

# SAFETY DATA SHEET

## VRLA (VALVE REGULATED LEAD ACID) BATTERY(NZ)

Infosafe No.: LQ7ZP  
ISSUED Date: 09/06/2017  
Issued by: JOHNSON CONTROLS AUSTRALIA  
PTY LTD

### 1. IDENTIFICATION

---

#### GHS Product Identifier

VRLA (VALVE REGULATED LEAD ACID) BATTERY(NZ)

#### Company Name

JOHNSON CONTROLS AUSTRALIA PTY LTD

#### Address

887 Wellington Rd, Rowville  
Vic 3187 Australia

#### Telephone/Fax Number

Tel: +61 3 9751 5003

Fax: +61 3 9764 3077

#### Emergency phone number

+61 3 9751 5003 (9 am - 5 pm)

#### Recommended use of the chemical and restrictions on use

Electric Storage Battery

#### Additional Information

Local Distributor: -

HCB Technologies

2A Mahunga Drive, Mangere bridge

Auckland, 2151

PH: +64 9 622 0033

FAX: +64 9 622 0220

Emergency Contact Number: +64 9 622 0033

National Poisons Contact: 0800 764 766

### 2. HAZARD IDENTIFICATION

---

#### GHS classification of the substance/mixture

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

6.1C (Oral) - Substance that is acutely toxic

6.1D (Inhalation – vapours, dusts or mists) - Substance that is acutely toxic

6.6B Substance that is a suspected human mutagen

6.7A Substance that is known or presumed to be a human carcinogen

6.8A Substance that is known or presumed to be a human reproductive or developmental toxicant

6.8C Substance that produces toxic human reproductive or developmental effects on or via lactation

6.9A (Single exposure) - Substance that is toxic to human target organs or systems

6.9A (Repeated exposure) - Substance that is toxic to human target organs or systems

8.1A Substance that is corrosive to metals

8.2B Substance that is corrosive to dermal tissue

8.3A Substance that is corrosive to ocular tissue

9.1A Substance that is very ecotoxic in the aquatic environment

9.3B Substance that is ecotoxic to terrestrial vertebrates

**Signal Word (s)**

DANGER

**Hazard Statement (s)**

H290 May be corrosive to metals.  
H301 Toxic if swallowed.  
H314 Causes severe skin burns and eye damage.  
H332 Harmful if inhaled.  
H341 Suspected of causing genetic defects.  
H350 May cause 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.  
H410 Very toxic to aquatic life with long lasting effects.  
H432 Toxic to terrestrial vertebrates.

**Pictogram (s)**

Corrosion, Skull and crossbones, Exclamation mark, Health hazard, Environment

**Precautionary statement – Prevention**

P102 Keep out of reach of children.  
P103 Read label before use.  
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 dust/fume/gas/mist/vapours/spray.  
P263 Avoid contact during pregnancy/while nursing.  
P264 Wash contaminated skin thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
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**

P101 If medical advice is needed, have product container or label at hand.  
P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.  
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.  
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.  
P308+P313 IF exposed or concerned: Get medical advice/attention.  
P310 Immediately call a POISON CENTER or doctor/physician.  
P363 Wash contaminated clothing before reuse.  
P390 Absorb spillage to prevent material damage.  
P391 Collect spillage.

**Precautionary statement – Storage**

P405 Store locked up.  
P406 Store in corrosive resistant/ container with a resistant inner liner.

**Precautionary statement – Disposal**

P501 In the case of a substance that is in compliance with a HSNO approval other than a Part 6A (Group Standards) approval, a label must provide a description of one or more appropriate and achievable methods for the disposal of a substance in accordance with the Hazardous Substances (Disposal) Regulations 2001. This may also include any method of disposal that must be avoided. See Section 13 for disposal details.

### IMPORTANT NOTE(S)

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

The hazard categories identified in this SDS are derived from chemicals within the battery and are provided as additional information in case of exposure to battery contents. Exposure to battery contents is not anticipated during normal storage, handling or maintenance of the battery.

### Other Information

No hazards occur during the normal operation of the Lead Acid Battery as it is described in the instructions for use that are provided with the Battery. Lead-acid Batteries have three significant characteristics.

- They contain an electrolyte which contains diluted sulphuric acid. Sulphuric acid may cause severe chemical burns.
- During the charging process or during operation they might develop hydrogen gas and oxygen, which under certain circumstances may result in an explosive mixture.
- They can contain a considerable amount of energy, which may be a source of high electrical current and a severe electrical shock in the event of a short circuit.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

### Ingredients

Name	CAS	Proportion
Lead and lead compounds		65-75 %
Sulphuric acid	7664-93-9	18-25 %
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. (0800 764 766)

## 5. FIRE-FIGHTING MEASURES

### Suitable Extinguishing Media

Class ABC extinguisher, carbon dioxide, foam, 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 and gases including acid mists and vapors, oxides of lead and sulphur and toxic fumes from burning the plastic case. Can release an explosive hydrogen/oxygen gas mixture.

### **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. 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.

Beware of corrosive liquid splatter during water application and wear resistant clothing, gloves, face and eye protection. If batteries are on charge, shut off power to the charging equipment, but note that strings of series connected batteries may still pose risk of electric shock even when charging equipment is shut down.

## **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. Neutralise the spill with alkali and/or water. Avoid exposure to spillage by collecting the material using vacuum and transfer into suitable labelled containers for subsequent recycling or disposal. Dispose of waste according to applicable local and national regulations. If contamination of sewers or waterways occurs inform the local water and waste management authorities in accordance with local regulations.

## **7. HANDLING AND STORAGE**

---

### **Precautions for Safe Handling**

Corrosive liquid within the battery. Handle battery cautiously to avoid spills. 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.

Lead/lead compounds from the plate can leach into the acid during use. 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. 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. Store batteries in cool, well-ventilated

location. Keep a supply of neutralizing agent in or near the storage area for emergency use. Avoid storage in areas exposed to heat or solar buildup. When batteries are completely discharged, the electrolyte will freeze when stored below -6°C. Fully charged batteries may be

stored at temperatures as low as -28.8°C.

Sulphuric acid:

Corrosive liquid. Store in a cool dry well-ventilated area. Store away from oxidising agents and bases/acids. Keep containers closed

when not in use, securely sealed and protected against physical damage. Inspect regularly for deficiencies such as damage or leaks. Provide a catch-tank in a bunded area. Store in original packages as approved by manufacturer. Ensure that storage conditions comply with applicable local and national regulations. For information on the design of the storeroom, reference should be made to Australian Standard AS 3780-2008: The storage and handling of corrosive substances. Reference should also be made to all State and Federal regulations.

#### **Corrosiveness**

Battery contents: May be corrosive to metals.

#### **Storage Temperatures**

Minimum: -28°C for fully charged batteries, -6°C for completely discharged batteries.

Maximum: 26°C for low shelf discharge but up to 38°C is safe.

#### **Other Information**

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

## **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:

Sulphuric acid

TWA: 1 mg/m<sup>3</sup>

Lead, inorganic dusts & fumes (as Pb)

TWA: 0.1 mg/m<sup>3</sup>

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.

#### **Biological Limit Values**

For all workers, preferred blood lead level is 1.5 micromol/L and workers will be suspended if a single blood lead result is equal to or greater than 2.42 micromol/L. A worker can return to work if their blood levels achieve 1.93 mol/litre whole blood. It is more stringent for pregnant women or women planning to become pregnant.

#### **Appropriate Engineering Controls**

None required, when used as intended. Where exposure to battery content is possible: This substance is hazardous and should be used with a local exhaust ventilation system, drawing vapours away from workers' breathing zone. If the engineering controls are not sufficient to maintain concentrations of vapours/mists below the exposure standards, suitable respiratory protection must be worn.

#### **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.

#### **Hand Protection**

Wear gloves of acid resistant gloves such as rubber, neoprene, vinyl coated or 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.

#### **Footwear**

Wear safety boots.

#### **Body Protection**

Suitable protective workwear, e.g. acid-resisting clothing, cotton overalls buttoned at neck and wrist is recommended. Chemical resistant apron is recommended for spill clean up.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Properties	Description	Properties	Description
Form	Article - Battery	Appearance	Battery with plate made of lead and lead compounds and containing liquid (Electrolyte, diluted sulphuric acid) Dilute sulphuric acid: transparent liquid
Odour	Not available	Decomposition Temperature	Not available
Melting Point	327 °C (lead) -40 °C (dilute sulphuric acid)	Freezing Point	-56.4°C (dilute sulphuric acid)
Boiling Point	1740°C (lead) 110°C (dilute sulphuric acid)	Solubility in Water	Not available
Specific Gravity	1.310 (dilute sulphuric acid)	pH	Not available
Vapour Pressure	3.17 kPa (for 30% dilute sulphuric acid at 25 °C) 0.1 kPa (for lead at 25 °C)	Vapour Density (Air=1)	Not available
Evaporation Rate	Not available	Odour Threshold	Not available
Viscosity	Not available	Partition Coefficient: n-octanol/water	Not available
Density	11.2 g/cm <sup>3</sup> (Lead)	Flash Point	Not available
Flammability	Non-flammable	Auto-Ignition Temperature	Not available
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, short-circuiting, sources of ignition, excess heat, exposure to moist air or water and mechanical and electrical abuse. Do not open, break or melt the casing.

### Incompatible materials

Oxidizing and reducing materials.

### Hazardous Decomposition Products

Under fire conditions this product may emit toxic and/or irritating fumes and gases including acid mists and vapors, oxides of lead and sulphur and toxic fumes from burning the plastic case. Can release an explosive hydrogen/oxygen gas mixture.

### Possibility of hazardous reactions

Not available

### Hazardous Polymerization

Will not occur

## 11. TOXICOLOGICAL INFORMATION

---

### **Toxicology Information**

No toxicity data available for this product. 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.

### **Ingestion**

Ingestion unlikely due to form of product. Ingestion of battery contents: Toxic if swallowed. Will cause nausea, vomiting, abdominal pain and chemical burns to the mouth, throat and stomach.

### **Inhalation**

Unlikely due to form of product. Inhalation of battery contents: Harmful if inhaled. Inhalation of mist or vapour will result in respiratory irritation and possible harmful corrosive effects including burns, lesions of the nasal septum, pulmonary edema, and scarring of tissue.

### **Skin**

Exposure to the battery contents: 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**

Exposure to the battery contents: 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**

Unlikely for intact battery due to form of product. Exposure to the battery contents: suspected of causing genetic defects. Classified as suspected to induce heritable mutations.

### **Carcinogenicity**

Unlikely for intact battery due to form of product. Exposure to the battery contents: may cause cancer. Classified as a Known or presumed human carcinogen.

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 compounds, inorganic is listed as a Group 2A: Probably 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**

Unlikely for intact battery due to form of product. Exposure to the battery contents: may damage fertility or the unborn child. May cause harm to breast-fed children. Classified as a Known or presumed human reproductive or developmental toxicant. Classified as a substance that produces toxic human reproductive or developmental effects on or via lactation.

### **STOT-single exposure**

Unlikely for intact battery due to form of product. Exposure to the battery contents: causes damage to organs.

### **STOT-repeated exposure**

Unlikely for intact battery due to form of product. Exposure to the battery contents: causes damage to organs through prolonged or repeated exposure.

### **Aspiration Hazard**

Not expected to be an aspiration hazard.

## 12. ECOLOGICAL INFORMATION

---

### **Ecotoxicity**

Effects unlikely for intact battery. Contents of the battery: Very toxic to aquatic life with long lasting effects. Toxic to terrestrial vertebrates.

**Persistence and degradability**

Lead may occur as sorbed ions or surface coatings on sediment mineral particles or may be carried in colloidal particles in surface water.

**Mobility**

Most lead is strongly retained in soil, resulting in little mobility. Lead may be immobilized by ion exchange with hydrous oxides or clays or by chelation with humic or fulvic acids in the soil.

**Bioaccumulative Potential**

Lead (when in the dissolved phase) is bioaccumulated by plants and animals, both aquatic and terrestrial.

**Other Adverse Effects**

Not available

**Environmental Protection**

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

---

**13. DISPOSAL CONSIDERATIONS**

---

**Disposal considerations**

Product Disposal:

The product is a "Manufactured article" and is therefore exempt from the Hazardous Substances (Minimum Degrees of Hazard) Regulations 2001. However other regulations may apply. Return whole scrap batteries to the distributor, manufacturer or a licensed battery recycler. Do not incinerate. Battery recycling personnel should carefully follow established employer protocols when processing batteries and battery components. Do not flush contaminated electrolyte into the sewer. The disposal of the spilled or waste material must be done in accordance with applicable local and national regulations.

Container Disposal:

The packaging may be re-used or recycled if it has been treated to remove any residual contents of the substance. Any wash-off water from the container cleaning process should be sent to a suitable waste water treatment plant before discharge into the environment.

In New Zealand, the packaging (that may or may not contain any residual substance) that is lawfully disposed of by householders or other consumers through a public or commercial waste collection service is a means of compliance with regulations.

---

**14. TRANSPORT INFORMATION**

---

**Transport Information**

Road and Rail Transport :

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.

Class/Division: 8

UN No: 2800

Proper Shipping Name: BATTERIES, WET, NON-SPILLABLE electric storage (Lead)(MARINE POLLUTANT)

EMS : F-A,S-B

Special Provisions: 29, 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.

Class/Division: 8

UN No: 2800

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

Packaging Instructions (passenger & cargo): 872

Packaging Instructions (cargo only): 872

Hazard Label: Corrosive

Special Provisions: A48, A67, A164, A183

Note: The product is a non-spillable battery (special provision 238)and exempted from all DG ( NZDG, IATA and IMDG) provisions if protected from short circuit.

**U.N. Number**

2800

**UN proper shipping name**

BATTERIES, WET, NON-SPILLABLE

**Transport hazard class(es)**

8

**Hazchem Code**

2R

**Special Precautions for User**

Not available

**IERG Number**

37

**IMDG Marine pollutant**

Yes

**Transport in Bulk**

Not available

## 15. REGULATORY INFORMATION

---

**Regulatory information**

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

## 16. OTHER INFORMATION

---

**Date of preparation or last revision of SDS**

SDS created: June 2017

**References**

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).

Manufactured Articles - Deciding when a substance which is part of a manufactured item is or is not covered by the HSNO Act.

## END OF SDS

© Copyright Chemical Safety International Pty Ltd

Copyright in the source code of the HTML, PDF, XML, XFO and any other electronic files rendered by an Infosafe system for Infosafe SDS displayed is the intellectual property of Chemical Safety International Pty Ltd.

Copyright in the layout, presentation and appearance of each Infosafe SDS displayed is the intellectual property of Chemical Safety International Pty Ltd.

The compilation of SDS's displayed is the intellectual property of Chemical Safety International Pty Ltd.

Copying of any SDS displayed is permitted for personal use only and otherwise is not permitted. In particular the SDS's displayed cannot be copied for the purpose of sale or licence or for inclusion as part of a collection of SDS without the express written consent of Chemical Safety International Pty Ltd.