

SAFETY DATA SHEET

VRLA (VALVE REGULATED LEAD ACID) BATTERY

Infosafe No.: LQ9FM
ISSUED Date : 14/05/2019
ISSUED by: GM HOLDEN LIMITED

1. IDENTIFICATION

GHS Product Identifier

VRLA (VALVE REGULATED LEAD ACID) BATTERY

Company Name

GM HOLDEN LIMITED

Address

Australia: 191 Salmon St, Port Melbourne, Vic

New Zealand: 2/118 Savill Drive, Mangere East, Auckland

Telephone/Fax Number

Tel: Aust: +61 3 9647 1111

Fax: Aust: +61 3 9647 2250

Emergency phone number

Aust: 1800 638 556 / NZ: 0800 154 666 (24hrs)

Recommended use of the chemical and restrictions on use

Electric Storage Battery

2. HAZARD IDENTIFICATION

GHS classification of the substance/mixture

Classified as Hazardous according to the Globally Harmonised System of Classification and Labelling of Chemicals (GHS) including Work, Health and Safety Regulations, Australia.

Classified as Dangerous Goods according to the Australian Code for the Transport of Dangerous Goods by Road and Rail. (7th edition)

Classified as Hazardous according to the Hazardous Substances (Minimum Degrees of Hazard) Regulations 2001, New Zealand.

Classified as Dangerous Goods for transport according to the New Zealand Standard NZS 5433:2012 Transport of Dangerous Goods on Land.

Skin Corrosion/Irritation: Category 1A

Eye Damage/Irritation: Category 1

Acute Toxicity - Inhalation: Category 4

Hazardous to the Aquatic Environment - Acute Hazard: Category 1

Hazardous to the Aquatic Environment - Long-Term Hazard: Category 1

Signal Word (s)

DANGER

Hazard Statement (s)

H314 Causes severe skin burns and eye damage.

H332 Harmful if inhaled.

H410 Very toxic to aquatic life with long lasting effects.

Pictogram (s)

Exclamation mark, Corrosion, Environment



Precautionary statement – Prevention

- P260 Do not breathe dust/fume/gas/mist/vapours/spray.
- P264 Wash contaminated skin thoroughly after handling.
- P271 Use only outdoors or in a well-ventilated area.
- P273 Avoid release to the environment.
- P280 Wear protective gloves/protective clothing/eye protection/face protection.

Precautionary statement – Response

- P301+P330+P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
- P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
- P363 Wash contaminated clothing before reuse.
- P304+P340 IF INHALED: Remove victim 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.
- P310 Immediately call a POISON CENTER or doctor/physician.
- P391 Collect spillage.

Precautionary statement – Storage

- P405 Store locked up.

Precautionary statement – Disposal

- P501 Dispose of contents/container to an approved waste disposal plant.

IMPORTANT NOTE(S)

The classification is derived from chemicals within the battery. Exposure to battery contents is not anticipated during normal storage, handling or maintenance of the battery. Accordingly, the hazards identified refer to the possible release of battery contents.

Wet Storage Battery is a manufactured article composed of lead and acid encased in polypropylene, sealed and vented with a flame arrestor to reduce flashback potential. The case color varies. These batteries contain dilute sulfuric acid, a corrosive substance, and may expel explosive gases.

Other Information

- New Zealand classification:
- 8.2B - Substance that is corrosive to dermal tissue.
- 8.3A - Substance that is corrosive to ocular tissue.
- 6.1D - Substances that are acutely toxic - Harmful(inhalation – vapours, dusts or mists)
- 9.1A - Substance that is very ecotoxic in the aquatic environment.
- 9.1A - Substance that is very ecotoxic in the aquatic environment.

This product contains Ototoxic substances. Combination with noise exposure, even at safe levels, could still cause auditory injuries and hearing loss.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients

Name	CAS	Proportion
Lead	7439-92-1	65-75 %
Sulfuric Acid	7664-93-9	7.2-10 %
Ingredients determined not to be hazardous		Balance

4. FIRST-AID MEASURES

Inhalation

Not considered a potential route of exposure for intact product, when used as intended. However, if exposure occurs to battery contents, remove affected person from contaminated area. Apply artificial respiration if not breathing. Seek medical attention.

Ingestion

Not considered a potential route of exposure for intact product, when used as intended. However, if exposure occurs to battery contents, do not induce vomiting. Wash out mouth thoroughly with water. Seek immediate medical attention.

Skin

Not considered a potential route of exposure for intact product, when used as intended. However, if exposure occurs to battery contents, remove all contaminated clothing immediately. Wash gently and thoroughly with water and non-abrasive soap for 15 minutes. Ensure contaminated clothing is washed before re-use or discard. Seek immediate medical attention.

Eye contact

Not considered a potential route of exposure for intact product, when used as intended. However, if exposure occurs to battery contents, hold eyelids apart and flush the eyes continuously with running water. Remove contact lenses. Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes. Seek immediate medical attention.

First Aid Facilities

Eye wash fountain, safety shower and normal washroom facilities.

Advice to Doctor

Treat symptomatically.

Other Information

For advice in an emergency, contact a Poisons Information Centre or a doctor at once (Phone Australia 131 126 or New Zealand 0800 764 766).

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Class ABC extinguisher, carbon dioxide, foam, halon, water spray.

Unsuitable Extinguishing Media

Do not use water jet.

Hazards from Combustion Products

Under fire conditions this product may emit toxic and/or irritating fumes, smoke and gases including lead, lead compounds and sulfuric acid fume.

Specific Hazards Arising From The Chemical

Hydrogen and oxygen gases are produced during normal battery operation and charging. These gases escape through the battery vents and may form an explosive atmosphere around the battery if ventilation is poor. Avoid open flame, sparks and other ignition sources in areas where batteries are used or stored. Sulphuric acid is an oxidizer and can ignite combustibles upon contact. Battery casing may burn if exposed to fire.

Hazchem Code

2R

Decomposition Temperature

Not available

Precautions in connection with Fire

Fire fighters should wear full protective clothing and self-contained breathing apparatus (SCBA) operated in positive pressure mode. Cool exterior of battery if exposed to fire to prevent rupture. In case of fire the product may be violently or explosively reactive. Use water spray to disperse vapours. This product should be prevented from entering drains and watercourses.

6. ACCIDENTAL RELEASE MEASURES

Emergency Procedures

Corrosive liquid within the battery. If there is spillage: Evacuate all unprotected personnel. Do not allow contact with skin and eyes. Do not breathe mist/vapour. It is essential to wear self-contained breathing apparatus (S.C.B.A) and full personal protective

equipment and clothing to prevent exposure.

Small spill: Neutralize the spill with baking soda, household ammonia and/or water. Rinse clean.

Large spill: Remove combustible materials and all sources of ignition. Contain spill by dinking with soda ash (sodium carbonate) or quicklime (calcium oxide). Cover spill with neutralizing agent such as soda ash or quicklime. Mix well. When mixture is neutral collect the residue in a suitable container and dispose of per local, state and federal waste regulations. Wear acid resistant boots, face shield, chemical splash goggles, and acid resistant gloves. Do not release unneutralized acid.

7. HANDLING AND STORAGE

Precautions for Safe Handling

Corrosive liquid within the battery attacks skin and eyes. Causes burns. Handle batteries cautiously to avoid spills. Do not short terminal. Wear suitable protective clothing, gloves and eye/face protection when handling. Use in designated areas with adequate ventilation. Avoid breathing in vapours, mist or fumes. Keep containers closed when not in use. Ensure a high level of personal hygiene is maintained when using this product, that is, always wash hands after handling, and before eating, drinking, smoking or using the toilet facilities.

Use a battery carrier to lift battery or place hands at opposite corners to avoid spilling acid through the vents. Avoid contact with internal components of batteries. Do not tilt batteries to an angle greater than 45 degrees. Do not smoke when working near a battery. Avoid direct conductive connection across positive and negative terminals to prevent short circuit.

Acid inside the battery can contain lead/lead compounds which can be toxic to reproduction. Avoid exposure to contents of battery. Do not handle until all safety precautions have been read and understood. It is recommended that pregnant or breastfeeding women should not handle this product unless adequate exposure protection can be assured at all times. Female personnel planning pregnancy should be made aware of the potential risks.

Conditions for safe storage, including any incompatibilities

Batteries must be kept in an upright position away from sources of heat, moisture, incompatibilities, and direct sunlight. Stack batteries so as to prevent accidental contact between terminal and/or other damage to terminals or containers. Whenever feasible, store on shipping pallet or rack. Do not stack loaded pallets or racks on top of other batteries. Have emergency equipment (for fires, spills, leaks, etc.) readily available.

Special Sensitivity: Avoid direct conductive connection across positive and negative terminals to prevent short circuit.

For information on the design of the storeroom, reference should be made to Australian Standard AS 3780 - The storage and handling of corrosive substances.

Storage Temperatures

Min: (-28°C) for fully charged batteries. (-6°C) for completely discharged batteries.

Max: (26°C) for low shelf discharge but up to (38°C) is safe.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational exposure limit values

No exposure standards have been established for this material. However, the available exposure limits for ingredients are listed below:

Australia:

Sulphuric acid

TWA: 1 mg/m³

STEL: 3 mg/m³

Lead, inorganic dusts & fumes (as Pb)

TWA: 0.05 mg/m³

TWA (Time Weighted Average): The average airborne concentration of a particular substance when calculated over a normal eight-hour working day, for a five-day week.

STEL (Short Term Exposure Limit): The average airborne concentration over a 15 minute period which should not be exceeded at

any time during a normal eight-hour workday.

Source: Safe Work Australia

New Zealand:

Sulphuric acid

TWA: 0.1 mg/m³

NOTICES: 6.7A

Lead

TWA: 0.1 mg/m³

NOTICES: (bio)6.7B

TWA (Time Weighted Average): The average airborne concentration of a particular substance when calculated over a normal eight-hour working day, for a five-day week.

6.7A: Confirmed carcinogen

6.7B: Suspected carcinogen

Source: Workplace Exposure Standards and Biological Exposure Indices.

Biological Limit Values

Name: Lead and Inorganic compounds

Determinant: Lead in blood

Value: 200 µg/L

Sampling time: Not critical

Source: American Conference of Industrial Hygienists (ACGIH).

Appropriate Engineering Controls

None required, when used as intended. Use local exhaust ventilation if necessary to control airborne mist and vapor.

Respiratory Protection

None required, when used as intended. Where exposure to battery content is possible, an approved respirator with a replaceable vapor/ mist filter should be used if engineering controls are not effective in controlling airborne exposure. Refer to relevant regulations for further information concerning respiratory protective requirements.

Reference should be made to Australian Standards AS/NZS 1715, Selection, Use and Maintenance of Respiratory Protective Devices; and AS/NZS 1716, Respiratory Protective Devices, in order to make any necessary changes for individual circumstances.

Eye Protection

None required, when used as intended. Where exposure to battery content is possible, safety glasses with full face shield should be used. Eye protection devices should conform to relevant regulations. Eye protection should conform with Australian/New Zealand Standard AS/NZS 1337 - Eye Protectors for Industrial Applications.

Eye protection should conform with Australian/New Zealand Standard AS/NZS 1337 (series) - Eye Protectors for Industrial Applications.

Hand Protection

Wear gloves of impervious, acid-resistant material such as such as rubber, neoprene, vinyl coated, PVC. Final choice of appropriate gloves will vary according to individual circumstances i.e. methods of handling or according to risk assessments undertaken. Occupational protective gloves should conform to relevant regulations.

Reference should be made to AS/NZS 2161.1: Occupational protective gloves - Selection, use and maintenance.

Body Protection

Suitable protective workwear, e.g. cotton overalls buttoned at neck and wrist is recommended. Chemical resistant apron is recommended where large quantities are handled.

9. PHYSICAL AND CHEMICAL PROPERTIES

Properties	Description	Properties	Description
Form	Article - Battery	Appearance	A manufactured article
Colour	Not available	Odour	Not available
Decomposition Temperature	Not available	Melting Point	-40°C (Dilute sulfuric acid) 327°C (Lead)
Freezing Point	-56.4°C (Dilute sulfuric acid)	Boiling Point	110°C (Dilute sulfuric acid) 1740°C (Lead)
Solubility in Water	Miscible (sulfuric acid)	Specific Gravity	1.280 (25°C)(electrolyte)
pH	Not available	Vapour Pressure	3.17 KPA(for 30% concentration at 25°C)(Dilute sulfuric acid) 0.1 KPA (at 25°C)(Lead)
Vapour Density (Air=1)	Not applicable	Evaporation Rate	Not available
Odour Threshold	Not available	Viscosity	Not available
Partition Coefficient: n-octanol/water	Not available	Flash Point	Not applicable
Flammability	Not flammable	Auto-Ignition Temperature	Not applicable
Flammable Limits - Lower	4.1% (Hydrogen gas)	Flammable Limits - Upper	74.2% (Hydrogen gas)

10. STABILITY AND REACTIVITY

Chemical Stability

Stable under normal conditions of storage and handling.

Reactivity and Stability

Reacts with incompatible materials.

Conditions to Avoid

Use only approved charging methods. Avoid overcharging. Avoid short-circuiting. Avoid sparks and other ignition sources. Keep away from oxidizing and reducing materials. Do not open, break or melt the casing.

Incompatible materials

Strong oxidizing or reducing agents.

Hazardous Decomposition Products

Can emit highly toxic fumes when heated. Combustion can produce carbon dioxide and carbon monoxide. Will release an explosive hydrogen/oxygen gas mixture. Oxides of lead, lead and/or lead compounds may be released. Sulfuric acid may release sulfur dioxide and/or sulfur trioxide.

Possibility of hazardous reactions

Not available

Hazardous Polymerization

Will not occur.

11. TOXICOLOGICAL INFORMATION

Toxicology Information

No toxicity data available for this product.

Wet storage batteries are sealed articles. Exposure to lead, acid and lead contaminated acid is not anticipated during normal storage, handling and intended use or maintenance of the battery.

Battery recycling personnel should carefully follow established employer protocols when processing batteries and battery

components.

Ingestion

Ingestion unlikely due to form of product. Ingestion of liquid inside the battery will cause nausea, vomiting, abdominal pain and chemical burns to the mouth, throat and stomach.

Inhalation

Harmful if inhaled. Inhalation will result in respiratory irritation and possible harmful corrosive effects including lesions of the nasal septum, pulmonary edema, pneumonitis and emphysema.

Skin

Liquid inside the battery causes severe skin burns. Corrosive to the skin. Skin contact can cause redness, itching, irritation, severe pain and chemical burns with resultant tissue destruction.

Eye

Liquid inside the battery causes eye damage. Eye contact will cause stinging, blurring, tearing, severe pain and possible burns, necrosis, permanent damage and blindness.

Respiratory sensitisation

Not expected to be a respiratory sensitiser.

Skin Sensitisation

Not expected to be a skin sensitiser.

Germ cell mutagenicity

Not considered to be a mutagenic hazard.

Sulfuric acid has been found to be non-mutagenic, and in two studies of workers employed in lead acid battery manufacture, no association between sulfuric acid mist exposure and respiratory tract cancers was observed.

Carcinogenicity

Due to the nature of the product, not considered to be a carcinogenic hazard.

Strong-inorganic-acid mists containing sulfuric acid are listed as a Group 1: Carcinogenic to humans according to International Agency for Research on Cancer (IARC).

Lead is listed as a Group 2B: Possibly carcinogenic to humans according to International Agency for Research on Cancer (IARC).

Reproductive Toxicity

Not considered to be toxic to reproduction.

* Lead - Severe toxicity can cause sterility, abortion, and neonatal mortality and morbidity. Experimental teratogen. Experimental reproductive effects. Pathological lesions have been found on male gonads.

* Sulfuric Acid - Experimental teratogen.

STOT-single exposure

Not expected to cause toxicity to a specific target organ.

STOT-repeated exposure

Not expected to cause toxicity to a specific target organ.

Aspiration Hazard

Not expected to be an aspiration hazard.

Other Information

This product contains Ototoxic substances. Combination with noise exposure, even at safe levels, could still cause auditory injuries and hearing loss.

Ingestion Effects:

Lead - Poison by ingestion in large dosages and with prolonged exposure leading to the same effects as seen in exposure by inhalation. Adults absorb 5-15% of ingested lead and retain less than 5%. Children absorb about 50% and retain about 30%.

* Sulfuric Acid - Moderately toxic by ingestion.

Inhalation Effects:

* Lead - For industry, inhalation is much more important than is ingestion. Systemic effects include loss of appetite, anemia, malaise, insomnia, headache, irritability, muscle and joint pains, tremors, flaccid paralysis without anesthesia, hallucinations and distorted perceptions, muscle weakness, gastritis and liver changes. Major organ systems affected are the nervous system, blood system and kidneys. Experimental evidence suggests that blood levels of lead below 10 mg/dL can lower the IQ scores of children. Low levels of lead impair neurotransmission and immune system function and may increase systolic blood pressure. Reversible kidney damage can occur from acute exposure.

Chronic exposure can lead to irreversible vascular sclerosis, tubular cell atrophy, interstitial fibrosis, and glomerular sclerosis. Very heavy intoxication can sometimes be detected by formation of a dark line on the gum margins.

Sulfuric Acid - Experimental poison by inhalation. Repeated or prolonged inhalation of sulfuric acid mist can cause inflammation of the upper respiratory tract, leading to chronic bronchitis. Severe exposure may cause chemical pneumonitis. Erosion of tooth enamel due to strong acid fume exposure has been observed in industry. Workers exposed to low concentrations of the vapors gradually lose their sensitivity to its irritating action.

12. ECOLOGICAL INFORMATION

Ecotoxicity

No ecological data available for this material. Content inside the battery is very toxic to aquatic life with long lasting effects.

Persistence and degradability

Not available

Mobility

Not available

Bioaccumulative Potential

Not available

Other Adverse Effects

Not available

Environmental Protection

Do not discharge this material into waterways, drains and sewers.

13. DISPOSAL CONSIDERATIONS

Disposal considerations

Australia and New Zealand:

The lead, plastic and electrolyte (sulphuric acid) in used lead acid batteries can be recycled. Wet storage batteries are recyclable and should be turned over to a licensed battery recycler. Do not incinerate.

Do not flush lead contaminated acid into the sewer. The disposal of the spilled or waste material must be done in accordance with applicable local and national regulations.

Spent lead-acid batteries are not allowed to dispose in the domestic waste or be mixed with other batteries in order not to compliance the processing and to prevent danger to humans and the environment.

Return whole scrap batteries to the distributor, manufacturer or a licensed battery recycler.

Sulfuric acid: Neutralize as for a spill; collect residue and place in suitable container; dispose as hazardous waste in accordance with local, state and federal regulations. Do not flush lead contaminated acid into the sewer.

14. TRANSPORT INFORMATION

Transport Information

Road and Rail Transport:

Australia:

This material is classified as a Class 8 Corrosive Substances Dangerous Goods

Class 8 Dangerous Goods are incompatible in a placard load with any of the following:

- Class 1: Explosives
- Division 4.3: Dangerous when wet Substances

- Division 5.1: Oxidising substances
 - Division 5.2: Organic peroxides
 - Class 6, Toxic or Infectious Substances, if the Class 6 dangerous goods are cyanides and the Class 8 dangerous goods are acids
 - Class 7: Radioactive materials unless specifically exempted
- and are incompatible with food and food packaging in any quantity.
Strong acids must not be loaded in the same freight container or on the same vehicle with strong alkalis. Packing Group I and II acids and alkalis should be considered as strong.

New Zealand:

This material is classified as Dangerous Goods Class 8 Corrosive Substances
Must not be loaded in the same freight container or on the same vehicle with:

- Class 1: Explosives
- Division 5.1: Oxidising substances
- Division 5.2: Organic peroxides
- Class 7: Radioactive materials unless specifically exempted
- Food items.

Note 1: Cyanides (Division 6.1) must not be loaded in the same freight container or on the same vehicle with acids (Class 8).

Note 2: Strong acids must not be loaded in the same freight container or on the same vehicle with strong alkalis. Packing Group I and II acids and alkalis should be considered as strong.

Must not be loaded with in the same freight container; and on the same vehicle must be separated horizontally by at least 3 metres unless all but one are packed in separate freight containers with:

- Division 4.3: Dangerous when wet Substances

Goods of packing group II or III may be loaded in the same freight container or on the same vehicle if transported in segregation devices with:

- Division 4.3: Dangerous when wet substances
- Division 5.1: Oxidising substances
- Division 5.2: Organic peroxides
- Food items.

Marine Transport (IMO/IMDG):

Classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport by sea.

UN No.: 2800

Proper Shipping Name: BATTERIES, WET, NON-SPILLABLE electric storage

Class: 8

EMS No.: F-A, S-B

Special provisions: 238

Air Transport (ICAO/IATA):

Classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air.

UN No: 2800

Hazard labels: Corrosive

Proper Shipping Name: Batteries, wet, non-spillable electric storage

Class: 8

Label: Corrosive

Packing Instruction: 872 (For passenger and cargo aircraft)

Packing Instruction: 872 (For cargo aircraft only)

Special provisions: A48, A67, A164, A183

U.N. Number

2800

UN proper shipping name

BATTERIES, WET, NON-SPILLABLE

Transport hazard class(es)

8

Hazchem Code

2R

IERG Number

37

IMDG Marine pollutant

No

Transport in Bulk

Not available

Special Precautions for User

Not available

15. REGULATORY INFORMATION

Regulatory information

Australia:

Classified as Hazardous according to the Globally Harmonised System of Classification and labelling of Chemicals (GHS) including Work, Health and Safety regulations, Australia.

Classified as a Scheduled Poison according to the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

New Zealand:

Classified as Hazardous according to the Hazardous Substances (Minimum Degrees of Hazard) Regulations 2001, New Zealand.

This product is a 'Manufactured article' and is therefore exempt from the Hazardous Substances (Minimum Degrees of Hazard) Regulations 2001.

Poisons Schedule

Not Scheduled

16. OTHER INFORMATION

Date of preparation or last revision of SDS

SDS Created: May 2019

References

Australia

Preparation of Safety Data Sheets for Hazardous Chemicals Code of Practice.

Standard for the Uniform Scheduling of Medicines and Poisons.

Australian Code for the Transport of Dangerous Goods by Road & Rail.

Model Work Health and Safety Regulations, Schedule 10: Prohibited carcinogens, restricted carcinogens and restricted hazardous chemicals.

Workplace exposure standards for airborne contaminants, Safe work Australia.

American Conference of Industrial Hygienists (ACGIH).

Globally Harmonised System of Classification and Labelling of Chemicals.

Code of Practice: Managing Noise and Preventing Hearing Loss at Work.

New Zealand

Workplace Exposure Standards and Biological Exposure Indices.

Transport of Dangerous goods on land NZS 5433.

Preparation of Safety Data Sheets - Approved Code of Practice Under the HSNO Act 1996 (HSNO CoP 8-1 09-06).

Assigning a hazardous substance to a group standard.

Adopted biological exposure determinants, American Conference of Industrial Hygienists (ACGIH).

END OF SDS

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