
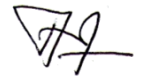
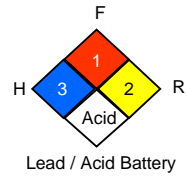
 PT. Century Batteries	<b>Material Safety Data Sheet</b> <b>(MSDS)</b> <b>LEAD ACID BATTERY (Wet)</b>		Date prepared : 30 May, 2023	
			Dokumen No. : MSDS-248	
			 	
		EHS		EHS Dept. Head
Manufacturer's Address :	Jl. Mitra Raya Selatan I, Blok E No. 17-18, Kawasan Industri Mitra Karawang, Desa Parungmulya, Kecamatan Ciampel, Kabupaten Karawang.	Emergency Contact :	62-21-4600880	



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### SECTION 1 - PRODUCT IDENTIFICATION

<b>PRODUCT NAME :</b>	Valve Regulated Lead-acid Battery
<b>COMMON SYNONYMS :</b>	Automotive Storage Battery, Wet DOT description : Battery, wet, filled with acid, 8, UN2794, PG III
<b>CHEMICAL FAMILY :</b>	Lead-acid Storage Battery
<b>FORMULA :</b>	Not Applicable
<b>PRODUCT USE :</b>	Electric Storage Battery
<b>H.S. CODE :</b>	85071090000

### SECTION 2 - HAZARDOUS IDENTIFICATION

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.

**Classification of the substance or mixture :**

Classification according to Regulation (EC) No. 1272/2008

Class 13 : Non-flammable solids in non-flammable package (CLP/GHS)

Classification according to 67/548/ECC or 1999/45/EC

Xi : Irritating

**Label elements**

Product identifier : Maintenance

Hazard pictograms :



Xi : Irritating

WHMIS : Not regulated

Signal word : CAUTION

Hazard statements : - May be harmful in contact with skin  
- Causes skin irritation  
- May cause respiratory irritation  
- Warning! Contains lead

Precautionary Statements : - Keep out of reach of children  
- Keep containers tightly closed.  
- Keep away from heat, sparks, and open flame while charging batteries.

**Other Hazards**

Adverse human health effects and symptoms :

1. Inhalation :	(Acute) : Under normal conditions of use, no health effects are expected.
	(Chronic) : Repeated and prolonged exposure may cause irritation.
2. Eyes :	(Acute) : Under normal conditions of use, no health effects are expected. Exposure to dust may cause irritation.
	(Chronic) : No data available.
3. Skin :	(Acute) : Under normal conditions of use, no health effects are expected.
	(Chronic) : No data available.
4. Ingestion :	(Acute) : Under normal conditions of use, no health effects are expected. Lead ingestion may cause abdominal pain, nausea, vomiting, diarrhea and severe cramping.
	(Chronic) : No data available.
5. Carcinogenic Effects :	Material is an article. No health effects are expected related to normal use of this product as sold.
	Material does contain components that exhibit carcinogenic effects.

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.

### SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

**Description of the mixture :**

CAS No.	EC No.	% (weight)	Name	Hazard Category	ACGIH TLV - mg/m <sup>3</sup>	OSHA PEL/TWA - mg/m <sup>3</sup>
7439-92-1	231-100-4	72 - 90 %	Lead/Lead Oxide	Acute/Chronic	0,05 mg/m <sup>3</sup>	0,05 mg/m <sup>3</sup>
7440-36-0	231-146-5	0.20 %	Antimony	Chronic	0,5 mg/m <sup>3</sup>	0,5 mg/m <sup>3</sup>
7440-31-5	231-141-8	0.01 %	Tin	Chronic	2 mg/m <sup>3</sup>	Not Established
7664-93-9	231-639-5	10 - 27%	Sulfuric Acid	Reactive-Oxidizer Acute - Chronic	1,0 mg/m <sup>3</sup>	1,0 mg/m <sup>3</sup>
7440-38-2	231-148-6	<1%	Arsenic	Acute-Chronic	0,01 mg/m <sup>3</sup>	0,01 mg/m <sup>3</sup>

Case material composes 5 - 6% of the article. Case material includes the following components : 1-Propene, homopolymer (9003-07-0); Polystyrene (9003-53-6); Acrylonitrile, polymer with styrene (9003-54-7); acrylonitrile, polymer with 1.3 - butadiene and styrene (9003-56-9); Styrene polymer with 1.3-butadiene and styrene (9003-56-9); Styrene polymer with 1.3-butadiene (Kraton) (9003-55-8); Ethylene, chloro-, polymer (9003-86-2); Hard rubber; Polycarbonate; Polyethylene.

### SECTION 4 - FIRST AID MEASURES

**Description of first aid measures :**

<b>Eye contact :</b>	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.
<b>Inhalation :</b>	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.
<b>Skin contact :</b>	First aid is not expected to be necessary if material is used under ordinary conditions and as recommended. Wash skin with water. If signs/symptoms develop, get medical attention.
<b>Ingestion :</b>	First aid is not expected to be necessary if material is used under ordinary conditions and as recommended. If ingested consult physician immediately.
<b>Self-protection of the first aider :</b>	If artificial respiration is required use a pocket mask equipped with a one-way valve or other proper respiratory medical device.

### SECTION 5 - FIREFIGHTING MEASURES

**Extinguishing media :**

Suitable extinguishing media : CO<sub>2</sub> dry chemical or foam  
 Unsuitable extinguishing media : Avoid using water

**Special hazards arising from the substance or mixture**

Hazardous combustion products : Lead portion of battery will likely produce toxic, metal fume, vapor or dust.

**Unusual Fire and Explosion Hazards**

Sulfuric Acid vapors are generated upon overcharge and polypropylene case failure. Use adequate ventilation. Avoid open flames/sparks/other sources of ignition near battery

**Advice for fire-fighters :**

- Keep sparks or other sources of ignition away from batteries.
- Do not allow metallic materials to simultaneously contact negative and positive terminals of cells and batteries.
- Wear positive pressure self-contained breathing apparatus (SCBA).
- Structural firefighter's protective clothing will only provide limited protection.

**Additional information :**

Material it self is non combustible although in fire situations will likely produce toxic metal fume, vapor or dust.

## SECTION 6 - ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures :

No special precautions expected to be necessary if material is used under ordinary conditions and as recommended.

Avoid contact of any spilled material with skin.

*For non-emergency personnel*

Protective equipment : Wear chemical gloves

*For emergency responders*

- No emergency procedures are expected to be necessary if material is used under ordinary conditions as recommended.
- Use normal clean up procedures.
- Personal protective equipment : Wear chemical gloves, goggles, acid resistant clothing and boots, respirator if insufficient ventilation.

### Environmental precautions :

Prevent entry into waterways, sewers, basements or confined areas. Run off from fire control and dilution water may be toxic and corrosive and may cause adverse environmental impacts.

### Methods and material for containment and cleaning up :

*For containment :*

- Lead dust should be vacuumed or wet swept into a D.O.T. approved container.
- Use controls that minimize fugitive emissions.
- Spilled material sulfuric acid should Neutralize with sodium bicarbonate, soda ash, lime or other neutralizing agent.
- Do not use compressed air.

*For cleaning up :*

Contact local and/or state officials for proper disposal requirements.

## SECTION 7 - HANDLING AND STORAGE

### Precautions for safe handling

*Protective measures :*

- Handle batteries cautiously.
- Do not tip to avoid spills (is 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.

*Advice on general occupational hygiene :*

- 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 practise.

### Conditions for safe storage, including any incompatibilities

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

Technical measures and 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 13 : Non-flammable solids in non-flammable package

**SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Control parameters**

Occupational exposure limits :

Limit value type (Country of origin)	Substance name	EC-No	CAS-No	Limit value	Monitoring and observation processes
TWA (ACGIH USA) TWA (CA) TWA (FI) STEL (ME) TWA (ME) TWA (NIOSH USA)	Tin	231-141-8	7440-31-5	2 mg/m <sup>3</sup> 2 mg/m <sup>3</sup> 2 mg/m <sup>3</sup> 4 mg/m <sup>3</sup> 2 mg/m <sup>3</sup> 2 mg/m <sup>3</sup>	
STEL (CH) TWA (CH) TWA (ACGIH USA) TWA (CA) TWA (FI) TWA (JP) TWA (ME) TWA (NIOSH USA) TWA (OSHA USA)	Antimony	231-146-5	7440-36-0	1.5 mg/m <sup>3</sup> 0.5 mg/m <sup>3</sup> 0.5 mg/m <sup>3</sup> 0.5 mg/m <sup>3</sup> 0.5 mg/m <sup>3</sup> 0.1 mg/m <sup>3</sup> 0.5 mg/m <sup>3</sup> 0.5 mg/m <sup>3</sup> 0.5 mg/m <sup>3</sup>	
TWA (ACGIH) TWA (CA ON) TWA (CA QU) STEL (CH) TWA (CH) TWA (FI) Biological Limit Value (FI) TWA (JP) TWA (ME) TWA (NIOSH USA) TWA (OSHA USA)	Lead	231-100-4	7439-92-1	0.5 mg/m <sup>3</sup> 0.5 mg/m <sup>3</sup> 0.5 mg/m <sup>3</sup> 0.15 (0.09)mg/m <sup>3</sup> 0.05 (0.03)mg/m <sup>3</sup> 0.1 mg/m <sup>3</sup> 1.4 umol/L 0.1 mg/m <sup>3</sup> 0.15 mg/m <sup>3</sup> 0.05 mg/m <sup>3</sup> 0.05 mg/m <sup>3</sup>	Designated substance regulation  Dust (fume) Dust (fume)  Dust  As Pb, dust & fume
TWA (ACGIH) TWA (OSHA USA)	Sulfuric Acid	231-639-5	7664-93-9	1.0 mg/m <sup>3</sup> 1.0 mg/m <sup>3</sup>	
TWA (ACGIH) TWA (OSHA USA)	Arsenic	231-148-6	7440-38-2	0.01 mg/m <sup>3</sup> 0.01 mg/m <sup>3</sup>	

**Exposure controls**

*Appropriate engineering controls :*

Store and charge in a well-ventilated area. General dilution ventilation is acceptable.

*Personal protective equipment :*

- Pictograms :



- Eye/face protection :

Wear protective eyewear (goggles, face shield or safety glasses with side shields).

- Skin protection :

Wear appropriate gloves.

No skin protection is ordinarily required under normal conditions of use. In accordance with industrial hygiene practises, 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.

- Ventilation :

Store and handle in dry ventilated area. Need Local exhaust when PEL is exceeded

- Other protective Clothing or Equipment :

Safety Shower and Eyewash

## SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties.

#### Appearance

Battery Case : Polypropylene or hard rubber case, Solid.  
 Lead : Gray, Metallic, Solid  
 Electrolyte : Odorless, liquid.  
 No apparent Odor

#### Safety relevant basic data

pH (20°C)	: <2 (Electrolyte)	Specific Gravity (g/cm <sup>3</sup> )	: 9.6 - 11.3 g/cm <sup>3</sup> (Lead)
Specific Gravity (g/cm <sup>3</sup> )	: 1.25 - 1.32 g/cm <sup>3</sup> (Electrolyte)	Partition coefficient	: No Data
Solubility in Water	: 100 % soluble (Electrolyte)	N-Octanol/water (log Po/w)	: No Data
Reactivity in Water	: Electrolyte - Water Reactive	Viscosity, dynamic (mPa S)	: No Data
Melting point/range (°C)	: 160°C - 166°C (Polypropylene)		
Initial boiling point/range (°C)	: 1380°C		
Decomposition temp. (°C)	: No Data		
Flash point (°C)	: No Data		
Ignition temp. (°C)	: No Data		
Vapor pressure (hPa)	: No Data		
Vapor density (air = 1)	: Hydrogen : 0,069 (Air = 1) Electrolyte : 3,4 STP (Air = 1)		
Bulk density (kg/m <sup>3</sup> )	: No Data		

#### Other safety information :

Properties of explosive atmospheres (mixtures) :

Gases and vapors : Hydrogen (LEL : 4,1%, HEL 74,8%)  
 Dusts : No Data

Physical chemical properties of nanoparticles : No Data

Limiting oxygen concentration : No Data

Bulk density : No Data

Solubility in different media : No Data

Stability in organic solvents and identity of relevant degradation products. : No Data

Evaporation rate : No Data

Conductivity : No Data

Surface tension : No Data

Dissociation constant in water (pKa) : No Data

Oxidation reduction potential : No Data

Fat solubility (solvent-oil to be specified) : No Data

Critical temp. : No Data

## SECTION 10 - STABILITY AND REACTIVITY

**Reactivity** : Not reactive

**Chemical stability** : Stable under normal temperatures and pressures.

**Possibility of hazardous reactions** : Hazardous polymerization will not occur.

**Conditions to avoid** : Prolonged overcharge, sources of ignition near battery surface. High temperature - cases decompose at 160°C - 166°C

**Incompatible materials** : Avoid contact with strong bases, acids, combustible organic materials, halides, halogenates, potassium nitrate, permanganate, peroxides, nascent hydrogen, reducing agents and water. Avoid from Sparks, open flames, keep battery away from strong oxidizer.

**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.

## SECTION 11 - TOXICOLOGICAL INFORMATION

### Information on toxicological effects :

Lead (7439-92-1)	Effect dose / concentration	Species	Method	Time
Acute oral toxicity	155 mg/kg	Human	LDLo	
Acute oral toxicity	1050 mg/kg	Rat	TDLo	30 Weeks(int.)
Acute inhalative toxicity (dust/mist)	0.011 mg/m <sup>3</sup>	Human	LCLo	26 Weeks(int.)
Mutagen	23 mg/m <sup>3</sup>	Rat	Inhalation	16 Weeks
Reproductive	790 mg/kg	Rat	TDLo (Oral)	
Reproductive	3 mg/m <sup>3</sup>	Rat	TCLo (Inhalation)	1 - 21 days preg.
Antimony (7440-36-0)	Effect dose/concentration	Species	Method	Time
Acute oral toxicity	100 mg/kg	Rat	LD50	
Acute inhalative toxicity (dust/mist)	13.5 mg/m <sup>3</sup>	Human	LCLo	4 Hours
Tumorigen/carcinogen	50 mg/m <sup>3</sup>	Rat	TCLo	7 Hours 52 weeks (int.)
Acute oral toxicity	763 mg/kg	Rat	LD50	
Acute oral toxicity	5 mg/kg	Rat	LCLo	
Mutagen	0.211 mg/L	Human	Oral	15 Years
Reproductive	605 mg/kg	Rat	TDLo	35 weeks preg.

#### Other information :

##### Carcinogenic Effects :

Material is an article. No health effects are expected related to normal use of this product as sold. Material does contain components that exhibit carcinogenic effects.

## Carcinogenic Effects :

	CAS	IARC	NTP
Lead	7439-92-1	Group 2A-Probable Carcinogen	Reasonably anticipated to be human carcinogen

*Routes of exposure :*

## a) In case of ingestion :

Acute (immediate) : under normal conditions of use, no health effects are expected. Lead ingestion may cause abdominal pain, nausea, vomiting, diarrhea and severe cramping.

## b) In cause of skin contact :

Acute (immediate) : under normal conditions of use, no health effects are expected. Chronic (delayed); No data available.

## c) In cause of inhalation :

Acute (immediate) : under normal conditions of use, no health effects are expected. Contents or an open battery can cause respiratory irritation. Chronic (delayed); Repeated and prolonged exposure may cause irritation.

## d) In cause of eye contact :

Acute (immediate) : under normal conditions of use, no health effects are expected. Exposure to dust may cause irritation.  
Chronic (delayed); No data available.

**SECTION 12 - ECOLOGICAL INFORMATION****Toxicity : Aquatic toxicity***Substances*

Acute (short-term) toxicity : No Data

Effect dose	Exposure time	Species	Method	Evaluation	Remark

Persistence/Degradability : Lead is persistent in soils and sediment.

**SECTION 13 - DISPOSAL CONSIDERATIONS****Waste treatment methods***Product/packaging disposal :*

Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

*Waste codes/waste designations according to EWC/AW :*

16.06.05

**Additional information :**

Any waste marked with an asterisk (\*) is considered as a hazardous waste pursuant to Directive 91/689/EEC on hazardous waste, and subject to the provisions of that Directive unless Article 1 (5) of that Directive applies.

**SECTION 14 - TRANSPORT INFORMATION**

The transportation of dry batteries is Not Regulated.

**Land transport (CFR 49 : DOT)**

This product is not hazardous as defined by 49CFR 172.101 by the U.S. Department of Transportation UN-No :

Proper shipping name : Class (es) :

Packing group : Hazard label (s) :

Special provision(s)/Exceptions :

**Land transport (ADR/RID/GGVSEB) :**

This product is not classified by the United Nations Economic Commission for Europe to be dangerous goods.

UN-No :

Proper shipping name :

Class (es) :

Classification code :

Packing group :

Hazard label (s) :

Special provision(s) :

**Land transport (TDG) :**

This product is not classified as dangerous goods by the TDG standards.

UN-No : 3171

Proper shipping name :

Class (es) :

Packing group :

Hazard label (s) :

Special provision(s) :

**Sea transport (IMDG-Code/GGVSee) :**

This product is not classified as dangerous goods by the IMO UN No : 3171

Proper shipping name : Class (es) :

Packing group : Marine Pollutant : Special provision(s) :

**Air transport (ICAO-IATA/DGR) :**

This product is not classified as dangerous goods by the International Air Transport Association (IATA) or the ICAO.

UN-No :

Proper shipping name : Class (es) :

Packing group : Special provision(s) :

**SECTION 15 - REGULATORY INFORMATION**

**Safety, health and environmental regulations/legislation specific for the mixture**

*National regulations (United States):*

The following substances are on the MA, NJ, and PA Right To Know Lists:

Lead (7439-92-1); Antimony (7440-36-0); Tin (7440-31-5); Calcium (7440-70-2)

The following substances are on the TSCA inventory:

Lead (7439-92-1); Antimony (7440-36-0); Tin (7440-31-5); Calcium (7440-70-2)

OSHA: Specifically Regulated Chemicals

Substance	CAS	Wt%	Concentration Limit
Calcium	7440-70-2	0.002	Not Listed
Lead	7439-92-1	89-92	30 g/m <sup>3</sup> Action Level (Poison, See 29 CFR 1910.1025); 50
Lead as Lead compounds		89-92	Not Listed
Lead as Lead, inorganic compounds		89-92	30 g/m <sup>3</sup> Action Level (Poison, See 29 CFR 1910.1025, as Pb); 50
Tin	7440-31-5	0.006	Not Listed
Antimony	7440-36-0	0.2	Not Listed
Antimony as Antimony compounds		0.2	Not Listed

CAA: 1990 Hazardous Air Pollutants

Substance	CAS	Wt%	Concentration Limit
Calcium	7440-70-2	0.002	Not Listed
Lead	7439-92-1	89-92	Not Listed
Lead as Lead compounds		89-92	(includes any unique chemical substance that contains Lead as
Lead as Lead, inorganic compounds		89-92	Not Listed
Tin	7440-31-5	0.006	Not Listed
Antimony	7440-36-0	0.2	Not Listed
Antimony as Antimony compounds		0.2	(includes any unique chemical substance that contains Antimony

**SECTION 16 - OTHER INFORMATION**

**PROPOSITION 65 WARNING :**

Battery posts, terminals, and related accessories contain lead and lead compounds, chemicals known to cause cancer and reproductive harm. Wash hands after handling.

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. Inorganic acid mist (sulfuric acid mist) is not generated under normal use of this product. Misuse of the product, such as overcharging, may however result in the generation of sulfuric acid mist.

This product contains sulfuric acid (CAS #7664-93-9), an extremely hazardous substance (40 CFR 355.30), that may be subject to the reporting requirements of Sections 302/304, 311/312 and Section 313 (only acid aerosols including mists, vapors, gas, fog, and other airborne forms) of the Superfund Amendments and Reauthorization Act of 1986 (SARA), and 40 CFR Parts 355, 370 and 372 (Community Right-to-Know).

This product contains lead (CAS #7439-92-1) and lead compounds, chemicals that may be subject to the reporting requirements of Sections 311/312 and Section 313 of SARA, and 40 CFR Parts 370 and 372 (Community Right-to-Know).