

SAFETY DATA SHEET
EHC® Reagent

SDS # : EHC-C
Revision date: 2020-10-14
Format: NA
Version 2.02



1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier

Product Name EHC® Reagent
Alternate Commercial Name EHC® Fine, EHC®-F, EHC® Granular, EHC® 50%

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 Address
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)
Korea: +82 2 567 0810

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

| Chemical name | CAS-No | Weight % |
|--------------------|-------------|----------|
| Iron | 7439-89-6 | 25 - 50 |
| Organic amendment | Proprietary | 50 - 75 |
| Soybean oil | 8001-22-7 | 2 |
| Viscosity modifier | Proprietary | 0 - 4 |

4. FIRST AID MEASURES

Eye Contact

In case of contact, immediately flush eyes with plenty of water. If irritation persists, call a physician.

Skin Contact

Wash skin with soap and water.

Inhalation

Remove person to fresh air. If breathing is difficult or if discomfort occurs and persists, obtain medical attention.

Ingestion

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water and afterwards drink plenty of water or milk. Call a poison control center or doctor immediately for treatment advice.

Most important symptoms and effects, both acute and delayed Asthma-like and/ or skin allergy-like symptoms.

Indication of immediate medical attention and special treatment needed, if necessary Treat symptomatically

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media Dry chemical, CO₂, sand, earth, water spray or regular foam.

Unsuitable extinguishing media Do not use a solid water stream as it may scatter and spread fire.

Specific Hazards Arising from the Chemical 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.

Flammable properties Combustible material

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. Use only non-sparking tools. Remove all sources of ignition. Refer to Section 8.

Storage Keep in a dry, cool and well-ventilated 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 Strong acids. Oxidizing agents

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

Engineering measures 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 Neoprene gloves

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

Bulk density
Bulk density 0.50 - 0.80 mg/l

Information on basic physical and chemical properties

| | |
|-------------------------------------|----------------------------------|
| Appearance | Flakes |
| Physical State | Solid |
| Color | Brown, Tan |
| Odor | odorless |
| Odor threshold | Not applicable |
| pH | 5.6 (as aqueous solution) |
| Melting point/freezing point | Decomposes |
| Boiling Point/Range | Not applicable |
| Flash point | Not applicable |
| Evaporation Rate | No information available |
| Flammability (solid, gas) | Combustible material |
| 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 | No information available |
| Specific gravity | No information available |
| Water solubility | practically insoluble |
| Solubility in other solvents | No information available |
| Partition coefficient | No information available |
| Autoignition temperature | No information available |
| Decomposition temperature | No information available |
| Viscosity, kinematic | No information available (Solid) |
| Viscosity, dynamic | No information available |
| Explosive properties | Low level dust explosion hazard |
| K_{st} | 19 bar-m/sec: St1 Class dust |
| Oxidizing properties | No information available |
| Other Information | |

Molecular weight No information available
Bulk density 0.50 - 0.80 mg/l 31.2 - 49.9 lb/cu ft

10. STABILITY AND REACTIVITY

Reactivity None under normal use conditions.

Chemical Stability Stable.

Possibility of Hazardous Reactions May react with water to release flammable hydrogen gas.

Hazardous polymerization Hazardous polymerization does not occur.

Conditions to avoid Heat, flames and sparks.

Incompatible materials Strong acids. Oxidizing agents.

Hazardous Decomposition Products Burning produces obnoxious and toxic fumes.

11. TOXICOLOGICAL 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)

Serious eye damage/eye irritation May cause slight irritation.
Skin corrosion/irritation May cause slight irritation.

Sensitization May cause sensitization by inhalation.

| Chemical name | LD50 Oral | LD50 Dermal | LC50 Inhalation | NOAEL Oral Value |
|---------------------------|---------------------|-------------|-----------------|------------------|
| Iron (7439-89-6) | 98600 mg/kg (Rat) | | | |
| Viscosity modifier () | 6770 mg/kg (Rat) | | | |

Information on toxicological effects

Symptoms Inhalation of dust may cause shortness of breath, tightness of the chest, a sore throat and cough.

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

Irritation May cause irritation.
Chronic toxicity No known chronic effects of components present at greater than 1%.

Carcinogenicity Contains no ingredient listed as a carcinogen.

Mutagenicity No known mutagenic or teratogenic effects.

Neurological effects Not neurotoxic

Reproductive toxicity This product does not contain any known or suspected reproductive hazards.

Developmental toxicity Not a reproductive hazard.

STOT - single exposure No information available.
STOT - repeated exposure No information available.

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

| Chemical name | Toxicity to algae | Toxicity to fish | Toxicity to Microorganisms | Toxicity to daphnia and other aquatic invertebrates |
|---------------|-------------------|---|----------------------------|---|
| Iron | | 96 h LC50: = 13.6 mg/L (Morone saxatilis) static | | 48 h Daphnia magna EC50 = 8934.78 mg/l |

Persistence and degradability No data is available on the product itself. The organic components are biodegradable and can be expected to contribute to BOD.

Bioaccumulation Does not bioaccumulate.

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

Other Adverse Effects None known.

13. DISPOSAL CONSIDERATIONS

Waste disposal methods Recovery/recycling recommended. Dispose of in accordance with local regulations.

Contaminated Packaging Empty remaining contents. Dispose of in accordance with local regulations.

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 has the following hazards that are reportable under The Emergency Planning and Community Right-to-Know rule (EPCRA Tier II):

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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

CWC (Chemical Weapons Convention) - Annex on Chemicals Not applicable

US State Regulations

U.S. State Right-to-Know Regulations

This product contains the following substances regulated under state Right-to-Know laws:

| Chemical name | Massachusetts | New Jersey | Pennsylvania | Illinois | Rhode Island |
|---------------|---------------|------------|--------------|----------|--------------|
| Soybean oil | | | X | | |

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

| Chemical name | TSCA (United States) | DSL (Canada) | EINECS/EL INCS (Europe) | ENCS (Japan) | China (IECSC) | KECL (Korea) | PICCS (Philippines) | AICS (Australia) | NZIoC (New Zealand) |
|--------------------|----------------------|--------------|-------------------------|--------------|---------------|--------------|---------------------|------------------|---------------------|
| Iron 7439-89-6 | X | X | 231-096-4 | X | X | X | X | X | X |
| Organic amendment | | X | 281-689-7 | | X | | X | X | X |
| Viscosity modifier | X | X | 232-536-8 | X | X | X | X | X | X |

All ingredients are directly listed on the active TSCA Inventory

Mexico

Mexico - Grade Slight risk, Grade 1

16. OTHER INFORMATION

| | | | | |
|------|------------------|----------------|-------------------|-----------------------|
| NFPA | Health Hazards 1 | Flammability 1 | Stability 0 | Special Hazards - |
| HMIS | Health Hazards 1 | Flammability 1 | Physical hazard 0 | Personal Protection - |

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.

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End of Safety Data Sheet