



WEST BENGAL CHEMICAL INDUSTRIES LIMITED

145/1, Jessore Road, Lake Town,

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Phone: +9133 4025 1700 Fax: +9133 2574 7410

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## Section 1 - Chemical Product and Company Identification

**1.1 MSDS Name:** Ferric Ammonium Citrate BP

**1.2 Product Code:** FACIH20

**1.3 Relevant identified uses of the substance or mixture and uses advised against:**

Laboratory chemicals, Industrial & for professional use only.

**1.4 Company Identification:**

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## Section 2 - Hazards Identification

**2.1 Classification of the substance or mixture:**

This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

2.1.1 Hazard classification

Skin Irrit. 2 (90.9%)

Eye Irrit. 2 (90.9%)

**2.2 Hazard Statements:**

H315 (90.9%): Causes skin irritation

H319 (90.9%): Causes serious eye irritation

**2.3 Signal:**

Warning

**2.4 Precautionary Statement Codes:**

**Prevention**

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P264 Wash hands thoroughly after handling.

P271 Use only outdoors or in a well-ventilated area.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

**Response**

P302+P352 IF ON SKIN: Wash with plenty of water.

P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P337+P313 If eye irritation persists: Get medical advice/attention.



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## Section 2 - Hazards Identification

P312 Call a POISON CENTER/doctor/physician if you feel unwell.

P321 Specific treatment (see warning on this label).

P332+P313 If SKIN irritation occurs: Get medical advice/attention.

P337+P313 If eye irritation persists: Get medical advice/attention.

P362 Take off contaminated clothing and wash it before reuse.

### Storage

P403+P233 Store in a well-ventilated place. Keep container tightly closed.

P405 Store locked up.

### Disposal

P501 Dispose of contents/container in accordance with local regulations.

### 2.5 Hazards not otherwise classified (HNOC):

None identified

### 2.6 Other hazards:

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

### 2.7 Potential acute health effects:

Slightly hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation.

### 2.8 Potential chronic health effects:

Hazardous in case of skin contact (irritant).

### 2.9 Carcinogenic effects:

No data available.

### 2.10 Mutagenic effect:

No data available.

### 2.11 Teratogenic effects:

No data available.

### 2.12 Developmental toxicity:

No data available.

### 2.13 Pictogram



### 2.14 NFPA SCALE:



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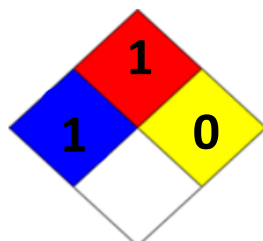
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## Section 2 - Hazards Identification



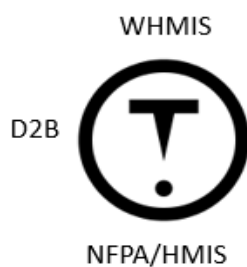
NFPA SCALE (0-4)

### 2.15 HMIS RATINGS:

Health	1
Flammability	1
Physical Hazard	0
Personal protection	E

HMIS RATINGS (0-4)

### 2.16 WHMIS RATINGS:



## Section 3 - Composition / Information on Ingredients

**3.1 Ingredient Name:** Ferric Ammonium Citrate

**3.2 Synonym:** Citric acid, ammonium iron (3+) salt; ammonium ferric citrate; 1,2,3-propanetricarboxylic acid,2-hydroxy-ammonium iron (3+) salt



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### Section 3 - Composition / Information on Ingredients

**3.3 CAS Number:** 1185 - 57 – 5

**3.4 EC Number:** 214-686-6

**3.5 Molecular formula:**  $C_6H_{11}FeNO_7^{+3}$

**3.6 Molecular weight:** 265.00 g/mol

**3.7 % wt:** 90 – 100

### Section 4 - First Aid Measures

**4.1. Description of first aid measures:**

**4.1.1 General advice:**

Consult a physician. Show this safety data sheet to the doctor in attendance.

**4.1.2 Inhalation:**

If breathed in, move person into fresh air. If not breathing, give artificial respiration.

Consult a physician.

**4.1.3 Ingestion:**

Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person.

Rinse mouth with water. Consult a physician.

**4.1.4 Skin Contact:**

Wash off with soap and plenty of water. Consult a physician.

**4.1.5 Eye Contact:**

Rinse thoroughly with plenty of water for 15 minutes and consult a physician.

**4.2 Most important symptoms and effects:**

No information available.

**4.3 Indication of any immediate medical attention and special treatment needed:**

Treat symptomatically

### Section 5 - Fire-Fighting Measures

**5.1 Extinguishing media:**

**5.1.1 Suitable Extinguishing Media:**

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

**5.1.2 Unsuitable Extinguishing Media:**

No information available

**5.2 Special hazards arising from the substance or mixture:**

Carbon oxides, nitrogen oxides (NOx), Iron oxides.



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## Section 5 - Fire-Fighting Measures

### 5.3 Hazardous Combustion Products:

Heavy metal oxides.

### 5.4 Fire Hazards in Presence of Various Substances:

Slightly flammable to flammable in presence of open flames and sparks, of heat

### 5.5 Fire Fighting Media and Instructions:

Wear self-contained breathing apparatus for firefighting if necessary.

5.5.1 Small fire: Use DRY chemical powder.

5.5.1 Large fire: Use water spray, fog or foam. Do not use water jet.

### 5.6 Further information:

data available.

### 5.7 Special Remarks on Fire Hazards:

Toxic oxides of nitrogen or ammonia gas may be formed in fires.

### 5.8 Special Remarks on Explosion Hazards:

Containers may explode when heated.

## Section 6 - Accidental Release Measures

### 6.1 Personal precautions, protective equipment and emergency procedure:

Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

6.1.1. For non-emergency personnel

Emergency procedures:

Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment:

Use personal protective equipment as required.

Emergency procedures:

Ventilate area.

### 6.2 Environmental precautions:

Do not let product enter drains.

### 6.3 Methods and material for containment and cleaning up:

Pick up and arrange disposal without creating dust. Sweep up and keep in suitable, closed containers for disposal.

## Section 7 - Handling and Storage

### 7.1. Precautions for safe handling:



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## Section 7 - Handling and Storage

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed.

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

Store in cool place. Store at temperatures between 2 °C and 8 °C.

## Section 8 - Exposure Controls / Personal Protection

### 8.1 Appropriate Engineering Controls:

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

### 8.2 Ventilation System:

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details

### 8.3 Personal protective equipment:

#### 8.3.1 Eye/face Protection:

Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

#### 8.3.2 Skin protection:

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices.

#### 8.3.3 Body Protection:

Impervious clothing, the type of protective equipment must be selected according to the concentration and amount of the amount of the dangerous substance at the specific workplace.

#### 8.3.4 Respiratory protection:

For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle r (US) or type ABEKP2 (EU EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

### 8.4 Personal Protection in Case of a Large Spill:

Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self-contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.



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## Section 8 - Exposure Controls / Personal Protection

### 8.5 Exposure Limits:

Component	ACGIH TLV	OSHA PEL (Permissible Exposure Limit)	NIOSH REL	NIOSH IDLH (Immediate Danger to Life or Health)
Ferric ammonium citrate	TWA 1 mg/m <sup>3</sup>	Notated TWA 1 mg/m <sup>3</sup>	TWA 1 mg/m <sup>3</sup>	TWA 1 mg/m <sup>3</sup>

### Legend

ACGIH: American Conference of Governmental Industrial Hygienists

OSHA: Occupational Safety and Health Administration

NIOSH REL: National Institute for Occupational Safety and Health - Recommended Exposure Limit

NIOSH IDLH: National Institute for Occupational Safety and Health - Immediate Danger to Life or Health

## Section 9 - Physical and Chemical Properties

Appearance	: Liquid
Color	: Brownish red.
Odour	: Characteristic
Solubility	: Soluble in 20°C, in 0.5% part of water, almost insoluble in alcohol (95%).
Flammability (solid, gas)	: Not applicable.
Flash point	: Not applicable.
pH	: 6-7
Explosive properties	: Not applicable
Freezing Point	: No data available
Relative Vapour Density	: No data available
Autoignition temperature	: Not applicable.
Odour threshold	: No data available
Melting point	: 116.5 °C
Initial boiling point	: 498 °C
Fat Solubility	: No data available
Vapour pressure	: No data available
Evaporation rate	: No data available
Density	: 1.064 g/cm <sup>3</sup>
Partition coefficient (P)	: No data available
Viscosity	: No data available
Oxidising	: No data available
Other safety information	: No data available

## Section 10 - Stability and Reactivity



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**10.1 Reactivity:**

## Section 10 - Stability and Reactivity

None known

**10.2 Stability:**

Stable under ordinary conditions of use and storage. Reduced to ferrous salt by exposure to light. Very deliquescent; forms a solution on prolonged exposure to air.

**10.3 Hazardous Decomposition Products:**

Burning may produce carbon monoxide, carbon dioxide, nitrogen oxides.

**10.4 Hazardous Polymerization:**

Will not occur

**10.5 Incompatible Materials:**

Strong oxidizing agents

**10.6 Incompatibilities:**

Iodides, Acacia preparation and tannins.

**10.7 Conditions to avoid:**

Heat, Light, moisture.

**10.8 Corrosivity:**

Not available.

## Section 11 - Toxicological Information

**11.1 Routes of Entry:**

Inhalation. Ingestion.

**11.2 Acute Toxicity:**

Lethal Dose/Conc: LD [Rat] - Route: Oral; Dose: >2000 mg/kg

**11.3 Skin corrosion/inhalation:**

No Data Available

**11.4 Serious eye damage/eye irritation:**

No Data Available

**11.5 Respiratory or skin sensitization:**

No Data Available

**11.6 Germ Cell Mutagenicity:**

No Data Available

**11.7 Carcinogenicity:**

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.





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#### 11.8 Sign & Symptoms of Exposure:

### Section 11 - Toxicological Information

Overdose of iron compounds may have a corrosive effect on the gastrointestinal mucosa and be followed by necrosis, perforation, and stricture formation. Several hours may elapse before symptoms that can include epigastric pain, diarrhea, vomiting, nausea, and hematemesis occur. After apparent recovery a person may experience metabolic acidosis, convulsions, and coma hours or days later. Further complications may develop leading to acute liver necrosis that can result in death due to hepatic coma.

#### 11.9 Mutagenic Effects:

No information available

#### 11.10 Reproductive Effects:

No information available.

#### 11.11 Developmental Effects:

No information available.

#### 11.12 Teratogenicity:

No information available.

#### 11.13 STOT - single exposure:

None known

#### 11.14 STOT - repeated exposure:

None known

#### 11.15 Aspiration hazard:

No information available

#### 11.16 Endocrine Disruptor Information:

No information available

#### 11.17 Other Adverse Effects:

The toxicological properties have not been fully investigated.

### Section 12 - Ecological Information

#### 12.1 Environmental toxicity:

This material is expected to be slightly toxic to aquatic life.

Short-Term Toxicity to Fish (*Species unspecified*): LC50 > 100 mg/L

Short-Term Toxicity to Aquatic Invertebrates (*Daphnia magna*): EC50 > 100 mg/L to 116.2 mg/L

Toxicity to Aquatic Algae and Cyanobacteria (*Green algae species*): No toxicity observed in the concentration range of 100–640 mg/L

Toxicity to Microorganisms:



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## Section 12 - Ecological Information

*Pseudomonas putida*: Toxicity threshold (TT) > 10,000 mg/L

*Gyrodactylus sp.* infecting rainbow trout (*Oncorhynchus mykiss*): ECO = 200 mg/L

### 12.3 Persistence and degradability:

No data available.

### 12.4 BOD5 and COD:

Not available.

### 12.5 Products of Biodegradation:

Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise

### 12.6 Toxicity of the Products of Biodegradation:

The product itself and its products of degradation are not toxic.

### 12.7 Bio-accumulative potential:

No data is available on this product.

### 12.8. Mobility in soil:

No data is available on this product.

### 12.9. Results of PBT and vPvB assessment:

No data is available on this product.

### 12.10 Endocrine disrupting properties:

No data is available on this product.

## Section 13 - Disposal Considerations

Waste must be disposed of in accordance with federal, state and local environmental control regulations.

## Section 14 - Transport Information

### 14.1. UN number:

The product is not classified as dangerous for carriage.

### 14.2. UN proper shipping name:

The product is not classified as dangerous for carriage.

### 14.3. Transport hazard class(es):

The product is not classified as dangerous for carriage.

### 14.4. Packing group:

The product is not classified as dangerous for carriage.

### 14.5. Environmental hazards:

The product is not classified as dangerous for carriage.

### 14.6. Special precautions for user:





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The product is not classified as dangerous for carriage.

**14.7 Maritime Transport in bulk according to IMO instruments:**

The product is not classified as dangerous for carriage.

## Section 15 - Regulatory Information

### United States of America Inventory

Component	CAS No	TSCA	TSCA Inventory Notification – Active/Inactive	TSCA – EPA Regulatory Flags
Ferric ammonium citrate	1185-57-5	X	ACTIVE	-

Legend:

TSCA US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

X - Listed

'-' - Not Listed

TSCA 12(b) - Notices of Export Not applicable

### International Inventories

Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), China (IECSC), Korea (KECL).

Component	CAS No	DSL	NDSL	EINECS	PICCS	ENCS	IECSC	AICS	TCSI	KECI
Ferric ammonium citrate	1185-57-5	X	-	215-686-4	X	-	X			

KECL - NIER number or KE number (<http://ncis.nier.go.kr/en/main.do>)

### U.S. Federal Regulations

**SARA 313** Not applicable

**SARA 311/312** Hazard Categories See section 2 for more information

### CWA (Clean Water Act)

Component	CWA – Hazardous Substances	CWA – Reportable Quantities	CWA – Toxic Pollutants	CWA – Priority Pollutants
Ferric ammonium citrate	X	-	-	-

**Clean Air Act** Not applicable

**OSHA** - Occupational Safety and Health Administration Not applicable



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## Section 15 - Regulatory Information

### CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability

Component	CWA – Hazardous Substances	CWA – Reportable Quantities	CWA – Toxic Pollutants	CWA – Priority Pollutants
Ferric ammonium citrate	X	-	-	-

**California Proposition 65** This product does not contain any Proposition 65 chemicals.

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

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Ferric ammonium citrate	X	X	X	-	X

### U.S. Department of Transportation

Reportable Quantity (RQ): Y

DOT Marine Pollutant N

DOT Severe Marine Pollutant N

### U.S. Department of Homeland Security

This product does not contain any DHS chemicals.

### Other International Regulations

**Mexico - Grade** No information available

### Authorization/Restrictions according to EU REACH

Safety, health and environmental regulations/legislation specific for the substance or mixture

Component	CAS No	OECD HPV	Persistent Organic Pollutant	Ozone Depletion Potential	Restriction of Hazardous Substances (RoHS)
Ferric ammonium citrate	1185-57-5	Not applicable	Not applicable	Not applicable	Not applicable

Component	CAS No	Seveso III Directive (2012/18/EU) – Qualifying Quantities for	Seveso III Directive (2012/18/EU) – Qualifying Quantities for	Rotterdam Convention (PIC)	Basel Convention (Hazardous Waste)



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### Section 15 - Regulatory Information

		Major Accident Notification	Safety Report Requirements		
Ferric ammonium citrate	1185-57-5	Not applicable	Not applicable	Not applicable	Not applicable

### Section 16 - Other Information

**Disclaimer:** This material safety data sheet is provided as an information resource only. WEST BENGAL CHEMICAL INDUSTRIES LIMITED believes the information herein is accurate and compiled from reliable sources. It is the responsibility of the user to verify its validity. The buyer assumes all responsibility of using and handling the product in accordance with federal, state, and local regulations.

ADR/RID: European Agreements Concerning the International Carriage of Dangerous Goods by Rail (RID) and by Road (ADR).

CAS No.: Chemical Abstracts Service.

CLASS: Classification, Labelling, and Safety Data Sheet of Hazardous Chemicals Regulation 2013 (Malaysia).

FIFRA: U.S. Federal Insecticide, Fungicide, and Rodenticide Act.

GHS: Globally Harmonized System.

HCS 2012: U.S. Hazard Communication Standard (2012 revision).

IATA: International Air Transport Association.

ICAO: International Civil Aviation Organisation.

IMDG: International Maritime Dangerous Goods.

LD: Lethal dose.

OEL: Occupational exposure limit.

OSHA: U.S. Occupational Safety and Health Administration.

PEL: Permissible Exposure Limit.

REACH: Registration, Evaluation, Authorisation, and Restriction of Chemicals.

STOT: Specific Target Organ Toxicity.

SVHC: Substance of very high concern.

US DOT: United States Department of Transportation.

VOC: Volatile Organic Compound.

WEL: Workplace Exposure Limit.



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## Section 16 - Other Information

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