

# 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 <sup>3</sup>	US. ACGIH Threshold Limit Values
		(Mist)	5 mg/m <sup>3</sup>	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 <sup>3</sup> (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 <sup>2</sup> /s (40.0 °C / 104.0 °F) Method: Unspecified
	10.42 mm <sup>2</sup> /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).

<b>IARC</b>	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.
<b>ACGIH</b>	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.
<b>OSHA</b>	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.
<b>NTP</b>	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.

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## 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.

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## 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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This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

## 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 <sup>3</sup>	
Electrolyte (Sulfuric acid) (CAS 7664-93-9)	TWA	0.2 mg/m <sup>3</sup>	Thoracic fraction.
Lead and lead compounds (inorganic) (CAS 7439-92-1)	TWA	0.05 mg/m <sup>3</sup>	

#### 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 <sup>3</sup>	
Electrolyte (Sulfuric acid) (CAS 7664-93-9)	STEL	3 mg/m <sup>3</sup>	
	TWA	1 mg/m <sup>3</sup>	
Lead and lead compounds (inorganic) (CAS 7439-92-1)	TWA	0.05 mg/m <sup>3</sup>	

#### 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 <sup>3</sup>	
Electrolyte (Sulfuric acid) (CAS 7664-93-9)	TWA	0.2 mg/m <sup>3</sup>	Mist.
Lead and lead compounds (inorganic) (CAS 7439-92-1)	TWA	0.05 mg/m <sup>3</sup>	

#### 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 <sup>3</sup>	
Electrolyte (Sulfuric acid) (CAS 7664-93-9)	TWA	0.2 mg/m <sup>3</sup>	Thoracic fraction.
Lead and lead compounds (inorganic) (CAS 7439-92-1)	TWA	0.05 mg/m <sup>3</sup>	

#### 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 <sup>3</sup>	
Electrolyte (Sulfuric acid) (CAS 7664-93-9)	TWA	0.2 mg/m <sup>3</sup>	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
------------	---------	--------------

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 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 <sup>3</sup>	
Electrolyte (Sulfuric acid) (CAS 7664-93-9)	TWA	0.2 mg/m <sup>3</sup>	Thoracic fraction.
Lead and lead compounds (inorganic) (CAS 7439-92-1)	TWA	0.05 mg/m <sup>3</sup>	

#### 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 <sup>3</sup>	
Electrolyte (Sulfuric acid) (CAS 7664-93-9)	STEL	3 mg/m <sup>3</sup>	
	TWA	1 mg/m <sup>3</sup>	
Lead and lead compounds (inorganic) (CAS 7439-92-1)	TWA	0.05 mg/m <sup>3</sup>	

#### 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 <sup>3</sup>	
Electrolyte (Sulfuric acid) (CAS 7664-93-9)	TWA	0.2 mg/m <sup>3</sup>	Mist.
Lead and lead compounds (inorganic) (CAS 7439-92-1)	TWA	0.05 mg/m <sup>3</sup>	

#### 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 <sup>3</sup>	
Electrolyte (Sulfuric acid) (CAS 7664-93-9)	TWA	0.2 mg/m <sup>3</sup>	Thoracic fraction.
Lead and lead compounds (inorganic) (CAS 7439-92-1)	TWA	0.05 mg/m <sup>3</sup>	

#### 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 <sup>3</sup>	
Electrolyte (Sulfuric acid) (CAS 7664-93-9)	TWA	0.2 mg/m <sup>3</sup>	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
------------	---------	--------------

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 <sup>3</sup>	
Electrolyte (Sulfuric acid) (CAS 7664-93-9)	TWA	0.2 mg/m <sup>3</sup>	Thoracic fraction.
Lead and lead compounds (inorganic) (CAS 7439-92-1)	TWA	0.05 mg/m <sup>3</sup>	

#### 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 <sup>3</sup>	
Electrolyte (Sulfuric acid) (CAS 7664-93-9)	STEL	3 mg/m <sup>3</sup>	
	TWA	1 mg/m <sup>3</sup>	
Lead and lead compounds (inorganic) (CAS 7439-92-1)	TWA	0.05 mg/m <sup>3</sup>	

#### 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 <sup>3</sup>	
Electrolyte (Sulfuric acid) (CAS 7664-93-9)	TWA	0.2 mg/m <sup>3</sup>	Mist.
Lead and lead compounds (inorganic) (CAS 7439-92-1)	TWA	0.05 mg/m <sup>3</sup>	

#### 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 <sup>3</sup>	
Electrolyte (Sulfuric acid) (CAS 7664-93-9)	TWA	0.2 mg/m <sup>3</sup>	Thoracic fraction.
Lead and lead compounds (inorganic) (CAS 7439-92-1)	TWA	0.05 mg/m <sup>3</sup>	

#### 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 <sup>3</sup>	
Electrolyte (Sulfuric acid) (CAS 7664-93-9)	TWA	0.2 mg/m <sup>3</sup>	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
------------	---------	--------------

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

#### Acute

Oral

LD50	Rat	2140 mg/kg
------	-----	------------

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

Serious eye damage/eye irritation  
Exposure to contents of an open or damaged battery: Causes serious eye damage.

### Respiratory or skin sensitisation

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 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.





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 <sup>3</sup>	
Electrolyte (Sulfuric acid) (CAS 7664-93-9)	TWA	0.2 mg/m <sup>3</sup>	Thoracic fraction.
Lead and lead compounds (inorganic) (CAS 7439-92-1)	TWA	0.05 mg/m <sup>3</sup>	

#### 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 <sup>3</sup>	
Electrolyte (Sulfuric acid) (CAS 7664-93-9)	STEL	3 mg/m <sup>3</sup>	
	TWA	1 mg/m <sup>3</sup>	
Lead and lead compounds (inorganic) (CAS 7439-92-1)	TWA	0.05 mg/m <sup>3</sup>	

#### 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 <sup>3</sup>	
Electrolyte (Sulfuric acid) (CAS 7664-93-9)	TWA	0.2 mg/m <sup>3</sup>	Mist.
Lead and lead compounds (inorganic) (CAS 7439-92-1)	TWA	0.05 mg/m <sup>3</sup>	

#### 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 <sup>3</sup>	
Electrolyte (Sulfuric acid) (CAS 7664-93-9)	TWA	0.2 mg/m <sup>3</sup>	Thoracic fraction.
Lead and lead compounds (inorganic) (CAS 7439-92-1)	TWA	0.05 mg/m <sup>3</sup>	

#### 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 <sup>3</sup>	
Electrolyte (Sulfuric acid) (CAS 7664-93-9)	TWA	0.2 mg/m <sup>3</sup>	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.

<b>Carcinogenicity</b>	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.	
<b>ACGIH Carcinogens</b>		
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.
<b>Canada - Alberta OELs: Carcinogen category</b>		
Electrolyte (Sulfuric acid) (CAS 7664-93-9)		Suspected human carcinogen.
<b>Canada - Manitoba OELs: carcinogenicity</b>		
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.
<b>Canada - Quebec OELs: Carcinogen category</b>		
Lead and lead compounds (inorganic) (CAS 7439-92-1)		Detected carcinogenic effect in animals.
<b>IARC Monographs. Overall Evaluation of Carcinogenicity</b>		
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.
<b>US. National Toxicology Program (NTP) Report on Carcinogens</b>		
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.
<b>Reproductive toxicity</b>	None under normal conditions. Exposure to contents of an open or damaged battery: May damage fertility or the unborn child.	
<b>Specific target organ toxicity - single exposure</b>	None under normal conditions. Exposure to contents of an open or damaged battery: Causes damage to organs (respiratory system).	
<b>Specific target organ toxicity - repeated exposure</b>	None under normal conditions. Exposure to contents of an open or damaged battery: Causes damage to organs through prolonged or repeated exposure: Respiratory system.	
<b>Aspiration hazard</b>	Due to the physical form of the product it is not an aspiration hazard.	
<b>Chronic effects</b>	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

<b>Ecotoxicity</b>	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.
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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
<b>Persistence and degradability</b>	The degradation half-life of the product is not known. Lead and its compounds are highly persistent in water.	
<b>Bioaccumulative potential</b>	Bioaccumulation of lead occurs in aquatic and terrestrial animals and plants, but very little bioaccumulation occurs through the food chain.	
<b>Mobility in soil</b>	If the product enters soil, one or more constituents will or may be mobile and may contaminate groundwater.	
<b>Mobility in general</b>	The product is insoluble in water and will spread on the water surface.	
<b>Other adverse effects</b>	None known.	

## 13. Disposal considerations

<b>Disposal instructions</b>	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.
<b>Local disposal regulations</b>	Empty containers should be taken to an approved waste handling site for recycling or disposal.
<b>Hazardous waste code</b>	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 <sup>3</sup>	
Electrolyte (Sulfuric acid) (CAS 7664-93-9)	TWA	0.2 mg/m <sup>3</sup>	Thoracic fraction.
Lead and lead compounds (inorganic) (CAS 7439-92-1)	TWA	0.05 mg/m <sup>3</sup>	

#### 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 <sup>3</sup>	
Electrolyte (Sulfuric acid) (CAS 7664-93-9)	STEL	3 mg/m <sup>3</sup>	
	TWA	1 mg/m <sup>3</sup>	
Lead and lead compounds (inorganic) (CAS 7439-92-1)	TWA	0.05 mg/m <sup>3</sup>	

#### 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 <sup>3</sup>	
Electrolyte (Sulfuric acid) (CAS 7664-93-9)	TWA	0.2 mg/m <sup>3</sup>	Mist.
Lead and lead compounds (inorganic) (CAS 7439-92-1)	TWA	0.05 mg/m <sup>3</sup>	

#### 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 <sup>3</sup>	
Electrolyte (Sulfuric acid) (CAS 7664-93-9)	TWA	0.2 mg/m <sup>3</sup>	Thoracic fraction.
Lead and lead compounds (inorganic) (CAS 7439-92-1)	TWA	0.05 mg/m <sup>3</sup>	

#### 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 <sup>3</sup>	
Electrolyte (Sulfuric acid) (CAS 7664-93-9)	TWA	0.2 mg/m <sup>3</sup>	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.
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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 <sup>3</sup>	
Electrolyte (Sulfuric acid) (CAS 7664-93-9)	TWA	0.2 mg/m <sup>3</sup>	Thoracic fraction.
Lead and lead compounds (inorganic) (CAS 7439-92-1)	TWA	0.05 mg/m <sup>3</sup>	

#### 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 <sup>3</sup>	
Electrolyte (Sulfuric acid) (CAS 7664-93-9)	STEL	3 mg/m <sup>3</sup>	
	TWA	1 mg/m <sup>3</sup>	
Lead and lead compounds (inorganic) (CAS 7439-92-1)	TWA	0.05 mg/m <sup>3</sup>	

#### 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 <sup>3</sup>	
Electrolyte (Sulfuric acid) (CAS 7664-93-9)	TWA	0.2 mg/m <sup>3</sup>	Mist.
Lead and lead compounds (inorganic) (CAS 7439-92-1)	TWA	0.05 mg/m <sup>3</sup>	

#### 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 <sup>3</sup>	
Electrolyte (Sulfuric acid) (CAS 7664-93-9)	TWA	0.2 mg/m <sup>3</sup>	Thoracic fraction.
Lead and lead compounds (inorganic) (CAS 7439-92-1)	TWA	0.05 mg/m <sup>3</sup>	

#### 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 <sup>3</sup>	
Electrolyte (Sulfuric acid) (CAS 7664-93-9)	TWA	0.2 mg/m <sup>3</sup>	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.

<b>Carcinogenicity</b>	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.	
<b>ACGIH Carcinogens</b>		
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.
<b>Canada - Alberta OELs: Carcinogen category</b>		
Electrolyte (Sulfuric acid) (CAS 7664-93-9)		Suspected human carcinogen.
<b>Canada - Manitoba OELs: carcinogenicity</b>		
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.
<b>Canada - Quebec OELs: Carcinogen category</b>		
Lead and lead compounds (inorganic) (CAS 7439-92-1)		Detected carcinogenic effect in animals.
<b>IARC Monographs. Overall Evaluation of Carcinogenicity</b>		
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.
<b>US. National Toxicology Program (NTP) Report on Carcinogens</b>		
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.
<b>Reproductive toxicity</b>	None under normal conditions. Exposure to contents of an open or damaged battery: May damage fertility or the unborn child.	
<b>Specific target organ toxicity - single exposure</b>	None under normal conditions. Exposure to contents of an open or damaged battery: Causes damage to organs (respiratory system).	
<b>Specific target organ toxicity - repeated exposure</b>	None under normal conditions. Exposure to contents of an open or damaged battery: Causes damage to organs through prolonged or repeated exposure: Respiratory system.	
<b>Aspiration hazard</b>	Due to the physical form of the product it is not an aspiration hazard.	
<b>Chronic effects</b>	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

<b>Ecotoxicity</b>	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.
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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
<b>Persistence and degradability</b>	The degradation half-life of the product is not known. Lead and its compounds are highly persistent in water.	
<b>Bioaccumulative potential</b>	Bioaccumulation of lead occurs in aquatic and terrestrial animals and plants, but very little bioaccumulation occurs through the food chain.	
<b>Mobility in soil</b>	If the product enters soil, one or more constituents will or may be mobile and may contaminate groundwater.	
<b>Mobility in general</b>	The product is insoluble in water and will spread on the water surface.	
<b>Other adverse effects</b>	None known.	

## 13. Disposal considerations

<b>Disposal instructions</b>	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.
<b>Local disposal regulations</b>	Empty containers should be taken to an approved waste handling site for recycling or disposal.
<b>Hazardous waste code</b>	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.



# US - OSHA SAFETY DATA SHEET

## SEALED LEAD ACID BATTERY

Safety Data Sheet

According to Regulation (EC) No. 453/2010

Issue Date 13-Feb-2014

Revision Date 10-Jul-2018

Version 2

### 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

#### Product identifier

**Product Name** Valve Regulated Lead Battery

#### Other means of identification

**Product Code** 853023  
**UN/ID No.** UN2800  
**Synonyms** Not available.

#### Recommended use of the chemical and restrictions on use

**Recommended Use** Power sport batteries.  
**Uses Advised Against** Any other not listed above

#### Details of the supplier of the safety data sheet

**Supplier Address**  
SHENG CHANG TECH CO., LTD  
Lot I-1A-CN, My Phuoc 2 Industrial Park, My  
phuoc ward, Ben Cat Town, Binh Duong Province,  
Vietnam T +84-274-3553577 - F +84-274-3553576

#### Emergency telephone number

**Company Phone Number** (610) 929-5781  
**24 Hour Emergency Phone Number** CHEMTREC  
  
Domestic (800) 424-9300  
International 1(703) 527-3887

### 2. HAZARDS IDENTIFICATION

#### Classification

**Health Hazards**  
Not classified.

**Physical Hazards**  
Not classified.

#### **OSHA Regulatory Status**

Material is an article. No health effects are expected related to normal use of this product as sold. Hazardous exposure can occur only when the product is heated, oxidized or otherwise processed or damaged to create lead dust, vapor or fume. Refer to the Material Safety Data Sheet for Lead Acid Battery when battery is filled with electrolyte/battery acid.

#### Label elements

#### Emergency Overview

**Appearance** Not available. **Physical State** Solid. **Odor** Odorless.



**Hazards not otherwise classified (HNOC)**

Not available.

**Other information**

Not available.

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

**Common name** Valve Regulated Lead Battery.  
**Synonyms** Not available.

Chemical Name	CAS No.	Weight-%
Powdered Lead	7439-92-1	63-78
Tin	7440-31-5	0.006
Antimony	7440-36-0	0.2
Arsenic	7440-38-2	0.003
Calcium	7440-70-2	0.002
Sulfuric Acid	7664-93-9	10-30

\*Note: Non-hazardous chemical ingredients are not listed

**4. FIRST AID MEASURES****First aid measures**

- Eye Contact** First aid is not expected to be necessary if material is used under ordinary conditions and as recommended. If contact with material occurs flush eyes with water. If signs/symptoms develop, get medical attention.
- Skin Contact** First aid is not expected to be necessary if material is used under ordinary conditions and as recommended. Wash skin with soap and water. If signs/symptoms develop, get medical attention. If exposure to electrolyte (sulfuric acid) occurs, flush with large quantities of water for 15 minutes. Immediately remove contaminated clothing and shoes. If exposure to lead component occurs, wash contaminated skin with plenty of soap and water.
- Inhalation** First aid is not expected to be necessary if material is used under ordinary conditions and as recommended. If signs/symptoms develop, move person to fresh air.
- Ingestion** First aid is not expected to be necessary if material is used under ordinary conditions and as recommended. If electrolyte (sulfuric acid) portion of battery is ingested give large quantities, DO NOT induce vomiting. Get medical attention immediately. If lead portion of battery is ingested get medical attention immediately.
- Self-Protection of the First Aider** Do not use mouth-to-mouth methods if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or another proper respiratory medical device.

**Most important symptoms and effects, both acute and delayed**

- Symptoms** Symptoms of lead toxicity include headache, fatigue, abdominal pain, loss of appetite, muscular aches and weakness, sleep disturbances and irritability. Lead absorption may cause nausea, weight loss, abdominal spasms, and pain in arms, legs and joints. Effects of chronic lead exposure may include central nervous system (CNS) damage, kidney dysfunction, anemia, neuropathy particularly of the motor nerves with wrist drop, and potential reproductive effects.

**Indication of any immediate medical attention and special treatment needed**

- Note to Physicians** Treat symptomatically.

## 5. FIRE-FIGHTING MEASURES

### Suitable extinguishing media

CO<sub>2</sub>, dry chemical or foam.

**Unsuitable Extinguishing Media** Avoid using water.

### Specific hazards arising from the chemical

Sulfuric acid in the electrolyte is corrosive to skin and eyes.

**Hazardous Combustion Products** Lead portion of battery will likely produce toxic metal fume, vapor or dust.

### Explosion data

**Sensitivity to Mechanical Impact** Not applicable.

**Sensitivity to Static Discharge** None known.

### Protective equipment and precautions for firefighters

If batteries are on charge, shut off power. Do not allow metallic materials to simultaneously contact negative and positive terminals of cells and batteries. Wear a positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.

## 6. ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

**Personal Precautions** No special precautions expected to be necessary if material is used under ordinary conditions and as recommended. Avoid contact of lead with skin.

**Other information** Non-emergency personnel should utilize chemical gloves.

**For emergency responders** Wear chemical gloves, goggles, acid resistant clothing and boots, respirator if insufficient ventilation.

### Environmental precautions

**Environmental Precautions** Prevent entry into waterways, sewers, basements or confined areas. Runoff from fire control and dilution water may be toxic and corrosive and may cause adverse environmental impacts. See Section 12 for additional ecological information.

### Methods and material for containment and cleaning up

**Methods for Containment** In event of a battery rupturing; stop the leak if you can do it without risk. Absorb with earth, sand, or other non-combustible material. Cautiously neutralize spilled liquid.

**Methods for Cleaning Up** Dispose of in accordance with local, state, and national regulations.

## 7. HANDLING AND STORAGE

### Precautions for safe handling

**Advice on Safe Handling** Handle batteries cautiously. Do not tip to avoid spills (if filled with electrolyte). Avoid contact with internal components. Wear protective clothing when filling or handling batteries. Follow manufacturer's instructions for installation and service. Do not allow conductive material to touch the battery terminals. Short circuit may occur and cause battery failure and fire. Wash thoroughly with soap and water after handling and before eating, drinking, or using tobacco. Eyewash stations and safety showers should be provided with unlimited water supply. Handle in accordance with good industrial hygiene and safety practice.

**Conditions for safe storage, including any incompatibilities****Storage Conditions**

Store in a cool/low-temperature, well-ventilated place away from heat and ignition sources. Batteries should be stored under roof for protection against adverse weather conditions. Place cardboard between layers of stacked batteries to avoid damage and short circuits. Store batteries on an impervious surface.  
Storage class:  
Class 8B: Non-flammable corrosive materials.

**Incompatible materials**

**Sulfuric acid:** Contact with combustible and organic materials may cause fire and explosion. Also reacts violently with strong reducing agents, metals, sulfur trioxide, strong oxidizers and water. Contact with metals may product toxic sulfur dioxide fumes and may release flammable hydrogen gas.

**Lead compounds:** Avoid contact with strong bases, acids, combustible organic materials, halides, halogenates, potassium nitrate, permanganate, peroxides, nascent hydrogen, reducing agents and water.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION****Control parameters****Exposure Guidelines**

This product, as supplied, contains the following hazardous materials with occupational exposure limits established by the region-specific regulatory bodies.

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Powdered Lead 7439-92-1	TWA: 0.05 mg/m <sup>3</sup> TWA: 0.05 mg/m <sup>3</sup> Pb	TWA: 50 µg/m <sup>3</sup> TWA: 50 µg/m <sup>3</sup> Pb	IDLH: 100 mg/m <sup>3</sup> IDLH: 100 mg/m <sup>3</sup> Pb TWA: 0.050 mg/m <sup>3</sup> TWA: 0.050 mg/m <sup>3</sup> Pb
Sulfuric Acid 7664-93-9	TWA: 0.2 mg/m <sup>3</sup> thoracic particulate matter	TWA: 1 mg/m <sup>3</sup> (vacated) TWA: 1 mg/m <sup>3</sup>	IDLH: 15 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup>

**Appropriate engineering controls****Engineering Controls**

The health hazard risks of handling this material are dependent on factors, such as physical form and quantity. Site-specific risk assessments should be conducted to determine the appropriate exposure control measures. Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels as low as reasonably achievable.

**Individual protection measures, such as personal protective equipment****Eye/Face Protection**

In laboratory, medical or industrial settings, safety glasses with side shields are highly recommended. The use of goggles or full face protection may be required depending on the industrial exposure setting. Contact a health and safety professional for specific information.

**Skin and Body Protection**

Wear appropriate gloves. No skin protection is ordinarily required under normal conditions of use. In accordance with industrial hygiene practices, if contact with leaking battery is expected precautions should be taken to avoid skin contact. Under severe exposure or emergency conditions, wear acid-resistant clothing and boots.

**Respiratory Protection**

In case of insufficient ventilation, wear suitable respiratory equipment.

**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.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

<b>Physical State</b>	Solid.	<b>Odor</b>	Odorless.
<b>Appearance</b>	Not available.	<b>Odor Threshold</b>	Not available.
<b>Color</b>	Clear (electrolyte)		

<u>Property</u>	<u>Values</u>	<u>Remarks</u>
pH	Not available.	
Melting Point/Freezing Point	Not available.	
Boiling Point/Boiling Range	95 °C - 95.555 °C	
Flash Point	Not available.	
Evaporation Rate	Not available.	
Flammability (solid, gas)	Not available.	
Flammability Limit in Air		
Upper Flammability Limit:	Not available.	
Lower Flammability Limit:	Not available.	
Vapor Pressure	10 mmHg	
Vapor Density	1	
Specific Gravity	Not available.	
Water Solubility	100%	
Solubility in Other Solvents	Not available.	
Partition Coefficient	Not available.	
Autoignition Temperature	Not available.	
Decomposition Temperature	Not available.	
Kinematic Viscosity	Not available.	
Dynamic Viscosity	Not available.	
Explosive Properties	Not available.	
Oxidizing Properties	Not available.	

### Other information

<b>Softening Point</b>	Not available.
<b>Molecular Weight</b>	Not available.
<b>VOC Content (%)</b>	Not available.
<b>Density</b>	75.8523-84.2803 lbs/ft <sup>3</sup>
<b>Bulk Density</b>	Not available.

## 10. STABILITY AND REACTIVITY

### Reactivity

Not reactive.

### Chemical stability

Stable at normal temperatures and pressures.

### Possibility of hazardous reactions

None under normal processing.

### **Hazardous Polymerization**

Hazardous polymerization does not occur.

### Conditions to avoid

Prolonged overcharge, sources of ignition.

### Incompatible materials

**Sulfuric acid:** Contact with combustible and organic materials may cause fire and explosion. Also reacts violently with strong reducing agents, metals, sulfur trioxide, strong oxidizers and water. Contact with metals may product toxic sulfur dioxide fumes and may release flammable hydrogen gas.

**Lead compounds:** Avoid contact with strong bases, acids, combustible organic materials, halides, halogenates, potassium nitrate,

permanganate, peroxides, nascent hydrogen, reducing agents and water.

#### Hazardous decomposition products

**Lead compounds** exposed to high temperatures will likely produce toxic metal fume, vapor or dust; contact with strong acid/base or presence of nascent hydrogen may generate highly toxic arsine gas.

**Sulfuric acid:** Sulfur oxides (SO<sub>x</sub>).

## 11. TOXICOLOGICAL INFORMATION

### Product Information

#### Acute Toxicity

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50	Intravenous LD50
Sulfuric Acid 7664-93-9	= 2140 mg/kg ( Rat )	-	85 - 103 mg/m <sup>3</sup> ( Rat ) 1 h	-

#### Information on toxicological effects

##### Symptoms

Symptoms of lead toxicity include headache, fatigue, abdominal pain, loss of appetite, muscular aches and weakness, sleep disturbances and irritability. Lead absorption may cause nausea, weight loss, abdominal spasms, and pain in arms, legs and joints. Effects of chronic lead exposure may include central nervous system (CNS) damage, kidney dysfunction, anemia, neuropathy particularly of the motor nerves with wrist drop, and potential reproductive effects.

#### Delayed and immediate effects as well as chronic effects from short- and long-term exposure

**Skin Corrosion/Irritation** No data available.

**Serious Eye Damage/Eye Irritation** No data available.

**Sensitization** No data available.

**Germ Cell Mutagenicity** The evidence for genotoxic effects of highly soluble inorganic lead compounds is contradictory, with numerous studies reporting both positive and negative effects. Responses appear to be induced by indirect mechanisms, mostly at very high concentrations that lack physiological relevance.

##### Carcinogenicity

**Sulfuric acid:** The International Agency for Research on Cancer (IARC) has classified "strong inorganic acid mist containing sulfuric acid" as a Category 1 carcinogen, a substance that is carcinogenic to humans. **This classification does not apply to liquid forms of sulfuric acid or sulfuric acid solutions contained within a battery.** Batteries subjected to abusive charging at excessively high currents for prolonged periods without vent caps in place may create a surrounding atmosphere of the offensive strong inorganic acid mist containing sulfuric acid.

**Lead:** There is evidence that soluble lead compounds may have a carcinogenic effect, particularly on the kidneys of rats. However, the mechanisms by which this effect occurs are still unclear. Epidemiology studies of workers exposed to inorganic lead compounds have found a limited association with stomach cancer. This has led to the classification by IARC that inorganic lead compounds are probably carcinogenic to humans (Group 2A).  
**Arsenic:** An increased lung cancer mortality was observed in multiple human populations exposed to arsenic primarily through inhalation. Also, increased mortality from multiple internal organ cancers (liver, kidney, lung, and bladder) and an increased incidence of skin cancer were observed in populations consuming drinking water high in inorganic arsenic.

Chemical Name	ACGIH	IARC	NTP	OSHA
Powdered Lead 7439-92-1	A3	Group 2A	Reasonably Anticipated	X
Sulfuric Acid	A2	Group 1		X

7664-93-9				
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**Reproductive Toxicity**

**Lead:** Pregnancy exposure to lead might cause miscarriage or premature birth, but reports on these effects are old and might have involved higher lead exposures than are currently encountered. Maternal blood lead concentrations above 30 mcg/dL can be associated with detectable abnormalities in cognitive/behavioral testing in infants. Lower concentrations (less than 10 mcg/dL) might be associated with subtle neurobehavioral effects, but these effects might be transient. Breastfeeding is not recommended if the maternal blood lead concentration is 40 mcg/dL or hi

**Teratogenicity**

**Lead** is a teratogen. Overexposure of lead by either parent before pregnancy may increase the chances of miscarriage or birth defects.

**STOT - Single Exposure**

Not classified.

**STOT - Repeated Exposure**

Not classified.

**Chronic Toxicity**

**Lead:** Lead is a cumulative poison. Increasing amounts of lead can build up in the body and may reach a point where symptoms and disabilities occur. Continuous exposure may result in decreased fertility.

**Antimony:** Chronic effects due to antimony are alterations of the ECG, especially T-wave abnormalities, myocardial changes, pneumoconiosis, but also pneumonitis, tracheitis, laryngitis, bronchitis, pustular skin eruptions called antimony spots, and contact allergy to the metal.

**Target Organ Effects**

**Lead** is a cumulative poison and may be absorbed into the body through ingestion or inhalation. Inorganic lead compounds have been documented in observational human studies to produce toxicity in multiple organ systems and body function including the hematopoietic (blood) system, kidney function, reproductive function and the central nervous system. Postnatal exposure to lead compounds is associated with impacts on neurobehavioral development in children.

**Aspiration Hazard**

Due to the physical form of the product, it is not an aspiration hazard.

## 12. ECOLOGICAL INFORMATION

**Ecotoxicity**

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Powdered Lead 7439-92-1		1.17: 96 h Oncorhynchus mykiss mg/L LC50 flow-through 0.44: 96 h Cyprinus carpio mg/L LC50 semi-static 1.32: 96 h Oncorhynchus mykiss mg/L LC50 static		600: 48 h water flea µg/L EC50
Sulfuric Acid 7664-93-9		500: 96 h Brachydanio rerio mg/L LC50 static		29: 24 h Daphnia magna mg/L EC50

**Persistence and degradability**

Lead is persistent in soils and sediments.

**Bioaccumulation**

Not available.

**Mobility**

Not available.

**Other adverse effects**

Not available.

**13. DISPOSAL CONSIDERATIONS**

**Waste treatment methods**

**Disposal of Wastes** Disposal should be in accordance with applicable regional, national and local laws and regulations.

**Contaminated Packaging** Disposal should be in accordance with applicable regional, national and local laws and regulations.

**US EPA Waste Number**

Chemical Name	RCRA	RCRA - Basis for Listing	RCRA - D Series Wastes	RCRA - U Series Wastes
Powdered Lead 7439-92-1		Included in waste streams: F035, F037, F038, F039, K002, K003, K005, K046, K048, K049, K051, K052, K061, K062, K069, K086, K100, K176	5.0 mg/L regulatory level	

**California Hazardous Waste Codes** Not available.

This product contains the following substances that are listed with the State of California as a hazardous waste.

Chemical Name	California Hazardous Waste Status
Powdered Lead 7439-92-1	Toxic
Sulfuric Acid 7664-93-9	Toxic Corrosive

**14. TRANSPORT INFORMATION**

**Note:** This product is not regulated for domestic transport by land, air or rail. Under 49 CFR 171.8, individual packages that contain lead metal (<100 micrometers) below the reportable quantity (RQ) are not regulated. Under 49 CFR 171.4, except when transporting aboard a vessel, the requirements of this subchapter specific to marine pollutants do not apply to non-bulk packaging transported by motor vehicles, rail cars and aircrafts.

**DOT** These batteries have been tested and meet the non-spillable criteria listed in CFR49, 173.159 (d) (3) (i) and (ii). Non-spillable batteries are excepted from CFR 49, Subchapter C requirements, provided that the following criteria are met:

- 1.) The batteries must be protected against short circuits and securely packaged.
- 2.) The batteries and their outer packaging must be plainly and durably marked "NON-SPILLABLE" or "NONSPILLABLE BATTERY".

**UN/ID No.** UN2800  
**Proper shipping name** Batteries, wet, non-spillable  
**Hazard Class** 8  
**Subsidiary class** 8  
**Packing Group** III  
**Special Provisions** 159a

**TDG** These batteries have been tested and meet the non-spillable criteria. Non-spillable batteries are excepted provided that the following criteria are met:

- 1.) The batteries must be protected against short circuits and securely packages.
- 2.) The batteries and their outer packaging must be plainly and durably marked "NON-SPILLABLE" or "NONSPILLABLE BATTERY".

**UN/ID No.** UN2800  
**Proper shipping name** Batteries, Wet, Non-Spillable  
**Hazard Class** 8  
**Subsidiary class** 8

<b>Packing Group</b>	III
<b>Special Provisions</b>	39
<b><u>MEX</u></b>	Not regulated.
<b><u>ICAO (air)</u></b>	VRLA batteries have been tested and meet the non-spillable criteria listed in IATA Packing Instruction 872 and Special Provision A67. These batteries are accepted from all IATA regulations provided that the battery terminals are protected against short circuits. The words "Not Restricted, as per Special Provision A67" must be included in the description on the Air Waybill.
<b>UN/ID No.</b>	UN2800
<b>Proper shipping name</b>	Batteries, Wet, Non-Spillable
<b>Hazard Class</b>	8
<b>Subsidiary hazard class</b>	8
<b>Packing Group</b>	III
<b>Special Provisions</b>	A48, A67, A164, A183
<b><u>IATA</u></b>	VRLA batteries have been tested and meet the non-spillable criteria listed in IATA Packing Instruction 872 and Special Provision A67. These batteries are accepted from all IATA regulations provided that the battery terminals are protected against short circuits. The words "Not Restricted, as per Special Provision A67" must be included in the description on the Air Waybill.
<b>UN/ID No.</b>	UN2800
<b>Proper shipping name</b>	Batteries, Wet, Non-Spillable
<b>Hazard Class</b>	8
<b>Subsidiary hazard class</b>	8
<b>Packing Group</b>	III
<b>Special Provisions</b>	A48, A67, A164, A183
<b><u>IMDG</u></b>	These batteries have been tested and meet the non-spillable criteria listed in IMDG Code Special Provision 238.1 and .2; therefore, are not subject to the provisions of the IMDG Code provided that the battery terminals are protected against short circuits when packaged for transport.
<b>UN/ID No.</b>	UN2800
<b>Proper shipping name</b>	Batteries, Wet, Non-Spillable
<b>Hazard Class</b>	8
<b>Subsidiary hazard class</b>	8
<b>Packing Group</b>	III
<b>Special Provisions</b>	29, 238
<b>Marine pollutant</b>	No
<b><u>RID</u></b>	Non-spillable batteries are not subject to the requirements of ADR if, at a temperature of 55C, the electrolyte will not flow from a ruptured or cracked case and there is no free liquid to flow and if, as packaged for carriage, the terminals are protected from short circuit.
<b>UN/ID No.</b>	UN2800
<b>Proper shipping name</b>	Batteries, Wet, Not-Spillable
<b>Hazard Class</b>	8
<b>Classification code</b>	C11
<b>Special Provisions</b>	238, 295, 598
<b><u>ADR</u></b>	Non-spillable batteries are not subject to the requirements of ADR if, at a temperature of 55C, the electrolyte will not flow from a ruptured or cracked case and there is no free liquid to flow and if, as packaged for carriage, the terminals are protected from short circuit.
<b>UN/ID No.</b>	UN2800
<b>Proper shipping name</b>	Batteries, Wet, Not-Spillable
<b>Hazard Class</b>	8
<b>Classification code</b>	C11
<b>Special Provisions</b>	238, 295, 598



**ADN**

Not regulated.

**15. REGULATORY INFORMATION****U.S. Federal Regulations****SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	CAS No.	Weight-%	SARA 313 - Threshold Values %
Powdered Lead - 7439-92-1	7439-92-1	63-78	0.1
Sulfuric Acid - 7664-93-9	7664-93-9	10-30	1.0

**SARA 311/312 Hazard Categories**

<b>Acute Health Hazard</b>	No
<b>Chronic Health Hazard</b>	No
<b>Fire Hazard</b>	No
<b>Sudden Release of Pressure Hazard</b>	No
<b>Reactive Hazard</b>	No

**CWA (Clean Water Act)**

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Powdered Lead 7439-92-1		X	X	
Sulfuric Acid 7664-93-9	1000 lb			X

**CERCLA**

This material, as supplied, contains the following substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302).

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Powdered Lead 7439-92-1	10 lb		RQ 10 lb final RQ RQ 4.54 kg final RQ
Sulfuric Acid 7664-93-9	1000 lb	1000 lb	RQ 1000 lb final RQ RQ 454 kg final RQ

**U.S. State Regulations****California Proposition 65**

Proposition 65: Warning: Battery posts, terminals and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and reproductive harm. Batteries also contain other chemicals known to the State of California to cause cancer. Wash hands after handling.

Chemical Name	California Proposition 65
Powdered Lead - 7439-92-1	Carcinogen Developmental Female Reproductive Male Reproductive

**U.S. State Right-to-Know Regulations**

This product contains the following substances regulated by state right-to-know regulations.

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Powdered Lead 7439-92-1	X	X	X

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Sulfuric Acid 7664-93-9	X	X	X
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**U.S. EPA Label Information****EPA Pesticide Registration Number** Not applicable.**16. OTHER INFORMATION**

**Prepared By** IES Engineers  
**Issue Date** 13-Feb-2014  
**Revision Date** 10-Jul-2018  
**Revision Note** Changes in section 3 and 11.

**Disclaimer**

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product

**End of Safety Data Sheet**



# US - OSHA SAFETY DATA SHEET

## SEALED LEAD ACID BATTERY

Safety Data Sheet

According to Regulation (EC) No. 453/2010

Issue Date 13-Feb-2014

Revision Date 10-Jul-2018

Version 2

### 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

#### Product identifier

**Product Name** Valve Regulated Lead Battery

#### Other means of identification

**Product Code** 853023  
**UN/ID No.** UN2800  
**Synonyms** Not available.

#### Recommended use of the chemical and restrictions on use

**Recommended Use** Power sport batteries.  
**Uses Advised Against** Any other not listed above

#### Details of the supplier of the safety data sheet

**Supplier Address**  
SHENG CHANG TECH CO., LTD  
Lot I-1A-CN, My Phuoc 2 Industrial Park, My  
phuoc ward, Ben Cat Town, Binh Duong Province,  
Vietnam T +84-274-3553577 - F +84-274-3553576

#### Emergency telephone number

**Company Phone Number** (610) 929-5781  
**24 Hour Emergency Phone Number** CHEMTREC  
  
Domestic (800) 424-9300  
International 1(703) 527-3887

### 2. HAZARDS IDENTIFICATION

#### Classification

**Health Hazards**  
Not classified.

**Physical Hazards**  
Not classified.

#### **OSHA Regulatory Status**

Material is an article. No health effects are expected related to normal use of this product as sold. Hazardous exposure can occur only when the product is heated, oxidized or otherwise processed or damaged to create lead dust, vapor or fume. Refer to the Material Safety Data Sheet for Lead Acid Battery when battery is filled with electrolyte/battery acid.

#### Label elements

#### Emergency Overview

**Appearance** Not available. **Physical State** Solid. **Odor** Odorless.

**Hazards not otherwise classified (HNOC)**

Not available.

**Other information**

Not available.

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

**Common name** Valve Regulated Lead Battery.  
**Synonyms** Not available.

Chemical Name	CAS No.	Weight-%
Powdered Lead	7439-92-1	63-78
Tin	7440-31-5	0.006
Antimony	7440-36-0	0.2
Arsenic	7440-38-2	0.003
Calcium	7440-70-2	0.002
Sulfuric Acid	7664-93-9	10-30

\*Note: Non-hazardous chemical ingredients are not listed

**4. FIRST AID MEASURES****First aid measures**

- Eye Contact** First aid is not expected to be necessary if material is used under ordinary conditions and as recommended. If contact with material occurs flush eyes with water. If signs/symptoms develop, get medical attention.
- Skin Contact** First aid is not expected to be necessary if material is used under ordinary conditions and as recommended. Wash skin with soap and water. If signs/symptoms develop, get medical attention. If exposure to electrolyte (sulfuric acid) occurs, flush with large quantities of water for 15 minutes. Immediately remove contaminated clothing and shoes. If exposure to lead component occurs, wash contaminated skin with plenty of soap and water.
- Inhalation** First aid is not expected to be necessary if material is used under ordinary conditions and as recommended. If signs/symptoms develop, move person to fresh air.
- Ingestion** First aid is not expected to be necessary if material is used under ordinary conditions and as recommended. If electrolyte (sulfuric acid) portion of battery is ingested give large quantities, DO NOT induce vomiting. Get medical attention immediately. If lead portion of battery is ingested get medical attention immediately.
- Self-Protection of the First Aider** Do not use mouth-to-mouth methods if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or another proper respiratory medical device.

**Most important symptoms and effects, both acute and delayed**

- Symptoms** Symptoms of lead toxicity include headache, fatigue, abdominal pain, loss of appetite, muscular aches and weakness, sleep disturbances and irritability. Lead absorption may cause nausea, weight loss, abdominal spasms, and pain in arms, legs and joints. Effects of chronic lead exposure may include central nervous system (CNS) damage, kidney dysfunction, anemia, neuropathy particularly of the motor nerves with wrist drop, and potential reproductive effects.

**Indication of any immediate medical attention and special treatment needed**

**Note to Physicians** Treat symptomatically.

## 5. FIRE-FIGHTING MEASURES

### Suitable extinguishing media

CO<sub>2</sub>, dry chemical or foam.

**Unsuitable Extinguishing Media** Avoid using water.

### Specific hazards arising from the chemical

Sulfuric acid in the electrolyte is corrosive to skin and eyes.

**Hazardous Combustion Products** Lead portion of battery will likely produce toxic metal fume, vapor or dust.

### Explosion data

**Sensitivity to Mechanical Impact** Not applicable.

**Sensitivity to Static Discharge** None known.

### Protective equipment and precautions for firefighters

If batteries are on charge, shut off power. Do not allow metallic materials to simultaneously contact negative and positive terminals of cells and batteries. Wear a positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.

## 6. ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

**Personal Precautions** No special precautions expected to be necessary if material is used under ordinary conditions and as recommended. Avoid contact of lead with skin.

**Other information** Non-emergency personnel should utilize chemical gloves.

**For emergency responders** Wear chemical gloves, goggles, acid resistant clothing and boots, respirator if insufficient ventilation.

### Environmental precautions

**Environmental Precautions** Prevent entry into waterways, sewers, basements or confined areas. Runoff from fire control and dilution water may be toxic and corrosive and may cause adverse environmental impacts. See Section 12 for additional ecological information.

### Methods and material for containment and cleaning up

**Methods for Containment** In event of a battery rupturing; stop the leak if you can do it without risk. Absorb with earth, sand, or other non-combustible material. Cautiously neutralize spilled liquid.

**Methods for Cleaning Up** Dispose of in accordance with local, state, and national regulations.

## 7. HANDLING AND STORAGE

### Precautions for safe handling

**Advice on Safe Handling** Handle batteries cautiously. Do not tip to avoid spills (if filled with electrolyte). Avoid contact with internal components. Wear protective clothing when filling or handling batteries. Follow manufacturer's instructions for installation and service. Do not allow conductive material to touch the battery terminals. Short circuit may occur and cause battery failure and fire. Wash thoroughly with soap and water after handling and before eating, drinking, or using tobacco. Eyewash stations and safety showers should be provided with unlimited water supply. Handle in accordance with good industrial hygiene and safety practice.

**Conditions for safe storage, including any incompatibilities**

<b>Storage Conditions</b>	Store in a cool/low-temperature, well-ventilated place away from heat and ignition sources. Batteries should be stored under roof for protection against adverse weather conditions. Place cardboard between layers of stacked batteries to avoid damage and short circuits. Store batteries on an impervious surface. Storage class: Class 8B: Non-flammable corrosive materials.
<b>Incompatible materials</b>	<b>Sulfuric acid:</b> Contact with combustible and organic materials may cause fire and explosion. Also reacts violently with strong reducing agents, metals, sulfur trioxide, strong oxidizers and water. Contact with metals may product toxic sulfur dioxide fumes and may release flammable hydrogen gas.  <b>Lead compounds:</b> Avoid contact with strong bases, acids, combustible organic materials, halides, halogenates, potassium nitrate, permanganate, peroxides, nascent hydrogen, reducing agents and water.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION****Control parameters**

**Exposure Guidelines** This product, as supplied, contains the following hazardous materials with occupational exposure limits established by the region-specific regulatory bodies.

<b>Chemical Name</b>	<b>ACGIH TLV</b>	<b>OSHA PEL</b>	<b>NIOSH IDLH</b>
Powdered Lead 7439-92-1	TWA: 0.05 mg/m <sup>3</sup> TWA: 0.05 mg/m <sup>3</sup> Pb	TWA: 50 µg/m <sup>3</sup> TWA: 50 µg/m <sup>3</sup> Pb	IDLH: 100 mg/m <sup>3</sup> IDLH: 100 mg/m <sup>3</sup> Pb TWA: 0.050 mg/m <sup>3</sup> TWA: 0.050 mg/m <sup>3</sup> Pb
Sulfuric Acid 7664-93-9	TWA: 0.2 mg/m <sup>3</sup> thoracic particulate matter	TWA: 1 mg/m <sup>3</sup> (vacated) TWA: 1 mg/m <sup>3</sup>	IDLH: 15 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup>

**Appropriate engineering controls**

**Engineering Controls** The health hazard risks of handling this material are dependent on factors, such as physical form and quantity. Site-specific risk assessments should be conducted to determine the appropriate exposure control measures. Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels as low as reasonably achievable.

**Individual protection measures, such as personal protective equipment**

<b>Eye/Face Protection</b>	In laboratory, medical or industrial settings, safety glasses with side shields are highly recommended. The use of goggles or full face protection may be required depending on the industrial exposure setting. Contact a health and safety professional for specific information.
<b>Skin and Body Protection</b>	Wear appropriate gloves. No skin protection is ordinarily required under normal conditions of use. In accordance with industrial hygiene practices, if contact with leaking battery is expected precautions should be taken to avoid skin contact. Under severe exposure or emergency conditions, wear acid-resistant clothing and boots.
<b>Respiratory Protection</b>	In case of insufficient ventilation, wear suitable respiratory equipment.
<b>General Hygiene Considerations</b>	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.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

<b>Physical State</b>	Solid.	<b>Odor</b>	Odorless.
<b>Appearance</b>	Not available.	<b>Odor Threshold</b>	Not available.
<b>Color</b>	Clear (electrolyte)		

<u>Property</u>	<u>Values</u>	<u>Remarks</u>
<b>pH</b>	Not available.	
<b>Melting Point/Freezing Point</b>	Not available.	
<b>Boiling Point/Boiling Range</b>	95 °C - 95.555 °C	
<b>Flash Point</b>	Not available.	
<b>Evaporation Rate</b>	Not available.	
<b>Flammability (solid, gas)</b>	Not available.	
<b>Flammability Limit in Air</b>		
<b>Upper Flammability Limit:</b>	Not available.	
<b>Lower Flammability Limit:</b>	Not available.	
<b>Vapor Pressure</b>	10 mmHg	
<b>Vapor Density</b>	1	
<b>Specific Gravity</b>	Not available.	
<b>Water Solubility</b>	100%	
<b>Solubility in Other Solvents</b>	Not available.	
<b>Partition Coefficient</b>	Not available.	
<b>Autoignition Temperature</b>	Not available.	
<b>Decomposition Temperature</b>	Not available.	
<b>Kinematic Viscosity</b>	Not available.	
<b>Dynamic Viscosity</b>	Not available.	
<b>Explosive Properties</b>	Not available.	
<b>Oxidizing Properties</b>	Not available.	

### Other information

<b>Softening Point</b>	Not available.
<b>Molecular Weight</b>	Not available.
<b>VOC Content (%)</b>	Not available.
<b>Density</b>	75.8523-84.2803 lbs/ft <sup>3</sup>
<b>Bulk Density</b>	Not available.

## 10. STABILITY AND REACTIVITY

### Reactivity

Not reactive.

### Chemical stability

Stable at normal temperatures and pressures.

### Possibility of hazardous reactions

None under normal processing.

### **Hazardous Polymerization**

Hazardous polymerization does not occur.

### Conditions to avoid

Prolonged overcharge, sources of ignition.

### Incompatible materials

**Sulfuric acid:** Contact with combustible and organic materials may cause fire and explosion. Also reacts violently with strong reducing agents, metals, sulfur trioxide, strong oxidizers and water. Contact with metals may product toxic sulfur dioxide fumes and may release flammable hydrogen gas.

**Lead compounds:** Avoid contact with strong bases, acids, combustible organic materials, halides, halogenates, potassium nitrate,

permanganate, peroxides, nascent hydrogen, reducing agents and water.

#### Hazardous decomposition products

**Lead compounds** exposed to high temperatures will likely produce toxic metal fume, vapor or dust; contact with strong acid/base or presence of nascent hydrogen may generate highly toxic arsine gas.

**Sulfuric acid:** Sulfur oxides (SO<sub>x</sub>).

## 11. TOXICOLOGICAL INFORMATION

### Product Information

#### Acute Toxicity

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50	Intravenous LD50
Sulfuric Acid 7664-93-9	= 2140 mg/kg ( Rat )	-	85 - 103 mg/m <sup>3</sup> ( Rat ) 1 h	-

#### Information on toxicological effects

##### Symptoms

Symptoms of lead toxicity include headache, fatigue, abdominal pain, loss of appetite, muscular aches and weakness, sleep disturbances and irritability. Lead absorption may cause nausea, weight loss, abdominal spasms, and pain in arms, legs and joints. Effects of chronic lead exposure may include central nervous system (CNS) damage, kidney dysfunction, anemia, neuropathy particularly of the motor nerves with wrist drop, and potential reproductive effects.

#### Delayed and immediate effects as well as chronic effects from short- and long-term exposure

**Skin Corrosion/Irritation** No data available.

**Serious Eye Damage/Eye Irritation** No data available.

**Sensitization** No data available.

**Germ Cell Mutagenicity** The evidence for genotoxic effects of highly soluble inorganic lead compounds is contradictory, with numerous studies reporting both positive and negative effects. Responses appear to be induced by indirect mechanisms, mostly at very high concentrations that lack physiological relevance.

##### Carcinogenicity

**Sulfuric acid:** The International Agency for Research on Cancer (IARC) has classified "strong inorganic acid mist containing sulfuric acid" as a Category 1 carcinogen, a substance that is carcinogenic to humans. **This classification does not apply to liquid forms of sulfuric acid or sulfuric acid solutions contained within a battery.** Batteries subjected to abusive charging at excessively high currents for prolonged periods without vent caps in place may create a surrounding atmosphere of the offensive strong inorganic acid mist containing sulfuric acid.

**Lead:** There is evidence that soluble lead compounds may have a carcinogenic effect, particularly on the kidneys of rats. However, the mechanisms by which this effect occurs are still unclear. Epidemiology studies of workers exposed to inorganic lead compounds have found a limited association with stomach cancer. This has led to the classification by IARC that inorganic lead compounds are probably carcinogenic to humans (Group 2A).  
**Arsenic:** An increased lung cancer mortality was observed in multiple human populations exposed to arsenic primarily through inhalation. Also, increased mortality from multiple internal organ cancers (liver, kidney, lung, and bladder) and an increased incidence of skin cancer were observed in populations consuming drinking water high in inorganic arsenic.

Chemical Name	ACGIH	IARC	NTP	OSHA
Powdered Lead 7439-92-1	A3	Group 2A	Reasonably Anticipated	X
Sulfuric Acid	A2	Group 1		X



7664-93-9				
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<b>Reproductive Toxicity</b>	<b>Lead:</b> Pregnancy exposure to lead might cause miscarriage or premature birth, but reports on these effects are old and might have involved higher lead exposures than are currently encountered. Maternal blood lead concentrations above 30 mcg/dL can be associated with detectable abnormalities in cognitive/behavioral testing in infants. Lower concentrations (less than 10 mcg/dL) might be associated with subtle neurobehavioral effects, but these effects might be transient. Breastfeeding is not recommended if the maternal blood lead concentration is 40 mcg/dL or hi
<b>Teratogenicity</b>	<b>Lead</b> is a teratogen. Overexposure of lead by either parent before pregnancy may increase the chances of miscarriage or birth defects.
<b>STOT - Single Exposure</b>	Not classified.
<b>STOT - Repeated Exposure</b>	Not classified.
<b>Chronic Toxicity</b>	<b>Lead:</b> Lead is a cumulative poison. Increasing amounts of lead can build up in the body and may reach a point where symptoms and disabilities occur. Continuous exposure may result in decreased fertility.  <b>Antimony:</b> Chronic effects due to antimony are alterations of the ECG, especially T-wave abnormalities, myocardial changes, pneumoconiosis, but also pneumonitis, tracheitis, laryngitis, bronchitis, pustular skin eruptions called antimony spots, and contact allergy to the metal.
<b>Target Organ Effects</b>	<b>Lead</b> is a cumulative poison and may be absorbed into the body through ingestion or inhalation. Inorganic lead compounds have been documented in observational human studies to produce toxicity in multiple organ systems and body function including the hematopoietic (blood) system, kidney function, reproductive function and the central nervous system. Postnatal exposure to lead compounds is associated with impacts on neurobehavioral development in children.
<b>Aspiration Hazard</b>	Due to the physical form of the product, it is not an aspiration hazard.

## 12. ECOLOGICAL INFORMATION

### Ecotoxicity

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Powdered Lead 7439-92-1		1.17: 96 h Oncorhynchus mykiss mg/L LC50 flow-through 0.44: 96 h Cyprinus carpio mg/L LC50 semi-static 1.32: 96 h Oncorhynchus mykiss mg/L LC50 static		600: 48 h water flea µg/L EC50
Sulfuric Acid 7664-93-9		500: 96 h Brachydanio rerio mg/L LC50 static		29: 24 h Daphnia magna mg/L EC50

### Persistence and degradability

Lead is persistent in soils and sediments.

### Bioaccumulation

Not available.

### Mobility

Not available.

### Other adverse effects

Not available.

### 13. DISPOSAL CONSIDERATIONS

#### Waste treatment methods

**Disposal of Wastes** Disposal should be in accordance with applicable regional, national and local laws and regulations.

**Contaminated Packaging** Disposal should be in accordance with applicable regional, national and local laws and regulations.

#### US EPA Waste Number

Chemical Name	RCRA	RCRA - Basis for Listing	RCRA - D Series Wastes	RCRA - U Series Wastes
Powdered Lead 7439-92-1		Included in waste streams: F035, F037, F038, F039, K002, K003, K005, K046, K048, K049, K051, K052, K061, K062, K069, K086, K100, K176	5.0 mg/L regulatory level	

**California Hazardous Waste Codes** Not available.

This product contains the following substances that are listed with the State of California as a hazardous waste.

Chemical Name	California Hazardous Waste Status
Powdered Lead 7439-92-1	Toxic
Sulfuric Acid 7664-93-9	Toxic Corrosive

### 14. TRANSPORT INFORMATION

**Note:** This product is not regulated for domestic transport by land, air or rail. Under 49 CFR 171.8, individual packages that contain lead metal (<100 micrometers) below the reportable quantity (RQ) are not regulated. Under 49 CFR 171.4, except when transporting aboard a vessel, the requirements of this subchapter specific to marine pollutants do not apply to non-bulk packaging transported by motor vehicles, rail cars and aircrafts.

**DOT** These batteries have been tested and meet the non-spillable criteria listed in CFR49, 173.159 (d) (3) (i) and (ii). Non-spillable batteries are excepted from CFR 49, Subchapter C requirements, provided that the following criteria are met:

- 1.) The batteries must be protected against short circuits and securely packaged.
- 2.) The batteries and their outer packaging must be plainly and durably marked "NON-SPILLABLE" or "NONSPILLABLE BATTERY".

**UN/ID No.** UN2800  
**Proper shipping name** Batteries, wet, non-spillable  
**Hazard Class** 8  
**Subsidiary class** 8  
**Packing Group** III  
**Special Provisions** 159a

**TDG** These batteries have been tested and meet the non-spillable criteria. Non-spillable batteries are excepted provided that the following criteria are met:

- 1.) The batteries must be protected against short circuits and securely packages.
- 2.) The batteries and their outer packaging must be plainly and durably marked "NON-SPILLABLE" or "NONSPILLABLE BATTERY".

**UN/ID No.** UN2800  
**Proper shipping name** Batteries, Wet, Non-Spillable  
**Hazard Class** 8  
**Subsidiary class** 8

<b>Packing Group</b>	III
<b>Special Provisions</b>	39
<b><u>MEX</u></b>	Not regulated.
<b><u>ICAO (air)</u></b>	VRLA batteries have been tested and meet the non-spillable criteria listed in IATA Packing Instruction 872 and Special Provision A67. These batteries are accepted from all IATA regulations provided that the battery terminals are protected against short circuits. The words "Not Restricted, as per Special Provision A67" must be included in the description on the Air Waybill.
<b>UN/ID No.</b>	UN2800
<b>Proper shipping name</b>	Batteries, Wet, Non-Spillable
<b>Hazard Class</b>	8
<b>Subsidiary hazard class</b>	8
<b>Packing Group</b>	III
<b>Special Provisions</b>	A48, A67, A164, A183
<b><u>IATA</u></b>	VRLA batteries have been tested and meet the non-spillable criteria listed in IATA Packing Instruction 872 and Special Provision A67. These batteries are accepted from all IATA regulations provided that the battery terminals are protected against short circuits. The words "Not Restricted, as per Special Provision A67" must be included in the description on the Air Waybill.
<b>UN/ID No.</b>	UN2800
<b>Proper shipping name</b>	Batteries, Wet, Non-Spillable
<b>Hazard Class</b>	8
<b>Subsidiary hazard class</b>	8
<b>Packing Group</b>	III
<b>Special Provisions</b>	A48, A67, A164, A183
<b><u>IMDG</u></b>	These batteries have been tested and meet the non-spillable criteria listed in IMDG Code Special Provision 238.1 and .2; therefore, are not subject to the provisions of the IMDG Code provided that the battery terminals are protected against short circuits when packaged for transport.
<b>UN/ID No.</b>	UN2800
<b>Proper shipping name</b>	Batteries, Wet, Non-Spillable
<b>Hazard Class</b>	8
<b>Subsidiary hazard class</b>	8
<b>Packing Group</b>	III
<b>Special Provisions</b>	29, 238
<b>Marine pollutant</b>	No
<b><u>RID</u></b>	Non-spillable batteries are not subject to the requirements of ADR if, at a temperature of 55C, the electrolyte will not flow from a ruptured or cracked case and there is no free liquid to flow and if, as packaged for carriage, the terminals are protected from short circuit.
<b>UN/ID No.</b>	UN2800
<b>Proper shipping name</b>	Batteries, Wet, Not-Spillable
<b>Hazard Class</b>	8
<b>Classification code</b>	C11
<b>Special Provisions</b>	238, 295, 598
<b><u>ADR</u></b>	Non-spillable batteries are not subject to the requirements of ADR if, at a temperature of 55C, the electrolyte will not flow from a ruptured or cracked case and there is no free liquid to flow and if, as packaged for carriage, the terminals are protected from short circuit.
<b>UN/ID No.</b>	UN2800
<b>Proper shipping name</b>	Batteries, Wet, Not-Spillable
<b>Hazard Class</b>	8
<b>Classification code</b>	C11
<b>Special Provisions</b>	238, 295, 598

**ADN**

Not regulated.

**15. REGULATORY INFORMATION****U.S. Federal Regulations****SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	CAS No.	Weight-%	SARA 313 - Threshold Values %
Powdered Lead - 7439-92-1	7439-92-1	63-78	0.1
Sulfuric Acid - 7664-93-9	7664-93-9	10-30	1.0

**SARA 311/312 Hazard Categories**

<b>Acute Health Hazard</b>	No
<b>Chronic Health Hazard</b>	No
<b>Fire Hazard</b>	No
<b>Sudden Release of Pressure Hazard</b>	No
<b>Reactive Hazard</b>	No

**CWA (Clean Water Act)**

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Powdered Lead 7439-92-1		X	X	
Sulfuric Acid 7664-93-9	1000 lb			X

**CERCLA**

This material, as supplied, contains the following substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302).

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Powdered Lead 7439-92-1	10 lb		RQ 10 lb final RQ RQ 4.54 kg final RQ
Sulfuric Acid 7664-93-9	1000 lb	1000 lb	RQ 1000 lb final RQ RQ 454 kg final RQ

**U.S. State Regulations****California Proposition 65**

Proposition 65: Warning: Battery posts, terminals and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and reproductive harm. Batteries also contain other chemicals known to the State of California to cause cancer. Wash hands after handling.

Chemical Name	California Proposition 65
Powdered Lead - 7439-92-1	Carcinogen Developmental Female Reproductive Male Reproductive

**U.S. State Right-to-Know Regulations**

This product contains the following substances regulated by state right-to-know regulations.

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Powdered Lead 7439-92-1	X	X	X

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Sulfuric Acid 7664-93-9	X	X	X
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**U.S. EPA Label Information****EPA Pesticide Registration Number** Not applicable.**16. OTHER INFORMATION**

**Prepared By** IES Engineers  
**Issue Date** 13-Feb-2014  
**Revision Date** 10-Jul-2018  
**Revision Note** Changes in section 3 and 11.

**Disclaimer**

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product

**End of Safety Data Sheet**



# US - OSHA SAFETY DATA SHEET

## SEALED LEAD ACID BATTERY

Safety Data Sheet

According to Regulation (EC) No. 453/2010

Issue Date 13-Feb-2014

Revision Date 10-Jul-2018

Version 2

### 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

#### Product identifier

**Product Name** Valve Regulated Lead Battery

#### Other means of identification

**Product Code** 853023  
**UN/ID No.** UN2800  
**Synonyms** Not available.

#### Recommended use of the chemical and restrictions on use

**Recommended Use** Power sport batteries.  
**Uses Advised Against** Any other not listed above

#### Details of the supplier of the safety data sheet

**Supplier Address**  
SHENG CHANG TECH CO., LTD  
Lot I-1A-CN, My Phuoc 2 Industrial Park, My  
phuoc ward, Ben Cat Town, Binh Duong Province,  
Vietnam T +84-274-3553577 - F +84-274-3553576

#### Emergency telephone number

**Company Phone Number** (610) 929-5781  
**24 Hour Emergency Phone Number** CHEMTREC  
  
Domestic (800) 424-9300  
International 1(703) 527-3887

### 2. HAZARDS IDENTIFICATION

#### Classification

**Health Hazards**  
Not classified.

**Physical Hazards**  
Not classified.

#### **OSHA Regulatory Status**

Material is an article. No health effects are expected related to normal use of this product as sold. Hazardous exposure can occur only when the product is heated, oxidized or otherwise processed or damaged to create lead dust, vapor or fume. Refer to the Material Safety Data Sheet for Lead Acid Battery when battery is filled with electrolyte/battery acid.

#### Label elements

#### Emergency Overview

**Appearance** Not available. **Physical State** Solid. **Odor** Odorless.

**Hazards not otherwise classified (HNOC)**

Not available.

**Other information**

Not available.

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

**Common name** Valve Regulated Lead Battery.  
**Synonyms** Not available.

Chemical Name	CAS No.	Weight-%
Powdered Lead	7439-92-1	63-78
Tin	7440-31-5	0.006
Antimony	7440-36-0	0.2
Arsenic	7440-38-2	0.003
Calcium	7440-70-2	0.002
Sulfuric Acid	7664-93-9	10-30

\*Note: Non-hazardous chemical ingredients are not listed

**4. FIRST AID MEASURES****First aid measures**

- Eye Contact** First aid is not expected to be necessary if material is used under ordinary conditions and as recommended. If contact with material occurs flush eyes with water. If signs/symptoms develop, get medical attention.
- Skin Contact** First aid is not expected to be necessary if material is used under ordinary conditions and as recommended. Wash skin with soap and water. If signs/symptoms develop, get medical attention. If exposure to electrolyte (sulfuric acid) occurs, flush with large quantities of water for 15 minutes. Immediately remove contaminated clothing and shoes. If exposure to lead component occurs, wash contaminated skin with plenty of soap and water.
- Inhalation** First aid is not expected to be necessary if material is used under ordinary conditions and as recommended. If signs/symptoms develop, move person to fresh air.
- Ingestion** First aid is not expected to be necessary if material is used under ordinary conditions and as recommended. If electrolyte (sulfuric acid) portion of battery is ingested give large quantities, DO NOT induce vomiting. Get medical attention immediately. If lead portion of battery is ingested get medical attention immediately.
- Self-Protection of the First Aider** Do not use mouth-to-mouth methods if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or another proper respiratory medical device.

**Most important symptoms and effects, both acute and delayed**

- Symptoms** Symptoms of lead toxicity include headache, fatigue, abdominal pain, loss of appetite, muscular aches and weakness, sleep disturbances and irritability. Lead absorption may cause nausea, weight loss, abdominal spasms, and pain in arms, legs and joints. Effects of chronic lead exposure may include central nervous system (CNS) damage, kidney dysfunction, anemia, neuropathy particularly of the motor nerves with wrist drop, and potential reproductive effects.

**Indication of any immediate medical attention and special treatment needed**

**Note to Physicians** Treat symptomatically.

## 5. FIRE-FIGHTING MEASURES

### Suitable extinguishing media

CO<sub>2</sub>, dry chemical or foam.

**Unsuitable Extinguishing Media** Avoid using water.

### Specific hazards arising from the chemical

Sulfuric acid in the electrolyte is corrosive to skin and eyes.

**Hazardous Combustion Products** Lead portion of battery will likely produce toxic metal fume, vapor or dust.

### Explosion data

**Sensitivity to Mechanical Impact** Not applicable.

**Sensitivity to Static Discharge** None known.

### Protective equipment and precautions for firefighters

If batteries are on charge, shut off power. Do not allow metallic materials to simultaneously contact negative and positive terminals of cells and batteries. Wear a positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.

## 6. ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

**Personal Precautions** No special precautions expected to be necessary if material is used under ordinary conditions and as recommended. Avoid contact of lead with skin.

**Other information** Non-emergency personnel should utilize chemical gloves.

**For emergency responders** Wear chemical gloves, goggles, acid resistant clothing and boots, respirator if insufficient ventilation.

### Environmental precautions

**Environmental Precautions** Prevent entry into waterways, sewers, basements or confined areas. Runoff from fire control and dilution water may be toxic and corrosive and may cause adverse environmental impacts. See Section 12 for additional ecological information.

### Methods and material for containment and cleaning up

**Methods for Containment** In event of a battery rupturing; stop the leak if you can do it without risk. Absorb with earth, sand, or other non-combustible material. Cautiously neutralize spilled liquid.

**Methods for Cleaning Up** Dispose of in accordance with local, state, and national regulations.

## 7. HANDLING AND STORAGE

### Precautions for safe handling

**Advice on Safe Handling** Handle batteries cautiously. Do not tip to avoid spills (if filled with electrolyte). Avoid contact with internal components. Wear protective clothing when filling or handling batteries. Follow manufacturer's instructions for installation and service. Do not allow conductive material to touch the battery terminals. Short circuit may occur and cause battery failure and fire. Wash thoroughly with soap and water after handling and before eating, drinking, or using tobacco. Eyewash stations and safety showers should be provided with unlimited water supply. Handle in accordance with good industrial hygiene and safety practice.



**Conditions for safe storage, including any incompatibilities**

<b>Storage Conditions</b>	Store in a cool/low-temperature, well-ventilated place away from heat and ignition sources. Batteries should be stored under roof for protection against adverse weather conditions. Place cardboard between layers of stacked batteries to avoid damage and short circuits. Store batteries on an impervious surface. Storage class: Class 8B: Non-flammable corrosive materials.
<b>Incompatible materials</b>	<b>Sulfuric acid:</b> Contact with combustible and organic materials may cause fire and explosion. Also reacts violently with strong reducing agents, metals, sulfur trioxide, strong oxidizers and water. Contact with metals may product toxic sulfur dioxide fumes and may release flammable hydrogen gas.  <b>Lead compounds:</b> Avoid contact with strong bases, acids, combustible organic materials, halides, halogenates, potassium nitrate, permanganate, peroxides, nascent hydrogen, reducing agents and water.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION****Control parameters**

**Exposure Guidelines** This product, as supplied, contains the following hazardous materials with occupational exposure limits established by the region-specific regulatory bodies.

<b>Chemical Name</b>	<b>ACGIH TLV</b>	<b>OSHA PEL</b>	<b>NIOSH IDLH</b>
Powdered Lead 7439-92-1	TWA: 0.05 mg/m <sup>3</sup> TWA: 0.05 mg/m <sup>3</sup> Pb	TWA: 50 µg/m <sup>3</sup> TWA: 50 µg/m <sup>3</sup> Pb	IDLH: 100 mg/m <sup>3</sup> IDLH: 100 mg/m <sup>3</sup> Pb TWA: 0.050 mg/m <sup>3</sup> TWA: 0.050 mg/m <sup>3</sup> Pb
Sulfuric Acid 7664-93-9	TWA: 0.2 mg/m <sup>3</sup> thoracic particulate matter	TWA: 1 mg/m <sup>3</sup> (vacated) TWA: 1 mg/m <sup>3</sup>	IDLH: 15 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup>

**Appropriate engineering controls**

**Engineering Controls** The health hazard risks of handling this material are dependent on factors, such as physical form and quantity. Site-specific risk assessments should be conducted to determine the appropriate exposure control measures. Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels as low as reasonably achievable.

**Individual protection measures, such as personal protective equipment**

<b>Eye/Face Protection</b>	In laboratory, medical or industrial settings, safety glasses with side shields are highly recommended. The use of goggles or full face protection may be required depending on the industrial exposure setting. Contact a health and safety professional for specific information.
<b>Skin and Body Protection</b>	Wear appropriate gloves. No skin protection is ordinarily required under normal conditions of use. In accordance with industrial hygiene practices, if contact with leaking battery is expected precautions should be taken to avoid skin contact. Under severe exposure or emergency conditions, wear acid-resistant clothing and boots.
<b>Respiratory Protection</b>	In case of insufficient ventilation, wear suitable respiratory equipment.
<b>General Hygiene Considerations</b>	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.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

<b>Physical State</b>	Solid.	<b>Odor</b>	Odorless.
<b>Appearance</b>	Not available.	<b>Odor Threshold</b>	Not available.
<b>Color</b>	Clear (electrolyte)		

<u>Property</u>	<u>Values</u>	<u>Remarks</u>
pH	Not available.	
Melting Point/Freezing Point	Not available.	
Boiling Point/Boiling Range	95 °C - 95.555 °C	
Flash Point	Not available.	
Evaporation Rate	Not available.	
Flammability (solid, gas)	Not available.	
Flammability Limit in Air		
Upper Flammability Limit:	Not available.	
Lower Flammability Limit:	Not available.	
Vapor Pressure	10 mmHg	
Vapor Density	1	
Specific Gravity	Not available.	
Water Solubility	100%	
Solubility in Other Solvents	Not available.	
Partition Coefficient	Not available.	
Autoignition Temperature	Not available.	
Decomposition Temperature	Not available.	
Kinematic Viscosity	Not available.	
Dynamic Viscosity	Not available.	
Explosive Properties	Not available.	
Oxidizing Properties	Not available.	

### Other information

Softening Point	Not available.
Molecular Weight	Not available.
VOC Content (%)	Not available.
Density	75.8523-84.2803 lbs/ft <sup>3</sup>
Bulk Density	Not available.

## 10. STABILITY AND REACTIVITY

### Reactivity

Not reactive.

### Chemical stability

Stable at normal temperatures and pressures.

### Possibility of hazardous reactions

None under normal processing.

### Hazardous Polymerization

Hazardous polymerization does not occur.

### Conditions to avoid

Prolonged overcharge, sources of ignition.

### Incompatible materials

**Sulfuric acid:** Contact with combustible and organic materials may cause fire and explosion. Also reacts violently with strong reducing agents, metals, sulfur trioxide, strong oxidizers and water. Contact with metals may product toxic sulfur dioxide fumes and may release flammable hydrogen gas.

**Lead compounds:** Avoid contact with strong bases, acids, combustible organic materials, halides, halogenates, potassium nitrate,

permanganate, peroxides, nascent hydrogen, reducing agents and water.

#### Hazardous decomposition products

**Lead compounds** exposed to high temperatures will likely produce toxic metal fume, vapor or dust; contact with strong acid/base or presence of nascent hydrogen may generate highly toxic arsine gas.

**Sulfuric acid:** Sulfur oxides (SO<sub>x</sub>).

## 11. TOXICOLOGICAL INFORMATION

### Product Information

#### Acute Toxicity

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50	Intravenous LD50
Sulfuric Acid 7664-93-9	= 2140 mg/kg ( Rat )	-	85 - 103 mg/m <sup>3</sup> ( Rat ) 1 h	-

#### Information on toxicological effects

##### Symptoms

Symptoms of lead toxicity include headache, fatigue, abdominal pain, loss of appetite, muscular aches and weakness, sleep disturbances and irritability. Lead absorption may cause nausea, weight loss, abdominal spasms, and pain in arms, legs and joints. Effects of chronic lead exposure may include central nervous system (CNS) damage, kidney dysfunction, anemia, neuropathy particularly of the motor nerves with wrist drop, and potential reproductive effects.

#### Delayed and immediate effects as well as chronic effects from short- and long-term exposure

**Skin Corrosion/Irritation** No data available.

**Serious Eye Damage/Eye Irritation** No data available.

**Sensitization** No data available.

**Germ Cell Mutagenicity** The evidence for genotoxic effects of highly soluble inorganic lead compounds is contradictory, with numerous studies reporting both positive and negative effects. Responses appear to be induced by indirect mechanisms, mostly at very high concentrations that lack physiological relevance.

##### Carcinogenicity

**Sulfuric acid:** The International Agency for Research on Cancer (IARC) has classified "strong inorganic acid mist containing sulfuric acid" as a Category 1 carcinogen, a substance that is carcinogenic to humans. **This classification does not apply to liquid forms of sulfuric acid or sulfuric acid solutions contained within a battery.** Batteries subjected to abusive charging at excessively high currents for prolonged periods without vent caps in place may create a surrounding atmosphere of the offensive strong inorganic acid mist containing sulfuric acid.

**Lead:** There is evidence that soluble lead compounds may have a carcinogenic effect, particularly on the kidneys of rats. However, the mechanisms by which this effect occurs are still unclear. Epidemiology studies of workers exposed to inorganic lead compounds have found a limited association with stomach cancer. This has led to the classification by IARC that inorganic lead compounds are probably carcinogenic to humans (Group 2A).  
**Arsenic:** An increased lung cancer mortality was observed in multiple human populations exposed to arsenic primarily through inhalation. Also, increased mortality from multiple internal organ cancers (liver, kidney, lung, and bladder) and an increased incidence of skin cancer were observed in populations consuming drinking water high in inorganic arsenic.

Chemical Name	ACGIH	IARC	NTP	OSHA
Powdered Lead 7439-92-1	A3	Group 2A	Reasonably Anticipated	X
Sulfuric Acid	A2	Group 1		X

7664-93-9				
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<b>Reproductive Toxicity</b>	<b>Lead:</b> Pregnancy exposure to lead might cause miscarriage or premature birth, but reports on these effects are old and might have involved higher lead exposures than are currently encountered. Maternal blood lead concentrations above 30 mcg/dL can be associated with detectable abnormalities in cognitive/behavioral testing in infants. Lower concentrations (less than 10 mcg/dL) might be associated with subtle neurobehavioral effects, but these effects might be transient. Breastfeeding is not recommended if the maternal blood lead concentration is 40 mcg/dL or hi
<b>Teratogenicity</b>	<b>Lead</b> is a teratogen. Overexposure of lead by either parent before pregnancy may increase the chances of miscarriage or birth defects.
<b>STOT - Single Exposure</b>	Not classified.
<b>STOT - Repeated Exposure</b>	Not classified.
<b>Chronic Toxicity</b>	<b>Lead:</b> Lead is a cumulative poison. Increasing amounts of lead can build up in the body and may reach a point where symptoms and disabilities occur. Continuous exposure may result in decreased fertility.  <b>Antimony:</b> Chronic effects due to antimony are alterations of the ECG, especially T-wave abnormalities, myocardial changes, pneumoconiosis, but also pneumonitis, tracheitis, laryngitis, bronchitis, pustular skin eruptions called antimony spots, and contact allergy to the metal.
<b>Target Organ Effects</b>	<b>Lead</b> is a cumulative poison and may be absorbed into the body through ingestion or inhalation. Inorganic lead compounds have been documented in observational human studies to produce toxicity in multiple organ systems and body function including the hematopoietic (blood) system, kidney function, reproductive function and the central nervous system. Postnatal exposure to lead compounds is associated with impacts on neurobehavioral development in children.
<b>Aspiration Hazard</b>	Due to the physical form of the product, it is not an aspiration hazard.

## 12. ECOLOGICAL INFORMATION

### Ecotoxicity

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Powdered Lead 7439-92-1		1.17: 96 h Oncorhynchus mykiss mg/L LC50 flow-through 0.44: 96 h Cyprinus carpio mg/L LC50 semi-static 1.32: 96 h Oncorhynchus mykiss mg/L LC50 static		600: 48 h water flea µg/L EC50
Sulfuric Acid 7664-93-9		500: 96 h Brachydanio rerio mg/L LC50 static		29: 24 h Daphnia magna mg/L EC50

### Persistence and degradability

Lead is persistent in soils and sediments.

### Bioaccumulation

Not available.

### Mobility

Not available.

### Other adverse effects

Not available.

### 13. DISPOSAL CONSIDERATIONS

#### Waste treatment methods

**Disposal of Wastes** Disposal should be in accordance with applicable regional, national and local laws and regulations.

**Contaminated Packaging** Disposal should be in accordance with applicable regional, national and local laws and regulations.

#### **US EPA Waste Number**

Chemical Name	RCRA	RCRA - Basis for Listing	RCRA - D Series Wastes	RCRA - U Series Wastes
Powdered Lead 7439-92-1		Included in waste streams: F035, F037, F038, F039, K002, K003, K005, K046, K048, K049, K051, K052, K061, K062, K069, K086, K100, K176	5.0 mg/L regulatory level	

**California Hazardous Waste Codes** Not available.

This product contains the following substances that are listed with the State of California as a hazardous waste.

Chemical Name	California Hazardous Waste Status
Powdered Lead 7439-92-1	Toxic
Sulfuric Acid 7664-93-9	Toxic Corrosive

### 14. TRANSPORT INFORMATION

**Note:** This product is not regulated for domestic transport by land, air or rail. Under 49 CFR 171.8, individual packages that contain lead metal (<100 micrometers) below the reportable quantity (RQ) are not regulated. Under 49 CFR 171.4, except when transporting aboard a vessel, the requirements of this subchapter specific to marine pollutants do not apply to non-bulk packaging transported by motor vehicles, rail cars and aircrafts.

**DOT** These batteries have been tested and meet the non-spillable criteria listed in CFR49, 173.159 (d) (3) (i) and (ii). Non-spillable batteries are excepted from CFR 49, Subchapter C requirements, provided that the following criteria are met:

- 1.) The batteries must be protected against short circuits and securely packaged.
- 2.) The batteries and their outer packaging must be plainly and durably marked "NON-SPILLABLE" or "NONSPILLABLE BATTERY".

**UN/ID No.** UN2800  
**Proper shipping name** Batteries, wet, non-spillable  
**Hazard Class** 8  
**Subsidiary class** 8  
**Packing Group** III  
**Special Provisions** 159a

**TDG** These batteries have been tested and meet the non-spillable criteria. Non-spillable batteries are excepted provided that the following criteria are met:

- 1.) The batteries must be protected against short circuits and securely packages.
- 2.) The batteries and their outer packaging must be plainly and durably marked "NON-SPILLABLE" or "NONSPILLABLE BATTERY".

**UN/ID No.** UN2800  
**Proper shipping name** Batteries, Wet, Non-Spillable  
**Hazard Class** 8  
**Subsidiary class** 8

<b>Packing Group</b>	III
<b>Special Provisions</b>	39
<b><u>MEX</u></b>	Not regulated.
<b><u>ICAO (air)</u></b>	VRLA batteries have been tested and meet the non-spillable criteria listed in IATA Packing Instruction 872 and Special Provision A67. These batteries are accepted from all IATA regulations provided that the battery terminals are protected against short circuits. The words "Not Restricted, as per Special Provision A67" must be included in the description on the Air Waybill.
<b>UN/ID No.</b>	UN2800
<b>Proper shipping name</b>	Batteries, Wet, Non-Spillable
<b>Hazard Class</b>	8
<b>Subsidiary hazard class</b>	8
<b>Packing Group</b>	III
<b>Special Provisions</b>	A48, A67, A164, A183
<b><u>IATA</u></b>	VRLA batteries have been tested and meet the non-spillable criteria listed in IATA Packing Instruction 872 and Special Provision A67. These batteries are accepted from all IATA regulations provided that the battery terminals are protected against short circuits. The words "Not Restricted, as per Special Provision A67" must be included in the description on the Air Waybill.
<b>UN/ID No.</b>	UN2800
<b>Proper shipping name</b>	Batteries, Wet, Non-Spillable
<b>Hazard Class</b>	8
<b>Subsidiary hazard class</b>	8
<b>Packing Group</b>	III
<b>Special Provisions</b>	A48, A67, A164, A183
<b><u>IMDG</u></b>	These batteries have been tested and meet the non-spillable criteria listed in IMDG Code Special Provision 238.1 and .2; therefore, are not subject to the provisions of the IMDG Code provided that the battery terminals are protected against short circuits when packaged for transport.
<b>UN/ID No.</b>	UN2800
<b>Proper shipping name</b>	Batteries, Wet, Non-Spillable
<b>Hazard Class</b>	8
<b>Subsidiary hazard class</b>	8
<b>Packing Group</b>	III
<b>Special Provisions</b>	29, 238
<b>Marine pollutant</b>	No
<b><u>RID</u></b>	Non-spillable batteries are not subject to the requirements of ADR if, at a temperature of 55C, the electrolyte will not flow from a ruptured or cracked case and there is no free liquid to flow and if, as packaged for carriage, the terminals are protected from short circuit.
<b>UN/ID No.</b>	UN2800
<b>Proper shipping name</b>	Batteries, Wet, Not-Spillable
<b>Hazard Class</b>	8
<b>Classification code</b>	C11
<b>Special Provisions</b>	238, 295, 598
<b><u>ADR</u></b>	Non-spillable batteries are not subject to the requirements of ADR if, at a temperature of 55C, the electrolyte will not flow from a ruptured or cracked case and there is no free liquid to flow and if, as packaged for carriage, the terminals are protected from short circuit.
<b>UN/ID No.</b>	UN2800
<b>Proper shipping name</b>	Batteries, Wet, Not-Spillable
<b>Hazard Class</b>	8
<b>Classification code</b>	C11
<b>Special Provisions</b>	238, 295, 598

**ADN**

Not regulated.

**15. REGULATORY INFORMATION****U.S. Federal Regulations****SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	CAS No.	Weight-%	SARA 313 - Threshold Values %
Powdered Lead - 7439-92-1	7439-92-1	63-78	0.1
Sulfuric Acid - 7664-93-9	7664-93-9	10-30	1.0

**SARA 311/312 Hazard Categories**

<b>Acute Health Hazard</b>	No
<b>Chronic Health Hazard</b>	No
<b>Fire Hazard</b>	No
<b>Sudden Release of Pressure Hazard</b>	No
<b>Reactive Hazard</b>	No

**CWA (Clean Water Act)**

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Powdered Lead 7439-92-1		X	X	
Sulfuric Acid 7664-93-9	1000 lb			X

**CERCLA**

This material, as supplied, contains the following substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302).

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Powdered Lead 7439-92-1	10 lb		RQ 10 lb final RQ RQ 4.54 kg final RQ
Sulfuric Acid 7664-93-9	1000 lb	1000 lb	RQ 1000 lb final RQ RQ 454 kg final RQ

**U.S. State Regulations****California Proposition 65**

Proposition 65: Warning: Battery posts, terminals and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and reproductive harm. Batteries also contain other chemicals known to the State of California to cause cancer. Wash hands after handling.

Chemical Name	California Proposition 65
Powdered Lead - 7439-92-1	Carcinogen Developmental Female Reproductive Male Reproductive

**U.S. State Right-to-Know Regulations**

This product contains the following substances regulated by state right-to-know regulations.

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Powdered Lead 7439-92-1	X	X	X

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Sulfuric Acid 7664-93-9	X	X	X
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**U.S. EPA Label Information****EPA Pesticide Registration Number** Not applicable.**16. OTHER INFORMATION**

**Prepared By** IES Engineers  
**Issue Date** 13-Feb-2014  
**Revision Date** 10-Jul-2018  
**Revision Note** Changes in section 3 and 11.

**Disclaimer**

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product

**End of Safety Data Sheet**





# US - OSHA SAFETY DATA SHEET

## SEALED LEAD ACID BATTERY

Safety Data Sheet

According to Regulation (EC) No. 453/2010

Issue Date 13-Feb-2014

Revision Date 10-Jul-2018

Version 2

### 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

#### Product identifier

**Product Name** Valve Regulated Lead Battery

#### Other means of identification

**Product Code** 853023  
**UN/ID No.** UN2800  
**Synonyms** Not available.

#### Recommended use of the chemical and restrictions on use

**Recommended Use** Power sport batteries.  
**Uses Advised Against** Any other not listed above

#### Details of the supplier of the safety data sheet

**Supplier Address**  
SHENG CHANG TECH CO., LTD  
Lot I-1A-CN, My Phuoc 2 Industrial Park, My  
phuoc ward, Ben Cat Town, Binh Duong Province,  
Vietnam T +84-274-3553577 - F +84-274-3553576

#### Emergency telephone number

**Company Phone Number** (610) 929-5781  
**24 Hour Emergency Phone Number** CHEMTREC  
  
Domestic (800) 424-9300  
International 1(703) 527-3887

### 2. HAZARDS IDENTIFICATION

#### Classification

**Health Hazards**  
Not classified.

**Physical Hazards**  
Not classified.

#### **OSHA Regulatory Status**

Material is an article. No health effects are expected related to normal use of this product as sold. Hazardous exposure can occur only when the product is heated, oxidized or otherwise processed or damaged to create lead dust, vapor or fume. Refer to the Material Safety Data Sheet for Lead Acid Battery when battery is filled with electrolyte/battery acid.

#### Label elements

#### **Emergency Overview**

**Appearance** Not available. **Physical State** Solid. **Odor** Odorless.

**Hazards not otherwise classified (HNOC)**

Not available.

**Other information**

Not available.

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

**Common name** Valve Regulated Lead Battery.  
**Synonyms** Not available.

Chemical Name	CAS No.	Weight-%
Powdered Lead	7439-92-1	63-78
Tin	7440-31-5	0.006
Antimony	7440-36-0	0.2
Arsenic	7440-38-2	0.003
Calcium	7440-70-2	0.002
Sulfuric Acid	7664-93-9	10-30

\*Note: Non-hazardous chemical ingredients are not listed

**4. FIRST AID MEASURES****First aid measures**

- Eye Contact** First aid is not expected to be necessary if material is used under ordinary conditions and as recommended. If contact with material occurs flush eyes with water. If signs/symptoms develop, get medical attention.
- Skin Contact** First aid is not expected to be necessary if material is used under ordinary conditions and as recommended. Wash skin with soap and water. If signs/symptoms develop, get medical attention. If exposure to electrolyte (sulfuric acid) occurs, flush with large quantities of water for 15 minutes. Immediately remove contaminated clothing and shoes. If exposure to lead component occurs, wash contaminated skin with plenty of soap and water.
- Inhalation** First aid is not expected to be necessary if material is used under ordinary conditions and as recommended. If signs/symptoms develop, move person to fresh air.
- Ingestion** First aid is not expected to be necessary if material is used under ordinary conditions and as recommended. If electrolyte (sulfuric acid) portion of battery is ingested give large quantities, DO NOT induce vomiting. Get medical attention immediately. If lead portion of battery is ingested get medical attention immediately.
- Self-Protection of the First Aider** Do not use mouth-to-mouth methods if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or another proper respiratory medical device.

**Most important symptoms and effects, both acute and delayed**

- Symptoms** Symptoms of lead toxicity include headache, fatigue, abdominal pain, loss of appetite, muscular aches and weakness, sleep disturbances and irritability. Lead absorption may cause nausea, weight loss, abdominal spasms, and pain in arms, legs and joints. Effects of chronic lead exposure may include central nervous system (CNS) damage, kidney dysfunction, anemia, neuropathy particularly of the motor nerves with wrist drop, and potential reproductive effects.

**Indication of any immediate medical attention and special treatment needed**

**Note to Physicians** Treat symptomatically.

## 5. FIRE-FIGHTING MEASURES

### Suitable extinguishing media

CO<sub>2</sub>, dry chemical or foam.

**Unsuitable Extinguishing Media** Avoid using water.

### Specific hazards arising from the chemical

Sulfuric acid in the electrolyte is corrosive to skin and eyes.

**Hazardous Combustion Products** Lead portion of battery will likely produce toxic metal fume, vapor or dust.

### Explosion data

**Sensitivity to Mechanical Impact** Not applicable.

**Sensitivity to Static Discharge** None known.

### Protective equipment and precautions for firefighters

If batteries are on charge, shut off power. Do not allow metallic materials to simultaneously contact negative and positive terminals of cells and batteries. Wear a positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.

## 6. ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

**Personal Precautions** No special precautions expected to be necessary if material is used under ordinary conditions and as recommended. Avoid contact of lead with skin.

**Other information** Non-emergency personnel should utilize chemical gloves.

**For emergency responders** Wear chemical gloves, goggles, acid resistant clothing and boots, respirator if insufficient ventilation.

### Environmental precautions

**Environmental Precautions** Prevent entry into waterways, sewers, basements or confined areas. Runoff from fire control and dilution water may be toxic and corrosive and may cause adverse environmental impacts. See Section 12 for additional ecological information.

### Methods and material for containment and cleaning up

**Methods for Containment** In event of a battery rupturing; stop the leak if you can do it without risk. Absorb with earth, sand, or other non-combustible material. Cautiously neutralize spilled liquid.

**Methods for Cleaning Up** Dispose of in accordance with local, state, and national regulations.

## 7. HANDLING AND STORAGE

### Precautions for safe handling

**Advice on Safe Handling** Handle batteries cautiously. Do not tip to avoid spills (if filled with electrolyte). Avoid contact with internal components. Wear protective clothing when filling or handling batteries. Follow manufacturer's instructions for installation and service. Do not allow conductive material to touch the battery terminals. Short circuit may occur and cause battery failure and fire. Wash thoroughly with soap and water after handling and before eating, drinking, or using tobacco. Eyewash stations and safety showers should be provided with unlimited water supply. Handle in accordance with good industrial hygiene and safety practice.

**Conditions for safe storage, including any incompatibilities**

<b>Storage Conditions</b>	Store in a cool/low-temperature, well-ventilated place away from heat and ignition sources. Batteries should be stored under roof for protection against adverse weather conditions. Place cardboard between layers of stacked batteries to avoid damage and short circuits. Store batteries on an impervious surface. Storage class: Class 8B: Non-flammable corrosive materials.
<b>Incompatible materials</b>	<b>Sulfuric acid:</b> Contact with combustible and organic materials may cause fire and explosion. Also reacts violently with strong reducing agents, metals, sulfur trioxide, strong oxidizers and water. Contact with metals may product toxic sulfur dioxide fumes and may release flammable hydrogen gas.  <b>Lead compounds:</b> Avoid contact with strong bases, acids, combustible organic materials, halides, halogenates, potassium nitrate, permanganate, peroxides, nascent hydrogen, reducing agents and water.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION****Control parameters**

**Exposure Guidelines** This product, as supplied, contains the following hazardous materials with occupational exposure limits established by the region-specific regulatory bodies.

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Powdered Lead 7439-92-1	TWA: 0.05 mg/m <sup>3</sup> TWA: 0.05 mg/m <sup>3</sup> Pb	TWA: 50 µg/m <sup>3</sup> TWA: 50 µg/m <sup>3</sup> Pb	IDLH: 100 mg/m <sup>3</sup> IDLH: 100 mg/m <sup>3</sup> Pb TWA: 0.050 mg/m <sup>3</sup> TWA: 0.050 mg/m <sup>3</sup> Pb
Sulfuric Acid 7664-93-9	TWA: 0.2 mg/m <sup>3</sup> thoracic particulate matter	TWA: 1 mg/m <sup>3</sup> (vacated) TWA: 1 mg/m <sup>3</sup>	IDLH: 15 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup>

**Appropriate engineering controls**

**Engineering Controls** The health hazard risks of handling this material are dependent on factors, such as physical form and quantity. Site-specific risk assessments should be conducted to determine the appropriate exposure control measures. Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels as low as reasonably achievable.

**Individual protection measures, such as personal protective equipment**

<b>Eye/Face Protection</b>	In laboratory, medical or industrial settings, safety glasses with side shields are highly recommended. The use of goggles or full face protection may be required depending on the industrial exposure setting. Contact a health and safety professional for specific information.
<b>Skin and Body Protection</b>	Wear appropriate gloves. No skin protection is ordinarily required under normal conditions of use. In accordance with industrial hygiene practices, if contact with leaking battery is expected precautions should be taken to avoid skin contact. Under severe exposure or emergency conditions, wear acid-resistant clothing and boots.
<b>Respiratory Protection</b>	In case of insufficient ventilation, wear suitable respiratory equipment.
<b>General Hygiene Considerations</b>	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.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

<b>Physical State</b>	Solid.	<b>Odor</b>	Odorless.
<b>Appearance</b>	Not available.	<b>Odor Threshold</b>	Not available.
<b>Color</b>	Clear (electrolyte)		

<u>Property</u>	<u>Values</u>	<u>Remarks</u>
pH	Not available.	
Melting Point/Freezing Point	Not available.	
Boiling Point/Boiling Range	95 °C - 95.555 °C	
Flash Point	Not available.	
Evaporation Rate	Not available.	
Flammability (solid, gas)	Not available.	
Flammability Limit in Air		
Upper Flammability Limit:	Not available.	
Lower Flammability Limit:	Not available.	
Vapor Pressure	10 mmHg	
Vapor Density	1	
Specific Gravity	Not available.	
Water Solubility	100%	
Solubility in Other Solvents	Not available.	
Partition Coefficient	Not available.	
Autoignition Temperature	Not available.	
Decomposition Temperature	Not available.	
Kinematic Viscosity	Not available.	
Dynamic Viscosity	Not available.	
Explosive Properties	Not available.	
Oxidizing Properties	Not available.	

### Other information

Softening Point	Not available.
Molecular Weight	Not available.
VOC Content (%)	Not available.
Density	75.8523-84.2803 lbs/ft <sup>3</sup>
Bulk Density	Not available.

## 10. STABILITY AND REACTIVITY

### Reactivity

Not reactive.

### Chemical stability

Stable at normal temperatures and pressures.

### Possibility of hazardous reactions

None under normal processing.

### Hazardous Polymerization

Hazardous polymerization does not occur.

### Conditions to avoid

Prolonged overcharge, sources of ignition.

### Incompatible materials

**Sulfuric acid:** Contact with combustible and organic materials may cause fire and explosion. Also reacts violently with strong reducing agents, metals, sulfur trioxide, strong oxidizers and water. Contact with metals may product toxic sulfur dioxide fumes and may release flammable hydrogen gas.

**Lead compounds:** Avoid contact with strong bases, acids, combustible organic materials, halides, halogenates, potassium nitrate,

permanganate, peroxides, nascent hydrogen, reducing agents and water.

#### Hazardous decomposition products

**Lead compounds** exposed to high temperatures will likely produce toxic metal fume, vapor or dust; contact with strong acid/base or presence of nascent hydrogen may generate highly toxic arsine gas.

**Sulfuric acid:** Sulfur oxides (SO<sub>x</sub>).

## 11. TOXICOLOGICAL INFORMATION

### Product Information

#### Acute Toxicity

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50	Intravenous LD50
Sulfuric Acid 7664-93-9	= 2140 mg/kg ( Rat )	-	85 - 103 mg/m <sup>3</sup> ( Rat ) 1 h	-

#### Information on toxicological effects

##### Symptoms

Symptoms of lead toxicity include headache, fatigue, abdominal pain, loss of appetite, muscular aches and weakness, sleep disturbances and irritability. Lead absorption may cause nausea, weight loss, abdominal spasms, and pain in arms, legs and joints. Effects of chronic lead exposure may include central nervous system (CNS) damage, kidney dysfunction, anemia, neuropathy particularly of the motor nerves with wrist drop, and potential reproductive effects.

#### Delayed and immediate effects as well as chronic effects from short- and long-term exposure

**Skin Corrosion/Irritation** No data available.

**Serious Eye Damage/Eye Irritation** No data available.

**Sensitization** No data available.

**Germ Cell Mutagenicity** The evidence for genotoxic effects of highly soluble inorganic lead compounds is contradictory, with numerous studies reporting both positive and negative effects. Responses appear to be induced by indirect mechanisms, mostly at very high concentrations that lack physiological relevance.

##### Carcinogenicity

**Sulfuric acid:** The International Agency for Research on Cancer (IARC) has classified "strong inorganic acid mist containing sulfuric acid" as a Category 1 carcinogen, a substance that is carcinogenic to humans. **This classification does not apply to liquid forms of sulfuric acid or sulfuric acid solutions contained within a battery.** Batteries subjected to abusive charging at excessively high currents for prolonged periods without vent caps in place may create a surrounding atmosphere of the offensive strong inorganic acid mist containing sulfuric acid.

**Lead:** There is evidence that soluble lead compounds may have a carcinogenic effect, particularly on the kidneys of rats. However, the mechanisms by which this effect occurs are still unclear. Epidemiology studies of workers exposed to inorganic lead compounds have found a limited association with stomach cancer. This has led to the classification by IARC that inorganic lead compounds are probably carcinogenic to humans (Group 2A).  
**Arsenic:** An increased lung cancer mortality was observed in multiple human populations exposed to arsenic primarily through inhalation. Also, increased mortality from multiple internal organ cancers (liver, kidney, lung, and bladder) and an increased incidence of skin cancer were observed in populations consuming drinking water high in inorganic arsenic.

Chemical Name	ACGIH	IARC	NTP	OSHA
Powdered Lead 7439-92-1	A3	Group 2A	Reasonably Anticipated	X
Sulfuric Acid	A2	Group 1		X

7664-93-9				
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<b>Reproductive Toxicity</b>	<b>Lead:</b> Pregnancy exposure to lead might cause miscarriage or premature birth, but reports on these effects are old and might have involved higher lead exposures than are currently encountered. Maternal blood lead concentrations above 30 mcg/dL can be associated with detectable abnormalities in cognitive/behavioral testing in infants. Lower concentrations (less than 10 mcg/dL) might be associated with subtle neurobehavioral effects, but these effects might be transient. Breastfeeding is not recommended if the maternal blood lead concentration is 40 mcg/dL or hi
<b>Teratogenicity</b>	<b>Lead</b> is a teratogen. Overexposure of lead by either parent before pregnancy may increase the chances of miscarriage or birth defects.
<b>STOT - Single Exposure</b>	Not classified.
<b>STOT - Repeated Exposure</b>	Not classified.
<b>Chronic Toxicity</b>	<b>Lead:</b> Lead is a cumulative poison. Increasing amounts of lead can build up in the body and may reach a point where symptoms and disabilities occur. Continuous exposure may result in decreased fertility.  <b>Antimony:</b> Chronic effects due to antimony are alterations of the ECG, especially T-wave abnormalities, myocardial changes, pneumoconiosis, but also pneumonitis, tracheitis, laryngitis, bronchitis, pustular skin eruptions called antimony spots, and contact allergy to the metal.
<b>Target Organ Effects</b>	<b>Lead</b> is a cumulative poison and may be absorbed into the body through ingestion or inhalation. Inorganic lead compounds have been documented in observational human studies to produce toxicity in multiple organ systems and body function including the hematopoietic (blood) system, kidney function, reproductive function and the central nervous system. Postnatal exposure to lead compounds is associated with impacts on neurobehavioral development in children.
<b>Aspiration Hazard</b>	Due to the physical form of the product, it is not an aspiration hazard.

## 12. ECOLOGICAL INFORMATION

### Ecotoxicity

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Powdered Lead 7439-92-1		1.17: 96 h Oncorhynchus mykiss mg/L LC50 flow-through 0.44: 96 h Cyprinus carpio mg/L LC50 semi-static 1.32: 96 h Oncorhynchus mykiss mg/L LC50 static		600: 48 h water flea µg/L EC50
Sulfuric Acid 7664-93-9		500: 96 h Brachydanio rerio mg/L LC50 static		29: 24 h Daphnia magna mg/L EC50

### Persistence and degradability

Lead is persistent in soils and sediments.

### Bioaccumulation

Not available.

### Mobility

Not available.

### Other adverse effects

Not available.

### 13. DISPOSAL CONSIDERATIONS

#### Waste treatment methods

**Disposal of Wastes** Disposal should be in accordance with applicable regional, national and local laws and regulations.

**Contaminated Packaging** Disposal should be in accordance with applicable regional, national and local laws and regulations.

#### **US EPA Waste Number**

Chemical Name	RCRA	RCRA - Basis for Listing	RCRA - D Series Wastes	RCRA - U Series Wastes
Powdered Lead 7439-92-1		Included in waste streams: F035, F037, F038, F039, K002, K003, K005, K046, K048, K049, K051, K052, K061, K062, K069, K086, K100, K176	5.0 mg/L regulatory level	

**California Hazardous Waste Codes** Not available.

This product contains the following substances that are listed with the State of California as a hazardous waste.

Chemical Name	California Hazardous Waste Status
Powdered Lead 7439-92-1	Toxic
Sulfuric Acid 7664-93-9	Toxic Corrosive

### 14. TRANSPORT INFORMATION

**Note:** This product is not regulated for domestic transport by land, air or rail. Under 49 CFR 171.8, individual packages that contain lead metal (<100 micrometers) below the reportable quantity (RQ) are not regulated. Under 49 CFR 171.4, except when transporting aboard a vessel, the requirements of this subchapter specific to marine pollutants do not apply to non-bulk packaging transported by motor vehicles, rail cars and aircrafts.

**DOT** These batteries have been tested and meet the non-spillable criteria listed in CFR49, 173.159 (d) (3) (i) and (ii). Non-spillable batteries are excepted from CFR 49, Subchapter C requirements, provided that the following criteria are met:

- 1.) The batteries must be protected against short circuits and securely packaged.
- 2.) The batteries and their outer packaging must be plainly and durably marked "NON-SPILLABLE" or "NONSPILLABLE BATTERY".

**UN/ID No.** UN2800  
**Proper shipping name** Batteries, wet, non-spillable  
**Hazard Class** 8  
**Subsidiary class** 8  
**Packing Group** III  
**Special Provisions** 159a

**TDG** These batteries have been tested and meet the non-spillable criteria. Non-spillable batteries are excepted provided that the following criteria are met:

- 1.) The batteries must be protected against short circuits and securely packages.
- 2.) The batteries and their outer packaging must be plainly and durably marked "NON-SPILLABLE" or "NONSPILLABLE BATTERY".

**UN/ID No.** UN2800  
**Proper shipping name** Batteries, Wet, Non-Spillable  
**Hazard Class** 8  
**Subsidiary class** 8



<b>Packing Group</b>	III
<b>Special Provisions</b>	39
<b><u>MEX</u></b>	Not regulated.
<b><u>ICAO (air)</u></b>	VRLA batteries have been tested and meet the non-spillable criteria listed in IATA Packing Instruction 872 and Special Provision A67. These batteries are accepted from all IATA regulations provided that the battery terminals are protected against short circuits. The words "Not Restricted, as per Special Provision A67" must be included in the description on the Air Waybill.
<b>UN/ID No.</b>	UN2800
<b>Proper shipping name</b>	Batteries, Wet, Non-Spillable
<b>Hazard Class</b>	8
<b>Subsidiary hazard class</b>	8
<b>Packing Group</b>	III
<b>Special Provisions</b>	A48, A67, A164, A183
<b><u>IATA</u></b>	VRLA batteries have been tested and meet the non-spillable criteria listed in IATA Packing Instruction 872 and Special Provision A67. These batteries are accepted from all IATA regulations provided that the battery terminals are protected against short circuits. The words "Not Restricted, as per Special Provision A67" must be included in the description on the Air Waybill.
<b>UN/ID No.</b>	UN2800
<b>Proper shipping name</b>	Batteries, Wet, Non-Spillable
<b>Hazard Class</b>	8
<b>Subsidiary hazard class</b>	8
<b>Packing Group</b>	III
<b>Special Provisions</b>	A48, A67, A164, A183
<b><u>IMDG</u></b>	These batteries have been tested and meet the non-spillable criteria listed in IMDG Code Special Provision 238.1 and .2; therefore, are not subject to the provisions of the IMDG Code provided that the battery terminals are protected against short circuits when packaged for transport.
<b>UN/ID No.</b>	UN2800
<b>Proper shipping name</b>	Batteries, Wet, Non-Spillable
<b>Hazard Class</b>	8
<b>Subsidiary hazard class</b>	8
<b>Packing Group</b>	III
<b>Special Provisions</b>	29, 238
<b>Marine pollutant</b>	No
<b><u>RID</u></b>	Non-spillable batteries are not subject to the requirements of ADR if, at a temperature of 55C, the electrolyte will not flow from a ruptured or cracked case and there is no free liquid to flow and if, as packaged for carriage, the terminals are protected from short circuit.
<b>UN/ID No.</b>	UN2800
<b>Proper shipping name</b>	Batteries, Wet, Not-Spillable
<b>Hazard Class</b>	8
<b>Classification code</b>	C11
<b>Special Provisions</b>	238, 295, 598
<b><u>ADR</u></b>	Non-spillable batteries are not subject to the requirements of ADR if, at a temperature of 55C, the electrolyte will not flow from a ruptured or cracked case and there is no free liquid to flow and if, as packaged for carriage, the terminals are protected from short circuit.
<b>UN/ID No.</b>	UN2800
<b>Proper shipping name</b>	Batteries, Wet, Not-Spillable
<b>Hazard Class</b>	8
<b>Classification code</b>	C11
<b>Special Provisions</b>	238, 295, 598

**ADN**

Not regulated.

**15. REGULATORY INFORMATION****U.S. Federal Regulations****SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	CAS No.	Weight-%	SARA 313 - Threshold Values %
Powdered Lead - 7439-92-1	7439-92-1	63-78	0.1
Sulfuric Acid - 7664-93-9	7664-93-9	10-30	1.0

**SARA 311/312 Hazard Categories**

<b>Acute Health Hazard</b>	No
<b>Chronic Health Hazard</b>	No
<b>Fire Hazard</b>	No
<b>Sudden Release of Pressure Hazard</b>	No
<b>Reactive Hazard</b>	No

**CWA (Clean Water Act)**

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Powdered Lead 7439-92-1		X	X	
Sulfuric Acid 7664-93-9	1000 lb			X

**CERCLA**

This material, as supplied, contains the following substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302).

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Powdered Lead 7439-92-1	10 lb		RQ 10 lb final RQ RQ 4.54 kg final RQ
Sulfuric Acid 7664-93-9	1000 lb	1000 lb	RQ 1000 lb final RQ RQ 454 kg final RQ

**U.S. State Regulations****California Proposition 65**

Proposition 65: Warning: Battery posts, terminals and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and reproductive harm. Batteries also contain other chemicals known to the State of California to cause cancer. Wash hands after handling.

Chemical Name	California Proposition 65
Powdered Lead - 7439-92-1	Carcinogen Developmental Female Reproductive Male Reproductive

**U.S. State Right-to-Know Regulations**

This product contains the following substances regulated by state right-to-know regulations.

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Powdered Lead 7439-92-1	X	X	X

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Sulfuric Acid 7664-93-9	X	X	X
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**U.S. EPA Label Information**

EPA Pesticide Registration Number Not applicable.

**16. OTHER INFORMATION**

Prepared By IES Engineers  
Issue Date 13-Feb-2014  
Revision Date 10-Jul-2018  
Revision Note Changes in section 3 and 11.

**Disclaimer**

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product

**End of Safety Data Sheet**



# US - OSHA SAFETY DATA SHEET

## SEALED LEAD ACID BATTERY

Safety Data Sheet

According to Regulation (EC) No. 453/2010

Issue Date 13-Feb-2014

Revision Date 10-Jul-2018

Version 2

### 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

#### Product identifier

**Product Name** Valve Regulated Lead Battery

#### Other means of identification

**Product Code** 853023  
**UN/ID No.** UN2800  
**Synonyms** Not available.

#### Recommended use of the chemical and restrictions on use

**Recommended Use** Power sport batteries.  
**Uses Advised Against** Any other not listed above

#### Details of the supplier of the safety data sheet

**Supplier Address**  
SHENG CHANG TECH CO., LTD  
Lot I-1A-CN, My Phuoc 2 Industrial Park, My  
phuoc ward, Ben Cat Town, Binh Duong Province,  
Vietnam T +84-274-3553577 - F +84-274-3553576

#### Emergency telephone number

**Company Phone Number** (610) 929-5781  
**24 Hour Emergency Phone Number** CHEMTREC  
  
Domestic (800) 424-9300  
International 1(703) 527-3887

### 2. HAZARDS IDENTIFICATION

#### Classification

**Health Hazards**  
Not classified.

**Physical Hazards**  
Not classified.

#### OSHA Regulatory Status

Material is an article. No health effects are expected related to normal use of this product as sold. Hazardous exposure can occur only when the product is heated, oxidized or otherwise processed or damaged to create lead dust, vapor or fume. Refer to the Material Safety Data Sheet for Lead Acid Battery when battery is filled with electrolyte/battery acid.

#### Label elements

#### Emergency Overview

**Appearance** Not available. **Physical State** Solid. **Odor** Odorless.

**Hazards not otherwise classified (HNOC)**

Not available.

**Other information**

Not available.

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

**Common name** Valve Regulated Lead Battery.  
**Synonyms** Not available.

Chemical Name	CAS No.	Weight-%
Powdered Lead	7439-92-1	63-78
Tin	7440-31-5	0.006
Antimony	7440-36-0	0.2
Arsenic	7440-38-2	0.003
Calcium	7440-70-2	0.002
Sulfuric Acid	7664-93-9	10-30

\*Note: Non-hazardous chemical ingredients are not listed

**4. FIRST AID MEASURES****First aid measures**

- Eye Contact** First aid is not expected to be necessary if material is used under ordinary conditions and as recommended. If contact with material occurs flush eyes with water. If signs/symptoms develop, get medical attention.
- Skin Contact** First aid is not expected to be necessary if material is used under ordinary conditions and as recommended. Wash skin with soap and water. If signs/symptoms develop, get medical attention. If exposure to electrolyte (sulfuric acid) occurs, flush with large quantities of water for 15 minutes. Immediately remove contaminated clothing and shoes. If exposure to lead component occurs, wash contaminated skin with plenty of soap and water.
- Inhalation** First aid is not expected to be necessary if material is used under ordinary conditions and as recommended. If signs/symptoms develop, move person to fresh air.
- Ingestion** First aid is not expected to be necessary if material is used under ordinary conditions and as recommended. If electrolyte (sulfuric acid) portion of battery is ingested give large quantities, DO NOT induce vomiting. Get medical attention immediately. If lead portion of battery is ingested get medical attention immediately.
- Self-Protection of the First Aider** Do not use mouth-to-mouth methods if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or another proper respiratory medical device.

**Most important symptoms and effects, both acute and delayed**

- Symptoms** Symptoms of lead toxicity include headache, fatigue, abdominal pain, loss of appetite, muscular aches and weakness, sleep disturbances and irritability. Lead absorption may cause nausea, weight loss, abdominal spasms, and pain in arms, legs and joints. Effects of chronic lead exposure may include central nervous system (CNS) damage, kidney dysfunction, anemia, neuropathy particularly of the motor nerves with wrist drop, and potential reproductive effects.

**Indication of any immediate medical attention and special treatment needed**

- Note to Physicians** Treat symptomatically.

## 5. FIRE-FIGHTING MEASURES

### Suitable extinguishing media

CO<sub>2</sub>, dry chemical or foam.

**Unsuitable Extinguishing Media** Avoid using water.

### Specific hazards arising from the chemical

Sulfuric acid in the electrolyte is corrosive to skin and eyes.

**Hazardous Combustion Products** Lead portion of battery will likely produce toxic metal fume, vapor or dust.

### Explosion data

**Sensitivity to Mechanical Impact** Not applicable.

**Sensitivity to Static Discharge** None known.

### Protective equipment and precautions for firefighters

If batteries are on charge, shut off power. Do not allow metallic materials to simultaneously contact negative and positive terminals of cells and batteries. Wear a positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.

## 6. ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

**Personal Precautions** No special precautions expected to be necessary if material is used under ordinary conditions and as recommended. Avoid contact of lead with skin.

**Other information** Non-emergency personnel should utilize chemical gloves.

**For emergency responders** Wear chemical gloves, goggles, acid resistant clothing and boots, respirator if insufficient ventilation.

### Environmental precautions

**Environmental Precautions** Prevent entry into waterways, sewers, basements or confined areas. Runoff from fire control and dilution water may be toxic and corrosive and may cause adverse environmental impacts. See Section 12 for additional ecological information.

### Methods and material for containment and cleaning up

**Methods for Containment** In event of a battery rupturing; stop the leak if you can do it without risk. Absorb with earth, sand, or other non-combustible material. Cautiously neutralize spilled liquid.

**Methods for Cleaning Up** Dispose of in accordance with local, state, and national regulations.

## 7. HANDLING AND STORAGE

### Precautions for safe handling

**Advice on Safe Handling** Handle batteries cautiously. Do not tip to avoid spills (if filled with electrolyte). Avoid contact with internal components. Wear protective clothing when filling or handling batteries. Follow manufacturer's instructions for installation and service. Do not allow conductive material to touch the battery terminals. Short circuit may occur and cause battery failure and fire. Wash thoroughly with soap and water after handling and before eating, drinking, or using tobacco. Eyewash stations and safety showers should be provided with unlimited water supply. Handle in accordance with good industrial hygiene and safety practice.

**Conditions for safe storage, including any incompatibilities****Storage Conditions**

Store in a cool/low-temperature, well-ventilated place away from heat and ignition sources. Batteries should be stored under roof for protection against adverse weather conditions. Place cardboard between layers of stacked batteries to avoid damage and short circuits. Store batteries on an impervious surface.  
Storage class:  
Class 8B: Non-flammable corrosive materials.

**Incompatible materials**

**Sulfuric acid:** Contact with combustible and organic materials may cause fire and explosion. Also reacts violently with strong reducing agents, metals, sulfur trioxide, strong oxidizers and water. Contact with metals may product toxic sulfur dioxide fumes and may release flammable hydrogen gas.

**Lead compounds:** Avoid contact with strong bases, acids, combustible organic materials, halides, halogenates, potassium nitrate, permanganate, peroxides, nascent hydrogen, reducing agents and water.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION****Control parameters****Exposure Guidelines**

This product, as supplied, contains the following hazardous materials with occupational exposure limits established by the region-specific regulatory bodies.

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Powdered Lead 7439-92-1	TWA: 0.05 mg/m <sup>3</sup> TWA: 0.05 mg/m <sup>3</sup> Pb	TWA: 50 µg/m <sup>3</sup> TWA: 50 µg/m <sup>3</sup> Pb	IDLH: 100 mg/m <sup>3</sup> IDLH: 100 mg/m <sup>3</sup> Pb TWA: 0.050 mg/m <sup>3</sup> TWA: 0.050 mg/m <sup>3</sup> Pb
Sulfuric Acid 7664-93-9	TWA: 0.2 mg/m <sup>3</sup> thoracic particulate matter	TWA: 1 mg/m <sup>3</sup> (vacated) TWA: 1 mg/m <sup>3</sup>	IDLH: 15 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup>

**Appropriate engineering controls****Engineering Controls**

The health hazard risks of handling this material are dependent on factors, such as physical form and quantity. Site-specific risk assessments should be conducted to determine the appropriate exposure control measures. Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels as low as reasonably achievable.

**Individual protection measures, such as personal protective equipment****Eye/Face Protection**

In laboratory, medical or industrial settings, safety glasses with side shields are highly recommended. The use of goggles or full face protection may be required depending on the industrial exposure setting. Contact a health and safety professional for specific information.

**Skin and Body Protection**

Wear appropriate gloves. No skin protection is ordinarily required under normal conditions of use. In accordance with industrial hygiene practices, if contact with leaking battery is expected precautions should be taken to avoid skin contact. Under severe exposure or emergency conditions, wear acid-resistant clothing and boots.

**Respiratory Protection**

In case of insufficient ventilation, wear suitable respiratory equipment.

**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.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

<b>Physical State</b>	Solid.	<b>Odor</b>	Odorless.
<b>Appearance</b>	Not available.	<b>Odor Threshold</b>	Not available.
<b>Color</b>	Clear (electrolyte)		

<u>Property</u>	<u>Values</u>	<u>Remarks</u>
<b>pH</b>	Not available.	
<b>Melting Point/Freezing Point</b>	Not available.	
<b>Boiling Point/Boiling Range</b>	95 °C - 95.555 °C	
<b>Flash Point</b>	Not available.	
<b>Evaporation Rate</b>	Not available.	
<b>Flammability (solid, gas)</b>	Not available.	
<b>Flammability Limit in Air</b>		
<b>Upper Flammability Limit:</b>	Not available.	
<b>Lower Flammability Limit:</b>	Not available.	
<b>Vapor Pressure</b>	10 mmHg	
<b>Vapor Density</b>	1	
<b>Specific Gravity</b>	Not available.	
<b>Water Solubility</b>	100%	
<b>Solubility in Other Solvents</b>	Not available.	
<b>Partition Coefficient</b>	Not available.	
<b>Autoignition Temperature</b>	Not available.	
<b>Decomposition Temperature</b>	Not available.	
<b>Kinematic Viscosity</b>	Not available.	
<b>Dynamic Viscosity</b>	Not available.	
<b>Explosive Properties</b>	Not available.	
<b>Oxidizing Properties</b>	Not available.	

### Other information

<b>Softening Point</b>	Not available.
<b>Molecular Weight</b>	Not available.
<b>VOC Content (%)</b>	Not available.
<b>Density</b>	75.8523-84.2803 lbs/ft <sup>3</sup>
<b>Bulk Density</b>	Not available.

## 10. STABILITY AND REACTIVITY

### Reactivity

Not reactive.

### Chemical stability

Stable at normal temperatures and pressures.

### Possibility of hazardous reactions

None under normal processing.

### **Hazardous Polymerization**

Hazardous polymerization does not occur.

### Conditions to avoid

Prolonged overcharge, sources of ignition.

### Incompatible materials

**Sulfuric acid:** Contact with combustible and organic materials may cause fire and explosion. Also reacts violently with strong reducing agents, metals, sulfur trioxide, strong oxidizers and water. Contact with metals may product toxic sulfur dioxide fumes and may release flammable hydrogen gas.

**Lead compounds:** Avoid contact with strong bases, acids, combustible organic materials, halides, halogenates, potassium nitrate,



permanganate, peroxides, nascent hydrogen, reducing agents and water.

#### Hazardous decomposition products

**Lead compounds** exposed to high temperatures will likely produce toxic metal fume, vapor or dust; contact with strong acid/base or presence of nascent hydrogen may generate highly toxic arsine gas.

**Sulfuric acid:** Sulfur oxides (SO<sub>x</sub>).

## 11. TOXICOLOGICAL INFORMATION

### Product Information

#### Acute Toxicity

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50	Intravenous LD50
Sulfuric Acid 7664-93-9	= 2140 mg/kg ( Rat )	-	85 - 103 mg/m <sup>3</sup> ( Rat ) 1 h	-

#### Information on toxicological effects

##### Symptoms

Symptoms of lead toxicity include headache, fatigue, abdominal pain, loss of appetite, muscular aches and weakness, sleep disturbances and irritability. Lead absorption may cause nausea, weight loss, abdominal spasms, and pain in arms, legs and joints. Effects of chronic lead exposure may include central nervous system (CNS) damage, kidney dysfunction, anemia, neuropathy particularly of the motor nerves with wrist drop, and potential reproductive effects.

#### Delayed and immediate effects as well as chronic effects from short- and long-term exposure

**Skin Corrosion/Irritation** No data available.

**Serious Eye Damage/Eye Irritation** No data available.

**Sensitization** No data available.

**Germ Cell Mutagenicity** The evidence for genotoxic effects of highly soluble inorganic lead compounds is contradictory, with numerous studies reporting both positive and negative effects. Responses appear to be induced by indirect mechanisms, mostly at very high concentrations that lack physiological relevance.

##### Carcinogenicity

**Sulfuric acid:** The International Agency for Research on Cancer (IARC) has classified "strong inorganic acid mist containing sulfuric acid" as a Category 1 carcinogen, a substance that is carcinogenic to humans. **This classification does not apply to liquid forms of sulfuric acid or sulfuric acid solutions contained within a battery.** Batteries subjected to abusive charging at excessively high currents for prolonged periods without vent caps in place may create a surrounding atmosphere of the offensive strong inorganic acid mist containing sulfuric acid.

**Lead:** There is evidence that soluble lead compounds may have a carcinogenic effect, particularly on the kidneys of rats. However, the mechanisms by which this effect occurs are still unclear. Epidemiology studies of workers exposed to inorganic lead compounds have found a limited association with stomach cancer. This has led to the classification by IARC that inorganic lead compounds are probably carcinogenic to humans (Group 2A).  
**Arsenic:** An increased lung cancer mortality was observed in multiple human populations exposed to arsenic primarily through inhalation. Also, increased mortality from multiple internal organ cancers (liver, kidney, lung, and bladder) and an increased incidence of skin cancer were observed in populations consuming drinking water high in inorganic arsenic.

Chemical Name	ACGIH	IARC	NTP	OSHA
Powdered Lead 7439-92-1	A3	Group 2A	Reasonably Anticipated	X
Sulfuric Acid	A2	Group 1		X

7664-93-9				
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<b>Reproductive Toxicity</b>	<b>Lead:</b> Pregnancy exposure to lead might cause miscarriage or premature birth, but reports on these effects are old and might have involved higher lead exposures than are currently encountered. Maternal blood lead concentrations above 30 mcg/dL can be associated with detectable abnormalities in cognitive/behavioral testing in infants. Lower concentrations (less than 10 mcg/dL) might be associated with subtle neurobehavioral effects, but these effects might be transient. Breastfeeding is not recommended if the maternal blood lead concentration is 40 mcg/dL or hi
<b>Teratogenicity</b>	<b>Lead</b> is a teratogen. Overexposure of lead by either parent before pregnancy may increase the chances of miscarriage or birth defects.
<b>STOT - Single Exposure</b>	Not classified.
<b>STOT - Repeated Exposure</b>	Not classified.
<b>Chronic Toxicity</b>	<b>Lead:</b> Lead is a cumulative poison. Increasing amounts of lead can build up in the body and may reach a point where symptoms and disabilities occur. Continuous exposure may result in decreased fertility.  <b>Antimony:</b> Chronic effects due to antimony are alterations of the ECG, especially T-wave abnormalities, myocardial changes, pneumoconiosis, but also pneumonitis, tracheitis, laryngitis, bronchitis, pustular skin eruptions called antimony spots, and contact allergy to the metal.
<b>Target Organ Effects</b>	<b>Lead</b> is a cumulative poison and may be absorbed into the body through ingestion or inhalation. Inorganic lead compounds have been documented in observational human studies to produce toxicity in multiple organ systems and body function including the hematopoietic (blood) system, kidney function, reproductive function and the central nervous system. Postnatal exposure to lead compounds is associated with impacts on neurobehavioral development in children.
<b>Aspiration Hazard</b>	Due to the physical form of the product, it is not an aspiration hazard.

## 12. ECOLOGICAL INFORMATION

### Ecotoxicity

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Powdered Lead 7439-92-1		1.17: 96 h Oncorhynchus mykiss mg/L LC50 flow-through 0.44: 96 h Cyprinus carpio mg/L LC50 semi-static 1.32: 96 h Oncorhynchus mykiss mg/L LC50 static		600: 48 h water flea µg/L EC50
Sulfuric Acid 7664-93-9		500: 96 h Brachydanio rerio mg/L LC50 static		29: 24 h Daphnia magna mg/L EC50

### Persistence and degradability

Lead is persistent in soils and sediments.

### Bioaccumulation

Not available.

### Mobility

Not available.

### Other adverse effects

Not available.

### 13. DISPOSAL CONSIDERATIONS

#### Waste treatment methods

**Disposal of Wastes** Disposal should be in accordance with applicable regional, national and local laws and regulations.

**Contaminated Packaging** Disposal should be in accordance with applicable regional, national and local laws and regulations.

#### **US EPA Waste Number**

Chemical Name	RCRA	RCRA - Basis for Listing	RCRA - D Series Wastes	RCRA - U Series Wastes
Powdered Lead 7439-92-1		Included in waste streams: F035, F037, F038, F039, K002, K003, K005, K046, K048, K049, K051, K052, K061, K062, K069, K086, K100, K176	5.0 mg/L regulatory level	

**California Hazardous Waste Codes** Not available.

This product contains the following substances that are listed with the State of California as a hazardous waste.

Chemical Name	California Hazardous Waste Status
Powdered Lead 7439-92-1	Toxic
Sulfuric Acid 7664-93-9	Toxic Corrosive

### 14. TRANSPORT INFORMATION

**Note:** This product is not regulated for domestic transport by land, air or rail. Under 49 CFR 171.8, individual packages that contain lead metal (<100 micrometers) below the reportable quantity (RQ) are not regulated. Under 49 CFR 171.4, except when transporting aboard a vessel, the requirements of this subchapter specific to marine pollutants do not apply to non-bulk packaging transported by motor vehicles, rail cars and aircrafts.

**DOT** These batteries have been tested and meet the non-spillable criteria listed in CFR49, 173.159 (d) (3) (i) and (ii). Non-spillable batteries are excepted from CFR 49, Subchapter C requirements, provided that the following criteria are met:

- 1.) The batteries must be protected against short circuits and securely packaged.
- 2.) The batteries and their outer packaging must be plainly and durably marked "NON-SPILLABLE" or "NONSPILLABLE BATTERY".

**UN/ID No.** UN2800  
**Proper shipping name** Batteries, wet, non-spillable  
**Hazard Class** 8  
**Subsidiary class** 8  
**Packing Group** III  
**Special Provisions** 159a

**TDG** These batteries have been tested and meet the non-spillable criteria. Non-spillable batteries are excepted provided that the following criteria are met:

- 1.) The batteries must be protected against short circuits and securely packages.
- 2.) The batteries and their outer packaging must be plainly and durably marked "NON-SPILLABLE" or "NONSPILLABLE BATTERY".

**UN/ID No.** UN2800  
**Proper shipping name** Batteries, Wet, Non-Spillable  
**Hazard Class** 8  
**Subsidiary class** 8

<b>Packing Group</b>	III
<b>Special Provisions</b>	39
<b><u>MEX</u></b>	Not regulated.
<b><u>ICAO (air)</u></b>	VRLA batteries have been tested and meet the non-spillable criteria listed in IATA Packing Instruction 872 and Special Provision A67. These batteries are accepted from all IATA regulations provided that the battery terminals are protected against short circuits. The words "Not Restricted, as per Special Provision A67" must be included in the description on the Air Waybill.
<b>UN/ID No.</b>	UN2800
<b>Proper shipping name</b>	Batteries, Wet, Non-Spillable
<b>Hazard Class</b>	8
<b>Subsidiary hazard class</b>	8
<b>Packing Group</b>	III
<b>Special Provisions</b>	A48, A67, A164, A183
<b><u>IATA</u></b>	VRLA batteries have been tested and meet the non-spillable criteria listed in IATA Packing Instruction 872 and Special Provision A67. These batteries are accepted from all IATA regulations provided that the battery terminals are protected against short circuits. The words "Not Restricted, as per Special Provision A67" must be included in the description on the Air Waybill.
<b>UN/ID No.</b>	UN2800
<b>Proper shipping name</b>	Batteries, Wet, Non-Spillable
<b>Hazard Class</b>	8
<b>Subsidiary hazard class</b>	8
<b>Packing Group</b>	III
<b>Special Provisions</b>	A48, A67, A164, A183
<b><u>IMDG</u></b>	These batteries have been tested and meet the non-spillable criteria listed in IMDG Code Special Provision 238.1 and .2; therefore, are not subject to the provisions of the IMDG Code provided that the battery terminals are protected against short circuits when packaged for transport.
<b>UN/ID No.</b>	UN2800
<b>Proper shipping name</b>	Batteries, Wet, Non-Spillable
<b>Hazard Class</b>	8
<b>Subsidiary hazard class</b>	8
<b>Packing Group</b>	III
<b>Special Provisions</b>	29, 238
<b>Marine pollutant</b>	No
<b><u>RID</u></b>	Non-spillable batteries are not subject to the requirements of ADR if, at a temperature of 55C, the electrolyte will not flow from a ruptured or cracked case and there is no free liquid to flow and if, as packaged for carriage, the terminals are protected from short circuit.
<b>UN/ID No.</b>	UN2800
<b>Proper shipping name</b>	Batteries, Wet, Not-Spillable
<b>Hazard Class</b>	8
<b>Classification code</b>	C11
<b>Special Provisions</b>	238, 295, 598
<b><u>ADR</u></b>	Non-spillable batteries are not subject to the requirements of ADR if, at a temperature of 55C, the electrolyte will not flow from a ruptured or cracked case and there is no free liquid to flow and if, as packaged for carriage, the terminals are protected from short circuit.
<b>UN/ID No.</b>	UN2800
<b>Proper shipping name</b>	Batteries, Wet, Not-Spillable
<b>Hazard Class</b>	8
<b>Classification code</b>	C11
<b>Special Provisions</b>	238, 295, 598

**ADN**

Not regulated.

**15. REGULATORY INFORMATION****U.S. Federal Regulations****SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	CAS No.	Weight-%	SARA 313 - Threshold Values %
Powdered Lead - 7439-92-1	7439-92-1	63-78	0.1
Sulfuric Acid - 7664-93-9	7664-93-9	10-30	1.0

**SARA 311/312 Hazard Categories**

<b>Acute Health Hazard</b>	No
<b>Chronic Health Hazard</b>	No
<b>Fire Hazard</b>	No
<b>Sudden Release of Pressure Hazard</b>	No
<b>Reactive Hazard</b>	No

**CWA (Clean Water Act)**

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Powdered Lead 7439-92-1		X	X	
Sulfuric Acid 7664-93-9	1000 lb			X

**CERCLA**

This material, as supplied, contains the following substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302).

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Powdered Lead 7439-92-1	10 lb		RQ 10 lb final RQ RQ 4.54 kg final RQ
Sulfuric Acid 7664-93-9	1000 lb	1000 lb	RQ 1000 lb final RQ RQ 454 kg final RQ

**U.S. State Regulations****California Proposition 65**

Proposition 65: Warning: Battery posts, terminals and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and reproductive harm. Batteries also contain other chemicals known to the State of California to cause cancer. Wash hands after handling.

Chemical Name	California Proposition 65
Powdered Lead - 7439-92-1	Carcinogen Developmental Female Reproductive Male Reproductive

**U.S. State Right-to-Know Regulations**

This product contains the following substances regulated by state right-to-know regulations.

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Powdered Lead 7439-92-1	X	X	X

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Sulfuric Acid 7664-93-9	X	X	X
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**U.S. EPA Label Information****EPA Pesticide Registration Number** Not applicable.**16. OTHER INFORMATION**

**Prepared By** IES Engineers  
**Issue Date** 13-Feb-2014  
**Revision Date** 10-Jul-2018  
**Revision Note** Changes in section 3 and 11.

**Disclaimer**

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product

**End of Safety Data Sheet**



# US - OSHA SAFETY DATA SHEET

## SEALED LEAD ACID BATTERY

Safety Data Sheet

According to Regulation (EC) No. 453/2010

Issue Date 13-Feb-2014

Revision Date 10-Jul-2018

Version 2

### 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

#### Product identifier

**Product Name** Valve Regulated Lead Battery

#### Other means of identification

**Product Code** 853023  
**UN/ID No.** UN2800  
**Synonyms** Not available.

#### Recommended use of the chemical and restrictions on use

**Recommended Use** Power sport batteries.  
**Uses Advised Against** Any other not listed above

#### Details of the supplier of the safety data sheet

**Supplier Address**  
SHENG CHANG TECH CO., LTD  
Lot I-1A-CN, My Phuoc 2 Industrial Park, My  
phuoc ward, Ben Cat Town, Binh Duong Province,  
Vietnam T +84-274-3553577 - F +84-274-3553576

#### Emergency telephone number

**Company Phone Number** (610) 929-5781  
**24 Hour Emergency Phone Number** CHEMTREC  
  
Domestic (800) 424-9300  
International 1(703) 527-3887

### 2. HAZARDS IDENTIFICATION

#### Classification

**Health Hazards**  
Not classified.

**Physical Hazards**  
Not classified.

#### OSHA Regulatory Status

Material is an article. No health effects are expected related to normal use of this product as sold. Hazardous exposure can occur only when the product is heated, oxidized or otherwise processed or damaged to create lead dust, vapor or fume. Refer to the Material Safety Data Sheet for Lead Acid Battery when battery is filled with electrolyte/battery acid.

#### Label elements

#### Emergency Overview

**Appearance** Not available. **Physical State** Solid. **Odor** Odorless.

**Hazards not otherwise classified (HNOC)**

Not available.

**Other information**

Not available.

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

**Common name** Valve Regulated Lead Battery.  
**Synonyms** Not available.

Chemical Name	CAS No.	Weight-%
Powdered Lead	7439-92-1	63-78
Tin	7440-31-5	0.006
Antimony	7440-36-0	0.2
Arsenic	7440-38-2	0.003
Calcium	7440-70-2	0.002
Sulfuric Acid	7664-93-9	10-30

\*Note: Non-hazardous chemical ingredients are not listed

**4. FIRST AID MEASURES****First aid measures**

- Eye Contact** First aid is not expected to be necessary if material is used under ordinary conditions and as recommended. If contact with material occurs flush eyes with water. If signs/symptoms develop, get medical attention.
- Skin Contact** First aid is not expected to be necessary if material is used under ordinary conditions and as recommended. Wash skin with soap and water. If signs/symptoms develop, get medical attention. If exposure to electrolyte (sulfuric acid) occurs, flush with large quantities of water for 15 minutes. Immediately remove contaminated clothing and shoes. If exposure to lead component occurs, wash contaminated skin with plenty of soap and water.
- Inhalation** First aid is not expected to be necessary if material is used under ordinary conditions and as recommended. If signs/symptoms develop, move person to fresh air.
- Ingestion** First aid is not expected to be necessary if material is used under ordinary conditions and as recommended. If electrolyte (sulfuric acid) portion of battery is ingested give large quantities, DO NOT induce vomiting. Get medical attention immediately. If lead portion of battery is ingested get medical attention immediately.
- Self-Protection of the First Aider** Do not use mouth-to-mouth methods if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or another proper respiratory medical device.

**Most important symptoms and effects, both acute and delayed**

- Symptoms** Symptoms of lead toxicity include headache, fatigue, abdominal pain, loss of appetite, muscular aches and weakness, sleep disturbances and irritability. Lead absorption may cause nausea, weight loss, abdominal spasms, and pain in arms, legs and joints. Effects of chronic lead exposure may include central nervous system (CNS) damage, kidney dysfunction, anemia, neuropathy particularly of the motor nerves with wrist drop, and potential reproductive effects.

**Indication of any immediate medical attention and special treatment needed**

**Note to Physicians** Treat symptomatically.



## 5. FIRE-FIGHTING MEASURES

### Suitable extinguishing media

CO<sub>2</sub>, dry chemical or foam.

**Unsuitable Extinguishing Media** Avoid using water.

### Specific hazards arising from the chemical

Sulfuric acid in the electrolyte is corrosive to skin and eyes.

**Hazardous Combustion Products** Lead portion of battery will likely produce toxic metal fume, vapor or dust.

### Explosion data

**Sensitivity to Mechanical Impact** Not applicable.

**Sensitivity to Static Discharge** None known.

### Protective equipment and precautions for firefighters

If batteries are on charge, shut off power. Do not allow metallic materials to simultaneously contact negative and positive terminals of cells and batteries. Wear a positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.

## 6. ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

**Personal Precautions** No special precautions expected to be necessary if material is used under ordinary conditions and as recommended. Avoid contact of lead with skin.

**Other information** Non-emergency personnel should utilize chemical gloves.

**For emergency responders** Wear chemical gloves, goggles, acid resistant clothing and boots, respirator if insufficient ventilation.

### Environmental precautions

**Environmental Precautions** Prevent entry into waterways, sewers, basements or confined areas. Runoff from fire control and dilution water may be toxic and corrosive and may cause adverse environmental impacts. See Section 12 for additional ecological information.

### Methods and material for containment and cleaning up

**Methods for Containment** In event of a battery rupturing; stop the leak if you can do it without risk. Absorb with earth, sand, or other non-combustible material. Cautiously neutralize spilled liquid.

**Methods for Cleaning Up** Dispose of in accordance with local, state, and national regulations.

## 7. HANDLING AND STORAGE

### Precautions for safe handling

**Advice on Safe Handling** Handle batteries cautiously. Do not tip to avoid spills (if filled with electrolyte). Avoid contact with internal components. Wear protective clothing when filling or handling batteries. Follow manufacturer's instructions for installation and service. Do not allow conductive material to touch the battery terminals. Short circuit may occur and cause battery failure and fire. Wash thoroughly with soap and water after handling and before eating, drinking, or using tobacco. Eyewash stations and safety showers should be provided with unlimited water supply. Handle in accordance with good industrial hygiene and safety practice.

**Conditions for safe storage, including any incompatibilities**

<b>Storage Conditions</b>	Store in a cool/low-temperature, well-ventilated place away from heat and ignition sources. Batteries should be stored under roof for protection against adverse weather conditions. Place cardboard between layers of stacked batteries to avoid damage and short circuits. Store batteries on an impervious surface. Storage class: Class 8B: Non-flammable corrosive materials.
<b>Incompatible materials</b>	<b>Sulfuric acid:</b> Contact with combustible and organic materials may cause fire and explosion. Also reacts violently with strong reducing agents, metals, sulfur trioxide, strong oxidizers and water. Contact with metals may product toxic sulfur dioxide fumes and may release flammable hydrogen gas.  <b>Lead compounds:</b> Avoid contact with strong bases, acids, combustible organic materials, halides, halogenates, potassium nitrate, permanganate, peroxides, nascent hydrogen, reducing agents and water.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION****Control parameters**

**Exposure Guidelines** This product, as supplied, contains the following hazardous materials with occupational exposure limits established by the region-specific regulatory bodies.

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Powdered Lead 7439-92-1	TWA: 0.05 mg/m <sup>3</sup> TWA: 0.05 mg/m <sup>3</sup> Pb	TWA: 50 µg/m <sup>3</sup> TWA: 50 µg/m <sup>3</sup> Pb	IDLH: 100 mg/m <sup>3</sup> IDLH: 100 mg/m <sup>3</sup> Pb TWA: 0.050 mg/m <sup>3</sup> TWA: 0.050 mg/m <sup>3</sup> Pb
Sulfuric Acid 7664-93-9	TWA: 0.2 mg/m <sup>3</sup> thoracic particulate matter	TWA: 1 mg/m <sup>3</sup> (vacated) TWA: 1 mg/m <sup>3</sup>	IDLH: 15 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup>

**Appropriate engineering controls**

**Engineering Controls** The health hazard risks of handling this material are dependent on factors, such as physical form and quantity. Site-specific risk assessments should be conducted to determine the appropriate exposure control measures. Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels as low as reasonably achievable.

**Individual protection measures, such as personal protective equipment**

<b>Eye/Face Protection</b>	In laboratory, medical or industrial settings, safety glasses with side shields are highly recommended. The use of goggles or full face protection may be required depending on the industrial exposure setting. Contact a health and safety professional for specific information.
<b>Skin and Body Protection</b>	Wear appropriate gloves. No skin protection is ordinarily required under normal conditions of use. In accordance with industrial hygiene practices, if contact with leaking battery is expected precautions should be taken to avoid skin contact. Under severe exposure or emergency conditions, wear acid-resistant clothing and boots.
<b>Respiratory Protection</b>	In case of insufficient ventilation, wear suitable respiratory equipment.
<b>General Hygiene Considerations</b>	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.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

<b>Physical State</b>	Solid.	<b>Odor</b>	Odorless.
<b>Appearance</b>	Not available.	<b>Odor Threshold</b>	Not available.
<b>Color</b>	Clear (electrolyte)		

<u>Property</u>	<u>Values</u>	<u>Remarks</u>
<b>pH</b>	Not available.	
<b>Melting Point/Freezing Point</b>	Not available.	
<b>Boiling Point/Boiling Range</b>	95 °C - 95.555 °C	
<b>Flash Point</b>	Not available.	
<b>Evaporation Rate</b>	Not available.	
<b>Flammability (solid, gas)</b>	Not available.	
<b>Flammability Limit in Air</b>		
<b>Upper Flammability Limit:</b>	Not available.	
<b>Lower Flammability Limit:</b>	Not available.	
<b>Vapor Pressure</b>	10 mmHg	
<b>Vapor Density</b>	1	
<b>Specific Gravity</b>	Not available.	
<b>Water Solubility</b>	100%	
<b>Solubility in Other Solvents</b>	Not available.	
<b>Partition Coefficient</b>	Not available.	
<b>Autoignition Temperature</b>	Not available.	
<b>Decomposition Temperature</b>	Not available.	
<b>Kinematic Viscosity</b>	Not available.	
<b>Dynamic Viscosity</b>	Not available.	
<b>Explosive Properties</b>	Not available.	
<b>Oxidizing Properties</b>	Not available.	

### Other information

<b>Softening Point</b>	Not available.
<b>Molecular Weight</b>	Not available.
<b>VOC Content (%)</b>	Not available.
<b>Density</b>	75.8523-84.2803 lbs/ft <sup>3</sup>
<b>Bulk Density</b>	Not available.

## 10. STABILITY AND REACTIVITY

### Reactivity

Not reactive.

### Chemical stability

Stable at normal temperatures and pressures.

### Possibility of hazardous reactions

None under normal processing.

### **Hazardous Polymerization**

Hazardous polymerization does not occur.

### Conditions to avoid

Prolonged overcharge, sources of ignition.

### Incompatible materials

**Sulfuric acid:** Contact with combustible and organic materials may cause fire and explosion. Also reacts violently with strong reducing agents, metals, sulfur trioxide, strong oxidizers and water. Contact with metals may product toxic sulfur dioxide fumes and may release flammable hydrogen gas.

**Lead compounds:** Avoid contact with strong bases, acids, combustible organic materials, halides, halogenates, potassium nitrate,

permanganate, peroxides, nascent hydrogen, reducing agents and water.

#### Hazardous decomposition products

**Lead compounds** exposed to high temperatures will likely produce toxic metal fume, vapor or dust; contact with strong acid/base or presence of nascent hydrogen may generate highly toxic arsine gas.

**Sulfuric acid:** Sulfur oxides (SO<sub>x</sub>).

## 11. TOXICOLOGICAL INFORMATION

### Product Information

#### Acute Toxicity

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50	Intravenous LD50
Sulfuric Acid 7664-93-9	= 2140 mg/kg ( Rat )	-	85 - 103 mg/m <sup>3</sup> ( Rat ) 1 h	-

#### Information on toxicological effects

##### Symptoms

Symptoms of lead toxicity include headache, fatigue, abdominal pain, loss of appetite, muscular aches and weakness, sleep disturbances and irritability. Lead absorption may cause nausea, weight loss, abdominal spasms, and pain in arms, legs and joints. Effects of chronic lead exposure may include central nervous system (CNS) damage, kidney dysfunction, anemia, neuropathy particularly of the motor nerves with wrist drop, and potential reproductive effects.

#### Delayed and immediate effects as well as chronic effects from short- and long-term exposure

**Skin Corrosion/Irritation** No data available.

**Serious Eye Damage/Eye Irritation** No data available.

**Sensitization** No data available.

**Germ Cell Mutagenicity** The evidence for genotoxic effects of highly soluble inorganic lead compounds is contradictory, with numerous studies reporting both positive and negative effects. Responses appear to be induced by indirect mechanisms, mostly at very high concentrations that lack physiological relevance.

##### Carcinogenicity

**Sulfuric acid:** The International Agency for Research on Cancer (IARC) has classified "strong inorganic acid mist containing sulfuric acid" as a Category 1 carcinogen, a substance that is carcinogenic to humans. **This classification does not apply to liquid forms of sulfuric acid or sulfuric acid solutions contained within a battery.** Batteries subjected to abusive charging at excessively high currents for prolonged periods without vent caps in place may create a surrounding atmosphere of the offensive strong inorganic acid mist containing sulfuric acid.

**Lead:** There is evidence that soluble lead compounds may have a carcinogenic effect, particularly on the kidneys of rats. However, the mechanisms by which this effect occurs are still unclear. Epidemiology studies of workers exposed to inorganic lead compounds have found a limited association with stomach cancer. This has led to the classification by IARC that inorganic lead compounds are probably carcinogenic to humans (Group 2A).  
**Arsenic:** An increased lung cancer mortality was observed in multiple human populations exposed to arsenic primarily through inhalation. Also, increased mortality from multiple internal organ cancers (liver, kidney, lung, and bladder) and an increased incidence of skin cancer were observed in populations consuming drinking water high in inorganic arsenic.

Chemical Name	ACGIH	IARC	NTP	OSHA
Powdered Lead 7439-92-1	A3	Group 2A	Reasonably Anticipated	X
Sulfuric Acid	A2	Group 1		X

7664-93-9				
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**Reproductive Toxicity**

**Lead:** Pregnancy exposure to lead might cause miscarriage or premature birth, but reports on these effects are old and might have involved higher lead exposures than are currently encountered. Maternal blood lead concentrations above 30 mcg/dL can be associated with detectable abnormalities in cognitive/behavioral testing in infants. Lower concentrations (less than 10 mcg/dL) might be associated with subtle neurobehavioral effects, but these effects might be transient. Breastfeeding is not recommended if the maternal blood lead concentration is 40 mcg/dL or hi

**Teratogenicity**

**Lead** is a teratogen. Overexposure of lead by either parent before pregnancy may increase the chances of miscarriage or birth defects.

**STOT - Single Exposure**

Not classified.

**STOT - Repeated Exposure**

Not classified.

**Chronic Toxicity**

**Lead:** Lead is a cumulative poison. Increasing amounts of lead can build up in the body and may reach a point where symptoms and disabilities occur. Continuous exposure may result in decreased fertility.

**Antimony:** Chronic effects due to antimony are alterations of the ECG, especially T-wave abnormalities, myocardial changes, pneumoconiosis, but also pneumonitis, tracheitis, laryngitis, bronchitis, pustular skin eruptions called antimony spots, and contact allergy to the metal.

**Target Organ Effects**

**Lead** is a cumulative poison and may be absorbed into the body through ingestion or inhalation. Inorganic lead compounds have been documented in observational human studies to produce toxicity in multiple organ systems and body function including the hematopoietic (blood) system, kidney function, reproductive function and the central nervous system. Postnatal exposure to lead compounds is associated with impacts on neurobehavioral development in children.

**Aspiration Hazard**

Due to the physical form of the product, it is not an aspiration hazard.

## 12. ECOLOGICAL INFORMATION

**Ecotoxicity**

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Powdered Lead 7439-92-1		1.17: 96 h Oncorhynchus mykiss mg/L LC50 flow-through 0.44: 96 h Cyprinus carpio mg/L LC50 semi-static 1.32: 96 h Oncorhynchus mykiss mg/L LC50 static		600: 48 h water flea µg/L EC50
Sulfuric Acid 7664-93-9		500: 96 h Brachydanio rerio mg/L LC50 static		29: 24 h Daphnia magna mg/L EC50

**Persistence and degradability**

Lead is persistent in soils and sediments.

**Bioaccumulation**

Not available.

**Mobility**

Not available.

**Other adverse effects**

Not available.

### 13. DISPOSAL CONSIDERATIONS

#### Waste treatment methods

**Disposal of Wastes** Disposal should be in accordance with applicable regional, national and local laws and regulations.

**Contaminated Packaging** Disposal should be in accordance with applicable regional, national and local laws and regulations.

#### **US EPA Waste Number**

Chemical Name	RCRA	RCRA - Basis for Listing	RCRA - D Series Wastes	RCRA - U Series Wastes
Powdered Lead 7439-92-1		Included in waste streams: F035, F037, F038, F039, K002, K003, K005, K046, K048, K049, K051, K052, K061, K062, K069, K086, K100, K176	5.0 mg/L regulatory level	

**California Hazardous Waste Codes** Not available.

This product contains the following substances that are listed with the State of California as a hazardous waste.

Chemical Name	California Hazardous Waste Status
Powdered Lead 7439-92-1	Toxic
Sulfuric Acid 7664-93-9	Toxic Corrosive

### 14. TRANSPORT INFORMATION

**Note:** This product is not regulated for domestic transport by land, air or rail. Under 49 CFR 171.8, individual packages that contain lead metal (<100 micrometers) below the reportable quantity (RQ) are not regulated. Under 49 CFR 171.4, except when transporting aboard a vessel, the requirements of this subchapter specific to marine pollutants do not apply to non-bulk packaging transported by motor vehicles, rail cars and aircrafts.

**DOT** These batteries have been tested and meet the non-spillable criteria listed in CFR49, 173.159 (d) (3) (i) and (ii). Non-spillable batteries are excepted from CFR 49, Subchapter C requirements, provided that the following criteria are met:

- 1.) The batteries must be protected against short circuits and securely packaged.
- 2.) The batteries and their outer packaging must be plainly and durably marked "NON-SPILLABLE" or "NONSPILLABLE BATTERY".

**UN/ID No.** UN2800  
**Proper shipping name** Batteries, wet, non-spillable  
**Hazard Class** 8  
**Subsidiary class** 8  
**Packing Group** III  
**Special Provisions** 159a

**TDG** These batteries have been tested and meet the non-spillable criteria. Non-spillable batteries are excepted provided that the following criteria are met:

- 1.) The batteries must be protected against short circuits and securely packages.
- 2.) The batteries and their outer packaging must be plainly and durably marked "NON-SPILLABLE" or "NONSPILLABLE BATTERY".

**UN/ID No.** UN2800  
**Proper shipping name** Batteries, Wet, Non-Spillable  
**Hazard Class** 8  
**Subsidiary class** 8

<b>Packing Group</b>	III
<b>Special Provisions</b>	39
<b><u>MEX</u></b>	Not regulated.
<b><u>ICAO (air)</u></b>	VRLA batteries have been tested and meet the non-spillable criteria listed in IATA Packing Instruction 872 and Special Provision A67. These batteries are accepted from all IATA regulations provided that the battery terminals are protected against short circuits. The words "Not Restricted, as per Special Provision A67" must be included in the description on the Air Waybill.
<b>UN/ID No.</b>	UN2800
<b>Proper shipping name</b>	Batteries, Wet, Non-Spillable
<b>Hazard Class</b>	8
<b>Subsidiary hazard class</b>	8
<b>Packing Group</b>	III
<b>Special Provisions</b>	A48, A67, A164, A183
<b><u>IATA</u></b>	VRLA batteries have been tested and meet the non-spillable criteria listed in IATA Packing Instruction 872 and Special Provision A67. These batteries are accepted from all IATA regulations provided that the battery terminals are protected against short circuits. The words "Not Restricted, as per Special Provision A67" must be included in the description on the Air Waybill.
<b>UN/ID No.</b>	UN2800
<b>Proper shipping name</b>	Batteries, Wet, Non-Spillable
<b>Hazard Class</b>	8
<b>Subsidiary hazard class</b>	8
<b>Packing Group</b>	III
<b>Special Provisions</b>	A48, A67, A164, A183
<b><u>IMDG</u></b>	These batteries have been tested and meet the non-spillable criteria listed in IMDG Code Special Provision 238.1 and .2; therefore, are not subject to the provisions of the IMDG Code provided that the battery terminals are protected against short circuits when packaged for transport.
<b>UN/ID No.</b>	UN2800
<b>Proper shipping name</b>	Batteries, Wet, Non-Spillable
<b>Hazard Class</b>	8
<b>Subsidiary hazard class</b>	8
<b>Packing Group</b>	III
<b>Special Provisions</b>	29, 238
<b>Marine pollutant</b>	No
<b><u>RID</u></b>	Non-spillable batteries are not subject to the requirements of ADR if, at a temperature of 55C, the electrolyte will not flow from a ruptured or cracked case and there is no free liquid to flow and if, as packaged for carriage, the terminals are protected from short circuit.
<b>UN/ID No.</b>	UN2800
<b>Proper shipping name</b>	Batteries, Wet, Not-Spillable
<b>Hazard Class</b>	8
<b>Classification code</b>	C11
<b>Special Provisions</b>	238, 295, 598
<b><u>ADR</u></b>	Non-spillable batteries are not subject to the requirements of ADR if, at a temperature of 55C, the electrolyte will not flow from a ruptured or cracked case and there is no free liquid to flow and if, as packaged for carriage, the terminals are protected from short circuit.
<b>UN/ID No.</b>	UN2800
<b>Proper shipping name</b>	Batteries, Wet, Not-Spillable
<b>Hazard Class</b>	8
<b>Classification code</b>	C11
<b>Special Provisions</b>	238, 295, 598

**ADN**

Not regulated.

**15. REGULATORY INFORMATION****U.S. Federal Regulations****SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	CAS No.	Weight-%	SARA 313 - Threshold Values %
Powdered Lead - 7439-92-1	7439-92-1	63-78	0.1
Sulfuric Acid - 7664-93-9	7664-93-9	10-30	1.0

**SARA 311/312 Hazard Categories**

<b>Acute Health Hazard</b>	No
<b>Chronic Health Hazard</b>	No
<b>Fire Hazard</b>	No
<b>Sudden Release of Pressure Hazard</b>	No
<b>Reactive Hazard</b>	No

**CWA (Clean Water Act)**

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Powdered Lead 7439-92-1		X	X	
Sulfuric Acid 7664-93-9	1000 lb			X

**CERCLA**

This material, as supplied, contains the following substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302).

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Powdered Lead 7439-92-1	10 lb		RQ 10 lb final RQ RQ 4.54 kg final RQ
Sulfuric Acid 7664-93-9	1000 lb	1000 lb	RQ 1000 lb final RQ RQ 454 kg final RQ

**U.S. State Regulations****California Proposition 65**

Proposition 65: Warning: Battery posts, terminals and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and reproductive harm. Batteries also contain other chemicals known to the State of California to cause cancer. Wash hands after handling.

Chemical Name	California Proposition 65
Powdered Lead - 7439-92-1	Carcinogen Developmental Female Reproductive Male Reproductive

**U.S. State Right-to-Know Regulations**

This product contains the following substances regulated by state right-to-know regulations.

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Powdered Lead 7439-92-1	X	X	X



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Sulfuric Acid 7664-93-9	X	X	X
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**U.S. EPA Label Information**

EPA Pesticide Registration Number Not applicable.

**16. OTHER INFORMATION**

Prepared By IES Engineers  
Issue Date 13-Feb-2014  
Revision Date 10-Jul-2018  
Revision Note Changes in section 3 and 11.

**Disclaimer**

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product

**End of Safety Data Sheet**



# US - OSHA SAFETY DATA SHEET

## SEALED LEAD ACID BATTERY

Safety Data Sheet

According to Regulation (EC) No. 453/2010

Issue Date 13-Feb-2014

Revision Date 10-Jul-2018

Version 2

### 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

#### Product identifier

**Product Name** Valve Regulated Lead Battery

#### Other means of identification

**Product Code** 853023  
**UN/ID No.** UN2800  
**Synonyms** Not available.

#### Recommended use of the chemical and restrictions on use

**Recommended Use** Power sport batteries.  
**Uses Advised Against** Any other not listed above

#### Details of the supplier of the safety data sheet

**Supplier Address**  
SHENG CHANG TECH CO., LTD  
Lot I-1A-CN, My Phuoc 2 Industrial Park, My  
phuoc ward, Ben Cat Town, Binh Duong Province,  
Vietnam T +84-274-3553577 - F +84-274-3553576

#### Emergency telephone number

**Company Phone Number** (610) 929-5781  
**24 Hour Emergency Phone Number** CHEMTREC  
  
Domestic (800) 424-9300  
International 1(703) 527-3887

### 2. HAZARDS IDENTIFICATION

#### Classification

**Health Hazards**  
Not classified.

**Physical Hazards**  
Not classified.

#### **OSHA Regulatory Status**

Material is an article. No health effects are expected related to normal use of this product as sold. Hazardous exposure can occur only when the product is heated, oxidized or otherwise processed or damaged to create lead dust, vapor or fume. Refer to the Material Safety Data Sheet for Lead Acid Battery when battery is filled with electrolyte/battery acid.

#### Label elements

#### **Emergency Overview**

**Appearance** Not available. **Physical State** Solid. **Odor** Odorless.

**Hazards not otherwise classified (HNOC)**

Not available.

**Other information**

Not available.

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

**Common name** Valve Regulated Lead Battery.  
**Synonyms** Not available.

Chemical Name	CAS No.	Weight-%
Powdered Lead	7439-92-1	63-78
Tin	7440-31-5	0.006
Antimony	7440-36-0	0.2
Arsenic	7440-38-2	0.003
Calcium	7440-70-2	0.002
Sulfuric Acid	7664-93-9	10-30

\*Note: Non-hazardous chemical ingredients are not listed

**4. FIRST AID MEASURES****First aid measures**

- Eye Contact** First aid is not expected to be necessary if material is used under ordinary conditions and as recommended. If contact with material occurs flush eyes with water. If signs/symptoms develop, get medical attention.
- Skin Contact** First aid is not expected to be necessary if material is used under ordinary conditions and as recommended. Wash skin with soap and water. If signs/symptoms develop, get medical attention. If exposure to electrolyte (sulfuric acid) occurs, flush with large quantities of water for 15 minutes. Immediately remove contaminated clothing and shoes. If exposure to lead component occurs, wash contaminated skin with plenty of soap and water.
- Inhalation** First aid is not expected to be necessary if material is used under ordinary conditions and as recommended. If signs/symptoms develop, move person to fresh air.
- Ingestion** First aid is not expected to be necessary if material is used under ordinary conditions and as recommended. If electrolyte (sulfuric acid) portion of battery is ingested give large quantities, DO NOT induce vomiting. Get medical attention immediately. If lead portion of battery is ingested get medical attention immediately.
- Self-Protection of the First Aider** Do not use mouth-to-mouth methods if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or another proper respiratory medical device.

**Most important symptoms and effects, both acute and delayed**

- Symptoms** Symptoms of lead toxicity include headache, fatigue, abdominal pain, loss of appetite, muscular aches and weakness, sleep disturbances and irritability. Lead absorption may cause nausea, weight loss, abdominal spasms, and pain in arms, legs and joints. Effects of chronic lead exposure may include central nervous system (CNS) damage, kidney dysfunction, anemia, neuropathy particularly of the motor nerves with wrist drop, and potential reproductive effects.

**Indication of any immediate medical attention and special treatment needed**

- Note to Physicians** Treat symptomatically.

## 5. FIRE-FIGHTING MEASURES

### Suitable extinguishing media

CO<sub>2</sub>, dry chemical or foam.

**Unsuitable Extinguishing Media** Avoid using water.

### Specific hazards arising from the chemical

Sulfuric acid in the electrolyte is corrosive to skin and eyes.

**Hazardous Combustion Products** Lead portion of battery will likely produce toxic metal fume, vapor or dust.

### Explosion data

**Sensitivity to Mechanical Impact** Not applicable.

**Sensitivity to Static Discharge** None known.

### Protective equipment and precautions for firefighters

If batteries are on charge, shut off power. Do not allow metallic materials to simultaneously contact negative and positive terminals of cells and batteries. Wear a positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.

## 6. ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

**Personal Precautions** No special precautions expected to be necessary if material is used under ordinary conditions and as recommended. Avoid contact of lead with skin.

**Other information** Non-emergency personnel should utilize chemical gloves.

**For emergency responders** Wear chemical gloves, goggles, acid resistant clothing and boots, respirator if insufficient ventilation.

### Environmental precautions

**Environmental Precautions** Prevent entry into waterways, sewers, basements or confined areas. Runoff from fire control and dilution water may be toxic and corrosive and may cause adverse environmental impacts. See Section 12 for additional ecological information.

### Methods and material for containment and cleaning up

**Methods for Containment** In event of a battery rupturing; stop the leak if you can do it without risk. Absorb with earth, sand, or other non-combustible material. Cautiously neutralize spilled liquid.

**Methods for Cleaning Up** Dispose of in accordance with local, state, and national regulations.

## 7. HANDLING AND STORAGE

### Precautions for safe handling

**Advice on Safe Handling** Handle batteries cautiously. Do not tip to avoid spills (if filled with electrolyte). Avoid contact with internal components. Wear protective clothing when filling or handling batteries. Follow manufacturer's instructions for installation and service. Do not allow conductive material to touch the battery terminals. Short circuit may occur and cause battery failure and fire. Wash thoroughly with soap and water after handling and before eating, drinking, or using tobacco. Eyewash stations and safety showers should be provided with unlimited water supply. Handle in accordance with good industrial hygiene and safety practice.

**Conditions for safe storage, including any incompatibilities**

<b>Storage Conditions</b>	Store in a cool/low-temperature, well-ventilated place away from heat and ignition sources. Batteries should be stored under roof for protection against adverse weather conditions. Place cardboard between layers of stacked batteries to avoid damage and short circuits. Store batteries on an impervious surface. Storage class: Class 8B: Non-flammable corrosive materials.
<b>Incompatible materials</b>	<b>Sulfuric acid:</b> Contact with combustible and organic materials may cause fire and explosion. Also reacts violently with strong reducing agents, metals, sulfur trioxide, strong oxidizers and water. Contact with metals may product toxic sulfur dioxide fumes and may release flammable hydrogen gas.  <b>Lead compounds:</b> Avoid contact with strong bases, acids, combustible organic materials, halides, halogenates, potassium nitrate, permanganate, peroxides, nascent hydrogen, reducing agents and water.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION****Control parameters**

**Exposure Guidelines** This product, as supplied, contains the following hazardous materials with occupational exposure limits established by the region-specific regulatory bodies.

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Powdered Lead 7439-92-1	TWA: 0.05 mg/m <sup>3</sup> TWA: 0.05 mg/m <sup>3</sup> Pb	TWA: 50 µg/m <sup>3</sup> TWA: 50 µg/m <sup>3</sup> Pb	IDLH: 100 mg/m <sup>3</sup> IDLH: 100 mg/m <sup>3</sup> Pb TWA: 0.050 mg/m <sup>3</sup> TWA: 0.050 mg/m <sup>3</sup> Pb
Sulfuric Acid 7664-93-9	TWA: 0.2 mg/m <sup>3</sup> thoracic particulate matter	TWA: 1 mg/m <sup>3</sup> (vacated) TWA: 1 mg/m <sup>3</sup>	IDLH: 15 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup>

**Appropriate engineering controls**

**Engineering Controls** The health hazard risks of handling this material are dependent on factors, such as physical form and quantity. Site-specific risk assessments should be conducted to determine the appropriate exposure control measures. Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels as low as reasonably achievable.

**Individual protection measures, such as personal protective equipment**

<b>Eye/Face Protection</b>	In laboratory, medical or industrial settings, safety glasses with side shields are highly recommended. The use of goggles or full face protection may be required depending on the industrial exposure setting. Contact a health and safety professional for specific information.
<b>Skin and Body Protection</b>	Wear appropriate gloves. No skin protection is ordinarily required under normal conditions of use. In accordance with industrial hygiene practices, if contact with leaking battery is expected precautions should be taken to avoid skin contact. Under severe exposure or emergency conditions, wear acid-resistant clothing and boots.
<b>Respiratory Protection</b>	In case of insufficient ventilation, wear suitable respiratory equipment.
<b>General Hygiene Considerations</b>	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.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

<b>Physical State</b>	Solid.	<b>Odor</b>	Odorless.
<b>Appearance</b>	Not available.	<b>Odor Threshold</b>	Not available.
<b>Color</b>	Clear (electrolyte)		

<u>Property</u>	<u>Values</u>	<u>Remarks</u>
<b>pH</b>	Not available.	
<b>Melting Point/Freezing Point</b>	Not available.	
<b>Boiling Point/Boiling Range</b>	95 °C - 95.555 °C	
<b>Flash Point</b>	Not available.	
<b>Evaporation Rate</b>	Not available.	
<b>Flammability (solid, gas)</b>	Not available.	
<b>Flammability Limit in Air</b>		
<b>Upper Flammability Limit:</b>	Not available.	
<b>Lower Flammability Limit:</b>	Not available.	
<b>Vapor Pressure</b>	10 mmHg	
<b>Vapor Density</b>	1	
<b>Specific Gravity</b>	Not available.	
<b>Water Solubility</b>	100%	
<b>Solubility in Other Solvents</b>	Not available.	
<b>Partition Coefficient</b>	Not available.	
<b>Autoignition Temperature</b>	Not available.	
<b>Decomposition Temperature</b>	Not available.	
<b>Kinematic Viscosity</b>	Not available.	
<b>Dynamic Viscosity</b>	Not available.	
<b>Explosive Properties</b>	Not available.	
<b>Oxidizing Properties</b>	Not available.	

### Other information

<b>Softening Point</b>	Not available.
<b>Molecular Weight</b>	Not available.
<b>VOC Content (%)</b>	Not available.
<b>Density</b>	75.8523-84.2803 lbs/ft <sup>3</sup>
<b>Bulk Density</b>	Not available.

## 10. STABILITY AND REACTIVITY

### Reactivity

Not reactive.

### Chemical stability

Stable at normal temperatures and pressures.

### Possibility of hazardous reactions

None under normal processing.

### **Hazardous Polymerization**

Hazardous polymerization does not occur.

### Conditions to avoid

Prolonged overcharge, sources of ignition.

### Incompatible materials

**Sulfuric acid:** Contact with combustible and organic materials may cause fire and explosion. Also reacts violently with strong reducing agents, metals, sulfur trioxide, strong oxidizers and water. Contact with metals may product toxic sulfur dioxide fumes and may release flammable hydrogen gas.

**Lead compounds:** Avoid contact with strong bases, acids, combustible organic materials, halides, halogenates, potassium nitrate,

permanganate, peroxides, nascent hydrogen, reducing agents and water.

#### Hazardous decomposition products

**Lead compounds** exposed to high temperatures will likely produce toxic metal fume, vapor or dust; contact with strong acid/base or presence of nascent hydrogen may generate highly toxic arsine gas.

**Sulfuric acid:** Sulfur oxides (SO<sub>x</sub>).

## 11. TOXICOLOGICAL INFORMATION

### Product Information

#### Acute Toxicity

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50	Intravenous LD50
Sulfuric Acid 7664-93-9	= 2140 mg/kg ( Rat )	-	85 - 103 mg/m <sup>3</sup> ( Rat ) 1 h	-

#### Information on toxicological effects

##### Symptoms

Symptoms of lead toxicity include headache, fatigue, abdominal pain, loss of appetite, muscular aches and weakness, sleep disturbances and irritability. Lead absorption may cause nausea, weight loss, abdominal spasms, and pain in arms, legs and joints. Effects of chronic lead exposure may include central nervous system (CNS) damage, kidney dysfunction, anemia, neuropathy particularly of the motor nerves with wrist drop, and potential reproductive effects.

#### Delayed and immediate effects as well as chronic effects from short- and long-term exposure

**Skin Corrosion/Irritation** No data available.

**Serious Eye Damage/Eye Irritation** No data available.

**Sensitization** No data available.

**Germ Cell Mutagenicity** The evidence for genotoxic effects of highly soluble inorganic lead compounds is contradictory, with numerous studies reporting both positive and negative effects. Responses appear to be induced by indirect mechanisms, mostly at very high concentrations that lack physiological relevance.

##### Carcinogenicity

**Sulfuric acid:** The International Agency for Research on Cancer (IARC) has classified "strong inorganic acid mist containing sulfuric acid" as a Category 1 carcinogen, a substance that is carcinogenic to humans. **This classification does not apply to liquid forms of sulfuric acid or sulfuric acid solutions contained within a battery.** Batteries subjected to abusive charging at excessively high currents for prolonged periods without vent caps in place may create a surrounding atmosphere of the offensive strong inorganic acid mist containing sulfuric acid.

**Lead:** There is evidence that soluble lead compounds may have a carcinogenic effect, particularly on the kidneys of rats. However, the mechanisms by which this effect occurs are still unclear. Epidemiology studies of workers exposed to inorganic lead compounds have found a limited association with stomach cancer. This has led to the classification by IARC that inorganic lead compounds are probably carcinogenic to humans (Group 2A).  
**Arsenic:** An increased lung cancer mortality was observed in multiple human populations exposed to arsenic primarily through inhalation. Also, increased mortality from multiple internal organ cancers (liver, kidney, lung, and bladder) and an increased incidence of skin cancer were observed in populations consuming drinking water high in inorganic arsenic.

Chemical Name	ACGIH	IARC	NTP	OSHA
Powdered Lead 7439-92-1	A3	Group 2A	Reasonably Anticipated	X
Sulfuric Acid	A2	Group 1		X

7664-93-9				
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<b>Reproductive Toxicity</b>	<b>Lead:</b> Pregnancy exposure to lead might cause miscarriage or premature birth, but reports on these effects are old and might have involved higher lead exposures than are currently encountered. Maternal blood lead concentrations above 30 mcg/dL can be associated with detectable abnormalities in cognitive/behavioral testing in infants. Lower concentrations (less than 10 mcg/dL) might be associated with subtle neurobehavioral effects, but these effects might be transient. Breastfeeding is not recommended if the maternal blood lead concentration is 40 mcg/dL or hi
<b>Teratogenicity</b>	<b>Lead</b> is a teratogen. Overexposure of lead by either parent before pregnancy may increase the chances of miscarriage or birth defects.
<b>STOT - Single Exposure</b>	Not classified.
<b>STOT - Repeated Exposure</b>	Not classified.
<b>Chronic Toxicity</b>	<b>Lead:</b> Lead is a cumulative poison. Increasing amounts of lead can build up in the body and may reach a point where symptoms and disabilities occur. Continuous exposure may result in decreased fertility.  <b>Antimony:</b> Chronic effects due to antimony are alterations of the ECG, especially T-wave abnormalities, myocardial changes, pneumoconiosis, but also pneumonitis, tracheitis, laryngitis, bronchitis, pustular skin eruptions called antimony spots, and contact allergy to the metal.
<b>Target Organ Effects</b>	<b>Lead</b> is a cumulative poison and may be absorbed into the body through ingestion or inhalation. Inorganic lead compounds have been documented in observational human studies to produce toxicity in multiple organ systems and body function including the hematopoietic (blood) system, kidney function, reproductive function and the central nervous system. Postnatal exposure to lead compounds is associated with impacts on neurobehavioral development in children.
<b>Aspiration Hazard</b>	Due to the physical form of the product, it is not an aspiration hazard.

## 12. ECOLOGICAL INFORMATION

### Ecotoxicity

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Powdered Lead 7439-92-1		1.17: 96 h Oncorhynchus mykiss mg/L LC50 flow-through 0.44: 96 h Cyprinus carpio mg/L LC50 semi-static 1.32: 96 h Oncorhynchus mykiss mg/L LC50 static		600: 48 h water flea µg/L EC50
Sulfuric Acid 7664-93-9		500: 96 h Brachydanio rerio mg/L LC50 static		29: 24 h Daphnia magna mg/L EC50

### Persistence and degradability

Lead is persistent in soils and sediments.

### Bioaccumulation

Not available.

### Mobility

Not available.

### Other adverse effects

Not available.



### 13. DISPOSAL CONSIDERATIONS

#### Waste treatment methods

**Disposal of Wastes** Disposal should be in accordance with applicable regional, national and local laws and regulations.

**Contaminated Packaging** Disposal should be in accordance with applicable regional, national and local laws and regulations.

#### **US EPA Waste Number**

Chemical Name	RCRA	RCRA - Basis for Listing	RCRA - D Series Wastes	RCRA - U Series Wastes
Powdered Lead 7439-92-1		Included in waste streams: F035, F037, F038, F039, K002, K003, K005, K046, K048, K049, K051, K052, K061, K062, K069, K086, K100, K176	5.0 mg/L regulatory level	

**California Hazardous Waste Codes** Not available.

This product contains the following substances that are listed with the State of California as a hazardous waste.

Chemical Name	California Hazardous Waste Status
Powdered Lead 7439-92-1	Toxic
Sulfuric Acid 7664-93-9	Toxic Corrosive

### 14. TRANSPORT INFORMATION

**Note:** This product is not regulated for domestic transport by land, air or rail. Under 49 CFR 171.8, individual packages that contain lead metal (<100 micrometers) below the reportable quantity (RQ) are not regulated. Under 49 CFR 171.4, except when transporting aboard a vessel, the requirements of this subchapter specific to marine pollutants do not apply to non-bulk packaging transported by motor vehicles, rail cars and aircrafts.

**DOT** These batteries have been tested and meet the non-spillable criteria listed in CFR49, 173.159 (d) (3) (i) and (ii). Non-spillable batteries are excepted from CFR 49, Subchapter C requirements, provided that the following criteria are met:

- 1.) The batteries must be protected against short circuits and securely packaged.
- 2.) The batteries and their outer packaging must be plainly and durably marked "NON-SPILLABLE" or "NONSPILLABLE BATTERY".

**UN/ID No.** UN2800  
**Proper shipping name** Batteries, wet, non-spillable  
**Hazard Class** 8  
**Subsidiary class** 8  
**Packing Group** III  
**Special Provisions** 159a

**TDG** These batteries have been tested and meet the non-spillable criteria. Non-spillable batteries are excepted provided that the following criteria are met:

- 1.) The batteries must be protected against short circuits and securely packages.
- 2.) The batteries and their outer packaging must be plainly and durably marked "NON-SPILLABLE" or "NONSPILLABLE BATTERY".

**UN/ID No.** UN2800  
**Proper shipping name** Batteries, Wet, Non-Spillable  
**Hazard Class** 8  
**Subsidiary class** 8

<b>Packing Group</b>	III
<b>Special Provisions</b>	39
<b><u>MEX</u></b>	Not regulated.
<b><u>ICAO (air)</u></b>	VRLA batteries have been tested and meet the non-spillable criteria listed in IATA Packing Instruction 872 and Special Provision A67. These batteries are accepted from all IATA regulations provided that the battery terminals are protected against short circuits. The words "Not Restricted, as per Special Provision A67" must be included in the description on the Air Waybill.
<b>UN/ID No.</b>	UN2800
<b>Proper shipping name</b>	Batteries, Wet, Non-Spillable
<b>Hazard Class</b>	8
<b>Subsidiary hazard class</b>	8
<b>Packing Group</b>	III
<b>Special Provisions</b>	A48, A67, A164, A183
<b><u>IATA</u></b>	VRLA batteries have been tested and meet the non-spillable criteria listed in IATA Packing Instruction 872 and Special Provision A67. These batteries are accepted from all IATA regulations provided that the battery terminals are protected against short circuits. The words "Not Restricted, as per Special Provision A67" must be included in the description on the Air Waybill.
<b>UN/ID No.</b>	UN2800
<b>Proper shipping name</b>	Batteries, Wet, Non-Spillable
<b>Hazard Class</b>	8
<b>Subsidiary hazard class</b>	8
<b>Packing Group</b>	III
<b>Special Provisions</b>	A48, A67, A164, A183
<b><u>IMDG</u></b>	These batteries have been tested and meet the non-spillable criteria listed in IMDG Code Special Provision 238.1 and .2; therefore, are not subject to the provisions of the IMDG Code provided that the battery terminals are protected against short circuits when packaged for transport.
<b>UN/ID No.</b>	UN2800
<b>Proper shipping name</b>	Batteries, Wet, Non-Spillable
<b>Hazard Class</b>	8
<b>Subsidiary hazard class</b>	8
<b>Packing Group</b>	III
<b>Special Provisions</b>	29, 238
<b>Marine pollutant</b>	No
<b><u>RID</u></b>	Non-spillable batteries are not subject to the requirements of ADR if, at a temperature of 55C, the electrolyte will not flow from a ruptured or cracked case and there is no free liquid to flow and if, as packaged for carriage, the terminals are protected from short circuit.
<b>UN/ID No.</b>	UN2800
<b>Proper shipping name</b>	Batteries, Wet, Not-Spillable
<b>Hazard Class</b>	8
<b>Classification code</b>	C11
<b>Special Provisions</b>	238, 295, 598
<b><u>ADR</u></b>	Non-spillable batteries are not subject to the requirements of ADR if, at a temperature of 55C, the electrolyte will not flow from a ruptured or cracked case and there is no free liquid to flow and if, as packaged for carriage, the terminals are protected from short circuit.
<b>UN/ID No.</b>	UN2800
<b>Proper shipping name</b>	Batteries, Wet, Not-Spillable
<b>Hazard Class</b>	8
<b>Classification code</b>	C11
<b>Special Provisions</b>	238, 295, 598

**ADN**

Not regulated.

**15. REGULATORY INFORMATION****U.S. Federal Regulations****SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	CAS No.	Weight-%	SARA 313 - Threshold Values %
Powdered Lead - 7439-92-1	7439-92-1	63-78	0.1
Sulfuric Acid - 7664-93-9	7664-93-9	10-30	1.0

**SARA 311/312 Hazard Categories**

<b>Acute Health Hazard</b>	No
<b>Chronic Health Hazard</b>	No
<b>Fire Hazard</b>	No
<b>Sudden Release of Pressure Hazard</b>	No
<b>Reactive Hazard</b>	No

**CWA (Clean Water Act)**

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Powdered Lead 7439-92-1		X	X	
Sulfuric Acid 7664-93-9	1000 lb			X

**CERCLA**

This material, as supplied, contains the following substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302).

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Powdered Lead 7439-92-1	10 lb		RQ 10 lb final RQ RQ 4.54 kg final RQ
Sulfuric Acid 7664-93-9	1000 lb	1000 lb	RQ 1000 lb final RQ RQ 454 kg final RQ

**U.S. State Regulations****California Proposition 65**

Proposition 65: Warning: Battery posts, terminals and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and reproductive harm. Batteries also contain other chemicals known to the State of California to cause cancer. Wash hands after handling.

Chemical Name	California Proposition 65
Powdered Lead - 7439-92-1	Carcinogen Developmental Female Reproductive Male Reproductive

**U.S. State Right-to-Know Regulations**

This product contains the following substances regulated by state right-to-know regulations.

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Powdered Lead 7439-92-1	X	X	X

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Sulfuric Acid 7664-93-9	X	X	X
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**U.S. EPA Label Information****EPA Pesticide Registration Number** Not applicable.**16. OTHER INFORMATION**

**Prepared By** IES Engineers  
**Issue Date** 13-Feb-2014  
**Revision Date** 10-Jul-2018  
**Revision Note** Changes in section 3 and 11.

**Disclaimer**

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product

**End of Safety Data Sheet**



# US - OSHA SAFETY DATA SHEET

## SEALED LEAD ACID BATTERY

Safety Data Sheet

According to Regulation (EC) No. 453/2010

Issue Date 13-Feb-2014

Revision Date 10-Jul-2018

Version 2

### 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

#### Product identifier

**Product Name** Valve Regulated Lead Battery

#### Other means of identification

**Product Code** 853023  
**UN/ID No.** UN2800  
**Synonyms** Not available.

#### Recommended use of the chemical and restrictions on use

**Recommended Use** Power sport batteries.  
**Uses Advised Against** Any other not listed above

#### Details of the supplier of the safety data sheet

**Supplier Address**  
SHENG CHANG TECH CO., LTD  
Lot I-1A-CN, My Phuoc 2 Industrial Park, My  
phuoc ward, Ben Cat Town, Binh Duong Province,  
Vietnam T +84-274-3553577 - F +84-274-3553576

#### Emergency telephone number

**Company Phone Number** (610) 929-5781  
**24 Hour Emergency Phone Number** CHEMTREC  
  
Domestic (800) 424-9300  
International 1(703) 527-3887

### 2. HAZARDS IDENTIFICATION

#### Classification

**Health Hazards**  
Not classified.

**Physical Hazards**  
Not classified.

#### **OSHA Regulatory Status**

Material is an article. No health effects are expected related to normal use of this product as sold. Hazardous exposure can occur only when the product is heated, oxidized or otherwise processed or damaged to create lead dust, vapor or fume. Refer to the Material Safety Data Sheet for Lead Acid Battery when battery is filled with electrolyte/battery acid.

#### Label elements

#### Emergency Overview

**Appearance** Not available. **Physical State** Solid. **Odor** Odorless.

**Hazards not otherwise classified (HNOC)**

Not available.

**Other information**

Not available.

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

**Common name** Valve Regulated Lead Battery.  
**Synonyms** Not available.

Chemical Name	CAS No.	Weight-%
Powdered Lead	7439-92-1	63-78
Tin	7440-31-5	0.006
Antimony	7440-36-0	0.2
Arsenic	7440-38-2	0.003
Calcium	7440-70-2	0.002
Sulfuric Acid	7664-93-9	10-30

\*Note: Non-hazardous chemical ingredients are not listed

**4. FIRST AID MEASURES****First aid measures**

**Eye Contact** First aid is not expected to be necessary if material is used under ordinary conditions and as recommended. If contact with material occurs flush eyes with water. If signs/symptoms develop, get medical attention.

**Skin Contact** First aid is not expected to be necessary if material is used under ordinary conditions and as recommended. Wash skin with soap and water. If signs/symptoms develop, get medical attention. If exposure to electrolyte (sulfuric acid) occurs, flush with large quantities of water for 15 minutes. Immediately remove contaminated clothing and shoes. If exposure to lead component occurs, wash contaminated skin with plenty of soap and water.

**Inhalation** First aid is not expected to be necessary if material is used under ordinary conditions and as recommended. If signs/symptoms develop, move person to fresh air.

**Ingestion** First aid is not expected to be necessary if material is used under ordinary conditions and as recommended. If electrolyte (sulfuric acid) portion of battery is ingested give large quantities, DO NOT induce vomiting. Get medical attention immediately. If lead portion of battery is ingested get medical attention immediately.

**Self-Protection of the First Aider** Do not use mouth-to-mouth methods if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or another proper respiratory medical device.

**Most important symptoms and effects, both acute and delayed**

**Symptoms** Symptoms of lead toxicity include headache, fatigue, abdominal pain, loss of appetite, muscular aches and weakness, sleep disturbances and irritability. Lead absorption may cause nausea, weight loss, abdominal spasms, and pain in arms, legs and joints. Effects of chronic lead exposure may include central nervous system (CNS) damage, kidney dysfunction, anemia, neuropathy particularly of the motor nerves with wrist drop, and potential reproductive effects.

**Indication of any immediate medical attention and special treatment needed**

**Note to Physicians** Treat symptomatically.

## 5. FIRE-FIGHTING MEASURES

### Suitable extinguishing media

CO<sub>2</sub>, dry chemical or foam.

**Unsuitable Extinguishing Media** Avoid using water.

### Specific hazards arising from the chemical

Sulfuric acid in the electrolyte is corrosive to skin and eyes.

**Hazardous Combustion Products** Lead portion of battery will likely produce toxic metal fume, vapor or dust.

### Explosion data

**Sensitivity to Mechanical Impact** Not applicable.

**Sensitivity to Static Discharge** None known.

### Protective equipment and precautions for firefighters

If batteries are on charge, shut off power. Do not allow metallic materials to simultaneously contact negative and positive terminals of cells and batteries. Wear a positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.

## 6. ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

**Personal Precautions** No special precautions expected to be necessary if material is used under ordinary conditions and as recommended. Avoid contact of lead with skin.

**Other information** Non-emergency personnel should utilize chemical gloves.

**For emergency responders** Wear chemical gloves, goggles, acid resistant clothing and boots, respirator if insufficient ventilation.

### Environmental precautions

**Environmental Precautions** Prevent entry into waterways, sewers, basements or confined areas. Runoff from fire control and dilution water may be toxic and corrosive and may cause adverse environmental impacts. See Section 12 for additional ecological information.

### Methods and material for containment and cleaning up

**Methods for Containment** In event of a battery rupturing; stop the leak if you can do it without risk. Absorb with earth, sand, or other non-combustible material. Cautiously neutralize spilled liquid.

**Methods for Cleaning Up** Dispose of in accordance with local, state, and national regulations.

## 7. HANDLING AND STORAGE

### Precautions for safe handling

**Advice on Safe Handling** Handle batteries cautiously. Do not tip to avoid spills (if filled with electrolyte). Avoid contact with internal components. Wear protective clothing when filling or handling batteries. Follow manufacturer's instructions for installation and service. Do not allow conductive material to touch the battery terminals. Short circuit may occur and cause battery failure and fire. Wash thoroughly with soap and water after handling and before eating, drinking, or using tobacco. Eyewash stations and safety showers should be provided with unlimited water supply. Handle in accordance with good industrial hygiene and safety practice.

**Conditions for safe storage, including any incompatibilities**

<b>Storage Conditions</b>	Store in a cool/low-temperature, well-ventilated place away from heat and ignition sources. Batteries should be stored under roof for protection against adverse weather conditions. Place cardboard between layers of stacked batteries to avoid damage and short circuits. Store batteries on an impervious surface. Storage class: Class 8B: Non-flammable corrosive materials.
<b>Incompatible materials</b>	<b>Sulfuric acid:</b> Contact with combustible and organic materials may cause fire and explosion. Also reacts violently with strong reducing agents, metals, sulfur trioxide, strong oxidizers and water. Contact with metals may product toxic sulfur dioxide fumes and may release flammable hydrogen gas.  <b>Lead compounds:</b> Avoid contact with strong bases, acids, combustible organic materials, halides, halogenates, potassium nitrate, permanganate, peroxides, nascent hydrogen, reducing agents and water.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION****Control parameters**

**Exposure Guidelines** This product, as supplied, contains the following hazardous materials with occupational exposure limits established by the region-specific regulatory bodies.

<b>Chemical Name</b>	<b>ACGIH TLV</b>	<b>OSHA PEL</b>	<b>NIOSH IDLH</b>
Powdered Lead 7439-92-1	TWA: 0.05 mg/m <sup>3</sup> TWA: 0.05 mg/m <sup>3</sup> Pb	TWA: 50 µg/m <sup>3</sup> TWA: 50 µg/m <sup>3</sup> Pb	IDLH: 100 mg/m <sup>3</sup> IDLH: 100 mg/m <sup>3</sup> Pb TWA: 0.050 mg/m <sup>3</sup> TWA: 0.050 mg/m <sup>3</sup> Pb
Sulfuric Acid 7664-93-9	TWA: 0.2 mg/m <sup>3</sup> thoracic particulate matter	TWA: 1 mg/m <sup>3</sup> (vacated) TWA: 1 mg/m <sup>3</sup>	IDLH: 15 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup>

**Appropriate engineering controls**

**Engineering Controls** The health hazard risks of handling this material are dependent on factors, such as physical form and quantity. Site-specific risk assessments should be conducted to determine the appropriate exposure control measures. Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels as low as reasonably achievable.

**Individual protection measures, such as personal protective equipment**

<b>Eye/Face Protection</b>	In laboratory, medical or industrial settings, safety glasses with side shields are highly recommended. The use of goggles or full face protection may be required depending on the industrial exposure setting. Contact a health and safety professional for specific information.
<b>Skin and Body Protection</b>	Wear appropriate gloves. No skin protection is ordinarily required under normal conditions of use. In accordance with industrial hygiene practices, if contact with leaking battery is expected precautions should be taken to avoid skin contact. Under severe exposure or emergency conditions, wear acid-resistant clothing and boots.
<b>Respiratory Protection</b>	In case of insufficient ventilation, wear suitable respiratory equipment.
<b>General Hygiene Considerations</b>	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.



## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

<b>Physical State</b>	Solid.	<b>Odor</b>	Odorless.
<b>Appearance</b>	Not available.	<b>Odor Threshold</b>	Not available.
<b>Color</b>	Clear (electrolyte)		

<u>Property</u>	<u>Values</u>	<u>Remarks</u>
<b>pH</b>	Not available.	
<b>Melting Point/Freezing Point</b>	Not available.	
<b>Boiling Point/Boiling Range</b>	95 °C - 95.555 °C	
<b>Flash Point</b>	Not available.	
<b>Evaporation Rate</b>	Not available.	
<b>Flammability (solid, gas)</b>	Not available.	
<b>Flammability Limit in Air</b>		
<b>Upper Flammability Limit:</b>	Not available.	
<b>Lower Flammability Limit:</b>	Not available.	
<b>Vapor Pressure</b>	10 mmHg	
<b>Vapor Density</b>	1	
<b>Specific Gravity</b>	Not available.	
<b>Water Solubility</b>	100%	
<b>Solubility in Other Solvents</b>	Not available.	
<b>Partition Coefficient</b>	Not available.	
<b>Autoignition Temperature</b>	Not available.	
<b>Decomposition Temperature</b>	Not available.	
<b>Kinematic Viscosity</b>	Not available.	
<b>Dynamic Viscosity</b>	Not available.	
<b>Explosive Properties</b>	Not available.	
<b>Oxidizing Properties</b>	Not available.	

### Other information

<b>Softening Point</b>	Not available.
<b>Molecular Weight</b>	Not available.
<b>VOC Content (%)</b>	Not available.
<b>Density</b>	75.8523-84.2803 lbs/ft <sup>3</sup>
<b>Bulk Density</b>	Not available.

## 10. STABILITY AND REACTIVITY

### Reactivity

Not reactive.

### Chemical stability

Stable at normal temperatures and pressures.

### Possibility of hazardous reactions

None under normal processing.

### **Hazardous Polymerization**

Hazardous polymerization does not occur.

### Conditions to avoid

Prolonged overcharge, sources of ignition.

### Incompatible materials

**Sulfuric acid:** Contact with combustible and organic materials may cause fire and explosion. Also reacts violently with strong reducing agents, metals, sulfur trioxide, strong oxidizers and water. Contact with metals may product toxic sulfur dioxide fumes and may release flammable hydrogen gas.

**Lead compounds:** Avoid contact with strong bases, acids, combustible organic materials, halides, halogenates, potassium nitrate,

permanganate, peroxides, nascent hydrogen, reducing agents and water.

#### Hazardous decomposition products

**Lead compounds** exposed to high temperatures will likely produce toxic metal fume, vapor or dust; contact with strong acid/base or presence of nascent hydrogen may generate highly toxic arsine gas.

**Sulfuric acid:** Sulfur oxides (SO<sub>x</sub>).

## 11. TOXICOLOGICAL INFORMATION

### Product Information

#### Acute Toxicity

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50	Intravenous LD50
Sulfuric Acid 7664-93-9	= 2140 mg/kg ( Rat )	-	85 - 103 mg/m <sup>3</sup> ( Rat ) 1 h	-

#### Information on toxicological effects

##### Symptoms

Symptoms of lead toxicity include headache, fatigue, abdominal pain, loss of appetite, muscular aches and weakness, sleep disturbances and irritability. Lead absorption may cause nausea, weight loss, abdominal spasms, and pain in arms, legs and joints. Effects of chronic lead exposure may include central nervous system (CNS) damage, kidney dysfunction, anemia, neuropathy particularly of the motor nerves with wrist drop, and potential reproductive effects.

#### Delayed and immediate effects as well as chronic effects from short- and long-term exposure

**Skin Corrosion/Irritation** No data available.

**Serious Eye Damage/Eye Irritation** No data available.

**Sensitization** No data available.

**Germ Cell Mutagenicity** The evidence for genotoxic effects of highly soluble inorganic lead compounds is contradictory, with numerous studies reporting both positive and negative effects. Responses appear to be induced by indirect mechanisms, mostly at very high concentrations that lack physiological relevance.

##### Carcinogenicity

**Sulfuric acid:** The International Agency for Research on Cancer (IARC) has classified "strong inorganic acid mist containing sulfuric acid" as a Category 1 carcinogen, a substance that is carcinogenic to humans. **This classification does not apply to liquid forms of sulfuric acid or sulfuric acid solutions contained within a battery.** Batteries subjected to abusive charging at excessively high currents for prolonged periods without vent caps in place may create a surrounding atmosphere of the offensive strong inorganic acid mist containing sulfuric acid.

**Lead:** There is evidence that soluble lead compounds may have a carcinogenic effect, particularly on the kidneys of rats. However, the mechanisms by which this effect occurs are still unclear. Epidemiology studies of workers exposed to inorganic lead compounds have found a limited association with stomach cancer. This has led to the classification by IARC that inorganic lead compounds are probably carcinogenic to humans (Group 2A).  
**Arsenic:** An increased lung cancer mortality was observed in multiple human populations exposed to arsenic primarily through inhalation. Also, increased mortality from multiple internal organ cancers (liver, kidney, lung, and bladder) and an increased incidence of skin cancer were observed in populations consuming drinking water high in inorganic arsenic.

Chemical Name	ACGIH	IARC	NTP	OSHA
Powdered Lead 7439-92-1	A3	Group 2A	Reasonably Anticipated	X
Sulfuric Acid	A2	Group 1		X

7664-93-9				
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<b>Reproductive Toxicity</b>	<b>Lead:</b> Pregnancy exposure to lead might cause miscarriage or premature birth, but reports on these effects are old and might have involved higher lead exposures than are currently encountered. Maternal blood lead concentrations above 30 mcg/dL can be associated with detectable abnormalities in cognitive/behavioral testing in infants. Lower concentrations (less than 10 mcg/dL) might be associated with subtle neurobehavioral effects, but these effects might be transient. Breastfeeding is not recommended if the maternal blood lead concentration is 40 mcg/dL or hi
<b>Teratogenicity</b>	<b>Lead</b> is a teratogen. Overexposure of lead by either parent before pregnancy may increase the chances of miscarriage or birth defects.
<b>STOT - Single Exposure</b>	Not classified.
<b>STOT - Repeated Exposure</b>	Not classified.
<b>Chronic Toxicity</b>	<b>Lead:</b> Lead is a cumulative poison. Increasing amounts of lead can build up in the body and may reach a point where symptoms and disabilities occur. Continuous exposure may result in decreased fertility.  <b>Antimony:</b> Chronic effects due to antimony are alterations of the ECG, especially T-wave abnormalities, myocardial changes, pneumoconiosis, but also pneumonitis, tracheitis, laryngitis, bronchitis, pustular skin eruptions called antimony spots, and contact allergy to the metal.
<b>Target Organ Effects</b>	<b>Lead</b> is a cumulative poison and may be absorbed into the body through ingestion or inhalation. Inorganic lead compounds have been documented in observational human studies to produce toxicity in multiple organ systems and body function including the hematopoietic (blood) system, kidney function, reproductive function and the central nervous system. Postnatal exposure to lead compounds is associated with impacts on neurobehavioral development in children.
<b>Aspiration Hazard</b>	Due to the physical form of the product, it is not an aspiration hazard.

## 12. ECOLOGICAL INFORMATION

### Ecotoxicity

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Powdered Lead 7439-92-1		1.17: 96 h Oncorhynchus mykiss mg/L LC50 flow-through 0.44: 96 h Cyprinus carpio mg/L LC50 semi-static 1.32: 96 h Oncorhynchus mykiss mg/L LC50 static		600: 48 h water flea µg/L EC50
Sulfuric Acid 7664-93-9		500: 96 h Brachydanio rerio mg/L LC50 static		29: 24 h Daphnia magna mg/L EC50

### Persistence and degradability

Lead is persistent in soils and sediments.

### Bioaccumulation

Not available.

### Mobility

Not available.

### Other adverse effects

Not available.

### 13. DISPOSAL CONSIDERATIONS

#### Waste treatment methods

**Disposal of Wastes** Disposal should be in accordance with applicable regional, national and local laws and regulations.

**Contaminated Packaging** Disposal should be in accordance with applicable regional, national and local laws and regulations.

#### **US EPA Waste Number**

Chemical Name	RCRA	RCRA - Basis for Listing	RCRA - D Series Wastes	RCRA - U Series Wastes
Powdered Lead 7439-92-1		Included in waste streams: F035, F037, F038, F039, K002, K003, K005, K046, K048, K049, K051, K052, K061, K062, K069, K086, K100, K176	5.0 mg/L regulatory level	

**California Hazardous Waste Codes** Not available.

This product contains the following substances that are listed with the State of California as a hazardous waste.

Chemical Name	California Hazardous Waste Status
Powdered Lead 7439-92-1	Toxic
Sulfuric Acid 7664-93-9	Toxic Corrosive

### 14. TRANSPORT INFORMATION

**Note:** This product is not regulated for domestic transport by land, air or rail. Under 49 CFR 171.8, individual packages that contain lead metal (<100 micrometers) below the reportable quantity (RQ) are not regulated. Under 49 CFR 171.4, except when transporting aboard a vessel, the requirements of this subchapter specific to marine pollutants do not apply to non-bulk packaging transported by motor vehicles, rail cars and aircrafts.

**DOT** These batteries have been tested and meet the non-spillable criteria listed in CFR49, 173.159 (d) (3) (i) and (ii). Non-spillable batteries are excepted from CFR 49, Subchapter C requirements, provided that the following criteria are met:

- 1.) The batteries must be protected against short circuits and securely packaged.
- 2.) The batteries and their outer packaging must be plainly and durably marked "NON-SPILLABLE" or "NONSPILLABLE BATTERY".

**UN/ID No.** UN2800  
**Proper shipping name** Batteries, wet, non-spillable  
**Hazard Class** 8  
**Subsidiary class** 8  
**Packing Group** III  
**Special Provisions** 159a

**TDG** These batteries have been tested and meet the non-spillable criteria. Non-spillable batteries are excepted provided that the following criteria are met:

- 1.) The batteries must be protected against short circuits and securely packages.
- 2.) The batteries and their outer packaging must be plainly and durably marked "NON-SPILLABLE" or "NONSPILLABLE BATTERY".

**UN/ID No.** UN2800  
**Proper shipping name** Batteries, Wet, Non-Spillable  
**Hazard Class** 8  
**Subsidiary class** 8

<b>Packing Group</b>	III
<b>Special Provisions</b>	39
<b><u>MEX</u></b>	Not regulated.
<b><u>ICAO (air)</u></b>	VRLA batteries have been tested and meet the non-spillable criteria listed in IATA Packing Instruction 872 and Special Provision A67. These batteries are accepted from all IATA regulations provided that the battery terminals are protected against short circuits. The words "Not Restricted, as per Special Provision A67" must be included in the description on the Air Waybill.
<b>UN/ID No.</b>	UN2800
<b>Proper shipping name</b>	Batteries, Wet, Non-Spillable
<b>Hazard Class</b>	8
<b>Subsidiary hazard class</b>	8
<b>Packing Group</b>	III
<b>Special Provisions</b>	A48, A67, A164, A183
<b><u>IATA</u></b>	VRLA batteries have been tested and meet the non-spillable criteria listed in IATA Packing Instruction 872 and Special Provision A67. These batteries are accepted from all IATA regulations provided that the battery terminals are protected against short circuits. The words "Not Restricted, as per Special Provision A67" must be included in the description on the Air Waybill.
<b>UN/ID No.</b>	UN2800
<b>Proper shipping name</b>	Batteries, Wet, Non-Spillable
<b>Hazard Class</b>	8
<b>Subsidiary hazard class</b>	8
<b>Packing Group</b>	III
<b>Special Provisions</b>	A48, A67, A164, A183
<b><u>IMDG</u></b>	These batteries have been tested and meet the non-spillable criteria listed in IMDG Code Special Provision 238.1 and .2; therefore, are not subject to the provisions of the IMDG Code provided that the battery terminals are protected against short circuits when packaged for transport.
<b>UN/ID No.</b>	UN2800
<b>Proper shipping name</b>	Batteries, Wet, Non-Spillable
<b>Hazard Class</b>	8
<b>Subsidiary hazard class</b>	8
<b>Packing Group</b>	III
<b>Special Provisions</b>	29, 238
<b>Marine pollutant</b>	No
<b><u>RID</u></b>	Non-spillable batteries are not subject to the requirements of ADR if, at a temperature of 55C, the electrolyte will not flow from a ruptured or cracked case and there is no free liquid to flow and if, as packaged for carriage, the terminals are protected from short circuit.
<b>UN/ID No.</b>	UN2800
<b>Proper shipping name</b>	Batteries, Wet, Not-Spillable
<b>Hazard Class</b>	8
<b>Classification code</b>	C11
<b>Special Provisions</b>	238, 295, 598
<b><u>ADR</u></b>	Non-spillable batteries are not subject to the requirements of ADR if, at a temperature of 55C, the electrolyte will not flow from a ruptured or cracked case and there is no free liquid to flow and if, as packaged for carriage, the terminals are protected from short circuit.
<b>UN/ID No.</b>	UN2800
<b>Proper shipping name</b>	Batteries, Wet, Not-Spillable
<b>Hazard Class</b>	8
<b>Classification code</b>	C11
<b>Special Provisions</b>	238, 295, 598

**ADN**

Not regulated.

**15. REGULATORY INFORMATION****U.S. Federal Regulations****SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	CAS No.	Weight-%	SARA 313 - Threshold Values %
Powdered Lead - 7439-92-1	7439-92-1	63-78	0.1
Sulfuric Acid - 7664-93-9	7664-93-9	10-30	1.0

**SARA 311/312 Hazard Categories**

<b>Acute Health Hazard</b>	No
<b>Chronic Health Hazard</b>	No
<b>Fire Hazard</b>	No
<b>Sudden Release of Pressure Hazard</b>	No
<b>Reactive Hazard</b>	No

**CWA (Clean Water Act)**

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Powdered Lead 7439-92-1		X	X	
Sulfuric Acid 7664-93-9	1000 lb			X

**CERCLA**

This material, as supplied, contains the following substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302).

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Powdered Lead 7439-92-1	10 lb		RQ 10 lb final RQ RQ 4.54 kg final RQ
Sulfuric Acid 7664-93-9	1000 lb	1000 lb	RQ 1000 lb final RQ RQ 454 kg final RQ

**U.S. State Regulations****California Proposition 65**

Proposition 65: Warning: Battery posts, terminals and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and reproductive harm. Batteries also contain other chemicals known to the State of California to cause cancer. Wash hands after handling.

Chemical Name	California Proposition 65
Powdered Lead - 7439-92-1	Carcinogen Developmental Female Reproductive Male Reproductive

**U.S. State Right-to-Know Regulations**

This product contains the following substances regulated by state right-to-know regulations.

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Powdered Lead 7439-92-1	X	X	X

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Sulfuric Acid 7664-93-9	X	X	X
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**U.S. EPA Label Information****EPA Pesticide Registration Number** Not applicable.**16. OTHER INFORMATION**

**Prepared By** IES Engineers  
**Issue Date** 13-Feb-2014  
**Revision Date** 10-Jul-2018  
**Revision Note** Changes in section 3 and 11.

**Disclaimer**

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product

**End of Safety Data Sheet**



# US - OSHA SAFETY DATA SHEET

## SEALED LEAD ACID BATTERY

Safety Data Sheet

According to Regulation (EC) No. 453/2010

Issue Date 13-Feb-2014

Revision Date 10-Jul-2018

Version 2

### 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

#### Product identifier

**Product Name** Valve Regulated Lead Battery

#### Other means of identification

**Product Code** 853023  
**UN/ID No.** UN2800  
**Synonyms** Not available.

#### Recommended use of the chemical and restrictions on use

**Recommended Use** Power sport batteries.  
**Uses Advised Against** Any other not listed above

#### Details of the supplier of the safety data sheet

**Supplier Address**  
SHENG CHANG TECH CO., LTD  
Lot I-1A-CN, My Phuoc 2 Industrial Park, My  
phuoc ward, Ben Cat Town, Binh Duong Province,  
Vietnam T +84-274-3553577 - F +84-274-3553576

#### Emergency telephone number

**Company Phone Number** (610) 929-5781  
**24 Hour Emergency Phone Number** CHEMTREC  
  
Domestic (800) 424-9300  
International 1(703) 527-3887

### 2. HAZARDS IDENTIFICATION

#### Classification

**Health Hazards**  
Not classified.

**Physical Hazards**  
Not classified.

#### **OSHA Regulatory Status**

Material is an article. No health effects are expected related to normal use of this product as sold. Hazardous exposure can occur only when the product is heated, oxidized or otherwise processed or damaged to create lead dust, vapor or fume. Refer to the Material Safety Data Sheet for Lead Acid Battery when battery is filled with electrolyte/battery acid.

#### Label elements

#### Emergency Overview

**Appearance** Not available. **Physical State** Solid. **Odor** Odorless.



**Hazards not otherwise classified (HNOC)**

Not available.

**Other information**

Not available.

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

**Common name** Valve Regulated Lead Battery.  
**Synonyms** Not available.

Chemical Name	CAS No.	Weight-%
Powdered Lead	7439-92-1	63-78
Tin	7440-31-5	0.006
Antimony	7440-36-0	0.2
Arsenic	7440-38-2	0.003
Calcium	7440-70-2	0.002
Sulfuric Acid	7664-93-9	10-30

\*Note: Non-hazardous chemical ingredients are not listed

**4. FIRST AID MEASURES****First aid measures**

- Eye Contact** First aid is not expected to be necessary if material is used under ordinary conditions and as recommended. If contact with material occurs flush eyes with water. If signs/symptoms develop, get medical attention.
- Skin Contact** First aid is not expected to be necessary if material is used under ordinary conditions and as recommended. Wash skin with soap and water. If signs/symptoms develop, get medical attention. If exposure to electrolyte (sulfuric acid) occurs, flush with large quantities of water for 15 minutes. Immediately remove contaminated clothing and shoes. If exposure to lead component occurs, wash contaminated skin with plenty of soap and water.
- Inhalation** First aid is not expected to be necessary if material is used under ordinary conditions and as recommended. If signs/symptoms develop, move person to fresh air.
- Ingestion** First aid is not expected to be necessary if material is used under ordinary conditions and as recommended. If electrolyte (sulfuric acid) portion of battery is ingested give large quantities, DO NOT induce vomiting. Get medical attention immediately. If lead portion of battery is ingested get medical attention immediately.
- Self-Protection of the First Aider** Do not use mouth-to-mouth methods if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or another proper respiratory medical device.

**Most important symptoms and effects, both acute and delayed**

- Symptoms** Symptoms of lead toxicity include headache, fatigue, abdominal pain, loss of appetite, muscular aches and weakness, sleep disturbances and irritability. Lead absorption may cause nausea, weight loss, abdominal spasms, and pain in arms, legs and joints. Effects of chronic lead exposure may include central nervous system (CNS) damage, kidney dysfunction, anemia, neuropathy particularly of the motor nerves with wrist drop, and potential reproductive effects.

**Indication of any immediate medical attention and special treatment needed**

**Note to Physicians** Treat symptomatically.

## 5. FIRE-FIGHTING MEASURES

### Suitable extinguishing media

CO<sub>2</sub>, dry chemical or foam.

**Unsuitable Extinguishing Media** Avoid using water.

### Specific hazards arising from the chemical

Sulfuric acid in the electrolyte is corrosive to skin and eyes.

**Hazardous Combustion Products** Lead portion of battery will likely produce toxic metal fume, vapor or dust.

### Explosion data

**Sensitivity to Mechanical Impact** Not applicable.

**Sensitivity to Static Discharge** None known.

### Protective equipment and precautions for firefighters

If batteries are on charge, shut off power. Do not allow metallic materials to simultaneously contact negative and positive terminals of cells and batteries. Wear a positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.

## 6. ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

**Personal Precautions** No special precautions expected to be necessary if material is used under ordinary conditions and as recommended. Avoid contact of lead with skin.

**Other information** Non-emergency personnel should utilize chemical gloves.

**For emergency responders** Wear chemical gloves, goggles, acid resistant clothing and boots, respirator if insufficient ventilation.

### Environmental precautions

**Environmental Precautions** Prevent entry into waterways, sewers, basements or confined areas. Runoff from fire control and dilution water may be toxic and corrosive and may cause adverse environmental impacts. See Section 12 for additional ecological information.

### Methods and material for containment and cleaning up

**Methods for Containment** In event of a battery rupturing; stop the leak if you can do it without risk. Absorb with earth, sand, or other non-combustible material. Cautiously neutralize spilled liquid.

**Methods for Cleaning Up** Dispose of in accordance with local, state, and national regulations.

## 7. HANDLING AND STORAGE

### Precautions for safe handling

**Advice on Safe Handling** Handle batteries cautiously. Do not tip to avoid spills (if filled with electrolyte). Avoid contact with internal components. Wear protective clothing when filling or handling batteries. Follow manufacturer's instructions for installation and service. Do not allow conductive material to touch the battery terminals. Short circuit may occur and cause battery failure and fire. Wash thoroughly with soap and water after handling and before eating, drinking, or using tobacco. Eyewash stations and safety showers should be provided with unlimited water supply. Handle in accordance with good industrial hygiene and safety practice.

**Conditions for safe storage, including any incompatibilities**

<b>Storage Conditions</b>	Store in a cool/low-temperature, well-ventilated place away from heat and ignition sources. Batteries should be stored under roof for protection against adverse weather conditions. Place cardboard between layers of stacked batteries to avoid damage and short circuits. Store batteries on an impervious surface. Storage class: Class 8B: Non-flammable corrosive materials.
<b>Incompatible materials</b>	<b>Sulfuric acid:</b> Contact with combustible and organic materials may cause fire and explosion. Also reacts violently with strong reducing agents, metals, sulfur trioxide, strong oxidizers and water. Contact with metals may product toxic sulfur dioxide fumes and may release flammable hydrogen gas.  <b>Lead compounds:</b> Avoid contact with strong bases, acids, combustible organic materials, halides, halogenates, potassium nitrate, permanganate, peroxides, nascent hydrogen, reducing agents and water.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION****Control parameters**

**Exposure Guidelines** This product, as supplied, contains the following hazardous materials with occupational exposure limits established by the region-specific regulatory bodies.

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Powdered Lead 7439-92-1	TWA: 0.05 mg/m <sup>3</sup> TWA: 0.05 mg/m <sup>3</sup> Pb	TWA: 50 µg/m <sup>3</sup> TWA: 50 µg/m <sup>3</sup> Pb	IDLH: 100 mg/m <sup>3</sup> IDLH: 100 mg/m <sup>3</sup> Pb TWA: 0.050 mg/m <sup>3</sup> TWA: 0.050 mg/m <sup>3</sup> Pb
Sulfuric Acid 7664-93-9	TWA: 0.2 mg/m <sup>3</sup> thoracic particulate matter	TWA: 1 mg/m <sup>3</sup> (vacated) TWA: 1 mg/m <sup>3</sup>	IDLH: 15 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup>

**Appropriate engineering controls**

**Engineering Controls** The health hazard risks of handling this material are dependent on factors, such as physical form and quantity. Site-specific risk assessments should be conducted to determine the appropriate exposure control measures. Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels as low as reasonably achievable.

**Individual protection measures, such as personal protective equipment**

<b>Eye/Face Protection</b>	In laboratory, medical or industrial settings, safety glasses with side shields are highly recommended. The use of goggles or full face protection may be required depending on the industrial exposure setting. Contact a health and safety professional for specific information.
<b>Skin and Body Protection</b>	Wear appropriate gloves. No skin protection is ordinarily required under normal conditions of use. In accordance with industrial hygiene practices, if contact with leaking battery is expected precautions should be taken to avoid skin contact. Under severe exposure or emergency conditions, wear acid-resistant clothing and boots.
<b>Respiratory Protection</b>	In case of insufficient ventilation, wear suitable respiratory equipment.
<b>General Hygiene Considerations</b>	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.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

<b>Physical State</b>	Solid.	<b>Odor</b>	Odorless.
<b>Appearance</b>	Not available.	<b>Odor Threshold</b>	Not available.
<b>Color</b>	Clear (electrolyte)		

<u>Property</u>	<u>Values</u>	<u>Remarks</u>
<b>pH</b>	Not available.	
<b>Melting Point/Freezing Point</b>	Not available.	
<b>Boiling Point/Boiling Range</b>	95 °C - 95.555 °C	
<b>Flash Point</b>	Not available.	
<b>Evaporation Rate</b>	Not available.	
<b>Flammability (solid, gas)</b>	Not available.	
<b>Flammability Limit in Air</b>		
<b>Upper Flammability Limit:</b>	Not available.	
<b>Lower Flammability Limit:</b>	Not available.	
<b>Vapor Pressure</b>	10 mmHg	
<b>Vapor Density</b>	1	
<b>Specific Gravity</b>	Not available.	
<b>Water Solubility</b>	100%	
<b>Solubility in Other Solvents</b>	Not available.	
<b>Partition Coefficient</b>	Not available.	
<b>Autoignition Temperature</b>	Not available.	
<b>Decomposition Temperature</b>	Not available.	
<b>Kinematic Viscosity</b>	Not available.	
<b>Dynamic Viscosity</b>	Not available.	
<b>Explosive Properties</b>	Not available.	
<b>Oxidizing Properties</b>	Not available.	

### Other information

<b>Softening Point</b>	Not available.
<b>Molecular Weight</b>	Not available.
<b>VOC Content (%)</b>	Not available.
<b>Density</b>	75.8523-84.2803 lbs/ft <sup>3</sup>
<b>Bulk Density</b>	Not available.

## 10. STABILITY AND REACTIVITY

### Reactivity

Not reactive.

### Chemical stability

Stable at normal temperatures and pressures.

### Possibility of hazardous reactions

None under normal processing.

### **Hazardous Polymerization**

Hazardous polymerization does not occur.

### Conditions to avoid

Prolonged overcharge, sources of ignition.

### Incompatible materials

**Sulfuric acid:** Contact with combustible and organic materials may cause fire and explosion. Also reacts violently with strong reducing agents, metals, sulfur trioxide, strong oxidizers and water. Contact with metals may product toxic sulfur dioxide fumes and may release flammable hydrogen gas.

**Lead compounds:** Avoid contact with strong bases, acids, combustible organic materials, halides, halogenates, potassium nitrate,

permanganate, peroxides, nascent hydrogen, reducing agents and water.

#### Hazardous decomposition products

**Lead compounds** exposed to high temperatures will likely produce toxic metal fume, vapor or dust; contact with strong acid/base or presence of nascent hydrogen may generate highly toxic arsine gas.

**Sulfuric acid:** Sulfur oxides (SO<sub>x</sub>).

## 11. TOXICOLOGICAL INFORMATION

### Product Information

#### Acute Toxicity

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50	Intravenous LD50
Sulfuric Acid 7664-93-9	= 2140 mg/kg ( Rat )	-	85 - 103 mg/m <sup>3</sup> ( Rat ) 1 h	-

#### Information on toxicological effects

##### Symptoms

Symptoms of lead toxicity include headache, fatigue, abdominal pain, loss of appetite, muscular aches and weakness, sleep disturbances and irritability. Lead absorption may cause nausea, weight loss, abdominal spasms, and pain in arms, legs and joints. Effects of chronic lead exposure may include central nervous system (CNS) damage, kidney dysfunction, anemia, neuropathy particularly of the motor nerves with wrist drop, and potential reproductive effects.

#### Delayed and immediate effects as well as chronic effects from short- and long-term exposure

**Skin Corrosion/Irritation** No data available.

**Serious Eye Damage/Eye Irritation** No data available.

**Sensitization** No data available.

**Germ Cell Mutagenicity** The evidence for genotoxic effects of highly soluble inorganic lead compounds is contradictory, with numerous studies reporting both positive and negative effects. Responses appear to be induced by indirect mechanisms, mostly at very high concentrations that lack physiological relevance.

##### Carcinogenicity

**Sulfuric acid:** The International Agency for Research on Cancer (IARC) has classified "strong inorganic acid mist containing sulfuric acid" as a Category 1 carcinogen, a substance that is carcinogenic to humans. **This classification does not apply to liquid forms of sulfuric acid or sulfuric acid solutions contained within a battery.** Batteries subjected to abusive charging at excessively high currents for prolonged periods without vent caps in place may create a surrounding atmosphere of the offensive strong inorganic acid mist containing sulfuric acid.

**Lead:** There is evidence that soluble lead compounds may have a carcinogenic effect, particularly on the kidneys of rats. However, the mechanisms by which this effect occurs are still unclear. Epidemiology studies of workers exposed to inorganic lead compounds have found a limited association with stomach cancer. This has led to the classification by IARC that inorganic lead compounds are probably carcinogenic to humans (Group 2A).  
**Arsenic:** An increased lung cancer mortality was observed in multiple human populations exposed to arsenic primarily through inhalation. Also, increased mortality from multiple internal organ cancers (liver, kidney, lung, and bladder) and an increased incidence of skin cancer were observed in populations consuming drinking water high in inorganic arsenic.

Chemical Name	ACGIH	IARC	NTP	OSHA
Powdered Lead 7439-92-1	A3	Group 2A	Reasonably Anticipated	X
Sulfuric Acid	A2	Group 1		X

7664-93-9				
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<b>Reproductive Toxicity</b>	<b>Lead:</b> Pregnancy exposure to lead might cause miscarriage or premature birth, but reports on these effects are old and might have involved higher lead exposures than are currently encountered. Maternal blood lead concentrations above 30 mcg/dL can be associated with detectable abnormalities in cognitive/behavioral testing in infants. Lower concentrations (less than 10 mcg/dL) might be associated with subtle neurobehavioral effects, but these effects might be transient. Breastfeeding is not recommended if the maternal blood lead concentration is 40 mcg/dL or hi
<b>Teratogenicity</b>	<b>Lead</b> is a teratogen. Overexposure of lead by either parent before pregnancy may increase the chances of miscarriage or birth defects.
<b>STOT - Single Exposure</b>	Not classified.
<b>STOT - Repeated Exposure</b>	Not classified.
<b>Chronic Toxicity</b>	<b>Lead:</b> Lead is a cumulative poison. Increasing amounts of lead can build up in the body and may reach a point where symptoms and disabilities occur. Continuous exposure may result in decreased fertility.  <b>Antimony:</b> Chronic effects due to antimony are alterations of the ECG, especially T-wave abnormalities, myocardial changes, pneumoconiosis, but also pneumonitis, tracheitis, laryngitis, bronchitis, pustular skin eruptions called antimony spots, and contact allergy to the metal.
<b>Target Organ Effects</b>	<b>Lead</b> is a cumulative poison and may be absorbed into the body through ingestion or inhalation. Inorganic lead compounds have been documented in observational human studies to produce toxicity in multiple organ systems and body function including the hematopoietic (blood) system, kidney function, reproductive function and the central nervous system. Postnatal exposure to lead compounds is associated with impacts on neurobehavioral development in children.
<b>Aspiration Hazard</b>	Due to the physical form of the product, it is not an aspiration hazard.

## 12. ECOLOGICAL INFORMATION

### Ecotoxicity

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Powdered Lead 7439-92-1		1.17: 96 h Oncorhynchus mykiss mg/L LC50 flow-through 0.44: 96 h Cyprinus carpio mg/L LC50 semi-static 1.32: 96 h Oncorhynchus mykiss mg/L LC50 static		600: 48 h water flea µg/L EC50
Sulfuric Acid 7664-93-9		500: 96 h Brachydanio rerio mg/L LC50 static		29: 24 h Daphnia magna mg/L EC50

### Persistence and degradability

Lead is persistent in soils and sediments.

### Bioaccumulation

Not available.

### Mobility

Not available.

### Other adverse effects

Not available.

### 13. DISPOSAL CONSIDERATIONS

#### Waste treatment methods

**Disposal of Wastes** Disposal should be in accordance with applicable regional, national and local laws and regulations.

**Contaminated Packaging** Disposal should be in accordance with applicable regional, national and local laws and regulations.

#### **US EPA Waste Number**

Chemical Name	RCRA	RCRA - Basis for Listing	RCRA - D Series Wastes	RCRA - U Series Wastes
Powdered Lead 7439-92-1		Included in waste streams: F035, F037, F038, F039, K002, K003, K005, K046, K048, K049, K051, K052, K061, K062, K069, K086, K100, K176	5.0 mg/L regulatory level	

**California Hazardous Waste Codes** Not available.

This product contains the following substances that are listed with the State of California as a hazardous waste.

Chemical Name	California Hazardous Waste Status
Powdered Lead 7439-92-1	Toxic
Sulfuric Acid 7664-93-9	Toxic Corrosive

### 14. TRANSPORT INFORMATION

**Note:** This product is not regulated for domestic transport by land, air or rail. Under 49 CFR 171.8, individual packages that contain lead metal (<100 micrometers) below the reportable quantity (RQ) are not regulated. Under 49 CFR 171.4, except when transporting aboard a vessel, the requirements of this subchapter specific to marine pollutants do not apply to non-bulk packaging transported by motor vehicles, rail cars and aircrafts.

**DOT** These batteries have been tested and meet the non-spillable criteria listed in CFR49, 173.159 (d) (3) (i) and (ii). Non-spillable batteries are excepted from CFR 49, Subchapter C requirements, provided that the following criteria are met:

- 1.) The batteries must be protected against short circuits and securely packaged.
- 2.) The batteries and their outer packaging must be plainly and durably marked "NON-SPILLABLE" or "NONSPILLABLE BATTERY".

**UN/ID No.** UN2800  
**Proper shipping name** Batteries, wet, non-spillable  
**Hazard Class** 8  
**Subsidiary class** 8  
**Packing Group** III  
**Special Provisions** 159a

**TDG** These batteries have been tested and meet the non-spillable criteria. Non-spillable batteries are excepted provided that the following criteria are met:

- 1.) The batteries must be protected against short circuits and securely packages.
- 2.) The batteries and their outer packaging must be plainly and durably marked "NON-SPILLABLE" or "NONSPILLABLE BATTERY".

**UN/ID No.** UN2800  
**Proper shipping name** Batteries, Wet, Non-Spillable  
**Hazard Class** 8  
**Subsidiary class** 8

<b>Packing Group</b>	III
<b>Special Provisions</b>	39
<b><u>MEX</u></b>	Not regulated.
<b><u>ICAO (air)</u></b>	VRLA batteries have been tested and meet the non-spillable criteria listed in IATA Packing Instruction 872 and Special Provision A67. These batteries are accepted from all IATA regulations provided that the battery terminals are protected against short circuits. The words "Not Restricted, as per Special Provision A67" must be included in the description on the Air Waybill.
<b>UN/ID No.</b>	UN2800
<b>Proper shipping name</b>	Batteries, Wet, Non-Spillable
<b>Hazard Class</b>	8
<b>Subsidiary hazard class</b>	8
<b>Packing Group</b>	III
<b>Special Provisions</b>	A48, A67, A164, A183
<b><u>IATA</u></b>	VRLA batteries have been tested and meet the non-spillable criteria listed in IATA Packing Instruction 872 and Special Provision A67. These batteries are accepted from all IATA regulations provided that the battery terminals are protected against short circuits. The words "Not Restricted, as per Special Provision A67" must be included in the description on the Air Waybill.
<b>UN/ID No.</b>	UN2800
<b>Proper shipping name</b>	Batteries, Wet, Non-Spillable
<b>Hazard Class</b>	8
<b>Subsidiary hazard class</b>	8
<b>Packing Group</b>	III
<b>Special Provisions</b>	A48, A67, A164, A183
<b><u>IMDG</u></b>	These batteries have been tested and meet the non-spillable criteria listed in IMDG Code Special Provision 238.1 and .2; therefore, are not subject to the provisions of the IMDG Code provided that the battery terminals are protected against short circuits when packaged for transport.
<b>UN/ID No.</b>	UN2800
<b>Proper shipping name</b>	Batteries, Wet, Non-Spillable
<b>Hazard Class</b>	8
<b>Subsidiary hazard class</b>	8
<b>Packing Group</b>	III
<b>Special Provisions</b>	29, 238
<b>Marine pollutant</b>	No
<b><u>RID</u></b>	Non-spillable batteries are not subject to the requirements of ADR if, at a temperature of 55C, the electrolyte will not flow from a ruptured or cracked case and there is no free liquid to flow and if, as packaged for carriage, the terminals are protected from short circuit.
<b>UN/ID No.</b>	UN2800
<b>Proper shipping name</b>	Batteries, Wet, Not-Spillable
<b>Hazard Class</b>	8
<b>Classification code</b>	C11
<b>Special Provisions</b>	238, 295, 598
<b><u>ADR</u></b>	Non-spillable batteries are not subject to the requirements of ADR if, at a temperature of 55C, the electrolyte will not flow from a ruptured or cracked case and there is no free liquid to flow and if, as packaged for carriage, the terminals are protected from short circuit.
<b>UN/ID No.</b>	UN2800
<b>Proper shipping name</b>	Batteries, Wet, Not-Spillable
<b>Hazard Class</b>	8
<b>Classification code</b>	C11
<b>Special Provisions</b>	238, 295, 598



**ADN**

Not regulated.

**15. REGULATORY INFORMATION****U.S. Federal Regulations****SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	CAS No.	Weight-%	SARA 313 - Threshold Values %
Powdered Lead - 7439-92-1	7439-92-1	63-78	0.1
Sulfuric Acid - 7664-93-9	7664-93-9	10-30	1.0

**SARA 311/312 Hazard Categories**

<b>Acute Health Hazard</b>	No
<b>Chronic Health Hazard</b>	No
<b>Fire Hazard</b>	No
<b>Sudden Release of Pressure Hazard</b>	No
<b>Reactive Hazard</b>	No

**CWA (Clean Water Act)**

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Powdered Lead 7439-92-1		X	X	
Sulfuric Acid 7664-93-9	1000 lb			X

**CERCLA**

This material, as supplied, contains the following substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302).

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Powdered Lead 7439-92-1	10 lb		RQ 10 lb final RQ RQ 4.54 kg final RQ
Sulfuric Acid 7664-93-9	1000 lb	1000 lb	RQ 1000 lb final RQ RQ 454 kg final RQ

**U.S. State Regulations****California Proposition 65**

Proposition 65: Warning: Battery posts, terminals and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and reproductive harm. Batteries also contain other chemicals known to the State of California to cause cancer. Wash hands after handling.

Chemical Name	California Proposition 65
Powdered Lead - 7439-92-1	Carcinogen Developmental Female Reproductive Male Reproductive

**U.S. State Right-to-Know Regulations**

This product contains the following substances regulated by state right-to-know regulations.

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Powdered Lead 7439-92-1	X	X	X

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Sulfuric Acid 7664-93-9	X	X	X
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**U.S. EPA Label Information****EPA Pesticide Registration Number** Not applicable.**16. OTHER INFORMATION**

**Prepared By** IES Engineers  
**Issue Date** 13-Feb-2014  
**Revision Date** 10-Jul-2018  
**Revision Note** Changes in section 3 and 11.

**Disclaimer**

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product

**End of Safety Data Sheet**



# US - OSHA SAFETY DATA SHEET

## SEALED LEAD ACID BATTERY

Safety Data Sheet

According to Regulation (EC) No. 453/2010

Issue Date 13-Feb-2014

Revision Date 10-Jul-2018

Version 2

### 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

#### Product identifier

**Product Name** Valve Regulated Lead Battery

#### Other means of identification

**Product Code** 853023  
**UN/ID No.** UN2800  
**Synonyms** Not available.

#### Recommended use of the chemical and restrictions on use

**Recommended Use** Power sport batteries.  
**Uses Advised Against** Any other not listed above

#### Details of the supplier of the safety data sheet

**Supplier Address**  
SHENG CHANG TECH CO., LTD  
Lot I-1A-CN, My Phuoc 2 Industrial Park, My  
phuoc ward, Ben Cat Town, Binh Duong Province,  
Vietnam T +84-274-3553577 - F +84-274-3553576

#### Emergency telephone number

**Company Phone Number** (610) 929-5781  
**24 Hour Emergency Phone Number** CHEMTREC  
  
Domestic (800) 424-9300  
International 1(703) 527-3887

### 2. HAZARDS IDENTIFICATION

#### Classification

**Health Hazards**  
Not classified.

**Physical Hazards**  
Not classified.

#### OSHA Regulatory Status

Material is an article. No health effects are expected related to normal use of this product as sold. Hazardous exposure can occur only when the product is heated, oxidized or otherwise processed or damaged to create lead dust, vapor or fume. Refer to the Material Safety Data Sheet for Lead Acid Battery when battery is filled with electrolyte/battery acid.

#### Label elements

#### Emergency Overview

**Appearance** Not available. **Physical State** Solid. **Odor** Odorless.

**Hazards not otherwise classified (HNOC)**

Not available.

**Other information**

Not available.

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

**Common name** Valve Regulated Lead Battery.  
**Synonyms** Not available.

Chemical Name	CAS No.	Weight-%
Powdered Lead	7439-92-1	63-78
Tin	7440-31-5	0.006
Antimony	7440-36-0	0.2
Arsenic	7440-38-2	0.003
Calcium	7440-70-2	0.002
Sulfuric Acid	7664-93-9	10-30

\*Note: Non-hazardous chemical ingredients are not listed

**4. FIRST AID MEASURES****First aid measures**

- Eye Contact** First aid is not expected to be necessary if material is used under ordinary conditions and as recommended. If contact with material occurs flush eyes with water. If signs/symptoms develop, get medical attention.
- Skin Contact** First aid is not expected to be necessary if material is used under ordinary conditions and as recommended. Wash skin with soap and water. If signs/symptoms develop, get medical attention. If exposure to electrolyte (sulfuric acid) occurs, flush with large quantities of water for 15 minutes. Immediately remove contaminated clothing and shoes. If exposure to lead component occurs, wash contaminated skin with plenty of soap and water.
- Inhalation** First aid is not expected to be necessary if material is used under ordinary conditions and as recommended. If signs/symptoms develop, move person to fresh air.
- Ingestion** First aid is not expected to be necessary if material is used under ordinary conditions and as recommended. If electrolyte (sulfuric acid) portion of battery is ingested give large quantities, DO NOT induce vomiting. Get medical attention immediately. If lead portion of battery is ingested get medical attention immediately.
- Self-Protection of the First Aider** Do not use mouth-to-mouth methods if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or another proper respiratory medical device.

**Most important symptoms and effects, both acute and delayed**

- Symptoms** Symptoms of lead toxicity include headache, fatigue, abdominal pain, loss of appetite, muscular aches and weakness, sleep disturbances and irritability. Lead absorption may cause nausea, weight loss, abdominal spasms, and pain in arms, legs and joints. Effects of chronic lead exposure may include central nervous system (CNS) damage, kidney dysfunction, anemia, neuropathy particularly of the motor nerves with wrist drop, and potential reproductive effects.

**Indication of any immediate medical attention and special treatment needed**

**Note to Physicians** Treat symptomatically.

## 5. FIRE-FIGHTING MEASURES

### Suitable extinguishing media

CO<sub>2</sub>, dry chemical or foam.

**Unsuitable Extinguishing Media** Avoid using water.

### Specific hazards arising from the chemical

Sulfuric acid in the electrolyte is corrosive to skin and eyes.

**Hazardous Combustion Products** Lead portion of battery will likely produce toxic metal fume, vapor or dust.

### Explosion data

**Sensitivity to Mechanical Impact** Not applicable.

**Sensitivity to Static Discharge** None known.

### Protective equipment and precautions for firefighters

If batteries are on charge, shut off power. Do not allow metallic materials to simultaneously contact negative and positive terminals of cells and batteries. Wear a positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.

## 6. ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

**Personal Precautions** No special precautions expected to be necessary if material is used under ordinary conditions and as recommended. Avoid contact of lead with skin.

**Other information** Non-emergency personnel should utilize chemical gloves.

**For emergency responders** Wear chemical gloves, goggles, acid resistant clothing and boots, respirator if insufficient ventilation.

### Environmental precautions

**Environmental Precautions** Prevent entry into waterways, sewers, basements or confined areas. Runoff from fire control and dilution water may be toxic and corrosive and may cause adverse environmental impacts. See Section 12 for additional ecological information.

### Methods and material for containment and cleaning up

**Methods for Containment** In event of a battery rupturing; stop the leak if you can do it without risk. Absorb with earth, sand, or other non-combustible material. Cautiously neutralize spilled liquid.

**Methods for Cleaning Up** Dispose of in accordance with local, state, and national regulations.

## 7. HANDLING AND STORAGE

### Precautions for safe handling

**Advice on Safe Handling** Handle batteries cautiously. Do not tip to avoid spills (if filled with electrolyte). Avoid contact with internal components. Wear protective clothing when filling or handling batteries. Follow manufacturer's instructions for installation and service. Do not allow conductive material to touch the battery terminals. Short circuit may occur and cause battery failure and fire. Wash thoroughly with soap and water after handling and before eating, drinking, or using tobacco. Eyewash stations and safety showers should be provided with unlimited water supply. Handle in accordance with good industrial hygiene and safety practice.

**Conditions for safe storage, including any incompatibilities**

<b>Storage Conditions</b>	Store in a cool/low-temperature, well-ventilated place away from heat and ignition sources. Batteries should be stored under roof for protection against adverse weather conditions. Place cardboard between layers of stacked batteries to avoid damage and short circuits. Store batteries on an impervious surface. Storage class: Class 8B: Non-flammable corrosive materials.
<b>Incompatible materials</b>	<b>Sulfuric acid:</b> Contact with combustible and organic materials may cause fire and explosion. Also reacts violently with strong reducing agents, metals, sulfur trioxide, strong oxidizers and water. Contact with metals may product toxic sulfur dioxide fumes and may release flammable hydrogen gas.  <b>Lead compounds:</b> Avoid contact with strong bases, acids, combustible organic materials, halides, halogenates, potassium nitrate, permanganate, peroxides, nascent hydrogen, reducing agents and water.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION****Control parameters**

**Exposure Guidelines** This product, as supplied, contains the following hazardous materials with occupational exposure limits established by the region-specific regulatory bodies.

<b>Chemical Name</b>	<b>ACGIH TLV</b>	<b>OSHA PEL</b>	<b>NIOSH IDLH</b>
Powdered Lead 7439-92-1	TWA: 0.05 mg/m <sup>3</sup> TWA: 0.05 mg/m <sup>3</sup> Pb	TWA: 50 µg/m <sup>3</sup> TWA: 50 µg/m <sup>3</sup> Pb	IDLH: 100 mg/m <sup>3</sup> IDLH: 100 mg/m <sup>3</sup> Pb TWA: 0.050 mg/m <sup>3</sup> TWA: 0.050 mg/m <sup>3</sup> Pb
Sulfuric Acid 7664-93-9	TWA: 0.2 mg/m <sup>3</sup> thoracic particulate matter	TWA: 1 mg/m <sup>3</sup> (vacated) TWA: 1 mg/m <sup>3</sup>	IDLH: 15 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup>

**Appropriate engineering controls**

**Engineering Controls** The health hazard risks of handling this material are dependent on factors, such as physical form and quantity. Site-specific risk assessments should be conducted to determine the appropriate exposure control measures. Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels as low as reasonably achievable.

**Individual protection measures, such as personal protective equipment**

<b>Eye/Face Protection</b>	In laboratory, medical or industrial settings, safety glasses with side shields are highly recommended. The use of goggles or full face protection may be required depending on the industrial exposure setting. Contact a health and safety professional for specific information.
<b>Skin and Body Protection</b>	Wear appropriate gloves. No skin protection is ordinarily required under normal conditions of use. In accordance with industrial hygiene practices, if contact with leaking battery is expected precautions should be taken to avoid skin contact. Under severe exposure or emergency conditions, wear acid-resistant clothing and boots.
<b>Respiratory Protection</b>	In case of insufficient ventilation, wear suitable respiratory equipment.
<b>General Hygiene Considerations</b>	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.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

<b>Physical State</b>	Solid.	<b>Odor</b>	Odorless.
<b>Appearance</b>	Not available.	<b>Odor Threshold</b>	Not available.
<b>Color</b>	Clear (electrolyte)		

<u>Property</u>	<u>Values</u>	<u>Remarks</u>
<b>pH</b>	Not available.	
<b>Melting Point/Freezing Point</b>	Not available.	
<b>Boiling Point/Boiling Range</b>	95 °C - 95.555 °C	
<b>Flash Point</b>	Not available.	
<b>Evaporation Rate</b>	Not available.	
<b>Flammability (solid, gas)</b>	Not available.	
<b>Flammability Limit in Air</b>		
<b>Upper Flammability Limit:</b>	Not available.	
<b>Lower Flammability Limit:</b>	Not available.	
<b>Vapor Pressure</b>	10 mmHg	
<b>Vapor Density</b>	1	
<b>Specific Gravity</b>	Not available.	
<b>Water Solubility</b>	100%	
<b>Solubility in Other Solvents</b>	Not available.	
<b>Partition Coefficient</b>	Not available.	
<b>Autoignition Temperature</b>	Not available.	
<b>Decomposition Temperature</b>	Not available.	
<b>Kinematic Viscosity</b>	Not available.	
<b>Dynamic Viscosity</b>	Not available.	
<b>Explosive Properties</b>	Not available.	
<b>Oxidizing Properties</b>	Not available.	

### Other information

<b>Softening Point</b>	Not available.
<b>Molecular Weight</b>	Not available.
<b>VOC Content (%)</b>	Not available.
<b>Density</b>	75.8523-84.2803 lbs/ft <sup>3</sup>
<b>Bulk Density</b>	Not available.

## 10. STABILITY AND REACTIVITY

### Reactivity

Not reactive.

### Chemical stability

Stable at normal temperatures and pressures.

### Possibility of hazardous reactions

None under normal processing.

### Hazardous Polymerization

Hazardous polymerization does not occur.

### Conditions to avoid

Prolonged overcharge, sources of ignition.

### Incompatible materials

**Sulfuric acid:** Contact with combustible and organic materials may cause fire and explosion. Also reacts violently with strong reducing agents, metals, sulfur trioxide, strong oxidizers and water. Contact with metals may product toxic sulfur dioxide fumes and may release flammable hydrogen gas.

**Lead compounds:** Avoid contact with strong bases, acids, combustible organic materials, halides, halogenates, potassium nitrate,

permanganate, peroxides, nascent hydrogen, reducing agents and water.

#### Hazardous decomposition products

**Lead compounds** exposed to high temperatures will likely produce toxic metal fume, vapor or dust; contact with strong acid/base or presence of nascent hydrogen may generate highly toxic arsine gas.

**Sulfuric acid:** Sulfur oxides (SO<sub>x</sub>).

## 11. TOXICOLOGICAL INFORMATION

### Product Information

#### Acute Toxicity

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50	Intravenous LD50
Sulfuric Acid 7664-93-9	= 2140 mg/kg ( Rat )	-	85 - 103 mg/m <sup>3</sup> ( Rat ) 1 h	-

#### Information on toxicological effects

##### Symptoms

Symptoms of lead toxicity include headache, fatigue, abdominal pain, loss of appetite, muscular aches and weakness, sleep disturbances and irritability. Lead absorption may cause nausea, weight loss, abdominal spasms, and pain in arms, legs and joints. Effects of chronic lead exposure may include central nervous system (CNS) damage, kidney dysfunction, anemia, neuropathy particularly of the motor nerves with wrist drop, and potential reproductive effects.

#### Delayed and immediate effects as well as chronic effects from short- and long-term exposure

**Skin Corrosion/Irritation** No data available.

**Serious Eye Damage/Eye Irritation** No data available.

**Sensitization** No data available.

**Germ Cell Mutagenicity** The evidence for genotoxic effects of highly soluble inorganic lead compounds is contradictory, with numerous studies reporting both positive and negative effects. Responses appear to be induced by indirect mechanisms, mostly at very high concentrations that lack physiological relevance.

##### Carcinogenicity

**Sulfuric acid:** The International Agency for Research on Cancer (IARC) has classified "strong inorganic acid mist containing sulfuric acid" as a Category 1 carcinogen, a substance that is carcinogenic to humans. **This classification does not apply to liquid forms of sulfuric acid or sulfuric acid solutions contained within a battery.** Batteries subjected to abusive charging at excessively high currents for prolonged periods without vent caps in place may create a surrounding atmosphere of the offensive strong inorganic acid mist containing sulfuric acid.

**Lead:** There is evidence that soluble lead compounds may have a carcinogenic effect, particularly on the kidneys of rats. However, the mechanisms by which this effect occurs are still unclear. Epidemiology studies of workers exposed to inorganic lead compounds have found a limited association with stomach cancer. This has led to the classification by IARC that inorganic lead compounds are probably carcinogenic to humans (Group 2A).  
**Arsenic:** An increased lung cancer mortality was observed in multiple human populations exposed to arsenic primarily through inhalation. Also, increased mortality from multiple internal organ cancers (liver, kidney, lung, and bladder) and an increased incidence of skin cancer were observed in populations consuming drinking water high in inorganic arsenic.

Chemical Name	ACGIH	IARC	NTP	OSHA
Powdered Lead 7439-92-1	A3	Group 2A	Reasonably Anticipated	X
Sulfuric Acid	A2	Group 1		X



7664-93-9				
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**Reproductive Toxicity**

**Lead:** Pregnancy exposure to lead might cause miscarriage or premature birth, but reports on these effects are old and might have involved higher lead exposures than are currently encountered. Maternal blood lead concentrations above 30 mcg/dL can be associated with detectable abnormalities in cognitive/behavioral testing in infants. Lower concentrations (less than 10 mcg/dL) might be associated with subtle neurobehavioral effects, but these effects might be transient. Breastfeeding is not recommended if the maternal blood lead concentration is 40 mcg/dL or hi

**Teratogenicity**

**Lead** is a teratogen. Overexposure of lead by either parent before pregnancy may increase the chances of miscarriage or birth defects.

**STOT - Single Exposure**

Not classified.

**STOT - Repeated Exposure**

Not classified.

**Chronic Toxicity**

**Lead:** Lead is a cumulative poison. Increasing amounts of lead can build up in the body and may reach a point where symptoms and disabilities occur. Continuous exposure may result in decreased fertility.

**Antimony:** Chronic effects due to antimony are alterations of the ECG, especially T-wave abnormalities, myocardial changes, pneumoconiosis, but also pneumonitis, tracheitis, laryngitis, bronchitis, pustular skin eruptions called antimony spots, and contact allergy to the metal.

**Target Organ Effects**

**Lead** is a cumulative poison and may be absorbed into the body through ingestion or inhalation. Inorganic lead compounds have been documented in observational human studies to produce toxicity in multiple organ systems and body function including the hematopoietic (blood) system, kidney function, reproductive function and the central nervous system. Postnatal exposure to lead compounds is associated with impacts on neurobehavioral development in children.

**Aspiration Hazard**

Due to the physical form of the product, it is not an aspiration hazard.

## 12. ECOLOGICAL INFORMATION

**Ecotoxicity**

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Powdered Lead 7439-92-1		1.17: 96 h Oncorhynchus mykiss mg/L LC50 flow-through 0.44: 96 h Cyprinus carpio mg/L LC50 semi-static 1.32: 96 h Oncorhynchus mykiss mg/L LC50 static		600: 48 h water flea µg/L EC50
Sulfuric Acid 7664-93-9		500: 96 h Brachydanio rerio mg/L LC50 static		29: 24 h Daphnia magna mg/L EC50

**Persistence and degradability**

Lead is persistent in soils and sediments.

**Bioaccumulation**

Not available.

**Mobility**

Not available.

**Other adverse effects**

Not available.

### 13. DISPOSAL CONSIDERATIONS

#### Waste treatment methods

**Disposal of Wastes** Disposal should be in accordance with applicable regional, national and local laws and regulations.

**Contaminated Packaging** Disposal should be in accordance with applicable regional, national and local laws and regulations.

#### **US EPA Waste Number**

Chemical Name	RCRA	RCRA - Basis for Listing	RCRA - D Series Wastes	RCRA - U Series Wastes
Powdered Lead 7439-92-1		Included in waste streams: F035, F037, F038, F039, K002, K003, K005, K046, K048, K049, K051, K052, K061, K062, K069, K086, K100, K176	5.0 mg/L regulatory level	

**California Hazardous Waste Codes** Not available.

This product contains the following substances that are listed with the State of California as a hazardous waste.

Chemical Name	California Hazardous Waste Status
Powdered Lead 7439-92-1	Toxic
Sulfuric Acid 7664-93-9	Toxic Corrosive

### 14. TRANSPORT INFORMATION

**Note:** This product is not regulated for domestic transport by land, air or rail. Under 49 CFR 171.8, individual packages that contain lead metal (<100 micrometers) below the reportable quantity (RQ) are not regulated. Under 49 CFR 171.4, except when transporting aboard a vessel, the requirements of this subchapter specific to marine pollutants do not apply to non-bulk packaging transported by motor vehicles, rail cars and aircrafts.

**DOT** These batteries have been tested and meet the non-spillable criteria listed in CFR49, 173.159 (d) (3) (i) and (ii). Non-spillable batteries are excepted from CFR 49, Subchapter C requirements, provided that the following criteria are met:

- 1.) The batteries must be protected against short circuits and securely packaged.
- 2.) The batteries and their outer packaging must be plainly and durably marked "NON-SPILLABLE" or "NONSPILLABLE BATTERY".

**UN/ID No.** UN2800  
**Proper shipping name** Batteries, wet, non-spillable  
**Hazard Class** 8  
**Subsidiary class** 8  
**Packing Group** III  
**Special Provisions** 159a

**TDG** These batteries have been tested and meet the non-spillable criteria. Non-spillable batteries are excepted provided that the following criteria are met:

- 1.) The batteries must be protected against short circuits and securely packages.
- 2.) The batteries and their outer packaging must be plainly and durably marked "NON-SPILLABLE" or "NONSPILLABLE BATTERY".

**UN/ID No.** UN2800  
**Proper shipping name** Batteries, Wet, Non-Spillable  
**Hazard Class** 8  
**Subsidiary class** 8

<b>Packing Group</b>	III
<b>Special Provisions</b>	39
<b><u>MEX</u></b>	Not regulated.
<b><u>ICAO (air)</u></b>	VRLA batteries have been tested and meet the non-spillable criteria listed in IATA Packing Instruction 872 and Special Provision A67. These batteries are accepted from all IATA regulations provided that the battery terminals are protected against short circuits. The words "Not Restricted, as per Special Provision A67" must be included in the description on the Air Waybill.
<b>UN/ID No.</b>	UN2800
<b>Proper shipping name</b>	Batteries, Wet, Non-Spillable
<b>Hazard Class</b>	8
<b>Subsidiary hazard class</b>	8
<b>Packing Group</b>	III
<b>Special Provisions</b>	A48, A67, A164, A183
<b><u>IATA</u></b>	VRLA batteries have been tested and meet the non-spillable criteria listed in IATA Packing Instruction 872 and Special Provision A67. These batteries are accepted from all IATA regulations provided that the battery terminals are protected against short circuits. The words "Not Restricted, as per Special Provision A67" must be included in the description on the Air Waybill.
<b>UN/ID No.</b>	UN2800
<b>Proper shipping name</b>	Batteries, Wet, Non-Spillable
<b>Hazard Class</b>	8
<b>Subsidiary hazard class</b>	8
<b>Packing Group</b>	III
<b>Special Provisions</b>	A48, A67, A164, A183
<b><u>IMDG</u></b>	These batteries have been tested and meet the non-spillable criteria listed in IMDG Code Special Provision 238.1 and .2; therefore, are not subject to the provisions of the IMDG Code provided that the battery terminals are protected against short circuits when packaged for transport.
<b>UN/ID No.</b>	UN2800
<b>Proper shipping name</b>	Batteries, Wet, Non-Spillable
<b>Hazard Class</b>	8
<b>Subsidiary hazard class</b>	8
<b>Packing Group</b>	III
<b>Special Provisions</b>	29, 238
<b>Marine pollutant</b>	No
<b><u>RID</u></b>	Non-spillable batteries are not subject to the requirements of ADR if, at a temperature of 55C, the electrolyte will not flow from a ruptured or cracked case and there is no free liquid to flow and if, as packaged for carriage, the terminals are protected from short circuit.
<b>UN/ID No.</b>	UN2800
<b>Proper shipping name</b>	Batteries, Wet, Not-Spillable
<b>Hazard Class</b>	8
<b>Classification code</b>	C11
<b>Special Provisions</b>	238, 295, 598
<b><u>ADR</u></b>	Non-spillable batteries are not subject to the requirements of ADR if, at a temperature of 55C, the electrolyte will not flow from a ruptured or cracked case and there is no free liquid to flow and if, as packaged for carriage, the terminals are protected from short circuit.
<b>UN/ID No.</b>	UN2800
<b>Proper shipping name</b>	Batteries, Wet, Not-Spillable
<b>Hazard Class</b>	8
<b>Classification code</b>	C11
<b>Special Provisions</b>	238, 295, 598

**ADN**

Not regulated.

**15. REGULATORY INFORMATION****U.S. Federal Regulations****SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	CAS No.	Weight-%	SARA 313 - Threshold Values %
Powdered Lead - 7439-92-1	7439-92-1	63-78	0.1
Sulfuric Acid - 7664-93-9	7664-93-9	10-30	1.0

**SARA 311/312 Hazard Categories**

<b>Acute Health Hazard</b>	No
<b>Chronic Health Hazard</b>	No
<b>Fire Hazard</b>	No
<b>Sudden Release of Pressure Hazard</b>	No
<b>Reactive Hazard</b>	No

**CWA (Clean Water Act)**

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Powdered Lead 7439-92-1		X	X	
Sulfuric Acid 7664-93-9	1000 lb			X

**CERCLA**

This material, as supplied, contains the following substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302).

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Powdered Lead 7439-92-1	10 lb		RQ 10 lb final RQ RQ 4.54 kg final RQ
Sulfuric Acid 7664-93-9	1000 lb	1000 lb	RQ 1000 lb final RQ RQ 454 kg final RQ

**U.S. State Regulations****California Proposition 65**

Proposition 65: Warning: Battery posts, terminals and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and reproductive harm. Batteries also contain other chemicals known to the State of California to cause cancer. Wash hands after handling.

Chemical Name	California Proposition 65
Powdered Lead - 7439-92-1	Carcinogen Developmental Female Reproductive Male Reproductive

**U.S. State Right-to-Know Regulations**

This product contains the following substances regulated by state right-to-know regulations.

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Powdered Lead 7439-92-1	X	X	X

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Sulfuric Acid 7664-93-9	X	X	X
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**U.S. EPA Label Information****EPA Pesticide Registration Number** Not applicable.**16. OTHER INFORMATION**

**Prepared By** IES Engineers  
**Issue Date** 13-Feb-2014  
**Revision Date** 10-Jul-2018  
**Revision Note** Changes in section 3 and 11.

**Disclaimer**

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product

**End of Safety Data Sheet**



# US - OSHA SAFETY DATA SHEET

## SEALED LEAD ACID BATTERY

Safety Data Sheet

According to Regulation (EC) No. 453/2010

Issue Date 13-Feb-2014

Revision Date 10-Jul-2018

Version 2

### 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

#### Product identifier

**Product Name** Valve Regulated Lead Battery

#### Other means of identification

**Product Code** 853023

**UN/ID No.** UN2800

**Synonyms** Not available.

#### Recommended use of the chemical and restrictions on use

**Recommended Use** Power sport batteries.

**Uses Advised Against** Any other not listed above

#### Details of the supplier of the safety data sheet

##### **Supplier Address**

SHENG CHANG TECH CO., LTD

Lot I-1A-CN, My Phuoc 2 Industrial Park, My phuoc ward, Ben Cat Town, Binh Duong Province, Vietnam T +84-274-3553577 - F +84-274-3553576

#### Emergency telephone number

**Company Phone Number** (610) 929-5781

**24 Hour Emergency Phone Number** CHEMTREC

Domestic (800) 424-9300

International 1(703) 527-3887

### 2. HAZARDS IDENTIFICATION

#### Classification

##### **Health Hazards**

Not classified.

##### **Physical Hazards**

Not classified.

#### **OSHA Regulatory Status**

Material is an article. No health effects are expected related to normal use of this product as sold. Hazardous exposure can occur only when the product is heated, oxidized or otherwise processed or damaged to create lead dust, vapor or fume. Refer to the Material Safety Data Sheet for Lead Acid Battery when battery is filled with electrolyte/battery acid.

#### Label elements

##### **Emergency Overview**

**Appearance** Not available.

**Physical State** Solid.

**Odor** Odorless.

**Hazards not otherwise classified (HNOC)**

Not available.

**Other information**

Not available.

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

**Common name** Valve Regulated Lead Battery.  
**Synonyms** Not available.

Chemical Name	CAS No.	Weight-%
Powdered Lead	7439-92-1	63-78
Tin	7440-31-5	0.006
Antimony	7440-36-0	0.2
Arsenic	7440-38-2	0.003
Calcium	7440-70-2	0.002
Sulfuric Acid	7664-93-9	10-30

\*Note: Non-hazardous chemical ingredients are not listed

**4. FIRST AID MEASURES****First aid measures**

- Eye Contact** First aid is not expected to be necessary if material is used under ordinary conditions and as recommended. If contact with material occurs flush eyes with water. If signs/symptoms develop, get medical attention.
- Skin Contact** First aid is not expected to be necessary if material is used under ordinary conditions and as recommended. Wash skin with soap and water. If signs/symptoms develop, get medical attention. If exposure to electrolyte (sulfuric acid) occurs, flush with large quantities of water for 15 minutes. Immediately remove contaminated clothing and shoes. If exposure to lead component occurs, wash contaminated skin with plenty of soap and water.
- Inhalation** First aid is not expected to be necessary if material is used under ordinary conditions and as recommended. If signs/symptoms develop, move person to fresh air.
- Ingestion** First aid is not expected to be necessary if material is used under ordinary conditions and as recommended. If electrolyte (sulfuric acid) portion of battery is ingested give large quantities, DO NOT induce vomiting. Get medical attention immediately. If lead portion of battery is ingested get medical attention immediately.
- Self-Protection of the First Aider** Do not use mouth-to-mouth methods if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or another proper respiratory medical device.

**Most important symptoms and effects, both acute and delayed**

- Symptoms** Symptoms of lead toxicity include headache, fatigue, abdominal pain, loss of appetite, muscular aches and weakness, sleep disturbances and irritability. Lead absorption may cause nausea, weight loss, abdominal spasms, and pain in arms, legs and joints. Effects of chronic lead exposure may include central nervous system (CNS) damage, kidney dysfunction, anemia, neuropathy particularly of the motor nerves with wrist drop, and potential reproductive effects.

**Indication of any immediate medical attention and special treatment needed**

- Note to Physicians** Treat symptomatically.

## 5. FIRE-FIGHTING MEASURES

### Suitable extinguishing media

CO<sub>2</sub>, dry chemical or foam.

**Unsuitable Extinguishing Media** Avoid using water.

### Specific hazards arising from the chemical

Sulfuric acid in the electrolyte is corrosive to skin and eyes.

**Hazardous Combustion Products** Lead portion of battery will likely produce toxic metal fume, vapor or dust.

### Explosion data

**Sensitivity to Mechanical Impact** Not applicable.

**Sensitivity to Static Discharge** None known.

### Protective equipment and precautions for firefighters

If batteries are on charge, shut off power. Do not allow metallic materials to simultaneously contact negative and positive terminals of cells and batteries. Wear a positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.

## 6. ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

**Personal Precautions** No special precautions expected to be necessary if material is used under ordinary conditions and as recommended. Avoid contact of lead with skin.

**Other information** Non-emergency personnel should utilize chemical gloves.

**For emergency responders** Wear chemical gloves, goggles, acid resistant clothing and boots, respirator if insufficient ventilation.

### Environmental precautions

**Environmental Precautions** Prevent entry into waterways, sewers, basements or confined areas. Runoff from fire control and dilution water may be toxic and corrosive and may cause adverse environmental impacts. See Section 12 for additional ecological information.

### Methods and material for containment and cleaning up

**Methods for Containment** In event of a battery rupturing; stop the leak if you can do it without risk. Absorb with earth, sand, or other non-combustible material. Cautiously neutralize spilled liquid.

**Methods for Cleaning Up** Dispose of in accordance with local, state, and national regulations.

## 7. HANDLING AND STORAGE

### Precautions for safe handling

**Advice on Safe Handling** Handle batteries cautiously. Do not tip to avoid spills (if filled with electrolyte). Avoid contact with internal components. Wear protective clothing when filling or handling batteries. Follow manufacturer's instructions for installation and service. Do not allow conductive material to touch the battery terminals. Short circuit may occur and cause battery failure and fire. Wash thoroughly with soap and water after handling and before eating, drinking, or using tobacco. Eyewash stations and safety showers should be provided with unlimited water supply. Handle in accordance with good industrial hygiene and safety practice.



**Conditions for safe storage, including any incompatibilities**

<b>Storage Conditions</b>	Store in a cool/low-temperature, well-ventilated place away from heat and ignition sources. Batteries should be stored under roof for protection against adverse weather conditions. Place cardboard between layers of stacked batteries to avoid damage and short circuits. Store batteries on an impervious surface. Storage class: Class 8B: Non-flammable corrosive materials.
<b>Incompatible materials</b>	<b>Sulfuric acid:</b> Contact with combustible and organic materials may cause fire and explosion. Also reacts violently with strong reducing agents, metals, sulfur trioxide, strong oxidizers and water. Contact with metals may product toxic sulfur dioxide fumes and may release flammable hydrogen gas.  <b>Lead compounds:</b> Avoid contact with strong bases, acids, combustible organic materials, halides, halogenates, potassium nitrate, permanganate, peroxides, nascent hydrogen, reducing agents and water.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION****Control parameters**

**Exposure Guidelines** This product, as supplied, contains the following hazardous materials with occupational exposure limits established by the region-specific regulatory bodies.

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Powdered Lead 7439-92-1	TWA: 0.05 mg/m <sup>3</sup> TWA: 0.05 mg/m <sup>3</sup> Pb	TWA: 50 µg/m <sup>3</sup> TWA: 50 µg/m <sup>3</sup> Pb	IDLH: 100 mg/m <sup>3</sup> IDLH: 100 mg/m <sup>3</sup> Pb TWA: 0.050 mg/m <sup>3</sup> TWA: 0.050 mg/m <sup>3</sup> Pb
Sulfuric Acid 7664-93-9	TWA: 0.2 mg/m <sup>3</sup> thoracic particulate matter	TWA: 1 mg/m <sup>3</sup> (vacated) TWA: 1 mg/m <sup>3</sup>	IDLH: 15 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup>

**Appropriate engineering controls**

**Engineering Controls** The health hazard risks of handling this material are dependent on factors, such as physical form and quantity. Site-specific risk assessments should be conducted to determine the appropriate exposure control measures. Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels as low as reasonably achievable.

**Individual protection measures, such as personal protective equipment**

<b>Eye/Face Protection</b>	In laboratory, medical or industrial settings, safety glasses with side shields are highly recommended. The use of goggles or full face protection may be required depending on the industrial exposure setting. Contact a health and safety professional for specific information.
<b>Skin and Body Protection</b>	Wear appropriate gloves. No skin protection is ordinarily required under normal conditions of use. In accordance with industrial hygiene practices, if contact with leaking battery is expected precautions should be taken to avoid skin contact. Under severe exposure or emergency conditions, wear acid-resistant clothing and boots.
<b>Respiratory Protection</b>	In case of insufficient ventilation, wear suitable respiratory equipment.
<b>General Hygiene Considerations</b>	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.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

<b>Physical State</b>	Solid.	<b>Odor</b>	Odorless.
<b>Appearance</b>	Not available.	<b>Odor Threshold</b>	Not available.
<b>Color</b>	Clear (electrolyte)		

<u>Property</u>	<u>Values</u>	<u>Remarks</u>
<b>pH</b>	Not available.	
<b>Melting Point/Freezing Point</b>	Not available.	
<b>Boiling Point/Boiling Range</b>	95 °C - 95.555 °C	
<b>Flash Point</b>	Not available.	
<b>Evaporation Rate</b>	Not available.	
<b>Flammability (solid, gas)</b>	Not available.	
<b>Flammability Limit in Air</b>		
<b>Upper Flammability Limit:</b>	Not available.	
<b>Lower Flammability Limit:</b>	Not available.	
<b>Vapor Pressure</b>	10 mmHg	
<b>Vapor Density</b>	1	
<b>Specific Gravity</b>	Not available.	
<b>Water Solubility</b>	100%	
<b>Solubility in Other Solvents</b>	Not available.	
<b>Partition Coefficient</b>	Not available.	
<b>Autoignition Temperature</b>	Not available.	
<b>Decomposition Temperature</b>	Not available.	
<b>Kinematic Viscosity</b>	Not available.	
<b>Dynamic Viscosity</b>	Not available.	
<b>Explosive Properties</b>	Not available.	
<b>Oxidizing Properties</b>	Not available.	

### Other information

<b>Softening Point</b>	Not available.
<b>Molecular Weight</b>	Not available.
<b>VOC Content (%)</b>	Not available.
<b>Density</b>	75.8523-84.2803 lbs/ft <sup>3</sup>
<b>Bulk Density</b>	Not available.

## 10. STABILITY AND REACTIVITY

### Reactivity

Not reactive.

### Chemical stability

Stable at normal temperatures and pressures.

### Possibility of hazardous reactions

None under normal processing.

### **Hazardous Polymerization**

Hazardous polymerization does not occur.

### Conditions to avoid

Prolonged overcharge, sources of ignition.

### Incompatible materials

**Sulfuric acid:** Contact with combustible and organic materials may cause fire and explosion. Also reacts violently with strong reducing agents, metals, sulfur trioxide, strong oxidizers and water. Contact with metals may product toxic sulfur dioxide fumes and may release flammable hydrogen gas.

**Lead compounds:** Avoid contact with strong bases, acids, combustible organic materials, halides, halogenates, potassium nitrate,

permanganate, peroxides, nascent hydrogen, reducing agents and water.

#### Hazardous decomposition products

**Lead compounds** exposed to high temperatures will likely produce toxic metal fume, vapor or dust; contact with strong acid/base or presence of nascent hydrogen may generate highly toxic arsine gas.

**Sulfuric acid:** Sulfur oxides (SO<sub>x</sub>).

## 11. TOXICOLOGICAL INFORMATION

### Product Information

#### Acute Toxicity

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50	Intravenous LD50
Sulfuric Acid 7664-93-9	= 2140 mg/kg ( Rat )	-	85 - 103 mg/m <sup>3</sup> ( Rat ) 1 h	-

#### Information on toxicological effects

##### Symptoms

Symptoms of lead toxicity include headache, fatigue, abdominal pain, loss of appetite, muscular aches and weakness, sleep disturbances and irritability. Lead absorption may cause nausea, weight loss, abdominal spasms, and pain in arms, legs and joints. Effects of chronic lead exposure may include central nervous system (CNS) damage, kidney dysfunction, anemia, neuropathy particularly of the motor nerves with wrist drop, and potential reproductive effects.

#### Delayed and immediate effects as well as chronic effects from short- and long-term exposure

**Skin Corrosion/Irritation** No data available.

**Serious Eye Damage/Eye Irritation** No data available.

**Sensitization** No data available.

**Germ Cell Mutagenicity** The evidence for genotoxic effects of highly soluble inorganic lead compounds is contradictory, with numerous studies reporting both positive and negative effects. Responses appear to be induced by indirect mechanisms, mostly at very high concentrations that lack physiological relevance.

##### Carcinogenicity

**Sulfuric acid:** The International Agency for Research on Cancer (IARC) has classified "strong inorganic acid mist containing sulfuric acid" as a Category 1 carcinogen, a substance that is carcinogenic to humans. **This classification does not apply to liquid forms of sulfuric acid or sulfuric acid solutions contained within a battery.** Batteries subjected to abusive charging at excessively high currents for prolonged periods without vent caps in place may create a surrounding atmosphere of the offensive strong inorganic acid mist containing sulfuric acid.

**Lead:** There is evidence that soluble lead compounds may have a carcinogenic effect, particularly on the kidneys of rats. However, the mechanisms by which this effect occurs are still unclear. Epidemiology studies of workers exposed to inorganic lead compounds have found a limited association with stomach cancer. This has led to the classification by IARC that inorganic lead compounds are probably carcinogenic to humans (Group 2A).  
**Arsenic:** An increased lung cancer mortality was observed in multiple human populations exposed to arsenic primarily through inhalation. Also, increased mortality from multiple internal organ cancers (liver, kidney, lung, and bladder) and an increased incidence of skin cancer were observed in populations consuming drinking water high in inorganic arsenic.

Chemical Name	ACGIH	IARC	NTP	OSHA
Powdered Lead 7439-92-1	A3	Group 2A	Reasonably Anticipated	X
Sulfuric Acid	A2	Group 1		X

7664-93-9				
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**Reproductive Toxicity**

**Lead:** Pregnancy exposure to lead might cause miscarriage or premature birth, but reports on these effects are old and might have involved higher lead exposures than are currently encountered. Maternal blood lead concentrations above 30 mcg/dL can be associated with detectable abnormalities in cognitive/behavioral testing in infants. Lower concentrations (less than 10 mcg/dL) might be associated with subtle neurobehavioral effects, but these effects might be transient. Breastfeeding is not recommended if the maternal blood lead concentration is 40 mcg/dL or hi

**Teratogenicity**

**Lead** is a teratogen. Overexposure of lead by either parent before pregnancy may increase the chances of miscarriage or birth defects.

**STOT - Single Exposure**

Not classified.

**STOT - Repeated Exposure**

Not classified.

**Chronic Toxicity**

**Lead:** Lead is a cumulative poison. Increasing amounts of lead can build up in the body and may reach a point where symptoms and disabilities occur. Continuous exposure may result in decreased fertility.

**Antimony:** Chronic effects due to antimony are alterations of the ECG, especially T-wave abnormalities, myocardial changes, pneumoconiosis, but also pneumonitis, tracheitis, laryngitis, bronchitis, pustular skin eruptions called antimony spots, and contact allergy to the metal.

**Target Organ Effects**

**Lead** is a cumulative poison and may be absorbed into the body through ingestion or inhalation. Inorganic lead compounds have been documented in observational human studies to produce toxicity in multiple organ systems and body function including the hematopoietic (blood) system, kidney function, reproductive function and the central nervous system. Postnatal exposure to lead compounds is associated with impacts on neurobehavioral development in children.

**Aspiration Hazard**

Due to the physical form of the product, it is not an aspiration hazard.

## 12. ECOLOGICAL INFORMATION

**Ecotoxicity**

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Powdered Lead 7439-92-1		1.17: 96 h Oncorhynchus mykiss mg/L LC50 flow-through 0.44: 96 h Cyprinus carpio mg/L LC50 semi-static 1.32: 96 h Oncorhynchus mykiss mg/L LC50 static		600: 48 h water flea µg/L EC50
Sulfuric Acid 7664-93-9		500: 96 h Brachydanio rerio mg/L LC50 static		29: 24 h Daphnia magna mg/L EC50

**Persistence and degradability**

Lead is persistent in soils and sediments.

**Bioaccumulation**

Not available.

**Mobility**

Not available.

**Other adverse effects**

Not available.

### 13. DISPOSAL CONSIDERATIONS

#### Waste treatment methods

**Disposal of Wastes** Disposal should be in accordance with applicable regional, national and local laws and regulations.

**Contaminated Packaging** Disposal should be in accordance with applicable regional, national and local laws and regulations.

#### **US EPA Waste Number**

Chemical Name	RCRA	RCRA - Basis for Listing	RCRA - D Series Wastes	RCRA - U Series Wastes
Powdered Lead 7439-92-1		Included in waste streams: F035, F037, F038, F039, K002, K003, K005, K046, K048, K049, K051, K052, K061, K062, K069, K086, K100, K176	5.0 mg/L regulatory level	

**California Hazardous Waste Codes** Not available.

This product contains the following substances that are listed with the State of California as a hazardous waste.

Chemical Name	California Hazardous Waste Status
Powdered Lead 7439-92-1	Toxic
Sulfuric Acid 7664-93-9	Toxic Corrosive

### 14. TRANSPORT INFORMATION

**Note:** This product is not regulated for domestic transport by land, air or rail. Under 49 CFR 171.8, individual packages that contain lead metal (<100 micrometers) below the reportable quantity (RQ) are not regulated. Under 49 CFR 171.4, except when transporting aboard a vessel, the requirements of this subchapter specific to marine pollutants do not apply to non-bulk packaging transported by motor vehicles, rail cars and aircrafts.

**DOT** These batteries have been tested and meet the non-spillable criteria listed in CFR49, 173.159 (d) (3) (i) and (ii). Non-spillable batteries are excepted from CFR 49, Subchapter C requirements, provided that the following criteria are met:

- 1.) The batteries must be protected against short circuits and securely packaged.
- 2.) The batteries and their outer packaging must be plainly and durably marked "NON-SPILLABLE" or "NONSPILLABLE BATTERY".

**UN/ID No.** UN2800  
**Proper shipping name** Batteries, wet, non-spillable  
**Hazard Class** 8  
**Subsidiary class** 8  
**Packing Group** III  
**Special Provisions** 159a

**TDG** These batteries have been tested and meet the non-spillable criteria. Non-spillable batteries are excepted provided that the following criteria are met:

- 1.) The batteries must be protected against short circuits and securely packages.
- 2.) The batteries and their outer packaging must be plainly and durably marked "NON-SPILLABLE" or "NONSPILLABLE BATTERY".

**UN/ID No.** UN2800  
**Proper shipping name** Batteries, Wet, Non-Spillable  
**Hazard Class** 8  
**Subsidiary class** 8

<b>Packing Group</b>	III
<b>Special Provisions</b>	39
<b><u>MEX</u></b>	Not regulated.
<b><u>ICAO (air)</u></b>	VRLA batteries have been tested and meet the non-spillable criteria listed in IATA Packing Instruction 872 and Special Provision A67. These batteries are accepted from all IATA regulations provided that the battery terminals are protected against short circuits. The words "Not Restricted, as per Special Provision A67" must be included in the description on the Air Waybill.
<b>UN/ID No.</b>	UN2800
<b>Proper shipping name</b>	Batteries, Wet, Non-Spillable
<b>Hazard Class</b>	8
<b>Subsidiary hazard class</b>	8
<b>Packing Group</b>	III
<b>Special Provisions</b>	A48, A67, A164, A183
<b><u>IATA</u></b>	VRLA batteries have been tested and meet the non-spillable criteria listed in IATA Packing Instruction 872 and Special Provision A67. These batteries are accepted from all IATA regulations provided that the battery terminals are protected against short circuits. The words "Not Restricted, as per Special Provision A67" must be included in the description on the Air Waybill.
<b>UN/ID No.</b>	UN2800
<b>Proper shipping name</b>	Batteries, Wet, Non-Spillable
<b>Hazard Class</b>	8
<b>Subsidiary hazard class</b>	8
<b>Packing Group</b>	III
<b>Special Provisions</b>	A48, A67, A164, A183
<b><u>IMDG</u></b>	These batteries have been tested and meet the non-spillable criteria listed in IMDG Code Special Provision 238.1 and .2; therefore, are not subject to the provisions of the IMDG Code provided that the battery terminals are protected against short circuits when packaged for transport.
<b>UN/ID No.</b>	UN2800
<b>Proper shipping name</b>	Batteries, Wet, Non-Spillable
<b>Hazard Class</b>	8
<b>Subsidiary hazard class</b>	8
<b>Packing Group</b>	III
<b>Special Provisions</b>	29, 238
<b>Marine pollutant</b>	No
<b><u>RID</u></b>	Non-spillable batteries are not subject to the requirements of ADR if, at a temperature of 55C, the electrolyte will not flow from a ruptured or cracked case and there is no free liquid to flow and if, as packaged for carriage, the terminals are protected from short circuit.
<b>UN/ID No.</b>	UN2800
<b>Proper shipping name</b>	Batteries, Wet, Not-Spillable
<b>Hazard Class</b>	8
<b>Classification code</b>	C11
<b>Special Provisions</b>	238, 295, 598
<b><u>ADR</u></b>	Non-spillable batteries are not subject to the requirements of ADR if, at a temperature of 55C, the electrolyte will not flow from a ruptured or cracked case and there is no free liquid to flow and if, as packaged for carriage, the terminals are protected from short circuit.
<b>UN/ID No.</b>	UN2800
<b>Proper shipping name</b>	Batteries, Wet, Not-Spillable
<b>Hazard Class</b>	8
<b>Classification code</b>	C11
<b>Special Provisions</b>	238, 295, 598

**ADN**

Not regulated.

**15. REGULATORY INFORMATION****U.S. Federal Regulations****SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	CAS No.	Weight-%	SARA 313 - Threshold Values %
Powdered Lead - 7439-92-1	7439-92-1	63-78	0.1
Sulfuric Acid - 7664-93-9	7664-93-9	10-30	1.0

**SARA 311/312 Hazard Categories**

<b>Acute Health Hazard</b>	No
<b>Chronic Health Hazard</b>	No
<b>Fire Hazard</b>	No
<b>Sudden Release of Pressure Hazard</b>	No
<b>Reactive Hazard</b>	No

**CWA (Clean Water Act)**

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Powdered Lead 7439-92-1		X	X	
Sulfuric Acid 7664-93-9	1000 lb			X

**CERCLA**

This material, as supplied, contains the following substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302).

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Powdered Lead 7439-92-1	10 lb		RQ 10 lb final RQ RQ 4.54 kg final RQ
Sulfuric Acid 7664-93-9	1000 lb	1000 lb	RQ 1000 lb final RQ RQ 454 kg final RQ

**U.S. State Regulations****California Proposition 65**

Proposition 65: Warning: Battery posts, terminals and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and reproductive harm. Batteries also contain other chemicals known to the State of California to cause cancer. Wash hands after handling.

Chemical Name	California Proposition 65
Powdered Lead - 7439-92-1	Carcinogen Developmental Female Reproductive Male Reproductive

**U.S. State Right-to-Know Regulations**

This product contains the following substances regulated by state right-to-know regulations.

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Powdered Lead 7439-92-1	X	X	X

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Sulfuric Acid 7664-93-9	X	X	X
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**U.S. EPA Label Information****EPA Pesticide Registration Number** Not applicable.**16. OTHER INFORMATION**

**Prepared By** IES Engineers  
**Issue Date** 13-Feb-2014  
**Revision Date** 10-Jul-2018  
**Revision Note** Changes in section 3 and 11.

**Disclaimer**

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**End of Safety Data Sheet**