1. Identification

Product identifier: Dry Battery (without electrolyte)

Other means of identification:
- Lead Acid Battery (without electrolyte)

Recommended use:
Electric storage battery.

Recommended restrictions:
None known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer/Supplier: East Penn Manufacturing Company, Inc.
Address: 102 Deka Road, Lyon Station PA 19536
Telephone number: (610) 682-6361
Contact person: East Penn EHS Department
Emergency telephone number: USA/Canada: CHEMTREC (800) 424-9300, Outside USA 1 (703) 527-3887
E-mail: contactus@eastpenn-deka.com

2. Hazard(s) identification

Physical hazards: Not classified.

Health hazards:
- Reproductive toxicity Category 1A
- Reproductive toxicity Effects on or via lactation
- Specific target organ toxicity, repeated exposure (oral, inhalation) Category 1 (Blood, Kidney, Central nervous system)

Environmental hazards:
- Hazardous to the aquatic environment, acute hazard Category 1
- Hazardous to the aquatic environment, long-term hazard Category 1

OSHA defined hazards: Not classified.

Label elements

Signal word: Danger

Hazard statement:
The materials contained in this product may only represent a hazard if the integrity of the cell or battery is compromised; physically, thermally, or electrically abused. The below are the hazards anticipated under those conditions:

May damage fertility or the unborn child. May cause harm to breast-fed children. Causes damage to organs (Blood, kidney, central nervous system) through prolonged or repeated exposure. Very toxic to aquatic life with long lasting effects.

Precautionary statement

Prevention:
Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe dust/fume/gas/mist/spray. Avoid contact during pregnancy/while nursing. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection.

Response:
If exposed or concerned: Get medical advice/attention. Collect spillage.

Storage:
Store locked up.

Disposal:
Dispose of contents/container in accordance with local/regional/national/international regulations. Refer to manufacturer/supplier for information on recovery/recycling.
Hazard(s) not otherwise classified (HNOC)
None known.

Supplemental information
Under normal conditions of processing and use, exposure to the chemical constituents in this product is unlikely.

3. Composition/information on ingredients

Mixtures

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead and lead compounds (inorganic)</td>
<td>7439-92-1</td>
<td>90 - 94</td>
</tr>
<tr>
<td>Lead monoxide</td>
<td>1317-36-8</td>
<td>&gt; 0.1</td>
</tr>
</tbody>
</table>

Composition comments
All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

The manufacturer has claimed the exact percentage as trade secret under the OSHA Hazard Communication Standard.

4. First-aid measures

Inhalation
Exposure to contents of an open or damaged battery: Move injured person into fresh air and keep person calm under observation. Get medical attention if any discomfort continues.

Skin contact
Exposure to contents of an open or damaged battery: Remove contaminated clothing immediately and wash skin with soap and water. Get medical attention if irritation develops and persists.

Eye contact
Exposure to contents of an open or damaged battery: Rinse immediately with plenty of water, also under the eyelids. Get medical attention if irritation develops and persists.

Ingestion
Under normal conditions of processing and use, exposure to the chemical constituents in this product is unlikely. The battery should not be opened or burned. Exposure to the ingredients contained within or their combustion products could be harmful. Heavy lead exposure may result in central nervous system damage, encephalopathy and damage to the blood-forming (hematopoietic) tissues. Abdominal pain. Dusts may irritate the respiratory tract, skin and eyes. Edema. Prolonged exposure may cause chronic effects.

Most important symptoms/effects, acute and delayed
Under normal conditions of processing and use, exposure to the chemical constituents in this product is unlikely. The battery should not be opened or burned. Exposure to the ingredients contained within or their combustion products could be harmful. Heavy lead exposure may result in central nervous system damage, encephalopathy and damage to the blood-forming (hematopoietic) tissues. Abdominal pain. Dusts may irritate the respiratory tract, skin and eyes. Edema. Prolonged exposure may cause chronic effects.

Indication of immediate medical attention and special treatment needed
Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.

General information
Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. IF exposed or concerned: Get medical advice/attention. If you feel unwell, seek medical advice (show the label where possible). Show this safety data sheet to the doctor in attendance.

5. Fire-fighting measures

Suitable extinguishing media
Dry chemical, foam, carbon dioxide, water fog.

Unsuitable extinguishing media
In the event that a battery is ruptured and the internal components are exposed, DO NOT USE WATER. Do not use carbon dioxide directly on cells.

Specific hazards arising from the chemical
Batteries evolve flammable hydrogen gas during charging and may increase fire risk. Containers may explode when heated.

Special protective equipment and precautions for firefighters
Self-contained breathing apparatus and full protective clothing must be worn in case of fire. Selection of respiratory protection for firefighting: follow the general fire precautions indicated in the workplace.

Fire fighting equipment/instructions
In case of fire and/or explosion do not breathe fumes. Use water spray to cool unopened containers.

Specific methods
Use standard firefighting procedures and consider the hazards of other involved materials.

General fire hazards
Like any sealed container, battery cells may rupture when exposed to excessive heat; this could result in the release of corrosive and flammable materials.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures
In the event of damage resulting in a leak or exposed materials, avoid contact with contents of an open or damaged cell or battery.
Methods and materials for containment and cleaning up

Use approved industrial vacuum cleaner for removal. Sweep up or vacuum up spillage and collect in suitable container for disposal. Dispose of waste and residues in accordance with local authority requirements.

Environmental precautions

Do not allow to enter drains, sewers or watercourses.

7. Handling and storage

Precautions for safe handling

In the event of damage resulting in a leak of exposed materials, avoid contact with contents of an open or damaged cell or battery. Keep away from heat, sparks and open flame. Do not allow conductive material to touch the battery terminals. A dangerous short-circuit may occur and cause battery failure and fire. Wash hands thoroughly after handling.

Conditions for safe storage, including any incompatibilities

Store locked up. Store in original tightly closed container. Protect containers from damage. Place cardboard between layers of stacked batteries to avoid damage and short circuits. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead and lead compounds (inorganic) (CAS 7439-92-1)</td>
<td>TWA</td>
<td>0.05 mg/m3</td>
</tr>
<tr>
<td>Lead monoxide (CAS 1317-36-8)</td>
<td>TWA</td>
<td>0.05 mg/m3</td>
</tr>
</tbody>
</table>

US. ACGIH Threshold Limit Values (TLV)

<table>
<thead>
<tr>
<th>Components</th>
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</tr>
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<tr>
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<td>TWA</td>
<td>0.05 mg/m3</td>
</tr>
</tbody>
</table>

NIOSH. Immediately Dangerous to Life or Health (IDLH) Values, as amended

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead and lead compounds (inorganic) (CAS 7439-92-1)</td>
<td>IDLH</td>
<td>100 mg/m3</td>
</tr>
<tr>
<td>Lead monoxide (CAS 1317-36-8)</td>
<td>IDLH</td>
<td>100 mg/m3</td>
</tr>
</tbody>
</table>

US. NIOSH: Pocket Guide to Chemical Hazards

<table>
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<tr>
<th>Components</th>
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<td>TWA</td>
<td>0.05 mg/m3</td>
</tr>
</tbody>
</table>

Biological limit values

No biological exposure limits noted for the ingredient(s).

ACGIH Biological Exposure Indices (BEI)

<table>
<thead>
<tr>
<th>Components</th>
<th>Value</th>
<th>Determinant</th>
<th>Specimen</th>
<th>Sampling Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead and lead compounds (inorganic) (CAS 7439-92-1)</td>
<td>200 µg/l</td>
<td>Lead</td>
<td>Blood</td>
<td>*</td>
</tr>
</tbody>
</table>

* - For sampling details, please see the source document.

Appropriate engineering controls

Provide adequate ventilation. Provide easy access to water supply and eye wash facilities.

Individual protection measures, such as personal protective equipment

Eye/face protection

None under normal conditions. Leak from a damaged or opened battery: Wear safety glasses with side shields (or goggles).
9. Physical and chemical properties

Appearance
- Physical state: Solid.
- Form: Lead, solid.
- Color: Various.

Odor
- Odor threshold: Not specific.
- pH: Not applicable as the product is insoluble in water.

Melting point/freezing point
- Initial boiling point and boiling range: > 2516 °F (> 1380 °C) (760 mmHg)

Flash point
- Not applicable, solid material.

Evaporation rate
- Not applicable as product is a solid.

Flammability (solid, gas)
- Like any sealed container, battery cells may rupture when exposed to excessive heat; this could result in the release of corrosive and flammable materials.

Upper/lower flammability or explosive limits
- Explosive limit - lower (%): Not applicable (the material is a solid).
- Explosive limit - upper (%): Not applicable (the material is a solid).

Vapor pressure
- Not measured yet.

Vapor density
- Not applicable as product is a solid.

Relative density
- No data available (not measured).

Solubility(ies)
- Solubility (water): Insoluble in water.
- Partition coefficient (n-octanol/water): Not applicable, product is a mixture.

Auto-ignition temperature
- Not applicable as product is a solid.

Decomposition temperature
- Not applicable. Product is not unstable.

Viscosity
- Not applicable as product is a solid.

Other information
- Explosive properties: Not explosive.
- Flammability: Like any sealed container, battery cells may rupture when exposed to excessive heat; this could result in the release of corrosive and flammable materials.
- Kinematic viscosity: not applicable, the product is a solid
- Oxidizing properties: Not oxidizing.

10. Stability and reactivity

Reactivity
- Not reactive under prescribed storage conditions.

Chemical stability
- Stable at normal conditions.

Possibility of hazardous reactions
- Will not occur.

Conditions to avoid
- Overcharging. Ignition sources.

Hazardous decomposition products: Carbon monoxide. Carbon dioxide (CO2). Varying hydrocarbon compounds.

11. Toxicological information

Information on likely routes of exposure

**Inhalation**: Inhalation is not expected under normal working conditions. Exposure to contents of an open or damaged battery: Prolonged exposure may cause chronic effects.

**Skin contact**: Exposure to contents of an open or damaged battery: Dust may irritate skin.

**Eye contact**: Exposure to contents of an open or damaged battery: Dust may irritate the eyes.

**Ingestion**: Exposure to contents of an open or damaged battery: May cause abdominal discomfort if swallowed. However, ingestion is not likely to be a primary route of occupational exposure.

Symptoms related to the physical, chemical and toxicological characteristics: Under normal conditions of processing and use, exposure to the chemical constituents in this product is unlikely. The battery should not be opened or burned. Exposure to the ingredients contained within or their combustion products could be harmful. Exposure to contents of an open or damaged battery: Heavy lead exposure may result in central nervous system damage, encephalopathy and damage to the blood-forming (hematopoietic) tissues. Abdominal pain. Dusts may irritate the respiratory tract, skin and eyes. Edema. Prolonged exposure may cause chronic effects.

Information on toxicological effects

**Acute toxicity**: Exposure to contents of an open or damaged battery: May be harmful if inhaled and swallowed.

**Skin corrosion/irritation**: Exposure to contents of an open or damaged battery: May cause skin irritation.

**Serious eye damage/eye irritation**: Exposure to contents of an open or damaged battery: May cause eye irritation.

**Respiratory or skin sensitization**: No data available.

**Respiratory sensitization**: No data available.

**Skin sensitization**: No data available.

**Germ cell mutagenicity**: No data available.

**Carcinogenicity**: None under normal conditions. Exposure to contents of an open or damaged battery: Risk of cancer cannot be excluded with prolonged exposure.

**IARC Monographs. Overall Evaluation of Carcinogenicity**: Lead and lead compounds (inorganic) (CAS 7439-92-1) 2B Possibly carcinogenic to humans. Lead monoxide (CAS 1317-36-8) 2A Probably carcinogenic to humans.

**NTP Report on Carcinogens**: Lead and lead compounds (inorganic) (CAS 7439-92-1) Reasonably Anticipated to be a Human Carcinogen. Not listed.


**Reproductive toxicity**: None under normal conditions. Exposure to contents of an open or damaged battery: May damage fertility or the unborn child. May cause harm to breastfed babies.

**Specific target organ toxicity - single exposure**: Not classified.

**Specific target organ toxicity - repeated exposure**: None under normal conditions. Exposure to contents of an open or damaged battery: Causes damage to organs (Blood, Kidney, Central nervous system) through prolonged or repeated exposure.

**Aspiration hazard**: Due to the physical form of the product it is not an aspiration hazard.

**Chronic effects**: Exposure to contents of an open or damaged battery: Heavy lead exposure may result in central nervous system damage, encephalopathy and damage to the blood-forming (hematopoietic) tissues.

12. Ecological information

**Ecotoxicity**: None under normal conditions. Exposure to contents of an open or damaged battery: Very toxic to aquatic life with long lasting effects.
Components | Species | Test Results
--- | --- | ---
Lead and lead compounds (inorganic) (CAS 7439-92-1) | Rainbow trout, donaldson trout (Oncorhynhus mykiss) | 1.17 mg/l, 96 Hours

Lead monoxide (CAS 1317-36-8)

**Aquatic**

Crustacea LC50 | Water flea (Daphnia magna) | 0.132 mg/l, 48 Hours

### Persistence and degradability
The degradation half-life of the product is not known. Lead and its compounds are highly persistent in water.

### Bioaccumulative potential
Bioaccumulation of lead occurs in aquatic and terrestrial animals and plants, but very little bioaccumulation occurs through the food chain.

### Mobility in soil
If the product enters soil, one or more constituents will or may be mobile and may contaminate groundwater.

### Mobility in general
The product is insoluble in water and will spread on water surfaces.

### Other adverse effects
None known.

#### 13. Disposal considerations

**Disposal instructions**
Recycle the batteries as the primary disposal method. Return lead-acid batteries to distributor, manufacturer or lead smelter for recycling. Dispose of in accordance with local regulations. Avoid discharge into water courses or onto the ground. Dispose of this material and its container to hazardous or special waste collection point.

**Local disposal regulations**
Empty containers should be taken to an approved waste handling site for recycling or disposal.

**Hazardous waste code**
RCRA: Spent lead-acid batteries are not regulated as hazardous waste when recycled.

**Waste from residues / unused products**
Avoid discharge into water courses or onto the ground.

**Contaminated packaging**
Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers retain product residue, follow label warnings even after container is emptied.

#### 14. Transport information

**DOT**
Not regulated as dangerous goods.

**IATA**
Not regulated as dangerous goods.

**IMDG**
Not regulated as dangerous goods.

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**
Not applicable.

#### 15. Regulatory information

**US federal regulations**
This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

**TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)**
Lead and lead compounds (inorganic) (CAS 7439-92-1) 0.1 % Annual Export Notification required.

**CERCLA Hazardous Substance List (40 CFR 302.4)**
Lead and lead compounds (inorganic) (CAS 7439-92-1) Listed.

**SARA 304 Emergency release notification**
Not regulated.

Lead and lead compounds (inorganic) (CAS 7439-92-1) Reproductive toxicity
- Central nervous system
- Kidney
- Blood
- Acute toxicity
Toxic Substances Control Act (TSCA)

All components of the mixture on the TSCA 8(b) inventory are designated "active".

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical

Yes

Classified hazard categories

Reproductive toxicity

Specific target organ toxicity (single or repeated exposure)

SARA 313 (TRI reporting)

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS number</th>
<th>% by wt.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead and lead compounds (inorganic)</td>
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<td>90 - 94</td>
</tr>
<tr>
<td>Lead monoxide</td>
<td>1317-36-8</td>
<td>&gt; 0.1</td>
</tr>
</tbody>
</table>

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Lead and lead compounds (inorganic) (CAS 7439-92-1)
Lead monoxide (CAS 1317-36-8)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA)

Contains component(s) regulated under the Safe Drinking Water Act.

US state regulations

US. Massachusetts RTK - Substance List

Lead and lead compounds (inorganic) (CAS 7439-92-1)
Lead monoxide (CAS 1317-36-8)

US. New Jersey Worker and Community Right-to-Know Act

Lead and lead compounds (inorganic) (CAS 7439-92-1)
Lead monoxide (CAS 1317-36-8)

US. Pennsylvaninia Worker and Community Right-to-Know Law

Lead and lead compounds (inorganic) (CAS 7439-92-1)
Lead monoxide (CAS 1317-36-8)

US. Rhode Island RTK

Lead and lead compounds (inorganic) (CAS 7439-92-1)

California Proposition 65

WARNING: Cancer and Reproductive Harm. www.P65warnings.ca.gov

PROPOSITION 65 WARNING: Battery posts, terminals and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and reproductive harm. Batteries also contain other chemicals known to the State of California to cause cancer. WASH HANDS AFTER HANDLING.

California Proposition 65 - CRT: Listed date/Carcinogenic substance

| Lead and lead compounds (inorganic) | Listed: October 1, 1992 |
| Lead monoxide | Listed: October 1, 1992 |

California Proposition 65 - CRT: Listed date/Developmental toxin

| Lead and lead compounds (inorganic) | Listed: February 27, 1987 |
| Lead monoxide | Listed: February 27, 1987 |

California Proposition 65 - CRT: Listed date/Female reproductive toxin

| Lead and lead compounds (inorganic) | Listed: February 27, 1987 |
| Lead monoxide | Listed: February 27, 1987 |

California Proposition 65 - CRT: Listed date/Male reproductive toxin

| Lead and lead compounds (inorganic) | Listed: February 27, 1987 |
| Lead monoxide | Listed: February 27, 1987 |

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

| Lead and lead compounds (inorganic) (CAS 7439-92-1) | |
| Lead monoxide (CAS 1317-36-8) | |
### International Inventories

<table>
<thead>
<tr>
<th>Country(s) or region</th>
<th>Inventory name</th>
<th>On inventory (yes/no)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>Australian Inventory of Industrial Chemicals (AICIS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Domestic Substances List (DSL)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Non-Domestic Substances List (NDSL)</td>
<td>No</td>
</tr>
<tr>
<td>China</td>
<td>Inventory of Existing Chemical Substances in China (IECSC)</td>
<td>Yes</td>
</tr>
<tr>
<td>Europe</td>
<td>European Inventory of Existing Commercial Chemical Substances (EINECS)</td>
<td>No</td>
</tr>
<tr>
<td>Europe</td>
<td>European List of Notified Chemical Substances (ELINCS)</td>
<td>No</td>
</tr>
<tr>
<td>Japan</td>
<td>Inventory of Existing and New Chemical Substances (ENCS)</td>
<td>No</td>
</tr>
<tr>
<td>Korea</td>
<td>Existing Chemicals List (ECL)</td>
<td>Yes</td>
</tr>
<tr>
<td>New Zealand</td>
<td>New Zealand Inventory</td>
<td>Yes</td>
</tr>
<tr>
<td>Philippines</td>
<td>Philippine Inventory of Chemicals and Chemical Substances (PICCS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Taiwan</td>
<td>Taiwan Chemical Substance Inventory (TCSI)</td>
<td>Yes</td>
</tr>
<tr>
<td>United States &amp; Puerto Rico</td>
<td>Toxic Substances Control Act (TSCA) Inventory</td>
<td>Yes</td>
</tr>
</tbody>
</table>

*A “Yes” indicates that all components of this product comply with the inventory requirements administered by the governing country(s) A “No” indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

### 16. Other information, including date of preparation or last revision

- **Issue date**: 19-September-2017
- **Revision date**: 03-October-2023
- **Version #**: 05
- **List of abbreviations**:
  - LC50: Lethal Concentration, 50%
  - LD50: Lethal Dose 50%
  - TWA: Time Weighted Average
- **References**:
  - IARC Monographs. Overall Evaluation of Carcinogenicity
  - Registry of Toxic Effects of Chemical Substances (RTECS)
- **Disclaimer**:
  - EastPenn cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user’s responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available. The information in this SDS was obtained from sources which we believe are reliable, but no warranty or representation as to its accuracy or completeness is hereby given. Users should consider the information herein only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use and disposal, the safety and health of employees and customers and the protection of the environment.