

**BAY AREA CHEMICAL CONSORTIUM
BID FORM FOR BID NO. 06-2026
FOR SUPPLY AND DELIVERY OF FERRIC CHLORIDE**

Sealed bids must be submitted in a PDF format and bidders must enter bid prices into the electronic bid platform (Line Item page)

<https://bacwa.org/about-bacc/>

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

Legal Name of Bidder:

Pencco, Inc.

Business Address

PO Box 600

San Felipe, TX 77473

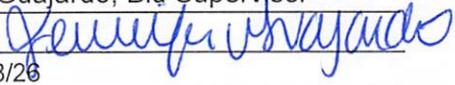
Telephone Number: 979.885.0005

Facsimile Number: 979.885.3208

Email Address: jguajardo@pencco.com

Authorized Representative (Please Print):

Jennifer Guajardo, Bid Supervisor

Signature: 

Date: 2/18/26

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

II. Bidders must submit all of the following, attached to this Bid Form:

- a. All requirements listed in Section 2.21 Manufacturer's Info.
- b. If applicable, the name, address, and contact information for the third party hauling company as well as an affidavit signed by the Bidder that the third party hauler can and will deliver the chemical to each and every participating BACC Agency.

III. Bidder Obligations

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



PO Box 600 San Felipe, Texas 77473
(979) 885-0005 Fax: (979) 885-3208

BOARD OF DIRECTORS MEETING

Prior notice was waived, and a meeting of the Directors was held on February 20, 2025. The following resolution was adopted in respects to the official signing of bids and contracts on behalf of Pencoco, Inc.

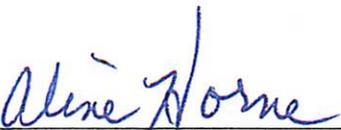
BE IT RESOLVED that Sarah Duffy, Bid Director, of the Corporation has authority to negotiate for and sign any bids/contracts which the Corporation might enter into for the furnishing of goods and services for the Corporation under such terms, conditions and stipulations, as for such consideration as she may deem to be in the best interest of the Corporation.

BE IT RESOLVED that Jennifer Guajardo, Bid Supervisor, of the Corporation has authority to negotiate for and sign any bids/contracts which the Corporation might enter into for the furnishing of goods and services for the Corporation under such terms, conditions and stipulations, as for such consideration as she may deem to be in the best interest of the Corporation.

No further business was necessary, and the meeting was concluded.



R. L. Horne, President



Aline Horne, Secretary



PO Box 600 San Felipe, Texas 77473
(979) 885-0005 Fax: (979) 885-3208

AFFIDAVIT OF COMPLIANCE

This is to certify that the Liquid Ferric Chloride supplied by our company meets AWWA Standard B407-24 or the latest revision and is certified to NSF/ANSI Standard NSF-60.



Signature

R. L. Horne, President

Name and Title of Official

1/6/2026

Date



The Public Health and Safety Organization

NSF Product and Service Listings

These NSF Official Listings are current as of **Wednesday, February 18, 2026** at 12:15 a.m. Eastern Time. Please [contact NSF](#) to confirm the status of any Listing, report errors, or make suggestions.

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

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

PENCCO, Inc.

831 Bartlett Road

Sealy, TX 77474

United States

800-864-1742

979-885-0005

Visit this company's website (<http://www.pencco.com>)

Facility : Distribution Center - Gadsden, AL

Ferric Sulfate

Trade Designation

50% Ferric Sulfate

60% Ferric Sulfate

Ferric Sulfate

Ferric Sulfate Solution

Poly Ferric Sulfate

Product Function

Coagulation & Flocculation

Max Use

650mg/L

650mg/L

650mg/L

650mg/L

650mg/L

Hydrofluosilicic Acid

Trade Designation

Fluorosilicic Acid

Fluosilicic Acid

HFS

HFSA

Hydrofluorosilicic Acid

Hydrofluosilicic Acid

Product Function

Fluoridation

Fluoridation

Fluoridation

Fluoridation

Fluoridation

Fluoridation

Max Use

5mg/L

5mg/L

5mg/L

5mg/L

5mg/L

5mg/L

Facility : Glendale, AZ

Ferric Chloride

Trade Designation

Ferric Chloride

Product Function

Coagulation & Flocculation

Max Use

600mg/L

Ferrous Chloride

Trade Designation

Ferrous Chloride

Product Function

Coagulation & Flocculation

Max Use

500mg/L

Hydrofluosilicic Acid

Trade Designation

Fluorosilicic Acid

Fluosilicic Acid

Hydrofluorosilicic Acid

Product Function

Fluoridation

Fluoridation

Fluoridation

Max Use

5mg/L

5mg/L

5mg/L

Hydrofluosilicic Acid	Fluoridation	5mg/L
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Facility : Distribution Center - Stockton, CA

Ferric Chloride <i>Trade Designation</i> Ferric Chloride	Product Function Coagulation & Flocculation	Max Use 600mg/L
Hydrofluosilicic Acid <i>Trade Designation</i> Fluorosilicic Acid Fluosilicic Acid HFS HFSA Hydrofluorosilicic Acid Hydrofluosilicic Acid	Product Function Fluoridation Fluoridation Fluoridation Fluoridation Fluoridation Fluoridation Fluoridation	Max Use 5mg/L 5mg/L 5mg/L 5mg/L 5mg/L 5mg/L 5mg/L

Facility : Vernon, CA

Ferric Chloride <i>Trade Designation</i> Ferric Chloride	Product Function Coagulation & Flocculation	Max Use 600mg/L
Ferrous Chloride <i>Trade Designation</i> Ferrous Chloride	Product Function Coagulation & Flocculation	Max Use 500mg/L

Facility : Distribution Center - Willow Springs, IL

Hydrofluosilicic Acid <i>Trade Designation</i> Fluorosilicic Acid Fluosilicic Acid Hydrofluosilicic Acid	Product Function Fluoridation Fluoridation Fluoridation	Max Use 5mg/L 5mg/L 5mg/L
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Facility : Distribution Center - Whippany, NJ

Hydrofluosilicic Acid <i>Trade Designation</i> Hydrofluosilicic Acid	Product Function Fluoridation	Max Use 5mg/L
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Facility : Middlesex, NC

Ammonium Sulfate <i>Trade Designation</i> Ammonium Sulfate LAS Liquid Ammonium Sulfate	Product Function Chloramination Chloramination Chloramination	Max Use 55mg/L 55mg/L 55mg/L
Blended Coagulation Chemicals <i>Trade Designation</i> COAGteC PFS	Product Function Coagulation & Flocculation	Max Use 200mg/L
Ferric Sulfate		

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
50% Ferric Sulfate	Coagulation & Flocculation	650mg/L
60% Ferric Sulfate	Coagulation & Flocculation	650mg/L
Ferric Sulfate	Coagulation & Flocculation	650mg/L
Penn 3202	Coagulation & Flocculation	650mg/L
Poly Ferric Sulfate	Coagulation & Flocculation	650mg/L

Hydrofluosilicic Acid	<i>Product Function</i>	<i>Max Use</i>
<i>Trade Designation</i>		
Fluorosilicic Acid	Fluoridation	5mg/L
Fluosilicic Acid	Fluoridation	5mg/L
Hydrofluorosilicic Acid	Fluoridation	5mg/L
Hydrofluosilicic Acid	Fluoridation	5mg/L

Facility : Distribution Center - Bardwell, TX

Blended Coagulation Chemicals

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
COAGteC PFS	Coagulation & Flocculation	200mg/L

Ferric Chloride	<i>Product Function</i>	<i>Max Use</i>
<i>Trade Designation</i>		
Ferric Chloride	Coagulation & Flocculation	600mg/L
Pencco 3012	Coagulation & Flocculation	600mg/L

Ferric Sulfate	<i>Product Function</i>	<i>Max Use</i>
<i>Trade Designation</i>		
Ferric Sulfate Solution	Coagulation & Flocculation	650mg/L

Ferrous Chloride	<i>Product Function</i>	<i>Max Use</i>
<i>Trade Designation</i>		
Ferrous Chloride	Corrosion Control	500mg/L
	Coagulation & Flocculation	
Pencco 0210	Corrosion Control	500mg/L
	Coagulation & Flocculation	

Hydrofluosilicic Acid	<i>Product Function</i>	<i>Max Use</i>
<i>Trade Designation</i>		
Fluorosilicic Acid	Fluoridation	5mg/L
Fluosilicic Acid	Fluoridation	5mg/L
Hydrofluorosilicic Acid	Fluoridation	5mg/L
Hydrofluosilicic Acid	Fluoridation	5mg/L

Facility : Ennis, TX

Ammonium Sulfate	<i>Product Function</i>	<i>Max Use</i>
<i>Trade Designation</i>		
Ammonium Sulfate	Chloramination	60mg/L

Ferric Chloride	<i>Product Function</i>	<i>Max Use</i>
<i>Trade Designation</i>		
Ferric Chloride	Coagulation & Flocculation	600mg/L
Pencco 3012	Coagulation & Flocculation	600mg/L

Ferric Sulfate	<i>Product Function</i>	<i>Max Use</i>
<i>Trade Designation</i>		
50% Ferric Sulfate	Coagulation & Flocculation	650mg/L
60% Ferric Sulfate	Coagulation & Flocculation	650mg/L
Ferric Sulfate	Coagulation & Flocculation	650mg/L
Ferric Sulfate Solution	Coagulation & Flocculation	650mg/L

Poly Ferric Sulfate	Coagulation & Flocculation	650mg/L
Ferrous Chloride		
<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Ferrous Chloride	Corrosion Control	500mg/L
	Coagulation & Flocculation	
Pencco 0210	Corrosion Control	500mg/L
	Coagulation & Flocculation	
Ferrous Sulfate[1]		
<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Ferrous Sulfate	Coagulation & Flocculation	150mg/L
GreenIron	Coagulation & Flocculation	150mg/L
SafeIron	Coagulation & Flocculation	150mg/L

[1] Only products bearing the NSF Mark on the product, product packaging, and/or documentation shipped with the product are Certified.

Hydrofluosilicic Acid		
<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Fluorosilicic Acid	Fluoridation	5mg/L
Fluosilicic Acid	Fluoridation	5mg/L
Hydrofluorosilicic Acid	Fluoridation	5mg/L
Hydrofluosilicic Acid	Fluoridation	5mg/L

Facility : Sealy, TX

Ammonium Sulfate		
<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Ammonium Sulfate	Chloramination	55mg/L

Blended Coagulation Chemicals		
<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
COAGteC PFS	Coagulation & Flocculation	200mg/L

Ferric Sulfate		
<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
50% Ferric Sulfate	Coagulation & Flocculation	650mg/L
60% Ferric Sulfate	Coagulation & Flocculation	650mg/L
Ferric Sulfate	Coagulation & Flocculation	650mg/L
Ferric Sulfate Solution	Coagulation & Flocculation	650mg/L
Penn 3202	Coagulation & Flocculation	650mg/L
Poly Ferric Sulfate	Coagulation & Flocculation	650mg/L

Hydrofluosilicic Acid		
<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Fluorosilicic Acid	Fluoridation	5mg/L
Fluosilicic Acid	Fluoridation	5mg/L
Hydrofluosilicic Acid	Fluoridation	5mg/L

Number of matching Manufacturers is 1

Number of matching Products is 81

Processing time was 0 seconds



Customer Service 800-864-1742
FAX 888-273-6226

Safety Data Sheet (SDS) Ferric Chloride Solution

SECTION 1 – Chemical Identification and Supplier’s Information

Product ID: Ferric Chloride Solution
Product Use: Water Treatment Chemical
Product Formula: FeCl₃
Chemical Family: Inorganic Iron Salts
CAS #: 7705-08-0

Supplier’s Name and Address:

Pencoco, Inc.
P.O. Box 600
San Felipe, TX 77473

Emergency Phone Number:

PENCCO (979) 885-0005
CHEMTREC (800) 424-9300 – 24 hours a day

SECTION 2 – Hazard Identification

GHS Information

Signal Word: **Warning**

Hazard Class: Corrosive to Metals (H290)

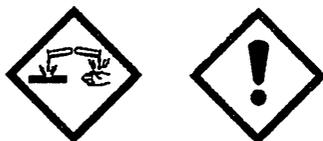
Hazard Category: 1

Hazard Statement: Toxic if Swallowed (H301)
Causes severe skin damage and eye damage. (H314)

Appearance and Odor: Reddish-brown liquid with a slightly acidic odor.

Emergency Overview: A corrosive chemical. Harmful or fatal if swallowed. Harmful if inhaled. Eye or skin contact may cause irritation. Contact with liquid or vapor form of this chemical may cause severe injury. Avoid overexposure.

Pictograms:



Health Hazards

Acute Toxicity, Oral – Category 4. Toxic if ingested. May cause irritation to the mouth and stomach. Higher doses may lead to abnormal liver function with nausea or vomiting, stomach pain, diarrhea, fast and weak pulse, lethargy, pallor, shock, hypertension, dilated pupils, fever, coma, and even death. Individuals with pre-existing liver diseases may have increased susceptibility to the toxicity of exposure.

Acute Toxicity, Dermal – Category 4. Prolonged contact may cause irritation and, possibly, burns.

Eye Contact – Irritation and, possibly, burns.

Inhalation – May cause irritation of the upper respiratory tract, resulting in difficulty breathing.

Precautionary Statements

Prevention

- Wash skin thoroughly after handling. (P264)
- Do not eat, drink, or smoke when using this product. (P270)



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- Avoid release to the environment. (P273)

Response

- If swallowed: Rinse mouth. (P301+P330)
 - Call a POISON CENTER/doctor/physician. (P312)
 - Collect spillage (P391)

Disposal Considerations

- Dispose of this material and its container to hazardous or special waste collection point in accordance with local, regional, national, and/or international regulation. (P501)

Carcinogenicity: None of the components of this material are listed as a carcinogen by IARC, NTP, OSHA, or ACGIH.

Fire and Explosion Hazards: Substance itself does not burn, but may decompose upon heating to produce corrosive and/or toxic fumes. Not considered a fire or explosion hazard.

	NFPA Rating	HMIS Rating	4 = Extreme / Severe
Health	2	2	3 = High / Serious
Reactivity	0	0	2 = Moderate
Flammability	0	0	1 = Slight

SECTION 3 – Composition/Information on Ingredients

Chemical Identity: FeCl₃

Common Name and Synonyms: Ferric chloride; no known synonyms

Ingredient	CAS #	Weight Percentage	ACGIH TLV	OSHA PEL	STEL
Water	7732-18-5	58 – 72%	N/A	N/A	N/A
Ferric Chloride	7705-08-0	28 – 42%	1 mg/m ³	1 mg/m ³	N/A
Ferrous Chloride	7758-94-3	<0.5%	1 mg/m ³	1 mg/m ³	N/A
Hydrochloric Acid	7647-01-0	<0.5%	5 ppm	5 ppm	N/A

Section 313 Supplier Notification: The hydrochloric acid mentioned above is subject to the reporting requirements of SARA TITLE III Section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 (40 CFR 372). This notification must be included in all MSDS's that are copied and distributed for this material.

SECTION 4 – First Aid Measures

Eye Contact First Aid: Immediately flush eyes for 15 minutes with large amounts of water while holding eyelids apart. Washing within one minute is essential to achieve maximum effectiveness. Obtain medical attention IMMEDIATELY after flushing.

Skin Contact First Aid: Flush skin with water. Remove contaminated clothing; wash before reuse. If irritation is still present, seek medical attention IMMEDIATELY.

Inhalation First Aid: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Obtain medical attention IMMEDIATELY.

Ingestion First Aid: DO NOT INDUCE VOMITING. Give 1 or 2 glasses of water or milk. Never give anything by mouth to an unconscious individual. Obtain medical attention IMMEDIATELY.



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SECTION 5 – Fire Fighting Measures

Flash Point: Not applicable.

Upper/Lower Explosion Limits in Air: Not applicable.

Auto Ignition Temperature: Not applicable.

Extinguishing Media: Will not burn; use materials appropriate for surrounding fire.

Fire and Explosion Hazards: Substance itself does not burn, but may decompose upon heating to produce corrosive and/or toxic fumes, such as hydrogen chloride and phosgene gas. Ferric chloride can react with metals to form flammable and potentially explosive hydrogen gas.

Fire Fighting Instructions: Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face-piece operated in a positive pressure mode. Move exposed containers from fire area if it can be done without risk. Use water to keep fire-exposed containers and tanks cool.

Hazardous Product of Decomposition or Combustion: Hydrogen chloride, hydrogen, phosgene.

SECTION 6 – Accidental Release Measures

Review safety precautions before proceeding with cleanup. Use appropriate personal protection equipment. Do not touch spilled material. Neutralize spill with lime (calcium hydroxide), limestone (calcium carbonate), or soda ash (sodium carbonate). Restrict access to area until completion of clean up.

Caution: limestone and soda ash will evolve CO₂; ventilation should be provided in enclosed areas. Dike area around spill to prevent spreading, and use absorbent material to pick up spill.

CERCLA Reportable Discharge (RQ): 1000 lbs. (454 kg), Based on anhydrous ferric chloride. Divide by solution concentration to obtain solution weight.

Disposal: Under the Resource Conservation and Recovery Act (RCRA), it is the responsibility of the user to determine whether a substance should be classified as a hazardous waste at the time of disposal. This is due to the fact that product use, transformation, synthesis, mixtures, etc. may change the nature of the product. Dispose of waste in accordance with applicable federal, state, and local laws.

RCRA: Test waste material for corrosivity, D002, prior to disposal.

Steps To Be Taken In Case Material Is Released Or Spilled: Notify the appropriate environmental authorities. Note that spills may need to be reported to the National Response Center ((800) 424-8802)

SECTION 7 – Handling and Storage

Handling: Store and handle in corrosion-proof materials (and area). Use FRP or PVC pipes. Be cautious of substance residue in empty containers. Act according to precautions and warnings set forth.



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Storage: Store in a tightly closed container. Do not store in metal containers. Fiberglass, plastic, or rubber-lined tanks may be used for storage. Protect from damage and keep separated from incompatible substances.

SECTION 8 – Exposure and Personal Protection

Respiratory Protection: Adequate general ventilation should be provided to keep vapor and mists below exposure limits. The exposure limits for some components are listed in Section 2. Wear a NIOSH/OSHA approved respirator with a dust/mist cartridge if there is potential of exposure to mists in excess of applicable limits, in any situation where product vapor or mists may be present, such as in confined spaces.

Eye Protection: Wear splash resistant goggles and/or safety glasses with side shields. Wear a full face shield if possibility of material splashing or spraying exists. Maintain eye wash fountain. Water should be supplied through insulated and heat-traced lines to prevent freeze-ups in cold weather.

Skin Protection: Where there is possibility of skin contact, use the following as appropriate, to avoid skin contact: gloves impervious to material, apron, boots, hood, pants, and jacket. Maintain a safety shower with quick opening valves. Water should be supplied through insulated and heat-traced lines to prevent freeze-ups in cold weather.

SECTION 9 – Physical and Chemical Properties

Boiling Point:	106°C (223°F)	pH:	< 2.0
Melting Point:	N/A	Solubility in Water:	Complete
Specific Gravity:	1.2 – 1.6	Vapor Pressure:	40 mm Hg @ 20°C
% Volatile:	60 – 75 (Water)	Evaporation Rate:	N/A
Vapor Density (Air = 1):	N/A	Molecular Weight:	162.2
Appearance:	Red/Brown Colored Liquid	Odor:	Slightly acrid

SECTION 10 – Stability and Reactivity

Stability: Stable at normal conditions

Polymerization: Will not occur.

Decomposition: Decomposes upon heating to produce corrosive and/or toxic fumes, such as hydrogen chloride. Contact with metals may evolve flammable hydrogen gas.

Incompatibility: Rapidly corrodes most metals (titanium is one exception); may generate flammable, potentially explosive hydrogen gas. Avoid contact with nylon, aluminum/aluminum alloys, carbon steel, stainless steel, and copper / copper alloys. Metals, bases, halocarbons, acids, and combustible materials can be considered incompatible.



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SECTION 11 – Toxicological Information

Chronic Effects: Repeated dosage may cause hemosiderosis, including possible damage to liver and pancreas.

Toxicological Data: Anhydrous Ferric Chloride Solid Oral LD₅₀ (rat) = 450 mg/kg

Carcinogenicity: None of the components of this material are listed as a carcinogen by IARC, NTP, OSHA, or ACGIH.

Reproductive Effects: TDLo Rat 1 day (intratesticular) 12976 mg/kg; TDLo Rat 1 day (intravaginal) 29 mg/kg pre-pregnancy continuous.

Target Organs: No data available.

SECTION 12 – Ecological Information

Ecotoxicological Information: TLm Daphnia 15 ppm/96 hr fresh water/conditions of bioassay not specified.

Persistence and Degradation: No data available

SECTION 13 – Disposal Considerations

Under the Resource Conservation and Recovery Act (RCRA), it is the responsibility of the user to determine whether a substance should be classified as a hazardous waste at the time of disposal. This is due to the fact that product use, transformation, synthesis, mixtures, etc. may change the nature of the product. Product containers should be thoroughly emptied before disposal. Dispose of waste in accordance with applicable federal, state, and local laws.

SECTION 14 – Transportation Information

DOT Shipping Name: Ferric Chloride Solution

Hazard Class: 8 – Corrosive Material

UN Number: UN 2582

Packing Group: III

Reportable Quantity: 1000 lbs (454 kg)

Shipping Containers: Rubber-lined steel tank cars/trucks; polyethylene drums, bottles.

Storage Conditions: Keep containers closed.

SECTION 15 – Regulatory Information

OSHA: Hazardous Corrosive Liquid – 29 CFR 1920.1200

OSHA Process Safety (29 CFR 1910.119): No



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CERCLA: Hazardous Substance – Reportable Quantity (RQ) = 1000 lbs (454 kg)

SARA Regulations: 313 and 40 CFR 372: No

SARA Hazard Categories, SARA Sections 311/312 (40 CFR 370.21):

Acute: Yes; Chronic: No; Fire: No; Reactive: No; Sudden Release: No

Clean Water Act: Designated as a hazardous substance under Section 311(b)(2)(A) of the Federal Water Pollution Control Act; ferric chloride is also regulated by the Clean Water Act Amendments of 1977 and 1978. This chemical is subject to regulations regarding its discharge.

TSCA Inventory Status: Yes

California Proposition 65: No

Right-To-Know Lists: Massachusetts, California, Pennsylvania, New Jersey. This substance does not contain nor is manufactured with ozone-depleting substances.

SECTION 16 – Other Information

IMPORTANT! Read this MSDS before use or disposal of this product. Pass along the information to employees and any other persons who could be exposed to the product to be sure that they are aware of the information before use or other exposure.

Revision Date: March 30, 2022

Pencco provides the information contained in each SDS, technical data sheet ("TDS"), product information brochure and/or information contained herein (including data and statements) in good faith and makes no representations as to its comprehensiveness or accuracy as of the date of publication. The SDSs, TDSs, and product information brochures are referred to collectively as the "Data Sheets". It is the responsibility of the user to obtain and use the most recent version of the Data Sheets. Each Data Sheet relates only to the specific product designated therein and may not be valid where such product is used in combination with any other materials or in any process. Further, since the conditions and methods of use of the product and information are beyond the control of Pencco, Pencco expressly disclaims any and all liability as to any consequential damages or results obtained or arising from any use of the products or the information contained in the Data Sheets. NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, IS MADE AS CONCERNS THE DATA SHEETS OR THE RELATED PRODUCTS.

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PO Box 600
 San Felipe, TX 77473
 979.885.0005
 Fax: 979.885.3208

Product Data Sheet Ferric Chloride Solution

Revision Date 06/20/2024

Description

Penco's Ferric Chloride is a dark maroon aqueous solution of soluble ferric iron, manufactured to strict specifications from high quality raw materials. Penco's unique manufacturing process renders a Ferric Chloride that is stable at concentrations up to 15% ferric iron. Penco's Ferric Chloride has a low ferrous iron content, reducing the likelihood of iron carryover throughout the system.

Application

Ferric Chloride is manufactured for both municipal and industrial water treatment. Being an iron based coagulant and having only trace amounts of aluminum, it is widely used for the clarification of drinking water. Ferric Chloride is very effective as a coagulant in oily water clarification. It is excellent for turbidity control, as well as the removal of phosphorus, color, and suspended solids. Ferric Chloride is widely used for sludge dewatering as well, resulting in volume reduction. It is very effective at removing metals, especially arsenic and selenium.

Typical Analysis

Concentration (%FeCl ⁺³)	28-42%
Concentration (%Fe ⁺³)	10%-15%
Concentration (%Fe ⁺²)	<0.5%
Specific Gravity.....	1.2 to 1.6
Free Acid	<0.5%
Ph.....	<2.0
Appearance	Red/Brown Colored Liquid
Freezing Point.....	<0 °F

Metals

	Maximum	Average
Arsenic	< 5 ppm	< 2 ppm
Cadmium	<1 ppm	< .5 ppm
Copper	<50 ppm	< 25 ppm
Chrome	< 50 ppm	< 10 ppm
Lead	< 10 ppm	< 5 ppm
Mercury	< .02 ppm	< .001 ppm
Nickel	< 50 ppm	< 10 ppm
Selenium	< 5 ppm	< 2 ppm
Zinc	< 50 ppm	< 20 ppm

Health and Safety

Ferric Chloride can cause irritation and burns to the skin and eyes. Ensure that individuals handling Ferric Chloride have been fully trained regarding the SDS, along with PPE requirements and specific operational procedures. In the event of an emergency, call 24 hr. CHEMTREC 800-424-9300

Certifications

Ferric Chloride is NSF/ANSI Standard 60 certified for use in potable water treatment and also meets or exceeds all AWWA Standards.

Product Handling and Shipping

Ferric Chloride is shipped in railcars, tank trucks, totes and drums. Suitable materials of construction include fiberglass, PVC, polypropylene, polyethylene, and stainless steel. It can be used with diaphragm metering pumps, providing the materials of construction are compatible. No dilution or preparation necessary.

DOT Classification: Corrosive Liquid, Acidic, Inorganic, N.O.S. (Contains Ferric Chloride)
 Hazard Class: 8 DOT ID Number: UN 2582 Packing Group: III RQ = 1000 lbs

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ralph Gessler
Pencco
4921 Gifford Avenue
Vernon, California 90058

Generated 2/5/2024 11:27:13 AM Revision 1

JOB DESCRIPTION

41% Ferric Chloride

JOB NUMBER

570-169950-1

Eurofins Calscience

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Revision 1

Authorized for release by
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(657)210-6362



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Definitions/Glossary

Client: Pencco
Project/Site: 41% Ferric Chloride

Job ID: 570-169950-1

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
▫	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

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Case Narrative

Client: Penccco
Project: 41% Ferric Chloride

Job ID: 570-169950-1

Job ID: 570-169950-1

Eurofins Calscience

**Job Narrative
570-169950-1**

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Revision

Report revised to remove pH and iron result per client request.

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt

The sample was received on 1/26/2024 2:05 PM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.0°C

Metals

Method 6010B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 570-406621 and analytical batch 570-407116 were outside control limits for one or more analytes. See QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

Method 6010B: The following sample was diluted due to the nature of the sample matrix: 41% Ferric Chloride (570-169950-1). Elevated reporting limits (RLs) are provided.

Method 6010B: The post digestion spike % recovery for Antimony associated with batch 570-407116 was outside of control limits. The associated sample is: (570-168798-A-1-C PDS ^5).

Method 7471A: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 570-405885 and analytical batch 570-406359 were outside control limits for one or more analytes. See QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Eurofins Calscience

Detection Summary

Client: Pencco
Project/Site: 41% Ferric Chloride

Job ID: 570-169950-1

Client Sample ID: 41% Ferric Chloride

Lab Sample ID: 570-169950-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chromium	2.1		2.0		mg/Kg	10		6010B	Total/NA
Cobalt	17		2.0		mg/Kg	10		6010B	Total/NA
Manganese	52		4.0		mg/Kg	10		6010B	Total/NA
Nickel	24		4.0		mg/Kg	10		6010B	Total/NA
Titanium	69		4.0		mg/Kg	10		6010B	Total/NA
Vanadium	230		2.0		mg/Kg	10		6010B	Total/NA
Specific Gravity	1.4		0.020		NONE	1		SM 2710F	Total/NA

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This Detection Summary does not include radiochemical test results.

Eurofins Calscience

Client Sample Results

Client: Pencco
Project/Site: 41% Ferric Chloride

Job ID: 570-169950-1

Client Sample ID: 41% Ferric Chloride

Lab Sample ID: 570-169950-1

Date Collected: 01/26/24 09:00

Matrix: Waste

Date Received: 01/26/24 14:05

Method: SW846 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		20		mg/Kg		02/01/24 08:28	02/02/24 11:09	10
Arsenic	ND		6.0		mg/Kg		02/01/24 08:28	02/02/24 11:09	10
Barium	ND		6.0		mg/Kg		02/01/24 08:28	02/02/24 11:09	10
Beryllium	ND		1.0		mg/Kg		02/01/24 08:28	02/02/24 11:09	10
Boron	ND		10		mg/Kg		02/01/24 08:28	02/02/24 11:09	10
Cadmium	ND		1.0		mg/Kg		02/01/24 08:28	02/02/24 11:09	10
Calcium	ND		50		mg/Kg		02/01/24 08:28	02/02/24 11:09	10
Chromium	2.1		2.0		mg/Kg		02/01/24 08:28	02/02/24 11:09	10
Cobalt	17		2.0		mg/Kg		02/01/24 08:28	02/02/24 11:09	10
Copper	ND		4.0		mg/Kg		02/01/24 08:28	02/02/24 11:09	10
Lead	ND		4.0		mg/Kg		02/01/24 08:28	02/02/24 11:09	10
Manganese	52		4.0		mg/Kg		02/01/24 08:28	02/02/24 11:09	10
Molybdenum	ND		4.0		mg/Kg		02/01/24 08:28	02/02/24 11:09	10
Nickel	24		4.0		mg/Kg		02/01/24 08:28	02/02/24 11:09	10
Selenium	ND		6.0		mg/Kg		02/01/24 08:28	02/02/24 11:09	10
Silver	ND		3.0		mg/Kg		02/01/24 08:28	02/02/24 11:09	10
Thallium	ND		20		mg/Kg		02/01/24 08:28	02/02/24 11:09	10
Titanium	69		4.0		mg/Kg		02/01/24 08:28	02/02/24 11:09	10
Vanadium	230		2.0		mg/Kg		02/01/24 08:28	02/02/24 11:09	10
Zinc	ND		10		mg/Kg		02/01/24 08:28	02/02/24 11:09	10

Method: SW846 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.085		mg/Kg		01/30/24 12:49	01/31/24 15:48	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Gravity (SM 2710F)	1.4		0.020		NONE			01/31/24 21:00	1

QC Sample Results

Client: Pencco
Project/Site: 41% Ferric Chloride

Job ID: 570-169950-1

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 570-406621/1-A ^5
Matrix: Waste
Analysis Batch: 407116

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 406621

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		10		mg/Kg		02/01/24 08:28	02/02/24 09:43	5
Arsenic	ND		3.0		mg/Kg		02/01/24 08:28	02/02/24 09:43	5
Barium	ND		3.0		mg/Kg		02/01/24 08:28	02/02/24 09:43	5
Beryllium	ND		0.50		mg/Kg		02/01/24 08:28	02/02/24 09:43	5
Boron	ND		5.0		mg/Kg		02/01/24 08:28	02/02/24 09:43	5
Cadmium	ND		0.50		mg/Kg		02/01/24 08:28	02/02/24 09:43	5
Calcium	ND		25		mg/Kg		02/01/24 08:28	02/02/24 09:43	5
Chromium	ND		1.0		mg/Kg		02/01/24 08:28	02/02/24 09:43	5
Cobalt	ND		1.0		mg/Kg		02/01/24 08:28	02/02/24 09:43	5
Copper	ND		2.0		mg/Kg		02/01/24 08:28	02/02/24 09:43	5
Lead	ND		2.0		mg/Kg		02/01/24 08:28	02/02/24 09:43	5
Manganese	ND		2.0		mg/Kg		02/01/24 08:28	02/02/24 09:43	5
Molybdenum	ND		2.0		mg/Kg		02/01/24 08:28	02/02/24 09:43	5
Nickel	ND		2.0		mg/Kg		02/01/24 08:28	02/02/24 09:43	5
Selenium	ND		3.0		mg/Kg		02/01/24 08:28	02/02/24 09:43	5
Silver	ND		1.5		mg/Kg		02/01/24 08:28	02/02/24 09:43	5
Thallium	ND		10		mg/Kg		02/01/24 08:28	02/02/24 09:43	5
Titanium	ND		2.0		mg/Kg		02/01/24 08:28	02/02/24 09:43	5
Vanadium	ND		1.0		mg/Kg		02/01/24 08:28	02/02/24 09:43	5
Zinc	ND		5.0		mg/Kg		02/01/24 08:28	02/02/24 09:43	5

Lab Sample ID: LCS 570-406621/2-A ^5
Matrix: Waste
Analysis Batch: 407116

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 406621

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Antimony	49.5	43.8		mg/Kg		89	80 - 120
Arsenic	49.5	41.6		mg/Kg		84	80 - 120
Barium	49.5	42.4		mg/Kg		86	80 - 120
Beryllium	49.5	42.2		mg/Kg		85	80 - 120
Boron	49.5	40.8		mg/Kg		82	80 - 120
Cadmium	49.5	42.0		mg/Kg		85	80 - 120
Calcium	248	209		mg/Kg		84	80 - 120
Chromium	49.5	42.6		mg/Kg		86	80 - 120
Cobalt	49.5	42.2		mg/Kg		85	80 - 120
Copper	49.5	42.4		mg/Kg		86	80 - 120
Lead	49.5	42.2		mg/Kg		85	80 - 120
Manganese	49.5	41.5		mg/Kg		84	80 - 120
Molybdenum	49.5	41.8		mg/Kg		84	80 - 120
Nickel	49.5	42.3		mg/Kg		85	80 - 120
Selenium	49.5	40.8		mg/Kg		82	80 - 120
Silver	24.8	21.1		mg/Kg		85	80 - 120
Thallium	49.5	42.0		mg/Kg		85	80 - 120
Titanium	49.5	41.7		mg/Kg		84	80 - 120
Vanadium	49.5	41.8		mg/Kg		84	80 - 120
Zinc	49.5	41.3		mg/Kg		83	80 - 120

QC Sample Results

Client: Pencco
Project/Site: 41% Ferric Chloride

Job ID: 570-169950-1

Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: LCSD 570-406621/3-A ^5				Client Sample ID: Lab Control Sample Dup					
Matrix: Waste				Prep Type: Total/NA					
Analysis Batch: 407116				Prep Batch: 406621					
Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Antimony	50.0	46.8		mg/Kg		94	80 - 120	7	20
Arsenic	50.0	45.5		mg/Kg		91	80 - 120	9	20
Barium	50.0	46.2		mg/Kg		92	80 - 120	9	20
Beryllium	50.0	45.9		mg/Kg		92	80 - 120	9	20
Boron	50.0	44.1		mg/Kg		88	80 - 120	8	20
Cadmium	50.0	45.5		mg/Kg		91	80 - 120	8	20
Calcium	250	225		mg/Kg		90	80 - 120	7	20
Chromium	50.0	46.3		mg/Kg		93	80 - 120	8	20
Cobalt	50.0	45.8		mg/Kg		92	80 - 120	8	20
Copper	50.0	46.2		mg/Kg		92	80 - 120	8	20
Lead	50.0	46.1		mg/Kg		92	80 - 120	9	20
Manganese	50.0	45.4		mg/Kg		91	80 - 120	9	20
Molybdenum	50.0	45.5		mg/Kg		91	80 - 120	8	20
Nickel	50.0	45.9		mg/Kg		92	80 - 120	8	20
Selenium	50.0	43.7		mg/Kg		87	80 - 120	7	20
Silver	25.0	22.9		mg/Kg		91	80 - 120	8	20
Thallium	50.0	45.5		mg/Kg		91	80 - 120	8	20
Titanium	50.0	45.5		mg/Kg		91	80 - 120	9	20
Vanadium	50.0	45.5		mg/Kg		91	80 - 120	8	20
Zinc	50.0	44.8		mg/Kg		90	80 - 120	8	20

Method: 7471A - Mercury (CVAA)

Lab Sample ID: MB 570-405885/1-A				Client Sample ID: Method Blank					
Matrix: Waste				Prep Type: Total/NA					
Analysis Batch: 406434				Prep Batch: 405885					
Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.085		mg/Kg		01/30/24 12:49	01/31/24 16:06	1

Lab Sample ID: LCS 570-405885/2-A				Client Sample ID: Lab Control Sample			
Matrix: Waste				Prep Type: Total/NA			
Analysis Batch: 406434				Prep Batch: 405885			
Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.408	0.449		mg/Kg		110	80 - 120

Lab Sample ID: LCSD 570-405885/3-A				Client Sample ID: Lab Control Sample Dup					
Matrix: Waste				Prep Type: Total/NA					
Analysis Batch: 406434				Prep Batch: 405885					
Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.408	0.423		mg/Kg		104	80 - 120	6	10

QC Association Summary

Client: Pencco
 Project/Site: 41% Ferric Chloride

Job ID: 570-169950-1

Metals

Prep Batch: 405885

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-169950-1	41% Ferric Chloride	Total/NA	Waste	7471A	
MB 570-405885/1-A	Method Blank	Total/NA	Waste	7471A	
LCS 570-405885/2-A	Lab Control Sample	Total/NA	Waste	7471A	
LCSD 570-405885/3-A	Lab Control Sample Dup	Total/NA	Waste	7471A	

Analysis Batch: 406434

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-169950-1	41% Ferric Chloride	Total/NA	Waste	7471A	405885
MB 570-405885/1-A	Method Blank	Total/NA	Waste	7471A	405885
LCS 570-405885/2-A	Lab Control Sample	Total/NA	Waste	7471A	405885
LCSD 570-405885/3-A	Lab Control Sample Dup	Total/NA	Waste	7471A	405885

Prep Batch: 406621

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-169950-1	41% Ferric Chloride	Total/NA	Waste	3050B	
MB 570-406621/1-A ^5	Method Blank	Total/NA	Waste	3050B	
LCS 570-406621/2-A ^5	Lab Control Sample	Total/NA	Waste	3050B	
LCSD 570-406621/3-A ^5	Lab Control Sample Dup	Total/NA	Waste	3050B	

Analysis Batch: 407116

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-169950-1	41% Ferric Chloride	Total/NA	Waste	6010B	406621
MB 570-406621/1-A ^5	Method Blank	Total/NA	Waste	6010B	406621
LCS 570-406621/2-A ^5	Lab Control Sample	Total/NA	Waste	6010B	406621
LCSD 570-406621/3-A ^5	Lab Control Sample Dup	Total/NA	Waste	6010B	406621

General Chemistry

Analysis Batch: 468844

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-169950-1	41% Ferric Chloride	Total/NA	Waste	SM 2710F	

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Lab Chronicle

Client: Pencco
 Project/Site: 41% Ferric Chloride

Job ID: 570-169950-1

Client Sample ID: 41% Ferric Chloride

Lab Sample ID: 570-169950-1

Date Collected: 01/26/24 09:00

Matrix: Waste

Date Received: 01/26/24 14:05

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.99 g	50 mL	406621	02/01/24 08:28	GYR8	EET CAL 4
Total/NA	Analysis	6010B		10			407116	02/02/24 11:09	K1UV	EET CAL 4
		Instrument ID: ICP11								
Total/NA	Prep	7471A			0.49 g	50 mL	405885	01/30/24 12:49	VCN7	EET CAL 4
Total/NA	Analysis	7471A		1			406434	01/31/24 15:48	RL6Q	EET CAL 4
		Instrument ID: HG7								
Total/NA	Analysis	SM 2710F		1			468844	01/31/24 21:00	DI9Q	ELLE
		Instrument ID: NOEQUIP								

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: Pencco
 Project/Site: 41% Ferric Chloride

Job ID: 570-169950-1

Laboratory: Eurofins Calscience

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	State	3082	07-31-24

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	0001.01	11-30-24
A2LA	ISO/IEC 17025	0001.01	11-30-24
Alabama	State	43200	01-31-24
Alaska	State	PA00009	06-30-24
Alaska (UST)	State	17-027	02-28-24
Arizona	State	AZ0780	03-12-24
Arkansas DEQ	State	88-00660	08-09-24
California	State	2792	01-31-24
Colorado	State	PA00009	06-30-24
Connecticut	State	PH-0746	06-30-25
DE Haz. Subst. Cleanup Act (HSCA)	State	019-006 (PA cert)	01-31-24
Delaware (DW)	State	N/A	01-31-24
Florida	NELAP	E87997	06-30-24
Georgia (DW)	State	C048	01-31-24
Hawaii	State	N/A	01-31-24
Illinois	NELAP	200027	01-31-25
Iowa	State	361	03-01-24
Kansas	NELAP	E-10151	10-31-24
Kentucky (DW)	State	KY90088	12-31-24
Kentucky (UST)	State	0001.01	11-30-24
Kentucky (WW)	State	KY90088	12-31-23 *
Louisiana (All)	NELAP	02055	06-30-24
Maine	State	2019012	03-12-25
Maryland	State	100	06-30-24
Massachusetts	State	M-PA009	06-30-24
Michigan	State	9930	01-31-25
Minnesota	NELAP	042-999-487	12-31-24
Mississippi	State	023	01-31-25
Missouri	State	450	01-31-25
Montana (DW)	State	0098	01-01-25
Nebraska	State	NE-OS-32-17	01-31-24
New Hampshire	NELAP	2730	01-10-25
New Jersey	NELAP	PA011	06-30-24
New York	NELAP	10670	04-01-24
North Carolina (DW)	State	42705	07-31-24
North Carolina (WW/SW)	State	521	12-31-24
North Dakota	State	R-205	01-31-24
Oklahoma	NELAP	9804	08-31-24
Oregon	NELAP	PA200001	09-11-24
Pennsylvania	NELAP	36-00037	01-31-25
Quebec Ministry of Environment and Fight against Climate Change	PALA	507	09-16-24
Rhode Island	State	LAO00338	12-30-24
South Carolina	State	89002	01-31-24
Tennessee	State	02838	01-31-24

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Accreditation/Certification Summary

Client: Pencco
Project/Site: 41% Ferric Chloride

Job ID: 570-169950-1

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

<u>Authority</u>	<u>Program</u>	<u>Identification Number</u>	<u>Expiration Date</u>
Texas	NELAP	T104704194-23-46	08-31-24
USDA	US Federal Programs	525-22-298-19481	10-25-25
Vermont	State	VT - 36037	10-28-24
Virginia	NELAP	460182	06-14-25
Washington	State	C457	04-11-24
West Virginia (DW)	State	9906 C	01-31-25
West Virginia DEP	State	055	07-31-24
Wyoming	State	8TMS-L	01-31-24
Wyoming (UST)	A2LA	0001.01	11-30-24

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Method Summary

Client: Pencco
Project/Site: 41% Ferric Chloride

Job ID: 570-169950-1

Method	Method Description	Protocol	Laboratory
6010B	Metals (ICP)	SW846	EET CAL 4
7471A	Mercury (CVAA)	SW846	EET CAL 4
SM 2710F	Specific Gravity	SM	ELLE
3050B	Preparation, Metals	SW846	EET CAL 4
7471A	Preparation, Mercury	SW846	EET CAL 4

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

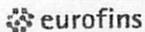
Client: Pencco
Project/Site: 41% Ferric Chloride

Job ID: 570-169950-1

<u>Lab Sample ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Collected</u>	<u>Received</u>
570-169950-1	41% Ferric Chloride	Waste	01/26/24 09:00	01/26/24 14:05



169950



Environment Testing
CalScience

570-169950 Chain of Custody

CHAIN-OF-CUSTODY RECORD

DATE: 1/26/24
PAGE: 1 OF 1

2841 Dow Avenue, Suite 100, Tustin, CA 92780 • (714) 895-5494
For courier service / sample drop off information, contact us26_sales@eurofinsus.com or call us.

4% Ferric Chloride

LABORATORY CLIENT: <u>Pencco, Inc.</u>		CLIENT PROJECT NAME / NO.: <u>4% Ferric chloride</u>	P.O. NO.:
ADDRESS: <u>4921 Gifford Ave</u>		PROJECT CONTACT: <u>Ralph Gessler</u>	LAB CONTACT OR QUOTE NO.:
CITY: <u>Vernon</u>	STATE: <u>CA</u>	ZIP: <u>90058</u>	SAMPLER(S) (PRINT): <u>Jennifer Moffatt</u>
TEL: <u>(909) 917-4501</u>	EMAIL: <u>rgessler@pencco.com</u>	GLOBAL ID:	LOG CODE:
TURNAROUND TIME (Rush surcharges may apply to any "FAST" or "STANDARD")		REQUESTED ANALYSES	
<input type="checkbox"/> SAME DAY <input type="checkbox"/> 24 HR <input type="checkbox"/> 48 HR <input type="checkbox"/> 72 HR <input checked="" type="checkbox"/> 5 DAYS <input type="checkbox"/> STANDARD		Please check box or fill in blank as needed.	
SPECIAL INSTRUCTIONS:		<input type="checkbox"/> COELT EDF <input type="checkbox"/> OTHER	

LAB USE ONLY	SAMPLE ID	SAMPLING		MATRIX	NO. OF CONT.	Unpreserved	Preserved	Field Filtered	Antimony / Arsenic	Barium / Beryllium	Boron / Cadmium	Calcium / Chromium	Cobalt / Copper	Lead / Manganese	Molybdenum	Nickel / Selenium	Silver / Thallium	Titanium / Vanadium	Zinc / Iron	Mercury	Perchlorate	Specific Gravity	% HC
		DATE	TIME																				
	<u>4% Ferric chloride</u>	<u>1/26/24</u>	<u>9AM</u>	<u>G</u>	<u>1</u>				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Eurofins Calscience
 2841 Dow Avenue, Suite 100
 Tustin, CA 92780
 Phone: 714-895-5484

Chain of Custody Record



eurofins Environment Testing

Client Information (Sub Contract Lab)		Sampler: Lab PM Moffatt, Jennifer		Carrier Tracking Note(s)		COC No: 570-343301.1																
Client Contact: Shipping/Receiving		Phone:		E-Mail: Jennifer.Moffatt@et.eurofins.com		State of Origin: California																
Company: Eurofins Lancaster Laboratories Environm		Accreditations Required (See note): State - California		Job #: 570-169950-1		Page Page 1 of 1																
Address: 2425 New Holland Pike, City: Lancaster State, Zip: PA, 17601		Due Date Requested: 2/2/2024		Analysis Requested				Preservation Codes: A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2CO3 E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - pH 4-5 L - EDA Y - Trizma Z - other (specify) Other:														
Phone: 717-656-2300(Tel)		TAT Requested (days):																				
Email:		Project #: 57014152		Field Filled Sample (Yes or No)		Total Number of Containers																
Project Name: 41% Ferric Chloride		SSOV#:		Perform MIS/HRD (Yes or No)		Special Instructions/Note:																
Site:				SIZ710P_Calc																		
Sample Identification - Client ID (Lab ID)		Sample Date		Sample Time		Sample Type (C=comp, G=grab)		Matrix (Innoc, Suspect, Onsite/Off)		Preservation Code		Field Filled Sample (Yes or No)		Perform MIS/HRD (Yes or No)		SIZ710P_Calc		Total Number of Containers		Special Instructions/Note		
41% Ferric Chloride (570-169950-1)		1/26/24		09 00 Pacific		Waste						X						1				
<p>Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.</p>																						
Possible Hazard Identification												Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)										
Unconfirmed												<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months										
Deliverable Requested: I, II, III, IV, Other (specify)												Primary Deliverable Rank: 0										
Empty Kit Relinquished by												Special Instructions/QC Requirements:										
Date:												Method of Shipment:										
Relinquished by: <i>JF Roberts</i>												Date/Time: <i>1/29/24 1440</i>										
Relinquished by:												Date/Time:										
Relinquished by:												Date/Time:										
Custody Seals Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No												Custody Seal No.:										
												Cooler Temperature(s) °C and Other Remarks: <i>2.0.9 C.O.V</i>										

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Login Sample Receipt Checklist

Client: Pencco

Job Number: 570-169950-1

Login Number: 169950

List Source: Eurofins Calscience

List Number: 1

Creator: Vitente, Precy

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Pencco

Job Number: 570-169950-1

Login Number: 169950
List Number: 2
Creator: Ballard, Megan

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC
List Creation: 01/30/24 11:49 AM

Question	Answer	Comment
The cooler's custody seal is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature acceptable, where thermal pres is required ($\leq 6C$, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temp acceptable, where thermal pres is required ($\leq 6C$, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
Sample custody seals are intact.	N/A	
VOA sample vials do not have headspace >6mm in diameter (none, if from WV)?	N/A	