



SAFETY DATA SHEET

BATTERY ELECTROLYTE

Infosafe No.: LQ9PI
ISSUED Date : 02/10/2019
ISSUED by: HCB Technologies Ltd

1. IDENTIFICATION

GHS Product Identifier

BATTERY ELECTROLYTE

Company Name

HCB Technologies Ltd

Address

2A Mahunga Drive Mangere Bridge
AKL 2151 NZ

Telephone/Fax Number

Tel: +64 9 622 0033

Emergency phone number

0800 764 766 (0800 POISON)

E-mail Address

marketing@hcb.co.nz

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 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.

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

6.1E (Oral) - Substance that is acutely toxic

8.1A Substance that is corrosive to metals

8.2A Substance that is corrosive to dermal tissue

8.3A Substance that is corrosive to ocular tissue

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

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

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.

H303 May be harmful if swallowed.

H314 Causes severe skin burns and eye damage.

H332 Harmful if inhaled.

H350 May cause cancer.

H372 Causes damage to organs through prolonged or repeated exposure (inhalation).

H410 Very toxic to aquatic life with long lasting effects.

H432 Toxic to terrestrial vertebrates.

Pictogram (s)

Exclamation mark, Corrosion, 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.
- 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

- P310 Immediately call a POISON CENTER or doctor/physician.
- P101 If medical advice is needed, have product container or label at hand.
- P301+P330+P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
- P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- 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.
- 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)

During the charging process or during operation they might develop hydrogen gas and oxygen, which under certain circumstances may result in an explosive mixture. Extremely flammable gas (hydrogen) - Explosive, fire, blast or projection hazard

The hazard details below refer to the possible release of the product's contents (electrodes). Acid inside the battery can contain lead/lead compounds.

Exposure to the lead/lead compounds from the electrode can cause: May damage fertility or the unborn child if ingested or inhaled. May cause harm to breast-fed children. May cause cancer if ingested or inhaled. Causes damage to central nervous system, blood and kidneys through prolonged or repeated exposure if ingested or inhaled

3. COMPOSITION/INFORMATION ON INGREDIENTS

Composition, information on ingredients

Product contains dry battery and bottle of acid.

Ingredients

Name	CAS	Proportion
Lead and lead compounds (inorganic)	7439-92-1	<70 %
Sulphuric acid	7664-93-9	10-30 %
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 with 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 with 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 with 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 with battery contents, if in eyes, 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

Eyewash, 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 (New Zealand 0800 764 766).

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Use carbon dioxide, dry chemical, foam, water fog or water mist.

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 lead, lead compounds, oxides of sulphur, hydrogen and sulfuric acid fumes.

Specific Hazards Arising From The Chemical

Highly flammable hydrogen gas is generated during charging and operation of batteries. During the charging process hydrogen gas and oxygen can develop, which under certain circumstances may turn into an explosive mixture. On contact with water hydrogen gas can develop, which can form an explosive mixture with air. If ignited by burning cigarette, naked flame or spark, may cause battery explosion with dispersion of casing fragments and corrosive liquid electrolyte. Keep away all sources of gas ignition and do not allow metallic articles to simultaneously contact the negative and positive terminals of the battery.

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.

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.

6. ACCIDENTAL RELEASE MEASURES

Emergency Procedures

Corrosive liquid within the battery. Do not allow contact with skin and eyes. Do not breathe vapours. It is essential to wear self-contained breathing apparatus (S.C.B.A) and full personal protective equipment and clothing to prevent exposure. Increase ventilation. If possible contain the spill. Place inert absorbent material onto spillage. Neutralize the spill with alkali and/or water. Collect the material and place into a suitable labelled container. 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

Precautions for Safe Handling

Should not be subject to strong mechanical shock. Protect from physical damage. Keep vent caps on and cover terminals to prevent short circuits.

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 mixing and using. 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.

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.

Charging: There is a possible risk of electric shock from charging equipment and from strings of series connected batteries, whether or not being charged. Shut off power to chargers whenever not in use and before detachment of any circuit connections. Batteries being charged will generate and release flammable hydrogen gas. Charging space should be ventilated. Keep battery vent caps in position. Prohibit smoking and avoid creation of flames and sparks nearby. Wear face and eye protection when near batteries being charged.

Conditions for safe storage, including any incompatibilities

Store in a cool, dry, well-ventilated area. Protect from sparks and dust. Keep away from metallic objects that could bridge the terminals on a battery and create a dangerous short circuit. Store away from direct sunlight, humidity, oxidising agents and reducing agents, organic chemicals, metals and combustible materials. Keep containers closed when not in use, securely sealed and protected against physical damage. Inspect regularly for deficiencies such as damage or leaks. Store in original packages as approved by manufacturer. For information on the design of the storeroom, reference should be made to Australian Standard AS 3780 - The storage and handling of corrosive substances.

Corrosiveness

Sulphuric acid: May be corrosive to metals.

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: 0.1 mg/m³
NOTICES: 6.7A

Lead
TWA: 0.1 mg/m³
NOTICES: 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

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. Where exposure to battery content is possible: Use with good general ventilation. If mists or vapours are produced, local exhaust ventilation should be used.

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 (series) - Eye Protectors for Industrial Applications.

Hand Protection

Industrial application: Wear gloves of impervious material such as neoprene or natural rubber gloves. 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 work wear. Acid-resistant apron, clothing and boots are recommended especially where large quantities are handled.

9. PHYSICAL AND CHEMICAL PROPERTIES

Properties	Description	Properties	Description
Form	Article - Battery	Appearance	Sealed article (Solid). Product contains dry battery and bottle of acid.
Colour	Case colour varies	Odour	Odourless
Decomposition Temperature	Not available	Melting Point	Not available
Boiling Point	112-116 °C (sulphuric acid)	Solubility in Water	Completely soluble (sulphuric acid)
Specific Gravity	Not available	pH	< 1.0 (liquid inside the battery)
Vapour Pressure	10 mm Hg (approximate)	Vapour Density (Air=1)	Not available
Evaporation Rate	Not available	Odour Threshold	Not available
Viscosity	Not available	Partition Coefficient: n-octanol/water	Not available
Flash Point	Not available	Flammability	Non-flammable
Auto-Ignition Temperature	Not available	Flammable Limits - Lower	4% (hydrogen gas)
Flammable Limits - Upper	74% (hydrogen gas)	Explosion Properties	Not available
Oxidising Properties	Not available		

10. STABILITY AND REACTIVITY

Reactivity

Reacts with incompatibles.

Chemical Stability

Stable under normal conditions of use.

Conditions to Avoid

Avoid excess heat and moisture. Mechanical abuse and electrical abuse. Overcharging. Ignition sources. Avoid direct conductive connection across positive and negative terminals to prevent short circuit. Do not open, break or melt the casing.

Incompatible materials

Strong bases, reducing agents, strong oxidisers, finely divided metals, water and combustible organic materials.

Hazardous Decomposition Products

Under fire conditions this product may emit toxic and/or irritating fumes and gases including lead, lead compounds, oxides of sulphur, hydrogen and sulfuric acid fumes.

Possibility of hazardous reactions

During the charging process hydrogen gas and oxygen can develop, which under certain circumstances may turn into an explosive mixture. On contact with water hydrogen gas can develop, which can form an explosive mixture with air.

Hazardous Polymerization

Will not occur.

11. TOXICOLOGICAL INFORMATION

Toxicology Information

No toxicity data available for this product. Data for ingredients is given below.

Acute Toxicity - Oral

Sulphuric acid

LD50(rat) : 2140 mg/kg

Acute Toxicity - Inhalation

Sulphuric acid

LC50(rat) : 375 mg/m³

Ingestion

Unlikely due to form of product. For battery contents: May be harmful if swallowed. Will cause nausea, vomiting, abdominal pain and chemical burns to the mouth, throat and stomach.

Inhalation

Unlikely due to form of product. For 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

For contact with 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

For contact with battery contents: Causes serious 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.

Carcinogenicity

For sulphuric acid solution: May cause cancer. Classified as a Known or presumed human carcinogen.

Acid mists, strong inorganic is 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.

STOT-single exposure

Not expected to cause toxicity to a specific target organ.

STOT-repeated exposure

Causes damage to organs through prolonged exposure if inhaled.

Aspiration Hazard

Not expected to be an aspiration hazard.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Exposure to contents of an open or damaged battery - Lead: Very toxic to aquatic life with long lasting effects. Toxic to terrestrial vertebrates.

Persistence and degradability

The degradation half-life of the product is not known. Lead and its compounds are highly persistent in water.

Mobility

If the product enters soil, one or more constituents will or may be mobile and may contaminate ground water. The product is insoluble in water and will spread on water surfaces.

Bioaccumulative Potential

Bioaccumulation of lead occurs in aquatic and terrestrial animals and plants, but very little bioaccumulation occurs through the food chain.

Other Adverse Effects

Not available

Environmental Protection

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

Acute Toxicity - Fish

Lead and lead compounds (inorganic)

LC50 (Rainbow trout, donaldson trout, (*Oncorhynchus mykiss*)): 1.17 mg/l/96h

13. DISPOSAL CONSIDERATIONS

Disposal considerations

The disposal of the spilled or waste material must be done in accordance with applicable local and national regulations. Do not allow into drains or watercourses or dispose of where ground or surface waters may be affected. Wastes including emptied containers are controlled wastes and should be disposed of in accordance with all applicable local and national regulations.

Spent lead-acid batteries are not allowed to be disposed with domestic waste. Return whole scrap batteries to the distributor, manufacturer or a licensed battery recycler. 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

14. TRANSPORT INFORMATION

Transport Information

Road and Rail Transport (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.

Class/Division: 8

UN No: 2796

Proper Shipping Name: BATTERY FLUID, ACID

Packing Group: II

EMS: F-A, S-B

Special Provisions: -

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: 2796

Proper Shipping Name: Battery fluid, acid

Packing Group: II

Packaging Instructions (passenger & cargo): 851

Packaging Instructions (cargo only): 855

U.N. Number

2796

UN proper shipping name

BATTERY FLUID, ACID

Transport hazard class(es)

8

Packing Group

II

Hazchem Code

2R

IERG Number

37

IMDG Marine pollutant

Yes

Transport in Bulk

Not available

Special Precautions for User

The batteries must be protected against short circuits and securely packaged.

Other Information

Product contains dry battery and bottle of acid with UN 2796 - BATTERY FLUID, ACID. Once the dry battery is filled with acid, it is then becomes UN 2800- BATTERIES, WET, NON-SPILLABLE

15. REGULATORY INFORMATION

Regulatory information

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.

For sulphuric acid: Sulphuric acid, >10% aqueous solution - Approval number: HSR001572

16. OTHER INFORMATION

Date of preparation or last revision of SDS

SDS created: October 2019

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).

END OF SDS

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