

CHEMICAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Trade Name : **EMG 1500 Hydrophobic Coated Dry Magnetic Nanoparticles**
Chemical Name : Proprietary Product
Chemical Formula : Mixture
Chemical Family : Coated particles
Relevant Identified Use: Biomedical/Scientific Research
Uses Advised Against : Not intended for continued contact with skin or mucosa

Name of manufacture: Ferrotec Corporation (Chiba Plant)
Name of Distributor : Ferrotec (USA) Corporation
Responsible Party : Ferrofluid-Safety@ferrotec.com
Address: 1-4 Midoridaira, Sosa-shi, Chiba, 289-2131 Japan
Name of section: Ferrofluid Section Quality Assurance Department
Phone number: +81-479-73-6752 (JAPAN) FAX number: +81-479-73-6602 (JAPAN)
Other product information: Chiba Plant +81-479-73-6752 (Japan)

2. HAZARDS IDENTIFICATION

GHS-Classification

Specific target organ toxicity (single exposure) : Category 3 (Respiratory tract irritation)

Specific target organ toxicity (repeated exposure) : Category 1 (Respiratory system)

Pictograms



Signal word : Danger

Hazard statements

H335 – May cause respiratory irritation

H372 – Causes damage to the following organs through prolonged or repeated exposure: respiratory system

Precautionary statements-(Prevention)

Wash face, hands and any exposed skin thoroughly after handling

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

Do not breathe dust/fume/gas/mist/vapors/spray

Do not eat, drink or smoke when using this product

Use only outdoors or in a well-ventilated area

Precautionary statements-(Response)

Get medical advice/attention if you feel unwell
 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 or doctor/physician
 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.

Precautionary statements-(Storage)

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

Precautionary statements-(Disposal)

Dispose of contents/container to an approved waste disposal plan

3. COMPOSITION / INFORMATION ON INGREDIENTS

Substance/Mixture:	Mixture		
General product description:	Magnetic particles		
Ingredients and composition:			
Chemical name	Composition (wt. %)	Chemical formula	CAS No.
Ferrosoferric oxide	88.2 – 97.2	Fe ₃ O ₄	1309-38-2
Surface coating	2. 8-11.8	—	9046-01-9
UN Class:	Not applicable	UN No.:	Not applicable

4. FIRST – AID MEASURES

Inhalation

Remove to fresh air. If symptoms persist, call a physician.

Skin contact

Wash off immediately with soap and plenty of water. If symptoms persist, call a physician.

Eye contact

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediate medical attention is required.

Ingestion

Rinse mouth. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately.

Do not induce vomiting without medical advice.

Protection of first-responders:

Use personal protective equipment as required.

5. FIRE – FIGHTING MEASURES

Suitable extinguishing media

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

Unsuitable extinguishing media No information available

Special extinguishing method No information available

Specific hazards arising from the chemical product

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

Protection of fire-fighters

Use personal protective equipment as required. Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

For indoor, provide adequate ventilation process until the end of the work shift. Deny unnecessary entry other than the people involved by, for example, using a rope. While working, wear appropriate protective equipment to avoid contact with skin or inhalation of the vapors. Work from windward, and move people upwind.

Environmental precautions

Do not discharge to the environment without proper waste water treatment. See Section 12 for additional ecological information.

Methods and materials for contaminant and methods and materials for cleaning up

Do not touch spilled material without suitable protection (See section 8). After material is completely picked up, wash the spill site with soap and water and ventilate the area. Put all wastes in a plastic bag for disposal and seal it tightly. Remove and clean, or dispose of contaminated clothing.

Recovery, neutralization

No information available

Secondary disaster prevention measures

Clean contaminated objects and areas thoroughly, observing environmental regulations.

7. HANDLING AND STORAGE

Handling

Technical measures

Avoid contact with eyes and skin Use with local exhaust ventilation.

Precautions

Do not handle containers roughly, such as jostling, dropping, giving a shock, and dragging. Prevent leakage, overflow, and scattering. Do not generate steam and dust. Seal the container after use. After handling, wash hands and face, and then gargle with water. Do not smoke, eat or drink in areas other than those specified. Contaminated protective equipment and gloves should not be brought into break rooms or common areas. Deny unnecessary entry of non-emergency personnel to the handling area.

Safety handling precautions

Avoid contact with skin, eyes or clothing. Use personal protective equipment as required.

Storage

Safe storage conditions

Storage conditions Keep containers tightly closed in a dry, cool and well-ventilated place.

Safe packaging material Glass

Incompatible substances Strong acids

8. EXPOSURE CONTROLS / PERSONAL PROTECTION .

Engineering measures :

In the case of indoor workplaces, seal the source or use a local exhaust system. Provide a safety shower facility, and hand- and eye-wash facility. Display their positions clearly.

Personal protective equipment

Respiratory protection Dust mask, conform to EN 149 (EU)

Hand protection Protective gloves, conform to EN 374 (EU)

Eye protection Protective eyeglasses or chemical safety goggles, conform to EN 166 (EU)

Skin and body protection Long-sleeved work clothes

General hygiene considerations Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Black/brown particles

Odor: No data available

Odor Threshold: No data available

pH: Not applicable

Melting Point/Freezing Point: Not applicable

Initial boiling point and boiling range: Not applicable

Flash point: Not applicable
Evaporation rate: Not applicable
Flammability (solid/gas): Not applicable
Upper/lower flammability or explosive limits: Not applicable
Density: No data available
Vapor density (air= 1) : Not applicable
Vapor pressure: Negligible
Percentage volatiles: Negligible
Solubility in water: Negligible
Partition coefficient; n-octanol/water: No data available
Auto-ignition temperature: Not applicable
Decomposition temperature: No data available
Viscosity: Not applicable
Explosive properties: Not applicable
Oxidizing properties: No data available

10. STABILITY AND REACTIVITY

Stability Stable under recommended storage conditions.
Possibility of hazardous reactions No information available.
Conditions to avoid Extremes of temperature and direct sunlight
Materials to avoid No information available.
Hazardous decomposition products No information available

11. TOXICOLOGICAL INFORMATION

Acute toxicity^{2) 3) 4)}:

INHALATION	LC ₅₀	Not applicable
ORAL	LD ₅₀	>10000mg/kg (rat)
DERMAL	LD ₅₀	Not applicable

LC₅₀: Lethal concentration 50% LD₅₀: Lethal dose 50% kill

Skin corrosion/irritation : Species: human

Classification: Not classified as irritant
Result: No skin irritation
Method: Patch test

Serious eye damage/ irritation : Human

Corrosive(IUCLID (2000)).

Respiratory sensitization /Skin sensitization : Species: human

Classification: Not a skin sensitizer.

12. ECOLOGICAL INFORMATION

Persistence and degradability	No information available
Bioaccumulative potential	No information available
Mobility in soil	No information available
Hazard to the ozone layer	No information available

13. DISPOSAL CONSIDERATIONS

Waste from residues

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated container and contaminated packaging

Disposal should be in accordance with applicable regional, national and local laws and regulations.

14. TRANSPORT INFORMATION

US DOT (UNITED STATES DEPARTMENT OF TRANSPORTATION)

- Not regulated as a hazardous material or dangerous goods for transportation by this agency.

IMO / IMDG (INTERNATIONAL MARITIME DANGEROUS GOODS)

- Not regulated as a hazardous material or dangerous goods for transportation by this agency.

IATA DGR 60th (INTERNATIONAL AIR TRANSPORT ASSOCIATION DANGEROUS GOODS
REGURATIONS 60th EDITION)

- Not regulated as a hazardous material or dangerous goods for transportation by this agency.

ADR (AGREEMENT ON DANGEROUS GOODS BY ROAD (EUROPE))

- Not regulated as a hazardous material or dangerous goods for transportation by this agency.

RID (REGULATIONS CONCERNING THE INTERNATIONAL TRANSPORT OF DANGEROUS GOODS
(EUROPE))

- Not regulated as a hazardous material or dangerous goods for transportation by this agency.

ADN (EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS
GOODS BY INLAND WATERWAYS)

- Not regulated as a hazardous material or dangerous goods for transportation by this agency.

15. REGULATORY INFORMATION

Composition	CAS No.	TSCA	EINECS	OSHA	
Ferrosferric oxide (Fe ₃ O ₄)	1309-38-2		Registered	Registered	Registered
Surface coating	9046-01-9		Registered	Registered	Registered

16. OTHER INFORMATION

References:

- 1) TLVs and BEIs (ACGIH 2018)
- 2) Material Data Sheet of manufacturer of components (2017)
- 3) Registry of Toxic Effects of Chemical Substances (2010 CD-ROM DB)
- 4) GHS Classification Data Base (National Institute of Technology and Evaluation (2016, Japan))

Inquiry of the information contained here in:

Ferrofluid Section Quality Assurance Department
Phone number +81-479-73-6752 (Japan)

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