1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier
Product Name METAFIX® I-11

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
267/422-2400 (General Information)
sdsinfo@peroxychem.com (E-Mail General Information)

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
Serious eye damage/eye irritation Category 2A
Specific target organ toxicity (single exposure) Category 3

GHS Label elements, including precautionary statements

EMERGENCY OVERVIEW

Warning
Hazard Statements
H302 - Harmful if swallowed
H319 - Causes serious eye irritation
H335 - May cause respiratory irritation
Precautionary Statements - Prevention
P261 - Avoid breathing dust.
P264 - Wash hands and face thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P271 - Use only outdoors or in a well-ventilated area
P280 - Wear protective gloves and eye/face protection
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
P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing
P312 - Call a POISON CENTER or doctor if you feel unwell
P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell
P330 - Rinse mouth

Precautionary Statements - Storage
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed
P405 - Store locked up

Precautionary Statements - Disposal
P501 - Dispose of contents/container to an approved landfill

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

Other Information
Causes mild skin irritation

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>crystalline silica, quartz</td>
<td>14808-60-7</td>
<td>&lt; 2</td>
</tr>
<tr>
<td>Trade secret</td>
<td>Proprietary</td>
<td>&gt; 98</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
Wash skin with soap and water. Get medical attention if irritation develops and persists.

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

Ingestion
Clean mouth with water and afterwards drink plenty of water. Get medical attention if symptoms occur.
5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Specific Hazards Arising from the Chemical
No information available.

Flammable properties
Substance does not burn

Explosion data
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. Wear suitable protective clothing, gloves and eye/face protection.

Other
For further clean-up instructions, call PeroxyChem Emergency Hotline number listed in Section 1 “Product and Company Identification” above.

Environmental Precautions
Prevent material from entering into soil, ditches, sewers, waterways, and/or groundwater. See Section 12, Ecological Information for more detailed information.

Methods for Containment
Cover powder spill with plastic sheet or tarp to minimize spreading and keep powder dry. Material may be recycled when contamination is not a problem.

Methods for cleaning up
Sweep or vacuum up spillage and return to container. Then wash with a solution of soap and water.

7. HANDLING AND STORAGE

Handling
Handle in accordance with good industrial hygiene and safety practice.

Storage
Keep in a dry, cool and well-ventilated place. Keep at temperatures between 0°C and 50°C.

Incompatible products
Acids

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

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>crystalline silica, quartz</td>
<td>TWA: 0.025 mg/m³</td>
<td>-</td>
<td>IDLH: 50 mg/m³</td>
<td>Mexico: TWA 0.1 mg/m³</td>
</tr>
<tr>
<td>14808-60-7</td>
<td></td>
<td></td>
<td>TWA: 0.05 mg/m³</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>crystalline silica, quartz</td>
<td>TWA: 0.025 mg/m³</td>
<td>TWA: 0.1 mg/m³</td>
<td>TWA: 0.10 mg/m³ respirable</td>
<td>TWA: 0.025 mg/m³</td>
</tr>
<tr>
<td>14808-60-7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appropriate engineering controls

Engineering measures
Ensure adequate ventilation, especially in confined areas. Provide emergency on-site eyewash.

Individual protection measures, such as personal protective equipment

Eye/Face Protection
Tightly fitting safety goggles.

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

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Powder</td>
</tr>
<tr>
<td>Physical State</td>
<td>Solid</td>
</tr>
<tr>
<td>Color</td>
<td>Dark brown</td>
</tr>
<tr>
<td>Odor</td>
<td>odorless</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>Not applicable</td>
</tr>
<tr>
<td>pH</td>
<td>9.1</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>No information available</td>
</tr>
<tr>
<td>Boiling Point/Range</td>
<td>No information available</td>
</tr>
<tr>
<td>Flash point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>No information available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not flammable</td>
</tr>
<tr>
<td>Flammability Limit in Air</td>
<td></td>
</tr>
<tr>
<td>Upper flammability limit</td>
<td>No information available</td>
</tr>
<tr>
<td>Lower flammability limit</td>
<td>No information available</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>No information available</td>
</tr>
<tr>
<td>Vapor density</td>
<td>No information available</td>
</tr>
<tr>
<td>Density</td>
<td>No information available</td>
</tr>
<tr>
<td>Specific gravity</td>
<td>No information available</td>
</tr>
<tr>
<td>Water solubility</td>
<td>Soluble in water</td>
</tr>
<tr>
<td>Solubility in other solvents</td>
<td>No information available</td>
</tr>
<tr>
<td>Partition coefficient</td>
<td>No information available</td>
</tr>
<tr>
<td>Autoignition temperature</td>
<td>No information available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No information available</td>
</tr>
<tr>
<td>Viscosity, kinematic</td>
<td>No information available</td>
</tr>
<tr>
<td>Viscosity, dynamic</td>
<td>No information available</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>No information available</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>No information available</td>
</tr>
<tr>
<td>Molecular weight</td>
<td>No information available</td>
</tr>
<tr>
<td>Bulk density</td>
<td>No information available</td>
</tr>
</tbody>
</table>
10. STABILITY AND REACTIVITY

Reactivity

<table>
<thead>
<tr>
<th>Chemical Stability</th>
<th>Stable under recommended storage conditions.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Possibility of Hazardous Reactions</td>
<td>None under normal processing.</td>
</tr>
<tr>
<td>Hazardous polymerization</td>
<td>Hazardous polymerization does not occur.</td>
</tr>
<tr>
<td>Conditions to avoid</td>
<td>None known.</td>
</tr>
<tr>
<td>Incompatible materials</td>
<td>Acids.</td>
</tr>
<tr>
<td>Hazardous Decomposition Products</td>
<td>None known based on information supplied</td>
</tr>
</tbody>
</table>

11. TOXICOLOGICAL INFORMATION

Product Information

Harmful if swallowed. Irritating to eyes and respiratory system.

| Serious eye damage/eye irritation | Severely irritating to the eyes. |
| Skin corrosion/irritation | Slightly irritating. |

<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>crystalline silica, quartz (14808-60-7)</td>
<td>= 500 mg/kg (Rat)</td>
<td></td>
<td></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

Carcinogenicity

Chronic exposure to silica dust may increase the risk of developing pneumoconiosis or silicosis, chronic diseases affecting the lungs, characterized by labored breathing, cough, reduction of work capacity, reduction of lung capacity, heart enlargement and failure.

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>ACGIH</th>
<th>IARC</th>
<th>NTP</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>crystalline silica, quartz 14808-60-7</td>
<td>A2</td>
<td>Group 1</td>
<td>Known</td>
<td>X</td>
</tr>
</tbody>
</table>

ACGIH (American Conference of Governmental Industrial Hygienists)
IARC (International Agency for Research on Cancer)

A2 - Suspected Human Carcinogen
Group 1 - Carcinogenic to Humans

Mutagenicity

This product is not recognized as mutagenic by Research Agencies

Reproductive toxicity

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

STOT - single exposure
May cause respiratory irritation.

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.

Persistence and degradability
No information available.

Bioaccumulation
No information available.

Mobility
Will likely be mobile in the environment due to its water solubility.

13. DISPOSAL CONSIDERATIONS

Waste disposal methods
Dispose of contents/container in accordance with local regulation. Recovery/recycling recommended.

Contaminated Packaging
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):

• Serious eye damage/eye irritation
• Acute toxicity
• Specific Target Organ Toxicity (STOT) - Single Exposure

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:

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Massachusetts</th>
<th>New Jersey</th>
<th>Pennsylvania</th>
<th>Illinois</th>
<th>Rhode Island</th>
</tr>
</thead>
<tbody>
<tr>
<td>crystalline silica, quartz</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

California Proposition 65
This product contains the following Proposition 65 chemicals:

<table>
<thead>
<tr>
<th>Component</th>
<th>California - Proposition 65 - Carcinogens List</th>
<th>California - Proposition 65 - Developmental Toxicity</th>
<th>California - Proposition 65 - Reproductive Toxicity</th>
</tr>
</thead>
<tbody>
<tr>
<td>crystalline silica, quartz 14808-60-7 ( &lt; 2 )</td>
<td>carcinogen</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Component</th>
<th>TSCA (United States)</th>
<th>DSL (Canada)</th>
<th>EINECS/EL INCS (Europe)</th>
<th>ENCS (Japan)</th>
<th>China (IECSC)</th>
<th>KECL (Korea)</th>
<th>PICCS (Philippines )</th>
<th>AICS (Australia)</th>
<th>NZIoC (New Zealand)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trade secret ( &gt; 98 )</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>crystalline silica, quartz 14808-60-7 ( &lt; 2 )</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

Mexico

Mexico - Grade Slight risk, Grade 1

16. OTHER INFORMATION

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

NFPA/HMIS Ratings Legend Protection = E (glasses, gloves, dust mask)

Revision date: 2018-05-24
Revision note Initial Release

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Prepared By: PeroxyChem
End of Safety Data Sheet