# Safety Data Sheet

**Issue Date:** 01-Jan-2014 **Revision Date:** 01-May-2018 **Version** 1

## 1. IDENTIFICATION

**Product Identifier**

**Product Name** PS, PSH, PSG, PHR, PG, PDC and DCG Valve Regulated (VRLA) Batteries Absorbed Electrolyte (AGM)

**Other means of identification**

**SDS #** POWER-001

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

**Recommended Use** Battery

**Details of the supplier of the safety data sheet**

**Manufacturer Address**
Power-Sonic Corporation
7550 Panasonic Way
San Diego, CA 92154

**Emergency Telephone Number**

**Company Phone Number** 1-619-661-2020
**Emergency Telephone (24 hr)** INFOTRAC 1-800-535-5053 (domestic), 1-352-323-3500 (International)

## 2. HAZARDS IDENTIFICATION

**EMERGENCY OVERVIEW:** This product is a nonspillable lead acid battery. The information below is intended for repeated and prolonged contact with the battery contents in an occupational setting. In the absence of an incident or accident, is not likely to apply to normal product use. However, this Safety Data Sheet (SDS) contains valuable information critical to the safe handling and proper use of this product. This SDS should be retained and available for employees and other users of this product. Always be aware of the risk of fire, explosion, or burns. Do not short circuit the (+) and (-) terminals with any other metals. Do not disassemble or modify the battery. Do not solder a battery directly. Keep away from fire or open flame.

**Appearance** Battery **Physical State** Solid containing liquid **Odor** Characteristic

**Classification**

This product is a battery. The classification below is based on the battery acid contained in the battery, which would only be released during an incident.

| | |
|---|---|
| Acute toxicity - Oral | Category 4 |
| Acute toxicity - Inhalation (Dusts/Mists) | Category 4 |
| Skin corrosion/irritation | Category 1 Sub-category B |
| Serious eye damage/eye irritation | Category 1 |
| Reproductive toxicity | Category 1A |
| Specific target organ toxicity (repeated exposure) | Category 2 |

**Signal Word**
**Danger**

**Hazard Statements**
Harmful if swallowed
Harmful if inhaled
Causes severe skin burns and eye damage
May damage fertility or the unborn child
May cause damage to organs through prolonged or repeated exposure

**Precautionary Statements - Prevention**
Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Use personal protective equipment as required
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Use only outdoors or in a well-ventilated area
Do not breathe dust/fume/gas/mist/vapors/spray

**Precautionary Statements - Response**
Immediately call a POISON CENTER or doctor/physician for all exposures
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
Wash contaminated clothing before reuse
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting

**Precautionary Statements - Storage**
Store locked up

**Precautionary Statements - Disposal**
Dispose of contents/container to an approved waste disposal plant

**Other Hazards**
Very toxic to aquatic life with long lasting effects

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

| Chemical Name | CAS No | Weight-% |
|---|---|---|
| Lead | 7439-92-1 | 65-75 |
| Sulfuric Acid | 7664-93-9 | 14-20 |
| Tin | 7440-31-5 | <.5 |
| Calcium | 7440-70-2 | <.1 |
| Fiberglass Separator | Proprietary | 5 |
| Case material: Acrylonitrile Butadine Styrene (ABS) | Proprietary | 5-10 |

**If Chemical Name/CAS No is "proprietary" and/or Weight-% is listed as a range, the specific chemical identity and/or percentage of composition has been withheld as a trade secret.** Inorganic lead and electrolyte (sulfuric acid) are the main components of every Valve Regulated Lead Acid battery supplied by Power-Sonic Corporation. Other ingredients may be present dependent upon the specific battery type. For additional information contact Power-Sonic Corporation Technical Department.

## 4. FIRST-AID MEASURES

**First Aid Measures**

**General Advice** — Immediately call a poison center or doctor/physician. Provide this SDS to medical personnel for treatment.

**Eye Contact** — IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

**Skin Contact** IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse.

**Inhalation** IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

**Ingestion** IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

**Most important symptoms and effects**

**Symptoms** Harmful if swallowed. Harmful if inhaled. Causes severe skin burns and eye damage. May damage fertility or the unborn child. May cause damage to organs through prolonged or repeated exposure.

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

**Notes to Physician** Treat symptomatically.

## 5. FIRE-FIGHTING MEASURES

**Suitable Extinguishing Media**
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Unsuitable Extinguishing Media** Not determined.

**Specific Hazards Arising from the Chemical**
Not determined.

**Hazardous Combustion Products** Sulfuric acid: Sulfur trioxide, carbon monoxide, sulfuric acid mist, sulfur dioxide, and hydrogen sulfide.
Lead Compounds: High temperatures above the melting point are likely to produce toxic metal fume, vapor, or dust; contact with strong acid or base or presence of nascent hydrogen may generate highly toxic arsine gas.

**Protective equipment and precautions for firefighters**
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

## 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions, protective equipment and emergency procedures**

**Personal Precautions** Use personal protective equipment as required.

**Methods and material for containment and cleaning up**

**Methods for Containment** There is no release of material unless the case is damaged or battery is misused/overcharged. If release occurs stop flow of material, contain/absorb all spills with dry sand, earth, or vermiculite. Do not use combustible materials. Neutralize spilled material with soda ash, sodium bicarbonate, lime, etc. Wear acid-resistant clothing, boots, gloves, and face shield. Dispose of as hazardous waste. Do not discharge acid to sewer.

**Methods for Clean-Up** Spent Batteries - send to secondary lead smelter for recycling. Follow applicable federal, state and local regulations Neutralize as in preceding step. Collect neutralized material in sealed container and handle as hazardous waste as applicable. A copy of this SDS must be supplied to any scrap dealer or secondary lead smelter with the battery.

## 7. HANDLING AND STORAGE

**Precautions for safe handling**

**Advice on Safe Handling** Handle in accordance with good industrial hygiene and safety practice. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required. Wash face, hands, and any exposed skin thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Do not breathe dust/fume/gas/mist/vapors/spray. Due to the battery's low internal resistance and high power density, high levels of short circuit current can be developed across the battery terminals. Do not rest tools or cables on the battery. Use insulated tools only. Follow all installation instructions and diagrams when installing or maintaining battery systems.

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

**Storage Conditions** Store batteries in a cool, dry, well ventilated area that are separated from incompatible materials and any activities which may generate flames, sparks, or heat. Keep clear of all metallic articles that could contact the negative and positive terminals on a battery and create a short circuit condition.

**Incompatible Materials** Sulfuric acid: Contact with combustibles and organic materials may cause fire and explosion. Also reacts violently with strong reducing agents, metals, sulfur trioxide gas, 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 acids, bases, halides, halogenates, potassium nitrate, permanganate, peroxides, nascent hydrogen, and reducing agents.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Exposure Guidelines**

| Chemical Name | ACGIH TLV | OSHA PEL | NIOSH IDLH |
|---|---|---|---|
| Lead<br>7439-92-1 | TWA: 0.05 mg/m$^3$ Pb | TWA: 50 µg/m$^3$ Pb | IDLH: 100 mg/m$^3$ Pb<br>TWA: 0.050 mg/m$^3$ Pb |
| Sulfuric Acid<br>7664-93-9 | TWA: 0.2 mg/m$^3$ thoracic fraction | TWA: 1 mg/m$^3$<br>(vacated) TWA: 1 mg/m$^3$ | IDLH: 15 mg/m$^3$<br>TWA: 1 mg/m$^3$ |
| Tin<br>7440-31-5 | TWA: 2 mg/m$^3$ Sn except Tin hydride | TWA: 2 mg/m$^3$ Sn except oxides<br>(vacated) TWA: 2 mg/m$^3$ Sn except oxides | IDLH: 100 mg/m$^3$ Sn<br>TWA: 2 mg/m$^3$ except Tin oxides Sn |

**Appropriate engineering controls**

**Engineering Controls** Store and handle batteries in a well ventilated area. If mechanical ventilation is used, components must be acid resistant.

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

**Eye/Face Protection** None needed under normal conditions. If handling damaged or broken batteries use chemical splash goggles or face shield.

**Skin and Body Protection** None needed under normal conditions. If battery case is damaged use rubber or plastic elbow length gauntlets. In case of damaged or broken battery use an acid resistant apron. Under severe exposure or emergency conditions wear acid resistant clothing.

**Respiratory Protection** None required under normal conditions. If battery is overcharged and concentrations of sulfuric acid are known to exceed PEL use NIOSH or MSH approved respiratory protection.

**General Hygiene Considerations** Handle batteries carefully to avoid damaging the case. Do not allow metallic articles to contact the battery terminals during handling. Avoid contact with the internal components of the battery.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Information on basic physical and chemical properties**

| | | | |
|---|---|---|---|
| **Physical State** | Solid containing liquid | | |
| **Appearance** | Battery | **Odor** | Characteristic |
| **Color** | Not determined | **Odor Threshold** | Not determined |

| **Property** | **This product is a battery and typical physical/chemical properties do not apply.** | **Remarks • Method** |
|---|---|---|
| **pH** | Not determined | |
| **Melting Point/Freezing Point** | Not determined | |
| **Boiling Point/Boiling Range** | Not determined | |
| **Flash Point** | Not determined | |
| **Evaporation Rate** | Not determined | |
| **Flammability (Solid, Gas)** | Not determined | |
| **Upper Flammability Limits** | Not determined | |
| **Lower Flammability Limit** | Not determined | |
| **Vapor Pressure** | Not determined | |
| **Vapor Density** | Not determined | |
| **Specific Gravity** | 1.3 | |
| **Water Solubility** | Not determined | |
| **Solubility in other solvents** | Not determined | |
| **Partition Coefficient** | Not determined | |
| **Auto-ignition Temperature** | Not determined | |
| **Decomposition Temperature** | Not determined | |
| **Kinematic Viscosity** | Not determined | |
| **Dynamic Viscosity** | Not determined | |
| **Explosive Properties** | Not determined | |
| **Oxidizing Properties** | Not determined | |

## 10. STABILITY AND REACTIVITY

**Reactivity**
Not reactive under normal conditions.

**Chemical Stability**
Stable under recommended storage conditions.

**Possibility of Hazardous Reactions**
None under normal processing.

**Hazardous Polymerization** Hazardous polymerization does not occur.

**Conditions to Avoid**
Keep out of reach of children.

**Incompatible Materials**
Sulfuric acid: Contact with combustibles and organic materials may cause fire and explosion. Also reacts violently with strong reducing agents, metals, sulfur trioxide gas, 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 acids, bases, halides, halogenates, potassium nitrate, permanganate, peroxides, nascent hydrogen, and reducing agents.

**Hazardous Decomposition Products**

Sulfuric acid: Sulfur trioxide, carbon monoxide, sulfuric acid mist, sulfur dioxide, and hydrogen sulfide.
Lead Compounds: High temperatures above the melting point are likely to produce toxic metal fume, vapor, or dust; contact with strong acid or base or presence of nascent hydrogen may generate highly toxic arsine gas.

## 11. TOXICOLOGICAL INFORMATION

**Information on likely routes of exposure**

**Product Information**

**Eye Contact** Causes severe eye damage.

**Skin Contact** Causes severe skin burns.

**Inhalation** Harmful by inhalation.

**Ingestion** Harmful if swallowed.

**Component Information**

| Chemical Name | Oral LD50 | Dermal LD50 | Inhalation LC50 |
|---|---|---|---|
| Sulfuric Acid<br>7664-93-9 | = 2140 mg/kg ( Rat ) | - | = 510 mg/m$^3$ ( Rat ) 2 h |
| Tin<br>7440-31-5 | = 700 mg/kg ( Rat ) | - | - |

**Information on physical, chemical and toxicological effects**

**Symptoms** Please see section 4 of this SDS for symptoms.

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

**Carcinogenicity** The table below indicates whether each agency has listed any ingredient as a carcinogen. However, the product as a whole has not been tested. IARC has classified "strong inorganic acid mist containing sulfuric acid" as a category 1 carcinogen, 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. Inorganic acid mist is not generated under normal use of this product. Misuse of the product, such as overcharging, may result in the generation of sulfuric acid mist. Hazardous exposure to lead can occur only when product is heated, oxidized, or otherwise processed or damaged to create dust, vapor or fume.

| Chemical Name | ACGIH | IARC | NTP | OSHA |
|---|---|---|---|---|
| Lead<br>7439-92-1 | A3 | Group 2A | Reasonably Anticipated | X |
| Sulfuric Acid<br>7664-93-9 | A2 | Group 1 | Known | X |

**Legend**

***ACGIH (American Conference of Governmental Industrial Hygienists)***
*A2 - Suspected Human Carcinogen*
*A3 - Animal Carcinogen*
***IARC (International Agency for Research on Cancer)***
*Group 1 - Carcinogenic to Humans*
*Group 2A - Probably Carcinogenic to Humans*
***NTP (National Toxicology Program)***
*Known - Known Carcinogen*
*Reasonably Anticipated - Reasonably Anticipated to be a Human Carcinogen*
***OSHA (Occupational Safety and Health Administration of the US Department of Labor)***
*X - Present*

**Reproductive toxicity** May damage fertility or the unborn child.

**STOT - repeated exposure** Causes damage to organs through prolonged or repeated exposure.

**Numerical measures of toxicity**
Not determined

## 12. ECOLOGICAL INFORMATION

**Ecotoxicity**
Very toxic to aquatic life with long lasting effects.

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

**Persistence/Degradability**
Not determined.

**Bioaccumulation**
Not determined.

**Mobility**
Not determined

**Other Adverse Effects**
Not determined

## 13. DISPOSAL CONSIDERATIONS

**Waste Treatment Methods**

**Disposal of Wastes** Spent Batteries - send to secondary lead smelter for recycling. Follow applicable federal, state and local regulations Neutralize as in preceding step. Collect neutralized material in sealed container and handle as hazardous waste as applicable. A copy of this SDS must be supplied to any scrap dealer or secondary lead smelter with the battery.

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

| Chemical Name | RCRA | RCRA - Basis for Listing | RCRA - D Series Wastes | RCRA - U Series Wastes |
|---|---|---|---|---|
| Lead<br>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 Status** This product contains one or more substances that are listed with the State of California as a hazardous waste

| Chemical Name | California Hazardous Waste Status |
|---|---|
| Lead<br>7439-92-1 | Toxic |
| Sulfuric Acid<br>7664-93-9 | Toxic<br>Corrosive |

## 14. TRANSPORT INFORMATION

**Note**

Powersonic's nonspillable lead acid batteries are regulated as Class 8 Corrosive hazardous materials / dangerous goods by the U.S. Department of Transportation (DOT) and international dangerous goods regulations referenced below (i.e., IATA Dangerous Goods Regulations and IMDG Code). However, Powersonic's nonspillable batteries are excepted from these regulations because the batteries meet all of the testing, packaging and marking requirements found in the U.S. and international dangerous goods regulations. Therefore, the batteries do not need to be shipped and transported as fully-regulated Class 8 Corrosive hazardous materials / dangerous goods when packaged in accordance with these regulations.

**UN Number**

2800

**DOT**

49 CFR 173.159(f) and 49 CFR 173.159a

The batteries have been tested in accordance with the vibration and pressure differential tests found in 49 CFR 173.159(f) and "crack test" found at 49 CFR 173.159a;
When offered for transport, the batteries must be protected against short circuits and securely packaged in accordance with 49 CFR 173.159a; and
The batteries and outer packaging must be marked NONSPILLABLE BATTERY as required by 49 CFR 173.159a.

**IATA**

Packing Instruction 872 and Special Provision A67

The batteries have been tested in accordance with the vibration and pressure differential tests found in Packing Instruction 872 and "crack test" found in Special Provision A67 of the International Air Transport Association (IATA) Dangerous Goods Regulations
When offered for transport, the batteries must be protected against short circuits and securely packaged in accordance with Special Provision A67.

**IMDG**

Special Provision 238.1 and 238.2

The batteries have been tested in accordance with the vibration and pressure differential tests and "crack test" found in Special Provision 238.1 and 238.2.
When offered for transport, the batteries must be protected against short circuits and securely packaged in accordance with Special Provision 238.1 and 238.2.

## 15. REGULATORY INFORMATION

**International Inventories**

| Chemical Name | TSCA | DSL | NDSL | EINECS | ELINCS | ENCS | IECSC | KECL | PICCS | AICS |
|---|---|---|---|---|---|---|---|---|---|---|
| Lead | Present | X | | Present | | Present | X | Present | X | X |
| Sulfuric Acid | Present | X | | Present | | Present | X | Present | X | X |
| Tin | Present | X | | Present | | | X | Present | X | X |
| Calcium | Present | X | | Present | | | X | Present | X | X |

**Legend:**

***TSCA*** *- United States Toxic Substances Control Act Section 8(b) Inventory*

***DSL/NDSL*** *- Canadian Domestic Substances List/Non-Domestic Substances List*

***EINECS/ELINCS*** *- European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances*

***ENCS*** *- Japan Existing and New Chemical Substances*

***IECSC*** *- China Inventory of Existing Chemical Substances*

***KECL*** *- Korean Existing and Evaluated Chemical Substances*

***PICCS*** *- Philippines Inventory of Chemicals and Chemical Substances*

***AICS*** *- Australian Inventory of Chemical Substances*

## US Federal Regulations

### CERCLA

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

### 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 % |
|---|---|---|---|
| Lead - 7439-92-1 | 7439-92-1 | 65-75 | 0.1 |
| Sulfuric Acid - 7664-93-9 | 7664-93-9 | 14-20 | 1.0 |

### CWA (Clean Water Act)

| Chemical Name | CWA - Reportable Quantities | CWA - Toxic Pollutants | CWA - Priority Pollutants | CWA - Hazardous Substances |
|---|---|---|---|---|
| Lead | | X | X | |
| Sulfuric Acid | 1000 lb | | | X |

## US State Regulations

### California Proposition 65

This product contains the following Proposition 65 chemicals.

| Chemical Name | California Proposition 65 |
|---|---|
| Lead - 7439-92-1 | Carcinogen<br>Developmental<br>Female Reproductive<br>Male Reproductive |
| Sulfuric Acid - 7664-93-9 | Carcinogen |

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

| Chemical Name | New Jersey | Massachusetts | Pennsylvania |
|---|---|---|---|
| Lead<br>7439-92-1 | X | X | X |
| Sulfuric Acid<br>7664-93-9 | X | X | X |
| Tin<br>7440-31-5 | X | X | X |
| Calcium<br>7440-70-2 | X | X | X |

## 16. OTHER INFORMATION

| | | | | |
|---|---|---|---|---|
| **NFPA** | **Health Hazards** | **Flammability** | **Instability** | **Special Hazards** |
| | 3 | 0 | 2 | - |
| **HMIS** | **Health Hazards** | **Flammability** | **Physical Hazards** | **Personal Protection** |
| | Not determined | Not determined | Not determined | Not determined |

**Issue Date:** 01-Jan-2014
**Revision Date:** 01-May-2018
**Revision Note:** 2018 update

**Disclaimer**

**The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.**

**End of Safety Data Sheet**

Rev.1.4