



Section 1: Identification

Product identifier

Product Name • **Valve Regulated Lead Acid Battery (including Absorbed Glass Mat – AGM)**

Relevant identified uses of the substance or mixture and uses advised against

Recommended use • Automotive, Truck, Marine, etc.

Details of the supplier of the safety data sheet

Manufacturer • Imported by General Motors of Canada
1908 Colonel Sam Drive
Oshawa L1H 8P7
Canada
In/au Canada - www.acdelcocanada.com
www.acdelco.com

• ACDelco
6200 Grand Pointe Drive
Grand Blanc, MI 48439
United States

Telephone • 1-800-223-3526
(General)

Emergency telephone number

Manufacturer • 1-800-814-3390 - GM Security

Manufacturer • 1-800-535-5053 - Infotrac

Section 2: Hazard Identification

United States (US)

According to: OSHA 29 CFR 1910.1200 HCS

Classification of the substance or mixture

OSHA HCS 2012 • Under normal use and handling, there will be no contact with the internal components of the battery. Under normal use and handling, these products do not emit hazardous substances. Misuse of the product may result in a release of battery electrolyte. Classifications provided are for the battery electrolyte and are only applicable in the event that the electrolyte is released.

- Explosives 1.3
- Skin Corrosion 1B
- Serious Eye Damage 1
- Acute Toxicity Inhalation 2
- Carcinogenicity 2
- Reproductive Toxicity 1A
- Specific Target Organ Toxicity Repeated Exposure 1

Label elements

OSHA HCS 2012

DANGER



- Hazard statements**
- Explosive; fire, blast or projection hazard
 - Causes severe skin burns and eye damage.
 - Causes serious eye damage
 - Fatal if inhaled
 - Suspected of causing cancer.
 - May damage fertility or the unborn child.
 - Causes damage to organs through prolonged or repeated exposure.

Precautionary statements

- Prevention**
- Obtain special instructions before use.
 - Do not handle until all safety precautions have been read and understood.
 - Keep away from heat, sparks, open flames and/or hot surfaces. - No smoking.
 - Keep wetted.
 - Ground and/or bond container and receiving equipment.
 - Do not subject to grinding/shock/friction.
 - Do not breathe mist, vapors, and/or spray.
 - Wash thoroughly after handling.
 - Do not eat, drink or smoke when using this product.
 - Use only outdoors or in a well-ventilated area.
 - Wear protective gloves/protective clothing/eye protection/face protection.
 - In case of inadequate ventilation wear respiratory protection.
- Response**
- In case of fire: Evacuate area.
 - Explosion risk in case of fire.
 - DO NOT fight fire when fire reaches explosives.
 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.
 - Immediately call a POISON CENTER/doctor.
 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
 - Wash contaminated clothing before reuse.
 - Specific treatment, see supplemental first aid information.
 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
 - IF exposed or concerned: Get medical advice/attention.
 - Get medical advice/attention if you feel unwell.

- Storage/Disposal**
- Store in accordance with local, regional, national, and/or international regulations.
 - Store locked up.
 - Store in a well-ventilated place. Keep container tightly closed.
 - Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

- Supplemental information**
- 72 - 90 percent of this product consists of an ingredient of unknown toxicity.

Other hazards

- OSHA HCS 2012**
- Under United States Regulations (29 CFR 1910.1200 - Hazard Communication Standard), this product is considered hazardous.

Canada

According to: WHMIS 2015

Classification of the substance or mixture

WHMIS 2015

- Under normal use and handling, there will be no contact with the internal components of the battery. Under normal use and handling, these products do not emit hazardous substances. Misuse of the product may result in a release of battery electrolyte. Classifications provided are for the battery electrolyte and are only applicable in the event that the electrolyte is released.
- Skin Corrosion 1B
- Serious Eye Damage 1
- Acute Toxicity Inhalation 2
- Carcinogenicity 2
- Reproductive Toxicity 1A
- Specific Target Organ Toxicity Repeated Exposure 1

Label elements**WHMIS 2015****DANGER**

- Hazard statements**
- Causes severe skin burns and eye damage.
 - Causes serious eye damage
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 - Suspected of causing cancer.
 - May damage fertility or the unborn child.
 - Causes damage to organs through prolonged or repeated exposure.

Precautionary statements

- Prevention**
- Obtain special instructions before use.
 - Do not handle until all safety precautions have been read and understood.
 - Do not breathe mist, vapors, and/or spray.
 - Wash thoroughly after handling.
 - Do not eat, drink or smoke when using this product.
 - Use only outdoors or in a well-ventilated area.
 - Wear protective gloves/protective clothing/eye protection/face protection.
 - In case of inadequate ventilation wear respiratory protection.
- Response**
- IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor.
 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
 - Wash contaminated clothing before reuse.
 - Specific treatment, see supplemental first aid information.
 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
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- Store in a well-ventilated place. Keep container tightly closed.
 - Store locked up.
 - Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

- Supplemental information**
- 72 - 90 percent of this product consists of an ingredient of unknown toxicity.

Other hazards**WHMIS 2015**

- This material is explosive; there is an extreme risk that explosives involved in a fire may detonate.
- In Canada, the product mentioned above is considered hazardous under the Workplace Hazardous Materials Information System (WHMIS).

Other information

- As an article this material does not legally require an SDS.

Section 3 - Composition/Information on Ingredients

Substances

- Material does not meet the criteria of a substance.

Mixtures

Composition					
Chemical Name	Identifiers	%	LD50/LC50	Classifications According to Regulation/Directive	Comments
Lead	CAS:7439-92-1	60% TO 85%	NDA	OSHA HCS 2012: Comb. Dust; Carc. 2 (Inhl); Repr. 1A (Orl, Inhl); STOT RE 1 (CNS, GI / Orl, Inhl) WHMIS 2015:	NDA
Sulfuric acid	CAS:7664-93-9	10% TO 28%	Inhalation-Rat LC50 • 510 mg/m ³ 2 Hour(s) Ingestion/Oral-Rat LD50 • 2140 mg/kg	OSHA HCS 2012: Skin Corr. 1B; Eye Dam. 1 WHMIS 2015: Skin Corr. 1B; Eye Dam. 1	NDA
1-Propene, homopolymer	CAS:9003-07-0	5% TO 8%	Ingestion/Oral-Rat LD50 • >8 g/kg	OSHA HCS 2012: Not Classified WHMIS 2015: Not Classified	NDA
Fiberglass Separator	NDA	3% TO 5%	NDA	OSHA HCS 2012: Not Classified WHMIS 2015: Not Classified	NDA
Tin	CAS:7440-31-5	0% TO 2%	NDA	OSHA HCS 2012: Not Classified WHMIS 2015: Not Classified	NDA
Calcium	CAS:7440-70-2	0% TO 1%	NDA	OSHA HCS 2012: Water-react. 2; Comb. Dust WHMIS 2015: Water-react. 2; Comb. Dust	NDA
Arsenic	CAS:7440-38-2	0% TO 0.01%	Ingestion/Oral-Rat LD50 • 763 mg/kg	OSHA HCS 2012: Exposure limit	NDA

Section 4: First-Aid Measures

Description of first aid measures

- Inhalation** • Sulfuric Acid: Remove to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Consult a physician. Lead: Remove from exposure, gargle, wash nose and lips; consult physician.
- Skin** • Sulfuric Acid: Flush affected area(s) with large amounts of water using deluge emergency shower, if available, shower for at least 15 minutes. Remove contaminated clothing, including shoes. If symptoms persist, seek medical attention. Wash contaminated clothing before reuse. Discard contaminated shoes. Lead: Wash immediately with soap and water.
- Eye** • Sulfuric Acid and Lead: Flush eyes immediately with large amounts of water for at least 15 minutes while lifting lids. Seek immediate medical attention if eyes have been exposed directly to acid.
- Ingestion** • Sulfuric Acid: Give large amounts of water. Do NOT induce vomiting or aspiration into the lungs may occur and can cause permanent injury or death; consult physician. Lead: Consult physician immediately.

Most important symptoms and effects, both acute and delayed

- Refer to Section 11 - Toxicological Information.

Indication of any immediate medical attention and special treatment needed

- Notes to Physician** • All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

Section 5: Fire-Fighting Measures

Extinguishing media

Suitable Extinguishing Media • CO₂ ; foam; dry chemical. Do not use carbon dioxide directly on cells. Avoid breathing vapors. Use appropriate media for surrounding fire.

Unsuitable Extinguishing Media • Water

Special hazards arising from the substance or mixture

Unusual Fire and Explosion Hazards • Highly flammable hydrogen gas is generated during charging and operation of batteries. If ignited by burning cigarette, naked flame or spark, may cause battery explosion with dispersion of casing fragments and corrosive liquid electrolyte. Carefully follow manufacturer's instructions for installation and service. Keep away all sources of gas ignition and do not allow metallic articles to simultaneously contact the negative and positive terminals of a battery.

Hazardous Combustion Products • No data available

Advice for firefighters

- Use positive pressure, self-contained breathing apparatus. Beware of acid splatter during water application and wear acid-resistant clothing, gloves, face and eye protection. If batteries are on charge, shut off power to the charging equipment, but note that strings of series connected batteries may still pose risk of electric shock even when charging equipment is shut down. Fire-fighting water runoff and dilution water may be toxic and corrosive and may cause adverse environmental impacts.

Section 6 - Accidental Release Measures

Personal precautions, protective equipment and emergency procedures

Personal Precautions • Wear acid-resistant clothing, boots, gloves, and face shield.

Emergency Procedures • Keep unauthorized personnel away.

Environmental precautions

- Do not allow discharge of un-neutralized acid to sewer.

Methods and material for containment and cleaning up

Containment/Clean-up Measures • Stop flow of material, contain / absorb small spills with dry sand, earth, and vermiculite. Do not use combustible materials. If possible, carefully neutralize spilled acid with soda ash, sodium bicarbonate, lime, etc. Acid must be managed in accordance with approved local, state, and federal requirements. Consult state environmental agency and / or federal EPA. Lead acid batteries are recyclable.

Section 7 - Handling and Storage

Precautions for safe handling

Handling • There is a possible risk of electric shock from charging equipment and from strings of series connected batteries, whether or not being charged. Shut-off power to chargers whenever not in use and before detachment of any circuit connections. Batteries being charged may generate and release flammable hydrogen gas. Charging space should be ventilated. Keep battery vent caps in position. Prohibit smoking and avoid creation of flames and sparks nearby. Wear face and eye protection when near batteries being charged. Unless involved in recycling operations, do not breach the casing or empty the contents of the battery. Handle carefully and avoid tipping, which may allow electrolyte leakage. There may be increasing risk of electric shock from strings of connected batteries. Keep containers tightly closed when not in use. If battery case is broken, avoid contact with internal components. Keep vent caps on and cover terminals to

prevent short circuits. Place cardboard between layers of stacked automotive batteries to avoid damage and short circuits. Keep away from combustible materials, organic chemicals, reducing substances, metals, strong oxidizers and water. Use banding or stretch wrap to secure items for shipping. Follow Manufacturers Recommendations regarding maximum recommended currents and operating temperature range. Do not overcharge beyond the recommended upper charging voltage limit. Applying pressure or deforming the battery may lead to disassembly followed by eye, skin and throat irritation. When using, do not eat, drink, or smoke. Wash hands after handling. Contaminated work clothing should not be allowed out of the workplace. Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

- Storage** • Store frost-free under roof; prevent short circuits. Do not store in sealed, unventilated areas. Seek agreement with local water authorities in case of larger quantities. Avoid overheating and charging. Do not use organic solvents or anything other than manufacturers recommended cleaners on the batteries. If batteries have to be stored in storage rooms, it is imperative that the instructions for use are observed.

Section 8 - Exposure Controls/Personal Protection

Control parameters

Exposure Limits/Guidelines				
	Result	ACGIH	NIOSH	OSHA
Tin (7440-31-5)	TWAs	2 mg/m ³ TWA	2 mg/m ³ TWA	Not established
Arsenic (7440-38-2)	TWAs	0.01 mg/m ³ TWA	Not established	Not established
	Ceilings	Not established	0.002 mg/m ³ Ceiling (15 min)	Not established
Sulfuric acid (7664-93-9)	TWAs	0.2 mg/m ³ TWA (thoracic particulate matter)	1 mg/m ³ TWA	1 mg/m ³ TWA
Lead (7439-92-1)	TWAs	0.05 mg/m ³ TWA	0.050 mg/m ³ TWA	50 µg/m ³ TWA

Exposure controls

- Engineering Measures/Controls** • Store at ambient temperature. Never recharge batteries in an unventilated, enclosed space. Do not subject product to open flame or fire. Avoid conditions that could cause arcing between terminals.

Personal Protective Equipment

- Respiratory** • None required under normal conditions. When concentrations of sulfuric acid mist are known to exceed PEL, use NIOSH or MSHA-approved respiratory protection.
- Eye/Face** • None required for normal handling of the finished product. If battery case is damaged, use chemical goggles or face shield.
- Skin/Body** • None required for normal handling of the finished product. If battery case is damaged, use rubber or plastic acid-resistant gloves with elbow-length gauntlet, acid-resistant apron, clothing and boots. Safety footwear meeting the requirements of ANSI Z 41.1 is recommended when it is necessary to handle the finished product.
- Environmental Exposure Controls** • Controls should be engineered to prevent release to the environment, including procedures to prevent spills, atmospheric release and release to waterways. Follow best practice for site management and disposal of waste.
- Additional Protection Measures** • In areas where water and sulfuric acid solutions are handled in concentrations greater than 1%, emergency eyewash stations and showers should be provided, with unlimited water supply. Chemically impervious apron and face shield recommended when adding water or electrolyte to batteries.

Key to abbreviations

ACGIH = American Conference of Governmental Industrial Hygiene

NIOSH = National Institute of Occupational Safety and Health

OSHA = Occupational Safety and Health Administration

TWA = Time-Weighted Averages are based on 8h/day, 40h/week exposures

Section 9 - Physical and Chemical Properties

Information on Physical and Chemical Properties

Material Description			
Physical Form	Liquid (battery acid)	Appearance/Description	Battery : Polypropylene or hard rubber case, solid. Lead : Gray, metallic, solid Electrolyte : Liquid, colorless, oily fluid; nuisance odor when charging battery.
Color	Gray, metallic / colorless.	Odor	Nuisance odor when charging battery.
Odor Threshold	No data available		
General Properties			
Boiling Point	Battery Electrolyte (Acid) – 230 - 233.6 °F (110 - 112 °C) Lead – 3180 °F (1749 °C)	Melting Point/Freezing Point	Lead – 621.32 °F (327.4 °C) Polypropylene <320â,‰
Decomposition Temperature	No data available	pH	< 1 (battery acid)
Specific Gravity/Relative Density	1.21 - 1.3 Battery Electrolyte (Acid)	Water Solubility	No data available
Viscosity	No data available		
Volatility			
Vapor Pressure	Battery Electrolyte (Acid) 11.7 10.95 mm Hg (Sulfuric Acid) Electrolyte 1mm Hg @ 145.8â,‰	Vapor Density	Hydrogen(Air=1) - 0.069 Electrolyte(Air=1) - 3.4 At STP
Evaporation Rate	No data available		
Flammability			
Flash Point	No data available	UEL	No data available
LEL	No data available	Autoignition	No data available
Flammability (solid, gas)	No data available		
Environmental			
Octanol/Water Partition coefficient	No data available		

Section 10: Stability and Reactivity

Reactivity

- No dangerous reaction known under conditions of normal use.

Chemical stability

- This product is stable under normal conditions at ambient temperature.

Possibility of hazardous reactions

- Hazardous polymerization will not occur.

Conditions to avoid

- Sparks and other sources of ignition; high temperature; over charging.

Incompatible materials

- Acid:Contact with combustibles and organic materials may cause fire and explosion. Also reacts violently with strong reducing agents, metals, sulfur trioxide gas, strong oxidizers, and water. Contact with metals may produce toxic sulfur dioxide fumes and may release flammable hydrogen gas. Lead compounds: Avoid contact with strong acids, bases, halides, halogenates, potassium nitrate, permanganate, peroxides, nascent hydrogen, and reducing agents.

Hazardous decomposition products

- Acid: Sulfur trioxide, carbon monoxide, sulfuric acid mist, sulfur dioxide, hydrogen sulfide. Lead compounds: Temperatures above the melting point are likely to produce toxic metal fume, vapor, or dust; contact with strong acid or base or presence of nascent hydrogen may generate highly toxic arsine gas.

Section 11 - Toxicological Information

Information on toxicological effects

Components		
Lead (60% TO 85%)	7439-92-1	<p>Acute Toxicity: Ingestion/Oral-Woman TDLo • 450 mg/kg 6 Year(s); <i>Peripheral Nerve and Sensation:</i> Flaccid paralysis without anesthesia (usually neuromuscular blockage); <i>Behavioral:</i> Hallucinations, distorted perceptions; <i>Behavioral:</i> Muscle weakness; Inhalation-Human TCLo • 10 µg/m³; <i>Gastrointestinal:</i> Gastritis; <i>Liver:</i> Other changes;</p> <p>Multi-dose Toxicity: Inhalation-Human TCLo • 0.011 mg/m³ 26 Week(s)-Intermittent; <i>Brain and Coverings:</i> Other degenerative changes; Inhalation-Man TCLo • 0.03 mg/m³ 5 Year(s)-Intermittent; <i>Endocrine:</i> Androgenic; Inhalation-Man TCLo • 0.03 mg/m³ 1 Year(s)-Intermittent; <i>Endocrine:</i> Change in LH; <i>Biochemical:Metabolism (intermediary):</i> Porphyrin, including bile pigments;</p> <p>Mutagen: Cytogenetic analysis • Ingestion/Oral-Monkey • 42 mg/kg 30 Week(s); Cytogenetic analysis • Inhalation-Rat • 23 µg/m³ 16 Week(s);</p> <p>Reproductive: Ingestion/Oral-Rat TDLo • 790 mg/kg (multigenerations); <i>Reproductive Effects:</i> Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus); <i>Reproductive Effects:</i> Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus); <i>Reproductive Effects:</i> Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus); <i>Reproductive Effects:</i> Specific Developmental Abnormalities: Blood and lymphatic system</p>
Sulfuric acid (10% TO 28%)	7664-93-9	<p>Acute Toxicity: Ingestion/Oral-Rat LD50 • 2140 mg/kg; Inhalation-Rat LC50 • 510 mg/m³ 2 Hour(s); Inhalation-Guinea Pig LCLo • 65 mg/m³ 30 Minute(s); <i>Lungs, Thorax, or Respiration:</i> Bronchiolar constriction;</p> <p>Irritation: Eye-Rabbit • 250 µg • Severe irritation;</p> <p>Reproductive: Inhalation-Rabbit TCLo • 20 mg/m³ 7 Hour(s) (6-18D preg); <i>Reproductive Effects:</i> Specific Developmental Abnormalities: Musculoskeletal system</p>
1-Propene, homopolymer (5% TO 8%)	9003-07-0	<p>Acute Toxicity: Ingestion/Oral-Rat LD50 • >8 g/kg</p>

GHS Properties	Classification
Acute toxicity	<p>OSHA HCS 2012•Acute Toxicity - Inhalation 2 - ATEmix (inhl, dust/mist) = 0.255 mg/L (4-hr)</p> <p>WHMIS 2015•Acute Toxicity - Inhalation 2 - ATEmix (inhl, dust/mist) = 0.255 mg/L (4-hr)</p>
Skin corrosion/Irritation	<p>OSHA HCS 2012•Skin Corrosion 1B</p> <p>WHMIS 2015•Skin Corrosion 1B</p>
Serious eye damage/Irritation	<p>OSHA HCS 2012•Serious Eye Damage 1</p> <p>WHMIS 2015•Serious Eye Damage 1</p>
Skin sensitization	<p>OSHA HCS 2012•No data available</p> <p>WHMIS 2015•No data available</p>
Respiratory sensitization	<p>OSHA HCS 2012•No data available</p> <p>WHMIS 2015•No data available</p>
Aspiration Hazard	<p>OSHA HCS 2012•No data available</p> <p>WHMIS 2015•No data available</p>
Carcinogenicity	<p>OSHA HCS 2012•Carcinogenicity 2</p> <p>WHMIS 2015•Carcinogenicity 2</p>
Germ Cell Mutagenicity	<p>OSHA HCS 2012•No data available</p> <p>WHMIS 2015•No data available</p>
Toxicity for Reproduction	<p>OSHA HCS 2012•Toxic to Reproduction 1A</p> <p>WHMIS 2015•Toxic to Reproduction 1A</p>
STOT-SE	<p>OSHA HCS 2012•No data available</p> <p>WHMIS 2015•No data available</p>

Potential Health Effects**Inhalation****Acute
(Immediate)**

- Fatal if inhaled. Sulfuric Acid: Breathing of sulfuric acid vapors or mists may cause severe respiratory irritation. Lead Compounds: Inhalation of lead dust or fumes may cause irritation of upper respiratory tract and lungs.

**Chronic
(Delayed)**

- No data available

Skin**Acute
(Immediate)**

- In the event of overcharging or damage to the unit, exposure to organic electrolyte solution / mist is possible. Extreme exposures to the organic electrolyte can be absorbed through the skin. Sulfuric Acid: Severe irritation, burns and ulceration. Lead Compounds: Not absorbed through the skin.

**Chronic
(Delayed)**

- No data available

Eye**Acute
(Immediate)**

- Sulfuric Acid: Severe irritation, burns, cornea damage, and blindness. Lead Compounds: May cause eye irritation.

**Chronic
(Delayed)**

- No data available

Ingestion**Acute
(Immediate)**

- Sulfuric Acid: May cause severe irritation of mouth, throat, esophagus and stomach. Lead Compounds: Acute ingestion may cause abdominal pain, nausea, vomiting, diarrhea and severe cramping. This may lead rapidly to systemic toxicity and must be treated by a physician.

**Chronic
(Delayed)**

- No data available

Other**Acute
(Immediate)**

- Sulfuric Acid : Severe skin irritation, damage to cornea, upper respiratory irritation. Lead Compounds: Symptoms of toxicity include headache, fatigue, abdominal pain, loss of appetite, muscular aches and weakness, sleep disturbances and irritability.

**Chronic
(Delayed)**

- Sulfuric Acid : Possible erosion of tooth enamel, inflammation of nose, throat & bronchial tubes. Lead Compounds: Anemia; neuropathy, particularly of the motor nerves, with wrist drop; kidney damage; reproductive changes in males and females. Repeated exposure to lead and lead compounds in the workplace may result in nervous system toxicity. Some toxicologists report abnormal conduction velocities in persons with blood lead levels of 50µg/100 ml or higher. Heavy lead exposure may result in central nervous system damage, encephalopathy and damage to the blood-forming (hematopoietic) tissues.

**Carcinogenic
Effects**

- Sulfuric Acid: The International Agency for Research on Cancer (IARC) has classified "strong inorganic acid mist containing sulfuric acid" as a Category I 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 result in the generation of sulfuric acid mist. Lead Compounds: Lead is listed as a 2B carcinogen, likely in animals at extreme doses. Proof of carcinogenicity in humans is lacking at present.

Carcinogenic Effects			
	CAS	IARC	NTP
Arsenic	7440-38-2	Group 1-Carcinogenic	Known Human Carcinogen
Sulfuric acid	7664-93-9	Group 1-Carcinogenic	Not Listed
Lead	7439-92-1	Group 2A-Probable Carcinogen	Reasonably Anticipated to be Human Carcinogen

**Reproductive
Effects**

- The 19th Amendment to EC Directive 67/548/EEC classified lead compounds, but not lead in metal form, as possibly toxic to reproduction. Risk phrase 61: May cause harm to the unborn child, applies to lead compounds, especially soluble forms.

Key to abbreviations

LC = Lethal Concentration

LD = Lethal Dose

TC = Toxic Concentration

TD = Toxic Dose

Section 12 - Ecological Information**Toxicity**

- Very toxic to aquatic life with long lasting effects. However, no ecological impacts expected under normal use conditions.

Persistence and degradability

- Lead is very persistent in soil and sediments. No data on environmental degradation.

Bioaccumulative potential

- Bioaccumulation of lead occurs in aquatic and terrestrial animals and plants but little bioaccumulation occurs through the food chain. Most studies include lead compounds and not elemental lead.

Mobility in Soil

- Mobility of metallic lead between ecological compartments is slow.

Other adverse effects

- No known effects on stratospheric ozone depletion. Volatile organic compounds: 0% (by Volume) Water Endangering Class (WGK): NA

Section 13 - Disposal Considerations**Waste treatment methods**

- Product waste** • Material should be recycled if possible. Lead-acid batteries are completely recyclable. Product can be recycled along with automotive (SLI) lead-acid batteries. Dispose waste and residues in accordance with applicable federal, state, and local regulations.
- Packaging waste** • Dispose of in accordance with local regulations. Empty containers or packaging may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions). Empty containers should be taken to an approved waste handling site for recycling or disposal.

Section 14 - Transport Information

	UN number	UN proper shipping name	Transport hazard class(es)	Packing group	Environmental hazards
DOT	UN2800	Batteries, wet, non-spillable	8	NDA	NDA
TDG	UN2800	BATTERIES, WET, NON-SPILLABLE	8	NDA	NDA
IMO/IMDG	UN2800	BATTERIES, WET, NON-SPILLABLE	8	NDA	NDA
IATA/ICAO	UN2800	Batteries, wet, non-spillable	8	NDA	NDA

Special precautions for user

- None specified.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

- No data available

Other information

DOT • Not regulated as dangerous goods per 49 CFR 173.159a.

IMO/IMDG • Not regulated as dangerous goods per exception 238.

Section 15 - Regulatory Information

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

Inventory				
Component	CAS	Canada DSL	Canada NDSL	TSCA
1-Propene, homopolymer	9003-07-0	Yes	No	Yes
Arsenic	7440-38-2	Yes	No	Yes
Calcium	7440-70-2	Yes	No	Yes
Lead	7439-92-1	Yes	No	Yes
Sulfuric acid	7664-93-9	Yes	No	Yes
Tin	7440-31-5	Yes	No	Yes

Canada

Labor

Canada - WHMIS 1988 - Classifications of Substances

•Calcium	7440-70-2	B6, E
•Sulfuric acid	7664-93-9	D1A, E (including 50% (14.2N), more than 51%, 85% (30.8)); E (2% (0.4N), 4.9% (1N))
•Lead	7439-92-1	D2A
•Tin	7440-31-5	Uncontrolled product according to WHMIS classification criteria
•Arsenic	7440-38-2	D1A, D2A
•1-Propene, homopolymer	9003-07-0	Uncontrolled product according to WHMIS classification criteria

Canada - WHMIS 1988 - Ingredient Disclosure List

•Calcium	7440-70-2	Not Listed
•Sulfuric acid	7664-93-9	1 %
•Lead	7439-92-1	0.1 %
•Tin	7440-31-5	1 %
•Arsenic	7440-38-2	0.1 %
•1-Propene, homopolymer	9003-07-0	Not Listed

Environment

Canada - CEPA - Priority Substances List

•Calcium	7440-70-2	Not Listed
•Sulfuric acid	7664-93-9	Not Listed
•Lead	7439-92-1	Not Listed
•Tin	7440-31-5	Not Listed
•Arsenic	7440-38-2	Not Listed
•1-Propene, homopolymer	9003-07-0	Not Listed

United States

Labor

U.S. - OSHA - Process Safety Management - Highly Hazardous Chemicals

•Calcium	7440-70-2	Not Listed
•Sulfuric acid	7664-93-9	Not Listed
•Lead	7439-92-1	Not Listed
•Tin	7440-31-5	Not Listed
•Arsenic	7440-38-2	Not Listed
•1-Propene, homopolymer	9003-07-0	Not Listed

U.S. - OSHA - Specifically Regulated Chemicals

•Calcium	7440-70-2	Not Listed
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•Sulfuric acid	7664-93-9	Not Listed 30 µg/m3 Action Level (See 29 CFR 1910.1025); 50 µg/m3 TWA (See 29 CFR 1910.1025)
•Lead	7439-92-1	
•Tin	7440-31-5	Not Listed
•Arsenic	7440-38-2	Not Listed
•1-Propene, homopolymer	9003-07-0	Not Listed

Environment

U.S. - CAA (Clean Air Act) - 1990 Hazardous Air Pollutants

•Calcium	7440-70-2	Not Listed
•Sulfuric acid	7664-93-9	Not Listed
•Lead	7439-92-1	Not Listed
•Tin	7440-31-5	Not Listed
•Arsenic	7440-38-2	Not Listed
•1-Propene, homopolymer	9003-07-0	Not Listed

U.S. - CERCLA/SARA - Hazardous Substances and their Reportable Quantities

•Calcium	7440-70-2	Not Listed
•Sulfuric acid	7664-93-9	1000 lb final RQ; 454 kg final RQ 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 >100 µm); 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 >100 µm)
•Lead	7439-92-1	
•Tin	7440-31-5	Not Listed 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 >100 µm); 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 >100 µm)
•Arsenic	7440-38-2	
•1-Propene, homopolymer	9003-07-0	Not Listed

U.S. - CERCLA/SARA - Radionuclides and Their Reportable Quantities

•Calcium	7440-70-2	Not Listed
•Sulfuric acid	7664-93-9	Not Listed
•Lead	7439-92-1	Not Listed
•Tin	7440-31-5	Not Listed
•Arsenic	7440-38-2	Not Listed
•1-Propene, homopolymer	9003-07-0	Not Listed

U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances EPCRA RQs

•Calcium	7440-70-2	Not Listed
•Sulfuric acid	7664-93-9	1000 lb EPCRA RQ
•Lead	7439-92-1	Not Listed
•Tin	7440-31-5	Not Listed
•Arsenic	7440-38-2	Not Listed
•1-Propene, homopolymer	9003-07-0	Not Listed

U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances TPQs

•Calcium	7440-70-2	Not Listed
•Sulfuric acid	7664-93-9	1000 lb TPQ
•Lead	7439-92-1	Not Listed
•Tin	7440-31-5	Not Listed
•Arsenic	7440-38-2	Not Listed
•1-Propene, homopolymer	9003-07-0	Not Listed

U.S. - CERCLA/SARA - Section 313 - Emission Reporting

•Calcium	7440-70-2	Not Listed
•Sulfuric acid	7664-93-9	1.0 % de minimis concentration (acid aerosols including mists, vapors, gas, fog, and other airborne forms of any particle size)
•Lead	7439-92-1	0.1 % Supplier notification limit; 0.1 % de minimis concentration (when contained in stainless steel, brass, or bronze)
•Tin	7440-31-5	Not Listed
•Arsenic	7440-38-2	0.1 % de minimis concentration
•1-Propene, homopolymer	9003-07-0	Not Listed
U.S. - CERCLA/SARA - Section 313 - PBT Chemical Listing		
•Calcium	7440-70-2	Not Listed
•Sulfuric acid	7664-93-9	Not Listed
•Lead	7439-92-1	100 lb RT (this lower threshold does not apply to lead when it is contained in stainless steel, brass or bronze alloy)
•Tin	7440-31-5	Not Listed
•Arsenic	7440-38-2	Not Listed
•1-Propene, homopolymer	9003-07-0	Not Listed

United States - California

Environment

U.S. - California - Proposition 65 - Carcinogens List

•Calcium	7440-70-2	Not Listed
•Sulfuric acid	7664-93-9	Not Listed
•Lead	7439-92-1	carcinogen, 10/1/1992
•Tin	7440-31-5	Not Listed
•Arsenic	7440-38-2	Not Listed
•1-Propene, homopolymer	9003-07-0	Not Listed

U.S. - California - Proposition 65 - Developmental Toxicity

•Calcium	7440-70-2	Not Listed
•Sulfuric acid	7664-93-9	Not Listed
•Lead	7439-92-1	developmental toxicity, 2/27/1987
•Tin	7440-31-5	Not Listed
•Arsenic	7440-38-2	Not Listed
•1-Propene, homopolymer	9003-07-0	Not Listed

U.S. - California - Proposition 65 - Maximum Allowable Dose Levels (MADL)

•Calcium	7440-70-2	Not Listed
•Sulfuric acid	7664-93-9	Not Listed
•Lead	7439-92-1	0.5 µg/day MADL
•Tin	7440-31-5	Not Listed
•Arsenic	7440-38-2	Not Listed
•1-Propene, homopolymer	9003-07-0	Not Listed

U.S. - California - Proposition 65 - No Significant Risk Levels (NSRL)

•Calcium	7440-70-2	Not Listed
•Sulfuric acid	7664-93-9	Not Listed
•Lead	7439-92-1	15 µg/day NSRL (oral)
•Tin	7440-31-5	Not Listed
•Arsenic	7440-38-2	0.06 µg/day NSRL (inhalation); 10 µg/day NSRL (except inhalation)
•1-Propene, homopolymer	9003-07-0	Not Listed

U.S. - California - Proposition 65 - Reproductive Toxicity - Female

•Calcium	7440-70-2	Not Listed
•Sulfuric acid	7664-93-9	Not Listed
•Lead	7439-92-1	female reproductive toxicity 2/27/87
•Tin	7440-31-5	Not Listed

•Arsenic	7440-38-2	Not Listed
•1-Propene, homopolymer	9003-07-0	Not Listed
U.S. - California - Proposition 65 - Reproductive Toxicity - Male		
•Calcium	7440-70-2	Not Listed
•Sulfuric acid	7664-93-9	Not Listed
•Lead	7439-92-1	male reproductive toxicity, 2/27/87
•Tin	7440-31-5	Not Listed
•Arsenic	7440-38-2	Not Listed
•1-Propene, homopolymer	9003-07-0	Not Listed

Other Information

- Proposition 65 Warning Battery posts, terminals and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and reproductive harm. Batteries also contain other chemicals known to State of California to cause cancer.

Section 16 - Other Information

Revision Date • 29/May/2018

Preparation Date • 29/May/2018

Disclaimer/Statement of Liability • This information is based upon technical information believed to be reliable. The information is subject to revision as additional knowledge and experience is gained. It is the responsibility of the users to comply with all applicable federal, state and local laws and regulations.

Key to abbreviations

NDA = No Data Available