

SAFETY DATA SHEET

EHC® Metals Reagent

SDS #: EHCM-C
Revision date: 2021-10-13
Version 1.02



1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product Identifier

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

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended Use: For the remediation of contaminated groundwater.

Restrictions on Use No uses to be advised against were identified

1.3. Details of the supplier of the safety data sheet

Manufacturer/Supplier
Evonik Active Oxygens, LLC
2005 Market Street
Suite 3200
Philadelphia, PA 19103
Phone: +1 267/ 422-2400 (General Information)
E-Mail: Product-regulatory-services@evonik.com

Responsible Persons
Evonik Operations GmbH
Rellinghauser Str. 1-11
45128 Essen
Germany
Tel: +49 6181 59 4787
E-mail: sds-hu@evonik.com

1.4. Emergency telephone numbers

24-Hour Health Emergency: +49 2365 49 2232

2. HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008

Not classified as a dangerous substances or preparation according to Regulation (EC) 1272/2008.

2.2. Label Elements

Not classified as a dangerous substances or preparation according to Regulation (EC) 1272/2008.

2.3. OTHER INFORMATION

General Hazards

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	EC-No	CAS-No	Weight %	Classification according to Regulation (EC) No. 1272/2008 [CLP]	REACH registration number
Potassium Magnesium Sulfate	-	14977-37-8	25-35	-	N/A
Iron	231-096-4	7439-89-6	25-35	-	01-2119462838-24-
Organic amendment	Listed	-	25-35	-	NA
Lecithin	232-307-2	8002-43-5	3	-	NA
Viscosity modifier	Listed	-	0 - 10%	-	NA
Sodium chloride	231-598-3	7647-14-5	2	-	01-2119485491-33-xxxx

4. FIRST AID MEASURES

4.1. Description of first-aid measures

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

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

Inhalation of dust in high concentration may cause irritation of respiratory system

4.3. Indication of immediate medical attention and special treatment needed, if necessary

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

5.1. Extinguishing media

Suitable Extinguishing Media

Dry chemical, CO₂, sand, earth, water spray or regular foam

5.2. Special hazards arising from the substance or mixture

Special exposure hazards arising from the substance or preparation itself, combustion products, resulting gases

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.

5.3. Advice for firefighters

Special protective equipment for fire-fighters

As in any fire, wear self-contained breathing apparatus and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

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

6.2. Environmental Precautions

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

6.3. Methods and materials for containment and cleaning up

Cover powder spill with plastic sheet or tarp to minimize spreading and keep powder dry. Sweep or vacuum up spillage and return to container. The waste may be recovered and recycled.

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

6.4. Reference to other sections.

See section 13 for disposal information.

7. HANDLING AND STORAGE

7.1. Precautions for Safe Handling

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

7.2. Conditions for safe storage, including any incompatibilities

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.

Materials to avoid

Strong acids.

7.3. Specific end uses

See subsection 1.2. Relevant identified uses of the substance or mixture and uses advised against

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Exposure Limits

Ingredients with workplace control parameters

Chemical name	Slovakia	Switzerland	Belgium
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Iron 7439-89-6	TWA 6.0 mg/m ³		
Chemical name	Latvia	Lithuania	Czech Republic
Sodium chloride 7647-14-5	TWA 5 mg/m ³	TWA 5 mg/m ³	
Chemical name	Romania	Bulgaria	Russia
Iron 7439-89-6		TWA 6.0 mg/m ³	TWA 10 mg/m ³
Sodium chloride 7647-14-5			MAC 5 mg/m ³

8.2. Exposure 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.

Personal protective equipment

Respiratory Protection

In case of inadequate ventilation wear respiratory protection. The use of breathing apparatus must comply strictly with the manufacturer's instructions and the regulations governing their choices and uses.

Eye/Face Protection

Safety glasses with side-shields

Skin and Body Protection

No special precautions required.

Hand Protection

Use gloves if extended exposure is anticipated

Hygiene measures

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

Environmental exposure controls

No special environmental precautions required.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance	Light-tan powder
Color	Light tan
Physical State	Solid
Odor	odorless
Odor threshold	Not applicable
pH	5.6 (as aqueous solution)
Flash point	No information available
Melting Point/Range	No information available
Freezing Point	No information available
Boiling Point/Range	No information available
Autoignition temperature	248 - 266 °C
Flammability Limits in Air	
Upper flammability limit:	46.0
Lower flammability limit:	3.3
Explosive properties	Low level dust explosion hazard
Vapor pressure	No information available
Vapor density	No information available
Density	1.03 g/mL No data available
Partition coefficient	No information available
Water solubility	practically insoluble

Viscosity No information available
Evaporation Rate No information available

9.2. OTHER INFORMATION

Bulk Density

10. STABILITY AND REACTIVITY

10.1. Reactivity

None under normal use conditions

10.2. Chemical Stability

Stable under recommended storage conditions.

10.3. 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.

10.4. Conditions to avoid

Heat, flames and sparks.

10.5. incompatible materials

Strong acids.

10.6. Hazardous Decomposition Products

Carbon oxides (COx); Sulfur oxides.

11. TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Acute toxicity

The product has not been tested. Data is based on component.

LD50 Dermal No information available
LD50 Oral Iron: 98.6 g/kg (rat)
LC50 Inhalation Iron: > 100 mg/m³ 6 hr (rat)

Skin Contact Does not pose a potential of skin irritation and sensitization.
Eye Contact Expected to be non-irritating based on ingredients.
Inhalation Inhalation of dust in high concentration may cause irritation of respiratory system.
Ingestion Low order of toxicity based on components.

Chronic toxicity

Sensitization As a precaution the product should be treated as a sensitizer.
Neurological effects None known.
Target organ effects No known effects under normal use conditions.
Carcinogenicity Contains no ingredient listed as a carcinogen.
Mutagenicity This product is not recognized as mutagenic by Research Agencies

12. ECOLOGICAL INFORMATION

12.1. Toxicity

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
Sodium chloride		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: = 7050 mg/L (Pimephales promelas) semi-static 96 h LC50: 4747 - 7824 mg/L (Oncorhynchus mykiss) flow-through 96 h LC50: 6420 - 6700 mg/L (Pimephales promelas) static		48h EC50: 1000 mg/l Daphnia magna; 48h EC50: 340.7 - 469.2 Daphnia magna Static

12.2. Persistence and degradability

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

12.3. Bioaccumulative potential

Bioaccumulation is unlikely.

12.4. Mobility in soil

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

12.5. Results of PBT and vPvB assessment

This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT)

12.6. Other Adverse Effects

None known.

13. DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste from residues / unused products Where possible recycling is preferred to disposal or incineration. If recycling is not practicable, dispose of in compliance with local regulations.

Product / Packaging disposal Dispose of as hazardous waste in compliance with local and national regulations.

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

14. TRANSPORT INFORMATION

ADR/RID NOT REGULATED

IMDG/IMO NOT REGULATED

ICAO/IATA NOT REGULATED

15. REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

International Inventories

Chemical name	TSCA (United States)	DSL (Canada)	EINECS/ELI NCS (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
Lecithin 8002-43-5	X	X	232-307-2	-	X	X	X	X	X
Viscosity modifier	X	X	232-536-8	X	X	X	X	X	X
Sodium chloride 7647-14-5	X	X	231-598-3	X	X	X	X	X	X

15.2. Chemical Safety Report

Not Applicable.

16. OTHER INFORMATION

Issuing Date: 2021-02-18

Restrictions on Use

Not for use in potable drinking water This product's foreseen or recommended applications are: For the remediation of contaminated groundwater

Sources of key data used to compile the datasheet

Evonik

Revision date: 2021-10-13

Revision note Manufacturer name changed.

List of Abbreviations and Acronyms

ATE Acute Toxicity Estimate
 ADR European Agreement concerning the International Carriage of Dangerous Goods by Road
 AND European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
 CE50 Concentración Efectiva Media
 CEN European Committee for Standardisation
 C&L Classification and Labelling
 CLP Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008

CLV Ceiling Limit Value Par CAS# Chemical Abstracts Service number
CMR Carcinogen, Mutagen, or Reproductive Toxicant
CSA Chemical Safety Assessment
CSR Chemical Safety Report
DNEL Derived No Effect Level
DOT Department of Transportation
DPD Dangerous Preparations Directive 1999/45/EC
DSD Dangerous Substances Directive 67/548/EEC
DU Downstream User
EC European Community
ECHA European Chemicals Agency
EC-Number EINECS and ELINCS Number (see also EINECS and ELINCS)
EEA European Economic Area (EU + Iceland, Liechtenstein and Norway)
EEC European Economic Community
EINECS European Inventory of Existing Commercial Substances
ELINCS European List of notified Chemical Substances
EN European Standard
EQS Environmental Quality Standard
EU European Union
Euphrac European Phrase Catalogue EWC
European Waste Catalogue (replaced by LoW –see below)
FDS Ficha de Datos de Seguridad
GES Generic Exposure Scenario
GHS Globally Harmonized System
IATA International Air Transport Association
ICAO-TI Technical Instructions for the Safe Transport of Dangerous Goods by Air
IMDG International Maritime Dangerous Goods
IMO International Maritime Organization
IMSBC International Maritime Solid Bulk Cargoes
IT Information Technology
IUCLID International Uniform Chemical Information Database
IUPAC International Union for Pure Applied Chemistry
JRC Joint Research Centre
Kow octanol-water partition coefficient
LC50 Lethal Concentration to 50 % of a test population Lethal Dose to 50% of a test population (Median Lethal Dose)
LE Legal Entity
LLV Level Limit Value
LoW List of Wastes (see <http://ec.europa.eu/environment/waste/framework/list.htm>)
LR Lead RegistrantM/I Manufacturer / Importer MS Member States
MSDS Material Safety Data Sheet
NOEC No observed effect concentration
OC Operational Conditions
OECD Organization for Economic Co-operation and Development
OEL Occupational Exposure Limit
OJ Official Journal
OR Only Representative
OSHA European Agency for Safety and Health at work
PBT Persistent, Bioaccumulative and Toxic substance
PEC Predicted Effect Concentration
PNEC(s) Predicted No Effect Concentration(s)
PPE Personal Protection Equipment
(Q)SAR Qualitative Structure Activity Relationship
RCR Risk Characterization ratio
REACH Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
RID Regulations concerning the International Carriage of Dangerous Goods by Rail
RIP REACH Implementation Project
RMM Risk Management Measure
SADT Self-accelerating decomposition temperature
SCBA Self-Contained Breathing Apparatus

SDS Safety data sheet
SIEF Substance Information Exchange Forum
SME Small and Medium sized Enterprises
STEL Short-term exposure limit
STOT Specific Target Organ Toxicity (STOT)
RE Repeated Exposure(STOT)
SE Single Exposure Par SVHC Substances of Very High Concern
TSCA Toxic Substances Control Act
TWA Time Weighed Average
UN United Nations
vPvB Very Persistent and Very Bioaccumulative / mPmB Muy Persistente y Muy Bioacumulativo
WGK Wassergefährdungsklassen

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End of Safety Data Sheet