



## Material Safety Data sheet (MSDS)

Control No.	
Date First	May 16, 2008
Date Revised	January 2011

### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

- A. PRODUCT NAME : PS/HS Battery Series (Dry-Charge Battery)
- B. RECOMMENDED USE OF THE CHEMICAL AND RESTRICTIONS ON USE  
: Electric Storage Battery.
- C. MANUFACTURER/SUPPLIER/DISTRIBUTOR INFORMATION  
MANUFACTURER : Sebang Global Battery CO.,Ltd.  
Namsan-dong 601-9, Changwon-city, Gyeongnam  
TEL: +82-55-279-9733 FAX: +82-55-282-2658

### 2. HAZARDS IDENTIFICATION

#### A. HAZARD CLASSIFICATION

- PHYSICAL HAZARD: : Not Classified.
- HEALTH HAZARDS : Carcinogenicity Category 1B  
: Germ cell mutagenicity Category 2  
: Reproductive Toxicity Category 1A  
: Specific target organ toxicity – repeated exposure Category 1

#### B. GHS LABEL ELEMENTS, INCLUDING PRECAUTIONARY STATEMENTS

PICTOGRAMS :



#### HAZARD STATEMENTS

- H350 May cause cancer (inhalation).
- H341 Suspected of causing genetic defects.  
May damage fertility or the unborn child (state specific effect if known)
- H360 (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard)
- H372 Causes damage to organs (Hematopoietic system, kidney, central nervous system, peripheral nervous system, cardiovascular system, immune system, respiratory).

PRECAUTIONARY STATEMENTS :

[Prevention]

- P260 Do not breathe dust/fume/gas/mist/vapours/spray.
- P264 Wash hands thoroughly after handling.
- P201 Obtain special instructions before use.
- P202 Do not handle until all safety precautions have been read and understood.
- P281 Use personal protective equipment as required.
- P270 Do not eat, drink or smoke when using this product.



## Material Safety Data sheet (MSDS)

Control No.	
Date First	May 16, 2008
Date Revised	January 2011

### [Response]

- P308 + P313 IF exposed or concerned: Get medical advice/attention.  
 P307+P311 IF exposed: Call a POISON CENTER or doctor/physician.  
 P314 Get medical advice/attention if you feel unwell.

### [Storage]

- P405 Store locked up.

### [Disposal]

- P501 Dispose of contents/container in accordance with local/regional/national regulations.

### C. OTHER HAZARDS WHICH DO NOT RESULT IN CLASSIFICATION (e.g. Dust explosion hazards)

#### NFPA/HMIS Rating

Lead : Health=1, Flammability=0, Instability=0  
 (0 = Insignificant 1 = Slight 2 = Moderate 3 = High 4 = Extreme)

Antimony : Health=2, Flammability=2, Instability=0

ABS Resin : Health=1, Flammability=1, Instability=0

## 3. COMPOSITION / INFORMATION ON INGREDIENTS

<u>Chemical name / Synonym</u>	<u>CAS No</u>	<u>Content (%)</u>
Lead	7439-92-1	68 - 70
Antimony	7440-36-0	< 1.4
Sulfuric acid / Oil of vitriol	7664-93-9	28 - 30
Butadiene-Acrylonitrile-Styrene copolymer / ABS Resin	9003-56-9	1 - 2
Acrylonitrile-Styrene copolymer / AS Resin	9003-54-7	4 - 5
Separator	Not available	2 - 3

## 4. FIRST AID MEASURES

- A. EYE CONTACT : If a battery ruptures, do not rub or scratch exposed eye. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Cold water may be used. GET MEDICAL ATTENTION IMMEDIATELY.
- B. SKIN CONTACT : If a battery ruptures, do not rub or scratch exposed skin. Wash immediately with soap and water.
- C. INHALATION : Remove from exposure, wash nose and lips. GET MEDICAL ATTENTION AS SOON AS POSSIBLE.
- D. INGESTION : If solutions of a battery chemicals have been swallowed and the person is conscious, give one glass of water. Vomiting may occur spontaneously, but Do NOT induce vomiting. Never give anything by mouth to an unconscious person. GET MEDICAL ATTENTION IMMEDIATELY.

- \* Lead may causes toxic to blood, kidneys, central nervous system (CNS).  
 Repeated or prolonged exposure to lead can produce target organs damage.



## Material Safety Data sheet (MSDS)

Control No.	
Date First	May 16, 2008
Date Revised	January 2011

### F. INDICATION OF IMMEDIATE MEDICAL ATTENTION AND NOTES FOR PHYSICIAN

- : Based on the individual reactions of the patient, the physician's judgement should be used to control symptoms and clinical condition.

---

## 5. FIRE FIGHTING MEASURES

---

### A. SUITABLE (AND UNSUITABLE) EXTINGUISHING MEDIA

- : Use extinguishing media appropriate for surrounding fire.
- : If a battery ruptures, use dry chemical, sand or carbon dioxide.

### B. SPECIFIC HAZARDS ARISING FROM THE CHEMICAL

- : Lead, lead compounds fume may be released during a fire involving the product.

### C. SPECIAL PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIRE FIGHTERS

- : Wear self-contained breathing apparatus (SCBA) and full fire-fighting protective clothing.

### D. FIRE AND EXPLOSION HAZARD

- : Not flammable.
- : Battery may rupture due to pressure buildup when exposed to excessive heat.

---

## 6. ACCIDENTAL RELEASE MEASURES

---

### A. NECESSARY MEASURES AND PROTECTIVE GEAR TO PROTECT HUMANS

- : If a battery ruptures, avoid contact with skin, eyes and clothing. Do not touch spilled material. Use personal protective equipment recommended in Section 8 (Exposure Controls/Personal Protection).

### B. NECESSARY MEASURES TO PROTECT ENVIRONMENT

- : Notify authorities and appropriate federal, state, and local agencies. Prevent the product from spreading into the environment. Avoid direct discharge into drains.

### C. METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING UP

- : Collect all released material in container. Dispose of all contaminated materials in accordance with current local regulations.

---

## 7. HANDLING AND STORAGE

---

### A. PRECAUTIONS FOR SAFE HANDLING

- : Protect from physical damage.

### B. CONDITIONS FOR SAFE STORAGE (INCLUDING ANY INCOMPATIBILITIES)

- : Store in a cool, dry, ventilated area away from sources of heat, moisture, incompatibilities, and direct sunlight. Have emergency equipment (for fires, spills, leaks, etc.) readily available.



## Material Safety Data sheet (MSDS)

Control No.	
Date First	May 16, 2008
Date Revised	January 2011

### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### A. OCCUPATIONAL EXPOSURE LIMIT(S), BIOLOGICAL EXPOSURE STANDARD

OSHA-PEL 0.05 mg/m<sup>3</sup> (Lead), 0.5 mg/m<sup>3</sup> (Antimony)

ACGIH-TLV TWA 0.05 mg/m<sup>3</sup> (Lead), TWA 0.5 mg/m<sup>3</sup>(Antimony)

#### B. APPROPRIATE ENGINEERING CONTROLS

: Use local exhaust ventilation if necessary to control airborne mist and vapor.

#### C. INDIVIDUAL PROTECTION MEASURES

Respiratory protection : None required under normal conditions.

Eye protection : Wear safety glasses with side shields (or goggles).

Hand protection : Wear chemical resistant gloves as a standard procedure to prevent skin contact.

Body protection : None required under normal conditions.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

A. APPEARANCE (PHYSICAL STATE, COLOUR etc.) : Off-white cloudy liquid with solid object.

B. Odor : Odorless

C. ODOR THRESHOLD : Not available.

D. pH : Not applicable.

E. MELTING POINT : Lead(327.5 °C), Antimony(630 °C)

F. INITIAL BOILING POINT AND BOILING RANGE : Not available.

G. FLASH POINT : Non-flammable.

H. EVAPORATION RATE : Not available.

I. FLAMMABILITY (SOLID, GAS) : Not applicable.

J. UPPER/LOWER FLAMMABILITY OR EXPLOSIVE LIMITS

: Non-flammable.

K. VAPOR PRESSURE : Lead(1.77mmHg(1000 °C)), Antimony(684mmHg(25 °C))

L. SOLUBILITY : Insoluble in water.

M. VAPOR DENSITY : Not available.

N. SPECIFIC GRAVITY : Lead(11.34), Antimony(6.7)

O. PARTITION COEFFICIENT OF n-OCTANOL/WATER : Not available.

P. AUTO-IGNITION TEMPERATURE : Not applicable.

Q. DECOMPOSITION TEMPERATURE : Not available.

R. VISCOSITY : Not available.

S. MOLECULAR WEIGHT : Lead(207.2), Antimony(121.8), ABS Resin(>60000)

### 10. STABILITY AND REACTIVITY



## Material Safety Data sheet (MSDS)

Control No.	
Date First	May 16, 2008
Date Revised	January 2011

A. CHEMICAL STABILIT : Stable at normal temperatures and storage conditions.

B. POSSIBILITY OF HAZARDOUS REACTIONS

: Hazardous polymerization will not occur.

C. CONDITIONS TO AVOID (STATIC DISCHARGE, SHOCK, VIBRATION etc.):

: Overcharging. Sources of ignition. Mechanical impact. Contact with incompatible chemicals.

D. SUBSTANCES TO AVOID

: Not available.

E. HAZARDOUS DECOMPOSITION PRODUCTS

: Lead, Lead compounds and sulfuric acid fumes may be released during a fire involving the product.

---

### 11. TOXICOLOGICAL INFORMATION

---

A. Delayed and immediate effects and also chronic effects from short and long term exposure

Acute toxicity (possible route of exposure) :

Oral (LD50) : Not available.

Skin (LD50) : Not available.

Inhalation (LC50) : Not available.

Skin corrosion/irritatio : Not available.

Serious eye damage/irritation : Not available.

Respiratory sensitization : Not available.

Skin sensitization : Not available.

Carcinogenicity : cat 2B

ACGIH Group A3, IARC Group 2B (Lead), IARC Group 3 (ABS, AS Resin)

Germ cell mutagenicity : Not available.

Reproductive toxicity : Not available.

STOST-single exposure : Not available.

: Not available.

STOST-repeated exposure

: Hematopoietic system, kidney, central nervous system, peripheral nervous system, cardiovascular system, immune system, respiratory.

Aspiration hazard : Not available.

---

### 12. ECOLOGICAL INFORMATION

---

A. Aquatic/terrestrial ecology toxicity

Fish (LC50) : Lead(LC50 2.2mg/L 96hr), Antimony(LC50 5.175mg/L 96hr)



## Material Safety Data sheet (MSDS)

Control No.	
Date First	May 16, 2008
Date Revised	January 2011

Daphnia (EC50) : Not available.

Algae (EC50) : Not available.

### B. Persistence and degradability

Persistence : Not available.

Degradability : Not available.

### C. Bioaccumulative potential

: Not available.

D. Mobility in soil : Not available.

E. Other hazardous effects : Not available.

## 13. DISPOSAL CONSIDERATIONS

### A. DISPOSAL METHODS

Dispose of in accordance with local, state, and federal regulations. Hazardous wastes must be transported by a licensed hazardous waste transporter and  
: disposed of or treated in a properly licensed hazardous waste treatment, storage, disposal or recycling facility. Consult local, state, and federal regulations for specific requirements.

### B. PRECAUTIONS (INCLUDING DISPOSAL OF CONTAMINATED CONTAINER OR PACKAGE)

: Since emptied containers retain product residue, follow label warnings even after container is emptied.

## 14. TRANSPORT INFORMATION

A. US DOT : The transportation of dry batteries (those batteries that contain no electrolyte or residue) are not regulated by the U.S. DOT as a hazardous material.

B. IATA : The international transportation of dry batteries is not regulated by the International Air Transport Association (IATA) as a hazardous material.

C. IMDG : The international transportation of dry batteries is not regulated by the International Maritime Dangerous Goods code (IMDG) as a hazardous material.

## 15. REGULATORY INFORMATION

### ☐ INVENTORIES

EINECS/EU : Listed (EINECS No. 231-100-4(Lead))

TSCA/US : Listed.

ENCS/JAPAN : Listed (ENCS No. 1-527(Lead))

AICS/AUSTRALIA : Listed.

DSL/CANADA : Listed.

IECSC/CHINA : Listed.



## Material Safety Data sheet (MSDS)

Control No.	
Date First	May 16, 2008
Date Revised	January 2011

PICCS/PHILIPPINES : Listed.

KECI/S.KOREA : Listed (KE-21887(Lead))

☐ International Environmental Agreement

PIC : Not listed.

POPs : Not listed.

Ozone depletion : Not listed.

EU. Directive 67/548/EEC on the classification, packaging, and labelling of dangerous substances, Annex I

Classification : C; R35

Risk Phrases : R35

Safety Phrases : S1/2, S26, S30, S45

☐ U.S. Federal, Health and Environment) and U.S. Federal, Right-To-Know

CERCLA Section 103 (40 CFR 302.4)

: 10lb (4.535 kg) (Lead), 5000lb (2267.995kg) (Antimony)

EPCRA (SARA Title III) Section 302 (EHS -TPQ)

: Not applicable.

EPCRA (SARA Title III) Section 304 (EHS - Reporting Quantities)

: Not applicable.

EPCRA (SARA Title III) Section 313 - Toxic chemical release reporting

: Lead, Antimony

OSHA Specifically Regulated Substances (29 CFR 1910.1001-.1052)

: Not applicable.

NOTE: The regulatory information given above only indicates the principal regulations specifically applicable to the product described in the Safety Data Sheet. The user's attention is drawn to the possible existence of additional provisions which complete these regulations. Refer to all applicable national, international and local regulations or provisions.

---

### 16. OTHER INFORMATION

---

A. SOURCE OF DATA :

Guideline for Globally Harmonized System of Classification and Labelling of Chemicals (GHS).

EC-ECB, International Uniform Chemical Information Database (IUCLID)

Hazardous Substances Data Bank (HSDB)

Registry of Toxic Effects of Chemical Substances (RTECS)

National Institute of Technology and Evaluation -NITE (Japan).

NFPA 704 Standard System for the Identification of the Hazards of Materials for Emergency Response.

International Chemical Safety Cards(ICSC)(<http://www.nihs.go.jp/ICSC>)

3E Company/Ariel WebInsight DB.

B. THE DATE OF PREPARATION OF THE MSDS : May 16, 2008

C. THE DATE OF PREPARATION OF THE LATEST REVISIC: January 2011



## Material Safety Data sheet (MSDS)

Control No.	
Date First	May 16, 2008
Date Revised	January 2011

### D. OTHER INFORMATION

The above information is believed to be correct but does not propose to be all inclusive and shall be used only as a guide. Sebang Global Battery CO.,Ltd. shall not be held liable for any damage resulting from handling or from contact with the above product. Each individual should make a determination as to the suitability of the information for their particular purpose(s). Various government agencies may have specific regulations regarding the transportation, handling, storage, use, or disposal of this product which may not be covered by this MSDS. The user is responsible for full compliance.

**GLOBAL BATTERY CO., LTD.**