

MATERIAL SAFETY DATA SHEET

GEL

Material Safety Data Sheet

Data Sheet No: VRLA GEL Issue 4

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1 Identification of the substance

Product name: Valve Regulated Lead Acid, Gelled Electrolyte Battery



Trade name: Sealed Lead acid battery

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2 Composition / Ingredient Data

Hazardous Components Chemical Identity	CAS Number	OSHA PEL	ACGIH TLV	Percent By Weight	EC Number	Average
Lead	7439-92-1	50 µg/m ³	50 µg/m ³	45-55%	231-100-4	50%
Sulfuric Acid	7664-93-9	100 µg/m ³	1.00 mg/m ³	19-24%	231-639-5	21%
Lead Oxide	1309-60-0	50 µg/m ³	500 µg/m ³	19-23%	215-174-5	21%

	Risk Phrases	CHIP Symbols	Safety Phrases
Sulphuric Acid	R61,62,20/22,33		S1/2,S26,S30,S45
Lead Oxide	R35		None

3 Hazards Identification

Odour: Not applicable
Appearance: Article as described above
Weight High Density/ Good lifting technique required

Hazards refer to internal component, i.e. lead and sulphuric acid

Contact with eyes: Causes irritation

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Contact with skin: May cause dermatitis
Inhalation: May cause irritation
Ingestion: Can cause damage to the kidneys

4 First Aid Measures

Contact with skin: Remove contaminated clothing immediately and drench affected skin with plenty of water, then wash with soap and water.

Contact with eyes: If substance has got into eyes, immediately wash out with plenty of water for at least 15 minutes.

Seek immediate medical attention.

Ingestion: Do not induce vomiting.

Seek immediate medical attention.

Inhalation: Remove patient to fresh air.
Seek medical attention if irritation persists.

5 Fire-Fighting Measures

Auto-ignition point (Hydrogen) 580° C at 760 mm Hg
Wear positive-pressure breathing apparatus
In case of fire use foam, carbon dioxide or dry agent (S43)
Flash point Hydrogen 259° C
Flammable Limits in air, Lower 4.1%
% by 3/4 vol. (Hydrogen)

Fire/explosion

Hydrogen and oxygen gases are produced in the cells during normal battery operation (hydrogen is flammable and oxygen supports combustion).

6 Accidental Release Measures

Immediate Actions: Shut off all ignition sources
Clean Up Actions: Neutralise with soda ash
Place in appropriate container
Ventilate area
Do not empty into drains (S29)

7 Handling and Storage

Under normal conditions of battery use, internal components will not present a health hazard

Handling: Keep away from heat and sources of ignition
Wash hands thoroughly after use
Avoid sparks
Avoid contact with metal jewellery and watches etc.
Do Not Remove Vent Caps
Do not double stack industrial batteries, it may cause damage.

Storage: Keep in cool and dry & Protect from heat.
Store lead acid batteries with adequate ventilation.
Room ventilation is required for batteries utilised for standby power generation.
Never re-charge batteries in an unventilated, enclosed space.

8 Exposure Controls / Personal Protection

Personal protection: Wear safety shoes with toe protector.
Where internal components are liberated use rubber or neoprene boots.
Wear goggles/safety glasses giving complete eye protection.
Respiratory protection may be required under exceptional circumstances when excessive air contamination exists.
Wear PVC mitts, gloves or gauntlets.

Exposure Limits: Lead OES / LTEL - ppm 0.15 mg/m³
Lead Dioxide OES / LTEL - ppm 0.15 mg/m³

9 Physical and Chemical Properties

Odour: Not applicable.
Appearance: Sealed Valve Regulated lead Acid Battery
State under normal temp: Solid
Flash point (Hydrogen): 259° C

Internal components

pH - (Sulphuric acid): 1.3 .
Boiling point: Battery Electrolyte 110° C, Lead 1755° C
(at 760 mm/Hg)
Melting point: Lead 327.4° C
Vapour pressure: 11.7
Vapour density: Battery Electrolyte 3.4, (air =1)
Specific gravity: Battery Electrolyte 1.3 g/cm³. (water =1)
Auto-ignition point: 580° deg C at 760 mm/Hg.
Water solubility: Battery Electrolyte is 100% soluble in water

10 Stability and Reactivity

VRLA Batteries are considered stable at normal conditions.
Keep away from heat and sources of ignition.
Incompatible with reducing agents. Incompatible with organic agents.
Decomposition products may include hydrogen.
Decomposition products may include sulphur oxides.

11 Toxicological Information

Danger of cumulative effects. (R33)
May cause severe irritation.
May cause gastro-intestinal disturbances.
Can cause damage to the mucous membranes.

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Routes of Entry:

Electrolyte: Harmful by all routes of entry.

Lead compounds: Hazardous exposure can occur only when product is heated above the melting point, oxidized or otherwise processed or damaged to create dust, vapor, or fume.

Inhalation:

Electrolyte: 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.

Ingestion:

Electrolyte: 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.

Skin Contact:

Electrolyte: Severe irritation, burns, and ulceration.

Lead compounds: Not absorbed through the skin.

Eye Contact:

Electrolyte: Severe irritation, burns, cornea damage, blindness.

Lead compounds: May cause eye irritation.

Effects of Overexposure - Acute:

Electrolyte: Severe skin irritation, damage to cornea may cause blindness, upper respiratory irritation.

Lead compounds: Symptoms of toxicity include headache, fatigue, abdominal pain, loss of appetite, muscular aches and weakness, sleep disturbances, and irritability.

Effects of Overexposure - Chronic:

Electrolyte: Possible erosion of tooth enamel; inflammation of nose, throat, and bronchial tubes.

Lead compounds: Anemia; neuropathy, particularly of the motor nerves, with wrist drop; kidney damage; reproductive changes in both males and females.

Carcinogenicity:

Electrolyte: The National Toxicology Program (NTP) and the International Agency for Research on Cancer (IARC) have 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 sulfuric acid solutions in static liquid state or to electrolyte in batteries. Batteries subjected to abusive charging at excessively high currents for prolonged periods of time without vent caps in place may create a surrounding atmosphere of the offensive strong inorganic acid mist containing sulfuric acid.

Lead compounds: Listed as a 2B carcinogen, likely in animals at extreme doses. Proof of carcinogenicity in humans is lacking at present.

Medical Conditions Generally Aggravated by Exposure:

Overexposure to sulfuric acid mist may cause lung damage and aggravate pulmonary conditions. Contact of electrolyte (water and sulfuric acid solution) with skin may aggravate skin diseases such as eczema and contact dermatitis. Contact of electrolyte (water and sulfuric acid solution) with eyes may damage cornea and/or cause blindness. Lead and its compounds can aggravate some forms of kidney, liver, and neurologic diseases.

Emergency and First Aid Procedures:

Inhalation:

Electrolyte: Remove to fresh air immediately. If breathing is difficult, give oxygen.

Lead compounds: Remove from exposure, gargle, wash nose and lips; consult physician.

Ingestion:

Electrolyte: Give large quantities of water; **do not** induce vomiting; consult physician.

Lead compounds: Consult physician immediately.

Skin:

Electrolyte: Flush with large amounts of water for at least 15 minutes; remove contaminated clothing completely, including shoes.

Lead compounds: Wash immediately with soap and water.

Eyes:

Electrolyte and Lead compounds: Flush immediately with large amounts of water for at least 15 minutes; consult physician immediately.

12 Ecological Information

Ecotoxicology - no information available. This product is not expected to present an environmental hazard if disposed of in line with the regulations.

13 Disposal Considerations

Classification: This material and/or its container must be disposed of as hazardous waste.

Disposal considerations: Do not discharge into drains or the environment, dispose to an authorised waste collection point.

14 Transport Information

We hereby certify that the Battery Supplies range of Maintenance Free Rechargeable Sealed Lead Acid batteries conform to the UN2800 classification as "Batteries, Non- Spillable, and electric storage" as a result of passing the Vibration and Pressure Differential Test described in DOT [49 CFR 173.159(d) and IATA/ICAO [Special Provision A67].

Battery Supplies having met the related conditions are EXEMPT from hazardous goods regulations for the purpose of transportation by DOT, and IATA/ICAO, and therefore are unrestricted for transportation by any means.

15 Regulatory information

Classification and labelling Not classified as hazardous for supply

16 Other 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.

Tested as per IMDG Amendment. 34-08, special provision 238 "a" and "b", Comply.

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.