SAFETY DATA SHEET

1. Identification

Product identifier	Valve Regulated Lead Acid Battery
Other means of identification	
-	Non-Spillable Lead Acid Battery, Sealed Lead Acid Battery
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	Explosive Chemical, Division 1.3	
Health hazards	Acute toxicity, oral	Category 4
	Acute toxicity, inhalation	Category 4
	Skin corrosion/irritation	Category 1A
	Serious eye damage/eye irritation	Category 1
	Carcinogenicity	Category 1A
	Reproductive toxicity	Category 1A
	Specific target organ toxicity following single exposure	Category 1 (respiratory system)
	Specific target organ toxicity following single exposure	Category 3 respiratory tract irritation
	Specific target organ toxicity following repeated exposure	Category 1 (respiratory system)
Environmental hazards	Hazardous to the aquatic environment, acute hazard	Category 1
	Hazardous to the aquatic environment, long-term hazard	Category 1

Label elements

Signal word	Danger
Hazard statement	Harmful if swallowed. Harmful if inhaled. Causes severe skin burns and eye damage. May cause cancer. May damage fertility or the unborn child. Causes damage to organs (respiratory system). Causes damage to organs (respiratory system) through prolonged or repeated exposure. May cause respiratory irritation. Very toxic to aquatic life with long lasting effects.
Precautionary statements	
Prevention	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Do not breathe dust/mist/vapours. 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 SWALLOWED: Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTRE/doctor. Wash contaminated clothing before reuse. Collect spillage.
Storage	Store in a well-ventilated place. Keep container tightly closed.
Disposal	Refer to manufacturer or supplier for information on recovery or recycling. Dispose of contents/container in accordance with local/regional/national/international regulations.
Other hazards	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.
Supplemental information	In use, may form flammable/explosive vapour-air mixture.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Lead and lead compounds	7439-92-1	60 - 75
Sulphuric acid	7664-93-9	5 - 15

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: Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention if irritation develops and persists.
Eye contact	Exposure to contents of an open or damaged battery: Flush thoroughly with water for at least 15 minutes. Hold eyelids open during flushing. If irritation persists, repeat flushing. Get medical attention if irritation develops and persists.
Ingestion	Exposure to contents of an open or damaged battery: Rinse mouth thoroughly with water. DO NOT induce vomiting because of danger of aspirating liquid into lungs. Get medical attention immediately.
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	Avoid contact with skin.

Methods and materials for containment and cleaning up	Neutralize the spilled material before disposal. 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	Prevent runoff from entering drains, sewers, or streams.

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.
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. ACGIH Threshold Limit Values

Components	Type	Value	Form
Lead and lead compounds (CAS 7439-92-1)	TWA	0.05 mg/m3	
Sulphuric acid (CAS 7664-93-9)	TWA	0.2 mg/m3	Thoracic fraction.

Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2)

Components	Type	Value
Lead and lead compounds (CAS 7439-92-1)	TWA	0.05 mg/m3
Sulphuric acid (CAS 7664-93-9)	STEL	3 mg/m3
	TWA	1 mg/m3

Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)

Components	Type	Value	Form
Lead and lead compounds (CAS 7439-92-1)	TWA	0.05 mg/m3	
Sulphuric acid (CAS 7664-93-9)	TWA	0.2 mg/m3	Mist.

Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act)

Components	Type	Value	Form
Lead and lead compounds (CAS 7439-92-1)	TWA	0.05 mg/m3	
Sulphuric acid (CAS 7664-93-9)	TWA	0.2 mg/m3	Thoracic fraction.

Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents)

Components	Type	Value	Form
Lead and lead compounds (CAS 7439-92-1)	TWA	0.05 mg/m3	
Sulphuric acid (CAS 7664-93-9)	TWA	0.2 mg/m3	Thoracic fraction.

Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety)

Components	Type	Value
Lead and lead compounds (CAS 7439-92-1)	TWA	0.05 mg/m3
Sulphuric acid (CAS 7664-93-9)	STEL	3 mg/m3
	TWA	1 mg/m3

Biological limit values

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
Lead and lead compounds (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: Wear appropriate chemical resistant gloves.

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.

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	Solid.
Physical state	Solid.
Form	Sulfuric acid, gelatinous. Lead, solid.
Colour	Not available.
Odour	Odourless.
Odour threshold	Not available.
pH	< 1
Melting point/freezing point	Not available.
Initial boiling point and boiling range	112.78 - 115.56 °C (235 - 240 °F) (Sulfuric acid)
Flash point	Below room temperature (as hydrogen gas).
Evaporation rate	< 1 (n-BuAc=1)
Flammability (solid, gas)	
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	4 % (Hydrogen)
Flammability limit - upper (%)	74 % (Hydrogen)
Vapour pressure	10 mm Hg
Vapour density	> 1 (Air = 1)
Relative density	1.27 - 1.33
Solubility(ies)	
Solubility (water)	100 % (Sulfuric acid)
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.

Oxidising properties	Not oxidising.

10. Stability and reactivity

Reactivity Chemical stability Possibility of hazardous reactions	The product is non-reactive under normal conditions of use, storage and transport. Stable at normal conditions. Will not occur.
Conditions to avoid	Overcharging. Ignition sources.
Incompatible materials	Strong bases. Combustible organic materials. Reducing Agents. Finely divided metals. Strong oxidizers. Water.
Hazardous decomposition products	Sulfur dioxide. Sulfur trioxide. Carbon monoxide. Sulfuric acid. Hydrogen.

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: Causes severe skin burns.
Eye contact	Exposure to contents of an open or damaged battery: Causes serious eye damage.
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	Exposure to contents of an open or damaged battery: Harmful if inhaled or swallowed.

Components	Species	Test Results
Sulphuric acid (CAS 7664-93-9)		
Acute		
Oral		
LD50	Rat	2140 mg/kg

Skin corrosion/irritation	Exposure to contents of an open or damaged battery: Causes severe skin burns.
Serious eye damage/eye irritation	Exposure to contents of an open or damaged battery: Causes serious eye damage.

Respiratory or skin sensitisation

Respiratory sensitisation	No data available.
Skin sensitisation	No data available.
Germ cell mutagenicity	No data available.
Carcinogenicity	The International Agency for Research on Cancer (IARC) has classified "strong inorganic acid mists containing sulfuric acid" as a known human carcinogen, (IARC category 1). This classification applies only to mists containing sulfuric acid and not to sulfuric acid or sulfuric acid solutions.

ACGIH Carcinogens

Lead and lead compounds (CAS 7439-92-1)	A3 Confirmed animal carcinogen with unknown relevance to humans.
Sulphuric acid (CAS 7664-93-9)	A2 Suspected human carcinogen.

Canada - Alberta OELs: Carcinogen category

Sulphuric acid (CAS 7664-93-9)	Suspected human carcinogen.

Canada - Manitoba OELs: carcinogenicity

Lead and lead compounds (CAS 7439-92-1)	Confirmed animal carcinogen with unknown relevance to humans.
Sulphuric acid (CAS 7664-93-9)	Suspected human carcinogen.

Canada - Quebec OELs: Carcinogen category

Lead and lead compounds (CAS 7439-92-1)	Detected carcinogenic effect in animals.

IARC Monographs. Overall Evaluation of Carcinogenicity

Lead and lead compounds (CAS 7439-92-1)	2B Possibly carcinogenic to humans.
Sulphuric acid (CAS 7664-93-9)	1 Carcinogenic to humans.

US. National Toxicology Program (NTP) Report on Carcinogens

Lead and lead compounds (CAS 7439-92-1)	Reasonably Anticipated to be a Human Carcinogen.

Sulphuric acid (CAS 7664-93-9)	Known To Be Human Carcinogen.

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	None under normal conditions. Exposure to contents of an open or damaged battery: Causes damage to organs (respiratory system).
Specific target organ toxicity - repeated exposure	None under normal conditions. Exposure to contents of an open or damaged battery: Causes damage to organs through prolonged or repeated exposure: Respiratory system.
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. Chronic inhalation of sulfuric acid mist may increase the risk of lung cancer.

12. Ecological information

Ecotoxicity: The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. 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 (CAS 7439-92-1)			
	LC50	Rainbow trout, donaldson trout (Oncorhynhus mykiss)	1.17 mg/l, 96 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 the water surface.
Other adverse effects	None known.

13. Disposal considerations

Disposal instructions	Recycle the batteries, as the primary disposal method. Neutralize electrolyte/sulfuric acid. 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	Spent lead-acid batteries are not regulated as hazardous waste when recycled. Depending upon circumstances, the following waste codes may apply: Spilled electrolyte/Sulfuric acid. D002: Corrosive waste
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

TDG

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.
General information	TDG: Not regulated per Special provision 39 IATA/ICAO: Not regulated per Special Provision A67. IMDG: Not regulated per Special Provision #238. Label: NONSPILLABLE

15. Regulatory information

Canadian regulations: This product has been classified in accordance with the hazard criteria of the HPR and the SDS contains all the information required by the HPR.

Controlled Drugs and Substances Act

Not regulated.

Export Control List (CEPA 1999, Schedule 3)

Not listed.

Greenhouse Gases

Not listed.

Ontario. Toxic Substances. Toxic Reduction Act, 2009. Regulation 455/09 (July 1, 2011)

Sulphuric acid (CAS 7664-93-9)

Precursor Control Regulations

Sulphuric acid (CAS 7664-93-9)	Class B

International regulations

Stockholm Convention

Not applicable.

Rotterdam Convention

Not applicable.

Kyoto Protocol

Not applicable.

Montreal Protocol

Not applicable.

Basel Convention

Not applicable.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	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 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

Issue date	19-September-2017
Revision date	19-March-2018
Version No.	03
List of abbreviations	LD50: Lethal Dose 50%. LC50: Lethal Concentration 50%.
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.