

# Safety Data Sheet

Issue Date: 01-Jan-2014

Revision Date: 06-July-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 #**

001

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

Battery

**Details of the supplier of the safety data sheet****Manufacturer Address**Newcastle Systems  
73 Ward Hill Avenue  
Haverhill, MA 01835**Emergency Telephone Number****Company Phone Number**

1-781-935-3450

**Emergency Telephone (24 hr)**

Chemtrec 1-800-424-9300 (North America) 1-703-527-3887 (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 Butadiene 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 Newcastle Systems. Other ingredients may be present dependent upon the specific battery type. For additional information contact Newcastle Systems Technical Department.

## **4. FIRST-AID MEASURES**

### **First Aid Measures**

<b>General Advice</b>	Immediately call a poison center or doctor/physician. Provide this SDS to medical personnel for treatment.
<b>Eye Contact</b>	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
<b>Skin Contact</b>	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse.
<b>Inhalation</b>	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
<b>Ingestion</b>	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

**Most important symptoms and effects**

<b>Symptoms</b>	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.
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**Indication of any immediate medical attention and special treatment needed**

<b>Notes to Physician</b>	Treat symptomatically.
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**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**

<b>Personal Precautions</b>	Use personal protective equipment as required.
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**Methods and material for containment and cleaning up**

<b>Methods for Containment</b>	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.
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#### 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 7439-92-1	TWA: 0.05 mg/m <sup>3</sup> Pb	TWA: 50 µg/m <sup>3</sup> Pb	IDLH: 100 mg/m <sup>3</sup> Pb TWA: 0.050 mg/m <sup>3</sup> Pb
Sulfuric Acid 7664-93-9	TWA: 0.2 mg/m <sup>3</sup> thoracic fraction	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>
Tin 7440-31-5	TWA: 2 mg/m <sup>3</sup> Sn except Tin hydride	TWA: 2 mg/m <sup>3</sup> Sn except oxides (vacated) TWA: 2 mg/m <sup>3</sup> Sn except oxides	IDLH: 100 mg/m <sup>3</sup> Sn TWA: 2 mg/m <sup>3</sup> 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.

<b>Skin and Body Protection</b>	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.
<b>Respiratory Protection</b>	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.
<b>General Hygiene Considerations</b>	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

<b>Physical State</b>	Solid containing liquid	<b>Odor</b>	Characteristic
<b>Appearance</b>	Battery	<b>Odor Threshold</b>	Not determined
<b>Color</b>	Not determined		

<u>Property</u>	<u>This product is a battery and typical physical/chemical properties do not apply.</u>	<u>Remarks • Method</u>
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.

<b>Hazardous Polymerization</b>	Hazardous polymerization does not occur.
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### 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 7664-93-9	= 2140 mg/kg ( Rat )	-	= 510 mg/m <sup>3</sup> ( Rat ) 2 h
Tin 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 7439-92-1	A3	Group 2A	Reasonably Anticipated	X
Sulfuric Acid 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 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 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 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 7439-92-1	Toxic
Sulfuric Acid 7664-93-9	Toxic Corrosive

#### 14. TRANSPORT INFORMATION

**Note**

Newcastle Systems'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, Newcastle Systems'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/NDL* - 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 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

**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 Developmental Female Reproductive Male Reproductive
Sulfuric Acid - 7664-93-9	Carcinogen

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

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

## 16. OTHER INFORMATION

### NFPA

#### Health Hazards

#### Flammability

#### Instability

#### Special Hazards

### HMIS

#### Health Hazards

#### Flammability

#### Physical Hazards

#### Personal Protection

3  
Not determined

0  
Not determined

2  
Not determined

-  
Not determined

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### 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**