anyone shall refrain from bidding; that the bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder, or to secure any advantage against the public body awarding the contract of anyone interested in the proposed contract; that all statements contained in the bid are true; and, further, that the bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid, and will not pay, any fee to any corporation, partnership, company association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid.


Signature Tatyana Lipanovich Date August 21, 2025
Director of Sales Of its Member PVS Technologies, Inc. (member)

Note: The above Non-collusion Affidavit is part of the Bid/Proposal.
Bidders are cautioned that making a false certification may subject the certifier to criminal prosecution.

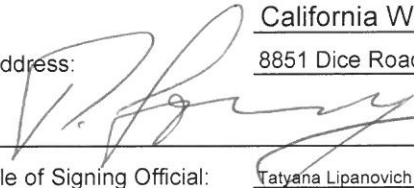
EXHIBIT "B-3"
EQUAL EMPLOYMENT OPPORTUNITY COMPLIANCE CERTIFICATE

(EXECUTIVE ORDER 11246)
To Accompany Bid Form

Equal Opportunity Clause

Unless exempted by rules, regulations or orders of the Secretary of Labor issued pursuant to Executive Orders 10925, 11114 or Section 204 of Executive Order 11246 of September 24, 1965, during the performance of each contract with the City of Visalia, the BIDDER agrees as follows:

7. The BIDDER will not discriminate against any employee or applicant for employment because of race, color, religion, gender, national origin or political affiliation. The BIDDER will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, gender, national origin or political affiliation. Such action shall include, but not be limited to, the following: employment upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination, rates of pay or other forms of compensation, and selection for training, including apprenticeship. The BIDDER agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the contracting officer setting forth the provisions of this nondiscrimination clause.
7. The BIDDER will, in all solicitations or advertisements for employees, placed by or on behalf of the BIDDER, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, gender, national origin or political affiliation.
7. The BIDDER will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided by the agency contracting officer, advising the labor union or the workers' representative of the BIDDER's commitments under Section 202 of Executive Order 11246 of September 24, 1965, and shall post copies of the notice on conspicuous places available to employees and applicants for employment.
7. The BIDDER will comply with all provisions of Executive Order 11246 of September 24, 1965, and the rules, regulations and relevancy orders of the Secretary of Labor.
7. The BIDDER will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by the rules, regulations and relevant orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records and accounts by the contracting agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations and orders.
6. In the event of the BIDDER's non-compliance with the non-discrimination clauses of this subcontract or with any of such rules, regulations or orders, this subcontract may be canceled, terminated or suspended, in whole, or in part and the BIDDER may be declared ineligible for further government contracts in accordance with the procedures authorized in accordance with Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation or order of the Secretary of Labor, or otherwise provided by law.
7. The BIDDER will include the provisions of Paragraphs (1) through (7) in every subcontract or purchase order unless exempted by rules, regulations or orders of the Secretary of Labor issued pursuant to Section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each SUBBIDDER or vendor. The BIDDER will take such action with respect to any subcontract or purchase order as the contracting agency may direct as a means of enforcing such provisions including sanctions for non-compliance. Provided, however, that in the event the BIDDER becomes involved in, or is threatened with litigation with a SUBBIDDER or vendor as a result of such direction by the contracting agency, the BIDDER may request the United States to enter into such litigation to protect the interest of the United States.

Company: California Water Technologies, LLC
Business Address: 8851 Dice Road, Santa Fe Springs, CA 90670
Signature:  Date: August 21, 2025
Name & Title of Signing Official: Tatyana Lipanovich Director of Sales of Member, PVS Technologies, Inc. (member)

Company Seal (if any):

EXHIBIT "B-4"
OWNERSHIP DISCLOSURE AND CALIFORNIA LEVINE ACT STATEMENT

To Accompany Bid Form

The following disclosure and statement apply to the Bidder/Proposer/Contractor/Consultant/ Vendor/Supplier or Company:

1. submitting a bid or proposal in response to a solicitation by City of Visalia; or
2. as Awardee of a contract/purchase order which is subject to approval by the Visalia City Council.

OWNERSHIP DISCLOSURE

Name of Bidder/Proposer/Contractor/Consultant/Vendor/Supplier or Company

California Water Technologies, LLC, 8851 Dice Road Santa Fe Springs, CA 90670

Address

List the names of all principals, partners, and/or trustees. For corporations, provide names of officers, directors and all stockholders owning more than 10% equity interest in corporation:

Christopher Thompson-President of Member, PVS Technologies, Inc. (member)

Tatyana Lipanovich-Director of Sales Of its Member PVS Technologies, Inc.(member)

Alex Avraamides- Representative, Phibro-Tech

CALIFORNIA LEVINE ACT STATEMENT

California Government Code Section 84308, also know as the "Levine Act," can prohibit members of the Visalia City Council from participating in any action related to a contract if he or she receives any political contributions totaling more than \$250 within the previous twelve (12) months, and for twelve (12) months following the date a final decision concerning the contract has been made, from the person or company awarded the contract. The Levine Act also requires disclosure of such contribution(s) by a party to be awarded a specific contract.

The following website contains a list of current Visalia City Council Members, https://www.visalia.city/government/city_council/default.asp. You are responsible for reviewing the names of Visalia City Council Members prior to making the following disclosure:

1. Have you or your company, or any agent on behalf of you or your company, made any political contributions of more than \$250 to a Visalia City Council Member in the twelve (12) months preceding the date of the submission of your proposals or the anticipated date of any City Council action related to this contract? YES: _____
NO: . If yes, please identify the City Council Member(s) and date(s) of contribution in the space below:

Council Member(s) Name

Date of Contribution(s)

Answering YES, does not preclude the City of Visalia from awarding a contract to your firm or from taking any subsequent action related to the contract. It does, however, preclude the identified Visalia City Council Member(s) from participating in any actions related to this contract.

NOTICE: The disclosure duty under state law continues for twelve (12) months after the award. If the above information regarding contributions changes during this time after the award, then the awardee is required to update this disclosure form.

Signature of Company Authorized Individual

Tatyana Lipanovich
Print or Type Name of Authorized Individual

EXHIBIT "B-5"
To Accompany Bid Form

STATE OF CALIFORNIA
DRUG-FREE WORKPLACE CERTIFICATION

STD.21 (REV.12-93)

CERTIFICATION

I, the official named below, hereby swear that I am duly authorized legally to bind the contractor or grant recipient to the certification described below. I am fully aware that this certification, executed on the date below, is made under penalty of perjury under the laws of the State of California.

CONTRACTOR/BIDDER FIRM NAME California Water Technologies, LLC	FEDERAL ID NUMBER 43-1982968
BY (Authorized Signature) 	DATE EXECUTED 08/21/2025
PRINTED NAME AND TITLE OF PERSON SIGNING Tatyana Lipanovich	TELEPHONE NUMBER (Include Area Code) (313) 319-7868
TITLE Director of Sales of Member, PVS Technologies, Inc. (member)	
CONTRACTOR/BIDDER FIRM'S MAILING ADDRESS PVS Chemicals, 10900 Harper Avenue, Detroit, MI 48213	

The contractor or grant recipient named above hereby certifies compliance with Government Code Section 8355 in matters relating to providing a drug-free workplace. The above named contractor or grant recipient will:

1. Publish a statement notifying employees that unlawful manufacture, distribution, dispensation, possession, or use of a controlled substance is prohibited and specifying actions to be taken against employees for violations, as required by Government Code Section 8355(a).
2. Establish a Drug-Free Awareness Program as required by Government Code Section 8355(b), to inform employees about all of the following:
 - (a) The dangers of drug abuse in the workplace,
 - (b) The person's or organization's policy of maintaining a drug-free workplace,
 - (c) Any available counseling, rehabilitation and employee assistance programs, and
 - (d) Penalties that may be imposed upon employees for drug abuse violations.
3. Provide as required by Government Code Section 8355©, that every employee who works on the proposed contract or grant:
 - (a) Will receive a copy of the company's drug-free workplace policy statement, and
 - (b) Will agree to abide by the terms of the company's statement as a condition of employment on the contract or grant.
4. At the election of the contractor or grantee, from and after the "Date Executed" and until _____ (NOT TO EXCEED 36 MONTHS), the state will regard this certificate as valid for all contracts or grants entered into between the contractor or grantee and this state agency without requiring the contractor or grantee to provide a new and individual certificate for each contract or grant. If the contractor or grantee elects to fill in the blank date, than the terms and conditions of this certificate shall have the same force, meaning effect and enforceability as if a certificate were separately, specifically, and individually provided for each contract or grant between the contractor or grantee and this state agency.

EXHIBIT "B-6"
AMERICANS WITH DISABILITIES ACT COMPLIANCE CERTIFICATE

To Accompany Bid Form

By submission of a bid, the BIDDER certifies it will comply with the Americans with Disabilities Act, 42 U.S.C., 12101 et. Seq., and will maintain compliance throughout the life of this Contract. By commencing performance of the Contract work, the selected BIDDER certifies to the Americans with Disabilities Act compliance.

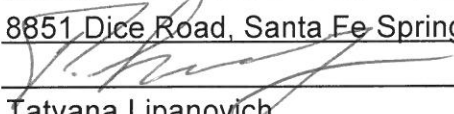
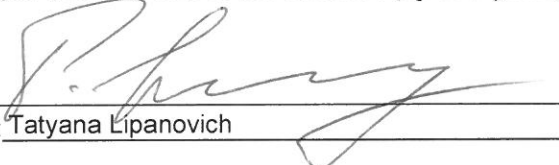
Company: California Water Technologies, LLC
Business Address: 8851 Dice Road, Santa Fe Springs, CA 90670
Signature: 
Name of Signing Official: Tatyana Lipanovich
Title of Signing Official: Director of Sales of Member, PVS Technologies, Inc. (member)
Date: August 21, 2025
Company Seal:
(if any)

EXHIBIT "B-7"
IRAN CONTRACTING ACT CERTIFICATION

(PUBLIC CONTRACT CODE SECTION 2200 ET SEQ.)
To Accompany Bid Form

As required by California Public Contract Code Section 2204, the Contractor certifies subject to penalty for perjury that the option checked below relating to the Contractor's status in regard to the Iran Contracting Act of 2010 (Public Contract Code Section 2200 et seq.) is true and correct:

- The Contractor is not:
- (1) Identified on the current list of persons and entities engaged in investment activities in Iran prepared by the California Department of General Services in accordance with subdivision (b) of Public Contract Code Section 2203; or
 - (2) A financial institution that extends, for 45 days or more, credit in the amount of \$20,000,000 or more to any other person or entity identified on the current list of persons and entities engaging in investment activities in Iran prepared by the California Department of General Services in accordance with subdivision (b) of Public Contract Code Section 2203, if that person or entity uses or will use the credit to provide goods or services in the energy sector in Iran.
- The City has exempted the Contractor from the requirements of the Iran Contracting Act of 2010 after making a public finding that, absent the exemption, the City will be unable to obtain the goods and/or services to be provided pursuant to the Contract.
- The amount of the Contract payable to the Contractor for the Project does not exceed \$1,000,00 over the life of the contract (up to 5 years).

Signature: 
Printed Name: Tatyana Lipanovich

Title: Director of Sales of Member, PVS Technologies, Inc. (member)
Agency Name: City of Visalia

Date: August 21, 2025

Note: In accordance with Public Contract Code Section 2205, false certification of this form shall be reported to the California Attorney General and may result in civil penalties equal to the greater of \$250,000 or twice the Contract amount, termination of the Contract and/or eligibility to bid on contracts for three years.



City of Visalia Purchasing Division
707 W. Acequia Avenue
Visalia, CA 93291 (559)713-4334
purchasing@visalia.gov

CITY OF VISALIA, CA
REQUEST FOR BID
RFB No. 25-26-08

**SUPPLY AND DELIVERY OF FERRIC CHLORIDE
TO THE VISALIA WATER RECLAMATION FACILITY**

ADDENDUM NO. 1

Issued: August 25, 2025

Submittals Due: **Wednesday, September 3, 2025, at 2:00 P.M. (PST)**

Addendum is being issued to provide responses to questions that have been submitted regarding this project. This addendum becomes part of the RFB- 25-26-08 document and must be signed and submitted with bid.

ITEM 1: QUESTIONS/RESPONSES

1. What is the current price?
\$1240.00/Ton
2. Who is the current supplier?
Penco
3. Is the addendum required to be acknowledged and submitted with the bid?
Yes
4. What is the anticipated start date?
Current contract ends 12/4/2025 anticipated start date is 12/5/2025
5. Can you provide the dates for the 12-month contract
Dependent on approvals from Council



City of Visalia Purchasing Division
707 W. Acequia Avenue
Visalia, CA 93291 (559)713-4334
purchasing@visalia.gov

CITY OF VISALIA, CA
REQUEST FOR BID
RFB No. 25-26-08

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Current contract ends 12/4/2025 anticipated start date is 12/5/2025
5. Can you provide the dates for the 12-month contract
Dependent on approvals from Council

6. Can I please get the bid tabulation for the Ferric Chloride bid to City of Visalia, CA? Dry Ton Price. Rates reflect bids received in March of 2019.



CITY OF VISALIA, CA
Annual Contract for Ferric Chloride
RFB-18-19-48
BID SUMMARY

Date: 03/22/2019

Location: CITY HALL WEST

Time: 2:00 PM

BIDDER'S NAME	LOCATION	TOTAL BID AMOUNT
Pencco, Inc	San Felipe, TX	\$ 716.10
Kemira	Lawrence, KS	\$ 728.00
Univar	Kent, WA	\$ no bid
California Water Tech	Detroit MI	\$ 706.88
		\$ _____
		\$ _____
		\$ _____
		\$ _____
		\$ _____

Witness: [Signature] Witness: _____
 Witness: [Signature] Witness: _____
 Witness: _____ Witness: _____
 Witness: _____ Witness: _____
 Witness: _____ Witness: _____

purchasing@visalia.city - www.visaliapurchasing.org
 559-713-4334 - 559-713-4802(fax)

Page ___ of ___

END OF ADDENDUM NO. 1

/s/ Purchasing Division
 (559) 713-4334

RESPONDENT to sign and submit with PROPOSAL

Firm: California Water Technologies, LLC

Date: August 25, 2025

By: [Signature]
 Bidder's Signature Tatyana Lipanovich

CERTIFICATION

I, Jonathan S. Taub, certify that I am the Secretary of PVS Technologies, Inc. ("PVS"), a Michigan corporation, which is a member of California Water Technologies, L.L.C. (the "Company"), a Michigan limited liability company, which is managed by its members.

I further certify that the following is an accurate and complete copy of resolutions duly adopted by the members of the Management Committee of the Company, and that said resolutions remain in full force and effect as of the date of this certificate:

"RESOLVED That the Company is authorized to submit bids to private and governmental entities for the sale of products and for the performance of services (collectively, 'Bids').


RESOLVED That the Company is authorized to enter into contracts with private and governmental entities for the sale and purchase of products and for the performance of services (collectively, 'Contracts').

FURTHER RESOLVED That the Company is authorized to submit applications for permits, licenses and other grants of authority from governmental entities which the Company requires to conduct its business (collectively, 'Applications').

FURTHER RESOLVED That the following persons, and each of them acting alone, shall be and is authorized to execute Bids, Contracts and Applications on behalf of the Company and such other documents relating to Bids, Contracts and Applications as such person deems necessary or expedient for the purposes of carrying out the terms of the Bids, Contracts and Applications or otherwise conducting the business of the Company:

Alex Avraamides:	Representative, Phibro-Tech, Inc.
Christopher Thompson:	President of Member, PVS Technologies, Inc.
Tatyana Lipanovich:	Director of Sales of Member, PVS Technologies, Inc."

IN WITNESS OF THIS CERTIFICATE, I have signed below on May 14, 2025.



Jonathan S. Taub, Secretary of Member,
PVS Technologies, Inc.

Subscribed and sworn to before me
on May 14, 2025.



Notary Public, Wayne County, Michigan

My Commission Expires: 3/2/2030

Mary M. Torrey
Notary Public, Macomb County, MI
Acting in Wayne County
Commission expires March 2, 2030



CERTIFICATE OF LIABILITY INSURANCE

4/1/2026

DATE (MM/DD/YYYY)

8/21/2025

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

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

PRODUCER Lockton Companies, LLC DBA Lockton Insurance Brokers, LLC in CA CA license #0F15767 1185 Avenue of the Americas, Ste. 2010 New York NY 10036 (646) 572-7300	CONTACT NAME: PHONE (A/C, No, Ext):		FAX (A/C, No):
	E-MAIL ADDRESS:		
INSURER(S) AFFORDING COVERAGE			NAIC #
INSURER A: ACE American Insurance Company			22667
INSURER B:			
INSURER C:			
INSURER D:			
INSURER E:			
INSURER F:			

INSURED
1540108 California Water Technologies, LLC
8851 Dice Road
Santa Fe Springs CA 90670

COVERAGES **CERTIFICATE NUMBER:** 22317120 **REVISION NUMBER:** XXXXXXXX

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

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input checked="" type="checkbox"/> CLAIMS-MADE <input type="checkbox"/> OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: <input checked="" type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC OTHER:	Y	N	HDC G48959544	4/1/2025	4/1/2026	EACH OCCURRENCE \$ 5,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 5,000,000 MED EXP (Any one person) \$ 10,000 PERSONAL & ADV INJURY \$ 5,000,000 GENERAL AGGREGATE \$ 10,000,000 PRODUCTS - COMP/OP AGG \$ 10,000,000 \$
A	<input checked="" type="checkbox"/> AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> OWNED AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS <input checked="" type="checkbox"/> HIRED AUTOS ONLY <input type="checkbox"/> NON-OWNED AUTOS ONLY	Y	N	ISA H1082624A	4/1/2025	4/1/2026	COMBINED SINGLE LIMIT (Ea accident) \$ 2,000,000 BODILY INJURY (Per person) \$ XXXXXXXX BODILY INJURY (Per accident) \$ XXXXXXXX PROPERTY DAMAGE (Per accident) \$ XXXXXXXX Phys. Damage \$ 5,000
	<input type="checkbox"/> UMBRELLA LIAB <input type="checkbox"/> OCCUR <input type="checkbox"/> EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE <input type="checkbox"/> DED <input type="checkbox"/> RETENTION \$			NOT APPLICABLE			EACH OCCURRENCE \$ XXXXXXXX AGGREGATE \$ XXXXXXXX \$ XXXXXXXX
A A A	<input checked="" type="checkbox"/> WORKERS COMPENSATION AND EMPLOYERS' LIABILITY <input checked="" type="checkbox"/> ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in Nh) If yes, describe under DESCRIPTION OF OPERATIONS below	Y/N N	N/A	WLR C72629991 (AOS) SCF C72630075 [NJ, TX] SCF C72630038 (FL, OR, WI)	4/1/2025 4/1/2025 4/1/2025	4/1/2026 4/1/2026 4/1/2026	<input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTH-ER E.L. EACH ACCIDENT \$ 2,000,000 E.L. DISEASE - EA EMPLOYEE \$ 2,000,000 E.L. DISEASE - POLICY LIMIT \$ 2,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)
 The City of Visalia, its officers, agents, employees, representatives, and volunteers are included as Additional Insured on the General Liability and Automobile Liability as required by written contract. 30-day notice of cancellation included.

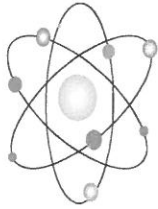
CERTIFICATE HOLDER**CANCELLATION**

22317120
City of Visalia
Attn: Purchasing Division
707 W. Acequia
Visalia, CA 93291

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

AUTHORIZED REPRESENTATIVE

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Phone: (248) 591-6660
MI Only: (888) 801-4MAS
Fax No: (248) 591-6668

PVS Technologies
10825 Harper Ave
Detroit, MI 48213-6303

Test Report

Order ID: 2501057
MAS Sample #: 250127011
Date Completed: 2/12/2025
PO Number: 219656

Sample Identification: Phibro FeCl3 Q4

Physical Description: Liquid

Sample Date: 1/6/2025

Sample Collected By: Thomas Rose

Method Number	Parameter	Result	Units	EQL	Analyst	Date Analyzed	Data Flag
	Total Metals:						
SW 846 6010B	Aluminum	71	mg/Kg	1.3	MV	2/6/2025	
SW 846 6010B	Arsenic	N/D	mg/Kg	0.50	MV	2/6/2025	
SW 846 6010B	Barium	0.39	mg/Kg	0.25	MV	2/6/2025	
SW 846 6010B	Beryllium	N/D	mg/Kg	0.025	MV	2/6/2025	
SW 846 6010B	Cadmium	N/D	mg/Kg	0.50	MV	2/6/2025	
SW 846 6010B	Chromium	110	mg/Kg	0.50	MV	2/6/2025	
SW 846 6010B	Copper	110	mg/Kg	0.25	MV	2/6/2025	
SW 846 6010B	Antimony	8.6	mg/Kg	5.0	MV	2/6/2025	
SW 846 7470A	Mercury	N/D	mg/Kg	0.002	MV	2/5/2025	HT
SW 846 6010B	Magnesium	28	mg/Kg	2.5	MV	2/6/2025	
SW 846 6010B	Manganese	1600	mg/Kg	19	MV	2/7/2025	
SW 846 6010B	Molybdenum	42	mg/Kg	0.50	MV	2/6/2025	
SW 846 6010B	Silver	N/D	mg/Kg	0.25	MV	2/6/2025	
SW 846 6010B	Nickel	31	mg/Kg	0.50	MV	2/6/2025	
SW 846 6010B	Titanium	12	mg/Kg	0.25	MV	2/6/2025	
SW 846 6010B	Lead	4.6	mg/Kg	0.50	MV	2/6/2025	
SW 846 6010B	Selenium	N/D	mg/Kg	0.50	MV	2/6/2025	
SW 846 6010B	Zinc	11	mg/Kg	0.50	MV	2/6/2025	
SW 846 6010B	Vanadium	7.2	mg/Kg	0.25	MV	2/6/2025	
SW 846 6010B	Sulfur	35	mg/Kg	13	MV	2/6/2025	
SW 846 6010B	Thallium	N/D	mg/Kg	2.5	MV	2/6/2025	

Kevin O'Mara
Laboratory Director



california water technologies LLC

8851 Dice Road Santa Fe Springs, CA 90670
(866) 337-7427

Liquid Ferric Chloride Drinking Water Grade

Description

California Water Technologies Liquid Ferric Chloride is a concentrated solution of Iron III Chloride (FeCl_3) in water. It is manufactured from high purity raw materials.

Principal Uses

Potable water treatment

- Turbidity reduction
- Color elimination
- Enhanced coagulation, NOM and DBP precursor removal
- Softening solids sedimentation
- Membrane pre-treatment
- Sludge reduction
- Filter conditioning
- Arsenic Removal

Wastewater treatment

- Phosphate precipitation and removal
- Enhanced sedimentation
- Dewatering of all types of sludge streams
- Polymer flocculant enhancement
- Sulfide based odor elimination
- Struvite control

Appearance:	A dark red/brown liquid	Specifications
Concentrations:		
FeCl_3	39% - 44%	
FeCl_2	0.75% maximum	
Free Acid as HCl	1.0% maximum	Drinking Water Grade
Insolubles	0.008% (80 ppm) maximum	
Radionuclides	None	
Specific gravity:	1.40 – 1.47	
Viscosity:	12.1 centipoises for a 40% solution	
Crystallization:	39% FeCl_3 (4°F); 44% FeCl_3 (45°F)	
ANSI/NSF Standard 60 Certified:	Maximum use level – 250 ppm as solution	
CAS No.:	7705-08-0	
UN Classification:	UN2582, Ferric Chloride Solution	
	SQC data available on request	

Document Number.:	Page 1 of 2	Revision No.:	Revision Date:
		3	1/18/2011

Shipping containers:

55 gallon drums
Tank Trucks

Manufacturing Location

Santa Fe Springs, California

Handling & Safety

Ferric Chloride is considered to be hazardous by definition of the Hazard Communication Standard (29 CFR 1910.1200) and should be handled in a manner that is consistent with acceptable practices. Please obtain the Ferric Chloride Material Safety Data Sheet for complete up-to-date information.

Under normal situations the only protective equipment required in the use of Liquid Ferric Chloride are splash proof chemical goggles and rubber gloves. Liquid Ferric Chloride will stain both clothing and skin and it is recommended that, to protect against this occurrence, other protective clothing be worn as is appropriate.

Ferric Chloride reacts strongly with many metals. However, most handling situations are reliably addressed through the use of common compatible plastic materials such as FRP, PVC, Polyethylene, Polypropylene and Teflon. For additional information consult your equipment supplier.

For additional information and to place orders call: 866-337-7427

California Water Technologies
Serving The Water and Wastewater Industry

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Document Number.:	Page 2 of 2	Revision No.:	Revision Date:
		3	1/18/2011



05/02/2025

Carla Berry
California Water Technologies, LLC
8851 Dice Road
Santa Fe Springs, CA 90670

Subject: Revised Authorized Registered Formulation for Standard 60

Enclosed is a copy of your revised Authorized Registered Formulation. This complete formulation (original copy with blue watermark) must be retained and on file at the identified facility location for review by an NSF Auditor, conducting the annual/follow-up audits. Please forward the Authorized Registered Formulation to the appropriate facility. Each product is identified by Document Control Code (DCC number) located in the upper left hand corner of the each page. All previous and now outdated Authorized Registered Formulations for your products are to be destroyed and replaced with the enclosed revisions.

The NSF audit of your facility, including materials/process verification and product sampling, will be guided by this formulation. Failure to maintain this information at the facility may require special follow-up audits or result in removal of products from Listing.

Only those specific material/ingredients and use levels indicated in the Authorized Registered Formulation are authorized for use in the Certified Product. To obtain authorization for an alternate supplier (or other modification) please contact your Account Manager at 1-800-NSF-MARK to request the appropriate forms. For customers outside the USA, please use 1-734-769-8010 and ask for your Account Manager. As a reminder, you are not permitted to make any formulation changes to NSF Certified products without prior written approval from NSF.

If you have any questions about the Authorized Registered Formulation, please contact your Account Manager indicated below.

Enclosure: Authorized Registered Formulation

Account Manager: Denice Erley, 1-947-207-1532, ERLEY@NSF.ORG

Facility: C0044724

DCC: DA06157

This is a copy of the Authorized Registered Formulation. If you have received this ARF in hard copy, you may confirm the most current ARF by contacting your Account Manager or going directly to the secure NSF Connect website (<http://clients.nsf.org>) for the latest, most accurate information.

NSF/ANSI/CAN Standard 60 - Drinking Water Treatment Chemicals
Authorized Registered Formulation

Reason for Revision: W0991297 - Add Supplier to CFL1 on DA06157 at C0044724.

Customer Name: California Water Technologies, LLC

Facility Location: Santa Fe Springs, CA

Customer Number: C0044723

Facility At: Santa Fe Springs, CA

Facility Number: C0044724

Trade Name Level Functions: Coagulation & Flocculation

Trade Name(s)	MUL(mg/L)
Ferric Chloride 40%	250
Ferric Chloride 41%	250
Ferric Chloride 43%	250
Ferric Chloride Drinking Water Grade	250
Ferric Chloride DWG	250
Ferric Chloride LMG	250
Ferric Chloride WT	250
Ferric Chloride, Solution	250
Liquid Ferric Chloride	250
Liquid Ferric Chloride - High Acid Drinking Water Grade	250

Section/Category: COAG, SECTION 4 - COAGULATION & FLOCCULATION

Chemical Name: Ferric Chloride

Physical State: Liquid

Auditor Notes

- Formulations are not product trade name specific.
- Formulation 2 is a repackage of a NSF Certified product.

Sample Notes

- Please submit for testing:
- Required sample is the highest certified concentration available from formulation 1
 - Strength of submitted sample is ____%
 - Safety Data Sheet (SDS)
- Liquid samples typically require 125 mL for testing.
-

DCC: DA06157

Date: 05/02/2025

Formulation

Customer Name: California Water Technologies, LLC
Customer Number: C0044723

Facility Location: Santa Fe Springs, CA
Facility At: Santa Fe Springs, CA
Facility Number: C0044724

Formulation Description: Formulation 1

Chemical Name	Trade Name	Supplier Name	% or PPW	DCC	Footnote#
HYDROCHLORIC ACID	HCL (20-37%)	BASIC CHEMICAL SOLUTIONS, LLC (BCS)	72-86%		
HYDROCHLORIC ACID	HCL (20-37%)	COVESTRO	72-86%		
HYDROCHLORIC ACID	ANY NSF CERTIFIED HYDROCHLORIC ACID	JONES-HAMILTON CO	72-86%		
HYDROCHLORIC ACID	HCL (20-37%)	CANEXUS CHEMICALS	72-86%		
HYDROCHLORIC ACID	HCL (20-37%)	REAGENT CHEMICAL & RESEARCH INC	72-86%		
HYDROCHLORIC ACID	ANY NSF CERTIFIED HYDROCHLORIC ACID	PIONEER AMERICAS LLC D/B/A OLIN CHLOR ALKALI PRODUCTS	72-86%		
HYDROCHLORIC ACID	HCL (20-37%)	PVS CHLORALKALI	72-86%		
HYDROCHLORIC ACID	HCL (20-37%)	UNIVAR	72-86%		
IRON OXIDE	IRON OXIDE	USS-POSCO INDUSTRIES (UPI)	12-20%		
IRON OXIDE	IRON OXIDE	PVS STEEL SERVICES	12-20%		
IRON OXIDE	IRON OXIDE	PROSI, SA DE CV*	12-20%		
IRON OXIDE	IRON OXIDE	HLYSA SA DE CV	12-20%		
IRON OXIDE	IRON OXIDE	BAILEY-PVS OXIDES, LLC (BPO)	12-20%		
IRON OXIDE	IRON OXIDE	DENSIMIX, INC	12-20%		
IRON OXIDE	FERRIC OXIDE	REMURIATE ARKANSAS LLC	12-20%		
WATER	POTABLE CITY WATER	MUNICIPAL	0-12%		

DCC: DA06157

Date: 05/02/2025

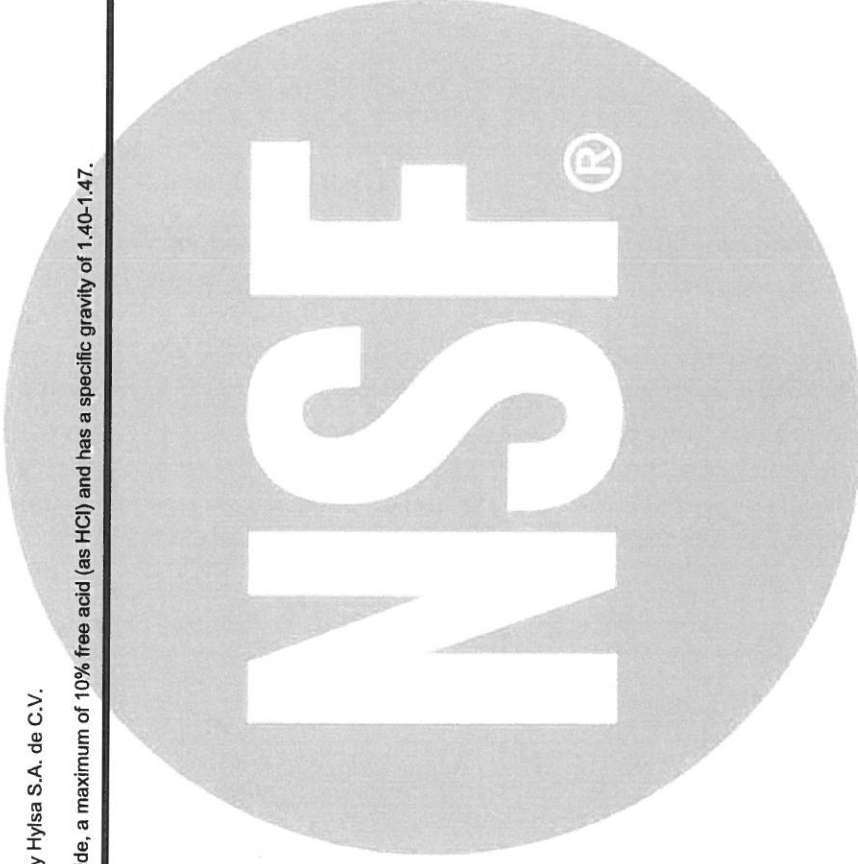
Formulation

Formulation Description: Formulation 1

Notes

*Distributor of iron oxide supplied by Hylisa S.A. de C.V.

Final product is 31-44% ferric chloride, a maximum of 10% free acid (as HCl) and has a specific gravity of 1.40-1.47.



Formulation

Formulation Description: Formulation 2

Chemical Name	Trade Name	Supplier Name	% or PPW	DCC	Footnote#
FERRIC CHLORIDE	ANY NSF CERTIFIED FERRIC CHLORIDE (WITH MUL > 250 MG/L)	PVS TECHNOLOGIES	100%		
FERRIC CHLORIDE	ANY NSF CERTIFIED FERRIC CHLORIDE (WITH MUL > 250 MG/L)	ANY SUPPLIER	100%		

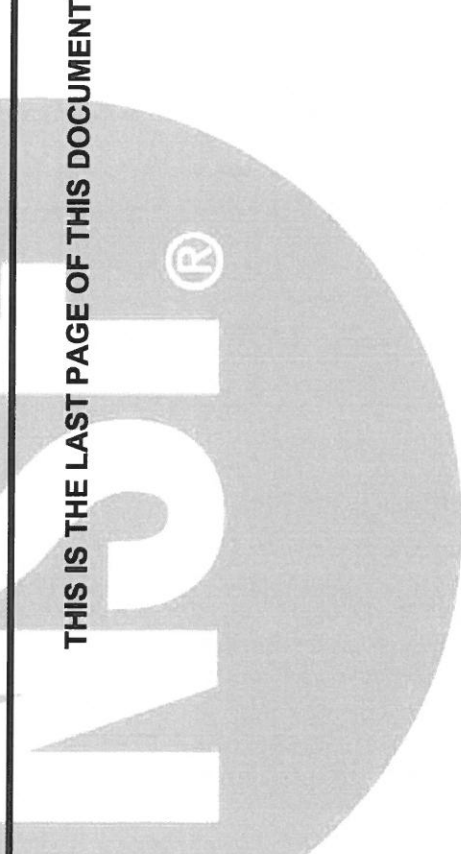
Notes

Definitions of Terminology used in this Document:

Trade name: The name given to the ingredient, material or assembly by the company that makes the product.

Supplier: The name of the company that provides an ingredient, material or assembly directly to the company that makes the product covered by this registration. The supplier could be a formulator, distributor, fabricator, molder, extruder, mixer, manufacturer or assembler.

Formulator: The name of the company that prepares a material according to a formula. The formulator and the supplier could be the same company. This field may be blank as this information is only reported when the information is not confidential.



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SAFETY DATA SHEET



california water technologies, inc.

Ferric Chloride Solution DWG Grade

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

GHS Product Information

Product Name: Ferric Chloride Solution DWG Grade
Business Unit Phibro-Tech Inc
Other means of identification: Not available

Safety data sheet number: 3073-310 -US-E

Recommended use of the chemical and restrictions on use

Recommended use: No information available.

Uses advised against: No information available

Details of the supplier of the safety data sheet

Supplier:

Phibro-Tech, Inc.
Glenpointe Centre East, 3rd FL
300 Frank W. Burr Blvd., Ste 21
Teaneck, NJ 07666-6712
Tel: (201) 329-7300
Toll free: (888) 475-7355
Fax: (201) 329-7070
Toll Free: 888-475-7355

SDS Contact (email of responsible person): phibroehs@pahc.com

24 Hour Emergency Phone Number: Chemtrec 1-800-424-9300 (CCN17224)

International: International Number: +1 703-527-3887

2. HAZARDS IDENTIFICATION

Classification

OSHA Regulatory Status

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)


Acute toxicity - Oral	Category 4
Skin corrosion/irritation	Category 1 Sub-category B
Serious eye damage/eye irritation	Category 1
Specific target organ toxicity (single exposure)	Category 3

Label elements

Emergency Overview

Danger

Hazard statements
Harmful if swallowed
Causes severe skin burns and eye damage
May cause respiratory irritation. May cause drowsiness or dizziness



Appearance cloudy **Physical state** liquid **Odor** Slight Hydrogen chloride (HCl)

Precautionary Statements - Prevention

Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Do not breathe dust/fume/gas/mist/vapors/spray
Wear protective gloves/protective clothing/eye protection/face protection
Use only outdoors or in a well-ventilated area

Precautionary Statements - Response

Immediately call a POISON CENTER or doctor/physician
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
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
Wash contaminated clothing before reuse
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Immediately call a POISON CENTER or doctor/physician
Call a POISON CENTER or doctor/physician if you feel unwell
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
Rinse mouth
Do NOT induce vomiting

Precautionary Statements - Storage

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

Precautionary Statements - Disposal

Dispose of contents/ container to an approved landfill

Hazards not otherwise classified (HNOC)

Other Information

Other hazards

- Harmful to aquatic life with long lasting effects
- Harmful to aquatic life

3. COMPOSITION/INFORMATION ON INGREDIENTS

Pure substance/mixture Mixture

Chemical Name	CAS No	Weight-%	Trade Secret
Iron trichloride	7705-08-0	15 - 40	*

Hydrogen chloride	7647-01-0	7 - 13	*
-------------------	-----------	--------	---

*The exact percentage (concentration) of composition has been withheld as a trade secret.

4. FIRST AID MEASURES

First aid measures

- General advice:** If symptoms persist, call a physician. Do not breathe dust/fume/gas/mist/vapors/spray. Do not get in eyes, on skin, or on clothing.
- Eye contact:** Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Keep eye wide open while rinsing. If symptoms persist, call a physician.
- Inhalation:** Remove to fresh air. Call a physician. If breathing is irregular or stopped, administer artificial respiration. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Artificial respiration and/or oxygen may be necessary. Immediate medical attention is not required. Move to fresh air in case of accidental inhalation of vapors. If symptoms persist, call a physician.
- Skin Contact:** Consult a physician if necessary. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Wash contaminated clothing before reuse. If skin irritation persists, call a physician. Immediate medical attention is not required.
- Ingestion:** Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Call a physician immediately.
- Self-protection of the first aider:** Use personal protective equipment as required.

Most important symptoms and effects, both acute and delayed

Symptoms: No information available.

Indication of any immediate medical attention and special treatment needed

Note to physicians: Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Extinguishing media

Suitable extinguishing media: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media: Caution: Use of water spray when fighting fire may be inefficient.

Specific hazards arising from the chemical: No information available.

Explosion data

Sensitivity to Mechanical Impact: None.

Sensitivity to Static Discharge: None.

Protective equipment and precautions for firefighters: As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

- Personal precautions:** Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.
- For emergency responders:** Use personal protection recommended in Section 8. Use personal protective equipment as required.
- Environmental Precautions:** Prevent entry into waterways, sewers, basements or confined areas. Do not flush into surface water or sanitary sewer system. Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. See Section 12 for additional ecological information.

Methods and material for containment and cleaning up

- Methods for containment:** Prevent further leakage or spillage if safe to do so.
- Methods for cleaning up:** Cover liquid spill with sand, earth or other non-combustible absorbent material. Cover powder spill with plastic sheet or tarp to minimize spreading. Pick up and transfer to properly labeled containers. Soak up with inert absorbent material. Dam up.

Personal precautions, protective equipment and emergency procedures

- Personal precautions:** Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.
- For emergency responders:** Use personal protection recommended in Section 8. Use personal protective equipment as required.
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7. HANDLING AND STORAGE

Precautions for safe handling

- Advice on safe handling:** Avoid contact with skin, eyes or clothing. Use personal protective equipment as required. Wash contaminated clothing before reuse. Do not breathe dust/fume/gas/mist/vapors/spray. Do not eat, drink or smoke when using this product. Use with local exhaust ventilation.

Conditions for safe storage, including any incompatibilities

- Storage Conditions:** Keep container tightly closed in a dry and well-ventilated place. Keep out of the reach of children. Keep containers tightly closed in a cool, well-ventilated place. Keep in properly labeled containers.
- Incompatible materials:** None known based on information supplied.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Chemical Name	CAS No	ACGIH TLV	OSHA PEL	NIOSH IDLH
---------------	--------	-----------	----------	------------

Product Code 3073-310 Ferric Chloride Solution DWG Revision Date 12/03/2015
Grade

Iron trichloride	7705-08-0	TWA: 1 mg/m ³ Fe	(vacated) TWA: 1 mg/m ³ Fe	TWA: 1 mg/m ³ Fe
Hydrogen chloride	7647-01-0	Ceiling: 2 ppm	(vacated) Ceiling: 5 ppm (vacated) Ceiling: 7 mg/m ³ Ceiling: 5 ppm Ceiling: 7 mg/m ³	IDLH: 50 ppm Ceiling: 5 ppm Ceiling: 7 mg/m ³

NIOSH IDLH Immediately Dangerous to Life or Health

Other Information: Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).

Appropriate engineering controls

Engineering Controls: Showers
Eyewash stations
Ventilation systems.

Individual protection measures, such as personal protective equipment

General Hygiene Considerations: When using do not eat, drink or smoke. Regular cleaning of equipment, work area and clothing is recommended.

Eye/face protection: Tight sealing safety goggles. Face protection shield.

Skin and body protection: No special technical protective measures are necessary.

Respiratory protection: If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	liquid	Odor	Slight Hydrogen chloride (HCl)
Appearance	cloudy	Odor threshold	No information available
Color	yellow	Remarks • Method	
<u>Property</u>	<u>Values</u>		
pH	2-4		
Melting Point / Freezing Point	No information available		
Boiling point / boiling range	No information available		
Flash point	No information available		
Evaporation rate	No information available		
Flammability (solid, gas)	No information available		
Flammability Limit in Air			
Upper flammability limit:	No information available		
Lower flammability limit:	No information available		
Vapor pressure	No information available		
Vapor density	No information available		
Specific Gravity	No information available		
Water solubility	No information available		
Solubility in other solvents	No information available		
Partition coefficient	No information available		
Autoignition temperature	No information available		
Decomposition temperature	No information available		
Kinematic viscosity	No information available		
Dynamic viscosity	No information available		
Explosive properties	No information available		
Oxidizing properties	No information available		

Other Information

Softening point No information available
Molecular weight No information available
VOC Content (%) No information available
Density No information available
Bulk density No information available
Percent Volatile No information available

10. STABILITY AND REACTIVITY

Reactivity

No data available

Chemical stability

Stable under recommended storage conditions.

Possibility of Hazardous Reactions

None under normal processing.

Conditions to avoid

Extremes of temperature and direct sunlight.

Incompatible materials

None known based on information supplied.

Hazardous Decomposition Products

None known based on information supplied.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information: No data available
Inhalation: No data available.
Eye contact: No data available.
Skin Contact: No data available.
Ingestion: No data available.

Chemical Name	CAS No	Oral LD50	Dermal LD50	Inhalation LC50
Iron trichloride	7705-08-0	= 450 mg/kg (Rat) = 316 mg/kg (Rat)	-	-
Hydrogen chloride	7647-01-0	= 700 mg/kg (Rat)	> 5010 mg/kg (Rabbit)	= 3124 ppm (Rat) 1 h

Information on toxicological effects

Symptoms: No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization: No information available.
Germ cell mutagenicity: No information available.
Carcinogenicity: The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical Name	CAS No	ACGIH	IARC	NTP	OSHA
Hydrogen chloride	7647-01-0	-	Group 3	-	-

IARC (International Agency for Research on Cancer)
Not classifiable as a human carcinogen

Reproductive toxicity: No information available.
STOT - single exposure: No information available.
STOT - repeated exposure: No information available.
Chronic toxicity: Avoid repeated exposure. May cause adverse liver effects.
Target Organ Effects: Eyes, Gastrointestinal tract (GI), liver, Respiratory system, Skin.
Aspiration hazard: No information available.

Numerical measures of toxicity - Product Information

The following values are calculated based on chapter 3.1 of the GHS document .

ATEmix (oral) 820 mg/kg
ATEmix (inhalation-dust/mist) 5 mg/l 917

12. ECOLOGICAL INFORMATION

Ecotoxicity

Harmful to aquatic life with long lasting effects

0% of the mixture consists of components(s) of unknown hazards to the aquatic environment

Chemical Name	CAS No	Algae/aquatic plants	Fish	Crustacea
Iron trichloride	7705-08-0	-	20.26: 96 h Lepomis macrochirus mg/L LC50 semi-static 20.95 - 22.56: 96 h Pimephales promelas mg/L LC50 semi-static 75.6: 96 h Gambusia affinis mg/L LC50 static	27.9: 48 h Daphnia magna mg/L EC50 9.6: 48 h Daphnia magna mg/L EC50 Static
Hydrogen chloride	7647-01-0	-	282: 96 h Gambusia affinis mg/L LC50 static	-

Persistence and degradability

No information available.

Bioaccumulation

No information available.

Mobility

No information available.

Chemical Name	Partition coefficient
Iron trichloride	-4

Other adverse effects:

No information available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal of wastes: This material, as supplied, is a hazardous waste according to federal regulations (40 CFR 261).

Disposal methods: Do not reuse container.

14. TRANSPORT INFORMATION

Note: Store in a closed container. Keep container upright.

Product Code 3073-310 Ferric Chloride Solution DWG Revision Date 12/03/2015
Grade

DOT

UN/ID no UN2582
Proper shipping name Ferric chloride, solution ()
Hazard Class 8
Packing Group III
Special Provisions B15, IB3, T4, TP1
Description UN2582, Ferric chloride, solution, 8, III
Emergency Response Guide Number 154

IATA

UN/ID no UN2582
Proper shipping name Ferric chloride solution ()
Hazard Class 8
Packing Group III
ERG Code 8L
Special Provisions A3, A803
Description UN2582, Ferric chloride solution, 8, III

IMDG

UN/ID no UN2582
Proper shipping name Ferric chloride solution ()
Hazard Class 8
Packing Group III
EmS-No F-A, S-B
Special Provisions 223
Description UN2582, Ferric chloride solution, 8, III

15. REGULATORY INFORMATION

International Inventories

TSCA: Complies
DSL/NDSL: Complies
EINECS/ELINCS: Complies
ENCS: Not Determined
IECSC: Complies
KECL: Complies
PICCS: Complies
AICS: Complies

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	CAS No	SARA 313 - Threshold Values %
Hydrogen chloride	7647-01-0	1.0

Product Code 3073-310 Ferric Chloride Solution DWG Revision Date 12/03/2015
Grade

SARA 311/312 Hazard Categories

Acute health hazard Yes
Chronic Health Hazard No
Fire hazard No
Sudden release of pressure hazard No
Reactive Hazard No

CWA (Clean Water Act)

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Chemical Name	CAS No	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Iron trichloride	7705-08-0	1000 lb	-	-	X
Hydrogen chloride	7647-01-0	5000 lb	-	-	X

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical Name	CAS No	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Iron trichloride	7705-08-0	1000 lb	-	RQ 1000 lb final RQ RQ 454 kg final RQ
Hydrogen chloride	7647-01-0	5000 lb	5000 lb	RQ 5000 lb final RQ RQ 2270 kg final RQ

FIFRA

Not applicable

US State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals

U.S. State Right-to-Know Regulations

No information available

Chemical Name	CAS No	New Jersey	Massachusetts	Pennsylvania
Iron trichloride	7705-08-0	X	X	X
Hydrogen chloride	7647-01-0	X	X	X

Canada

No information available

16. OTHER INFORMATION

NFPA Health hazards 3 Flammability 0 Instability 0 Physical & Chemical Properties 0
HMIS Health hazards 3 Flammability 0 Physical hazards 0 Personal protection H

Document Review

Revision Number: 1

Revision Note: No information available

Product Code 3073-310 Ferric Chloride Solution DWG Revision Date 12/03/2015
Grade

Key or legend to abbreviations and acronyms used in the safety data sheet:

Bioconcentration factor (BCF)
International Air Transport Association (IATA)
Globally Harmonized System (GHS)
International Maritime Dangerous Goods (IMDG)

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End of Safety Data Sheet