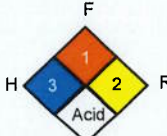


 PT. Century Batteries	Material Safety Data Sheet (MSDS) LEAD ACID BATTERY (Wet)		Date prepared : 29 Juni 2026	
			Dokumen No. : MSDS-248	
			 	
		SHE	SHE & CSR Dept. Head	
Manufacturer's Address :	Jl. Mitra Raya Selatan I, Blok E No. 17-18, Kawasan Industri Mitra Karawang, Desa Parungmulya, Kecamatan Ciampel, Kabupaten Karawang.	Emergency Contact :	62-21-4600880	 Lead / Acid Battery

The information below is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes.

SECTION 1 - PRODUCT IDENTIFICATION	
PRODUCT NAME :	Lead-acid Battery
BRAND :	Asahi
COMMON SYNONYMS :	Automotive Storage Battery, Wet DOT description : Battery, wet, filled with acid, 8, UN2794
CHEMICAL FAMILY :	Lead-acid Storage Battery
FORMULA :	Not Applicable
PRODUCT USE :	Electric Storage Battery
H.S. CODE :	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 : - harmful if swallowed, inhaled or in contact with skin - explosive, fire, blast or projection hazard - Causes severe skin burns and eye damage - Warning! Contains lead (may cause cancer if ingested or inhaled) - May damage fertility or unborn children if ingested or inhaled - Very toxic to aquatic life with long lasting effects - May form explosive gas (hydrogen) during charging	
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 ³	OSHA PEL/TWA - mg/m ³
7439-92-1	231-100-4	72 - 90 %	Lead/Lead Oxide	Acute/Chronic	0,05 mg/m ³	0,05 mg/m ³
7440-36-0	231-146-5	0.20 %	Antimony	Chronic	0,5 mg/m ³	0,5 mg/m ³
7440-31-5	231-141-8	0.01 %	Tin	Chronic	2 mg/m ³	Not Established
7664-93-9	231-639-5	10 - 27%	Sulfuric Acid	Reactive-Oxidizer Acute - Chronic	1,0 mg/m ³	1,0 mg/m ³
7440-38-2	231-148-6	<1%	Arsenic	Acute-Chronic	0,01 mg/m ³	0,01 mg/m ³

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 :

Eye contact :	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.
Inhalation :	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.
Skin contact :	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.
Ingestion :	First aid is not expected to be necessary if material is used under ordinary conditions and as recommended. If ingested consult physician immediately.
Self-protection of the first aider :	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 : CO₂ 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 practice.

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 ³ 2 mg/m ³ 2 mg/m ³ 4 mg/m ³ 2 mg/m ³ 2 mg/m ³	
STEL (CH)				1.5 mg/m ³	
TWA (CH)				0.5 mg/m ³	
TWA (ACGIH USA)				0.5 mg/m ³	
TWA (CA)				0.5 mg/m ³	
TWA (FI)				0.5 mg/m ³	
TWA (JP)	Antimony	231-146-5	7440-36-0	0.1 mg/m ³	
TWA (ME)				0.5 mg/m ³	
TWA (NIOSH USA)				0.5 mg/m ³	
TWA (OSHA USA)				0.5 mg/m ³	
TWA (ACGIH)				0.5 mg/m ³	
TWA (CA ON)				0.5 mg/m ³	
TWA (CA QU)	Lead	231-100-4	7439-92-1	0.5 mg/m ³	Designated substance regulation
STEL (CH)				0.15 (0.09)mg/m ³	
TWA (CH)				0.05 (0.03)mg/m ³	Dust (fume)
TWA (FI)				0.1 mg/m ³	Dust (fume)
Biological Limit Value (FI)				1.4 umol/L	Dust
TWA (JP)				0.1 mg/m ³	
TWA (ME)				0.15 mg/m ³	As Pb, dust & fume

TWA (NIOSH USA)				0.05 mg/m ³	
TWA (OSHA USA)				0.05 mg/m ³	
TWA (ACGIH)	Sulfuric Acid	231-639-5	7664-93-9	1.0 mg/m ³	
TWA (OSHA USA)				1.0 mg/m ³	
TWA (ACGIH)	Arsenic	231-148-6	7440-38-2	0.01 mg/m ³	
TWA (OSHA USA)				0.01 mg/m ³	

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 ³)	: 9.6 - 11.3 g/cm ³ (Lead)
Specific Gravity (g/cm ³)	: 1.25 - 1.32 g/cm ³ (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 ³)	: 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

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 ³	Human	LCLo	26 Weeks(int.)
Mutagen	23 mg/m ³	Rat	Inhalation	16 Weeks
Reproductive	790 mg/kg	Rat	TDLo (Oral)	
Reproductive	3 mg/m ³	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 ³	Human	LCLo	4 Hours
Tumorigen/carcinogen	50 mg/m ³	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**Land transport (CFR 49 : DOT)**

Proper shipping name : Batteries, Wet, Filled With Acid

Class (es) : 8

Packing group : III

Hazard label (s) : Corrosive

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 : 2794

Proper shipping name : Batteries, Wet, Filled With Acid

Class (es) : 8

Classification code : C11

Packing group : not applicable

Hazard label (s) :

Special provision(s) : 295, 598

Land transport (TDG) :

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

Proper shipping name :

Class (es) :

Packing group :

Hazard label (s) :

Special provision(s) :

Sea transport (IMDG-Code/GGVSee) :

Proper shipping name : Batteries, Wet, Filled With Acid

Class (es) : 8

Packing group : III Marine Pollutant :

Special provision(s) : 295

Air transport (ICAO-IATA/DGR) :

UN-No : 2794

Proper shipping name : Batteries, Wet, Filled With Acid

Class (es) : 8

Packing group : III

Hazard label (s) : Corrosive

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 ³ 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 ³ 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).