

Safety Data Sheet (SDS)

Sealed Lead Acid: AGM

The information and recommendations below are believed to be accurate at the date of document preparation. Ascent Battery Supply makes no warranty or merchantability or any other warranty, express or implied, with respect to this information and assumes no liability resulting from its use. This SDS provides guidelines for safe use and handling of product. It does not, and cannot, advise all possible situations. All specific uses of this product must be evaluated by the end user to determine if additional safety precautions should be taken.

The following information is provided as a courtesy to Ascent customers.

SECTION 1 - IDENTIFICATION

Product Name	AGM Battery: Stand-By, UPS, High-Rate, Telecomm		
Common Name(s)	Absorbed Glass Mat(AGM) - Battery		
Synonyms	SLA, VRLA, AGM, Absorbed Glass Mat, Sealed Recombinant		
DOT Description	Wet Battery, non-spillable		
Chemical Name	Sealed Lead Acid, Secondary Battery		
Distributed By	Ascent Battery Supply, LLC	Emergency Number	CHEMTREC 1-800-424-9300
Address	1325 Walnut Ridge Drive Hartland, Wisconsin 53029	Overseas Emergency Number	CHEMTREC +1 703-741-5970

SECTION 2 – HAZARD(S)

Unusual Fire and Explosion Hazards	Hydrogen and oxygen gases are produced in the cells during normal battery operation and may increase fire risk in poorly ventilated areas (hydrogen is flammable and oxygen supports combustion). These gases enter the air through the vent caps. To avoid the chance of fire or explosion, keep sparks and other sources of ignition away from the battery.
Hazard Statements	Contact with internal components may cause irritation or severe burns. Irritating to eyes, respiratory system, and skin.
Symbols	C (Corrosive)



SECTION 3 – COMPOSITION

Chemical Name	CAS No.	Percentage %
Lead and/or Lead Oxide	7439-92-1/1309-60-0	50 - 75
Electrolyte (Sulfuric Acid) 1.400 sg	7664-93-9	5 - 17
AGM Separator	n/a	3 - 4
Tin	7440-31-5	0 - 1
Antimony	7440-36-0	0 - 0.1
Calcium	7440-70-2	0 - 0.15
Arsenic	7440-38-2	0 - 0.1
ABS/Polypropylene	9003-56-9/9003-07-0	2 - 10

SECTION 4 – FIRST AID MEASURES

Inhalation	Remove from exposure, move to fresh air, and apply oxygen if breathing is difficult. Consult physician immediately.
Eyes and Skin	Skin: Wash with plenty of soap and water for at least 15 minutes. Remove any contaminated clothing. Consult physician if skin irritation appears. Eyes: Flush with plenty of water immediately for at least 15 minutes, lifting lower and upper eyelids occasionally. Consult a physician immediately.
Ingestion	Do not induce vomiting. Give large quantities of water. Never give anything by mouth to an unconscious person. Consult a physician immediately.

SECTION 5 – FIRE-FIGHTING MEASURES

Extinguisher Media	Dry chemical type extinguishers or water
Special Fire-Fighting Procedures	Full protective clothing and NIOSH-approved self-contained breathing apparatus with full face shield. Extinguish fire with agent suitable for surrounding combustible materials. Cool exterior of battery if exposed to fire to prevent or stop release of lead chemicals and fumes. Firefighting runoff and dilution water may be toxic and corrosive. Do not use carbon dioxide directly on cells.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

- Not applicable under normal conditions; in case of damage resulting in breaking of the battery container, see Section 8.

SECTION 7 – HANDLING AND STORAGE

1. Store in a cool, dry place in closed containers. Keep away from ignition sources and high temperatures. Avoid skin or eye contact. Avoid breathing vapors. Do not use near sources of ignition.
2. Store lead/acid batteries with adequate ventilation. Room ventilation is required for batteries utilized for standby power generation. Never recharge batteries in an unventilated, enclosed space. Do not remove vent covers.
3. To avoid damage to terminals and seals, do not double stack industrial batteries.

SECTION 8 – EXPOSURE/PERSONAL PROTECTION

Respiratory Protection	None required under normal handling conditions. During battery formation (high-rate charge condition), acid mist can be generated which may cause respiratory irritation. Also, if acid spillage occurs in a confined space, exposure may occur. If irritation occurs, wear a respirator suitable for protection against acid mist.
Gloves	Vinyl coated, VC, gauntlet type gloves with rough finish are preferred.
Safety Glasses	Chemical splash goggles are preferred. Also acceptable are "visor-gogs" or a chemical face shield worn over safety glasses.
Footwear	Safety shoes are recommended when handling batteries. All footwear must meet requirements of ANSI Z41.1 -Rev.1972
Other	None

SECTION 9 – PHYSICAL/CHEMICAL PROPERTIES

Boiling Point	Electrolyte: 110°C (230°F)	Melting Point	Lead: 327°C (621°F)
Vapor Pressure	Electrolyte: 10 mmHg	Vapor Density	>1
Specific Gravity	Electrolyte: 1.27-1.33	Solubility in Water	Electrolyte: 100%
Appearance and Odor	Electrolyte: clear liquid; acidic odor	Case:	case with terminals, odorless

SECTION 10 – STABILITY & REACTIVITY

Flash Point	259°C (Hydrogen)	Flammable Limits in Air (% by vol)	N/A
Reactivity in Water	N/A	Evaporation Rate	Acid: <1 (n-BuAc=1)
Percent Volatile by Volume	N/A	Auto-Ignition Temperature	580°C (Hydrogen)
Generally Stable	Avoid sparks, other sources of ignition, and electrical shorting		
Incompatibility (materials to avoid)	Lead/Lead Compounds: potassium (K), carbides, sulfides, peroxides, phosphorus (P), and sulfur. Battery Electrolyte (Acid): combustible materials, strong reducing agents, most metals, carbides, organic materials, chlorates, nitrates, picrate and fulminates.		

SECTION 11 – TOXICOLOGICAL INFORMATION

Threshold Limit Value

OSHA Air Exposure Limits ($\mu\text{g}/\text{m}^3$)

Lead/Lead Compounds	50
Tin	2000
Dilute Sulfuric Acid	1000

Signs and Symptoms of Exposure

Acute Effects: Over exposure to lead may lead to loss of appetite, constipation, sleeplessness and fatigue. Over exposure to acid may lead to skin irritation, corneal damage of the eyes and upper respiratory system.
Chronic Effects: Lead and its components may cause damage to kidneys and nervous system.
Acid and its components may cause lung damage and pulmonary conditions.

Medical Conditions Possibly Caused by Exposure

Potential to Cause Cancer: The International Agency for Research on Cancer has classified "strong inorganic acid mist containing sulfuric acid" as a Category 1 carcinogen, a substance that is carcinogenic to humans. This classification does not apply to liquid forms of sulfuric acid or sulfuric acid solutions contained within a battery. Inorganic acid mist is not generated under normal use of this product. Misuse of the product, such as overcharging, may however result in the generation of sulfuric acid mist

Routes of Entry

1. Inhalation: Acid mist from formation process may cause respiratory irritation.
2. Skin Contact: Acid may cause irritation, burns and/or ulceration.
3. Skin Absorption: Not a significant route of entry.
4. Eye Contact: Acid may cause severe irritation, burns, cornea damage and/or blindness.
5. Ingestion: Acid may cause irritation of mouth, throat, esophagus, and stomach.

SECTION 12 – ECOLOGICAL INFORMATION

Hazardous Decomposition Products

1. Lead/Lead Compounds: Oxides of lead and sulfur.
2. Battery Electrolyte (Acid): Hydrogen, sulfur dioxide, and sulfur trioxide.

SECTION 13 - DISPOSAL

1. Battery electrolyte (acid): Neutralize as above for a spill, collect residue, and place in a drum or suitable container. Dispose of as hazardous waste.
2. Do not flush lead contaminated acid to sewer.
3. Batteries: Send to lead smelter for reclamation following applicable Federal, State and local regulations. Product can be recycled along with automotive (SLI) lead acid batteries.

SECTION 14 – TRANSPORT

U.S.DOT Lead Acid batteries that are classified as non-spillable have been tested and meet the non-spillable criteria listed in CFR 49, 173.159 (f) and 173.159a (d) (1).

Non-spillable batteries are excluded from CFR 49, Subchapter C requirements, provided that the following criteria are met:

- The batteries must be securely packed in strong outer packaging and meet the requirements of CFR 49 173.159a.
- The batteries' terminals must be protected against short circuit
- Each battery and their outer packaging must be plainly and durably marked "NONSPILLABLE" or "NONSPILLABLE BATTERY".

The exception from CFR 49, Subchapter C means shipping papers need not show proper shipping name, hazard class, UN number, and packing group. Hazardous warning labels are not required when transporting a non-spillable battery.

IATA Lead Acid batteries that are classified as non-spillable have been tested and meet the non-spillable criteria listed in IATA Packing Instruction 872 and Special Provision A67. Non-spillable batteries must be packed according to IATA Packing Instruction 872. This means shipping papers need not show proper shipping name, hazard class, UN number, and packing group. Hazardous warning labels are not required when transporting a non-spillable battery.

These batteries are excluded from all IATA regulations provided that battery terminals are protected against short circuits.

IMDG Lead Acid batteries that are classified as non-spillable have been tested and meet the non-spillable criteria listed in Special Provision 238. Non-spillable batteries must be packed according to IMDG Packing Instruction P003. This means shipping papers need not show proper shipping name, hazard class, UN number, and packing group. No hazardous warning labels are required when transporting a non-spillable battery.

These batteries are excluded from all IMDG code provided that the batteries' terminals are protected against short circuits per PP16.

SECTION 15 – REGULATORY INFORMATION

Batteries in this category may be listed with UL in the 'recognized component' class.

SECTION 16 - OTHER

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