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: 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:
- Acute toxicity, oral: Category 4
- Acute toxicity, inhalation: Category 4
- Reproductive toxicity: Category 1A
- Specific target organ toxicity, repeated exposure: Category 2 (Blood, Central nervous system, Kidney)

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: Harmful if swallowed. Harmful if inhaled. May damage fertility or the unborn child. May cause damage to organs (Blood, Central nervous system, Kidney) 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. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection. Avoid release to the environment.

Response: If swallowed: Call a poison center/doctor if you feel unwell. Rinse mouth. If inhaled: Remove person to fresh air and keep comfortable for breathing. If exposed or concerned: Get medical advice/attention. Call a poison center/doctor if you feel unwell. Collect spillage.

Storage: Not assigned.
Disposal: Refer to manufacturer/supplier for information on recovery/recycling. Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC): 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.
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.

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

Exposure to contents of an open or damaged battery: Rinse mouth thoroughly with water. Get medical advice/attention if you feel unwell.

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.

Indication of immediate medical attention and special treatment needed

Treat symptomatically.

General information

Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

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

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. 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 in original tightly closed container. Protect containers from damage. Place cardboard between layers of stacked batteries to avoid damage and short circuits.
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

<table>
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<th>Components</th>
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US. NIOSH: Pocket Guide to Chemical Hazards

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

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

ACGIH Biological Exposure Indices

<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).

Skin protection

Hand protection

None under normal conditions. Leak from a damaged or opened battery: Wear appropriate chemical resistant gloves.

Skin protection

Other

None under normal conditions. Leak from a damaged or opened battery: Wear suitable protective clothing.

Respiratory protection

None under normal conditions.

Thermal hazards

When material is heated, wear gloves to protect against thermal burns.

General hygiene considerations

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Physical state

Solid.

Form

Lead, solid.

Color

Not available.

Odor

None specific.

Odor threshold

Not available.

pH

Not available.

Melting point/freezing point

486 - 680 °F (252.22 - 360 °C)
Initial boiling point and boiling range
> 2516 °F (> 1380 °C) (760 mmHg)

Flash point
Not available.

Evaporation rate
Not available.

Flammability (solid, gas)
Not available.

Upper/lower flammability or explosive limits
Flammability limit - lower (%)
Not available.

Flammability limit - upper (%)
Not available.

Vapor pressure
Not available.

Vapor density
Not available.

Relative density
Not available.

Solubility(ies)
Solubility (water)
Insoluble in water.

Partition coefficient (n-octanol/water)
Not available.

Auto-ignition temperature
Not available.

Decomposition temperature
Not available.

Viscosity
Not available.

Other information
Explosive properties
Not explosive.

Oxidizing properties
Not oxidizing.

10. Stability and reactivity
Reactivity
The product is non-reactive under normal conditions of use, storage and transport.

Chemical stability
Stable at normal conditions.

Possibility of hazardous reactions
Will not occur.

Conditions to avoid
Overcharging. Ignition sources.

Incompatible materials

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

11. Toxicological information
Information on likely routes of exposure
Inhalation
Exposure to contents of an open or damaged battery: Harmful if inhaled.

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: Harmful if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics
Exposure to contents of an open or damaged battery: Dust may irritate the eyes and the respiratory system.

Information on toxicological effects
Acute toxicity
Not relevant, due to the form of the product.

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
Respiratory sensitization
No data available.

Skin sensitization
No data available.

Germ cell mutagenicity
No data available.

Carcinogenicity
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.
Lead monoxide (CAS 1317-36-8) Reasonably Anticipated to be a Human Carcinogen.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not regulated.

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

Specific target organ toxicity - single exposure
No data available.

Specific target organ toxicity - repeated exposure
None under normal conditions. Exposure to contents of an open or damaged battery: May cause damage to organs 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.

<table>
<thead>
<tr>
<th>Components</th>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead and lead compounds (inorganic) (CAS 7439-92-1)</td>
<td>Rainbow trout, donaldson trout (Oncorhynhus mykiss)</td>
<td>LC50 1.17 mg/l, 96 Hours</td>
</tr>
<tr>
<td>Lead monoxide (CAS 1317-36-8)</td>
<td>Water flea (Daphnia magna)</td>
<td>LC50 0.132 mg/l, 48 Hours</td>
</tr>
</tbody>
</table>

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. Avoid discharge into water courses or onto the ground.
Dispose of in accordance with local regulations.

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 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

15. Regulatory information

US federal regulations
This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)
Not regulated.

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.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)
Lead and lead compounds (inorganic) (CAS 7439-92-1) Reproductive toxicity
Central nervous system
Kidney
Blood
Acute toxicity

Superfund Amendments and Reauthorization Act of 1986 (SARA)
SARA 302 Extremely hazardous substance
Not listed.

SARA 311/312 Hazardous chemical
Yes

Classified hazard categories
Acute toxicity (any route of exposure)
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>
<td>7439-92-1</td>
<td>90 - 94</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)
Not regulated.

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. Pennsylvania 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
or
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) (CAS 7439-92-1) Listed: October 1, 1992
- Lead monoxide (CAS 1317-36-8) Listed: October 1, 1992

California Proposition 65 - CRT: Listed date/Developmental toxin

- Lead and lead compounds (inorganic) (CAS 7439-92-1) Listed: February 27, 1987

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

- Lead and lead compounds (inorganic) (CAS 7439-92-1) Listed: February 27, 1987

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

- Lead and lead compounds (inorganic) (CAS 7439-92-1) 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 Chemical Substances (AICS)</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 this product complies 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

<table>
<thead>
<tr>
<th>Issue date</th>
<th>19-September-2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revision date</td>
<td>08-January-2018</td>
</tr>
<tr>
<td>Version #</td>
<td>02</td>
</tr>
</tbody>
</table>

List of abbreviations

- TWA: Time Weighted Average.
- LC50: Lethal Concentration 50%.
- SVHC: Substance of Very High Concern.

References

- IARC Monographs. Overall Evaluation of Carcinogenicity
- Registry of Toxic Effects of Chemical Substances (RTECS)

Disclaimer

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.