SAFETY DATA SHEET

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

Chemical name	CAS number	%
Lead and lead compounds (inorganic)	7439-92-1	90 - 94
Lead monoxide	1317-36-8	> 0.1

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	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. 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)

Components	Type	Value
Lead and lead compounds (inorganic) (CAS 7439-92-1)	TWA	0.05 mg/m3
Lead monoxide (CAS 1317-36-8)	TWA	0.05 mg/m3

US. ACGIH Threshold Limit Values (TLV)

Components	Type	Value
Lead and lead compounds (inorganic) (CAS 7439-92-1)	TWA	0.05 mg/m3
Lead monoxide (CAS 1317-36-8)	TWA	0.05 mg/m3

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

Components	Type	Value
Lead and lead compounds (inorganic) (CAS 7439-92-1)	IDLH	100 mg/m3
Lead monoxide (CAS 1317-36-8)	IDLH	100 mg/m3

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Lead and lead compounds (inorganic) (CAS 7439-92-1)	TWA	0.05 mg/m3
Lead monoxide (CAS 1317-36-8)	TWA	0.05 mg/m3

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

ACGIH Biological Exposure Indices (BEI)

Components	Value	Determinant	Specimen	Sampling Time
Lead and lead compounds (inorganic) (CAS 7439-92-1)	200 µg/l	Lead	Blood	*

* - 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: Glove material: Nitrile rubber Layer thickness: 0.152 or 0.381 mm Breakthrough time: 240 or 480 min. Suitable gloves can be recommended by the glove supplier.
Other	None under normal conditions. Leak from a damaged or opened battery: Wear suitable protective clothing. Use of an impervious apron is recommended.
Respiratory protection	None under normal conditions. In the event that cell or battery is damaged, open, or leaking, respiratory protection should be worn where there is a potential to exceed the exposure limit requirements or guidelines.
Thermal hazards	When material is heated, wear gloves to protect against thermal burns.
General hygiene considerations	Observe any medical surveillance requirements. 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	Various.
Odor	None specific.
Odor threshold	Not available.
pH	Not applicable as the product is insoluble in water.
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 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.

Incompatible materials	Water. Acids. Strong bases. Strong reducing agents. Strong oxidizers.
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	
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.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

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)			
	LC50	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.

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

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)

Chemical name	CAS number	% by wt.
Lead and lead compounds (inorganic)	7439-92-1	90 - 94
Lead monoxide	1317-36-8	> 0.1

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. 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

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

*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
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