

1. Identification

Product identifier Valve Regulated Lead Acid Battery

Other means of identification - Non-Spillable Lead Acid Battery, Sealed Lead Acid Battery

Recommended use Electric storage battery.

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer/Supplier Energy Battery Group, Inc.

Address 1800 Roswell Road, Suite 2200, Marietta, GA 30062

Telephone number (888) 823-0954

Contact person

Emergency telephone number USA/Canada: CHEMTREC (800) 424-9300, Outside USA 1 (703) 527-3887

E-mail info@energybattery.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, single exposure | Category 1 (respiratory system) |
| Specific target organ toxicity, single exposure | Category 3 respiratory tract irritation |
| Specific target organ toxicity, repeated exposure | Category 1 (respiratory system) |

Environmental hazards

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| Hazardous to the aquatic environment, acute hazard | Category 1 |
| Hazardous to the aquatic environment, long-term hazard | Category 1 |

OSHA defined hazards Not classified.

Label elements



Signal word

Danger

Hazard statement

Harmful if swallowed. Harmful if inhaled. 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.

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| Precautionary statement | |
| 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/vapors. 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/shower. 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 center/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. |
| Hazard(s) not otherwise classified (HNOC) | Under normal conditions of processing and use, exposure to the chemical constituents in this product is unlikely. The battery should not be opened or burned. Exposure to the ingredients contained within or their combustion products could be harmful. |
| Supplemental information | In use, may form flammable/explosive vapor-air mixture. |

3. Composition/information on ingredients

Mixtures

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

Composition comments All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

| | |
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| Inhalation | Exposure to contents of an open or damaged battery: Move injured person into fresh air and keep person calm under observation. Get medical attention if any discomfort continues. |
| Skin contact | Exposure to contents of an open or damaged battery: Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention if irritation develops and persists. |
| Eye contact | Exposure to contents of an open or damaged battery: Flush thoroughly with water for at least 15 minutes. Hold eyelids open during flushing. If irritation persists, repeat flushing. Get medical attention if irritation develops and persists. |
| Ingestion | Exposure to contents of an open or damaged battery: Rinse mouth thoroughly with water. DO NOT induce vomiting because of danger of aspirating liquid into lungs. Get medical attention immediately. |
| Most important symptoms/effects, acute and delayed | Under normal conditions of processing and use, exposure to the chemical constituents in this product is unlikely. The battery should not be opened or burned. Exposure to the ingredients contained within or their combustion products could be harmful. |
| Indication of immediate medical attention and special treatment needed | Treat symptomatically. |
| General information | Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. |

5. Fire-fighting measures

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| Suitable extinguishing media | Dry chemical, foam, carbon dioxide, water fog. |
| Unsuitable extinguishing media | In the event that a battery is ruptured and the internal components are exposed, DO NOT USE WATER. Do not use carbon dioxide directly on cells. |
| Specific hazards arising from the chemical | Batteries evolve flammable hydrogen gas during charging and may increase fire risk. Containers may explode when heated. |
| Special protective equipment and precautions for firefighters | Self-contained breathing apparatus and full protective clothing must be worn in case of fire. Selection of respiratory protection for firefighting: follow the general fire precautions indicated in the workplace. |
| Fire fighting equipment/instructions | Use standard firefighting procedures and consider the hazards of other involved materials. |

General fire hazards Like any sealed container, battery cells may rupture when exposed to excessive heat; this could result in the release of corrosive and flammable materials.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures Avoid contact with skin.

Methods and materials for containment and cleaning up Neutralize the spilled material before disposal. Sweep up or vacuum up spillage and collect in suitable container for disposal. Dispose of waste and residues in accordance with local authority requirements.

Environmental precautions Prevent runoff from entering drains, sewers, or streams.

7. Handling and storage

Precautions for safe handling In the event of damage resulting in a leak of exposed materials, avoid contact with contents of an open or damaged cell or battery. Keep away from heat, sparks and open flame. Do not allow conductive material to touch the battery terminals. A dangerous short-circuit may occur and cause battery failure and fire.

Conditions for safe storage, including any incompatibilities Store in original tightly closed container. Protect containers from damage. Place cardboard between layers of stacked batteries to avoid damage and short circuits.

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

| Components | Type | Value |
|---|------|------------------------|
| Lead and lead compounds (CAS 7439-92-1) | TWA | 0.05 mg/m ³ |

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

| Components | Type | Value |
|--------------------------------|------|---------------------|
| Sulphuric acid (CAS 7664-93-9) | PEL | 1 mg/m ³ |

US. ACGIH Threshold Limit Values

| Components | Type | Value | Form |
|---|------|------------------------|--------------------|
| Lead and lead compounds (CAS 7439-92-1) | TWA | 0.05 mg/m ³ | |
| Sulphuric acid (CAS 7664-93-9) | TWA | 0.2 mg/m ³ | Thoracic fraction. |

US. NIOSH: Pocket Guide to Chemical Hazards

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

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

ACGIH Biological Exposure Indices

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

* - For sampling details, please see the source document.

Appropriate engineering controls Provide adequate ventilation. Provide easy access to water supply and eye wash facilities.

Individual protection measures, such as personal protective equipment

Eye/face protection None under normal conditions. Leak from a damaged or opened battery: Wear safety glasses with side shields (or goggles).

Skin protection

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

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|--------------------------------|---|
| Skin protection | |
| 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

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| Appearance | Solid. |
| Physical state | Solid. |
| Form | Sulfuric acid, gelatinous. Lead, solid. |
| Color | Not available. |
| Odor | Odorless. |
| Odor threshold | Not available. |
| pH | < 1 |
| Melting point/freezing point | Not available. |
| Initial boiling point and boiling range | 235 - 240 °F (112.78 - 115.56 °C) (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) |
| Vapor pressure | 10 mm Hg |
| Vapor 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. |
| Oxidizing properties | Not oxidizing. |

10. Stability and reactivity

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|------------------------------------|---|
| 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

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

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

Information on toxicological effects

Acute toxicity
Exposure to contents of an open or damaged battery: Harmful if inhaled or swallowed.

| Components | Species | Test Results |
|------------|---------|--------------|
|------------|---------|--------------|

Sulphuric acid (CAS 7664-93-9)

Acute

Oral

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

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

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

Respiratory or skin sensitization

Respiratory sensitization
No data available.

Skin sensitization
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.

IARC Monographs. Overall Evaluation of Carcinogenicity

Lead and lead compounds (CAS 7439-92-1) 2B Possibly carcinogenic to humans.

Sulphuric acid (CAS 7664-93-9) 1 Carcinogenic to humans.

NTP Report on Carcinogens

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

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

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not regulated.

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

Specific target organ toxicity - single exposure
None under normal conditions. Exposure to contents of an open or damaged battery: Causes damage to organs (respiratory system).

Specific target organ toxicity - repeated exposure
None under normal conditions. Exposure to contents of an open or damaged battery: Causes damage to organs through prolonged or repeated exposure: Respiratory system.

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

Chronic effects
Exposure to contents of an open or damaged battery: Heavy lead exposure may result in central nervous system damage, encephalopathy and damage to the blood-forming (hematopoietic) tissues. Chronic inhalation of sulfuric acid mist may increase the risk of lung cancer.

12. Ecological information

Ecotoxicity
The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. Exposure to contents of an open or damaged battery: Very toxic to aquatic life with long lasting effects.

| Components | Species | Test Results |
|------------|---------|--------------|
|------------|---------|--------------|

Lead and lead compounds (CAS 7439-92-1)

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|------|--|---------------------|
| LC50 | Rainbow trout, donaldson trout (Oncorhynchus mykiss) | 1.17 mg/l, 96 Hours |
|------|--|---------------------|

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

13. Disposal considerations

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|---------------------------------------|--|
| Disposal instructions | Recycle the batteries, as the primary disposal method. Neutralize electrolyte/sulfuric acid. Avoid discharge into water courses or onto the ground. Dispose of in accordance with local regulations. |
| Local disposal regulations | Empty containers should be taken to an approved waste handling site for recycling or disposal. |
| Hazardous waste code | RCRA: 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

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| DOT | Not regulated as dangerous goods. |
| IATA | Not regulated as dangerous goods. |
| IMDG | Not regulated as dangerous goods. |
| Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code | Not applicable. |
| General information | DOT: Not regulated per 49 CFR 173.159a. IATA/ICAO: Not regulated per Special Provision A67. IMDG: Not regulated per Special Provision #238. Label: NONSPILLABLE |

15. Regulatory information

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| US federal regulations | This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. All components are on the U.S. EPA TSCA Inventory List. Hazardous Chemical Reporting Requirements apply when an Extremely Hazardous Substance is present at a facility in an amount equal to or exceeding 500 pounds or the Threshold Planning Quantity, whichever is lower per 40CFR370.10(a)(1) | |
| TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D) | Not regulated. | |
| CERCLA Hazardous Substance List (40 CFR 302.4) | Lead and lead compounds (CAS 7439-92-1) | Listed. |
| | Sulphuric acid (CAS 7664-93-9) | Listed. |
| SARA 304 Emergency release notification | Sulphuric acid (CAS 7664-93-9) | 1000 LBS |
| OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053) | Lead and lead compounds (CAS 7439-92-1) | Reproductive toxicity Central nervous system Kidney Blood Acute toxicity |

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance

| Chemical name | CAS number | Reportable quantity (pounds) | Threshold planning quantity (pounds) | Threshold planning quantity, lower value (pounds) | Threshold planning quantity, upper value (pounds) |
|---------------|------------|------------------------------|--------------------------------------|---|---|
|---------------|------------|------------------------------|--------------------------------------|---|---|

| | | | | | |
|----------------|-----------|------|------|--|--|
| Sulphuric acid | 7664-93-9 | 1000 | 1000 | | |
|----------------|-----------|------|------|--|--|

SARA 311/312 Hazardous chemical

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|------------------------------|--|
| Classified hazard categories | Acute toxicity (any route of exposure) Skin corrosion or irritation Serious eye damage or eye irritation Carcinogenicity Reproductive toxicity Specific target organ toxicity (single or repeated exposure) |
|------------------------------|--|

SARA 313 (TRI reporting)

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

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Lead and lead compounds (CAS 7439-92-1)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Sulphuric acid (CAS 7664-93-9)

Safe Drinking Water Act (SDWA) Not regulated.

Drug Enforcement Administration (DEA). List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.04(f)(2) and Chemical Code Number

Sulphuric acid (CAS 7664-93-9) 6552

Drug Enforcement Administration (DEA). List 1 & 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))

Sulphuric acid (CAS 7664-93-9) 20 %WV

DEA Exempt Chemical Mixtures Code Number

Sulphuric acid (CAS 7664-93-9) 6552

US state regulations

US. Massachusetts RTK - Substance List

Lead and lead compounds (CAS 7439-92-1)

Sulphuric acid (CAS 7664-93-9)

US. New Jersey Worker and Community Right-to-Know Act

Lead and lead compounds (CAS 7439-92-1)

Sulphuric acid (CAS 7664-93-9)

US. Pennsylvania Worker and Community Right-to-Know Law

Lead and lead compounds (CAS 7439-92-1)

Sulphuric acid (CAS 7664-93-9)

US. Rhode Island RTK

Lead and lead compounds (CAS 7439-92-1)

Sulphuric acid (CAS 7664-93-9)

California Proposition 65



WARNING: Cancer and Reproductive Harm. www.P65warnings.ca.gov or

PROPOSITION 65 WARNING: Battery posts, terminals and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and reproductive harm. Batteries also contain other chemicals known to the State of California to cause cancer. WASH HANDS AFTER HANDLING.

California Proposition 65 - CRT: Listed date/Carcinogenic substance

Lead and lead compounds (CAS 7439-92-1) Listed: October 1, 1992

Sulphuric acid (CAS 7664-93-9) Listed: March 14, 2003

California Proposition 65 - CRT: Listed date/Developmental toxin

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

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

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

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

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

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

Lead and lead compounds (CAS 7439-92-1)

Sulphuric acid (CAS 7664-93-9)

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, including date of preparation or last revision

Issue date 19-September-2017

Revision date 28-February-2018

Version # 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.