



Trade name: Lead Acid Battery Wet, Filled with Acid  
Print date: February 5, 2016

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## **SECTION 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**

### **1.1. Product Identifier**

#### **1.1.1. Trade name/designation**

Lead Acid Battery Wet, Filled With Acid

### **1.2. Relevant identified uses of the substance or mixture and uses advised against**

#### **1.2.1. Relevant identified uses**

SLI Lead Acid Battery

#### **1.2.2. Uses advised against**

Any other not listed above

### **1.3. Details of the supplier**

#### **1.3.1. Supplier:**

GS Battery (U.S.A) Inc.

#### **1.3.2. Website**

[www.gsbattery.com](http://www.gsbattery.com)

#### **1.3.3. Information contact**

1150 Northmeadow Parkway  
STE110  
Roswell  
GA 30076-3886

#### **1.3.4. National contact**

GS Battery (U.S.A.) Inc.: (678) 762-4818

### **1.4. Emergency Telephone Number**

CHEMTREC: Domestic: 1-800-424-9300  
International: 1-703-527-3887



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## SECTION 2. HAZARDS IDENTIFICATION

*Material is an article. No health effects are expected during normal use of this product as sold. Hazardous exposure may occur when the product is heated, oxidized or otherwise processed, damaged or subjected to misuse. Follow manufacturer's instructions for installation, service and use.*

### 2.1. Classification of the substance or mixture:

#### 2.1.1. Classification according to Regulation (EC) No 1272/2008 [CLP/GHS]

8B: Non flammable corrosive materials

#### 2.1.2. Classification according to 67/548/EEC or 1999/45/EC

Xi: Irritating

C: Corrosive

### 2.2. Label elements

#### 2.2.1. Labeling according to Regulation (EC) No 1272/2008

Product identifier:

Lead Acid Battery

Hazard pictograms:



Xn: Harmful

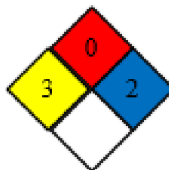


Xi: Irritating



C: Corrosive

NFPA:



WHMIS:



Class E:  
Corrosive Materials

Signal word:  
DANGER



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*Hazard statements:*

Contact with internal components may cause irritation or severe burns.  
Irritating to eyes, respiratory system, and skin.

*Precautionary statements:*

Keep out of reach of children.  
Keep containers tightly closed.  
Avoid heat, sparks, and open flame while charging batteries.  
Avoid contact with internal acid.

**2.3. Other hazards**

Adverse human health effects and symptoms:

*Inhalation:* (Acute): Under normal conditions of use, no health effects are expected. Contents of an open battery can cause respiratory irritation.

(Chronic): Repeated and prolonged exposure may cause irritation.

*Skin:* (Acute): Under normal conditions of use, no health effects are expected.

(Chronic): No data available

*Eye:* (Acute): Under normal conditions of use, no health effects are expected. Exposure to dust may cause irritation.

(Chronic): no data available.

*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.

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. Acute exposure to sulfuric acid causes severe irritation, burns and permanent tissue damage to all routes of exposure.

Chronic exposure to sulfuric acid may cause erosion of tooth enamel, inflammation of nose, throat and respiratory system.



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**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS****3.1. Description of the mixture:**

CAS No	EC No	% [weight]	Name	WHMIS Classifications	Classification according to CLP (1272/2008)
7439-92-1	231-100-4	63-78%	Lead	D2A	Xn, N, T; R20/22, R33, R50, R50/53, R53, R61, R62; Repr. Cat. 1, Repr. Cat. 3; S53, S45, S60, S61 except those specified elsewhere in the annex
7664-93-9	231-639-5	10-30%	Sulfuric Acid	D1A, E (including >51%, <=51%)	C; R35; S1/2, S26, S30, S45
7440-36-0	231-146-5	0.2%	Antimony	Uncontrolled product according to WHMIS classification criteria; D1B(powder)	Xn, N; R20/22, R51/53; S2, S61 except tetroxide, pentoxide, trisulphide, pentasulphide, and those specified elsewhere in the annex
7440-31-5	231-141-8	0.006%	Tin	Uncontrolled product according to WHMIS classification criteria	Not Listed
7440-38-2	231-148-6	0.003%	Arsenic	D1A, D2A	T, N; R23/25, R50/53; S1/2, S20/21, S28, S45, S60, S61
7440-70-2	231-179-5	0.002%	Calcium	B6, E	F; R15; S2, S8, S24/25, S43

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****4.1. Description of first aid measures****4.1.1 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. Get medical attention.

**4.1.2 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. Administer oxygen if breathing is difficult. Get medical attention.

**4.1.3 Skin contact:**

First aid is not expected to be necessary if material is used under ordinary conditions and as recommended. If exposure to electrolyte (sulfuric acid) occurs, flush with large quantities of water for 15 minutes. Immediately remove contaminated clothing and shoes. If exposure to lead component occurs, wash contaminated skin with plenty of soap and water.

**4.1.4 Ingestion:**

First aid is not expected to be necessary if material is used under ordinary conditions and as recommended. If electrolyte (sulfuric acid) portion of battery is ingested give large quantities, DO NOT induce vomiting. Get medical attention immediately. If lead portion of battery is ingested get medical attention immediately.



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**4.1.5 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****5.1. Extinguishing media:****5.1.1 Suitable extinguishing media:**

CO<sub>2</sub>, dry chemical or foam

**5.1.2 Unsuitable extinguishing media:**

Avoid using water

**5.2. Special hazards arising from the substance or mixture****5.2.1 Hazardous combustion products:**

Lead portion of battery will likely produce toxic metal fume, vapor or dust.

**5.3. Advice for fire-fighters:**

If batteries are on charge, shut off power. Do not allow metallic materials to simultaneously contact negative and positive terminals of cells and batteries.

Wear a positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.

**5.4. Additional information:**

Highly flammable hydrogen gas is generated during charging and operation of batteries. Water applied to electrolyte generates heat and causes it to splatter.

**SECTION 6. ACCIDENTAL RELEASE MEASURES****6.1. Personal precautions, protective equipment and emergency procedures****6.1.1 For non-emergency personnel Protective equipment:**

Wear chemical gloves

**6.1.2 For emergency responders**

Personal protective equipment:

Wear chemical gloves, goggles, acid resistant clothing and boots, respirator if insufficient ventilation.

**6.2. Environmental precautions:**

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



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### **6.3. Methods and material for containment and cleaning up**

#### **6.3.1 For containment:**

In the event of a battery rupturing; stop the leak if you can do it without risk. Absorb with earth, sand or other non-combustible material. Cautiously neutralize spilled liquid.

#### **6.3.2 For cleaning up:**

Dispose of in accordance with local, State, and national regulations.

## **SECTION 7. HANDLING AND STORAGE**

### **7.1. Precautions for safe handling**

#### **7.1.1 Protective measures:**

Handle batteries cautiously. Do not tip to avoid spills (if 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.

#### **7.1.2 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.

### **7.2. Conditions for safe storage, including any incompatibilities**

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 8B: Non-flammable corrosive materials



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

**8.1. Control parameters**

**8.1.1 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) STEL(CA QU) TWA(CA QU) STEL (CH) TWA(CH) STEL(FI) TWA(FI)	Sulfuric Acid	231-639-5	7664-93-9	0.2 mg/m <sup>3</sup> 0.2 mg/m <sup>3</sup> 3 mg/m <sup>3</sup> 1 mg/m <sup>3</sup> 2 mg/m <sup>3</sup> 1 mg/m <sup>3</sup> 1 mg/m <sup>3</sup> 0.2 mg/m <sup>3</sup>	Thoracic fraction Thoracic
Ceiling(DE) MAK(DE) Ceiling(JP) TWA(ME) TWA(NIOSH) TWA(OSHA)				0.1 mg/m <sup>3</sup> peak 0.1 mg/m <sup>3</sup> 1 mg/m <sup>3</sup> 1 mg/m <sup>3</sup> 1 mg/m <sup>3</sup> 1 mg/m <sup>3</sup>	Inhalable fraction Inhalable fraction
TWA (ACGIH) TWA(CA ON) TWA(CA QU) STEL(CH) TWA(CH) TWA(FI) Biological Limit Value (FI) TWA(JP) TWA(ME) TWA(NIOSH) TWA(OSHA)	Lead	231-100-4	7439-92-1	0.05 mg/m <sup>3</sup> 0.05 mg/m <sup>3</sup> 0.05 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> 50 ug/m <sup>3</sup>	Designated substance regulation Dust (fume) Dust (fume) Dust As Pb, dust and fume



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## 8.2. Exposure controls

### 8.2.1 *Appropriate engineering controls:*

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

### 8.2.2 *Personal protective equipment:*

#### 8.2.2.1 *Pictograms:*



#### 8.2.2.2 *Eye/Face protection:*

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

#### 8.2.2.3 *Skin protection:*

Wear protective gloves.

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

#### 8.2.2.4 *Respiratory protection:*

In case of insufficient ventilation, wear suitable respiratory equipment.

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1. Information on basic physical and chemical properties

#### 9.1.1 *Appearance*

Physical state: Solid      Color: Clear (electrolyte)      Odor: Odorless      Odor threshold: No Data

#### 9.1.2 *Safety relevant basic data*

pH (20 °C): No Data

Melting point/range (°C): No Data

Initial boiling point/range (°C): 95-95.555

Decomposition temperature (°C): No Data

Flash point (°C): No Data

Ignition temperature (°C): No Data

Vapor pressure (hPa): 10 mmHg

Vapor density (air = 1): 1

Density (g/cm<sup>3</sup>) at °C: 75.8523-84.2803 lbs/ft<sup>3</sup>

Bulk density (kg/m<sup>3</sup>): No Data

Water solubility (20°C in g/l): 100%

Solubility(ies): No Data

Partition coefficient: No Data





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N-Octanol/Water (log Po/w): No Data

Viscosity, dynamic (mPa s): No Data

**9.1.3. Physical hazards:**

Flammable gases

Metal corrosion

**9.2. Other safety information:**

Properties of explosive atmospheres (mixtures):

Gases and vapors: No Data

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 temperature: No Data

**SECTION 10. STABILITY AND REACTIVITY****10.1. Reactivity:**

Not reactive

**10.2. Chemical stability:**

Stable under normal temperatures and pressures

**10.3. Possibility of hazardous reactions**

Hazardous polymerization will not occur.

**10.4. Conditions to avoid:**

Prolonged overcharge, sources of ignition.

**10.5. Incompatible materials:**

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



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### 10.6. 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.

Sulfuric acid: Sulfur trioxide, carbon monoxide, sulfuric acid mist, sulfur dioxide and hydrogen.

## SECTION 11. TOXICOLOGICAL INFORMATION

### 11.1. 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 ug/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 ug/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.)
Sulfuric Acid (7664-93-9)	Effect dose / Concentration	Species	Method	Time
Acute oral toxicity	2140 mg/kg	Rat	LD50	
Acute inhalative toxicity (vapor)	30 mg/m <sup>3</sup>	Guinea Pig	LCLo	7 Days (con.)
Acute inhalative toxicity (vapor)	510 mg/m <sup>3</sup>	Rat	LC50	2 Hours
Acute inhalative toxicity (vapor)	3 mg/m <sup>3</sup>	Human	LCLo	24 Weeks
Irritation	5 mg	Rabbit	SEV (eye)	30 second rinse
Irritation	250 ug	Rabbit	SEV (eye)	
Arsenic (7440-38-2)	Effect dose / Concentration	Species	Method	Time
Acute oral toxicity	763 mg/kg	Rat	LD50	
Acute oral toxicity	5 mg/kg	Rat	LDLo	
Mutagen	0.211 mg/L	Human	Oral	15 Years
Reproductive	605 ug/kg	Rat	TDLo	35 weeks preg.

### 11.2. Other information:

#### 11.2.1 Carcinogenic Effects:

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. Batteries subjected to abusive charging at excessively high currents for prolonged periods without vent caps in place may create a surrounding atmosphere of the offensive strong inorganic acid mist containing sulfuric acid.



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Carcinogenic Effects			
	CAS	IARC	NTP
Sulfuric acid	7664-93-9	Group 1-Carcinogenic	Not established
Lead	7439-92-1	Group 2A-Probable Carcinogen	Reasonably anticipated to be human carcinogen

### 11.2.2 Routes of exposure:

#### 11.2.2.1 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.

Chronic (Delayed): No data available

#### 11.2.2.2 In case of skin contact:

Acute (Immediate): Under normal conditions of use, no health effects are expected.

Chronic (Delayed): No data available

#### 11.2.2.3 In case of inhalation:

Acute (Immediate): Under normal conditions of use, no health effects are expected. Contents of an open battery can cause respiratory irritation.

Chronic (Delayed): Repeated and prolonged exposure may cause irritation.

#### 11.2.2.4 In case 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

### 12.1. Toxicity:

Aquatic toxicity

#### 12.1.1 Substances

Acute (short-term) toxicity: No Data

Effect dose	Exposure time	Species	Method	Evaluation	Remark
82 mg/L	24 Hours	Brachydanio rerio	LC50		
22 mg/L	96 Hours	Cyprinus carpio	LOEC		Lowest observable effect concentration



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## SECTION 13. DISPOSAL CONSIDERATIONS

### 13.1. Waste treatment method

#### 13.1.1 Product/packaging disposal:

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

#### 13.1.2 Waste codes/waste designations according to EWC/AVV:

16 06 01\*

### 13.2. 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

### 14.1. Land transport (CFR 49: DOT)

The transportation of wet and moist charged (moist active) batteries within the continental United States is regulated by the U.S. DOT through the Code of Federal Regulations, Title 49 (CFR 49). These regulations classify these types of batteries as a hazardous material. Refer to CFR 49, 173.159 for more details pertaining to the transportation of wet and moist batteries.

Proper Shipping Name: Batteries, wet, filled with acid

Hazardous Class: 8

UN Identification: UN 2794

Packing Group: III

Label / Placard Required: Corrosive

### 14.2. Sea transport (IMDG-Code/GGVSee):

The international transportation of wet and moist charged (moist active) batteries regulated by the International Maritime Dangerous Goods code (IMDG). These regulations also classify these types of batteries as a hazardous material. The batteries must be packed according to IMDG code page 8120 and 8121.

Proper Shipping Name: Batteries, wet, filled with acid

Hazardous Class: 8

UN Identification: UN 2794

Packing Group: III

Label / Placard Required: Corrosive

In addition, these batteries are excepted from all IMDG regulations provided that the batteries' terminals are protected against short circuits.



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### 14.3. Air transport (ICAO-IATA/DGR):

The International Air Transport Association (IATA) regulates the international transportation of wet and moist charged (moist active) batteries. These regulations also classify these types of batteries as a hazardous material. The batteries must be packed according to IATA Packing Instruction 800.

Proper Shipping Name: Batteries, wet, filled with acid

Hazardous Class: 8

UN Identification: UN 2794

Packing Group: III

Label / Placard Required: Corrosive

## SECTION 15. REGULATORY INFORMATION

### 15.1. Safety, health and environmental regulations/legislation specific for the mixture

#### 15.1.1 National regulations (Canada):

*WHMIS Classification:*

Class E: Corrosive materials present at greater than 1%

*This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the Controlled Products Regulations.*

Canada DSL:

The following substances are listed on the Canadian DSL:

Lead (7439-92-1); Sulfuric Acid (7664-93-9); Antimony (7440-36-0); Tin (7440-31-5); Arsenic (7440-38-2); Calcium (7440-70-2)

Canada NDSL:

None of the components on this SDS are listed on the Canadian NDSL:

WHMIS: Ingredient Disclosure List

Substance	CAS No.	Wt %	Disclosure Limit %
Calcium	7440-70-2	0.002%	Not Listed
Sulfuric Acid	7664-93-9	10-30%	1%
Lead	7439-92-1	63-78%	0.1%
Lead as Lead compounds		63-78%	Not Listed
Lead as Lead, inorganic		63-78%	1%
Tin	7440-31-5	0.006%	1%
Antimony	7440-36-0	0.2 %	1%
Antimony as Antimony		0.2%	1%
Arsenic	7440-38-2	0.003%	0.1%



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## CEPA: Priority Substances List

Substance	CAS No.	Wt %	Status
Calcium	7440-70-2	0.002%	Not Listed
Sulfuric Acid	7664-93-9	10-30%	Not Listed
Lead	7439-92-1	63-78%	Not Listed
Lead as Lead compounds		63-78%	Not Listed
Lead as Lead, inorganic		63-78%	Not Listed
Tin	7440-31-5	0.006%	Not Listed
Antimony	7440-36-0	0.2 %	Not Listed
Antimony as Antimony		0.2%	Not Listed
Arsenic	7440-38-2	0.003%	Not Listed

**15.1.2 National regulations (China):**

The following components are listed on the Inventory list for China:

Lead (7439-92-1); Sulfuric Acid (7664-93-9); Antimony (7440-36-0); Tin (7440-31-5); Arsenic (7440-38-2); Calcium (7440-70-2)

**15.1.3 National regulations (European Union):**

Classification:

Xi; C

Risk Phrases: R35, R36, R38

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

The following components are listed on the EU EINECS:

Lead (7439-92-1); Sulfuric acid (7664-93-9); Antimony (7440-36-0); Tin (7440-31-5); Arsenic (7440-38-2); Calcium (7440-70-2)

None of the above mentioned components are listed on the EU ELNICS.

## CLP (1272/2008) Concentration Limits

Substance	CAS	WT %	Concentration Limit
Calcium	7440-70-2	0.002	Not Listed
Sulfuric Acid	7664-93-9	10-30	15%≤C: C; R35 5%≤C<15%: Xi; R36/38
Lead	7439-92-1	63-78	Not Listed
Lead as Lead compounds		63-78	2.5%≤C: Repr. Cat. 3; R62 1%≤C: Xn; R20/22
Lead as Lead, inorganic		63-78	Not Listed
Tin	7440-31-5	0.006	Not Listed
Antimony	7440-36-0	0.2	Not Listed
Antimony as Antimony		0.2	0.25%≤C: Xn; R20/22
Arsenic	7440-38-2	0.003	Not Listed



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Substance	CAS	WT %	Substances and Preparations
Calcium	7440-70-2	0.002	Not Listed
Sulfuric Acid	7664-93-9	10-30	B
Lead	7439-92-1	63-78	Not Listed
Lead as Lead compounds		63-78	A, E, 1 (except those specified elsewhere in the annex)
Lead as Lead, inorganic compounds		63-78	Not Listed
Tin	7440-31-5	0.006	Not Listed
Antimony	7440-36-0	0.2	Not Listed
Antimony as Antimony compounds		0.2	A, 1 (except tetroxide, pentoxide, trisulphide, pentasulphide and those specified elsewhere in the annex)
Arsenic	7440-38-2	0.003	Not Listed

## Germany

## Lead Restrictions:

Lead concentration in the blood above 300 µg/L in male employees and 100 µg/L in female employees requires additional training for personal hygiene and vigilance. Lead concentration in the blood above 350 µg/L in male employees and 200 µg/L in female employees requires additional training for personal hygiene and vigilance; Lead concentration in the blood above 400 µg/L in male employees and 300 µg/L in female employees requires additional training for personal hygiene and vigilance; See TRGS 505 for detailed regulations regarding lead and lead compounds.

Employment restrictions for employees below the age of 18 years; Employment restrictions for pregnant or breastfeeding women; Prohibited for use at home based workplaces; Restrictions apply for use of lead compounds in packaging material, drinking water systems, cars, electrical and electronic devices; See TRGS 505 for detailed regulations regarding lead and lead compounds.

## Emission Limits for Inorganic Dusts

Substance	CAS	WT %	Emission Limit
Calcium	7440-70-2	0.002	Not Listed
Sulfuric Acid	7664-93-9	10-30	Not Listed
Lead	7439-92-1	63-78	2.5 g/h Mass flow (class II); 0.5 mg/m <sup>3</sup> mass concentration (Class II)
Lead as Lead compounds		63-78	2.5 m/h Mass flow (Class II, as Pb); 0.5 mg/m <sup>3</sup>
Lead as Lead, inorganic compounds		63-78	Not Listed
Tin	7440-31-5	0.006	5 g/h Mass flow (Class III); 1 mg/m <sup>3</sup> Mass concentration (Class III)
Antimony	7440-36-0	0.2	5 g/h Mass flow (Class III); 1 mg/m <sup>3</sup> Mass concentration (Class III)
Antimony as Antimony compounds		0.2	5 g/h Mass flow (Class III, as Sb); 1 mg/m <sup>3</sup> Mass
Arsenic	7440-38-2	0.003	Not Listed



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**15.1.4 National regulations (Japan):**

The following chemicals are on the Japanese ENCS:

Lead (7439-92-1); Sulfuric Acid (7664-93-9); Antimony (7440-36-0); Tin (7440-31-5); Arsenic (7440-38-2); Calcium (7440-70-2)

Substance	CAS	WT %	Limit
Calcium	7440-70-2	0.002	Not Listed
Sulfuric Acid	7664-93-9	10-30	Not Listed
Lead	7439-92-1	63-78	0.1% weight
Lead as Lead compounds		63-78	0.1% weight
Lead as Lead, inorganic compounds		63-78	Not Listed
Tin	7440-31-5	0.006	Not Listed
Antimony	7440-36-0	0.2	Not Listed
Antimony as Antimony compounds		0.2	Not Listed
Arsenic	7440-38-2	0.003	0.1% weight

## ISHL Prevention of Lead Poisoning

Substance	CAS	WT %	Status
Calcium	7440-70-2	0.002	Not Listed
Sulfuric Acid	7664-93-9	10-30	Not Listed
Lead	7439-92-1	63-78	Not Listed
Lead as Lead compounds		63-78	Not Listed
Lead as Lead, inorganic compounds		63-78	Not Listed
Tin	7440-31-5	0.006	Not Listed
Antimony	7440-36-0	0.2	Not Listed
Antimony as Antimony compounds		0.2	Not Listed
Arsenic	7440-38-2	0.003	Not Listed

## ISHL Notifiable Substances

Substance	CAS	WT %	Limit
Calcium	7440-70-2	0.002	Not Listed
Sulfuric Acid	7664-93-9	10-30	1% weight
Lead	7439-92-1	63-78	0.1% weight
Lead as Lead compounds		63-78	Not Listed
Lead as Lead, inorganic compounds		63-78	0.1% weight
Tin	7440-31-5	0.006	0.1% weight
Antimony	7440-36-0	0.2	0.1% weight
Antimony as Antimony compounds		0.2	0.1% weight
Arsenic	7440-38-2	0.003	0.1%weight

## Air Pollution Control Law: Emission Standards for Air Pollutants

Substance	CAS	WT %	Emission Limit
Calcium	7440-70-2	0.002	Not Listed
Sulfuric Acid	7664-93-9	10-30	Not Listed
Lead	7439-92-1	63-78	10-30 mg/Nm <sup>3</sup>
Lead as Lead compounds		63-78	10-30 mg/Nm <sup>3</sup>
Lead as Lead, inorganic compounds		63-78	Not Listed
Tin	7440-31-5	0.006	Not Listed
Antimony	7440-36-0	0.2	Not Listed
Antimony as Antimony compounds		0.2	Not Listed
Arsenic	7440-38-2	0.003	Not Listed





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## Pollutant Release Transfer Register (PRTR): Class 1 Substances

Substance	CAS	WT %	Status
Calcium	7440-70-2	0.002	Not Listed
Sulfuric Acid	7664-93-9	10-30	Not Listed
Lead	7439-92-1	63-78	304
Lead as Lead compounds		63-78	305 (Designated class 1 substance)
Lead as Lead, inorganic compounds		63-78	Not Listed
Tin	7440-31-5	0.006	Not Listed
Antimony	7440-36-0	0.2	31
Antimony as Antimony compounds		0.2	31
Arsenic	7440-38-2	0.003	332 (Designated class 1 substance)

## ISHL Working Environment Evaluation Standards: Administrative Control Levels

Substance	CAS	WT %	Limit
Calcium	7440-70-2	0.002	Not Listed
Sulfuric Acid	7664-93-9	10-30	Not Listed
Lead	7439-92-1	63-78	0.05 mg/m <sup>3</sup> ACL
Lead as Lead compounds		63-78	0.05 mg/m <sup>3</sup> ACL (as Pb)
Lead as Lead, inorganic compounds		63-78	Not Listed
Tin	7440-31-5	0.006	Not Listed
Antimony	7440-36-0	0.2	Not Listed
Antimony as Antimony compounds		0.2	
Arsenic	7440-38-2	0.00	0.003 mg/m <sup>3</sup> ACL

**15.1.5 National regulations (Korea):**

The following substances are listed on the Korean KECL:

Lead (7439-92-1); Sulfuric Acid (7664-93-9); Antimony (7440-36-0); Tin (7440-31-5); Arsenic (7440-38-2); Calcium (7440-70-2)

**15.1.6 National regulations (Mexico):**

Pollutant Release and Transfer Register: Reporting Emissions

Substance	CAS	WT %	Threshold Quantities
Calcium	7440-70-2	0.002	Not Listed
Sulfuric Acid	7664-93-9	10-30	Not Listed
Lead	7439-92-1	63-78	Not Listed
Lead as Lead compounds		63-78	1 kg/yr TQ
Lead as Lead, inorganic compounds		63-78	Not Listed
Tin	7440-31-5	0.006	Not Listed
Antimony	7440-36-0	0.2	Not Listed
Antimony as Antimony compounds		0.2	Not Listed
Arsenic	7440-38-2	0.003	1 kg/yr TQ

**15.1.7 National regulations (United States):**

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

Lead (7439-92-1); Sulfuric Acid (7664-93-9); Antimony (7440-36-0); Tin (7440-31-5); Arsenic (7440-38-2); Calcium (7440-70-2)



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The following substances are on the TSCA inventory:

Lead (7439-92-1); Sulfuric Acid (7664-93-9); Antimony (7440-36-0); Tin (7440-31-5); Arsenic (7440-38-2); Calcium (7440-70-2)

OSHA: Specifically Regulated Chemicals

Substance	CAS	WT %	Limit
Calcium	7440-70-2	0.002	Not Listed
Sulfuric Acid	7664-93-9	10-30	Not Listed
Lead	7439-92-1	63-78	30 µg/m <sup>3</sup> Action Level (Poison, See 29 CFR
Lead as Lead compounds		63-78	Not Listed
Lead as Lead, inorganic compounds		63-78	30 µg/m <sup>3</sup> Action Level (Poison, See 29 CFR
Tin	7440-31-5	0.006	Not Listed
Antimony	7440-36-0	0.2	Not Listed
Antimony as Antimony compounds		0.2	Not Listed
Arsenic	7440-38-2	0.003	Not Listed

CAA: 1990 Hazardous Air Pollutants

Substance	CAS	WT %	Limit
Calcium	7440-70-2	0.002	Not Listed
Sulfuric Acid	7664-93-9	10-30	Not Listed
Lead	7439-92-1	63-78	Not Listed
Lead as Lead compounds		63-78	(includes any unique chemical substance that contains Lead as part of its infrastructure)
Lead as Lead, inorganic compounds		63-78	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
Arsenic	7440-38-2	0.003	Not Listed



SAFETY DATA SHEET

According to Regulation (EC) No 1907/2006 (REACH)

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CERCLA/SARA  
Hazardous Substances and Their Reportable Quantities

Substance	CAS	WT %	Reportable Quantity
Calcium	7440-70-2	0.002	Not Listed
Sulfuric Acid	7664-93-9	10-30	1000 lb final RQ; 454 kg final RQ
Lead	7439-92-1	63-78	10 lb final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is larger than 100 micrometers); 4.54 kg final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is larger than 100 micrometers)
Lead as Lead compounds		63-78	Not Listed
Lead as Lead, inorganic compounds		63-78	Not Listed
Tin	7440-31-5	0.006	Not Listed
Antimony	7440-36-0	0.2	5000 lb final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is larger than 100 micrometers); 2270 kg final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is larger than 100 micrometers)
Antimony as Antimony compounds		0.2	Not Listed
Arsenic	7440-38-2	0.003	1 lb final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is larger than 100 micrometers); 0.454 kg final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is larger than 100 micrometers)

Substance	CAS	WT %	Reportable Quantity
Calcium	7440-70-2	0.002	Not Listed
Sulfuric Acid	7664-93-9	10-30	1000 lb EPCRA RQ
Lead	7439-92-1	63-78	Not Listed
Lead as Lead compounds		63-78	Not Listed
Lead as Lead, inorganic compounds		63-78	Not Listed
Tin	7440-31-5	0.006	Not Listed
Antimony	7440-36-0	0.2	Not Listed
Antimony as Antimony compounds		0.2	Not Listed
Arsenic	7440-38-2	0.003	Not Listed

Section 302 Extremely Hazardous Substances TPQs

Substance	CAS	WT %	Threshold Planning Quantity
Calcium	7440-70-2	0.002	Not Listed
Sulfuric Acid	7664-93-9	10-30	1000 lb TPQ
Lead	7439-92-1	63-78	Not Listed
Lead as Lead compounds		63-78	Not Listed
Lead as Lead, inorganic compounds		63-78	Not Listed
Tin	7440-31-5	0.006	Not Listed
Antimony	7440-36-0	0.2	Not Listed
Antimony as Antimony compounds		0.2	Not Listed
Arsenic	7440-38-2	0.003	Not Listed



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RCRA

Basis for Listing: Appendix VII

Substance	CAS	WT %	Basis
Calcium	7440-70-2	0.002	Not Listed
Sulfuric Acid	7664-93-9	10-30	Not Listed
Lead	7439-92-1	63-78	Included in waste streams: F035, F037, F038, F039, K002, K003, K005, K046, K048, K049, K051, K052, K061, K062, K064, K065, K066, K069, K086, K100, K176
Lead as Lead compounds		63-78	Not Listed
Lead as Lead, inorganic compounds		63-78	Not Listed
Tin	7440-31-5	0.006	Not Listed
Antimony	7440-36-0	0.2	Included in waste streams: F039, K021, K161, K177
Antimony as Antimony compounds		0.2	Not Listed
Arsenic	7440-38-2	0.003	Included in waste streams: F032, F034, F035, F039, K031, K060, K084, K101, K102, K161, K171, K172, K176

D Series Wastes: Max Concentration of Contaminants for the Toxic Characteristic

Substance	CAS	WT %	Regulatory Level
Calcium	7440-70-2	0.002	Not Listed
Sulfuric Acid	7664-93-9	10-30	Not Listed
Lead	7439-92-1	63-78	5.0 mg/L
Lead as Lead compounds		63-78	Not Listed
Lead as Lead, inorganic compounds		63-78	Not Listed
Tin	7440-31-5	0.006	Not Listed
Antimony	7440-36-0	0.2	Not Listed
Antimony as Antimony compounds		0.2	Not Listed
Arsenic	7440-38-2	0.003	5.0 mg/L

Hazardous Constituents: Appendix VIII to 40 CFR 261

Substance	CAS	WT %	Status
Calcium	7440-70-2	0.002	Not Listed
Sulfuric Acid	7664-93-9	10-30	Not Listed
Lead	7439-92-1	63-78	Hazardous constituent – no waste number
Lead as Lead compounds		63-78	Hazardous constituent – no waste number
Lead as Lead, inorganic compounds		63-78	Not Listed
Tin	7440-31-5	0.006	Not Listed
Antimony	7440-36-0	0.2	Hazardous constituent – no waste number
Antimony as Antimony compounds		0.2	Hazardous constituent – no waste number
Arsenic	7440-38-2	0.003	Hazardous constituent – no waste number



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California: California Proposition 65

Substance	CAS	WT %	Status
Calcium	7440-70-2	0.002	Not Listed
Sulfuric Acid	7664-93-9	10-30	Not Listed
Lead	7439-92-1	63-78	Carcinogen(initial date 10/1/92); developmental toxicity(initial date 2/27/87); 0.5 µg/day(Maximum Allowable Dose Level); 15 µg/day oral (No Significant Risk Level); female reproductive toxicity(initial date 2/27/87); male reproductive toxicity(initial date 2/27/87)
Lead as Lead compounds		63-78	Carcinogen(initial date 10/1/92)
Lead as Lead, inorganic compounds		63-78	Developmental toxicity(initial date 2/27/87)
Tin	7440-31-5	0.006	Not Listed
Antimony	7440-36-0	0.2	Not Listed
Antimony as Antimony compounds		0.2	Not Listed
Arsenic	7440-38-2	0.003	0.06µg/day inhalation(No Significant Risk Level); 10µg/day except inhalation(No Significant Risk Level)

Pennsylvania

Environmental Hazard list

Substance	CAS	WT %	Regulatory Level
Calcium	7440-70-2	0.002	Not Listed
Sulfuric Acid	7664-93-9	10-30	
Lead	7439-92-1	63-78	
Lead as Lead compounds		63-78	
Lead as Lead, inorganic compounds		63-78	Not Listed
Tin	7440-31-5	0.006	Not Listed
Antimony	7440-36-0	0.2	
Antimony as Antimony compounds		0.2	
Arsenic	7440-38-2	0.003	

Special Hazardous Substances

Substance	CAS	WT %	Regulatory Level
Calcium	7440-70-2	0.002	Not Listed
Sulfuric Acid	7664-93-9	10-30	Not Listed
Lead	7439-92-1	63-78	Not Listed
Lead as Lead compounds		63-78	Not Listed
Lead as Lead, inorganic compounds		63-78	Not Listed
Tin	7440-31-5	0.006	Not Listed
Antimony	7440-36-0	0.2	Not Listed
Antimony as Antimony compounds		0.2	Not Listed
Arsenic	7440-38-2	0.003	

Rhode Island: Hazardous Substances List

Substance	CAS	WT %	Regulatory Level
Calcium	7440-70-2	0.002	Flammable
Sulfuric Acid	7664-93-9	10-30	Toxic; Flammable
Lead	7439-92-1	63-78	Toxic (dust and fume)
Lead as Lead compounds		63-78	Not Listed
Lead as Lead, inorganic compounds		63-78	Not Listed
Tin	7440-31-5	0.006	Toxic
Antimony	7440-36-0	0.2	Toxic
Antimony as Antimony compounds		0.2	Toxic
Arsenic	7440-38-2	0.003	Toxic; Carcinogen



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## SECTION 16. OTHER INFORMATION

### 16.1. NFPA Hazard Rating for sulfuric acid:

Flammability (Red) = 0  
Health (Blue) = 3  
Reactivity (Yellow) = 2  
Sulfuric acid is water-reactive if concentrated.

### 16.2. Relevant R-, H- and EUH-phrases (number and full text):

#### *Hazard Abbreviations:*

Xi: Irritant  
Xn: Harmful  
N: Dangerous for the environment  
T: Toxic  
C: Corrosive  
F: Highly Flammable

#### *Risk Phrases:*

R15: Contact with water liberates extremely flammable gases  
R20/22: Harmful by inhalation and if swallowed  
R23/25: Toxic by inhalation and if swallowed  
R33: Danger of cumulative effects  
R35: Causes severe burns  
R36: Irritating to eyes  
R38: Irritating to skin  
R50: Very toxic to aquatic organisms  
R50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment  
R51/53: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment  
R53: May cause long-term adverse effects in the aquatic environment  
R61: May cause harm to the unborn child  
R62: Possible risk of impaired fertility



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***Safety Phrases:***

- S1/2: Keep locked up and out of the reach of children
- S2: Keep out of the reach of children
- S8: Keep container dry
- S20/21: When using do not eat, drink, or smoke
- S24/25: Avoid contact with skin and eyes
- S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice
- S28: After contact with skin, wash immediately with plenty of water
- S30: Never add water to this product
- S43: In case of fire use CO<sub>2</sub>, dry chemical, or foam. Never use water
- S45: In case of accident or if you feel unwell seek medical advice immediately (show the label where possible)
- S53: Avoid exposure – obtain special instructions before use
- S60: This material and its container must be disposed of as hazardous waste
- S61: Avoid release to the environment. Refer to special instructions/safety data sheet

***Hazard statements:***

- H313: May be harmful in contact with skin
- H315: Causes skin irritation
- H335: May cause respiratory irritation
- EUH201A: Warning! Contains lead

***Precautionary statements:***

- P102: Keep out of reach of children.
- P233: Keep containers tightly closed.
- P210: Keep away from heat, sparks, and open flame while charging batteries.

**16.3. Further information:**

The information contained herein is based on data considered accurate. However, no warranty is expressed or implied regarding the accuracy of this data or the results to be obtained from the use thereof. GS Battery (U.S.A.) Inc. assumes no responsibility for injury to the vendee or third persons proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Additionally, GS Battery (U.S.A.) Inc. assumes no responsibility for injury to vendee or third persons proximately caused by abnormal use of the material even if reasonable safety procedures are followed. Furthermore, vendee assumes the risk in his use of the material.