SAFETY DATA SHEET
EHC® Metals Reagent

Product Identifier

Product Name: EHC® Metals Reagent
Alternate Commercial Name: EHC®-M, METAFOX® EM

Recommended use of the chemical and restrictions on use

Recommended Use: For the remediation of contaminated groundwater
Restrictions on Use: No uses to be advised against were identified.

Manufacturer/Supplier
PeroxyChem LLC
2005 Market Street
Suite 3200
Philadelphia, PA 19103
Phone: +1 267/ 422-2400  (General Information)
E-Mail: sdsinfo@peroxychem.com

Emergency telephone numbers
For leak, fire, spill or accident emergencies, call:
1 800 / 424 9300 (CHEMTREC - U.S.A.)
1 703 / 527 3887 (CHEMTREC - Collect - All Other Countries)
1 303/ 389-1409 (Medical - U.S. - Call Collect)

2. HAZARDS IDENTIFICATION

Classification

OSHA Regulatory Status
This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Combustible dust

GHS Label elements, including precautionary statements

EMERGENCY OVERVIEW

Warning

Hazard Statements
May form combustible dust concentrations in air
Precautionary Statements - Prevention
Dry or powdered ingredients are combustible. Dispersal of finely divided dust from products into air may form mixtures that are ignitable or explosive. Minimize airborne dust generation and eliminate sources of ignition.

Hazards not otherwise classified (HNOC)
No hazards not otherwise classified were identified.

Other Information
CONTAINMENT HAZARD: Any vessel that contains wet EHC must be vented due to potential pressure build up from fermentation gases.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium Magnesium Sulfate</td>
<td>14977-37-8</td>
<td>25-35</td>
</tr>
<tr>
<td>Iron</td>
<td>7439-89-6</td>
<td>25-35</td>
</tr>
<tr>
<td>Organic amendment</td>
<td>Proprietary</td>
<td>25-35</td>
</tr>
<tr>
<td>Viscosity modifier</td>
<td>Proprietary</td>
<td>0 - 10%</td>
</tr>
</tbody>
</table>

### 4. FIRST AID MEASURES

**Eye Contact**
In case of contact, immediately flush skin with plenty of water. Get medical attention if irritation develops and persists.

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

**Inhalation**
Remove person to fresh air. If signs/symptoms continue, get medical attention.

**Ingestion**
Rinse mouth with water and afterwards drink plenty of water or milk. Call a poison control center or doctor immediately for treatment advice. Never give anything by mouth to an unconscious person.

**Most important symptoms and effects, both acute and delayed**
Inhalation of dust in high concentration may cause irritation of respiratory system.

**Indication of immediate medical attention and special treatment needed, if necessary**
Treat symptomatically
### 5. FIRE-FIGHTING MEASURES

<table>
<thead>
<tr>
<th>Suitable Extinguishing Media</th>
<th>Dry chemical, CO2, sand, earth, water spray or regular foam.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unsuitable extinguishing media</td>
<td>Do not use a solid water stream as it may scatter and spread fire.</td>
</tr>
<tr>
<td>Specific Hazards Arising from the Chemical</td>
<td>Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.</td>
</tr>
<tr>
<td>Flammable properties</td>
<td>Combustible material</td>
</tr>
</tbody>
</table>

**Explosion data**

- **Sensitivity to Mechanical Impact**: Not sensitive.
- **Sensitivity to Static Discharge**: Not sensitive.

**Protective equipment and precautions for firefighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

### 6. ACCIDENTAL RELEASE MEASURES

**Personal Precautions**

Avoid dust formation. Avoid dispersal of dust in the air (i.e., cleaning dust surfaces with compressed air.). For personal protection see Section 8.

**Other**

Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Use only non-sparking tools.

**Environmental Precautions**

Recover the product in solid form, if possible. Do not flush into surface water or sanitary sewer system.

**Methods for Containment**

Cover powder spill with plastic sheet or tarp to minimize spreading and keep powder dry.

**Methods for cleaning up**

Sweep or vacuum up spillage and return to container. The waste may be recovered and recycled.

### 7. HANDLING AND STORAGE

**Handling**

Minimize dust generation and accumulation. Keep away from open flames, hot surfaces and sources of ignition. Refer to Section 8.

**Storage**

Keep tightly closed in a dry and cool place. Keep away from open flames, hot surfaces and sources of ignition. Any vessel that contains wet EHC must be vented due to potential pressure build up from fermentation gases.

**Incompatible products**

Oxidizing agents. Strong acids.

### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Control parameters**

**Exposure Guidelines**

This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies. Local nuisance dust standards apply.

**Appropriate engineering controls**

It is recommended that all dust control equipment such as local exhaust ventilation and material transport systems involved in the handling of this product contain explosion relief vents or an explosion suppression or an oxygen-deficient environment. Ensure that dust-handling systems (such as exhaust ducts, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape of dust into the work area (i.e.,...
there is no leakage from the equipment). Use only appropriately classified electrical equipment and powered industrial trucks.

**Individual protection measures, such as personal protective equipment**

**Eye/Face Protection**  
Safety glasses with side-shields.

**Skin and Body Protection**  
Wear suitable protective clothing. Protective shoes or boots.

**Hand Protection**  
Use gloves if extended exposure is anticipated.

**Respiratory Protection**  
Whenever dust in the worker's breathing zone cannot be controlled with ventilation or other engineering means, workers should wear respirators or dust masks approved by NIOSH/MSHA, EU CEN or comparable organization to protect against airborne dust.

**Hygiene measures**  
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and immediately after handling the product.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

**Information on basic physical and chemical properties**

- **Appearance**: Light-tan powder
- **Physical State**: Solid
- **Color**: Light tan
- **Odor**: odorless
- **Odor threshold**: Not applicable
- **pH**: 5.6 (as aqueous solution)
- **Melting point/freezing point**: No information available
- **Boiling Point/Range**: No information available
- **Flash point**: No information available
- **Evaporation Rate**: No information available
- **Flammability (solid, gas)**: Some of these materials will burn with intense heat
- **Flammability Limit in Air**
  - Upper flammability limit: No information available
  - Lower flammability limit: No information available
- **Vapor pressure**: No information available
- **Vapor density**: No information available
- **Density**: 1.03 g/mL
- **Specific gravity**: No information available
- **Water solubility**: practically insoluble
- **Solubility in other solvents**: No information available
- **Partition coefficient**: No information available
- **Autoignition temperature**: 248 - 266 °C
- **Decomposition temperature**: No information available
- **Viscosity, kinematic**: No information available (Solid)
- **Viscosity, dynamic**: No information available
- **Explosive properties**: Low level dust explosion hazard
- **Kst**: 8 bar-m/sec: St1 Class dust
- **Oxidizing properties**: No information available
- **Molecular weight**: No information available
- **Bulk density**: Not applicable
10. STABILITY AND REACTIVITY

Reactivity
None under normal use conditions.

Chemical Stability
Stable.

Possibility of Hazardous Reactions
Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.

Hazardous polymerization
Hazardous polymerization does not occur.

Conditions to avoid
Heat, flames and sparks.

Incompatible materials
Strong acids. Oxidizing agents.

Hazardous Decomposition Products
Carbon oxides (COx); Sulfur oxides.

11. TOICOLOGICAL INFORMATION

Product Information

LD50 Oral
Iron: 98.6 g/kg (rat)

LD50 Dermal
No information available

LC50 Inhalation
Iron: > 100 mg/m³ 6 hr (rat)

Sensitization
As a precaution the product should be treated as a sensitizer.

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>LD50 Oral</th>
<th>LD50 Dermal</th>
<th>LC50 Inhalation</th>
<th>NOAEL Oral Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium Magnesium Sulfate (14977-37-8)</td>
<td>2000 mg/kg (Rat)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Information on toxicological effects

Symptoms
No information available.

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

Irritation
Not expected to be irritating based on the components.

Corrosivity
Not applicable.

Chronic toxicity
No known chronic effects of components present at greater than 1%.

Carcinogenicity
Contains no ingredient listed as a carcinogen.

Mutagenicity
This product is not recognized as mutagenic by Research Agencies

Neurological effects
None known

Reproductive toxicity
This product is not recognized as reprotox by Research Agencies.

STOT - single exposure
No information available.

STOT - repeated exposure
No information available.

Target organ effects
No known effects under normal use conditions.

Aspiration hazard
No information available.
## 12. ECOLOGICAL INFORMATION

### Ecotoxicity

#### Ecotoxicity effects

Contains no substances known to be hazardous to the environment or that are not degradable in waste water treatment plants.

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Toxicity to algae</th>
<th>Toxicity to fish</th>
<th>Toxicity to Microorganisms</th>
<th>Toxicity to daphnia and other aquatic invertebrates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iron</td>
<td>96 h LC50: = 13.6 mg/L (Morone saxatilis) static</td>
<td>48 h Daphnia magna EC50 = 8934.78 mg/l</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sodium chloride</td>
<td>96 h LC50: 5560 - 6080 mg/L (Lepomis macrochirus) flow-through 96 h LC50: = 12946 mg/L (Lepomis macrochirus) static 96 h LC50: 6020 - 7070 mg/L (Pimephales promelas) static 96 h LC50: 6420 - 6700 mg/L (Pimephales promelas) static 96 h LC50: 4747 - 7824 mg/L (Oncorhynchus mykiss) flow-through 96 h LC50: = 7050 mg/L (Pimephales promelas) semi-static</td>
<td>48 h EC50: 1000 mg/l Daphnia magna; 48h EC50: 340.7 - 469.2 Daphnia magna Static</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Persistence and degradability

The organic components are biodegradable and can be expected to contribute to BOD.

### Bioaccumulation

Bioaccumulation is unlikely.

### Mobility

Is not likely mobile in the environment due its low water solubility.

### Other Adverse Effects

None known.

## 13. DISPOSAL CONSIDERATIONS

### Waste disposal methods

It must undergo special treatment, e.g. at suitable disposal site, to comply with local regulations.

### Contaminated Packaging

Empty containers should be taken to an approved waste handling site for recycling or disposal.

## 14. TRANSPORT INFORMATION

DOT

NOT REGULATED

## 15. REGULATORY INFORMATION

### U.S. Federal Regulations
SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

SARA 311/312 Hazard Categories
This product is not subject to reporting under the Emergency Planning and Community Right-to-Know rule.

Clean Water Act
This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

CERCLA/EPCRA
This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

US State Regulations

U.S. State Right-to-Know Regulations
This product contains the following substances regulated under state Right-to-Know laws:

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

CANADA

Environmental Emergencies
This product contains no substances listed under Canada's Environmental Emergency regulations.

Canadian National Pollutant Release Inventory
This product contains no substances reportable under Canada's National Pollutant Release Inventory regulations.

International Inventories

Mexico

Mexico - Grade
Slight risk, Grade 1

16. OTHER INFORMATION

<table>
<thead>
<tr>
<th>NFPA</th>
<th>Health Hazards 1</th>
<th>Flammability 1</th>
<th>Stability 0</th>
<th>Special Hazards -</th>
</tr>
</thead>
<tbody>
<tr>
<td>HMIS</td>
<td>Health Hazards 1</td>
<td>Flammability 1</td>
<td>Physical hazard 0</td>
<td>Personal Protection -</td>
</tr>
</tbody>
</table>

NFPA/HMIS Ratings Legend
Severe = 4; Serious = 3; Moderate = 2; Slight = 1; Minimal = 0

References
Refer to NFPA 654, Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing, and Handling of Combustible Particulate Solids, for safe handling.

Revision date: 2016-02-18
Revision note: Initial Release.
Issuing Date: 2015-07-14

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End of Safety Data Sheet