

SAFETY DATA SHEET

GeoForm™ Soluble Mix

SDS # : BGCBS2
Revision date: 2017-07-25
Format: NA
Version 1



1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier

Product Name GeoForm™ Soluble Mix

Recommended use of the chemical and restrictions on use

Recommended Use: Remediation of contaminated soil and groundwater

Restrictions on Use Not for direct treatment of potable drinking water.

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 chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity - Oral	Category 4
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2
Combustible dust	

GHS Label elements, including precautionary statements

EMERGENCY OVERVIEW

Warning

Hazard Statements

H302 - Harmful if swallowed
H315 - Causes skin irritation

H319 - Causes serious eye irritation
 May form combustible dust concentrations in air



Precautionary Statements - Prevention

P280 - Wear protective gloves and eye/face protection
 P264 - Wash hands thoroughly after handling
 P270 - Do not eat, drink or smoke when using this product
 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.

P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
 P337 + P313 - If eye irritation persists: Get medical advice/ attention
 P302 + P352 - IF ON SKIN: Wash with plenty of water and soap
 P332 + P313 - If skin irritation occurs: Get medical advice/ attention
 P362 - Take off contaminated clothing and wash before reuse
 P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell
 P330 - Rinse mouth

Precautionary Statements - Disposal

P501 - Dispose of contents/ container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

No hazards not otherwise classified were identified.

Other Information

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

Unknown acute toxicity

0% of the mixture consists of ingredient(s) of unknown toxicity

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name	CAS-No	Weight %
Ferrous Sulfate Monohydrate	17375-41-6	30 - 35
Sulfite	Proprietary	5 - 10
Proprietary	Proprietary	50 - 55
Inorganic salt	Proprietary	5 - 10

4. FIRST AID MEASURES

Eye Contact

Hold eyes open and rinse slowly and gently with water for 15 to 20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for further treatment advice.

Skin Contact

Take off contaminated clothing. Wash off immediately with soap and plenty of water for at least 15 minutes. Get medical attention if irritation develops and persists. Wash contaminated clothing before reuse.

Inhalation	Move victim to fresh air. If breathing difficulty or discomfort occurs and persists, obtain medical attention.
Ingestion	Rinse mouth with water and afterwards drink plenty of water or milk. Get medical attention if symptoms occur.
Most important symptoms and effects, both acute and delayed	Causes serious eye irritation. May cause skin irritation. 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

Suitable Extinguishing Media	Carbon dioxide (CO ₂). Dry chemical. Water spray. Foam.
Specific Hazards Arising from the Chemical	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
Hazardous Combustion Products	Oxides of sulfur. Carbon monoxide.
Explosion data	
Sensitivity to Mechanical Impact	Not sensitive.
Sensitivity to Static Discharge	Fine dust dispersed in air, in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.
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. Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Avoid contact with eyes. Use personal protective equipment. For personal protection see Section 8.
Other	For further clean-up instructions, call PeroxyChem Emergency Hotline number listed in Section 1 "Product and Company Identification" above.
Environmental Precautions	Local authorities should be advised if significant spillages cannot be contained.
Methods for Containment	Maintain good housekeeping practices to avoid accumulation of settled dust, especially on overhead surfaces. Cover powder spill with plastic sheet or tarp to minimize spreading and keep powder dry.
Methods for cleaning up	Pick up and transfer to properly labeled containers. Take precautionary measures against static discharges. Avoid wetting dust and clean up as a dry powder with appropriate PPE for handling dry dusty materials; store in containers that keep material dry, segregated but allow to vent. The waste may be recovered and recycled.

7. HANDLING AND STORAGE

Handling	Avoid contact with eyes. Avoid breathing dust. Wear personal protective equipment. Refer to Section 8. Minimize dust generation and accumulation. Keep away from open flames, hot surfaces and sources of ignition. Dry powdered material can build static electricity when subjected to the friction of transfer and mixing operations. Provide adequate precautions, such as electrical grounding and bonding, or inert atmosphere.
Storage	Store in a well-ventilated place. Keep cool. Keep away from open flames, hot surfaces and

sources of ignition. Any vessel that contains wet product must be vented due to potential pressure build up from gases.

Incompatible products Oxidizing agents Strong acids Strong bases Oxidizing agents. Strong acids. Strong bases.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Chemical name	ACGIH TLV	OSHA PEL	NIOSH	Mexico
Ferrous Sulfate Monohydrate 17375-41-6	TWA: 1 mg/m ³	-	-	-
Chemical name	British Columbia	Quebec	Ontario TWAEV	Alberta
Ferrous Sulfate Monohydrate 17375-41-6	TWA: 1 mg/m ³	TWA: 1.0 mg/m ³	TWA: 1 mg/m ³	TWA: 1 mg/m ³

Appropriate engineering controls

Engineering measures Provide appropriate exhaust ventilation at places where dust is formed. Use grounding and bonding of dry handling equipment for pneumatics or free falling powder during processing in enclosed systems. Use only appropriately classified electrical equipment and powered industrial trucks. and.

Individual protection measures, such as personal protective equipment

Eye/Face Protection Whenever airborne dust concentrations are high, appropriate protective eyewear, such as mono-goggles, should be worn to prevent eye contact.

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

Hand Protection Protective 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 Clean water should be available for washing in case of eye or skin contamination. Remove and wash contaminated clothing before re-use. Do not eat, drink or smoke when using this product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	Light-tan powder
Physical State	Solid
Color	Light tan
Odor	No information available
Odor threshold	No information available
pH	6.84 (1% 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)	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	Soluble in water
Solubility in other solvents	No information available
Partition coefficient	No information available
Autoignition temperature	No information available
Decomposition temperature	No information available
Viscosity, kinematic	Not applicable (Solid)
Viscosity, dynamic	No information available
Explosive properties	Low level dust explosion hazard
K _{st}	St1 Class dust
Oxidizing properties	No information available
Molecular weight	No information available
Bulk density	0.99 g/cm ³ (loose) / 1.15 g/cm ³ (tapped)

10. STABILITY AND REACTIVITY

Reactivity	None under normal use conditions.
Chemical Stability	Stable under recommended storage conditions.
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. Product may form by-products during processing which can be toxic or potentially explosive such as hydrogen, hydrogen sulfide and carbon monoxide.
Hazardous polymerization	Hazardous polymerization does not occur.
Conditions to avoid	Heat, flames and sparks.
Incompatible materials	Oxidizing agents. Strong acids. Strong bases.
Hazardous Decomposition Products	Thermal decomposition can lead to release of irritating and toxic gases and vapors: Hydrogen sulfide Hydrogen gas, Sulfur oxides, Carbon oxides (COx), Calcium oxides, Potassium oxides.

11. TOXICOLOGICAL INFORMATION

Product Information

No acute toxicity information is available for this product. Data is for major component in product. May be harmful if swallowed. Irritating to eyes and skin.

Unknown acute toxicity	0% of the mixture consists of ingredient(s) of unknown toxicity
LD50 Oral	319 mg/kg (rat, 4 hr) (ferrous sulfate)
LD50 Dermal	No information available
LC50 Inhalation	No information available
Serious eye damage/eye irritation	Irritating to eyes.
Skin corrosion/irritation	Irritating to skin.

Component Information

Chemical name	LD50 Oral	LD50 Dermal	LC50 Inhalation	NOAEL Oral Value
Trade secret ()	= 5680 mg/kg (Rat)		> 22 mg/L (Rat) 1 h	

Information on toxicological effects

Symptoms Dust is irritating eyes, nose, throat, and lungs.

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

Chronic toxicity Chronic exposure to dust at concentrations exceeding occupational exposure limits may cause pneumoconosis (lung disease).

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical name	ACGIH	IARC	NTP	OSHA
Sulfite		Group 3		

IARC (International Agency for Research on Cancer)

Group 3 - Not classifiable as to its carcinogenicity to humans

Mutagenicity This product is not recognized as mutagenic by Research Agencies

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

STOT - single exposure None known.
STOT - repeated exposure None known.

Aspiration hazard Not applicable.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity effects Ecotoxicity effects of component substances

Chemical name	Toxicity to algae	Toxicity to fish	Toxicity to Microorganisms	Toxicity to daphnia and other aquatic invertebrates
Trade secret		96 h LC50: 220 - 460 mg/L (Leuciscus idus) static		24 h LC50: = 330 mg/L (Psammechinus miliaris)

Persistence and degradability The organic components are biodegradable and can be expected to contribute to BOD. Biodegradability does not pertain to inorganic substances.

Bioaccumulation Bioaccumulation is unlikely.

Mobility No information available.

Other Adverse Effects None known.

13. DISPOSAL CONSIDERATIONS

Waste disposal methods This material, as supplied, is not a hazardous waste according to Federal regulations (40 CFR 261). This material could become a hazardous waste if it is mixed with or otherwise comes in contact with a hazardous waste, if chemical additions are made to this material, or if the material is processed or otherwise altered. Consult 40 CFR 261 to determine whether the altered material is a hazardous waste. Consult the appropriate state, regional, or local regulations for additional requirements. Recovery/recycling recommended.

Contaminated Packaging Dispose of in accordance with local regulations.

14. TRANSPORT INFORMATION

DOT NOT REGULATED

TDG 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):

- Acute toxicity
- Serious eye damage/eye irritation
- Skin corrosion/irritation
- Combustible dust

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 does not contain any substances regulated under applicable state right-to-know regulations

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

Component	TSCA	DSL	EINECS/EL	ENCS	China	KECL	PICCS (Philippines)	AICS	NZIoC
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	(United States)	(Canada)	INCS (Europe)	(Japan)	(IECSC)	(Korea))	(Australia)	(New Zealand)
Ferrous Sulfate Monohydrate 17375-41-6 (30 - 35)								X	X
Sulfite (5 - 10)	X	X	X	X	X	X	X	X	X
Proprietary (50 - 55)					X		X	X	X
Inorganic salt (5 - 10)	X	X	X	X	X	X	X	X	X

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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Prepared By:

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End of Safety Data Sheet