

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR
1910.1200

Version 1.2

Revision Date: 07/07/2015

Print Date: 07/08/2015

SECTION 1. IDENTIFICATION

Product name : FormulaShell SAE 10W-30 Motor Oil

Product code : 001D7227

Manufacturer or supplier's details

Manufacturer/Supplier : **Shell Oil Products US**
P.O. Box 4427
Houston TX 77210-4427
USA

SDS Request : (+1) 877-276-7285
Customer Service :

Emergency telephone number

Spill Information : 877-504-9351
Health Information : 877-242-7400

Recommended use of the chemical and restrictions on use

Recommended use : Engine oil.

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Not a hazardous substance or mixture.

GHS Label element

Hazard pictograms : No Hazard Symbol required

Signal word : No signal word

Hazard statements : **PHYSICAL HAZARDS:**
Not classified as a physical hazard under GHS criteria.
HEALTH HAZARDS:
Not classified as a health hazard under GHS criteria.
ENVIRONMENTAL HAZARDS:
Not classified as an environmental hazard under GHS criteria.

Precautionary statements : **Prevention:**
No precautionary phrases.
Response:
No precautionary phrases.
Storage:
No precautionary phrases.
Disposal:
No precautionary phrases.

Other hazards which do not result in classification

Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis.

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Used oil may contain harmful impurities.
Not classified as flammable but will burn.

The classification of this material is based on OSHA HCS 2012 criteria.

Under normal conditions of use or in a foreseeable emergency, this product does not meet the definition of a hazardous chemical when evaluated according to the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature : Highly refined mineral oil.
Synthetic base oil and additives.
The highly refined mineral oil contains <3% (w/w) DMSO-extract, according to IP346.

* contains one or more of the following CAS-numbers: 64742-53-6, 64742-54-7, 64742-55-8, 64742-56-9, 64742-65-0, 68037-01-4, 72623-86-0, 72623-87-1, 8042-47-5, 848301-69-9.

Hazardous components

Chemical Name	Synonyms	CAS-No.	Concentration (%)
Polyolefin Amide Alkneamine Polyol		308070-26-0	1 - 3
Alkaryl amine		112-90-3	1 - 3
Interchangeable low viscosity base oil (<20,5 cSt @ 40°C) *		64742-54-7 and 848301-69-9	0 - 90

SECTION 4. FIRST-AID MEASURES

General advice : Not expected to be a health hazard when used under normal conditions.

If inhaled : No treatment necessary under normal conditions of use.
If symptoms persist, obtain medical advice.

In case of skin contact : Remove contaminated clothing. Flush exposed area with water and follow by washing with soap if available.
If persistent irritation occurs, obtain medical attention.

In case of eye contact : Flush eye with copious quantities of water.
If persistent irritation occurs, obtain medical attention.

If swallowed : In general no treatment is necessary unless large quantities are swallowed, however, get medical advice.

Most important symptoms and effects, both acute and delayed : Oil acne/folliculitis signs and symptoms may include formation of black pustules and spots on the skin of exposed areas.
Ingestion may result in nausea, vomiting and/or diarrhoea.

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- Protection of first-aiders : When administering first aid, ensure that you are wearing the appropriate personal protective equipment according to the incident, injury and surroundings.
- Immediate medical attention, special treatment : Treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

- Suitable extinguishing media : Foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.
- Unsuitable extinguishing media : Do not use water in a jet.
- Specific hazards during fire-fighting : Hazardous combustion products may include:
A complex mixture of airborne solid and liquid particulates and gases (smoke).
Carbon monoxide may be evolved if incomplete combustion occurs.
Unidentified organic and inorganic compounds.
- Specific extinguishing methods : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Special protective equipment for firefighters : Proper protective equipment including chemical resistant gloves are to be worn; chemical resistant suit is indicated if large contact with spilled product is expected. Self-Contained Breathing Apparatus must be worn when approaching a fire in a confined space. Select fire fighter's clothing approved to relevant Standards (e.g. Europe: EN469).

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Avoid contact with skin and eyes.
- Environmental precautions : Use appropriate containment to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers.

Local authorities should be advised if significant spillages cannot be contained.
- Methods and materials for containment and cleaning up : Slippery when spilt. Avoid accidents, clean up immediately. Prevent from spreading by making a barrier with sand, earth or other containment material. Reclaim liquid directly or in an absorbent. Soak up residue with an absorbent such as clay, sand or other suitable material and dispose of properly.

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Additional advice : For guidance on selection of personal protective equipment see Chapter 8 of this Safety Data Sheet.
For guidance on disposal of spilled material see Chapter 13 of this Safety Data Sheet.

SECTION 7. HANDLING AND STORAGE

Technical measures : Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols.
Use the information in this data sheet as input to a risk assessment of local circumstances to help determine appropriate controls for safe handling, storage and disposal of this material.

Precautions for safe handling : Avoid prolonged or repeated contact with skin.
Avoid inhaling vapour and/or mists.
When handling product in drums, safety footwear should be worn and proper handling equipment should be used.
Properly dispose of any contaminated rags or cleaning materials in order to prevent fires.

Avoidance of contact : Strong oxidising agents.

Product Transfer : This material has the potential to be a static accumulator.
Proper grounding and bonding procedures should be used during all bulk transfer operations.

Storage

Other data : Keep container tightly closed and in a cool, well-ventilated place.
Use properly labeled and closable containers.

Store at ambient temperature.

Packaging material : Suitable material: For containers or container linings, use mild steel or high density polyethylene.
Unsuitable material: PVC.

Container Advice : Polyethylene containers should not be exposed to high temperatures because of possible risk of distortion.

SECTION 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Oil mist, mineral	Not Assigned	TWA ((inhalable fraction))	5 mg/m ³	US. ACGIH Threshold Limit Values
		(Mist)	5 mg/m ³	OSHA TRA

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Biological occupational exposure limits

No biological limit allocated.

Monitoring Methods

Monitoring of the concentration of substances in the breathing zone of workers or in the general workplace may be required to confirm compliance with an OEL and adequacy of exposure controls. For some substances biological monitoring may also be appropriate.

Validated exposure measurement methods should be applied by a competent person and samples analysed by an accredited laboratory.

Examples of sources of recommended exposure measurement methods are given below or contact the supplier. Further national methods may be available.

National Institute of Occupational Safety and Health (NIOSH), USA: Manual of Analytical Methods
<http://www.cdc.gov/niosh/>

Occupational Safety and Health Administration (OSHA), USA: Sampling and Analytical Methods
<http://www.osha.gov/>

Health and Safety Executive (HSE), UK: Methods for the Determination of Hazardous Substances
<http://www.hse.gov.uk/>

Institut für Arbeitsschutz Deutschen Gesetzlichen Unfallversicherung (IFA), Germany
<http://www.dguv.de/inhalt/index.jsp>

L'Institut National de Recherche et de Sécurité, (INRS), France <http://www.inrs.fr/accueil>

Engineering measures : The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. Appropriate measures include:
Adequate ventilation to control airborne concentrations.

Where material is heated, sprayed or mist formed, there is greater potential for airborne concentrations to be generated.

General Information:

Define procedures for safe handling and maintenance of controls.

Educate and train workers in the hazards and control measures relevant to normal activities associated with this product. Ensure appropriate selection, testing and maintenance of equipment used to control exposure, e.g. personal protective equipment, local exhaust ventilation.

Drain down system prior to equipment break-in or maintenance.

Retain drain downs in sealed storage pending disposal or subsequent recycle.

Always observe good personal hygiene measures, such as washing hands after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned.

Practice good housekeeping.

Personal protective equipment

Respiratory protection : No respiratory protection is ordinarily required under normal conditions of use.
In accordance with good industrial hygiene practices, precau-

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tions should be taken to avoid breathing of material. If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation. Check with respiratory protective equipment suppliers. Where air-filtering respirators are suitable, select an appropriate combination of mask and filter. Select a filter suitable for the combination of organic gases and vapours [Type A/Type P boiling point >65°C (149°F)].

Hand protection Remarks

: Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374, US: F739) made from the following materials may provide suitable chemical protection. PVC, neoprene or nitrile rubber gloves. Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced. Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended. For continuous contact we recommend gloves with breakthrough time of more than 240 minutes with preference for > 480 minutes where suitable gloves can be identified. For short-term/splash protection we recommend the same, but recognize that suitable gloves offering this level of protection may not be available and in this case a lower breakthrough time may be acceptable so long as appropriate maintenance and replacement regimes are followed. Glove thickness is not a good predictor of glove resistance to a chemical as it is dependent on the exact composition of the glove material. Glove thickness should be typically greater than 0.35 mm depending on the glove make and model.

Eye protection

: If material is handled such that it could be splashed into eyes, protective eyewear is recommended.

Skin and body protection

: Skin protection is not ordinarily required beyond standard work clothes. It is good practice to wear chemical resistant gloves.

Protective measures

: Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers.

Environmental exposure controls

General advice

: Take appropriate measures to fulfill the requirements of relevant environmental protection legislation. Avoid contamination of the environment by following advice given in Chapter 6. If necessary, prevent undissolved material from being discharged to waste water. Waste water should be treated in a municipal or industrial waste water treatment plant before discharge to surface water. Local guidelines on emission limits for volatile substances

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must be observed for the discharge of exhaust air containing vapour.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: Liquid at room temperature.
Colour	: amber
Odour	: Slight hydrocarbon
Odour Threshold	: Data not available
pH	: Not applicable
pour point	: -43 °C / -45 °F Method: Unspecified
Initial boiling point and boiling range	: > 280 °C / 536 °F estimated value(s)
Flash point	: 228 °C / 442 °F Method: Unspecified
Evaporation rate	: Data not available
Flammability (solid, gas)	: Data not available
Upper explosion limit	: Typical 10 %(V)
Lower explosion limit	: Typical 1 %(V)
Vapour pressure	: < 0.5 Pa (20 °C / 68 °F) estimated value(s)
Relative vapour density	: > 1 estimated value(s)
Relative density	: 0.880 (15 °C / 59 °F)
Density	: 880 kg/m ³ (15.0 °C / 59.0 °F) Method: Unspecified
Solubility(ies)	
Water solubility	: negligible
Solubility in other solvents	: Data not available
Partition coefficient: n-octanol/water	: Pow: > 6 (based on information on similar products)
Auto-ignition temperature	: > 320 °C / 608 °F

Viscosity

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Viscosity, dynamic	: Data not available
Viscosity, kinematic	: 69.05 mm ² /s (40.0 °C / 104.0 °F) Method: Unspecified
	10.42 mm ² /s (100 °C / 212 °F) Method: Unspecified
Conductivity	: This material is not expected to be a static accumulator.
Decomposition temperature	: Data not available

SECTION 10. STABILITY AND REACTIVITY

Reactivity	: The product does not pose any further reactivity hazards in addition to those listed in the following sub-paragraph.
Chemical stability	: Stable.
Possibility of hazardous reactions	: Reacts with strong oxidising agents.
Conditions to avoid	: Extremes of temperature and direct sunlight.
Incompatible materials	: Strong oxidising agents.
Hazardous decomposition products	: Hazardous decomposition products are not expected to form during normal storage.

SECTION 11. TOXICOLOGICAL INFORMATION

Basis for assessment	: Information given is based on data on the components and the toxicology of similar products. Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s).
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Information on likely routes of exposure

Skin and eye contact are the primary routes of exposure although exposure may occur following accidental ingestion.

Acute toxicity

Product:

Acute oral toxicity	: LD50 (rat): > 5,000 mg/kg Remarks: Expected to be of low toxicity:
Acute inhalation toxicity	: Remarks: Not considered to be an inhalation hazard under normal conditions of use.
Acute dermal toxicity	: LD50 (Rabbit): > 5,000 mg/kg Remarks: Expected to be of low toxicity:

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Skin corrosion/irritation

Product:

Remarks: Expected to be slightly irritating., Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis.

Serious eye damage/eye irritation

Product:

Remarks: Expected to be slightly irritating.

Respiratory or skin sensitisation

Product:

Remarks: Not expected to be a skin sensitiser.

Germ cell mutagenicity

Product:

: Remarks: Not considered a mutagenic hazard.

Carcinogenicity

Product:

Remarks: Not expected to be carcinogenic.

Remarks: Product contains mineral oils of types shown to be non-carcinogenic in animal skin-painting studies., Highly refined mineral oils are not classified as carcinogenic by the International Agency for Research on Cancer (IARC).

IARC	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
OSHA	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
NTP	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Product:

: Remarks: Not expected to impair fertility., Not expected to be

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a developmental toxicant.

STOT - single exposure

Product:

Remarks: Not expected to be a hazard.

STOT - repeated exposure

Product:

Remarks: Not expected to be a hazard.

Aspiration toxicity

Product:

Not considered an aspiration hazard.

Further information

Product:

Remarks: Used oils may contain harmful impurities that have accumulated during use. The concentration of such impurities will depend on use and they may present risks to health and the environment on disposal., ALL used oil should be handled with caution and skin contact avoided as far as possible.

Remarks: Continuous contact with used engine oils has caused skin cancer in animal tests.

Remarks: Slightly irritating to respiratory system.

SECTION 12. ECOLOGICAL INFORMATION

Basis for assessment : Ecotoxicological data have not been determined specifically for this product.
Information given is based on a knowledge of the components and the ecotoxicology of similar products.
Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s).(LL/EL/IL50 expressed as the nominal amount of product required to prepare aqueous test extract).

Ecotoxicity

Product:

Toxicity to fish (Acute toxicity) : Remarks: Expected to be practically non toxic: LL/EL/IL50 > 100 mg/l

Toxicity to daphnia and other aquatic invertebrates (Acute toxicity) : Remarks: Expected to be practically non toxic: LL/EL/IL50 > 100 mg/l

Toxicity to algae (Acute toxicity) : Remarks: Expected to be practically non toxic:

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LL/EL/IL50 > 100 mg/l

Toxicity to fish (Chronic toxicity) : Remarks: Data not available

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : Remarks: Data not available

Toxicity to bacteria (Acute toxicity) : Remarks: Data not available

Persistence and degradability

Product:

Biodegradability : Remarks: Expected to be not readily biodegradable. Major constituents are expected to be inherently biodegradable, but contains components that may persist in the environment.

Bioaccumulative potential

Product:

Bioaccumulation : Remarks: Contains components with the potential to bioaccumulate.

Mobility in soil

Product:

Mobility : Remarks: Liquid under most environmental conditions. If it enters soil, it will adsorb to soil particles and will not be mobile.

Remarks: Floats on water.

Other adverse effects

no data available

Product:

Additional ecological information : Product is a mixture of non-volatile components, which are not expected to be released to air in any significant quantities. Not expected to have ozone depletion potential, photochemical ozone creation potential or global warming potential.

Poorly soluble mixture.
May cause physical fouling of aquatic organisms.

Mineral oil is not expected to cause any chronic effects to aquatic organisms at concentrations less than 1 mg/l.

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SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Waste product should not be allowed to contaminate soil or ground water, or be disposed of into the environment.
Waste, spills or used product is dangerous waste.

Disposal should be in accordance with applicable regional, national, and local laws and regulations.
Local regulations may be more stringent than regional or national requirements and must be complied with.

Contaminated packaging : Dispose in accordance with prevailing regulations, preferably to a recognized collector or contractor. The competence of the collector or contractor should be established beforehand.
Disposal should be in accordance with applicable regional, national, and local laws and regulations.

SECTION 14. TRANSPORT INFORMATION

National Regulations

US Department of Transportation Classification (49 CFR Parts 171-180)

Not regulated as a dangerous good

International Regulation

IATA-DGR

Not regulated as a dangerous good

IMDG-Code

Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Pollution category : Not applicable
Ship type : Not applicable
Product name : Not applicable
Special precautions : Not applicable

Special precautions for user

Remarks : Special Precautions: Refer to Chapter 7, Handling & Storage, for special precautions which a user needs to be aware of or needs to comply with in connection with transport.

Additional Information : MARPOL Annex 1 rules apply for bulk shipments by sea.

SECTION 15. REGULATORY INFORMATION

OSHA Hazards : No OSHA Hazards

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EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ., Shell classifies this material as an "oil" under the CERCLA Petroleum Exclusion, therefore releases to the environment are not reportable under CERCLA.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : No SARA Hazards

SARA 302 : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Clean Water Act

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

California Prop 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

The components of this product are reported in the following inventories:

EINECS : All components listed or polymer exempt.

TSCA : All components listed.

DSL : All components listed.

SECTION 16. OTHER INFORMATION

Further information

NFPA Rating (Health, Fire, Reactivity) 0, 1, 0

A vertical bar (|) in the left margin indicates an amendment from the previous version.

Abbreviations and Acronyms : The standard abbreviations and acronyms used in this document can be looked up in reference literature (e.g. scientific dictionaries) and/or websites.

ACGIH = American Conference of Governmental Industrial Hygienists

ADR = European Agreement concerning the International Carriage of Dangerous Goods by Road

AICS = Australian Inventory of Chemical Substances

ASTM = American Society for Testing and Materials

BEL = Biological exposure limits

BTEX = Benzene, Toluene, Ethylbenzene, Xylenes

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CAS = Chemical Abstracts Service
CEFIC = European Chemical Industry Council
CLP = Classification Packaging and Labelling
COC = Cleveland Open-Cup
DIN = Deutsches Institut für Normung
DMEL = Derived Minimal Effect Level
DNEL = Derived No Effect Level
DSL = Canada Domestic Substance List
EC = European Commission
EC50 = Effective Concentration fifty
ECETOC = European Center on Ecotoxicology and Toxicology Of Chemicals
ECHA = European Chemicals Agency
EINECS = The European Inventory of Existing Commercial Chemical Substances
EL50 = Effective Loading fifty
ENCS = Japanese Existing and New Chemical Substances Inventory
EWC = European Waste Code
GHS = Globally Harmonised System of Classification and Labelling of Chemicals
IARC = International Agency for Research on Cancer
IATA = International Air Transport Association
IC50 = Inhibitory Concentration fifty
IL50 = Inhibitory Level fifty
IMDG = International Maritime Dangerous Goods
INV = Chinese Chemicals Inventory
IP346 = Institute of Petroleum test method N° 346 for the determination of polycyclic aromatics DMSO-extractables
KECI = Korea Existing Chemicals Inventory
LC50 = Lethal Concentration fifty
LD50 = Lethal Dose fifty per cent.
LL/EL/IL = Lethal Loading/Effective Loading/Inhibitory loading
LL50 = Lethal Loading fifty
MARPOL = International Convention for the Prevention of Pollution From Ships
NOEC/NOEL = No Observed Effect Concentration / No Observed Effect Level
OE_HPVS = Occupational Exposure - High Production Volume
PBT = Persistent, Bioaccumulative and Toxic
PICCS = Philippine Inventory of Chemicals and Chemical Substances
PNEC = Predicted No Effect Concentration
REACH = Registration Evaluation And Authorisation Of Chemicals
RID = Regulations Relating to International Carriage of Dangerous Goods by Rail
SKIN_DES = Skin Designation
STEL = Short term exposure limit
TRA = Targeted Risk Assessment
TSCA = US Toxic Substances Control Act
TWA = Time-Weighted Average
vPvB = very Persistent and very Bioaccumulative

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1. Identification

Product identifier	Lead Acid Battery Wet, Filled With Acid
Other means of identification	
Synonyms	may include gel/absorbed electrolyte type lead acid batteries
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. 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/supplier for information on recovery/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 (inorganic)	7439-92-1	43 - 70
Electrolyte (Sulfuric acid)	7664-93-9	20 - 44
Antimony	7440-36-0	3 - 5

Composition comments All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.
Content composition concentrations will vary with battery type/size.

4. First-aid measures

Inhalation	Exposure to contents of an open or damaged battery: Move injured person into fresh air and keep person 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. Heavy lead exposure may result in central nervous system damage, encephalopathy and damage to the blood-forming (hematopoietic) tissues.
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	Do NOT use water on live electrical circuits.
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
Antimony (CAS 7440-36-0)	TWA	0.5 mg/m ³	
Electrolyte (Sulfuric acid) (CAS 7664-93-9)	TWA	0.2 mg/m ³	Thoracic fraction.
Lead and lead compounds (inorganic) (CAS 7439-92-1)	TWA	0.05 mg/m ³	

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

Components	Type	Value	Form
Antimony (CAS 7440-36-0)	TWA	0.5 mg/m ³	
Electrolyte (Sulfuric acid) (CAS 7664-93-9)	STEL	3 mg/m ³	
	TWA	1 mg/m ³	
Lead and lead compounds (inorganic) (CAS 7439-92-1)	TWA	0.05 mg/m ³	

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

Components	Type	Value	Form
Antimony (CAS 7440-36-0)	TWA	0.5 mg/m ³	
Electrolyte (Sulfuric acid) (CAS 7664-93-9)	TWA	0.2 mg/m ³	Mist.
Lead and lead compounds (inorganic) (CAS 7439-92-1)	TWA	0.05 mg/m ³	

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

Components	Type	Value	Form
Antimony (CAS 7440-36-0)	TWA	0.5 mg/m ³	
Electrolyte (Sulfuric acid) (CAS 7664-93-9)	TWA	0.2 mg/m ³	Thoracic fraction.
Lead and lead compounds (inorganic) (CAS 7439-92-1)	TWA	0.05 mg/m ³	

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

Components	Type	Value	Form
Antimony (CAS 7440-36-0)	TWA	0.5 mg/m ³	
Electrolyte (Sulfuric acid) (CAS 7664-93-9)	TWA	0.2 mg/m ³	Thoracic fraction.

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

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

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

Components	Type	Value
Antimony (CAS 7440-36-0)	TWA	0.5 mg/m3
Electrolyte (Sulfuric acid) (CAS 7664-93-9)	STEL	3 mg/m3
Lead and lead compounds (inorganic) (CAS 7439-92-1)	TWA	1 mg/m3
	TWA	0.05 mg/m3

Biological limit values

ACGIH Biological Exposure Indices

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: 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

Physical state	Solid.
Form	Sulfuric acid, liquid. 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	The product is non-reactive under normal conditions of use, storage and transport.
Possibility of hazardous reactions	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. Causes severe respiratory tract irritation.
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
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Electrolyte (Sulfuric acid) (CAS 7664-93-9)

Acute

Oral

LD50	Rat	2140 mg/kg
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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

Canada - Alberta OELs: Irritant

Antimony (CAS 7440-36-0)	Irritant
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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

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

Canada - Alberta OELs: Carcinogen category

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

Canada - Manitoba OELs: carcinogenicity

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

Canada - Quebec OELs: Carcinogen category

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

IARC Monographs. Overall Evaluation of Carcinogenicity

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

US. National Toxicology Program (NTP) Report on Carcinogens

Electrolyte (Sulfuric acid) (CAS 7664-93-9) Known To Be Human Carcinogen.
 Lead and lead compounds (inorganic) (CAS 7439-92-1) Reasonably Anticipated to be a 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 (inorganic) (CAS 7439-92-1)	LC50 Rainbow trout, donaldson trout (Oncorhynchus 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. Avoid discharge into water courses or onto the ground. Dispose of this material and its container to hazardous or special waste collection point. Neutralize electrolyte/sulfuric acid.

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

UN number UN2794
UN proper shipping name BATTERIES, WET, FILLED WITH ACID, electric storage
Transport hazard class(es)
Class 8
Subsidiary risk -
Packing group III
Environmental hazards No
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

IATA

UN number UN2794
UN proper shipping name Batteries, wet, filled with acid electric storage
Transport hazard class(es)
Class 8
Subsidiary risk -
Packing group -
Environmental hazards No
ERG Code 8L
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.
Packing Instruction: 870

IMDG

UN number UN2794
UN proper shipping name BATTERIES, WET, FILLED WITH ACID electric storage
Transport hazard class(es)
Class 8
Subsidiary risk -
Packing group -
Environmental hazards
Marine pollutant No
EmS F-A, S-B
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.
Packing Instruction: P801

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

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)

Antimony (CAS 7440-36-0)

Electrolyte (Sulfuric acid) (CAS 7664-93-9)

Precursor Control Regulations

Electrolyte (Sulfuric 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.

1. Identification

Product identifier	Lead Acid Battery Wet, Filled With Acid
Other means of identification	
Synonyms	may include gel/absorbed electrolyte type lead acid batteries
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. 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/supplier for information on recovery/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 (inorganic)	7439-92-1	43 - 70
Electrolyte (Sulfuric acid)	7664-93-9	20 - 44
Antimony	7440-36-0	3 - 5

Composition comments All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.
Content composition concentrations will vary with battery type/size.

4. First-aid measures

Inhalation	Exposure to contents of an open or damaged battery: Move injured person into fresh air and keep person 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. Heavy lead exposure may result in central nervous system damage, encephalopathy and damage to the blood-forming (hematopoietic) tissues.
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	Do NOT use water on live electrical circuits.
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
Antimony (CAS 7440-36-0)	TWA	0.5 mg/m ³	
Electrolyte (Sulfuric acid) (CAS 7664-93-9)	TWA	0.2 mg/m ³	Thoracic fraction.
Lead and lead compounds (inorganic) (CAS 7439-92-1)	TWA	0.05 mg/m ³	

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

Components	Type	Value	Form
Antimony (CAS 7440-36-0)	TWA	0.5 mg/m ³	
Electrolyte (Sulfuric acid) (CAS 7664-93-9)	STEL	3 mg/m ³	
	TWA	1 mg/m ³	
Lead and lead compounds (inorganic) (CAS 7439-92-1)	TWA	0.05 mg/m ³	

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

Components	Type	Value	Form
Antimony (CAS 7440-36-0)	TWA	0.5 mg/m ³	
Electrolyte (Sulfuric acid) (CAS 7664-93-9)	TWA	0.2 mg/m ³	Mist.
Lead and lead compounds (inorganic) (CAS 7439-92-1)	TWA	0.05 mg/m ³	

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

Components	Type	Value	Form
Antimony (CAS 7440-36-0)	TWA	0.5 mg/m ³	
Electrolyte (Sulfuric acid) (CAS 7664-93-9)	TWA	0.2 mg/m ³	Thoracic fraction.
Lead and lead compounds (inorganic) (CAS 7439-92-1)	TWA	0.05 mg/m ³	

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

Components	Type	Value	Form
Antimony (CAS 7440-36-0)	TWA	0.5 mg/m ³	
Electrolyte (Sulfuric acid) (CAS 7664-93-9)	TWA	0.2 mg/m ³	Thoracic fraction.

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

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

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

Components	Type	Value
Antimony (CAS 7440-36-0)	TWA	0.5 mg/m3
Electrolyte (Sulfuric acid) (CAS 7664-93-9)	STEL	3 mg/m3
Lead and lead compounds (inorganic) (CAS 7439-92-1)	TWA	1 mg/m3
	TWA	0.05 mg/m3

Biological limit values

ACGIH Biological Exposure Indices

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: 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

Physical state Solid.

Form Sulfuric acid, liquid. 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	The product is non-reactive under normal conditions of use, storage and transport.
Possibility of hazardous reactions	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. Causes severe respiratory tract irritation.
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
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Electrolyte (Sulfuric acid) (CAS 7664-93-9)

Acute

Oral

LD50	Rat	2140 mg/kg
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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

Canada - Alberta OELs: Irritant

Antimony (CAS 7440-36-0)	Irritant
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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

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

Canada - Alberta OELs: Carcinogen category

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

Canada - Manitoba OELs: carcinogenicity

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

Canada - Quebec OELs: Carcinogen category

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

IARC Monographs. Overall Evaluation of Carcinogenicity

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

US. National Toxicology Program (NTP) Report on Carcinogens

Electrolyte (Sulfuric acid) (CAS 7664-93-9) Known To Be Human Carcinogen.
 Lead and lead compounds (inorganic) (CAS 7439-92-1) Reasonably Anticipated to be a 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 (inorganic) (CAS 7439-92-1)	LC50 Rainbow trout, donaldson trout (Oncorhynchus 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. Avoid discharge into water courses or onto the ground. Dispose of this material and its container to hazardous or special waste collection point. Neutralize electrolyte/sulfuric acid.

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

UN number UN2794
UN proper shipping name BATTERIES, WET, FILLED WITH ACID, electric storage
Transport hazard class(es)
Class 8
Subsidiary risk -
Packing group III
Environmental hazards No
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

IATA

UN number UN2794
UN proper shipping name Batteries, wet, filled with acid electric storage
Transport hazard class(es)
Class 8
Subsidiary risk -
Packing group -
Environmental hazards No
ERG Code 8L
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.
Packing Instruction: 870

IMDG

UN number UN2794
UN proper shipping name BATTERIES, WET, FILLED WITH ACID electric storage
Transport hazard class(es)
Class 8
Subsidiary risk -
Packing group -
Environmental hazards
Marine pollutant No
EmS F-A, S-B
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.
Packing Instruction: P801

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

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)

Antimony (CAS 7440-36-0)

Electrolyte (Sulfuric acid) (CAS 7664-93-9)

Precursor Control Regulations

Electrolyte (Sulfuric 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.

1. Identification

Product identifier	Lead Acid Battery Wet, Filled With Acid
Other means of identification	
Synonyms	may include gel/absorbed electrolyte type lead acid batteries
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
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. 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/supplier for information on recovery/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 (inorganic)	7439-92-1	43 - 70
Electrolyte (Sulfuric acid)	7664-93-9	20 - 44
Antimony	7440-36-0	3 - 5

Composition comments All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.
Content composition concentrations will vary with battery type/size.

4. First-aid measures

Inhalation	Exposure to contents of an open or damaged battery: Move injured person into fresh air and keep person 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. Heavy lead exposure may result in central nervous system damage, encephalopathy and damage to the blood-forming (hematopoietic) tissues.
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	Do NOT use water on live electrical circuits.
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
Antimony (CAS 7440-36-0)	TWA	0.5 mg/m ³	
Electrolyte (Sulfuric acid) (CAS 7664-93-9)	TWA	0.2 mg/m ³	Thoracic fraction.
Lead and lead compounds (inorganic) (CAS 7439-92-1)	TWA	0.05 mg/m ³	

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

Components	Type	Value	Form
Antimony (CAS 7440-36-0)	TWA	0.5 mg/m ³	
Electrolyte (Sulfuric acid) (CAS 7664-93-9)	STEL	3 mg/m ³	
	TWA	1 mg/m ³	
Lead and lead compounds (inorganic) (CAS 7439-92-1)	TWA	0.05 mg/m ³	

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

Components	Type	Value	Form
Antimony (CAS 7440-36-0)	TWA	0.5 mg/m ³	
Electrolyte (Sulfuric acid) (CAS 7664-93-9)	TWA	0.2 mg/m ³	Mist.
Lead and lead compounds (inorganic) (CAS 7439-92-1)	TWA	0.05 mg/m ³	

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

Components	Type	Value	Form
Antimony (CAS 7440-36-0)	TWA	0.5 mg/m ³	
Electrolyte (Sulfuric acid) (CAS 7664-93-9)	TWA	0.2 mg/m ³	Thoracic fraction.
Lead and lead compounds (inorganic) (CAS 7439-92-1)	TWA	0.05 mg/m ³	

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

Components	Type	Value	Form
Antimony (CAS 7440-36-0)	TWA	0.5 mg/m ³	
Electrolyte (Sulfuric acid) (CAS 7664-93-9)	TWA	0.2 mg/m ³	Thoracic fraction.

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

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

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

Components	Type	Value
Antimony (CAS 7440-36-0)	TWA	0.5 mg/m3
Electrolyte (Sulfuric acid) (CAS 7664-93-9)	STEL	3 mg/m3
	TWA	1 mg/m3
Lead and lead compounds (inorganic) (CAS 7439-92-1)	TWA	0.05 mg/m3

Biological limit values

ACGIH Biological Exposure Indices

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: 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

Physical state Solid.

Form Sulfuric acid, liquid. 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	The product is non-reactive under normal conditions of use, storage and transport.
Possibility of hazardous reactions	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. Causes severe respiratory tract irritation.
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
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Electrolyte (Sulfuric acid) (CAS 7664-93-9)

Acute

Oral

LD50	Rat	2140 mg/kg
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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

Canada - Alberta OELs: Irritant

Antimony (CAS 7440-36-0)	Irritant
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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

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

Canada - Alberta OELs: Carcinogen category

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

Canada - Manitoba OELs: carcinogenicity

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

Canada - Quebec OELs: Carcinogen category

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

IARC Monographs. Overall Evaluation of Carcinogenicity

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

US. National Toxicology Program (NTP) Report on Carcinogens

Electrolyte (Sulfuric acid) (CAS 7664-93-9) Known To Be Human Carcinogen.
 Lead and lead compounds (inorganic) (CAS 7439-92-1) Reasonably Anticipated to be a 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 (inorganic) (CAS 7439-92-1)	LC50 Rainbow trout, donaldson trout (Oncorhynchus 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. Avoid discharge into water courses or onto the ground. Dispose of this material and its container to hazardous or special waste collection point. Neutralize electrolyte/sulfuric acid.

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

UN number UN2794
UN proper shipping name BATTERIES, WET, FILLED WITH ACID, electric storage
Transport hazard class(es)
Class 8
Subsidiary risk -
Packing group III
Environmental hazards No
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

IATA

UN number UN2794
UN proper shipping name Batteries, wet, filled with acid electric storage
Transport hazard class(es)
Class 8
Subsidiary risk -
Packing group -
Environmental hazards No
ERG Code 8L
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.
Packing Instruction: 870

IMDG

UN number UN2794
UN proper shipping name BATTERIES, WET, FILLED WITH ACID electric storage
Transport hazard class(es)
Class 8
Subsidiary risk -
Packing group -
Environmental hazards
Marine pollutant No
EmS F-A, S-B
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.
Packing Instruction: P801

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

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)

Antimony (CAS 7440-36-0)

Electrolyte (Sulfuric acid) (CAS 7664-93-9)

Precursor Control Regulations

Electrolyte (Sulfuric 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.

1. Identification

Product identifier	Lead Acid Battery Wet, Filled With Acid
Other means of identification	
Synonyms	may include gel/absorbed electrolyte type lead acid batteries
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. 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/supplier for information on recovery/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 (inorganic)	7439-92-1	43 - 70
Electrolyte (Sulfuric acid)	7664-93-9	20 - 44
Antimony	7440-36-0	3 - 5

Composition comments All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.
Content composition concentrations will vary with battery type/size.

4. First-aid measures

Inhalation	Exposure to contents of an open or damaged battery: Move injured person into fresh air and keep person 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. Heavy lead exposure may result in central nervous system damage, encephalopathy and damage to the blood-forming (hematopoietic) tissues.
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	Do NOT use water on live electrical circuits.
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
Antimony (CAS 7440-36-0)	TWA	0.5 mg/m ³	
Electrolyte (Sulfuric acid) (CAS 7664-93-9)	TWA	0.2 mg/m ³	Thoracic fraction.
Lead and lead compounds (inorganic) (CAS 7439-92-1)	TWA	0.05 mg/m ³	

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

Components	Type	Value	Form
Antimony (CAS 7440-36-0)	TWA	0.5 mg/m ³	
Electrolyte (Sulfuric acid) (CAS 7664-93-9)	STEL	3 mg/m ³	
	TWA	1 mg/m ³	
Lead and lead compounds (inorganic) (CAS 7439-92-1)	TWA	0.05 mg/m ³	

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

Components	Type	Value	Form
Antimony (CAS 7440-36-0)	TWA	0.5 mg/m ³	
Electrolyte (Sulfuric acid) (CAS 7664-93-9)	TWA	0.2 mg/m ³	Mist.
Lead and lead compounds (inorganic) (CAS 7439-92-1)	TWA	0.05 mg/m ³	

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

Components	Type	Value	Form
Antimony (CAS 7440-36-0)	TWA	0.5 mg/m ³	
Electrolyte (Sulfuric acid) (CAS 7664-93-9)	TWA	0.2 mg/m ³	Thoracic fraction.
Lead and lead compounds (inorganic) (CAS 7439-92-1)	TWA	0.05 mg/m ³	

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

Components	Type	Value	Form
Antimony (CAS 7440-36-0)	TWA	0.5 mg/m ³	
Electrolyte (Sulfuric acid) (CAS 7664-93-9)	TWA	0.2 mg/m ³	Thoracic fraction.

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

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

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

Components	Type	Value
Antimony (CAS 7440-36-0)	TWA	0.5 mg/m3
Electrolyte (Sulfuric acid) (CAS 7664-93-9)	STEL	3 mg/m3
Lead and lead compounds (inorganic) (CAS 7439-92-1)	TWA	1 mg/m3
	TWA	0.05 mg/m3

Biological limit values

ACGIH Biological Exposure Indices

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: 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

Physical state Solid.

Form Sulfuric acid, liquid. 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	The product is non-reactive under normal conditions of use, storage and transport.
Possibility of hazardous reactions	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. Causes severe respiratory tract irritation.
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
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Electrolyte (Sulfuric acid) (CAS 7664-93-9)

Acute

Oral

LD50	Rat	2140 mg/kg
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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

Canada - Alberta OELs: Irritant

Antimony (CAS 7440-36-0)	Irritant
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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

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

Canada - Alberta OELs: Carcinogen category

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

Canada - Manitoba OELs: carcinogenicity

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

Canada - Quebec OELs: Carcinogen category

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

IARC Monographs. Overall Evaluation of Carcinogenicity

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

US. National Toxicology Program (NTP) Report on Carcinogens

Electrolyte (Sulfuric acid) (CAS 7664-93-9) Known To Be Human Carcinogen.
 Lead and lead compounds (inorganic) (CAS 7439-92-1) Reasonably Anticipated to be a 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 (inorganic) (CAS 7439-92-1)	LC50 Rainbow trout, donaldson trout (Oncorhynchus 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. Avoid discharge into water courses or onto the ground. Dispose of this material and its container to hazardous or special waste collection point. Neutralize electrolyte/sulfuric acid.

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

UN number UN2794
UN proper shipping name BATTERIES, WET, FILLED WITH ACID, electric storage
Transport hazard class(es)
Class 8
Subsidiary risk -
Packing group III
Environmental hazards No
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

IATA

UN number UN2794
UN proper shipping name Batteries, wet, filled with acid electric storage
Transport hazard class(es)
Class 8
Subsidiary risk -
Packing group -
Environmental hazards No
ERG Code 8L
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.
Packing Instruction: 870

IMDG

UN number UN2794
UN proper shipping name BATTERIES, WET, FILLED WITH ACID electric storage
Transport hazard class(es)
Class 8
Subsidiary risk -
Packing group -
Environmental hazards
Marine pollutant No
EmS F-A, S-B
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.
Packing Instruction: P801

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

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)

Antimony (CAS 7440-36-0)

Electrolyte (Sulfuric acid) (CAS 7664-93-9)

Precursor Control Regulations

Electrolyte (Sulfuric 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.

1. Identification

Product identifier	Lead Acid Battery Wet, Filled With Acid
Other means of identification	
Synonyms	may include gel/absorbed electrolyte type lead acid batteries
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. 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/supplier for information on recovery/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 (inorganic)	7439-92-1	43 - 70
Electrolyte (Sulfuric acid)	7664-93-9	20 - 44
Antimony	7440-36-0	3 - 5

Composition comments All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.
Content composition concentrations will vary with battery type/size.

4. First-aid measures

Inhalation	Exposure to contents of an open or damaged battery: Move injured person into fresh air and keep person 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. Heavy lead exposure may result in central nervous system damage, encephalopathy and damage to the blood-forming (hematopoietic) tissues.
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	Do NOT use water on live electrical circuits.
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
Antimony (CAS 7440-36-0)	TWA	0.5 mg/m ³	
Electrolyte (Sulfuric acid) (CAS 7664-93-9)	TWA	0.2 mg/m ³	Thoracic fraction.
Lead and lead compounds (inorganic) (CAS 7439-92-1)	TWA	0.05 mg/m ³	

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

Components	Type	Value	Form
Antimony (CAS 7440-36-0)	TWA	0.5 mg/m ³	
Electrolyte (Sulfuric acid) (CAS 7664-93-9)	STEL	3 mg/m ³	
	TWA	1 mg/m ³	
Lead and lead compounds (inorganic) (CAS 7439-92-1)	TWA	0.05 mg/m ³	

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

Components	Type	Value	Form
Antimony (CAS 7440-36-0)	TWA	0.5 mg/m ³	
Electrolyte (Sulfuric acid) (CAS 7664-93-9)	TWA	0.2 mg/m ³	Mist.
Lead and lead compounds (inorganic) (CAS 7439-92-1)	TWA	0.05 mg/m ³	

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

Components	Type	Value	Form
Antimony (CAS 7440-36-0)	TWA	0.5 mg/m ³	
Electrolyte (Sulfuric acid) (CAS 7664-93-9)	TWA	0.2 mg/m ³	Thoracic fraction.
Lead and lead compounds (inorganic) (CAS 7439-92-1)	TWA	0.05 mg/m ³	

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

Components	Type	Value	Form
Antimony (CAS 7440-36-0)	TWA	0.5 mg/m ³	
Electrolyte (Sulfuric acid) (CAS 7664-93-9)	TWA	0.2 mg/m ³	Thoracic fraction.

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

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

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

Components	Type	Value
Antimony (CAS 7440-36-0)	TWA	0.5 mg/m3
Electrolyte (Sulfuric acid) (CAS 7664-93-9)	STEL	3 mg/m3
Lead and lead compounds (inorganic) (CAS 7439-92-1)	TWA	1 mg/m3
	TWA	0.05 mg/m3

Biological limit values

ACGIH Biological Exposure Indices

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: 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

Physical state Solid.

Form Sulfuric acid, liquid. 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	The product is non-reactive under normal conditions of use, storage and transport.
Possibility of hazardous reactions	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. Causes severe respiratory tract irritation.
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
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Electrolyte (Sulfuric acid) (CAS 7664-93-9)

Acute

Oral

LD50	Rat	2140 mg/kg
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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

Canada - Alberta OELs: Irritant

Antimony (CAS 7440-36-0)	Irritant
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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

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

Canada - Alberta OELs: Carcinogen category

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

Canada - Manitoba OELs: carcinogenicity

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

Canada - Quebec OELs: Carcinogen category

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

IARC Monographs. Overall Evaluation of Carcinogenicity

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

US. National Toxicology Program (NTP) Report on Carcinogens

Electrolyte (Sulfuric acid) (CAS 7664-93-9) Known To Be Human Carcinogen.
 Lead and lead compounds (inorganic) (CAS 7439-92-1) Reasonably Anticipated to be a 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 (inorganic) (CAS 7439-92-1)	LC50	1.17 mg/l, 96 Hours
	Rainbow trout, donaldson trout (Oncorhynchus mykiss)	

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. Avoid discharge into water courses or onto the ground. Dispose of this material and its container to hazardous or special waste collection point. Neutralize electrolyte/sulfuric acid.

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

UN number UN2794
UN proper shipping name BATTERIES, WET, FILLED WITH ACID, electric storage
Transport hazard class(es)
Class 8
Subsidiary risk -
Packing group III
Environmental hazards No
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

IATA

UN number UN2794
UN proper shipping name Batteries, wet, filled with acid electric storage
Transport hazard class(es)
Class 8
Subsidiary risk -
Packing group -
Environmental hazards No
ERG Code 8L
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.
Packing Instruction: 870

IMDG

UN number UN2794
UN proper shipping name BATTERIES, WET, FILLED WITH ACID electric storage
Transport hazard class(es)
Class 8
Subsidiary risk -
Packing group -
Environmental hazards
Marine pollutant No
EmS F-A, S-B
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.
Packing Instruction: P801

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

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)

Antimony (CAS 7440-36-0)

Electrolyte (Sulfuric acid) (CAS 7664-93-9)

Precursor Control Regulations

Electrolyte (Sulfuric 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.

1. Identification

Product identifier	Lead Acid Battery Wet, Filled With Acid
Other means of identification	
Synonyms	may include gel/absorbed electrolyte type lead acid batteries
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. 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/supplier for information on recovery/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 (inorganic)	7439-92-1	43 - 70
Electrolyte (Sulfuric acid)	7664-93-9	20 - 44
Antimony	7440-36-0	3 - 5

Composition comments All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.
Content composition concentrations will vary with battery type/size.

4. First-aid measures

Inhalation	Exposure to contents of an open or damaged battery: Move injured person into fresh air and keep person 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. Heavy lead exposure may result in central nervous system damage, encephalopathy and damage to the blood-forming (hematopoietic) tissues.
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	Do NOT use water on live electrical circuits.
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
Antimony (CAS 7440-36-0)	TWA	0.5 mg/m ³	
Electrolyte (Sulfuric acid) (CAS 7664-93-9)	TWA	0.2 mg/m ³	Thoracic fraction.
Lead and lead compounds (inorganic) (CAS 7439-92-1)	TWA	0.05 mg/m ³	

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

Components	Type	Value	Form
Antimony (CAS 7440-36-0)	TWA	0.5 mg/m ³	
Electrolyte (Sulfuric acid) (CAS 7664-93-9)	STEL	3 mg/m ³	
	TWA	1 mg/m ³	
Lead and lead compounds (inorganic) (CAS 7439-92-1)	TWA	0.05 mg/m ³	

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

Components	Type	Value	Form
Antimony (CAS 7440-36-0)	TWA	0.5 mg/m ³	
Electrolyte (Sulfuric acid) (CAS 7664-93-9)	TWA	0.2 mg/m ³	Mist.
Lead and lead compounds (inorganic) (CAS 7439-92-1)	TWA	0.05 mg/m ³	

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

Components	Type	Value	Form
Antimony (CAS 7440-36-0)	TWA	0.5 mg/m ³	
Electrolyte (Sulfuric acid) (CAS 7664-93-9)	TWA	0.2 mg/m ³	Thoracic fraction.
Lead and lead compounds (inorganic) (CAS 7439-92-1)	TWA	0.05 mg/m ³	

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

Components	Type	Value	Form
Antimony (CAS 7440-36-0)	TWA	0.5 mg/m ³	
Electrolyte (Sulfuric acid) (CAS 7664-93-9)	TWA	0.2 mg/m ³	Thoracic fraction.

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

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

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

Components	Type	Value
Antimony (CAS 7440-36-0)	TWA	0.5 mg/m3
Electrolyte (Sulfuric acid) (CAS 7664-93-9)	STEL	3 mg/m3
Lead and lead compounds (inorganic) (CAS 7439-92-1)	TWA	1 mg/m3
	TWA	0.05 mg/m3

Biological limit values

ACGIH Biological Exposure Indices

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: 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

Physical state Solid.

Form Sulfuric acid, liquid. 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	The product is non-reactive under normal conditions of use, storage and transport.
Possibility of hazardous reactions	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. Causes severe respiratory tract irritation.
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
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Electrolyte (Sulfuric acid) (CAS 7664-93-9)

Acute

Oral

LD50	Rat	2140 mg/kg
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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

Canada - Alberta OELs: Irritant

Antimony (CAS 7440-36-0)	Irritant
--------------------------	----------

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

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

Canada - Alberta OELs: Carcinogen category

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

Canada - Manitoba OELs: carcinogenicity

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

Canada - Quebec OELs: Carcinogen category

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

IARC Monographs. Overall Evaluation of Carcinogenicity

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

US. National Toxicology Program (NTP) Report on Carcinogens

Electrolyte (Sulfuric acid) (CAS 7664-93-9) Known To Be Human Carcinogen.
 Lead and lead compounds (inorganic) (CAS 7439-92-1) Reasonably Anticipated to be a 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 (inorganic) (CAS 7439-92-1)	LC50	1.17 mg/l, 96 Hours
	Rainbow trout, donaldson trout (Oncorhynchus mykiss)	

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. Avoid discharge into water courses or onto the ground. Dispose of this material and its container to hazardous or special waste collection point. Neutralize electrolyte/sulfuric acid.

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

UN number UN2794
UN proper shipping name BATTERIES, WET, FILLED WITH ACID, electric storage
Transport hazard class(es)
Class 8
Subsidiary risk -
Packing group III
Environmental hazards No
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

IATA

UN number UN2794
UN proper shipping name Batteries, wet, filled with acid electric storage
Transport hazard class(es)
Class 8
Subsidiary risk -
Packing group -
Environmental hazards No
ERG Code 8L
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.
Packing Instruction: 870

IMDG

UN number UN2794
UN proper shipping name BATTERIES, WET, FILLED WITH ACID electric storage
Transport hazard class(es)
Class 8
Subsidiary risk -
Packing group -
Environmental hazards
Marine pollutant No
EmS F-A, S-B
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.
Packing Instruction: P801

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

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)

Antimony (CAS 7440-36-0)

Electrolyte (Sulfuric acid) (CAS 7664-93-9)

Precursor Control Regulations

Electrolyte (Sulfuric 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.

1. Identification

Product identifier Lead Acid Battery Wet, Filled With Acid

Other means of identification

 Synonyms may include gel/absorbed electrolyte type lead acid batteries

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. 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/supplier for information on recovery/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 (inorganic)	7439-92-1	43 - 70
Electrolyte (Sulfuric acid)	7664-93-9	20 - 44
Antimony	7440-36-0	3 - 5

Composition comments All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.
Content composition concentrations will vary with battery type/size.

4. First-aid measures

Inhalation	Exposure to contents of an open or damaged battery: Move injured person into fresh air and keep person 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. Heavy lead exposure may result in central nervous system damage, encephalopathy and damage to the blood-forming (hematopoietic) tissues.
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	Do NOT use water on live electrical circuits.
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
Antimony (CAS 7440-36-0)	TWA	0.5 mg/m ³	
Electrolyte (Sulfuric acid) (CAS 7664-93-9)	TWA	0.2 mg/m ³	Thoracic fraction.
Lead and lead compounds (inorganic) (CAS 7439-92-1)	TWA	0.05 mg/m ³	

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

Components	Type	Value	Form
Antimony (CAS 7440-36-0)	TWA	0.5 mg/m ³	
Electrolyte (Sulfuric acid) (CAS 7664-93-9)	STEL	3 mg/m ³	
	TWA	1 mg/m ³	
Lead and lead compounds (inorganic) (CAS 7439-92-1)	TWA	0.05 mg/m ³	

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

Components	Type	Value	Form
Antimony (CAS 7440-36-0)	TWA	0.5 mg/m ³	
Electrolyte (Sulfuric acid) (CAS 7664-93-9)	TWA	0.2 mg/m ³	Mist.
Lead and lead compounds (inorganic) (CAS 7439-92-1)	TWA	0.05 mg/m ³	

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

Components	Type	Value	Form
Antimony (CAS 7440-36-0)	TWA	0.5 mg/m ³	
Electrolyte (Sulfuric acid) (CAS 7664-93-9)	TWA	0.2 mg/m ³	Thoracic fraction.
Lead and lead compounds (inorganic) (CAS 7439-92-1)	TWA	0.05 mg/m ³	

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

Components	Type	Value	Form
Antimony (CAS 7440-36-0)	TWA	0.5 mg/m ³	
Electrolyte (Sulfuric acid) (CAS 7664-93-9)	TWA	0.2 mg/m ³	Thoracic fraction.

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

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

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

Components	Type	Value
Antimony (CAS 7440-36-0)	TWA	0.5 mg/m3
Electrolyte (Sulfuric acid) (CAS 7664-93-9)	STEL	3 mg/m3
Lead and lead compounds (inorganic) (CAS 7439-92-1)	TWA	1 mg/m3
	TWA	0.05 mg/m3

Biological limit values

ACGIH Biological Exposure Indices

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: 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	
Physical state	Solid.
Form	Sulfuric acid, liquid. 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	The product is non-reactive under normal conditions of use, storage and transport.
Possibility of hazardous reactions	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. Causes severe respiratory tract irritation.
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
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Electrolyte (Sulfuric acid) (CAS 7664-93-9)

Acute

Oral

LD50	Rat	2140 mg/kg
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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

Canada - Alberta OELs: Irritant

Antimony (CAS 7440-36-0)	Irritant
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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

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

Canada - Alberta OELs: Carcinogen category

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

Canada - Manitoba OELs: carcinogenicity

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

Canada - Quebec OELs: Carcinogen category

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

IARC Monographs. Overall Evaluation of Carcinogenicity

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

US. National Toxicology Program (NTP) Report on Carcinogens

Electrolyte (Sulfuric acid) (CAS 7664-93-9) Known To Be Human Carcinogen.
 Lead and lead compounds (inorganic) (CAS 7439-92-1) Reasonably Anticipated to be a 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 (inorganic) (CAS 7439-92-1)	LC50 Rainbow trout, donaldson trout (Oncorhynchus 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. Avoid discharge into water courses or onto the ground. Dispose of this material and its container to hazardous or special waste collection point. Neutralize electrolyte/sulfuric acid.

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

UN number UN2794
UN proper shipping name BATTERIES, WET, FILLED WITH ACID, electric storage
Transport hazard class(es)
Class 8
Subsidiary risk -
Packing group III
Environmental hazards No
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

IATA

UN number UN2794
UN proper shipping name Batteries, wet, filled with acid electric storage
Transport hazard class(es)
Class 8
Subsidiary risk -
Packing group -
Environmental hazards No
ERG Code 8L
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.
Packing Instruction: 870

IMDG

UN number UN2794
UN proper shipping name BATTERIES, WET, FILLED WITH ACID electric storage
Transport hazard class(es)
Class 8
Subsidiary risk -
Packing group -
Environmental hazards
Marine pollutant No
EmS F-A, S-B
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.
Packing Instruction: P801

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

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)

Antimony (CAS 7440-36-0)

Electrolyte (Sulfuric acid) (CAS 7664-93-9)

Precursor Control Regulations

Electrolyte (Sulfuric 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.