Section 1 - Chemical Product and Company Identification

1.1 MSDS Name: Ferric Citrate

1.2 Product Code: FEC2022

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

Identified uses: Laboratory chemicals, Manufacture of substances

1.4 Company Identification:

WEST BENGAL CHEMICAL INDUSTRIES LIMITED
145/1, Jessore Road, Lake Town,
Kolkata – 700 089, India.
1.5 Phone: +91 33 4025 1700 Fax: +91 33 2574 7410
Website: www.wbcil.com Email: webcil@wbcil.com

Section 2 - Hazards Identification

2.1 Classification of the substance or mixture

Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008.

2.2 Label elements

Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008.

2.3 Hazard classification of Chemical

Skin irritation: category 2.
Eye irritation, category 2A.
Specific target organ toxicity following single exposure, category 3

2.4 Signal word:

Warning

2.5 Hazard statement

H319: Causes serious eye irritation
H315: Causes skin irritation
H335: May cause respiratory irritation

2.6 Precautionary Statement Codes:

P264+P265: Wash hands thoroughly after handling. Do not touch eyes before washing hands.
P280: Wear protective gloves, protective clothing, eye protection, and face protection.
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+P317: If eye irritation persists, get medical advice/attention.

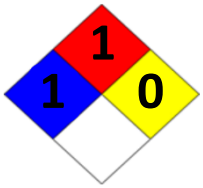
2.7 Other hazards:
This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

2.8 Ecological information:
The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

2.9 Toxicological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

2.10 Pictogram:

2.11 NFPA SCALE:



NFPA SCALE (0-4)

2.12 HIMS RATINGS:

Health	**1**
Flammability	**0**
Physical Hazard	**0**
Personal protection	**E**

HMIS RATINGS (0-4)

Section 3 – Composition/Information on Ingredients

3.1 Ingredient: Ferric Citrate

3.2 Synonym: Iron (III) citrate tribasic monohydrate, Iron citrate monohydrate, Iron (III) citrate

3.3 Molecular Formula: C6H5FeO7
3.4 Molecular Weight: 244.94 g/mol
3.5 CAS Number: 2338-05-8
3.6 EC-No.: 219-045-4

Section 4 – First Aid Measures

4.1 Description of first aid measures:

4.1.1 If inhaled

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

4.1.2 In case of skin contact

Wash off skin with soap and plenty of water. Take off immediately all contaminated clothing.

4.1.3 In case of eye contact

Flush eyes with water as a precaution. Call in ophthalmologist. Remove contact lenses.

4.1.4 If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water.

4.2 Most important symptoms and effects, both acute and delayed:

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

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

No data available

Section 5 – Fire-Fighting Measures

5.1 Extinguishing media:

Suitable extinguishing media

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

Unsuitable extinguishing media for this substance/mixture no limitations of extinguishing agents are given.

5.2 Special hazards arising from the substance or mixture:

Carbon oxides, Iron oxides, and hazardous combustion gases or vapours are possible in the event of fire.

5.3 Hazardous decomposition products in case of fire:
Toxic fumes may be released.
5.4 Advice for firefighters:
Wear self-contained breathing apparatus for firefighting if necessary.
5.5 Further information:
Use water spray to cool unopened containers. Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

Section 6 – Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures:
Avoid dust formation. Avoid breathing vapours, mist or gas. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert. For personal protection see section 8.
6.2 Environmental precautions:
Do not let product enter drains. Avoid release to the environment
6.3 Methods and materials for containment and cleaning up:
Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.
6.4 For non-emergency personnel Emergency procedures:
Ventilate spillage area. Evacuate unnecessary personnel.
6.5 For emergency responder's Protective equipment:
Do not attempt to act without suitable protective equipment. Use personal protective equipment as required. For further information refer to section 8
6.6 Other information:
Dispose of materials or solid residues at an authorized site.
Reference to other sections for further information refer to section 13

Section 7 – Handling and Storage

7.1 Precautions for safe handling:
Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection. For precautions see section 2.2.
7.1.1 Hygiene measures

Section 7 – Handling and Storage

Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2 Conditions for safe storage, including any incompatibilities:

Store in ambient condition. Keep container tightly closed and well-ventilated place.

7.2.1 Light sensitive.

7.2.2 Storage class (TRGS 510): Combustible Solids

7.2.3 Specific end use(s) Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

Section 8 - Exposure Controls / Personal Protection

8.1 Control parameters:

Not available

8.2 Exposure controls:

Not available

8.3 Appropriate engineering controls:

General industrial hygiene practice.

8.4 Personal protective equipment:

8.4.1 Eye/face protection

Use equipment for eye protection tested and approved under appropriate government standards such
as NIOSH (US) or EN 166(EU).

8.4.2 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. Wash and dry hands.

8.4.3 Full contact Material

Nitrile rubber Minimum layer thickness: 0,11 mm

Break through time: 480 min

Material tested:KCL 741 Dermatril® L

8.4.4 Splash contact Material

Nitrile rubber Minimum layer thickness: 0,11 mm

Break through time: 480 min
Material tested: KCL 741 Dermatril® L
The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.
8.4.5 Body Protection
Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
8.4.6 Respiratory protection
Respiratory protection is not required. Where protection from nuisance le (EN 143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).
8.5 Control of environmental exposure:
Do not let product enter drains.

Section 9 - Physical and Chemical Properties

Appearance:	Greenish brown to brown hygroscopic powder. Upper/lower flammability or explosive limits
Odor:	Odourless
Vapor pressure:	0 Pa
Odor threshold:	No data available
Vapor density:	No data available
pH:	No data available
Relative density:	1.906 g/cm³ at 20 °C - OECD Test Guideline 109
Melting point/ freezing point:	169 – 239 °C at 1.013 hPa - OECD Test Guideline 102.
Solubility	water 0.05 g/l at 23 °C
Initial boiling point and boiling range:	No data available
Flash point:	No data available
Evaporation rate:	No data available
Flammability (solid, gas):	No data available

Partition coefficient:	n-octanol/water: 1
Auto-ignition temperature:	No data available
Decomposition temperature:	342.8 °C
Viscosity:	No data available

Section 10 – Stability and Reactivity

10.1 Reactivity:
No data available
10.2 Chemical stability:
Ferric citrate is stable under recommended storage conditions, which include a dry environment at room temperature (15–25°C) and protection from light and moisture. Prolonged exposure to air or high humidity may result in degradation or loss of quality.
10.3 Possibility of hazardous reactions:
Strong acids, strong bases, and oxidizing agents may cause decomposition or undesired reactions.
10.4 Conditions to avoid:
Extreme heat, open flames, excessive moisture
10.5 Incompatible materials:
Strong oxidizing agents, strong acid or base
10.6 Hazardous decomposition products formed under fire conditions:
Carbon oxides, Iron oxides
10.7 Other decomposition products:
No data available
In the event of fire: see section 5

Section 11 – Toxicological Information

11.1 Information on toxicological effects:
Acute toxicity
Oral
LD50: 2800mg/kg (oral, rabbit)
LD50 >2000mg/kg (oral, rat)
Inhalation: No data available
Dermal: No data available

Skin corrosion/irritation
Skin - reconstructed human epidermis (RhE)
Result: No skin irritation (OECD Test Guideline 439)
Serious eye damage/eye irritation
Eyes - Human
Result: Causes serious eye irritation. (OECD Test Guideline 492)
Respiratory or skin sensitization
No data available (Iron (III) citrate)

11.2 Germ cell mutagenicity:

No data available (Iron (III) citrate)

11.3 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.

11.4 Reproductive toxicity:

No data available (Iron (III) citrate)

11.5 Specific target organ toxicity - single exposure:

No data available (Iron (III) citrate)

11.6 Specific target organ toxicity - repeated exposure:

No data available.

11.7 Additional Information:

Endocrine disrupting properties
Product: Assessment: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

11.8 Repeated dose toxicity:

Rat - Oral - 32 Weeks - NOAEL (No observed adverse effect level) - 2.800 mg/kg

Section 12 – Ecological Information

12.1 Toxicity:

Aquatic Vertebrate: LC0 - Fundulus heteroclitus - 200 mg/l - 7 d

12.2 Persistence and degradability:

No data available.

12.3 Bioaccumulative potential:
No data available.
12.4 Mobility in soil:
No data available (Iron (III) citrate)
12.5 Results of PBT and vPvB assessment:
This substance/mixture contains no components considered to be either persistent, bio accumulative
and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.
12.6 Endocrine disrupting properties:
Endocrine disrupting potential: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.
12.7 Other adverse effects:
No data available.

Section 13 – Disposal Considerations

13.1 Waste treatment methods:
13.1.1 Product
Offer surplus and non-recyclable solutions to a licensed disposal company.
13.2 Contaminated packaging:
Dispose of as unused product.

Section 14 – Transport Information

14.1 UN Number:
Not applicable. Ferric citrate is not classified as hazardous for transport under UN

regulations.

14.2 UN Proper Shipping Name:
Not regulated.

14.3 Transport Hazard Class(es):
Not classified as a hazardous material.

14.4 Packing Group:
Not applicable.

14.5 Environmental Hazards:

Ferric citrate is not classified as an environmentally hazardous substance under transport regulations.

14.6 Special Precautions for User:
No special transport precautions are required. Ensure proper packaging to prevent exposure to moisture and damage during transit.

14.7 Transport in Bulk According to Annex II of MARPOL 73/78 and the IBC Code:
Not applicable. Ferric citrate is not transported in bulk under these regulations.

Section 15 – Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture:
This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.
15.2 Chemical safety assessment:
For this product a chemical safety assessment was not carried out.
15.1.1. EU-Regulations:
REACH Annex XVII (Restriction List)
No REACH Annex XVII restrictions
REACH Annex XIV (Authorisation List)

FERRIC CITRATE MONOHYDRATE FOR BACTERIOLOGY is not on the REACH Annex XIV List
REACH Candidate List (SVHC)
FERRIC CITRATE MONOHYDRATE FOR BACTERIOLOGY is not on the REACH Candidate List
PIC Regulation (Prior Informed Consent)
FERRIC CITRATE MONOHYDRATE FOR BACTERIOLOGY is not subject to Regulation (EU) No 649/2012 of the European Parliament and of the Council of 4 july 2012 concerning the export and import of hazardous chemicals.
POP Regulation (Persistent Organic Pollutants)
FERRIC CITRATE MONOHYDRATE FOR BACTERIOLOGY is not subject to Regulation (EU) No 2019/1021 of the European Parliament and of the Council of 20 June 2019 on persistent organic pollutants
Ozone Regulation (1005/2009) FERRIC CITRATE MONOHYDRATE is not subject to REGULATION (EU) No 1005/2009 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 September 2009 on substances that deplete the ozone layer.
Explosives Precursors Regulation (2019/1148)
Contains no substance subject to Regulation (EU) 2019/1148 of the European Parliament and of the Council of 20 June 2019 on the marketing and use of explosives precursors.
Drug Precursors Regulation (273/2004)
Contains no substance(s) listed on the Drug Precursors list (Regulation EC 273/2004 on drug precursors)

15.1.2. National regulations:

Germany

Water hazard class (WGK) : Not classified according to Regulation Governing Systems for Handling Substances Hazardous to Waters (AwSV).
Hazardous Incident Ordinance (12. BImSchV) : Is not subject of the Hazardous Incident Ordinance (12. BImSchV)

Netherlands

SZW-lijst van kankerverwekkende stoffen : The substance is not listed
SZW-lijst van mutagene stoffen : The substance is not listed
SZW-lijst van reprotoxische stoffen – Borstvoeding : The substance is not listed
SZW-lijst van reprotoxische stoffen – Vruchtbaarheid : The substance is not listed
SZW-lijst van reprotoxische stoffen – Ontwikkeling : The substance is not listed

Section 16 – Other information

Abbreviations and acronyms:

ADN European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE Acute Toxicity Estimate
BCF Bioconcentration factor
BLV Biological limit value
BOD Biochemical oxygen demand (BOD)
COD Chemical oxygen demand (COD)
DMEL Derived Minimal Effect level
DNEL Derived-No Effect Level
EC-No. European Community number
EC50 Median effective concentration
EN European Standard
IARC International Agency for Research on Cancer
IATA International Air Transport Association
IMDG International Maritime Dangerous Goods
LC50 Median lethal concentration
LD50 Median lethal dose
LOAEL Lowest Observed Adverse Effect Level
NOAEC No-Observed Adverse Effect Concentration
NOAEL No-Observed Adverse Effect Level
NOEC No-Observed Effect Concentration
OECD Organisation for Economic Co-operation and Development
OEL Occupational Exposure Limit
PBT Persistent Bioaccumulative Toxic
PNEC Predicted No-Effect Concentration
RID Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS Safety Data Sheet
STP Sewage treatment plant
ThOD Theoretical oxygen demand (ThOD)
TLM Median Tolerance Limit
VOC Volatile Organic Compounds

Section 16 – Other information

CAS-No. Chemical Abstract Service number
N.O.S. Not Otherwise Specified
vPvB Very Persistent and Very Bioaccumulative
ED Endocrine disrupting properties.

Disclaimer: This material safety data sheet is provided as an information resource only. WEST BENGAL CHEMICAL INDUSTRIES LIMITED believes the information contained 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.

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