

Material Safety Data Sheet

VOLTEC LI-ION BATTERY

Infosafe™ LQ1N3 **Issue Date** September 2012 **Status** ISSUED by **BS: 1.12.2**
No. GMHOLD

Not classified as hazardous

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY/UNDERTAKING

Product Name VOLTEC LI-ION BATTERY
Product Use Battery
Company Name GM HOLDEN LTD
Address 191 Salmon Street Port Melbourne
Vic 3207
Emergency Tel. Aust: 1800 638 556 NZ: 0800 154 666 (24 hours)
Telephone Tel: +61 3 9647 1111
Number/Fax Fax: +61 3 9647 2250
Other Names Not Available

2. COMPOSITION/INFORMATION ON INGREDIENTS

**Composition,
information on
ingredients**

Chemical	Cas No.	Percent (%)
Cell/Electrolyte Mixture:		
Aluminium foil	7429-90-5	2-10
Metal oxide	Proprietary	30-40
Manganese	Proprietary	10-20
Nickel	Proprietary	2-5
Cobalt	Proprietary	2-5
Polyvinylidene Fluoride (PVDF)	Proprietary	<5
Copper Foil	7440-50-8	5-15
Carbon	7440-44-0	10-20
Electrolyte-organic carbonate	Proprietary	10-20
Lithium	Proprietary	-

Battery Cover:

Chemical	Cas No.	Percent(%)
SMC-type material	NA	NA

Frames, Endplates, Hose Connections and Interconnect Boards:		
Chemical	Cas No.	Percent(%)
33% Fiberglass		
Reinforced Nylon 66	NA	NA

3. HAZARDS IDENTIFICATION

Not 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)

Reproductive Toxicity

Not considered to be toxic to reproduction.

Carcinogenicity

The following components, that can be present at > 0.1%, are listed in the NTP Annual Report on Carcinogens (latest edition) or have been found to be a potential carcinogen in the IARC Monographs (latest edition), or by OSHA:
Cobalt: IARC 2B (Possibly Carcinogenic to Humans)
Nickel: IARC 2B (Possibly Carcinogenic to Humans) and NTP (Reasonably Anticipated to be a Human Carcinogen).

Chronic Effects

Prolonged contact with cell/electrolyte mixture may cause skin sensitization.

Inhalation

Inhalation of vapours from an open battery may cause irritation of the respiratory system.

Ingestion

Not expected during normal use. Swallowing electrolyte mixture may cause gastrointestinal tract burns. May cause nausea and vomiting.

Skin

Contents of an open battery can be irritating or corrosive to skin. The symptoms may include redness, itching, swelling or burns.

Eye

Contents of an open battery can be severely irritating or corrosive to eyes. The symptoms may include redness, itching, blurred vision, tearing or burns and possible tissue injury.

Other Information

Under normal conditions of use the battery is hermetically sealed. This is a sealed article; although the contents are hazardous, the overall article is classified as non-hazardous. The battery should not be opened or burned. Exposure to ingredients contained within or their combustion products could be harmful. Exposure to the substances could occur only if the battery pack or cells have been opened, disassembled, crushed, burned, exposed to high temperatures >150°C, or subjected to other types of abuse.
This battery has two significant characteristics:
- Contains an electrolyte; and
- Can contain a considerable amount of energy, which may be a source of high electric current and lead to a severe electrical shock in the event of a short circuit.

4. FIRST AID MEASURES

Inhalation	If inhaled, remove affected person from contaminated area. Keep at rest until recovered. If symptoms persist seek medical attention.
Ingestion	Do not induce vomiting. Wash out mouth thoroughly with water. Seek medical attention.
Skin	Wash affected area thoroughly with soap and water. Remove contaminated clothing and wash before reuse or discard. If symptoms develop seek medical attention.
Eye	If in eyes wash out immediately with water. Continue flushing for several minutes until all contaminants are washed off completely. Seek medical attention.
First Aid Facilities	Eyewash and normal washroom facilities
Advice to Doctor	Treat symptomatically.
Other Information	This information is of relevance only if the Battery is broken and this results in a direct contact with the ingredients.

5. FIRE FIGHTING MEASURES

Extinguishing Media	Small Fire: Use ABC fire extinguisher or water spray. Large Fire: Use water spray or fog.
Specific Hazards	This product will burn under fire conditions. If heated above 150°C, battery or cell/electrolyte mixture may burst or rupture or vent.
Hazardous Combustion Products	Under fire conditions this product may emit toxic and/or irritating fumes and gases including carbon monoxide, carbon dioxide, hydrogen, hydrogen fluoride, aldehydes, metal oxides and C1-C3 hydrocarbons.
Decomposition Temp.	Not available
Precautions in connection with Fire	Fire fighters should wear Self-Contained Breathing Apparatus (SCBA) operated in positive pressure mode and full protective clothing to prevent exposure to vapours or fumes.
Unsuitable Extinguishing Media	Do not use extinguisher containing metal (Class D, type II extinguisher).
Flash Point	Not applicable for an article.
Ignition Temperature	Not applicable for an article.
Flammability	Non-flammable

6. ACCIDENTAL RELEASE MEASURES

In case of leakage, wear appropriate personal protective equipment and clothing to prevent exposure. Remove all metal objects including rings, watches, belts, etc. before handling battery cells or packs. Extinguish or remove all sources of ignition and stop leak if safe to do so. Increase ventilation. Evacuate all unprotected personnel.

For small releases, use paper towel or dry cloth to absorb electrolyte. For larger releases, cleanup all spills/leaks immediately using an inert absorbent (vermiculite, cat litter, dry sand).

Place contaminated sorbent in appropriate container and dispose of waste in accordance with local regulations. After removing the battery/cell and absorbent material, clean area with soap and water. Collect the material and place into suitable labelled containers for subsequent recycling or disposal. Dispose of waste according to the 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

Handling

Do not short circuit the battery. Prolonged short circuit will cause battery to lose energy, generate significant heat and can cause the safety release vent to open. Damaging a lithium battery can result in an internal short circuit. The contents of an open lithium battery, including a vented battery, when exposed to water, may result in a fire and/or explosion. Crushed or damaged batteries may result in a fire. Do not charge it in the unit. Do not disassemble the pack.

Storage

Store in a cool, dry, well-ventilated area away from sources of ignition, strong oxidising agents and strong acids. Elevated temperatures can result in shortened battery life. Protect against physical damage. Inspect regularly for deficiencies such as damage or leaks. Have appropriate fire extinguishers available in and near the storage area.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

National Exposure Standards

No exposure value assigned for this specific material by the Safe Work, Australia. However, the available exposure limits for battery contents are given below:

Safe Work, Australia Exposure Standards:

Substance

TWA

STEL

NOTICES

ppm

mg/m³

ppm

mg/m³

Cobalt, metal dust & fume (as Co)

-

0.05

-

-

Sen

Aluminium (metal dust)

-

10

-

-

-

Aluminium (welding fumes)	-	5	-	-
-				
Copper (dust & mist)	-	1	-	-
-				
Copper (fume)	-	0.2	-	-
-				
Nickel	-	1	-	-
Sen				

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.

Respiratory Protection

Not required under normal conditions.

Eye Protection

Not required under normal conditions.

Hand Protection

Wear insulated high voltage gloves for handling packs, or neoprene or nitrile rubber gloves. Final choice of appropriate gloves will vary according to individual circumstances i.e. methods of handling or according to risk assessments undertaken. Reference should be made to AS/NZS 2161.1: Occupational protective gloves - Selection, use and maintenance.

Body Protection

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

Eng. Controls

Not required under normal conditions.

Biological

Limit Values

No biological limit allocated.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Cell: Aluminum Colored Sealed Unit
Battery Pack: Black T-Shaped Sealed Assembly

Odour

Odourless

Decomposition Temperature

Not available

Melting Point

Not applicable for an article.

Boiling Point

Not applicable for an article.

Solubility in Water

Not applicable for an article.

Specific Gravity (H2O=1)

Not applicable for an article.

pH Value

Not applicable for an article.

Vapour Pressure

Not applicable for an article.

Vapour Density (Air=1)	Not applicable for an article.
Evaporation Rate	Not applicable for an article.
Coefficient Water/Oil Distr.	Not applicable for an article.
Odour Threshold	Not applicable for an article.
Viscosity	Not applicable for an article.
Colour	Aluminium coloured
Flash Point	Not applicable for an article.
Flammability	Non-flammable
Ignition Temperature	Not applicable for an article.
Explosion Limit - Upper	Not applicable for an article.
Explosion Limit - Lower	Not applicable for an article.

10. STABILITY AND REACTIVITY

	Reacts with incompatibles.
Stability	Stable under normal conditions of storage and handling.
Hazardous Polymerization	Will not occur.
Materials to Avoid	Avoid exposure to heat, open flame, and corrosives.
Hazardous Decomposition Products	At high temperatures toxic and/or corrosive compounds including carbon monoxide, carbon dioxide, hydrogen, hydrogen fluoride, aldehydes, metal oxides and C1-C3 hydrocarbons.
Conditions to Avoid	Do not crush, puncture, incinerate, immerse in water or expose to heat over 150°C.

11. TOXICOLOGICAL INFORMATION

Toxicology Information	No toxicity data available for this product.
Inhalation	Inhalation of vapours from an open battery may cause irritation of the respiratory system.
Ingestion	Not expected during normal use. Swallowing electrolyte mixture

may cause gastrointestinal tract burns. May cause nausea and vomiting.

Skin Contents of an open battery can be irritating or corrosive to skin. The symptoms may include redness, itching, swelling or burns.

Eye Contents of an open battery can be severely irritating or corrosive to eyes. The symptoms may include redness, itching, blurred vision, tearing or burns and possible tissue injury.

Chronic Effects Prolonged contact with cell/electrolyte mixture may cause skin sensitization.

Reproductive Toxicity Not considered to be toxic to reproduction.

Carcinogenicity The following components, that can be present at > 0.1%, are listed in the NTP Annual Report on Carcinogens (latest edition) or have been found to be a potential carcinogen in the IARC Monographs (latest edition), or by OSHA:
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Nickel: IARC 2B (Possibly Carcinogenic to Humans) and NTP (Reasonably Anticipated to be a Human Carcinogen).

Skin Sensitisation Not expected to be a skin sensitiser.

Other Information Overexposure to products generated from overcharge or combustion of the cell or battery may result in simple and chemical asphyxiation. Symptoms may include rapid respiration, muscular incoordination, fatigue, dizziness, nausea, vomiting, unconsciousness, and death. Severe eye irritation or tissue injury may occur at high concentrations. Prolonged overexposure to decomposition products may adversely affect the lungs, blood, cardiovascular, and central nervous system. Symptoms may include headache, confusion, excitation, rapid breathing, an irregular heartbeat (arrhythmia), lassitude (weakness, exhaustion), cyanosis (bluish or purplish tinge to the skin), and chest pain.

12. ECOLOGICAL INFORMATION

Environment Protection Prevent this material entering waterways, drains and sewers.

Mobility Not available

Persistence / Degradability Not available

Bioaccumulation Some substances within the cell/electrolyte mixture are bioaccumulative.

Ecotoxicity In the case of a broken battery and leakage of the electrolyte solution, will react with water and organic substances, causing damage to flora and fauna. The electrolyte may also contain soluble components which can be toxic to aquatic environments

13. DISPOSAL CONSIDERATIONS

This product can be disposed through a licensed commercial waste collection service, in accordance with applicable local and national regulations. Do not discharge into drains, sewers, waterways or soil.

14. TRANSPORT INFORMATION

Road and Rail Transport:

This material is classified as a Class 9 (Miscellaneous Dangerous Goods) dangerous Goods according to The Australian Code for the Transport of Dangerous Goods by Road and Rail (7th edition).

Class 9 Dangerous Goods are incompatible in a placard load with any of the following:

- Class 1, Explosives (when the class 9 substance is a fire risk substance),
- Division 5.1, Oxidizing agents (when the class 9 substance is a fire risk substance), and
- Division 5.2, Organic peroxides (when the class 9 substance is a fire risk substance).

However, this product is not recognised as 'DANGEROUS GOODS', when its transport condition accords with Special Provisions 188, 230 and 310 of the ADG Code.

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.: 3480

Proper Shipping Name: LITHIUM ION BATTERIES

DG Class: 9

Packaging Group: II

EMS No.: F-A, S-I

IMDG Marine Pollutant: N

Special provision: 188, 230, 310, 348, 957

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: 3480

Proper Shipping Name: : LITHIUM ION BATTERIES

Class: 9

Packing Group: II

Label: Miscellaneous

Packing Instruction: 965 (For passenger and cargo aircraft)

Packing Instruction: 965 (For cargo aircraft only)

Special provision: A88, A99, A154, A164, A183

U.N. Number 3480

Proper Shipping Name LITHIUM ION BATTERIES

DG Class 9

Hazchem Code 4W

Packing Group II
IERG Number 47
IMDG Marine Pollutant (MP) No

15. REGULATORY INFORMATION

Not classified as Hazardous according to the Globally Harmonised System of Classification and labelling of Chemicals (GHS) including Work, Health and Safety regulations, Australia.
Not classified as a Scheduled Poison according to the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

Safety Phrase S15 Keep away from heat.

Poisons Schedule Not Scheduled

16. OTHER INFORMATION

User Codes	<u>User Title Label</u>	<u>User Code</u>
	Approval Number	2486
	Part Number	20791589
	Part Number	20910799
	Part Number	20979876
	Part Number	20985840
	Part Number	20997681
	Part Number	22751641
	Part Number	22786019
	Part Number	22810864
	Part Number	22824608
	Part Number	22830003
	Part Number	22856838
	Part Number	22882719
	Part Number	22882720
	Part Number	22882721
	Part Number	22900853
	Part Number	22900854
	Part Number	22900855
	Part Number	22905839
	Part Number	22922055
	Part Number	22922056
	Part Number	22922057
	Part Number	22928417
	Part Number	22928418
	Part Number	22954461

SDS History MSDS Created: September 2012

**Poisons
Schedule** Not Scheduled

End of MSDS

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