

## SAFETY DATA SHEET

### [SECTION 1]: PRODUCT AND COMPANY IDENTIFICATION

Product Trade Name	: <b>EMG 1300M Polymer Coated Dry Magnetic Nanoparticles</b>
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
Manufacturer's Name	: <b>Ferrotec Corporation</b>
Importers / Distributor	: <b>Ferrotec (USA) Corporation, 33 Constitution Dr., Bedford, NH 03110, USA</b>
Responsible Party	: <b>Ferrofluid-Safety@ferrotec.com</b>
Telephone Number	: <b>(603) 472-6800</b>
Emergency Tel. Number	: <b>+1 (800)424-9300 (CHEMTREC – US only)</b> <b>+1 (703)527-3887 (CHEMTREC – International)</b>
Other safety information	: <b>+81-479-73-6752 (FERROTEC CORP. – Japan)</b> <b>+49-7022-9270-0 (FERROTEC GmbH – Germany)</b>

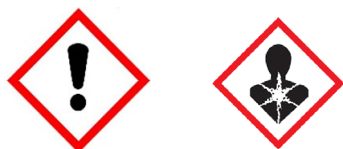
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### [SECTION 2]: HAZARD IDENTIFICATION

**Skin Corrosion / Irritation:** Category 2  
**Severe Eye Damage / Irritation:** Category 2  
**Target Organs** : Not Established

#### GHS Label Elements, including precautionary statements -

##### Pictogram:



**Signal word:** Danger

##### Hazard statement(s):

H302 - Harmful if swallowed.  
H313 - May be harmful in contact with skin.  
H314 - Causes severe skin burns and eye damage.  
H317 - May cause an allergic skin reaction.  
H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
H372 - Causes damage to organs through prolonged or repeated exposure

##### Precautionary statement(s):

P260 - Do not breathe dust/fume/gas/mist/vapors/spray.  
P280 - Wear protective gloves/eye protection/face protection.  
P303+P361+P353IF ON SKIN (or hair) - Take off immediately all contaminated clothing. Rinse skin with water/shower.  
P305+P351+P338IF IN EYES - Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P342+P311If experiencing respiratory symptoms - Call a POISON CENTER/doctor.  
P363 - Wash contaminated clothing before reuse.  
P501 - Dispose of contents/container to industrial combustion plant

#### **-Prevention**

P264 Wash thoroughly after handling  
P273 Avoid release to the environment  
P280 Wear protective gloves / protective clothing / eye protection / face protection.

Any hazards not otherwise classified or identified during classification process: N/A

% of mixture consisting of ingredient(s) of unknown toxicity: N/A

#### **HMIS Classification**

**Health hazard:** 2  
**Chronic Health Hazard:** N/A  
**Flammability:** 0  
**Physical hazards:** 0

#### **NFPA Rating**

**Health hazard:** 2  
**Fire:** 0  
**Reactivity Hazard:** 0

#### **Potential Health Effects**

**Inhalation:** Inhalation of mist or vapors at elevated temperatures may cause respiratory irritation.  
**Skin:** Potential skin irritant  
**Eyes:** Potential eye irritant  
**Ingestion:** No significant health hazard

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**[SECTION 3]: COMPOSITION / INGREDIENT INFORMATION**

**Synonyms:** N/A

The precise composition of this mixture is proprietary information. A more complete disclosure will be provided to a physician or a nurse in the event of a medical emergency. All components are registered in Chemical Abstracts Service (CAS).

Composition		Proportion % (by volume)	Exposure Limit	Toxicity Data
A	Iron Oxide (magnetite)	68.4 – 76.7	No Data	No Data
B	Polymeric Dispersant/Maleic Anhydride	23.3 – 31.6	No Data	No Data

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**[SECTION 4]: FIRST AID MEASURES**

**Necessary measures to be taken according to route(s) of exposure -**

**Ingestion:** This material is harmful if swallowed. Aspiration into lungs during ingestion could cause allergic asthma or severe pulmonary injury. Do not induce vomiting; seek medical attention if material is ingested.

**Eye contact:** Check for contact lenses and remove. Flush with water for at least 15 minutes and consult a physician for treatment.

**Skin Contact:** Wash with soap and water.

**Inhalation of smoke or mist:** Move to fresh air and refer to a physician for treatment. If difficulty in breathing is observed, supply oxygen. If inhaled, there are possibilities of dizziness or asphyxiation without special symptoms.

**Most important symptoms/effects**

**Acute:** Not established

**Delayed:** Not established

**Indication of immediate medical attention and special treatment needed, if necessary:** This product should not cause any significant health issues. Take appropriate action for signs of allergic or sensitivity reaction.

**Notes to physicians:** This product contains a dispersant that includes Maleic Anhydride. If breathing has stopped, try artificial respiration.

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**[SECTION 5]: FIRE FIGHTING MEASURES**

**Suitable extinguishing media:** CO<sub>2</sub>, Foam, dry chemical, water spray (water spray may cause frothing)

**Unsuitable extinguishing media:** N/A

**Specific hazards arising from chemical combustion products:** Burning may produce carbon monoxide and nitrogen oxides. Vapor mixed with air at temperatures above flash point may be explosive. Vapor is heavier than air.

**Special protective equipment and precautions for fire-fighters:** Respirators, if smoke or vapor is present.

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**[SECTION 6]: ACCIDENTAL RELEASE MEASURES****Steps to be taken in case material is released or spilled**

**Personal precautions:** Remove clothing that may have become contaminated, wash skin thoroughly with soap and lots of water.

**Environmental Precautions:** Remove bulk of material to a disposal container and wash surface with soap and water to reduce possible slipping hazard. Prevent material from entering sewers, water courses or low areas.

**Methods and materials for containment and cleanup:** Refer to section 13.

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**[SECTION 7]: HANDLING AND STORAGE**

**Precautions for safe handling:** Ordinary care in handling chemicals. Wash hands after handling.

**Conditions for safe storage:** Keep in a cool, dark area. If large quantities are stored, ground the storage container to prevent static buildup.

**Other precautions:** Avoid contamination of food or tobacco products. Users should be aware that a very small percentage of the population may display unexpected allergic skin reactions to otherwise innocuous industrial chemicals and raw materials.

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**[SECTION 8]: EXPOSURE CONTROLS / PERSONAL PROTECTION**

**OSHA permissible exposure limit (PEL):** Not established

**ACGIH Threshold Limit Value (TLV):** Not established

**Any other exposure limit used or recommended by the chemical manufacturer, importer, or employer preparing the safety data sheet, where available:** No data

**Appropriate engineering controls:** Supply adequate ventilation

**Personal Protective Measures/Equipment:**

**Respiratory protection:** Not required unless smoke, mists or vapors are produced.

**Ventilation:** No special ventilation required.

**Hand protection:** Rubber or plastic gloves to prevent prolonged or repeated contact with skin conforms to EN374 (EU).

**Eye protection:** Safety glasses recommended, conforms to EN 166 (EU).

**Other protective equipment:** Apron recommended but not required.

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**[SECTION 9]: PHYSICAL AND CHEMICAL PROPERTIES**

<b>Appearance:</b> Black/brown particles or clumps	<b>Lower /Upper Explosion Limits:</b> Not established
<b>Odor:</b> Mild faint	<b>Vapor Pressure (kPa @ 20°C):</b> N/A
<b>Odor Threshold:</b> Not established	<b>Vapor Density (Air = 1):</b> No data
<b>pH:</b> N/A	<b>Density:</b> 4.8 g/cc
<b>Melting/Freezing Point (°C):</b> N/A	<b>Water Solubility:</b> Insoluble
<b>Boiling Point (°C):</b> N/A	<b>Partition Coefficient: n-octanol/water:</b> No data
<b>Flash Point (°C):</b> N/A	<b>Auto-ignition Temperature:</b> No data
<b>Evaporation Rate:</b> N/A	<b>Decomposition Temp.:</b> No data
<b>Flammability (solid/gas):</b> No data	<b>Viscosity:</b> N/A
<b>Explosive properties:</b> See section 5	<b>Oxidizing properties:</b> N/A

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**[SECTION 10]: STABILITY AND REACTIVITY**

**Reactivity:** No data

**Chemical stability:** Stable under recommended storage conditions

**Possibility of hazardous reactions:** No data

**Conditions to avoid (e.g. static discharge, shock or vibration):** Pyrolysis

**Incompatible materials:** Strong oxidizing agents

**Hazardous decomposition products:** None

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**[SECTION 11]: TOXICOLOGICAL INFORMATION**

**Acute Toxicity**

**Oral LD50**

LD50 Oral – No data

**Inhalation LC50**

LC50 Inhalation – No data

**Dermal LD50**

LD50 Dermal – No data

**Other information on acute toxicity**

**Skin corrosion/irritation:** May cause skin irritation

**Serious eye damage/eye irritation:** May cause irritation to eyes and/or membranes

**Respiratory or skin sensitization:** May cause respiratory irritation

**Germ cell mutagenicity:** No data

**Carcinogenicity:** No data

**IARC:** No data

**NTP:** No data

**OSHA:** No data

**Reproductive Toxicity:** No data

**Teratogenicity:** No data

**Specific target organ toxicity – single exposure (Globally Harmonized System):** No data

**Specific target organ toxicity – repeated exposure (Globally Harmonized System):** No data

**Aspiration hazard:** No data

**Potential health effects**

**Inhalation:** May cause allergic/asthmatic symptoms

**Ingestion: Harmful if swallowed,** May cause above symptoms if aspirated during swallowing

**Skin:** Slight irritation

**Eyes:** Slight irritation

**Signs and Symptoms of Exposure:** Symptoms, if present, vary with individual. Watch for signs of allergic reaction, rash or respiratory distress.

**Synergistic effects:** No data

**Additional Information:** N/A

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**[SECTION 12]: ECOLOGICAL INFORMATION**

**Ecotoxicity (Aquatic and Terrestrial toxicity):** No data

**Persistence and biodegradability:** No data

**Bioaccumulative potential:** No data

**Mobility in soil:** No data

**Other adverse effects:** No data

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**[SECTION 13]: DISPOSAL CONSIDERATION**

**Product:** Comply with all federal, state and local regulations for disposal of waste organic materials. Consult a professional waste disposal service for help in disposing of bulk product.

**Do not dump this product into sewers, on the ground or into any body of water.**

**Contaminated packaging:** Dispose of as unused product, high temperature incineration.

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**[SECTION 14]: TRANSPORT INFORMATION**

**DOT (US)**

**Hazard class:** Not dangerous goods

**UN No:** N/A

**Packing Group:** N/A

**Proper bulk shipping description:** Dry Particles N.O.S.

**Proper non-bulk shipping description:** Not restricted

**Reportable Quantity:** None

Marine Pollutant: No Reference

Poison Inhalation Hazard: N/A

**IMDG**

**Hazard class:** Not dangerous goods

**UN No:** N/A

**Packing Group:** N/A

**Proper bulk shipping description:** Not restricted

**Proper non-bulk shipping description:** Not restricted

**ICAO shipping description:** Not restricted

**ADR/RID hazard class:** Not restricted

**IATA**

**Hazard class:** Not dangerous goods

**UN No:** N/A

**Packing Group:** N/A

**Proper bulk shipping description:** Not restricted

**Proper non-bulk shipping description:** Not restricted

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**[SECTION 15]: REGULATORY INFORMATION**

**OSHA Hazards:** N/A

**DSL Status:** N/A

**SARA 302 Components:** N/A

**SARA 313 Components:** N/A

Composition	CAS No.	TSCA	EINECS	OSHA
A Magnetite (Fe <sub>3</sub> O <sub>4</sub> )	1309-38-2	Registered	Registered	Registered
B Polymeric Dispersant/Maleic Anhydride	Proprietary/ 108-31-6	Registered	Registered	Registered

These components do not contain any chemical subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act (SARA) of 1986 and 40 CFR part 372.

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**[SECTION 16]: OTHER INFORMATION**

We believe the statements, technical information and recommendations contained herein to be reliable, but they are given without warranty or guarantee of any kind, express or implied, and we assume no responsibility for any loss, damage or expense, direct or consequential, arising from their use.

This material is not sold for use in products for which prolonged contact with skin or implantation into the human body is intended. We do not recommend this material as safe and effective for such uses and assume no liability for any such use.

RoHS compliance statement: This material is believed to comply with RoHS standards.

REACH 2 Compliance Statement: This material is believed to comply with REACH standards.

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