



WEST BENGAL CHEMICAL INDUSTRIES LIMITED

145/1, Jessore Road, Lake Town,

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

Email: webcil@wbcil.com

Website: www.wbcil.com

Section 1 - Chemical Product and Company Identification

1.1 Name: Ferrous Ascorbate

1.2 Product Code: FAS2015

1.3 Relevant uses and uses advised against (if any): Laboratory and Industrial Manufacturing.

1.4 Company Identification:

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Section 2- Hazards Identification

2.1 GHS, Globally Harmonized System Classification in accordance with 29 CFR 1910

Classification according to Regulation (EC) No 1272/2008

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

This substance is not classified as dangerous according to Directive 67/548/EEC.

2.2 Labeling according to GHS & Regulation (EC) No 1272/2008

2.3 Signal word None

2.4 Hazard statement

H316 May causes mild skin irritation.

H320 May Causes mild eye irritation.

2.5 Precautionary statement(s):





P261: Avoid breathing dust/fume/gas/mist/vapors/spray.

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

P303+P361+P353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

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+313: If eye irritation persists get medical advice/attention.

2.6 Hazards not otherwise classified (HNOC): Not Applicable

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

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

2.9 CARCINOGENIC EFFECTS

No data available.

2.10 MUTAGENIC EFFECTS

No data available.

2.11 TERATOGENIC EFFECTS

No data available

2.12 DEVELOPMENTAL TOXICITY

No data available

2.13 NFPA SCALE:



NFPA SCALE (0-4)





2.14 HMIS RATINGS:

Health	2
Flammability	0
Physical Hazard	0
Personal Protection	x

HMIS RATINGS (0-4)

Section 3- Composition / Information on Ingredients

3.1 Ingredient Name : Ferrous Ascorbate

3.2 Synonym : (+)-Iron (II) L-ascorbate, Iron Ascorbate, Iron (2+) di-L-ascorbate, L-(+)-Ascorbic acid iron(II) salt, Vitamin C Iron(II)salt

3.3 CAS Number: 24808 – 52 – 4

3.4 EINECS EC-No.: 246-469-7

3.5 % wt: 90-100

3.6 Molecular formula : $C_{12}H_{14}FeO_{12}$

3.7 Molecular Weight: 406.08 g/mol

Section 4 - First Aid Measures

4.1 Description of necessary first-aid measures, by routes of exposure:

- 4.1.1 INHALATION** : Move exposed person to fresh air. If not breathing, seek immediate medical attention. If breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel and seek medical attention. Keep the victim warm and at rest to reduce respiratory distress. Administer oxygen if available and if trained personnel are present."
- 4.1.2 INGESTION** : Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Seek medical attention. If conscious and alert, rinse mouth with water. Monitor for nausea, vomiting, or





abdominal pain.

4.1.3 SKIN CONTACT

: Remove contaminated clothing and shoes and immediately flush skin with plenty of water for at least 15 minutes.

Wash

clothing before reuse. Clean shoes thoroughly before reuse. If irritation persists, seek medical attention. Avoid using harsh soaps or scrubbing affected areas to prevent aggravating the irritation.

4.1.4 EYE CONTACT

: Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Seek immediate medical attention. Ensure continuous irrigation of the eyes for the full 15 minutes or until irritation subsides. If irritation persists, consult an ophthalmologist immediately.

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

Mild irritation to the skin, eyes, or respiratory tract may occur under exposure. No delayed or systemic effects are known or expected under normal conditions of use.

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

Provide symptomatic treatment as necessary. If ingestion is suspected, consider monitoring for iron overload symptoms (nausea, abdominal pain). For severe eye or respiratory irritation, refer the patient to an ophthalmologist or pulmonologist as needed.





Section 5 – Fire Fighting Measures

5.1 Flammability of the Product: May be combustible at high temperature.

5.2 Auto-Ignition Temperature: Data not available

5.3 Flash Points: Not determined

5.4 Suitable Extinguishing Media: Carbon dioxide (CO₂), dry chemical powder, water spray mist, or foam. Avoid using direct water jets.

5.5 Hazardous Combustion Products: Decomposition products may include carbon monoxide, carbon dioxide, and iron oxides.

5.6 Fire Hazards in Presence of Various Substances: Slightly flammable under high heat conditions. Non-flammable under mechanical shock.

5.7 Explosion Hazards in Presence of Various Substances: Dust accumulation from finely divided particles may be slightly explosive in the presence of open flames or sparks. Non-explosive under mechanical shock.

5.8 Special Protective Actions for Firefighters: Firefighters should wear self-contained breathing apparatus (SCBA) with a full facepiece operated in positive pressure mode. Use thermal protective clothing. Prevent dust accumulation in enclosed spaces to minimize explosion risks.

5.9 Decomposition Temperature: Thermal decomposition occurs at approximately 183°C; 190–192°C under prolonged heating.





Section 6 – Accidental Release Measures

6.1.1 Personal precautions:

Ensure adequate ventilation.

6.1.2 Protective equipment:

Use personal protective equipment. Wear chemical-resistant gloves (e.g., nitrile or PVC), protective eyewear, and respiratory protection (e.g., a dust mask or respirator) if dust is generated. Avoid contact with skin, eyes and clothing. Remove all sources of ignition.

6.2 Environmental precautions:

Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Avoid discharge into the environment, including watercourses and soil. Report significant spills to local environmental authorities if required

6.3 Methods and material for containment and cleaning up:

Methods for containment: Stop leak if you can do it without risk. Cover with plastic sheet to prevent spreading. Use inert absorbent materials such as sand, vermiculite, or universal absorbent pads to contain the spill if possible.

6.4 Methods for cleaning up:

- 6.4.1 Small Spill : Use appropriate tools (e.g., a dustpan or HEPA vacuum) to put the spilled solid in a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.
- 6.4.2 Large Spill : Use non-sparking tools such as a shovel to put the material into a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and allow evacuating through the sanitary system.





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Section 7 – Handling and Storage

7.1 Precautions: Keep away from heat and sources of ignition. Avoid creating and accumulating dust. Use non-sparking tools and equipment. Do not breathe dust. Ensure adequate local exhaust ventilation or use appropriate respiratory protection (e.g., a dust mask or respirator) when handling in dusty conditions.

7.2 Storage: Keep the container tightly close and store in a well-ventilated area. Avoid exposure to high humidity, as it may degrade the product. Store away from incompatible substances such as strong oxidizers, acids, or alkalis.

7.3 Corrosiveness: Attacks aluminum, copper, copper alloys, iron, and zinc.

7.4 Storage Temperatures: Store at room temperature (15 to 25 °C recommended). Avoid prolonged storage above 25°C or below 15°C, as this may affect product stability. Prevent exposure to freezing or direct sunlight.

7.5 Unsuitable Materials: Avoid using storage containers made of aluminum, copper, copper alloys, iron, or zinc. Use compatible materials such as polyethylene, polypropylene, or stainless steel.





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Section 8 – Exposure Controls / Personal Protection

- 8.1 ENGINEERING CONTROLS** : Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits.
- 8.2 PERSONAL PROTECTION** : Safety glasses, Lab Coat, Dust respirator, Be sure to use an approved / certified respirator or equivalent, Gloves
Skin Protection: Wear protective gloves and clean body-covering clothing.
Eye Protection: Use chemical safety goggles and/or full face shield where dusting or splashing of solutions is possible. Maintain eye wash fountain and quick-drench facilities in work area.
Other Control Measures: Maintain good housekeeping in work area. Dust deposits on floors and other surfaces may pick up moisture and cause the surfaces to become slippery and present safety hazards. Handle in accordance with good industrial hygiene and safety practice. Wash hands after handling.
- 8.3 PERSONAL PROTECTION IN CASE OF A LARGE SPILL** : Splash goggles. Full suit. Dust 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.
- 8.4 EXPOSURE LIMITS** : Consult local authorities for acceptable exposure limits.





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Section 9 – Physical and Chemical Properties

APPEARANCE FORM	Blackish free flowing powder.
<u>Odor:</u>	Odorless.
<u>Odor threshold</u>	Not available.
pH (2% w/v Solution)	4.5 – 7.0
Melting point and freezing point	193°C literature
Initial boiling point and boiling range	415.8°C at 760 mmHg.
Flash point	180.4°C (closed cup, literature).
Evaporation rate	Not available.
Flammability, in the case of solids and gases	Not available.
Upper and lower flammability or explosive limits	Not available.
VAPOR PRESSURE	1.18E-08 mmHg at 25°C.
VAPOR DENSITY (AIR =1)	No information found.
RELATIVE DENSITY	about 1.65 (at 25°C).
SOLUBILITY	Soluble in water (1g/3mL at 20 °C).
Partition coefficient — n-octanol/water	-2.15
Auto-ignition temperature	640 °C
Decomposition temperature	ca. 183 °C; 190 - 192 °C.
Viscosity	Not available





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Section 10 – Stability and Reactivity

10.1 Reactivity :

No information available

10.2 Chemical STABILITY :

The product is stable at normal conditions.

10.3 Possibility of hazardous reactions:

HAZARDOUS POLYMERIZATION Does not occur

10.4 Conditions to avoid:

Fine particles (such as dust and mists) may fuel fires/explosions, Heat

10.5 INCOMPATIBILITIES:

As a precautionary measure, keep away from strong oxidizers

10.6 Hazardous decomposition products:

Carbon oxides. Iron oxides.

10.7 Other Information:

CORROSIVITY : Not available.





Section 11 – Toxicological Information

11.1 Routes of Entry :

Inhalation. Ingestion

11.2 Other Toxic Effects on Humans :

Hazardous in case of skin contact (irritant), of ingestion, of inhalation

11.3 Special Remarks on Toxicity to Animals :

Not Available

11.4 Special Remarks on Chronic Effects on Humans :

Not Available

11.5 Special Remarks on other Toxic Effects on Humans :

Not Available

11.6 Acute Toxicity :

LD50 (Oral, Rat): 1,500 - 1,600 mg/kg for ferrous ascorbate. This dose indicates moderate acute toxicity if ingested in large amounts. LD50 (Oral, Mouse): 900 - 1,000 mg/kg for ferrous ascorbate. These values suggest similar toxicity across rodent species.

11.7 Chronic Toxicity:

NOAEL (No Observed Adverse Effect Level, oral, rat, 90 days): 30 mg/kg/day for ferrous ascorbate. At this dose, no significant adverse effects were observed after chronic exposure. LOAEL (Lowest Observed Adverse Effect Level, oral, rat, 90 days): 50 mg/kg/day for ferrous ascorbate.

11.8 Reproductive and Developmental Toxicity:

NOAEL for Reproductive Toxicity (oral, rat): 20 mg/kg/day for ferrous ascorbate. At this level, no adverse reproductive effects were observed. LOAEL for Developmental Toxicity (oral, rat): 40 mg/kg/day.

11.9 Skin corrosion/irritation:

harmful if absorbed through the skin. May cause skin irritation.

11.10 Serious eye damage/irritation:

can cause eye irritation.

11.11 Inhalation:

May cause irritation of respiratory tract.





11.12 Ingestion:

May cause digestive (gastrointestinal) tract irritation. Health injuries are not known or expected under normal use.

11.13 Aspiration hazard: No information available

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

11.15 Respiratory or skin sensitization: No data available

11.16 Germ cell mutagenicity: No data available

11.17 Carcinogenicity: IARC:

None of this product is greater than or equal to 0. The 1% content of the component was identified by IARC as a probable or definite human carcinogen.

Teratogenic Effects: Not available.

11.18 Environmental Toxicity: Not available.

11.19 STOT-single exposure : No data available

11.20 STOT-repeated exposure : No data available

11.21 Aspiration hazard : No data available

Components	CAS-No.	IARC	ACGIH - Carcinogens	NTP	OSHA HCS - Carcinogens	Australia - Notifiable Carcinogenic Substances	Australia - Prohibited Carcinogenic Substances
(+)-IRON(II) L-ASCORBATE, CRYSTALLINE	24808-52-4	Not listed	Not listed	Not listed	Not listed	Not listed	Not listed

ACGIH (American Conference of Governmental Industrial Hygienists)

IARC (International Agency for Research on Cancer)

NTP (National Toxicology Program)

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





Section 12 – Ecological Information

12.1 ECOTOXICITY : Not Available

12.2 BOD 5 and COD : Not Available

12.3 Persistence and degradability: No Data Available

12.4 Bioaccumulative potential: No Data Available

12.5 Mobility in soil: No Data Available

12.6 PRODUCTS of BIODEGRADATION : Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

12.7 TOXICITY OF THE PRODUCTS OF BIODEGRADATION :

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

12.8 SPECIAL REMARKS ON THE PRODUCTS OF BIODEGRADATION. :

Not Available

12.9 Ecological Information :

Ecotoxicity: LC50 (Fish, 96 hours): 20 mg/L for ferrous ascorbate. This indicates moderate toxicity to fish, as iron can disrupt respiratory function in aquatic organisms

EC50 (Daphnia, 48 hours): 10 mg/L for ferrous ascorbate. This level indicates that ferrous ascorbate is toxic to aquatic invertebrates, potentially leading to population declines at higher concentrations.

Toxicity to Algae (EC50, 72 hours): 15 mg/L for ferrous ascorbate. Iron promotes algal growth but can be toxic at higher concentrations.

12.10 Other adverse effects: No Data Available





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Section 13 – Disposal Considerations

It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. Disposal should be in accordance with applicable regional, national and local laws and regulations.

Section 14 – Transport Information

14.1 UN Number

ADR/RID: no data available

IMDG: no data available

IATA: no data available

14.2 UN Proper Shipping Name

ADR/RID: no data available

IMDG: no data available

IATA: no data available

DOT Classification :



Not a DOT controlled material

Air transport Goods :

Nonhazardous/non dangerous as per IATA DGR.

Special Provision for Transport :

Not applicable

IATA Specification

Non-dangerous, non-hazardous

Packing group, if applicable

ADR/RID: no data available

IMDG: no data available

IATA: no data available

14.5 Environmental hazards





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ADR/RID: No

IMDG: No

IATA: No

14.6 Special precautions for user: No data available

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: No data available

Section 15 – Regulatory Information

FEDERAL AND STATE REGULATION : No products were found.

OTHER REGULATION : Not available.

WHIMIS 2015 - GHS Classifications

WHMIS 2015 Hazard Classification Information:

Not a dangerous product according to HPR classification criteria.

Canada Hazardous Products Regulation

This product has been classified according to the hazard criteria of the HPR (Hazardous Products Regulation) and the SDS contains all of the information required by the HPR

WHMIS 1988 Hazard Class

Non-controlled

Canada Controlled Products Regulation:

This product has been classified according to the hazard criteria of the CPR (Controlled Products Regulation) and the MSDS contains all of the information required by the CPR.DSCL (EEC) :

This product is not controlled under the EU Regulations.

European Inventory of Existing Commercial Chemical Substances (EINECS)	Listed.
EC Inventory	Listed.
United States Toxic Substances Control Act (TSCA) Inventory	Not Listed.
China Catalog of Hazardous chemicals 2015	Not Listed.
New Zealand Inventory of Chemicals (NZIoC)	Not Listed.
Philippines Inventory of Chemicals and Chemical Substances (PICCS)	Not Listed.





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Vietnam National Chemical Inventory	Not Listed.
Chinese Chemical Inventory of Existing Chemical Substances (China IECSC)	Not Listed

USA:

SARA 302 Components: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components: 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.

SARA 311/312 Hazards: No SARA Hazards

California Proposition 65 Chemicals: This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

PROTECTIVE EQUIPMENT :

Gloves. Lab coat. Dust respirator. Be sure to use an approved /certified respirator or equivalent. Splash goggles.





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Section 16 – Abbreviations and Acronyms

CAS: Chemical Abstracts Service

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

RID: Regulation concerning the International Carriage of Dangerous Goods by Rail

IMDG: International Maritime Dangerous Goods

IATA: International Air Transportation Association

TWA: Time Weighted Average

STEL: Short term exposure limit

LC50: Lethal Concentration 50%

LD50: Lethal Dose 50%

EC50: Effective Concentration 50%

References:

IPCS - The International Chemical Safety Cards (ICSC), website:

<http://www.ilo.org/dyn/icsc/showcard.home>

HSDB - Hazardous Substances Data Bank, website:

<https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>

IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>

eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website:

http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en

CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>

ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>

ERG - Emergency Response Guidebook by U.S. Department of Transportation, website:

<http://www.phmsa.dot.gov/hazmat/library/erg>

Germany GESTIS-database on hazard substance, website:

<http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>

ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>





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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 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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