

State of Kansas
County of Douglas

Kemira Water Solutions, Inc. Affidavit of Compliance

This is to certify that the Ferrous Chloride (Kemira PIX-411) and manufactured by **Kemira Water Solutions, Inc.** meets or exceeds all specifications required by the Bay Area Chemical Consortium (BID No. 07-2024) and those specifications as established by the latest American Water Works Association standards. All products bid have been certified under ANSI/NSF Standard 60.

Deliveries will be made with Kemira trucks and dedicated trucks from Chemical Transfer. Chemical Transfer, Stockton, CA, Mike Ellis (800) 874-7444
Our third party haulers can and will deliver Ferrous Chloride to each and every participating BACC Agency.

I declare under penalty of perjury that the foregoing is true and correct. Executed on this 20 day of February, 2024.

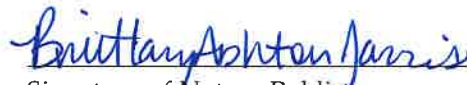
Kemira Water Solutions, Inc.

By: 

Name: Christina Imbrogno

Title: Commercial Support Manager

This instrument was signed and sworn to before me on 20 day of February, 2024 by Christina Imbrogno as Commercial Support Manager of Kemira Water Solutions, Inc.



Signature of Notary Public

Print Name: Brittany Ashton Jarvis

Attach Notarial Seal:

My appointment expires:





Kemira PIX-411

Ferrous Chloride, 27-36% Solution

KEMIRA PIX-411 is a coagulant in liquid form based on divalent iron (Fe^{2+}). Its uses include: control of odor and corrosion caused by hydrogen sulfide; phosphorus removal; control of struvite formation; as a raw material in manufacturing applications; and chlorite reduction in potable water treatment.

Typical Properties

Appearance	Green to brown liquid
Specific Gravity (20°C/68°F)	1.28 – 1.44
FeCl_2	27 – 36 wt. %
Fe (II)	12.0 – 16.0 wt. %
Free Acid (HCl)	< 1.0 wt. %
Freezing Point	-35°C / -31°F to -29°C / -20°F

This TDS is a general representation of the product. Detailed product specification/analysis is available upon request.

Certification / Approval

KEMIRA PIX-411 is NSF/ANSI Standard 60 certified for use in potable water treatment.

Dosing

KEMIRA PIX-411 can be fed straight. No dilution or preparation is required. A diaphragm m-metering pump of non-corrosive material is suitable.

Storage

Storage tanks and piping should be constructed of suitable material such as fiberglass, or cross-linked polyethylene. KEMIRA PIX-411 has a recommended shelf life of minimum six (6) months in an appropriate storage environment. With this product, inspect the storage tank yearly, clean if necessary.

Handling / Safety

The handling of any chemical requires care. Anyone responsible for using or handling KEMIRA PIX-411 should familiarize themselves with our Safety Data Sheet.

Delivery

Shipping Instructions: Corrosive Liquid, n.o.s. (Ferrous chloride) 8, UN 1760, P.G. II

Kemira makes this information available as an accommodation to its customers and it is intended to be solely a guide in customer's evaluation of the products. You must test our products, to determine if they are suitable for your intended uses and applications, as well as from the health, safety and environmental standpoint. You must also instruct employees, agents, contractors, customers or any third party which may be exposed to the products about all applicable precautions. All information and technical assistance is given without warranty or guarantee and is subject to change without notice. You assume full liability and responsibility for compliance with all information and precautions, and with all laws and statutes, ordinances and regulations of any governmental authority applicable to the processing, transportation, delivery, unloading, discharge, storage, handling, sale and use of each product. Nothing herein shall be construed as a recommendation to use any product in conflict with patents covering any material or its use.

Kemira

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The Americas Quality Lab

Analytical Report

To: Tina Imbrogno

Tina.Imbrogno@kemira.com

Date Reported: 2/15/2024

Sample Description: PIX-411 Ferrous Chloride

Sample Date: 8/21/2023

Sample ID: 1O16230103

Parameter	Result	Unit	Method	Reporting Limit		Analyst	Date
Ferrous	15.66	%	KWS QL 3312	0.05	%	SB	9/1/23
Ferrous Chloride	35.54	%	KWS QL 3312	0.11	%	SB	9/1/23
Free Acid as HCl	<0.05	%	KWS QL 3210	0.05	%	NH	10/9/23
Specific Gravity	1.408		KWS QL 3112			MK	9/19/23
Insoluble Solids	<0.005	%	KWS QL 3410	0.005	%	SB	11/20/23

Certified by: Sheila St. Amour
Sheila St. Amour, Laboratory Supervisor



Certificate # 3889.01

SAFETY DATA SHEET

KEMIRA PIX-411

Ref. 1.8/US/EN

Revision Date:
05/16/2023

Date of last issue: 11/15/2021
Print Date:02/20/2024

SECTION 1. IDENTIFICATION

Product identifier

Trade name : KEMIRA PIX-411

Relevant identified uses of the substance or mixture and uses advised against

Use of the Sub-stance/Mixture : Flocculating agent, Water treatment chemical

Recommended restrictions on use : Do not use for other purposes than the identified uses.

Manufacturer or supplier's details

Company name of supplier : Kemira Water Solutions, Inc.
Address : 1000 Parkwood Circle, Suite 500
Atlanta GA 30339
Telephone : (770) 436-1542
Telefax : (770) 436-3432
E-mail address of person responsible for the SDS : us-customerservice@kemira.com
Emergency telephone number : CHEMTREC (24 Hours): 1-800-424-9300

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Corrosive to metals : Category 1

Acute toxicity (Oral) (Oral) : Category 4

Skin corrosion/irritation : Category 2

Serious eye damage : Category 1

GHS label elements

Hazard pictograms :



Signal word : Danger

Hazard statements : H290 May be corrosive to metals.
H302 Harmful if swallowed.
H315 Causes skin irritation.
H318 Causes serious eye damage.

SAFETY DATA SHEET

KEMIRA PIX-411

Ref. 1.8/US/EN

Revision Date:
05/16/2023

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Precautionary statements

Prevention:

P234 Keep only in original container.
P264 Wash face, hands and any exposed skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

P301 + P312 + P330 IF SWALLOWED: Call a doctor if you feel unwell. Rinse mouth.
P302 + P352 + P312 IF ON SKIN: Wash with plenty of soap and water. Call a doctor if you feel unwell.
P332 + P313 If skin irritation occurs: Get medical attention.
P303 + P361 + P353 + P310 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Immediately call a POISON CENTER.
P363 Wash contaminated clothing before reuse.
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.
P390 Absorb spillage to prevent material damage.

Storage:

P406 Store in corrosive resistant container with a resistant inner liner.

Disposal:

P501 Dispose of contents/container as special waste in compliance with local and national regulations.

Other hazards

May lower the pH of water and thus be harmful to aquatic organisms.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture
Chemical nature : Ferrous Chloride Solution

Components

Chemical name	CAS-No.	Concentration (% w/w)
Iron dichloride	7758-94-3	20 - 40
Hydrochloric acid	7647-01-0	<= 1

SECTION 4. FIRST AID MEASURES

General advice : Show this safety data sheet to the doctor in attendance.
If inhaled : If breathed in, move person into fresh air.
If symptoms persist, seek medical advice.
In case of skin contact : Take off contaminated clothing and shoes immediately.
Rinse with plenty of water.
If symptoms persist, seek medical advice.

SAFETY DATA SHEET



KEMIRA PIX-411

Ref. 1.8/US/EN

Revision Date:
05/16/2023

Date of last issue: 11/15/2021
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In case of eye contact	: Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Prevent rinsing water from flowing into the other eye. Call a physician immediately. Continue rinsing eyes during transport to hospital.
If swallowed	: Rinse mouth with water. Do NOT induce vomiting. If symptoms persist, call a physician.
Most important symptoms and effects, both acute and delayed	: corrosive effects The possible symptoms known are those derived from the labelling (see section 2). No additional symptoms are known.
Protection of first-aiders	: First Aid responders should pay attention to self-protection and use the recommended protective clothing
Notes to physician	: Rinse with plenty of water. All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred. Treat symptomatically.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media	: Not combustible. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable extinguishing media	: No special requirements.
Specific hazards during fire-fighting	: Heating above the decomposition temperature can cause formation of hydrogen chloride. Exposure to decomposition products may be a hazard to health. Do not allow run-off from fire fighting to enter drains or water courses.
Further information	: Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
Special protective equipment for firefighters	: Exposure to decomposition products may be a hazard to health. In the event of fire, wear self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	: Use personal protective equipment. Wear respiratory protection. Ensure adequate ventilation.
Environmental precautions	: Do not allow uncontrolled discharge of product into the environment.
Methods and materials for containment and cleaning up	: Clean-up methods - small spillage Dilute residues with water and then neutralize with lime or limestone powder to a solid consistency.

SAFETY DATA SHEET



KEMIRA PIX-411

Ref. 1.8/US/EN

Revision Date:
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Shovel or sweep up.
Must be disposed of in accordance with local and national regulations.

Clean-up methods - large spillage

Remove spill using a vacuum truck.
Dilute residues with water and then neutralize with lime or limestone powder to a solid consistency.
Shovel or sweep up remaining material.
Must be disposed of in accordance with local and national regulations.

SECTION 7. HANDLING AND STORAGE

- Technical measures : Install appropriate equipment and wear appropriate personal protective equipment (see "8. Exposure control/personal protection").
- Advice on safe handling : For personal protection see section 8.
The work place and work methods shall be organized in such a way that direct contact with the product is prevented or minimized.
Keep away from incompatible materials.
Contact with certain metals, e.g. aluminium and zinc, may form hydrogen gas, which in turn may form explosive mixtures of gases with air.
- Conditions for safe storage : Keep away from incompatible materials.
For quality reasons:
Keep at temperatures above 0 °C.
Keep at temperatures below 30 °C.
- Packaging material : Suitable material: plastic (PE, PP, PVC), fiberglass-reinforced polyester, rubber-coated steel
Unsuitable material: Avoid contact with unalloyed steel or galvanized surfaces., many metals, stainless steel (AISI 304), Nylon, materials not resistant to acid, Copper, Aluminium, Iron, Zinc, brass, titanium

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Iron dichloride	7758-94-3	TWA	1 mg/m ³ (Iron)	ACGIH
		TWA	1 mg/m ³ (Iron)	OSHA P0
		TWA	1 mg/m ³ (Iron)	NIOSH REL
		TWA	1 mg/m ³ (Iron)	ACGIH
		TWA	1 mg/m ³	NIOSH REL

SAFETY DATA SHEET



KEMIRA PIX-411

Ref. 1.8/US/EN

Revision Date:
05/16/2023

Date of last issue: 11/15/2021
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			(Iron)	
		TWA	1 mg/m ³ (Iron)	OSHA P0
Hydrochloric acid	7647-01-0	C	2 ppm	ACGIH
		C	5 ppm 7 mg/m ³	NIOSH REL
		C	5 ppm 7 mg/m ³	OSHA Z-1
		C	5 ppm 7 mg/m ³	OSHA P0

Engineering measures : Ensure adequate ventilation.

Personal protective equipment

Respiratory protection : Respiratory protection is not required under normal handling conditions.
In case of insufficient ventilation wear suitable respiratory equipment.

Hand protection

Remarks : Chemical resistant gloves.
Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. Gloves should be removed and replaced immediately if there is any indication of degradation or chemical breakthrough.

Eye protection : Wear eye protection/ face protection.
Tightly fitting safety goggles or face-shield.

Skin and body protection : Wear protective clothing if necessary.
Use rubber boots.

Protective measures : Eye wash bottle or emergency eye-wash fountain must be found in the work place.
Ensure adequate ventilation.

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice.
Ensure that eyewash stations and safety showers are close to the workstation location.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Aqueous solution

Colour : light green/brown

Odour : slightly acidic

Odour Threshold : No data available

pH : < 1

Melting point/freezing point : -29 °F / -34 °C

Boiling point/boiling range : ca. 220 - 230 °F / 104 - 110 °C

SAFETY DATA SHEET



KEMIRA PIX-411

Ref. 1.8/US/EN

Revision Date:
05/16/2023

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Flash point	:	Not applicable inorganic compound
Evaporation rate	:	similar to water
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Vapour pressure	:	similar to water
Relative vapour density	:	similar to water
Relative density	:	No data available
Density	:	1.23 - 1.44 g/cm ³ (68 °F / 20 °C)
Solubility(ies)	:	
Water solubility	:	miscible
Partition coefficient: n-octanol/water	:	No data available
Auto-ignition temperature	:	No data available
Decomposition temperature	:	> 212 °F / > 100 °C
Viscosity	:	
Viscosity, dynamic	:	No data available
Viscosity, kinematic	:	No data available
Oxidizing properties	:	No data available
Surface tension	:	No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	Corrosive to metals.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	Bases cause exothermic reactions. Contact with certain metals may form hydrogen gas, which in turn may form explosive mixtures of gases with air.
Conditions to avoid	:	Stable under normal conditions.
Incompatible materials	:	Metals Bases Alkaline materials Oxidizing agents Reducing agents sulphites Sulphides
Hazardous decomposition	:	Heating above the decomposition temperature can cause

SAFETY DATA SHEET



KEMIRA PIX-411

Ref. 1.8/US/EN

Revision Date:
05/16/2023

Date of last issue: 11/15/2021
Print Date:02/20/2024

products

formation of hydrogen chloride.

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Product:

Acute oral toxicity : Acute toxicity estimate: 1,000 - 1,500 mg/kg
Remarks: Harmful if swallowed.

Components:

Iron dichloride:

Acute oral toxicity : LD50 (Rat): 220 mg/kg
Method: OECD Test Guideline 423
Remarks: Calculated as Fe

Acute toxicity estimate: 500 mg/kg

Acute inhalation toxicity : No observed adverse effect level: 1.1 mg/l
Method: EPA OPP 81-3

Acute dermal toxicity : LD50 (Rat): > 2,000 mg/kg
Method: OECD Test Guideline 402

LD50 (Rat): > 881 mg/kg
Method: OECD Test Guideline 402
Remarks: Calculated as Fe

Hydrochloric acid:

Acute inhalation toxicity : LC50 (Rat): 4701 ppm
Exposure time: 30 min
Remarks: gas

LC50 (Rat): 8.3 mg/l
Exposure time: 30 min
Remarks: aerosol

Acute dermal toxicity : Remarks: No data available

Skin corrosion/irritation

Product:

Remarks : Causes skin irritation.

Components:

Iron dichloride:

Species : Rabbit
Method : OECD Test Guideline 404
Result : No irritating effects.

SAFETY DATA SHEET

Kemira

KEMIRA PIX-411

Ref. 1.8/US/EN

Revision Date:
05/16/2023

Date of last issue: 11/15/2021
Print Date:02/20/2024

Hydrochloric acid:

Species : EPISKIN Human Skin Model Test
Exposure time : 1 h
Method : OECD Test Guideline 431
Result : Corrosive
GLP : yes

Serious eye damage/eye irritation

Product:

Remarks : Causes serious eye damage.

Components:

Iron dichloride:

Species : Rabbit
Result : Causes serious eye damage.
Method : OECD Test Guideline 405
GLP : yes
Remarks : Read-across (Analogy)
7758-94-3
dry substance

Hydrochloric acid:

Species : Rabbit
Result : Risk of serious damage to eyes.
Method : OECD Test Guideline 405
Test substance : yes
Remarks : 0,1 ml, conc. 10 %

Respiratory or skin sensitisation

Product:

Remarks : May cause an allergic skin reaction.

Components:

Iron dichloride:

Test Type : Local lymph node assay (LLNA)
Species : Mouse
Method : OECD Test Guideline 429
Result : Not sensitizing.
Test substance : ferrous sulfate

Hydrochloric acid:

Test Type : Maximisation Test
Exposure routes : Skin contact
Species : Guinea pig
Result : Not sensitizing.

SAFETY DATA SHEET



KEMIRA PIX-411

Ref. 1.8/US/EN

Revision Date:
05/16/2023

Date of last issue: 11/15/2021
Print Date:02/20/2024

Germ cell mutagenicity

Product:

Genotoxicity in vitro : Remarks: Based on available data, the classification criteria are not met.

Components:

Iron dichloride:

Genotoxicity in vitro : Test Type: reverse mutation assay
Test system: Salmonella typhimurium (bacterium)
Metabolic activation: with and without
Method: OECD Test Guideline 471
Result: negative
Test substance: ferrous chloride

Hydrochloric acid:

Genotoxicity in vitro : Test Type: In vitro mitotic recombination
Test system: Saccharomyces cerevisiae
Metabolic activation: with and without
Result: negative

Carcinogenicity

Product:

Remarks : Based on available data, the classification criteria are not met.

Components:

Iron dichloride:

Species : Rat
Application Route : Oral
Exposure time : 2 years
NOAEL : > 0.5 %
Test substance : ferric chloride

Hydrochloric acid:

Species : Rat
Application Route : Inhalation
: 15 mg/m³
Method : OECD Test Guideline 451

Reproductive toxicity

Product:

Effects on fertility : Remarks: Based on available data, the classification criteria are not met.

Components:

Iron dichloride:

SAFETY DATA SHEET



KEMIRA PIX-411

Ref. 1.8/US/EN

Revision Date:
05/16/2023

Date of last issue: 11/15/2021
Print Date:02/20/2024

Effects on fertility	: Test Type: Reproductive effects Species: Rat Application Route: Oral General Toxicity - Parent: NOAEL: > 500 mg/kg bw/day Method: OECD Test Guideline 422
Effects on foetal development	: Species: Rat Application Route: Oral Teratogenicity: NOAEL: > 1,000 mg/kg bw/day Method: OECD Test Guideline 422 Result: Did not show teratogenic effects in animal experiments.
Hydrochloric acid: Effects on fertility	: Remarks: No data available
Effects on foetal development	: Remarks: No data available
STOT - single exposure Product: Remarks	: Based on available data, the classification criteria are not met.
Components: Hydrochloric acid: Assessment	: May cause respiratory irritation.
STOT - repeated exposure Product: Remarks	: Based on available data, the classification criteria are not met.
Components: Hydrochloric acid: Assessment	: The substance or mixture is not classified as specific target organ toxicant, repeated exposure.
Repeated dose toxicity Product: Remarks	: Based on available data, the classification criteria are not met.
Aspiration toxicity Product: No aspiration toxicity classification	

SAFETY DATA SHEET



KEMIRA PIX-411

Ref. 1.8/US/EN

Revision Date:
05/16/2023

Date of last issue: 11/15/2021
Print Date:02/20/2024

Components:

Hydrochloric acid:

No aspiration toxicity classification

Experience with human exposure

Product:

- Inhalation : Symptoms: Inhalation may provoke the following symptoms:, cough and difficulties in breathing
- Skin contact : Symptoms: Skin contact may provoke the following symptoms:, irritation, burns
- Eye contact : Symptoms: Causes burns., Contact with eyes causes a smarting pain and a flood of tears.
- Ingestion : Symptoms: Ingestion may provoke the following symptoms:, burns in upper digestive organs, May cause irritation of the mucous membranes.

Further information

Product:

- Remarks : The product is classified as corrosive due to the low pH.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

- Toxicity to fish :
Remarks: This material is not classified as dangerous for the environment.
The compound is considered to have no long term effects in aquatic systems due to the rapid formation of insoluble hydroxides.

Components:

Iron dichloride:

- Toxicity to fish : LC50 (*Oryzias latipes* (Japanese rice fish)): 47 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203
GLP: yes
- NOEC (*Oncorhynchus kisutch* (Coho salmon)): > 1 mg/l
Exposure time: 90 d
Test substance: Read-across (Analogy)
- Toxicity to daphnia and other aquatic invertebrates : EC50 (*Daphnia magna* (Water flea)): 19 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202
GLP: yes

SAFETY DATA SHEET



KEMIRA PIX-411

Ref. 1.8/US/EN

Revision Date:
05/16/2023

Date of last issue: 11/15/2021
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NOEC (Daphnia magna (Water flea)): > 1 mg/l
Exposure time: 21 d

Toxicity to algae/aquatic plants : IC50 (Pseudokirchneriella subcapitata (green algae)): 6.9 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201
GLP: yes

Hydrochloric acid:

Toxicity to fish : LC50 (Lepomis macrochirus (Bluegill sunfish)): 20.5 mg/l
Exposure time: 96 h
Test Type: semi-static test
GLP: no
Remarks: fresh water

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 0.45 mg/l
Exposure time: 48 h
Test Type: static test
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : EC50 (Chlorella vulgaris (Fresh water algae)): 0.73 mg/l
Test Type: static test
Method: OECD Test Guideline 201
Remarks: Fresh water

Persistence and degradability

Product:

Biodegradability : Remarks: The methods for determining the biological degradability are not applicable to inorganic substances.

Components:

Iron dichloride:

Biodegradability : Remarks: The methods for determining the biological degradability are not applicable to inorganic substances.

Hydrochloric acid:

Biodegradability : Remarks: The methods for determining the biological degradability are not applicable to inorganic substances.

Bioaccumulative potential

Components:

Iron dichloride:

Partition coefficient: n-octanol/water : Remarks: Not applicable inorganic compound

Hydrochloric acid:

Partition coefficient: n-octanol/water : Remarks: Not applicable inorganic compound

SAFETY DATA SHEET



KEMIRA PIX-411

Ref. 1.8/US/EN

Revision Date:
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Print Date:02/20/2024

Mobility in soil

No data available

Other adverse effects

Product:

Additional ecological information : May lower the pH of water and thus be harmful to aquatic organisms.

Components:

Hydrochloric acid:

Results of PBT and vPvB assessment : This substance is not considered to be a PBT (Persistent, Bioaccumulation, Toxic) This substance is not considered to be vPvB (very Persistent nor very Bioaccumulating)

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : The product should not be allowed to enter drains, water courses or the soil.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Dispose of in compliance with local and national regulations.

Contaminated packaging : Must be disposed of in accordance with local and national regulations.

SECTION 14. TRANSPORT INFORMATION

International Regulation

IATA-DGR

UN/ID No. : UN 1760
Proper shipping name : Corrosive liquid, n.o.s.
(Ferrous chloride)
Class : 8
Packing group : II
Labels : Corrosive
Packing instruction (cargo aircraft) : 855

IMDG-Code

UN number : UN 1760
Proper shipping name : CORROSIVE LIQUID, N.O.S.
(Ferrous chloride)
Class : 8
Packing group : II
Labels : 8
EmS Code : F-A, S-B
Marine pollutant : no

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

Not applicable for product as supplied.

SAFETY DATA SHEET



KEMIRA PIX-411

Ref. 1.8/US/EN

Revision Date:
05/16/2023

Date of last issue: 11/15/2021
Print Date:02/20/2024

National Regulations

49 CFR

UN/ID/NA number : UN 1760
Proper shipping name : Corrosive liquids, n.o.s.
(Ferrous chloride)
Class : 8
Packing group : II
Labels : CORROSIVE
ERG Code : 154
Marine pollutant : no

Special precautions for user

Remarks : Corrosive in contact with metals, Metal containers must be lined.

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15. REGULATORY INFORMATION

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

Components	CAS-No.	Component TPQ (lbs)
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SARA 311/312 Hazards : Corrosive to metals
Serious eye damage or eye irritation
Skin corrosion or irritation

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

California Prop. 65

WARNING: This product can expose you to chemicals including iron bis(arsenate), Beryllium chloride, which is/are known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

WARNING: This product can expose you to chemicals including Nickel dichloride, Lead dichloride, which is/are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

The components of this product are reported in the following inventories:

TSCA : All components of this product are included in the United States TSCA Chemical Inventory with Active Status or are not required to be listed on the United States TSCA Chemical Inventory.
DSL : All components of this product are included in the Canada Domestic Substance List (DSL) or are not required to be listed on the Canada Domestic Substance List (DSL).
AIIC : All components of this product are NOT included on the Australian Inventory of Industrial Chemicals (AIIC).
IECSC : All components of this product are NOT included on the Chinese inventory.

SAFETY DATA SHEET

KEMIRA PIX-411

Ref. 1.8/US/EN

Revision Date:
05/16/2023

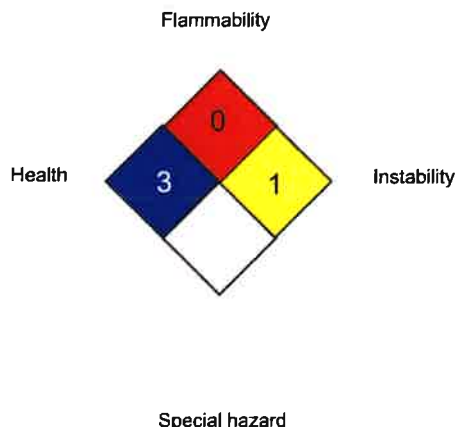
Date of last issue: 11/15/2021
Print Date:02/20/2024

EINECS	: All components of this product are NOT included on the European Inventory of Existing Chemical Substance (EINECS) inventory.
ENCS	: All components of this product are NOT included on the Japanese (ENCS) inventory.
KECI	: All components of this product are NOT included on the Korean (ECL) inventory.
NZIoC	: All components of this product are NOT included on the New Zealand Inventory of Chemical Substances.
PICCS	: All components of this product are NOT included on the Philippine (PICCS) inventory.
TCSI	: All components of this product are NOT included on the Taiwan Chemical Substances Inventory.

SECTION 16. OTHER INFORMATION

Further information

NFPA 704:



HMIS® IV:

HEALTH	3
FLAMMABILITY	0
PHYSICAL HAZARD	1

HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks.

Full text of other abbreviations

ACGIH	: USA. ACGIH Threshold Limit Values (TLV)
NIOSH REL	: USA. NIOSH Recommended Exposure Limits
OSHA P0	: USA. Table Z-1-A Limits for Air Contaminants (1989 vacated values)
OSHA Z-1	: USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
ACGIH / TWA	: 8-hour, time-weighted average
ACGIH / C	: Ceiling limit
NIOSH REL / TWA	: Time-weighted average concentration for up to a 10-hour workday during a 40-hour workweek
NIOSH REL / C	: Ceiling value not be exceeded at any time.
OSHA P0 / TWA	: 8-hour time weighted average
OSHA P0 / C	: Ceiling limit
OSHA Z-1 / C	: Ceiling

SAFETY DATA SHEET



KEMIRA PIX-411

Ref. 1.8/US/EN

Revision Date:
05/16/2023

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AiIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECl - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECl - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Relevant changes have been marked with vertical lines.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

This Safety Data Sheet is prepared according to the OSHA Hazard Communication Standard (29 CFR 1910.1200), an adoption of the UN Globally Harmonized System of Classification and Labeling of Chemicals (GHS), Revision 3 by Kemira.

Sources of key data used to compile the Safety Data Sheet : Regulations, databases, literature, own tests.
Revision Date : 05/16/2023

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US / EN



The Public Health and Safety Organization

NSF Product and Service Listings

These NSF Official Listings are current as of **Tuesday, February 20, 2024** 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=kemira+water&TradeName=pix%2D411&>

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

Kemira Water Solutions, Inc.

1000 Parkwood Circle

Suite 500

Atlanta, GA 30334

United States

888-KEMIRON

863-533-5990

[Visit this company's website \(http://www.kemira.com\)](http://www.kemira.com)

Facility : # 3 Canada

Ferrous Chloride

Trade Designation

KEMIRA PIX-411

Product Function

Coagulation & Flocculation

Max Use

300mg/L

NOTE: Four digit alpha suffix in Certified trade names on product labels and/or literature may be used to designate container size.

Facility : # 4 A USA

Ferrous Chloride

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
KEMIRA PIX-411	Dechlorination	300mg/L

NOTE: Four digit alpha suffix in Certified trade names on product labels and/or literature may be used to designate container size.

Facility : Distribution Center - Buckeye, AZ

Ferrous Chloride

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
KEMIRA PIX-411	Coagulation & Flocculation	300mg/L
KEMIRA PIX-411	Coagulation & Flocculation	250mg/L

NOTE: Four digit alpha suffix in Certified trade names on product labels and/or literature may be used to designate container size.

Facility : Fontana, CA

Ferrous Chloride

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
KEMIRA PIX-411	Coagulation & Flocculation	300mg/L

NOTE: Four digit alpha suffix in Certified trade names on product labels and/or literature may be used to designate container size.

Facility : Mojave, CA

Ferrous Chloride

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
KEMIRA PIX-411	Coagulation & Flocculation	300mg/L
KEMIRA PIX-411H	Coagulation & Flocculation	300mg/L

NOTE: Four digit alpha suffix in Certified trade names on product labels and/or literature may be used to designate container size.

Facility : East Chicago, IN

Ferrous Chloride

Trade Designation

KEMIRA PIX-411

Product Function

Coagulation & Flocculation

Max Use

300mg/L

NOTE: Four digit alpha suffix in Certified trade names on product labels and/or literature may be used to designate container size.

Facility : Baltimore, MD

Ferrous Chloride

Trade Designation

KEMIRA PIX-411

Product Function

Coagulation & Flocculation

Max Use

300mg/L

NOTE: Four digit alpha suffix in Certified trade names on product labels and/or literature may be used to designate container size.

Facility : Distribution Center - Euclid, OH

Ferrous Chloride

Trade Designation

KEMIRA PIX-411

Product Function

Coagulation & Flocculation

Max Use

300mg/L

NOTE: Four digit alpha suffix in Certified trade names on product labels and/or literature may be used to designate container size.

Facility : Distribution Center - El Paso, TX

Ferrous Chloride

Trade Designation

KEMIRA PIX-411

Product Function

Coagulation & Flocculation

Max Use

300mg/L

NOTE: Four digit alpha suffix in Certified trade names on product labels and/or literature may be used to designate container size.

Facility : Kalama, WA

Ferrous Chloride

Trade Designation

KEMIRA PIX-411

Product Function

Coagulation & Flocculation

Max Use

300 mg/L

NOTE: Four digit alpha suffix in Certified trade names on product labels and/or literature may be used to designate container size.

Facility : Varennes, Quebec, Canada

Ferrous Chloride

Trade Designation

KEMIRA PIX-411

Product Function

Coagulation & Flocculation

Max Use

300mg/L

NOTE: Four digit alpha suffix in Certified trade names on product labels and/or literature may be used to designate container size.

Number of matching Manufacturers is 1

Number of matching Products is 13

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