

Motive Power Flooded Lead Acid Battery

Safety Data Sheet

According To Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations
Date of Issue: 08/30/2022

Version: 1.0

SECTION 1: IDENTIFICATION

1.1. Product Identifier

Product Form: Mixture

Product Name: Motive Power Flooded Lead Acid Battery

Synonyms: M-Series F-100/ Marathon Classic, M-Series F-110/Marathon FPX, M-Series T-300/Tubular CMX, M-Series T-310/Tubular LMX, M-Series T-330/Tubular MPX, M-Series KDZ ; M15, M16, M17, M18, M19, M25, M26, M27, M28, M29, M34, M44,M48

Additional Information:The following product is a flooded lead acid battery. This SDS covers hazards to exposure of the inner contents of the battery and acid pack that could occur under normal conditions of use/storage, processing or a foreseeable emergency.

1.2. Intended Use of the Product

Use of the Substance/Mixture: The following product is a flooded lead acid battery.

1.3. Name, Address, and Telephone of the Responsible Party

Stryten Energy LLC
5925 Cabot Pkwy
Alpharetta, GA
30005
678-566-9000

1.4. Emergency Telephone Number

Emergency Number : VelocityEHS
(800)255-3924 (North America)
+1 (813)248-0585 (International)

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the Substance or Mixture

GHS-US Classification

Corrosive to metals Category 1	H290
Acute toxicity (oral) Category 4	H302
Skin corrosion/irritation Category 1A	H314
Serious eye damage/eye irritation Category 1	H318
Carcinogenicity Category 1B	H350
Reproductive toxicity Category 1A	H360
Reproductive toxicity, Additional category, Effects on or via lactation	H362
Specific target organ toxicity (repeated exposure) Category 1	H372
Hazardous to the aquatic environment - Acute Hazard Category 1	H400
Hazardous to the aquatic environment - Chronic Hazard Category 1	H410

2.2. Label Elements

GHS-US Labeling

Hazard Pictograms (GHS-US)



Signal Word (GHS-US)

: Danger

Hazard Statements (GHS-US)

: H290 - May be corrosive to metals.
H302 - Harmful if swallowed.
H314 - Causes severe skin burns and eye damage.
H318 - Causes serious eye damage.
H350 - May cause cancer (oral).
H360 - May damage fertility or the unborn child.
H362 - May cause harm to breast-fed children.
H372 - Causes damage to organs (hematopoiesis, central nervous system, kidneys) through prolonged or repeated exposure (oral).
H400 - Very toxic to aquatic life.
H410 - Very toxic to aquatic life with long lasting effects.

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Precautionary Statements (GHS-US)

- : P201 - Obtain special instructions before use.
- P202 - Do not handle until all safety precautions have been read and understood.
- P234 - Keep only in original container.
- P260 - Do not breathe vapors, mist, or spray.
- P263 - Avoid contact during pregnancy/while nursing.
- P264 - Wash hands, forearms, and other exposed areas thoroughly after handling.
- P270 - Do not eat, drink or smoke when using this product.
- P273 - Avoid release to the environment.
- P280 - Wear protective gloves, protective clothing, and eye protection.
- P301+P312 - If swallowed: Call a poison center or doctor if you feel unwell.
- P301+P330+P331 - If swallowed: rinse mouth. Do NOT induce vomiting.
- P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
- P304+P340 - If inhaled: Remove person to fresh air and keep at rest in a position comfortable for breathing.
- P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P308+P313 - If exposed or concerned: Get medical advice/attention.
- P310 - Immediately call a poison center or doctor.
- P314 - Get medical advice/attention if you feel unwell.
- P321 - Specific treatment (see section 4 on this SDS).
- P330 - Rinse mouth.
- P363 - Wash contaminated clothing before reuse.
- P390 - Absorb spillage to prevent material-damage.
- P391 - Collect spillage.
- P405 - Store locked up.
- P406 - Store in corrosive resistant container with a resistant inner liner.
- P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations.

2.3. Other Hazards

Exposure may aggravate pre-existing eye, skin, or respiratory conditions. Inhalation of fumes may cause metal fume fever.

2.4. Unknown Acute Toxicity (GHS-US)

No data available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substance

Not applicable

3.2. Mixture

Name	Synonyms	Product Identifier	%	GHS US classification
Lead	C.I. Pigment Metal 4 / Lead metal / Lead, elemental / C.I. 77575	(CAS-No.) 7439-92-1	54 – 64	Carc. 1B, H350 Lact., H362 Repr. 1A, H360 STOT RE 1, H372 Aquatic Acute 1, H400 Aquatic Chronic 1, H410 Comb. Dust
Lead oxide (PbO ₂)	Lead peroxide / Lead Brown / Lead dioxide / Lead Oxide Brown / Lead(IV) oxide / Lead(4+) peroxide / Lead oxide	(CAS-No.) 1309-60-0	13 – 24	Ox. Sol. 3, H272 Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Inhalation:dust,mist), H332 Carc. 1B, H350 Repr. 1A, H360 STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
Water	water / AQUA	(CAS-No.) 7732-18-5	15 – 18	Not classified

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Sulfuric acid	Sulphuric acid / SULFURIC ACID / Hydrogen sulfate / Sulphuric acid ...% / sulfuric acid / Sulfuric acid ...% / Sulfuric acid (H2SO4)	(CAS-No.) 7664-93-9	9 – 10	Met. Corr. 1, H290 Skin Corr. 1A, H314 Eye Dam. 1, H318 STOT SE 3, H335 Aquatic Acute 3, H402
Polypropylene	1-Propene, homopolymer / Polypropylene wax / POLYPROPYLENE / Polypropyl-1-ene / Polypropylene homopolymer / Polypropylene and polypropylene wax / Propylene homopolymer / Polymer of prop-1-ene / Amberlite(tm)14i inert resin	(CAS-No.) 9003-07-0	2 – 5	Comb. Dust
Antimony	Antimony powder / Antimony, elemental / Antimony, metal / C.I. 77050 / Antimony, metallic	(CAS-No.) 7440-36-0	1 – 2	Acute Tox. 3 (Oral), H301 Carc. 2, H351 STOT RE 2, H373 Aquatic Acute 2, H401 Aquatic Chronic 3, H412 Comb. Dust
Silica, amorphous	Amorphous silica / Silica / Silica, amorphous, fumed / Silica, colloidal / Silicon dioxide / Silicon dioxide, amorphous / SILICA / Silicon(IV) oxide / Un-crystalline silica / Pigment White 27 / Silicon dioxide (amorphous) / Silicon dioxide amorphous / Silicon(IV)oxide / Silica amorphous / Silicon dioxide containing crystalline and amorphous / Fumed silica / SOLUM DIATOMEAE / silicon dioxide	(CAS-No.) 7631-86-9	0.2 – 0.9	Not classified
Polyvinyl chloride	Chloroethylene polymer / Ethene, chloro-, homopolymer / Ethylene, chloro-, polymer / Vinyl chloride homopolymer / Vinyl chloride polymer / PVC / POLYVINYL CHLORIDE / Vinyl chloride resin / Chloroethylene, polymer / Polyetenyl chloride / Polyethylene chloride / Polyethenyl chloride / Polyvinyl chloride resin / Chloroethene, polymer / Polymer of chloroethene / Polymer mainly composed of vinyl chloride	(CAS-No.) 9002-86-2	0.1 – 0.5	Comb. Dust
Ethene, homopolymer	Polyethylene / Ethene polymer / Ethylene homopolymer / Ethylene polymer / Polythene / Polyethylene wax / POLYETHYLENE / Polymer of ethene	(CAS-No.) 9002-88-4	0.2 – 0.4	Comb. Dust
Tin	Tin metal / Tin, elemental / Tin, metal / TIN / tin / Organometallic tin	(CAS-No.) 7440-31-5	0.04 – 0.1	Comb. Dust

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Arsenic	Arsenic, elemental / Arsenic, inorganic	(CAS-No.) 7440-38-2	0.04 – 0.08	Acute Tox. 3 (Oral), H301 Acute Tox. 3 (Inhalation:dust,mist), H331 Skin Irrit. 2, H315 Eye Dam. 1, H318 Carc. 1A, H350 STOT SE 1, H370 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
Copper	Copper, metallic / Pigment Metal 2 / Copper metal / CI 77400 / Copper, elemental / C.I. Pigment Metal 2 / C.I. 77400 / Granulated copper / copper	(CAS-No.) 7440-50-8	0.005 – 0.01	Aquatic Acute 1, H400 Aquatic Chronic 1, H410 Comb. Dust
Selenium	Elemental selenium / Selenium, elemental / selenium	(CAS-No.) 7782-49-2	0.002 – 0.009	Acute Tox. 3 (Oral), H301 Acute Tox. 3 (Inhalation:dust,mist), H331 STOT RE 2, H373 Comb. Dust
Sulfur	Sulphur / Sulphur, molten / Elemental sulfur / Brimstone / SULFUR / Elemental sulphur / Sulfur, elemental / sulfur	(CAS-No.) 7704-34-9	0.001	Flam. Sol. 2, H228 Skin Irrit. 2, H315 Aquatic Acute 3, H402 Aquatic Chronic 3, H412 Comb. Dust

Full text of H-phrases: see section 16

SECTION 4: FIRST AID MEASURES

4.1. Description of First-aid Measures

First-aid Measures General: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

First-aid Measures After Inhalation: For exposure to battery contents: Remove to fresh air and keep at rest in a position comfortable for breathing. Immediately call a poison center or doctor/physician.

First-aid Measures After Skin Contact: For exposure to battery contents: Immediately remove contaminated clothing. Immediately flush skin with plenty of water for at least 60 minutes. Get immediate medical advice/attention.

First-aid Measures After Eye Contact: For exposure to battery contents: Immediately rinse with water for at least 60 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical advice/attention.

First-aid Measures After Ingestion: For exposure to battery contents: Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

4.2. Most Important Symptoms and Effects Both Acute and Delayed

Symptoms/Injuries: None expected under normal conditions of use. Exposure to battery contents may result in the following: May damage fertility. May damage the unborn child. May cause harm to breast-fed children. Causes severe skin burns and eye damage. Causes damage to organs (hematopoiesis, central nervous system, kidneys) through prolonged or repeated exposure (oral). May cause cancer (oral). Harmful if swallowed. Harmful if inhaled. Skin sensitization.

Symptoms/Injuries After Inhalation: Exposure to materials housed in battery: May be corrosive to the respiratory tract. May be harmful if inhaled.

Symptoms/Injuries After Skin Contact: Exposure to materials housed in battery: Causes severe irritation which will progress to chemical burns. May cause an allergic skin reaction.

Symptoms/Injuries After Eye Contact: Exposure to materials housed in battery: Causes permanent damage to the cornea, iris, or conjunctiva.

Symptoms/Injuries After Ingestion: Exposure to materials housed in battery: May cause burns or irritation of the linings of the mouth, throat, and gastrointestinal tract. Harmful if swallowed.

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Chronic Symptoms: None expected under normal conditions of use. Exposure to materials housed in battery: May cause cancer (oral). May damage fertility or the unborn child. Causes damage to organs (hematopoiesis, central nervous system, kidneys) through prolonged or repeated exposure (oral).

Lead: Exposure can result in lassitude (weakness, exhaustion), insomnia; facial pallor; anorexia, weight loss, malnutrition; constipation, abdominal pain, colic; anemia; gingival lead line; tremor; encephalopathy; kidney disease; hypertension.

Tin: Has been shown to increase incidence of sarcoma in animal tests. Chronic exposure to tin dusts and fume may result in "stannosis", a mild form of pneumoconiosis.

Antimony: Exposure to antimony dusts and fume may result in irritation eyes, skin, nose, throat, mouth; cough; dizziness; headache; nausea, vomiting, diarrhea; stomach cramps; insomnia; anorexia; unable to smell properly.

4.3. Indication of Any Immediate Medical Attention and Special Treatment Needed

If exposed or concerned, get medical advice and attention. If medical advice is needed, have product container or label at hand.

SECTION 5: FIRE-FIGHTING MEASURES

5.1. Extinguishing Media

Suitable Extinguishing Media: Dry chemical powder.

Unsuitable Extinguishing Media: Do NOT use water on live electrical circuits.

5.2. Special Hazards Arising From the Substance or Mixture

Fire Hazard: Batteries may explode in fire. Damaged batteries can result in rapid heating and the release of flammable vapors. Inhalation of fumes may cause metal fume fever.

Explosion Hazard: Battery may rupture/explode when exposed to excessive heat or fire, if overcharged, short circuited, punctured, or crushed. The following applies to the contents inside the cartridge: Contact with metallic substances may release flammable hydrogen gas.

Reactivity: Batteries are non-reactive under normal conditions of use, storage and transport. If damaged or opened, may be corrosive to metals. Contact with metals may evolve flammable hydrogen gas. May react exothermically with water releasing heat. Adding an acid to a base or base to an acid may cause a violent reaction.

5.3. Advice for Firefighters

Precautionary Measures Fire: Exercise caution when fighting any chemical fire.

Firefighting Instructions: Use water spray or fog for cooling exposed containers.

Protection During Firefighting: Do not enter fire area without proper protective equipment, including respiratory protection.

Hazardous Combustion Products: Metal oxides. Sulfur oxides. Carbon oxides (CO, CO₂).

Other Information: Do not allow run-off from fire fighting to enter drains or water courses.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal Precautions, Protective Equipment and Emergency Procedures

General Measures: If the battery is damaged: Do not get in eyes, on skin, or on clothing. Do not breathe vapor, mist or spray. Do not touch damaged containers or spilled material unless wearing the appropriate protective equipment.

6.1.1. For Non-Emergency Personnel

Protective Equipment: Use appropriate personal protective equipment (PPE).

Emergency Procedures: Evacuate unnecessary personnel.

6.1.2. For Emergency Personnel

Protective Equipment: Equip cleanup crew with proper protection.

Emergency Procedures: Upon arrival at the scene, a first responder is expected to recognize the presence of dangerous goods, protect oneself and the public, secure the area, and call for the assistance of trained personnel as soon as conditions permit. Ventilate area.

6.2. Environmental Precautions

Prevent entry to sewers and public waters. Avoid release to the environment. Collect spillage.

6.3. Methods and Materials for Containment and Cleaning Up

For Containment: Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. As an immediate precautionary measure, isolate spill or leak area in all directions.

Methods for Cleaning Up: Clean up spills immediately and dispose of waste safely. Transfer spilled material to a suitable container for disposal. Contact competent authorities after a spill. Absorb spillage to prevent material damage. Cautiously neutralize spilled liquid.

6.4. Reference to Other Sections

See Section 8 for exposure controls and personal protection and Section 13 for disposal considerations.

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SECTION 7: HANDLING AND STORAGE

7.1. Precautions for Safe Handling

Precautions for Safe Handling: Do not tip. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Do not handle until all safety precautions have been read and understood. Do not breathe battery contents. Avoid contact with eyes, skin and clothing. Obtain special instructions before use. Avoid contact during pregnancy/while nursing. Handle empty containers with care because they may still present a hazard.

Hygiene Measures: Handle in accordance with good industrial hygiene and safety procedures.

7.2. Conditions for Safe Storage, Including Any Incompatibilities

Technical Measures: Comply with applicable regulations.

Storage Conditions: Keep container closed when not in use. Store in a dry, cool place. Keep/Store away from direct sunlight, extremely high or low temperatures and incompatible materials. Store locked up/in a secure area. Store in corrosive resistant container with a resistant inner liner. Store in original container or corrosive resistant and/or lined container.

Incompatible Materials: For exposure to the internal contents of the battery: Oxidizers. Metals. May be corrosive to metals. Bases. Reducing agents.

Packaging materials: Store in corrosive resistant container with a resistant inner liner.

7.3. Specific End Use(s)

The following product is a flooded lead acid battery.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control Parameters

For substances listed in section 3 that are not listed here, there are no established exposure limits from the manufacturer, supplier, importer, or the appropriate advisory agency including: ACGIH (TLV), AIHA (WEEL), NIOSH (REL), or OSHA (PEL).

Sulfuric acid (7664-93-9)		
USA ACGIH	ACGIH OEL TWA	0.2 mg/m ³ (thoracic particulate matter)
USA ACGIH	ACGIH chemical category	Suspected Human Carcinogen contained in strong inorganic acid mists
USA NIOSH	NIOSH REL (TWA)	1 mg/m ³
USA IDLH	IDLH	15 mg/m ³
USA OSHA	OSHA PEL (TWA) [1]	1 mg/m ³
Lead (7439-92-1)		
USA ACGIH	ACGIH OEL TWA	0.05 mg/m ³
USA ACGIH	ACGIH chemical category	Confirmed Animal Carcinogen with Unknown Relevance to Humans
USA ACGIH	BEI (BLV)	200 µg/l Parameter: Lead - Medium: blood - Sampling time: not critical (Note: Persons applying this BEI are encouraged to counsel female workers of child-bearing age about the risk of delivering a child with a PbB (lead in blood level) over the current CDC reference value.)
USA NIOSH	NIOSH REL (TWA)	0.05 mg/m ³
USA IDLH	IDLH	100 mg/m ³
USA OSHA	OSHA PEL (TWA) [1]	50 µg/m ³
USA OSHA	OSHA Action Level/Excursion Limit	30 µg/m ³ (Action Level, see 29 CFR 1910.1025)
Tin (7440-31-5)		
USA ACGIH	ACGIH OEL TWA	2 mg/m ³ (inhalable particulate matter)
USA NIOSH	NIOSH REL (TWA)	2 mg/m ³
USA IDLH	IDLH	100 mg/m ³
Copper (7440-50-8)		
USA ACGIH	ACGIH OEL TWA	0.2 mg/m ³ (fume)
USA NIOSH	NIOSH REL (TWA)	1 mg/m ³ (dust and mist) 0.1 mg/m ³ (fume)
USA IDLH	IDLH	100 mg/m ³ (dust, fume and mist)
USA OSHA	OSHA PEL (TWA) [1]	0.1 mg/m ³ (fume) 1 mg/m ³ (dust and mist)
Selenium (7782-49-2)		
USA ACGIH	ACGIH OEL TWA	0.2 mg/m ³
USA NIOSH	NIOSH REL (TWA)	0.2 mg/m ³

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USA IDLH	IDLH	1 mg/m ³
Arsenic (7440-38-2)		
USA ACGIH	ACGIH OEL TWA	0.01 mg/m ³
USA ACGIH	ACGIH chemical category	Confirmed Human Carcinogen
USA ACGIH	BEI (BLV)	35 µg As/L Parameter: Inorganic arsenic plus methylated metabolites - Medium: urine - Sampling time: end of workweek (background)
USA NIOSH	NIOSH REL (Ceiling)	0.002 mg/m ³
USA IDLH	IDLH	5 mg/m ³
Antimony (7440-36-0)		
USA ACGIH	ACGIH OEL TWA	0.5 mg/m ³
USA NIOSH	NIOSH REL (TWA)	0.5 mg/m ³
USA IDLH	IDLH	50 mg/m ³
USA OSHA	OSHA PEL (TWA) [1]	0.5 mg/m ³
Polyvinyl chloride (9002-86-2)		
USA ACGIH	ACGIH OEL TWA	1 mg/m ³ (respirable particulate matter)
USA ACGIH	ACGIH chemical category	Not Classifiable as a Human Carcinogen
Silica, amorphous (7631-86-9)		
USA NIOSH	NIOSH REL (TWA)	6 mg/m ³
USA IDLH	IDLH	3000 mg/m ³
USA OSHA	OSHA PEL (TWA) [1]	6 mg/m ³
USA OSHA	OSHA PEL (TWA) [2]	20 mppcf (80mg/m ³ /%SiO ₂)

8.2. Exposure Controls

Appropriate Engineering Controls

: Ensure adequate ventilation, especially in confined areas. Ensure all national/local regulations are observed. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

Personal Protective Equipment

: Gloves. Protective clothing. Protective goggles. Insufficient ventilation: wear respiratory protection. Face shield.



Materials for Protective Clothing

: Chemically resistant materials and fabrics. Corrosion-proof clothing.

Hand Protection

: Wear protective gloves.

Eye and Face Protection

: Chemical safety goggles and face shield.

Skin and Body Protection

: Wear suitable protective clothing.

Respiratory Protection

: If exposure limits are exceeded or irritation is experienced, approved respiratory protection should be worn. In case of inadequate ventilation, oxygen deficient atmosphere, or where exposure levels are not known wear approved respiratory protection.

Consumer Exposure Controls

: Avoid contact during pregnancy/while nursing.

Other Information

: When using, do not eat, drink or smoke.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on Basic Physical and Chemical Properties

Physical State	: Liquid
Appearance	: No data available
Odor	: No data available
Odor Threshold	: No data available
pH	: No data available
Evaporation Rate	: No data available
Melting Point	: No data available
Freezing Point	: No data available
Boiling Point	: No data available
Flash Point	: No data available
Auto-ignition Temperature	: No data available

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Decomposition Temperature	: No data available
Flammability (solid, gas)	: Not applicable
Vapor Pressure	: No data available
Relative Vapor Density at 20°C	: No data available
Relative Density	: No data available
Solubility	: No data available
Partition Coefficient: N-Octanol/Water	: No data available
Viscosity	: No data available

9.2. Other Information

No additional information available

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

Batteries are non-reactive under normal conditions of use, storage and transport. If damaged or opened, may be corrosive to metals. Contact with metals may evolve flammable hydrogen gas. May react exothermically with water releasing heat. Adding an acid to a base or base to an acid may cause a violent reaction.

10.2. Chemical Stability

Stable under recommended handling and storage conditions (see section 7).

10.3. Possibility of Hazardous Reactions

Hazardous polymerization will not occur.

10.4. Conditions to Avoid

Do not heat, expose to fire, disassemble, short circuit, immerse in water, or overcharge batteries. Direct sunlight, extremely high or low temperatures, and incompatible materials.

10.5. Incompatible Materials

For exposure to the internal contents of the battery: Oxidizers. Metals. May be corrosive to metals. Bases. Reducing agents. Alkalis.

10.6. Hazardous Decomposition Products

Thermal decomposition may produce: Metal oxides. Sulfur oxides. Carbon oxides (CO, CO₂). Nitrous fumes. Nitric acid. Aldehydes.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on Toxicological Effects

Acute Toxicity (Oral): Harmful if swallowed.

Acute Toxicity (Dermal): Not classified

Acute Toxicity (Inhalation): Not classified

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ATE (Oral)	1,398.22 mg/kg body weight
Sulfuric acid (7664-93-9)	
LD50 Oral Rat	2140 mg/kg
Tin (7440-31-5)	
LD50 Dermal Rat	> 2000 mg/kg
Copper (7440-50-8)	
LC50 Inhalation Rat	> 5.11 mg/l/4h
Selenium (7782-49-2)	
LD50 Oral Rat	6700 mg/kg
ATE (Oral)	100.00 mg/kg body weight
ATE (Dust/Mist)	0.50 mg/l/4h
Lead oxide (PbO ₂) (1309-60-0)	
ATE (Oral)	500.00 mg/kg body weight
ATE (Dust/Mist)	1.50 mg/l/4h
Sulfur (7704-34-9)	
LD50 Oral Rat	> 3000 mg/kg
LD50 Dermal Rabbit	> 2000 mg/kg
LC50 Inhalation Rat	> 9.23 mg/l/4h
Arsenic (7440-38-2)	
ATE (Oral)	100.00 mg/kg body weight

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ATE (Dust/Mist)	0.50 mg/l/4h
Antimony (7440-36-0)	
LD50 Oral Rat	100 mg/kg
Silica, amorphous (7631-86-9)	
LD50 Oral Rat	7900 mg/kg
LD50 Dermal Rabbit	> 2000 mg/kg (No deaths)
Ethene, homopolymer (9002-88-4)	
LD50 Oral Rat	> 8000 mg/kg

Skin Corrosion/Irritation: Causes severe skin burns.

Serious Eye Damage/Irritation: Causes serious eye damage.

Respiratory or Skin Sensitization: Not classified

Germ Cell Mutagenicity: Not classified

Carcinogenicity: May cause cancer (oral).

Sulfuric acid (7664-93-9)	
IARC group	1
OSHA Hazard Communication Carcinogen List	In OSHA Hazard Communication Carcinogen list.
Lead (7439-92-1)	
IARC group	2A
National Toxicology Program (NTP) Status	Reasonably anticipated to be Human Carcinogen.
OSHA Hazard Communication Carcinogen List	In OSHA Hazard Communication Carcinogen list.
Polypropylene (9003-07-0)	
IARC group	3
Selenium (7782-49-2)	
IARC group	3
Lead oxide (PbO₂) (1309-60-0)	
IARC group	2A
OSHA Hazard Communication Carcinogen List	In OSHA Hazard Communication Carcinogen list.
Arsenic (7440-38-2)	
IARC group	1
National Toxicology Program (NTP) Status	Known Human Carcinogens.
OSHA Hazard Communication Carcinogen List	In OSHA Hazard Communication Carcinogen list.
Polyvinyl chloride (9002-86-2)	
IARC group	3
Silica, amorphous (7631-86-9)	
IARC group	3
Ethene, homopolymer (9002-88-4)	
IARC group	3

Reproductive Toxicity: May damage fertility or the unborn child. May cause harm to breast-fed children. (This material or its emissions may appear in breast milk of nursing mothers.)

Specific Target Organ Toxicity (Single Exposure): Not classified

Arsenic (7440-38-2)	
LOAEL (oral,rat)	5 mg/kg body weight
LOAEL (dermal,rat/rabbit)	300 mg/kg body weight

Specific Target Organ Toxicity (Repeated Exposure): Causes damage to organs (hematopoiesis, central nervous system, kidneys) through prolonged or repeated exposure (oral).

Aspiration Hazard: Not classified

Symptoms/Injuries After Inhalation: Exposure to materials housed in battery: May be corrosive to the respiratory tract. May be harmful if inhaled.

Symptoms/Injuries After Skin Contact: Exposure to materials housed in battery: Causes severe irritation which will progress to chemical burns. May cause an allergic skin reaction.

Symptoms/Injuries After Eye Contact: Exposure to materials housed in battery: Causes permanent damage to the cornea, iris, or conjunctiva.

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Symptoms/Injuries After Ingestion: Exposure to materials housed in battery: May cause burns or irritation of the linings of the mouth, throat, and gastrointestinal tract. Harmful if swallowed.

Chronic Symptoms: None expected under normal conditions of use. Exposure to materials housed in battery: May cause cancer (oral). May damage fertility or the unborn child. Causes damage to organs (hematopoiesis, central nervous system, kidneys) through prolonged or repeated exposure (oral).

Lead: Exposure can result in lassitude (weakness, exhaustion), insomnia; facial pallor; anorexia, weight loss, malnutrition; constipation, abdominal pain, colic; anemia; gingival lead line; tremor; encephalopathy; kidney disease; hypertension.

Tin: Has been shown to increase incidence of sarcoma in animal tests. Chronic exposure to tin dusts and fume may result in "stannosis", a mild form of pneumoconiosis.

Antimony: Exposure to antimony dusts and fume may result in irritation eyes, skin, nose, throat, mouth; cough; dizziness; headache; nausea, vomiting, diarrhea; stomach cramps; insomnia; anorexia; unable to smell properly.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecology - General : Not classified. The materials housed inside this battery are very toxic to the aquatic environment.

Sulfuric acid (7664-93-9)	
LC50 Fish 1	500 mg/l (Exposure time: 96 h - Species: Brachydanio rerio [static])
EC50 - Crustacea [1]	29 mg/l
LC50 Fish 2	42 mg/l (Exposure time: 96 h - Species: Gambusia affinis [static])
NOEC Chronic Fish	0.025 mg/l
Lead (7439-92-1)	
LC50 Fish 1	0.44 mg/l (Exposure time: 96 h - Species: Cyprinus carpio [semi-static])
EC50 - Crustacea [1]	600 µg/l (Exposure time: 48 h - Species: water flea)
LC50 Fish 2	1.17 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [flow-through])
Copper (7440-50-8)	
LC50 Fish 1	0.0068 – 0.0156 mg/l (Exposure time: 96 h - Species: Pimephales promelas)
EC50 - Crustacea [1]	0.03 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])
EC50 Other Aquatic Organisms 1	0.0426 (0.0426 – 0.0535) mg/l (Exposure time: 72 h - Species: Pseudokirchneriella subcapitata [static])
LC50 Fish 2	< 0.3 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static])
EC50 Other Aquatic Organisms 2	0.031 (0.031 – 0.054) mg/l (Exposure time: 96 h - Species: Pseudokirchneriella subcapitata [static])
Selenium (7782-49-2)	
LC50 Fish 1	> 100 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [semi-static])
Sulfur (7704-34-9)	
LC50 Fish 1	866 mg/l (Exposure time: 96 h - Species: Brachydanio rerio [static])
EC50 - Crustacea [1]	736 mg/l (Exposure time: 48 h - Species: Daphnia magna)
LC50 Fish 2	14 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus [static])
Antimony (7440-36-0)	
LC50 Fish 1	6.2 (6.2 – 8.3) mg/l (Exposure time: 96 h - Species: Cyprinodon variegatus)
EC50 - Crustacea [1]	5.3 mg/l (Exposure time: 48 h - Species: Daphnia magna)
NOEC Chronic Crustacea	4.16 mg/l Exposure time: 28 days - Species: Daphnia magna)
Silica, amorphous (7631-86-9)	
LC50 Fish 1	5000 mg/l (Exposure time: 96 h - Species: Brachydanio rerio [static])
EC50 - Crustacea [1]	7600 mg/l (Exposure time: 48 h - Species: Ceriodaphnia dubia)

12.2. Persistence and Degradability

Motive Power Flooded Lead Acid Battery	
Persistence and Degradability	May cause long-term adverse effects in the environment.
Copper (7440-50-8)	
Persistence and Degradability	Not readily biodegradable.

12.3. Bioaccumulative Potential

Motive Power Flooded Lead Acid Battery	
Bioaccumulative Potential	Not established.
Sulfuric acid (7664-93-9)	

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BCF Fish 1	(no bioaccumulation)
Silica, amorphous (7631-86-9)	
BCF Fish 1	(no bioaccumulation expected)

12.4. Mobility in Soil

No additional information available

12.5. Other Adverse Effects

Other Information : Avoid release to the environment.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste Treatment Methods

Waste Treatment Methods: Seal leaking cell/battery in a plastic bag along with neutralizing material such as sodium bicarbonate, soda lime, or baking soda. Use appropriate personal protective equipment such as SCBA or Air Purifying respirator with acid gas cartridges. Follow local, federal, and state requirements for waste disposal. Follow National Emergency Response Guide, #138 for cells involved in an accident, have vented, or have exploded.

Sewage Disposal Recommendations: Disposal must be done according to official regulations.

Waste Disposal Recommendations: Dispose of contents/container in accordance with local, regional, national, and international regulations.

Additional Information: Batteries should be completely discharged prior to disposal and/or the terminals taped or capped to prevent short circuit. Container may remain hazardous when empty. Continue to observe all precautions.

Ecology - Waste Materials: Avoid release to the environment. This material is hazardous to the aquatic environment. Keep out of sewers and waterways.

SECTION 14: TRANSPORT INFORMATION

The shipping description(s) stated herein were prepared in accordance with certain assumptions at the time the SDS was authored, and can vary based on a number of variables that may or may not have been known at the time the SDS was issued.

14.1. In Accordance with DOT

Proper Shipping Name : BATTERIES, WET, FILLED WITH ACID
 Hazard Class : 8
 Identification Number : UN2794
 Label Codes : 8
 Marine Pollutant : Marine pollutant
 ERG Number : 154



14.2. In Accordance with IMDG

Proper Shipping Name : BATTERIES, WET, FILLED WITH ACID
 Hazard Class : 8
 Identification Number : UN2794
 Label Codes : 8
 EmS-No. (Fire) : F-A
 EmS-No. (Spillage) : S-B
 Marine Pollutant : Marine pollutant



14.3. In Accordance with IATA

Proper Shipping Name : BATTERIES, WET, FILLED WITH ACID
 Identification Number : UN2794
 Hazard Class : 8
 Label Codes : 8
 ERG Code (IATA) : 8L



SECTION 15: REGULATORY INFORMATION

15.1. US Federal Regulations

Motive Power Flooded Lead Acid Battery	
SARA Section 311/312 Hazard Classes	Health hazard - Carcinogenicity Health hazard - Specific target organ toxicity (single or repeated exposure) Health hazard - Reproductive toxicity Physical hazard - Corrosive to metals Health hazard - Serious eye damage or eye irritation Health hazard - Skin corrosion or Irritation

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Sulfuric acid (7664-93-9)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Listed on the United States SARA Section 302 Subject to reporting requirements of United States SARA Section 313	
CERCLA RQ	1000 lb
SARA Section 302 Threshold Planning Quantity (TPQ)	1000 lb
SARA Section 313 - Emission Reporting	1 % (acid aerosols including mists, vapors, gas, fog, and other airborne forms of any particle size)
Water (7732-18-5)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active	
Lead (7439-92-1)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active Subject to reporting requirements of United States SARA Section 313	
CERCLA RQ	10 lb no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is >100 µm
SARA Section 313 - Emission Reporting	0.1 %
Tin (7440-31-5)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active	
Polypropylene (9003-07-0)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active	
EPA TSCA Regulatory Flag	XU - XU - indicates a substance exempt from reporting under the Chemical Data Reporting Rule, (40 CFR 711).
Copper (7440-50-8)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active Subject to reporting requirements of United States SARA Section 313	
CERCLA RQ	5000 lb no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is >100 µm
SARA Section 313 - Emission Reporting	1 %
Selenium (7782-49-2)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active Subject to reporting requirements of United States SARA Section 313	
CERCLA RQ	100 lb no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is >100 µm
SARA Section 313 - Emission Reporting	1 %
Lead oxide (PbO₂) (1309-60-0)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active	
Sulfur (7704-34-9)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active	
Arsenic (7440-38-2)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active Subject to reporting requirements of United States SARA Section 313	
CERCLA RQ	1 lb no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is >100 µm
SARA Section 313 - Emission Reporting	0.1 %
Antimony (7440-36-0)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active Subject to reporting requirements of United States SARA Section 313	
CERCLA RQ	5000 lb no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is >100 µm
SARA Section 313 - Emission Reporting	1 %
Polyvinyl chloride (9002-86-2)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active	

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EPA TSCA Regulatory Flag	XU - XU - indicates a substance exempt from reporting under the Chemical Data Reporting Rule, (40 CFR 711).
Silica, amorphous (7631-86-9)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active	
Ethene, homopolymer (9002-88-4)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active	
EPA TSCA Regulatory Flag	XU - XU - indicates a substance exempt from reporting under the Chemical Data Reporting Rule, (40 CFR 711).

15.2. US State Regulations

Sulfuric acid (7664-93-9)
U.S. - Massachusetts - Right To Know List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List U.S. - Pennsylvania - RTK (Right to Know) List
Lead (7439-92-1)
U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List U.S. - Massachusetts - Right To Know List U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List
Tin (7440-31-5)
U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List U.S. - Massachusetts - Right To Know List
Copper (7440-50-8)
U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List U.S. - Massachusetts - Right To Know List U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List
Selenium (7782-49-2)
U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List U.S. - Massachusetts - Right To Know List U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List
Lead oxide (PbO₂) (1309-60-0)
U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Massachusetts - Right To Know List
Sulfur (7704-34-9)
U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List U.S. - Massachusetts - Right To Know List
Arsenic (7440-38-2)
U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List U.S. - Massachusetts - Right To Know List U.S. - Pennsylvania - RTK (Right to Know) - Special Hazardous Substances U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List
Antimony (7440-36-0)
U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List U.S. - Massachusetts - Right To Know List U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List
Polyvinyl chloride (9002-86-2)
U.S. - New Jersey - Right to Know Hazardous Substance List
Silica, amorphous (7631-86-9)

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U.S. - Pennsylvania - RTK (Right to Know) List

U.S. - Massachusetts - Right To Know List

California Proposition 65



WARNING: This product can expose you to Lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

Chemical Name (CAS No.)	Carcinogenicity	Developmental Toxicity	Female Reproductive Toxicity	Male Reproductive Toxicity
Sulfuric acid (7664-93-9)	X			
Lead (7439-92-1)	X	X	X	X

SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

Date of Preparation or Latest Revision : 08/30/2022

Other Information : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200

GHS Full Text Phrases:

H228	Flammable solid
H272	May intensify fire; oxidizer
H290	May be corrosive to metals
H301	Toxic if swallowed
H302	Harmful if swallowed
H314	Causes severe skin burns and eye damage
H315	Causes skin irritation
H318	Causes serious eye damage
H331	Toxic if inhaled
H332	Harmful if inhaled
H335	May cause respiratory irritation
H350	May cause cancer
H351	Suspected of causing cancer
H360	May damage fertility or the unborn child
H362	May cause harm to breast-fed children
H370	Causes damage to organs
H372	Causes damage to organs through prolonged or repeated exposure
H373	May cause damage to organs through prolonged or repeated exposure
H400	Very toxic to aquatic life
H401	Toxic to aquatic life
H402	Harmful to aquatic life
H410	Very toxic to aquatic life with long lasting effects
H412	Harmful to aquatic life with long lasting effects

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

SDS US (GHS HazCom)