CAMDEN Electronics Ltd.

Material Safety Data Sheet

Valve Regulated Lead Acid Gel Batteries

HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

Hazardous Components Specific Chemical Identity (Common Name (s))	CAS Number	OSHA PEL	ACGIH TLV	Range Percent By Weight	Average
Lead	7439-92-1	50 µg/m³	50 µg/m³	45-55%	50%
Sulfuric Acid	7664-93-9	100 µg/m³	1.00 mg/m³	19-25%	22%
Amorphous Silica	7631-86-9	5mg/m³	10 µg/m³	8-10% of Acid Wt	9%
Lead Oxide	1309-60-0	50 µg/m³	500 µg/m³	19-23%	21%
Lead Sulfate	7446-14-2	50 µg/m³	10 µg/m³	<1 %	<1%
Calcium	7440-70-2	100 µg/m³	1.0 mg/m³	0-0.1%	<0.1%
Tin	7440-70-2	20 µg/m³	2.0 mg/m³	0-0.1%	<0.1%

PHYSICAL/CHEMICAL CHARACTERISTICS

Electrolyte (Sulfuric Acid):
Appearance and Odor: Clear, Odorless, colorless liquid
Boiling Point: 112 – 115° C (235 -240 ° F)
Evaporation Rate (Butyl Acetate=1): less than 1.0
Melting Point: N/A
Solubility in Water: 100%
Specific Gravity ($H_20=1$): 1.270 – 1.330
Vapor Density (AIR=1): Greater than 1
Vapor Pressure (mm Hg): 10

FIRE AND EXPLOSION HAZARD DATA

Flash Point (Method Used): Non-Flammable
Extinguishing Media: Class ABC extinguisher,
Flammable Limits: *Hydrogen Gas
LEL: 4% UEL 74%
NOTE: CO_2 may be used, but not directly on the cell. The thermal shock may cause cracking of the battery case and/or cases.
*** Hydrogen gas may be generated during battery charging.**

REACTIVITY DATA

Stability: Stable
Condition to Avoid: Prolonged overcharging, sources of ignition

Incompatibility (Materials to Avoid): Sulfuric Acid: Contact with combustibles and organic materials may cause fire and explosion. Also reacts violently with strong reducing agents, metals, strong oxidizers and water. Contact with metals may produce toxic sulfur dioxide fumes and may release flammable hydrogen gas.

Hazardous Decomposition of By-Products: Sulfuric Acid: Excessive overcharging or fire may create Sulfur trioxide, carbon monoxide, sulfuric acid mist, sulfur dioxide, and hydrogen.
Lead Compounds: Contact with strong acid or base or presence of nascent hydrogen may generate highly toxic arsine gas.

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HEALTH HAZARD DATA

Route(s) of Entry: Not Applicable under normal use.

Carcinogenicity:
Sulfuric Acid: 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 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.
Arsenic: Listed by National Toxicology Program (NTP), IARC, OSHA and NIOSH as a carcinogen only after prolonged exposure at high levels.

Signs and Symptoms of Exposure: Avoid contact, with absorbed electrolyte (sulfuric acid) may cause irritation of eyes, nose and throat. Contact with eyes and skin causes irritation and skin burns. Absorbed electrolyte is corrosive.

Medical Conditions Generally Aggravated by Exposure: Pregnant women and children must be protected from lead exposure.

Health Hazards (Acute and Chronic): Do not open the battery. Avoid any contact with internal components. Internal components include lead and absorbed electrolyte. Electrolyte is corrosive and contact may cause skin irritation and chemical burns.

Emergency and First Aid Procedures: (contact with electrolyte)
1) Flush contacted area with large amounts of water for at least 15 minutes. Remove contaminated clothing and obtain medical attention if necessary. Eye wash and/or emergency shower should be readily available.
2) If swallowed, give large volumes of water. **DO NOT** induce vomiting, obtain medical treatment.

PRECAUTIONS FOR SAFE HANDLING AND USE

Steps to be Taken in Case Material is Released or Spilled: Electrolyte material is corrosive. Contains sulfuric acid. Neutralize any spilled material. Reference 1996 North American Emergency Response Guidebook, #154.

Waste Disposal Method: Lead-acid batteries are completely recyclable. For information on returning batteries to Haze for recycling, contact your Haze Representative. Dispose of any collected material in accordance with local, state or applicable federal regulations.

Precautions to be Taken in Handling and Storing: Store away from reactive material as defined in Section V, Reactivity Data. Place cardboard between layers of stacked batteries to avoid damage and short circuit. Do not allow metallic materials to simultaneously contact both terminals.

Other Precautions: If battery case is broken, avoid direct contact with internal components. Keep away from ignition sources during charging.

CONTROL MEASURES

Respiratory Protection (Specific Type): N/A

Ventilation: Must be provided when charging in an enclosed area.

Protective Gloves: Recommended

Eye Protection: Recommended

Other Protective Clothing or Equipment: N/A

Work Hygienic Practices: Good Personal hygiene and work practices are recommended.

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TRANSPORT INFORMATION

Proper Shipping Name
Batteries, Wet, Non-spillable. Electric storage
Emergency Action Code
EAC None
UN. No. 2800
Hazard Class 8
Road/Rail (ADR/RID)
Proper Shipping Name Batteries, Wet, Non-spillable. Electric storage
ADR UN No 2800
ADR Hazard Class 8 ADR Item No. 81*(c)
ADR/RID No 80 Tremcard None
Sea (IMDG)
Proper Shipping Name Batteries, Non-spillable. Electric storage
Not Classified as Hazardous for Sea Transport
Air (ICAO/IATA)
Proper Shipping Name Batteries, Non-spillable. Electric storage
Not Classified as Hazardous for Air Transport

OTHER REGULATORY INFORMATION

Under normal conditions of battery use, internal components will not present a health hazard. The information contained in this Safety Data Sheet is provided for battery electrolyte (acid) and lead, for exposure that may occur during battery production or container breakage or under extreme heat conditions such as fire.
These batteries are not considered hazardous for air (ICAO/IATA) by reason of special provision A67; they are also not considered hazardous for sea (IMO/IMDG) by reason of an exemption on page 3121 of the IMDG Code (Vol. IV). This Safety Data Sheet and the information therein does not constitute the user's own assessment of work place risk as required by other Health & Safety legislation.

NFPA Hazard Rating	Sulfuric Acid	Lead
Health (Blue)	3	3
Flammability (Red)	0	0
Reactivity (Yellow)	2	0

Note: Sulfuric acid is water-reactive if concentrated.

U.S. DOT: The Non-Spillable lead acid battery complies with the provisions listed in 49CFR173.159(d) therefore must not be marked with an identification number.

RCRA: Spent lead-acid batteries are not regulated as hazardous waste when recycled. Spilled sulfuric acid is a characteristic hazardous waste, EPA hazardous waste number D002 (corrosivity).

CERCLA (Superfund) and EPCRA (Emergency Planning and Community Right to Know ACT)

a) Reportable Quantity (RQ) for spilled 100% sulfuric acid is 1000 lbs.
b) Sulfuric acid is a listed "Extremely Hazardous Substance" under EPCRA with a Threshold Planning Quantity (TPQ) of 1000 lbs.
c) EPCRA Section 312 Tier II reporting required for batteries if sulfuric acid is present in quantities of 500 lbs or more and/or lead is present in quantities of 10,000 lbs or more.

California Prop 65: This product contains chemicals known to the State of California to cause cancer, birth defects and other reproductive harm.

This information is accurate to the best of Camden Electronic's knowledge or obtained from sources believed by Camden to be accurate. Before using any product, read all warnings and directions on the label.

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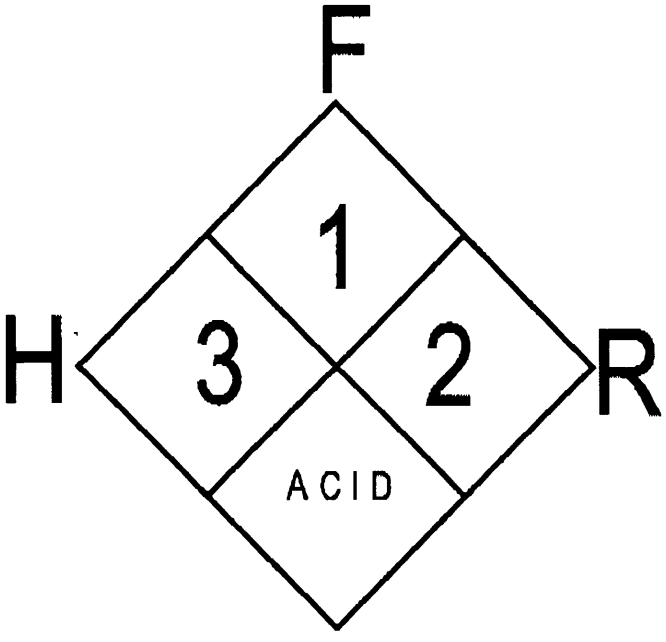
Camden BEL & BEG

Our AGM & GEL batteries comply with IATA/IACO Special Provision A67 for air transport. Recognised by DOT as "Dry Charge" 49 CFR 173-159 for surface transport. Classified per MG Amendment 27 as non-hazardous material for water transport. Also meets UL924 as a recognised component.



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