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)

<table>
<thead>
<tr>
<th>Hazard</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity - Oral</td>
<td>Category 4</td>
</tr>
<tr>
<td>Skin corrosion/irritation</td>
<td>Category 2</td>
</tr>
<tr>
<td>Serious eye damage/eye irritation</td>
<td>Category 2</td>
</tr>
<tr>
<td>Combustible dust</td>
<td></td>
</tr>
</tbody>
</table>

GHS Label elements, including precautionary statements

EMERGENCY OVERVIEW

Warning

Hazard Statements

H302 - Harmful if swallowed
H315 - Causes skin irritation
GeoForm™ Soluble Mix

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

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ferrous Sulfate Monohydrate</td>
<td>17375-41-6</td>
<td>30 - 35</td>
</tr>
<tr>
<td>Sulfitic acid</td>
<td>Proprietary</td>
<td>5 - 10</td>
</tr>
<tr>
<td>Proprietary</td>
<td>Proprietary</td>
<td>50 - 55</td>
</tr>
<tr>
<td>Inorganic salt</td>
<td>Proprietary</td>
<td>5 - 10</td>
</tr>
</tbody>
</table>

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.
GeoForm™ Soluble Mix

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 (CO₂). 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

<table>
<thead>
<tr>
<th>8. EXPOSURE CONTROLS/PERSONAL PROTECTION</th>
</tr>
</thead>
</table>

Control parameters
Exposure Guidelines

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>NIOSH</th>
<th>Mexico</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ferrous Sulfate Monohydrate 17375-41-6</td>
<td>TWA: 1 mg/m³</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>British Columbia</th>
<th>Quebec</th>
<th>Ontario TWAEV</th>
<th>Alberta</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ferrous Sulfate Monohydrate 17375-41-6</td>
<td>TWA: 1 mg/m³</td>
<td>TWA: 1.0 mg/m³</td>
<td>TWA: 1 mg/m³</td>
<td>TWA: 1 mg/m³</td>
</tr>
</tbody>
</table>

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 |
GeoForm™ Soluble Mix

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
Kst St1 Class dust
Oxidizing properties No information available
Molecular weight No information available
Bulk density 0.99 g/cm³ (loose) / 1.15 g/cm³ (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.
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

<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>Trade secret ()</td>
<td>= 5680 mg/kg ( Rat )</td>
<td></td>
<td>&gt; 22 mg/L ( Rat ) 1 h</td>
<td></td>
</tr>
</tbody>
</table>

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 pneumoconiosis (lung disease).

Carcinogenicity

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

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>ACGIH</th>
<th>IARC</th>
<th>NTP</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sulfite</td>
<td></td>
<td>Group 3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

<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>Trade secret</td>
<td></td>
<td>96 h LC50: 220 - 460 mg/L (Leuciscus idus) static</td>
<td></td>
<td>24 h LC50: = 330 mg/L (Psammechinus miliaris)</td>
</tr>
</tbody>
</table>

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
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
## 16. OTHER INFORMATION

<table>
<thead>
<tr>
<th>NFPA</th>
<th>Health Hazards</th>
<th>Flammability</th>
<th>Stability</th>
<th>Special Hazards</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HMIS</th>
<th>Health Hazards</th>
<th>Flammability</th>
<th>Physical hazard</th>
<th>Personal Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
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<td></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: 2017-07-25
Revision note: Initial Release
Issuing Date: 2018-02-22

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Prepared By:

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End of Safety Data Sheet