

Safety Data Sheet

according to WHS Regulations

Printing date 08.02.2023

Revision date: 07.02.2023

1 Identification

Product Name: Quickee Li Ion Battery**Other Means of Identification:** Article**Product Parameters:**

Nominal Voltage: 37 V

Nominal Capacity: 14.5 Ah

Watt-hour Rating: 537 Wh

Recommended Use of the Chemical and Restriction on Use: Li-ion Battery Pack**Details of Manufacturer or Importer:**

Pac Fire Australia Pty Ltd

62 Link Drive

Yatala, QLD 4207

Phone Number: 07 3441 7100**Emergency telephone number:** 07 3441 7100

2 Hazard(s) Identification

Hazardous Nature:

Not classified as Hazardous according to the Globally Harmonised System of Classification and Labelling of Chemicals (GHS) and Safe Work Australia criteria.

Batteries are considered as articles and are as such exempted from the UN-GHS classification requirements.

The classification based on the hazardous substances contained in the product (electrode materials and liquid electrolyte contained in the batteries) is provided below for information purposes only.

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



Health hazard

Carcinogenicity 2

H351 Suspected of causing cancer. Route of exposure:
Inhalation.

STOT RE 2

H373 May cause damage to the bones and the teeth through
prolonged or repeated exposure. Route of exposure:
Inhalation.

Skin Corrosion/Irritation 2

H315 Causes skin irritation.

Serious eye damage/irritation – Category 2A

Skin Sensitisation 1

H319 Causes serious eye irritation.

H317 May cause an allergic skin reaction.

Signal Word Warning**Hazard Statements**

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H317 May cause an allergic skin reaction.

H351 Suspected of causing cancer. Route of exposure: Inhalation.

H373 May cause damage to the bones and the teeth through prolonged or repeated exposure. Route of exposure: Inhalation.

Precautionary Statements

P201 Obtain special instructions before use.

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P202	Do not handle until all safety precautions have been read and understood.
P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P264	Wash thoroughly after handling.
P272	Contaminated work clothing should not be allowed out of the workplace.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352	IF ON SKIN: Wash with plenty of water.
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.
P321	Specific treatment (see on this label).
P314	Get medical advice/attention if you feel unwell.
P362+P364	Take off contaminated clothing and wash it before reuse.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P337+P313	If eye irritation persists: Get medical advice/attention.
P405	Store locked up.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

3 Composition and Information on Ingredients

Chemical Characterization: Mixtures**Description:** Formulated article - battery for energy storage**Hazardous Components:**

CAS: 346417-97-8	Lithium nickel manganese cobalt oxide ⚠ Carcinogenicity 2, H351; ⚠ Skin Sensitisation 1, H317	30-50%
CAS: 616-38-6	Dimethyl carbonate ⚠ Flammable Liquids 2, H225	5-10%
CAS: 21324-40-3	Phosphate(1-), hexafluoro-, lithium ⚠ Acute Toxicity (Oral) 3, H301; ⚠ STOT RE 1, H372; ⚠ Skin Corrosion/Irritation 1A, H314; Eye Dam. 1, H318	1-3%
CAS: 96-49-1	1,3-Dioxolan-2-one ⚠ STOT RE 2, H373; ⚠ Acute Toxicity (Oral) 4, H302; Serious eye damage/irritation – Category 2A, H319	1-3%
CAS: 623-53-0	Ethyl methyl carbonate ⚠ Flammable Liquids 2, H225	≤1%
CAS: 9003-55-8	Styrene-butadiene rubber ⚠ Skin Sensitisation 1, H317; Aquatic Acute 3, H402; Aquatic Chronic 3, H412	<1%
CAS: 7440-02-0	Nickel ⚠ Carcinogenicity 2, H351; STOT RE 1, H372; ⚠ Skin Sensitisation 1, H317	<1%
CAS: 1333-86-4	Carbon black ⚠ STOT RE 2, H373	<1%

Non Hazardous Components:

CAS: 7782-42-5	Graphite	10-30%
CAS: 7439-89-6	Iron	10-20%
CAS: 7440-50-8	Copper	5-10%
CAS: 7429-90-5	Aluminium	2-5%
CAS: 9003-07-0	Polypropylene	<1%
CAS: 24937-79-9	Ethene, 1,1-difluoro-, homopolymer	<1%
CAS: 9000-11-7	Cellulose, carboxymethyl ether	<1%

Additional information:

The battery is sealed hermetically and designed to withstand temperatures and pressures encountered during normal use. Thus, the ingredients have no hazard potential except if the battery is violated or dismantled. If exposed to a fire, mechanical shocks, and electric stress by misuse, the battery cell case will be breached and

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the hazardous materials may be released and acrid gas may be emitted. Therefore the batteries should not be short circuited, overcharged, punctured, incinerated, immersed in water, force discharged or exposed to temperatures above the temperature range of the cell or battery.

4 First Aid Measures

General Information: This information is relevant only if the battery is broken and contents are exposed.

Inhalation: If the battery inner contents are inhaled, remove to fresh air. Seek medical attention.

Skin Contact:

In case of the battery inner contents skin contact, immediately remove contaminated clothing and wash affected areas with water and soap. Seek medical attention if irritation persists.

Eye Contact:

In case of the battery inner contents eye contact, rinse with water for several minutes, including under eyelids. Remove contact lenses, if present and easy to do. Continue rinsing for at least 15 minutes. Seek medical attention if irritation persists.

Ingestion:

If swallowed, do not induce vomiting. Immediately rinse mouth with water. Never give anything by mouth to an unconscious person. Seek immediate medical attention.

Symptoms Caused by Exposure:

Inhalation: The battery inner contents may cause respiratory irritation.

Skin Contact: The battery inner contents cause skin irritation. May cause an allergic skin reaction.

Eye Contact: The battery inner contents cause serious eye irritation.

Ingestion: May cause gastrointestinal irritation, nausea, diarrhoea and vomiting.

5 Fire Fighting Measures

Suitable Extinguishing Media: Dry chemical powder or carbon dioxide.

Specific Hazards Arising from the Chemical:

Hazardous combustion products include oxides of carbon and oxides of lithium.

Product is not flammable.

Containers close to fire should be removed only if safe to do so. Use water spray to cool fire exposed containers.

Minimise run-off from fire fighting entering drains or water courses.

HAZCHEM Code: 2Y

Special Protective Equipment and Precautions for Fire Fighters:

When fighting a major fire wear self-contained breathing apparatus and protective equipment.

6 Accidental Release Measures

Personal Precautions, Protective Equipment and Emergency Procedures:

If dealing with an electrolyte leakage and irritating vapours are generated, an approved half face inorganic vapours and gases/acid gases/particulate respirator is required, solvent resistant gloves, protective clothing, apron and boots. Evacuate all non-essential personnel from affected area and allow the vapours to dissipate. Avoid eye and skin contact and inhalation of vapors or fumes. Ensure adequate ventilation. Eliminate all ignition sources. Avoid sparks and open flames. No smoking.

Environmental Precautions:

In the event of a major spill, prevent spillage from entering drains or water courses.

Inform respective authorities in case of seepage into water course or sewage system.

Methods and Materials for Containment and Cleaning Up:

The material contained within the battery is released only in the case of mechanical, electrical or thermal abuse. In the event of battery rupture and leakage allow the batteries to cool and the vapour to dissipate. Stop leak if safe to do so and absorb spill with sand, earth or some other inert absorbent material. Collect the spilled material and place into a suitable plastic lined container for disposal. Clean spill surface with detergent and water, collect all contaminated wash water for proper disposal.

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7 Handling and Storage

Precautions for Safe Handling:

Charge according to manufacturer's specifications.

Do not overcharge, short-circuit, force discharge, disassemble, crush, deform, expose to high temperatures or incinerate. Do not allow battery terminals to contact each other or other metals. Do not weld, solder or in any way modify batteries. Do not damage or remove the external casing. Ensure batteries are installed with the correct polarity.

Use of safe work practices are recommended to avoid eye or skin contact and inhalation of vapours, mists and dusts.

Food, beverages and tobacco products should not be stored or consumed where this material is in use. Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storage or re-use. Provide eyewash fountains and safety showers in close proximity to points of potential exposure.

Conditions for Safe Storage:

Store in a cool, dry and well ventilated area. Avoid exposure to air over prolonged periods. Ensure battery terminals are protected during storage. Batteries must be packed in a manner to prevent short circuits. Loose batteries should not be stored in bulk. Protect from mechanical and electrical abuse such as short circuiting, overcharging, installing with incorrect polarity, disassembling or crushing. Protect from heat, sparks, open flames and direct sunlight. Avoid excessive moisture. Keep out of reach of children. Store locked up. Keep away from oxidising agents, acids and bases.

8 Exposure Controls and Personal Protection

Exposure Standards:**CAS: 7782-42-5 Graphite**WES TWA: 3 mg/m³**CAS: 7440-50-8 Copper**WES TWA: 1* 0.2** mg/m³
*dust & mists (as Cu) **fume**CAS: 7429-90-5 Aluminium**WES TWA: 10* 5** mg/m³
*metal dust,**welding, pyro powders**CAS: 1333-86-4 Carbon black (<1%)**WES TWA: 3 mg/m³**Engineering Controls:**

Natural ventilation should be adequate under normal use conditions.

If the battery inner contents are exposed ensure adequate ventilation of the working area, keeping airborne concentrations below occupational exposure standards.

Respiratory Protection:

Respiratory protection is not required under normal use conditions.

However, if dealing with an electrolyte leakage and irritating vapours are generated, an approved half face inorganic vapours and gases/acid gases/particulate respirator is required. See Australian Standards AS/NZS 1715 and 1716 for more information.

Skin Protection:

Skin protection is not required under normal use conditions.

If the battery inner contents are exposed use chemical resistant gloves. See Australian/New Zealand Standard AS/NZS 2161 for more information.

When selecting gloves for use against certain chemicals, the degradation resistance, permeation rate and permeation breakthrough time should be considered.

Occupational protective clothing (depending on conditions in which it has to be used, in particular as regards the period for which it is worn, which shall be determined on the basis of the seriousness of the risk, the frequency of exposure to the risk, the characteristics of the workstation of each worker and the performance of the protective clothing). See Australian/New Zealand Standard AS/NZS 4501 for more information.

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Eye and Face Protection:

Eye protection is not required under normal use conditions.

In case of spill or leakage wear safety glasses for protection against splashing materials or liquids. See Australian/New Zealand Standard AS/NZS 1337 for more information.

9 Physical and Chemical Properties

Appearance:

Form:	Solid
Colour:	Black
Odour:	Odourless
Odour Threshold:	No information available
pH-Value:	No information available
Melting point/freezing point:	No information available
Initial Boiling Point/Boiling Range:	No information available
Flash Point:	No information available
Flammability:	No information available
Auto-ignition Temperature:	No information available
Decomposition Temperature:	No information available
Explosion Limits:	
Lower:	No information available
Upper:	No information available
Vapour Pressure:	No information available
Relative Density:	No information available
Vapour Density:	No information available
Evaporation Rate:	No information available
Solubility in Water:	Insoluble
Partition Coefficient (n-octanol/water):	No information available
Viscosity:	No information available

10 Stability and Reactivity

Possibility of Hazardous Reactions: No dangerous reactions known under conditions of normal use.**Chemical Stability:** Stable at ambient temperature and under normal conditions of storage and use.**Conditions to Avoid:**

Mechanical and electrical abuse such as short circuiting, overcharging, installing with incorrect polarity, disassembling or crushing. Protect from heat, sparks and open flames. Avoid excessive moisture.

Incompatible Materials: Oxidising agents, acids and bases.**Hazardous Decomposition Products:** Oxides of carbon and oxides of lithium.

11 Toxicological Information

Toxicity:**LD50/LC50 Values:****CAS: 616-38-6 Dimethyl carbonate**

Oral	LD50	13,000 mg/kg (Rattus norvegicus (rat))
	LD50	>5,000 mg/kg (Oryctolagus cuniculus (rabbit))

CAS: 7440-50-8 Copper

Oral	LD50	>2,000 mg/kg (Rattus norvegicus (rat))
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CAS: 96-49-1 1,3-Dioxolan-2-one

Oral	LD50	10,000 mg/kg (Rattus norvegicus (rat))
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Acute Health Effects**Inhalation:** The battery inner contents may cause respiratory irritation.**Skin:** The battery inner contents cause skin irritation. May cause an allergic skin reaction.**Eye:** The battery inner contents cause serious eye irritation.**Ingestion:** May cause gastrointestinal irritation, nausea, diarrhoea and vomiting.**Skin Corrosion / Irritation:** Causes skin irritation.**Serious Eye Damage / Irritation:** Causes serious eye irritation.**Respiratory or Skin Sensitisation:** May cause an allergic skin reaction.**Germ Cell Mutagenicity:** Based on classification principles, the classification criteria are not met.**Carcinogenicity:**

Suspected of causing cancer via inhalation.

Nickel compounds are classified by IARC as Group 1 - Carcinogenic to humans.

Cobalt and cobalt compounds are classified by IARC as Group 2A - Probably carcinogenic to humans.

Carbon black is classified by IARC as Group 2B - Possibly carcinogenic to humans.

Polypropylene is classified by IARC as Group 3 - Not classifiable as to its carcinogenicity to humans.

Reproductive Toxicity: Based on classification principles, the classification criteria are not met.**Specific Target Organ Toxicity (STOT) - Single Exposure:**

Based on classification principles, the classification criteria are not met.

Specific Target Organ Toxicity (STOT) - Repeated Exposure:

May cause damage to the bones and the teeth through prolonged or repeated exposure.

Aspiration Hazard: Based on classification principles, the classification criteria are not met.**Chronic Health Effects:** No data associated with long term health effects.**Existing Conditions Aggravated by Exposure:** No data available.

12 Ecological Information

Ecotoxicity:**Aquatic toxicity:**

The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

CAS: 7440-50-8 Copper

EC50/48 h	0.792 mg/l (Daphnia magna (water flea))
EC50/72 h	0.333 mg/l (Algae)
LC50/96 h	0.0068-0.0156 mg/l (Pimephales promelas (fathead minnow))
	0.0081 mg/l (fish)

Persistence and Degradability: No data available on finished product.**Bioaccumulative Potential:** No data available on finished product.**Mobility in Soil:** No data available on finished product.**Other adverse effects:** No further relevant information available.

13 Disposal Considerations

Disposal Methods and Containers: Dispose according to applicable local and state government regulations.**Special Precautions for Landfill or Incineration:**

Please consult your state Land Waste Management Authority for more information.

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14 Transport Information

UN Number	
ADG, IMDG, IATA	UN3480
Proper Shipping Name	
ADG, IMDG, IATA	LITHIUM ION BATTERIES
Dangerous Goods Class	
ADG Class:	9
Packing Group:	None
EMS Number:	F-A,S-I
Hazchem Code:	2Y
Special Provisions:	188, 230, 310, 348, 376, 377, 384, 387, 390 IATA 965 IA
Transport/Additional information:	The Lithium Battery (BHQ1-10S5P 37V 14500mAh) has passed the test UN38.3.
Excepted quantities (EQ):	E0
Limited Quantities:	0
Packagings & IBCs - Packing Instruction:	P903, P908, P909, P910, P911, LP903, LP904, LP905, LP906

15 Regulatory Information

Australian Inventory of Industrial Chemicals:

All components are listed except:

CAS: 346417-97-8	Lithium nickel manganese cobalt oxide
CAS: 623-53-0	Ethyl methyl carbonate

Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Poison Schedule:

Not a scheduled poison.

16 Other Information

Date of Preparation or Last Revision: 07.02.2023**Prepared by:** MSDS.COM.AU Pty Ltdwww.msds.com.au

Abbreviations and acronyms:

ADG: Australian Dangerous Goods
 IMDG: International Maritime Code for Dangerous Goods
 IATA: International Air Transport Association
 GHS: Globally Harmonised System of Classification and Labelling of Chemicals
 CAS: Chemical Abstracts Service (division of the American Chemical Society)
 LC50: Lethal concentration, 50 percent
 LD50: Lethal dose, 50 percent
 IARC: International Agency for Research on Cancer
 STEL: Short Term Exposure Limit
 TWA: Time Weighted Average
 NES: National Exposure Standard (Safe Work Australia - Workplace Exposure Standards For Airborne Contaminants)
 Flammable Liquids 2: Flammable liquids – Category 2
 Acute Toxicity (Oral) 3: Acute toxicity – Category 3
 Acute Toxicity (Oral) 4: Acute toxicity – Category 4
 Skin Corrosion/Irritation 1A: Skin corrosion/irritation – Category 1A
 Skin Corrosion/Irritation 2: Skin corrosion/irritation – Category 2
 Eye Dam. 1: Serious eye damage/eye irritation – Category 1
 Serious eye damage/irritation – Category 2A: Serious eye damage/eye irritation – Category 2A
 Skin Sensitisation 1: Skin sensitisation, Hazard Category 1
 Carcinogenicity 2: Carcinogenicity – Category 2
 STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1

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STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2

Aquatic Acute 3: Hazardous to the aquatic environment, short-term (Acute). Category 3

Aquatic Chronic 3: Hazardous to the aquatic environment, long-term (Chronic). Category 3

Disclaimer

This SDS is prepared in accord with the Safe Work Australia document “Code of Practice for the Preparation of Safety Data Sheets for Hazardous Chemicals - July 2020”.

The information contained in this safety data sheet is provided in good faith and is believed to be accurate at the date of issuance. Pac Fire Australia Pty Ltd makes no representation of the accuracy or comprehensiveness of the information and to the full extent allowed by law excludes all liability for any loss or damage related to the supply or use of the information in this material safety data sheet. MSDS.COM.AU Pty Ltd is not in a position to warrant the accuracy of the data herein. The user is cautioned to make their own determinations as to the suitability of the information provided to the particular circumstances in which the product is used.