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

Product identifier
Product Name
SureCure®

Other means of identification
Synonyms
SureCure® LD, SureCure® 100, SureCure® 200

Recommended use of the chemical and restrictions on use
Recommended Use
SureCure® is used as a seed crystal to promote rapid formation of tetrabasic lead sulfate during paste mixing and curing.

Uses advised against
Not available.

Details of the supplier of the safety data sheet
Manufacturer Address
Hammond Lead Products
Hammond Plant
Hammond Group, Inc.
2308 165th Street
Hammond, IN 46323

Hammond Lead Products
Pottstown Plant
Hammond Group, Inc.
10 South Grosstown Road
Pottstown, PA 19464

Emergency telephone number
Company Phone Number
219-845-0031

24 Hour Emergency Phone Number
Chemetrec
1-800-424-9300

2. HAZARDS IDENTIFICATION

Classification

OSHA Regulatory Status
This product is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

<table>
<thead>
<tr>
<th>Hazard Category</th>
<th>Acute toxicity - Oral</th>
<th>Acute toxicity - Inhalation (Dusts/Mists)</th>
<th>Carcinogenicity</th>
<th>Reproductive toxicity</th>
<th>Specific target organ toxicity (repeated exposure)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category</td>
<td>Category 4</td>
<td>Category 4</td>
<td>Category 1B</td>
<td>Category 1A</td>
<td>Category 1</td>
</tr>
</tbody>
</table>
Label elements

Emergency Overview

Danger

Hazard statements
Harmful if swallowed
Harmful if inhaled
May cause cancer
May damage fertility or the unborn child
May cause harm to breast-fed children
Causes damage to central nervous system, blood formation and kidneys and cardiovascular system through prolonged or repeated exposure

Appearance Powder
Physical state Solid
Odor Odorless

Precautionary Statements - Prevention
Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Use personal protective equipment as required
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Use only outdoors or in a well-ventilated area
Do not breathe dust/fume/gas/mist/vapors/spray

Precautionary Statements - Response
IF exposed or concerned: Get medical advice/attention
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
Rinse mouth

Precautionary Statements - Storage
Store locked up

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)
Other Information
• Very toxic to aquatic life with long lasting effects
• Very toxic to aquatic life
Unknown Acute Toxicity 0% of the mixture consists of ingredient(s) of unknown toxicity

3. COMPOSITION/INFORMATION ON INGREDIENTS

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Synonyms SureCure® LD, SureCure® 100, SureCure®200.

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS No.</th>
<th>Weight-%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tetrabasic Lead Sulfate</td>
<td>12065-90-6</td>
<td>100</td>
</tr>
</tbody>
</table>
4. FIRST AID MEASURES

First aid measures

Eye contact In case of eye contact, immediately flush eyes with fresh water for at least 15 minutes while holding the eyelids open. Remove contact lenses if worn. Get medical attention if irritation persists. Do not rub affected area.

Skin Contact Wash off immediately with soap and plenty of water. If skin irritation persists, call a physician.

Inhalation Remove to fresh air. If breathing has stopped, give artificial respiration. Get medical attention immediately. If conscious, have victim clear nasal passages.

Ingestion Seek immediate medical attention. Rinse mouth. Drink plenty of water. Induce vomiting, but only if victim is fully conscious.

Most important symptoms and effects, both acute and delayed

Symptoms Typical manifestations of lead poisoning include weakness, irritability, asthenia, nausea, abdominal pain with constipation and anemia.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

5. FIRE-FIGHTING MEASURES

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

   Unsuitable extinguishing media Unknown.

Specific hazards arising from the chemical
May give off toxic fumes in a fire, including lead fumes.

   Explosion data
   Sensitivity to Mechanical Impact None known.
   Sensitivity to Static Discharge None known.

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, protective equipment and emergency procedures

Personal precautions Evacuate personnel to safe areas. Avoid contact with skin, eyes and inhalation of dusts. Avoid creating dust. Use personal protection recommended in Section 8.

For emergency responders Wear respiratory protection. Wear proper personal protective equipment (gloves and goggles). Wear appropriate outer garment to protect clothing.

Environmental precautions

Environmental precautions Prevent entry into waterways, sewers, surface drainage systems and poorly ventilated areas.
Methods and material for containment and cleaning up

Methods for containment
Avoid creating dust. Safely stop source of spill. Restrict non-essential personnel from area. All personnel involved in spill cleanup should avoid skin and eye contact by wearing appropriate personal protection equipment. Do not breathe dust.

Methods for cleaning up
Avoid dust formation. Clean up dusts with high efficiency particulate air (HEPA) filtered vacuum equipment or by wet cleaning.

Prevention of secondary hazards
Clean contaminated objects and areas thoroughly observing environmental regulations.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling

Conditions for safe storage, including any incompatibilities

Storage Conditions
Keep containers tightly closed in a dry, cool and well-ventilated place.

Incompatible materials
Strong oxidizing agents.

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>
</tr>
</thead>
<tbody>
<tr>
<td>Tetrabasic Lead Sulfate</td>
<td>TWA: 0.05 mg/m³ Pb</td>
<td>TWA: 0.05 mg/m³ Pb</td>
<td>IDLH: 100 mg/m³ Pb</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>TWA: 0.050 mg/m³ Pb</td>
</tr>
</tbody>
</table>

Appropriate engineering controls

Engineering Controls
Use contained process enclosures, local exhaust ventilation or other engineering controls to maintain aerosols below the exposure limit. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Individual protection measures, such as personal protective equipment

Eye/face protection
Use safety glasses with side shields or chemical goggles.

Skin and body protection
Protective clothing is required if exposure exceeds the PEL or TLV or where possibility of skin or eye irritation exists. Full body cotton or disposable coveralls and disposable gloves should be worn during use and handling. Clothing should be left at work site and be properly disposed of or laundered after use. The wash water should be disposed of in accordance with local, state and federal regulations. Personal clothing should be protected from contamination.

Respiratory protection
If engineering controls cannot maintain airborne concentrations below exposure limits, use appropriate, approved respiratory protection (a 42 CFR 84 Class N, R, or P-100 particulate filter cartridge). When exposure levels are unknown, a self-contained breathing apparatus which supplies a positive air pressure within a full face-piece mask should be worn. Utilization of respiratory equipment should be in accordance with 29 CFR 1910.1025 and 29 CFR 1910.134.
General Hygiene Considerations
Do not eat, drink or smoke when using this product. Contaminated work clothing should not be allowed out of the workplace. Wear disposable gloves and eye/face protection. Wash face, hands and any exposed skin thoroughly after handling.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Values</th>
<th>Remarks • Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Solid</td>
<td></td>
</tr>
<tr>
<td>Appearance</td>
<td>Powder</td>
<td></td>
</tr>
<tr>
<td>Color</td>
<td>White</td>
<td>Odor threshold</td>
</tr>
<tr>
<td>pH</td>
<td>Not available.</td>
<td></td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>&gt; 600 °C</td>
<td></td>
</tr>
<tr>
<td>Boiling point / boiling range</td>
<td>&gt; 600 °C</td>
<td></td>
</tr>
<tr>
<td>Flash point</td>
<td>Not applicable (high-melting point solid)</td>
<td></td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not applicable (high-melting point solid)</td>
<td></td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not combustible</td>
<td></td>
</tr>
<tr>
<td>Flammability Limit in Air</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper flammability limit:</td>
<td>Not combustible</td>
<td></td>
</tr>
<tr>
<td>Lower flammability limit:</td>
<td>Not combustible</td>
<td></td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>Negligible</td>
<td></td>
</tr>
<tr>
<td>Vapor density</td>
<td>Not applicable (high-melting point solid)</td>
<td></td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>7.15</td>
<td></td>
</tr>
<tr>
<td>Water solubility</td>
<td>32.7 mg/L at 20°C (calculated)</td>
<td></td>
</tr>
<tr>
<td>Solubility in other solvents</td>
<td>Lead compounds, soluble in 0.07 M hydrochloric acid</td>
<td></td>
</tr>
<tr>
<td>Partition coefficient</td>
<td>Not applicable (inorganic)</td>
<td></td>
</tr>
<tr>
<td>Autoignition temperature</td>
<td>Not combustible</td>
<td></td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>&gt;600°C</td>
<td></td>
</tr>
<tr>
<td>Kinematic viscosity</td>
<td>Not applicable (solid)</td>
<td></td>
</tr>
<tr>
<td>Dynamic viscosity</td>
<td>Not applicable (solid)</td>
<td></td>
</tr>
<tr>
<td>Explosive properties</td>
<td>Not considered to be explosive</td>
<td></td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>Not considered to be oxidizing</td>
<td></td>
</tr>
</tbody>
</table>

Other Information

| Softening point                  | Not available.                |                                      |
| Molecular weight                 | Not available.                |                                      |
| VOC Content (%)                  | Not available.                |                                      |
| Density                          | Not available.                |                                      |
| Bulk density                     | Not available.                |                                      |

10. STABILITY AND REACTIVITY

Reactivity
Stable at normal conditions. No data available

Chemical stability
Stable under normal conditions.

Possibility of Hazardous Reactions
None under normal processing.

Hazardous polymerization
Hazardous polymerization does not occur.
**Conditions to avoid**
Avoid excessive exposure to heat.

**Incompatible materials**
Strong oxidizing agents.

**Hazardous Decomposition Products**
Sulfur oxides and lead oxide fumes.

## 11. TOXICOLOGICAL INFORMATION

**Information on likely routes of exposure**

**Product Information**
No data available

**Inhalation**
No data available.

**Eye contact**
No data available.

**Skin Contact**
No data available.

**Ingestion**
No data available.

**Component Information**
Inorganic lead compounds are slowly absorbed by ingestion and inhalation and poorly absorbed through the skin. If absorbed, lead will accumulate in the body with low rates of excretion, leading to long-term build up. Part of risk management is to take blood samples from workers for analysis to ensure that exposure levels are acceptable.

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Oral LD50</th>
<th>Dermal LD50</th>
<th>Inhalation LC50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tetrabasic Lead Sulfate</td>
<td>&gt; 2000 mg/kg (Rat)</td>
<td>-</td>
<td>&gt; 5 mg/L/4-hr (Rat)</td>
</tr>
<tr>
<td>12065-90-6</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Information on toxicological effects**

**Symptoms**
Not available.

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

**Skin corrosion/irritation**
Studies of sparingly soluble inorganic lead compounds have shown that they are not corrosive or irritating to skin. This is supported by the lack of reports of irritant effects from occupational settings.

**Serious eye damage/eye irritation**
Studies of similar sparingly soluble inorganic lead compounds have shown that they are not corrosive or irritating to eyes.

**Sensitization**
There is no evidence that sparingly soluble lead compounds cause respiratory or skin sensitization.

**Germ cell mutagenicity**
The evidence for genotoxic effects of highly soluble inorganic lead compounds is contradictory, with numerous studies reporting both positive and negative effects. Responses appear to be induced by indirect mechanisms, mostly at very high concentrations that lack physiological relevance.

**Carcinogenicity**
There is some evidence that lead compounds may have a carcinogenic effect, particularly on the kidneys of rats. However, the mechanisms by which this effect occurs are still unclear. Epidemiology studies of workers exposed to inorganic lead compounds have found a limited association with stomach cancer. This has led to the classification by IARC that inorganic lead compounds are probably carcinogenic to humans (Group 2A).

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH</th>
<th>IARC</th>
<th>NTP</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tetrabasic Lead Sulfate</td>
<td>A3</td>
<td>Group 2A</td>
<td>Reasonably Anticipated</td>
<td>Category 1B</td>
</tr>
<tr>
<td>12065-90-6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Reproductive toxicity

Exposure to high levels of inorganic lead compounds may cause adverse effects on male and female fertility, including adverse effects on sperm quality. Prenatal exposure to fetal development.

STOT - single exposure

Inorganic lead compounds have generally been found to be of relatively low acute toxicity by ingestion, in contact with skin, and by inhalation, with no evidence of any local or systemic toxicity from such exposures.

STOT - repeated exposure

Inorganic lead compounds are a cumulative poison and may be absorbed into the body through ingestion or inhalation. Inorganic lead compounds have been documented in observational human studies to produce toxicity in multiple organ systems and body function including the hematopoietic (blood) system, kidney function, reproductive function and the central nervous system. Postnatal exposure to lead compounds is associated with impacts on neurobehavioral development in children.

Chronic toxicity

Lead is a cumulative poison. Increasing amounts of lead can build up in the body and may reach a point where symptoms and disabilities occur. Continuous exposure may result in decreased fertility. Lead is a teratogen. Overexposure of lead by either parent before pregnancy may increase the chances of miscarriage or birth defects. May cause cancer. Contains a known or suspected reproductive toxin. May cause adverse kidney effects.

Aspiration hazard

Tetrabasic lead sulfate is a solid and aspiration hazards are not expected to occur.

Numerical measures of toxicity - Product Information

Unknown Acute Toxicity

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

The following values are calculated based on chapter 3.1 of the GHS document.

12. ECOLOGICAL INFORMATION

This product contains a chemical which is listed as a marine pollutant according to DOT. Lead compounds.

Ecotoxicity

0% of the mixture consists of components(s) of unknown hazards to the aquatic environment

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Algae/aquatic plants</th>
<th>Fish</th>
<th>Toxicity to microorganisms</th>
<th>Crustacea</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tetrabasic Lead Sulfate</td>
<td>0.072-0.388: 72 h</td>
<td>0.041-0.810: 96 h</td>
<td>0.052-3.60: 96 h Pimephales promelas, Oncorhynchus mykiss mg/L LC50 (pH 5.5-6.5)</td>
<td>0.074-0.656: 48 h Daphnia magna, Ceriodaphnia dubia mg/L LC50 (pH 5.5-6.5)</td>
</tr>
<tr>
<td>12065-90-6</td>
<td>Pseudokirchneriella subcapitata, Chlorella kessleri mg/L ErC50 (pH 5.5-6.5)</td>
<td>0.027-0.080: 72 h Pseudokirchneriella subcapitata, Chlorella kessleri mg/L ErC50 (pH &gt;6.5-7.5)</td>
<td>0.114-3.25: 96 h Pimephales promelas, Oncorhynchus mykiss mg/L LC50 (pH &gt;7.5-8.5)</td>
<td>0.029-1.18: 48 h Daphnia magna, Ceriodaphnia dubia mg/L LC50 (pH &gt;6.5-7.5)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.021-0.050: 72 h Pseudokirchneriella subcapitata, Chlorella kessleri mg/L ErC50 (pH &gt;7.5-8.5)</td>
<td></td>
<td>0.026-3.12: 48 h Daphnia magna, Ceriodaphnia dubia mg/L LC50 (pH &gt;7.5-8.5)</td>
</tr>
</tbody>
</table>

Persistence and degradability

Not readily biodegradable.

Bioaccumulation

While lead metal and its compounds are generally insoluble, its processing or extended exposure in aquatic and terrestrial environments may lead to the release of lead in bioavailable forms. Lead compounds are not particularly mobile in the aquatic environment, but can be toxic for organisms, especially fish, at low concentrations. Water hardness, pH and dissolved organic carbon content are factors which regulate the degree of toxicity. In soil, lead and lead compounds are generally not very bioavailable.
Mobility
Lead and lead compounds will partially settle out due to their fairly low solubility and partially dissolve. In soil, lead and lead compounds are generally not very mobile or bioavailable, as they can be strongly absorbed on soil particles, increasingly over time. It also forms complexes with organic matter and clay minerals that limit its mobility. When released into the soil, this material is not expected to leach into groundwater.

Other adverse effects
Not available.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal of wastes
Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated packaging
Disposal should be in accordance with applicable regional, national and local laws and regulations.

14. TRANSPORT INFORMATION

Note:
This product is not regulated for domestic transport by land, air or rail.

• Under 49 CFR 171.8, individual packages that contain lead metal (<100 micrometers) below the reportable quantity (RQ) are not regulated.
• Under 49 CFR 171.4, except when transporting aboard a vessel, the requirements of this subchapter specific to marine pollutants do not apply to non-bulk packaging transported by motor vehicles, rail cars and aircrafts.

DOT
Proper shipping name
RQ, Environmentally Hazardous Substance, Solid, N.O.S (Lead)
Hazard Class
9
Packing Group
III
Reportable Quantity (RQ)
10 lbs
Marine pollutant
This product contains a chemical which is listed as a marine pollutant according to DOT. Lead compounds.

Emergency Response Guide Number
NAERG-171

15. REGULATORY INFORMATION

International Inventories

<table>
<thead>
<tr>
<th>Inventory</th>
<th>Complies/Does not comply</th>
</tr>
</thead>
<tbody>
<tr>
<td>TSCA</td>
<td>Complies</td>
</tr>
<tr>
<td>DSL/NDSL</td>
<td>Complies</td>
</tr>
<tr>
<td>EINECS/ELINCS</td>
<td>Complies</td>
</tr>
<tr>
<td>ENCS</td>
<td>Complies</td>
</tr>
<tr>
<td>IECSC</td>
<td>Complies</td>
</tr>
<tr>
<td>KECL</td>
<td>Complies</td>
</tr>
<tr>
<td>PICCS</td>
<td>Does not comply</td>
</tr>
<tr>
<td>AICS</td>
<td>Complies</td>
</tr>
</tbody>
</table>

Legend:
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances
US Federal Regulations

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS No.</th>
<th>Weight-%</th>
<th>SARA 313 - Threshold Values %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tetrabasic Lead Sulfate - 12065-90-6</td>
<td>12065-90-6</td>
<td>100</td>
<td>0.1</td>
</tr>
</tbody>
</table>

SARA 311/312 Hazard Categories
- Acute health hazard: Yes
- Chronic Health Hazard: Yes
- Fire hazard: No
- Sudden release of pressure hazard: No
- Reactive Hazard: No

CWA (Clean Water Act)
This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CWA - Reportable Quantities</th>
<th>CWA - Toxic Pollutants</th>
<th>CWA - Priority Pollutants</th>
<th>CWA - Hazardous Substances</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tetrabasic Lead Sulfate 12065-90-6</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

CERCLA
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

California Proposition 65
This product contains the following Proposition 65 chemicals

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>California Proposition 65</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tetrabasic Lead Sulfate 12065-90-6</td>
<td>Developmental</td>
</tr>
</tbody>
</table>

U.S. State Right-to-Know Regulations
This product does not contain any substances regulated by state right-to-know regulations

U.S. EPA Label Information
EPA Pesticide Registration Number: Not available.

16. OTHER INFORMATION

Revision Date: 01-Dec-2014
Revision Note: Not available.
Disclaimer: The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet