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Version 1

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

**Product identifier**

**Product Name** FeRROMEC® AC Liquid Iron 15-0-0

**Other means of identification**

**Product Code** PBI FP 970-6

**Recommended use of the chemical and restrictions on use**

**Recommended Use** Fertilizers.  
**Uses advised against** No information available.

**Details of the supplier of the safety data sheet**

<b>Supplier</b>	<b>Manufacturer</b>	<b>Company Name</b>
PBI Gordon Corporation 1217 West 12th Street Kansas City, MO 64101	PBI Gordon Corporation 1217 West 12th Street Kansas City, MO 64101	PBI Gordon Corporation 1217 West 12th Street Kansas City, MO 64101

**Emergency telephone number**

**Emergency Telephone** Chemtrec 1-800-424-9300

## 2. HAZARDS IDENTIFICATION

**Classification**

**OSHA Regulatory Status**

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


Acute toxicity - Oral	Category 4***
Acute toxicity - Inhalation (Dusts/Mists)	Category 4***
Skin corrosion/irritation	Category 2***
Serious eye damage/eye irritation	Category 2***
Carcinogenicity	Category 1A***

**Label elements**

**Emergency Overview**

**Danger\*\*\***

**Hazard statements**  
 Harmful if swallowed. Harmful if inhaled. Causes skin irritation. Causes serious eye irritation. May cause cancer.\*\*\*



**Appearance** Liquid                      **Physical state** Liquid                      **Odor** No discernible odor

**Precautionary Statements - Prevention**

- Obtain special instructions before use
- Do not handle until all safety precautions have been read and understood
- Use personal protective equipment as required
- Wash face, hands and any exposed skin thoroughly after handling
- Do not eat, drink or smoke when using this product
- Avoid breathing dust/fume/gas/mist/vapors/spray
- Use only outdoors or in a well-ventilated area
- Wear eye/face protection\*\*\*

**Precautionary Statements - Response**

- IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
- If eye irritation persists: Get medical advice/attention\*\*\*
- IF ON SKIN: Wash with plenty of soap and water
- If skin irritation occurs: Get medical advice/attention
- Take off contaminated clothing and wash before reuse\*\*\*
- IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
- Call a POISON CENTER or doctor/physician if you feel unwell\*\*\*
- IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
- Rinse mouth
- Do NOT induce vomiting\*\*\*

**Precautionary Statements - Storage**

- Store locked up\*\*\*

**Precautionary Statements - Disposal**

- Dispose of contents/container to an approved waste disposal plant\*\*\*

**Hazards not otherwise classified (HNOC)**

The low flash point of this product is due to a minor component in the mixture. Based on independent laboratory testing of similar products, this product would not sustain combustion as specified in DOT Regulation 49 CFR 173 Appendix H; however OSHA HCS 2012 flammable classifications are solely based on tested mixture flash points and boiling points.\*\*\*

**Other Information****3. COMPOSITION/INFORMATION ON INGREDIENTS**

Chemical Name	CAS No.	Weight-%
Urea	57-13-6	32.6
Ferrous Sulfate	7720-78-7	16.3
Sulfuric acid	7664-93-9	<6

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

**4. FIRST AID MEASURES****First aid measures****General advice**

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

**Eye contact**

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area.\*\*\*

**Skin Contact**

Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.\*\*\*

**Inhalation**

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.\*\*\*

<b>Ingestion</b>	Drink plenty of water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Immediate medical attention is required. Remove from exposure, lie down. Clean mouth with water and drink afterwards plenty of water. Call a physician or poison control center immediately.***
<b>Self-protection of the first aider</b>	Use personal protective equipment as required.***
<b><u>Most important symptoms and effects, both acute and delayed</u></b>	
<b>Symptoms</b>	No information available.
<b><u>Indication of any immediate medical attention and special treatment needed</u></b>	
<b>Note to physicians</b>	Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure. Treat symptomatically.***

## 5. FIRE-FIGHTING MEASURES

### **Suitable extinguishing media**

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

### **Specific hazards arising from the chemical**

The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating and toxic gases and vapors. In the event of fire and/or explosion do not breathe fumes.\*\*\*

### **Explosion data**

**Sensitivity to Mechanical Impact** None.

**Sensitivity to Static Discharge** None.

### **Protective equipment and precautions for firefighters**

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

## 6. ACCIDENTAL RELEASE MEASURES

### **Personal precautions, protective equipment and emergency procedures**

**Personal precautions** Use personal protective equipment as required. Avoid contact with eyes and skin. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.\*\*\*

### **Environmental precautions**

**Environmental precautions** Prevent entry into waterways, sewers, basements or confined areas. Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. See Section 12 for additional ecological information.\*\*\*

### **Methods and material for containment and cleaning up**

**Methods for containment** Prevent further leakage or spillage if safe to do so.\*\*\*

**Methods for cleaning up** Use personal protective equipment as required. Dam up. Cover liquid spill with sand, earth or other non-combustible absorbent material. Take up mechanically, placing in appropriate containers for disposal. Clean contaminated surface thoroughly. After cleaning, flush away traces with water.\*\*\*

## 7. HANDLING AND STORAGE

### **Precautions for safe handling**

**Advice on safe handling** Ensure adequate ventilation, especially in confined areas. Use personal protective equipment as required. Avoid contact with skin and eyes. In case of insufficient ventilation, wear suitable respiratory equipment. Use only with adequate ventilation and in closed systems.\*\*\*

#### Conditions for safe storage, including any incompatibilities

**Storage Conditions** Keep out of the reach of children. Keep container tightly closed in a dry and well-ventilated place. Keep in properly labeled containers.\*\*\*

**Incompatible materials** Strong bases. Incompatible with strong acids and bases. Incompatible with oxidizing agents.\*\*\*

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### Control parameters

#### Exposure Guidelines \*\*\*

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Ferrous Sulfate 7720-78-7	TWA: 1 mg/m <sup>3</sup> Fe	(vacated) TWA: 1 mg/m <sup>3</sup> Fe	TWA: 1 mg/m <sup>3</sup> Fe
Sulfuric acid 7664-93-9	TWA: 0.2 mg/m <sup>3</sup> thoracic fraction	TWA: 1 mg/m <sup>3</sup> (vacated) TWA: 1 mg/m <sup>3</sup>	IDLH: 15 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup>

NIOSH IDLH *Immediately Dangerous to Life or Health*\*\*\*

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

#### Appropriate engineering controls

**Engineering Controls** Local and General Ventilation.

#### Individual protection measures, such as personal protective equipment

**Eye/face protection** Tight sealing safety goggles. Face protection shield.\*\*\*

**Skin and body protection** Wear protective gloves and protective clothing.

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

**General Hygiene Considerations** When using do not eat, drink or smoke. Wash contaminated clothing before reuse. Keep away from food, drink and animal feeding stuffs. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Avoid contact with skin, eyes or clothing. Take off all contaminated clothing and wash it before reuse. Wear suitable gloves and eye/face protection.\*\*\*

## 9. PHYSICAL AND CHEMICAL PROPERTIES

#### Information on basic physical and chemical properties

<b>Physical state</b>	Liquid	<b>Odor</b>	No discernible odor
<b>Appearance</b>	Liquid	<b>Odor threshold</b>	No information available
<b>Color</b>	Green		

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	1.4-2.5	***
Melting point/freezing point	-5*** °C*** /*** 23 °F***	***
Boiling point / boiling range	121*** °C*** /*** 250 °F***	***

Flash point	>*** 96*** °C*** /*** > 205 °F***	***
Evaporation rate	< 1	***
Flammability (solid, gas)	No information available	
Flammability Limit in Air		
Upper flammability limit:	No information available	
Lower flammability limit:	No information available	
Vapor pressure	<17 mm Hg***	***
Vapor density	>1	***
Specific Gravity	1.36	***
Water solubility	Soluble in water	***
Solubility in other solvents	No information available	
Partition coefficient	No information available	
Autoignition temperature	No information available	
Decomposition temperature	No information available	
Oxidizing properties	No information available	

**Other Information**

Density 11.5 pounds/gallon

## 10. STABILITY AND REACTIVITY

**Reactivity**

No data available

**Chemical stability**

Stable.

**Possibility of Hazardous Reactions**

None under normal processing.

**Hazardous polymerization**

Will not occur.

**Conditions to avoid**

(Store below 110 degrees F). Exposure to air or moisture over prolonged periods.\*\*\*

**Incompatible materials**

Strong bases. Incompatible with strong acids and bases. Incompatible with oxidizing agents.\*\*\*

**Hazardous Decomposition Products**

Thermal decomposition can lead to release of irritating and toxic gases and vapors.\*\*\*

## 11. TOXICOLOGICAL INFORMATION

**Information on likely routes of exposure****Product Information**

<b>Inhalation</b>	May cause irritation.
<b>Eye contact</b>	May cause irritation. May cause burns.
<b>Skin Contact</b>	May cause irritation.
<b>Ingestion</b>	May cause irritation. May be harmful if swallowed.

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Ferrous Sulfate 7720-78-7	= 237 mg/kg ( Rat )	-	-
Sulfuric acid 7664-93-9	= 2140 mg/kg ( Rat )	-	= 510 mg/m <sup>3</sup> ( Rat ) 2 h

**Information on toxicological effects**

**Symptoms** No information available.

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

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

Chemical Name	ACGIH	IARC	NTP	OSHA
Sulfuric acid 7664-93-9	A2	Group 1	Known	X

ACGIH (American Conference of Governmental Industrial Hygienists)

A2 - Suspected Human Carcinogen\*\*\*

IARC (International Agency for Research on Cancer)

Group 1 - Carcinogenic to Humans\*\*\*

NTP (National Toxicology Program)

Known - Known Carcinogen\*\*\*

OSHA (Occupational Safety and Health Administration of the US Department of Labor)

X - Present\*\*\*

**Reproductive toxicity** No information available.  
**STOT - single exposure** No information available.  
**STOT - repeated exposure** No information available.  
**Chronic toxicity** Chronic exposure to corrosive fumes/gases may cause erosion of the teeth followed by jaw necrosis. Bronchial irritation with chronic cough and frequent attacks of pneumonia are common. Gastrointestinal disturbances may also be seen. Avoid repeated exposure. Possible risk of irreversible effects. May cause adverse liver effects.\*\*\*  
**Target Organ Effects** Eyes, Gastrointestinal tract (GI), Liver, Respiratory system, Skin, Teeth. \*\*\*  
**Aspiration hazard** No information available.

**Numerical measures of toxicity - Product Information**

**Unknown Acute Toxicity** 33% of the mixture consists of ingredient(s) of unknown toxicity\*\*\*

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

ATEmix (oral) 1902\*\*\* mg/kg\*\*\*

ATEmix (inhalation-dust/mist) 2.9\*\*\* mg/L\*\*\*

**12. ECOLOGICAL INFORMATION****Ecotoxicity**

Toxic to aquatic life with long lasting effects\*\*\*

0% of the mixture consists of component(s) of unknown hazards to the aquatic environment\*\*\*

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Urea 57-13-6		16200 - 18300: 96 h Poecilia reticulata mg/L LC50		10000: 24 h Daphnia magna Straus mg/L EC50 3910: 48 h Daphnia magna mg/L EC50 Static
Ferrous Sulfate 7720-78-7		925: 96 h Poecilia reticulata mg/L LC50 static 0.56: 96 h Cyprinus carpio mg/L LC50 semi-static		152: 48 h Daphnia magna mg/L EC50 6.15 - 9.26: 48 h Daphnia magna mg/L EC50 Static
Sulfuric acid 7664-93-9		500: 96 h Brachydanio rerio mg/L LC50 static		29: 24 h Daphnia magna mg/L EC50

**Persistence and degradability**

No information available.

**Bioaccumulation**

No information available.

**Other adverse effects**

No information available

**13. DISPOSAL CONSIDERATIONS****Waste treatment methods****Disposal of wastes**

This material, as supplied, is a hazardous waste according to federal regulations (40 CFR 261).\*\*\*

**Contaminated packaging**

Do not reuse container, unless specified by the manufacturer.

**14. TRANSPORT INFORMATION****DOT****Description**

The following guidelines apply for domestic ground transport. If shipping by air or ocean, please contact our Transportation Dept.

FERTILIZERS NOI - NMFC #68140, SUB 6

**15. REGULATORY INFORMATION****U.S. EPA Label Information****EPA Pesticide Registration Number** Not Applicable**International Inventories**

<b>TSCA</b>	Listed
<b>DSL/NDSL</b>	Listed
<b>EINECS/ELINCS</b>	Listed
<b>ENCS</b>	Not Listed
<b>IECSC</b>	Listed
<b>KECL</b>	Listed
<b>PICCS</b>	Listed
<b>AICS</b>	Listed

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

Chemical Name	TSCA	DSL	NDSL	EINECS	ELINCS	ENCS	IECSC	KECL	PICCS	AICS
Urea	X	X		X		X	X	X	X	X
Ferrous Sulfate	X	X		X		X	X	X	X	X
Sulfuric acid	X	X		X		X	X	X	X	X

**US Federal Regulations**

**SARA 313**

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

Chemical Name	CAS No.	Weight-%	SARA 313 - Threshold Values %
Sulfuric acid - 7664-93-9	7664-93-9	<6	1.0

**SARA 311/312 Hazard Categories**

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

**CWA (Clean Water Act)**

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

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Ferrous Sulfate 7720-78-7	1000 lb			X
Sulfuric acid 7664-93-9	1000 lb			X

**CERCLA**

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

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Ferrous Sulfate 7720-78-7	1000 lb		RQ 1000 lb final RQ RQ 454 kg final RQ
Sulfuric acid 7664-93-9	1000 lb	1000 lb	RQ 1000 lb final RQ RQ 454 kg final RQ

**US State Regulations**

**U.S. State Right-to-Know Regulations**

\*\*\*

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Ferrous Sulfate 7720-78-7	X	X	X
Sulfuric acid 7664-93-9	X	X	X

**International Regulations**

**Mexico - Grade** Slight risk, Grade 1\*\*\*

Chemical Name	Carcinogenicity	Exposure Limits
Ferrous Sulfate		Mexico: TWA 1 mg/m <sup>3</sup> Mexico: STEL 2 mg/m <sup>3</sup>
Sulfuric acid	A2	Mexico: TWA 1 mg/m <sup>3</sup>

**16. OTHER INFORMATION**

<b>NFPA</b>	Health hazards 3***	Flammability 1***	Instability 0	Physical and Chemical Properties -
<b>HMIS</b>	Health hazards 3***	Flammability 1***	Physical hazards 0	Personal protection X



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**End of Safety Data Sheet**