



Material Safety Data Sheet

LITHIUM-ION BATTERY PACK

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Section 1. PRODUCT & COMPANY IDENTIFICATION

1.1 PRODUCT IDENTIFIER:	Lithium-ion Battery Pack for SLK1770BP4 Battery Generator
1.1. Relevant identified uses of the product and uses advised against.	This battery pack is designed to power the Rite-Power Battery Generator Model Reference SLK1770BP4 Nominal voltage: 25.55V Rated Capacity: 273.6A Rated Energy: 7000Wh
PRODUCT CODES: Catalogue No	SLK1770BP4
1.3 MANUFACTURER / SUPPLIER	Ritelite Systems Ltd Meadow Park, Bourne Road Essendine, Stamford, PE9 4LT
Tel:	+44 (0) 1780765600
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1.4 INFORMATION & EMERGENCY CONTACT:	
	Ritelite Systems Ltd
Tel:	+44 (0) 1780765600

Identification Images

Products containing the SLK1770BP4 Lithium-ion battery pack





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Section 2: HAZARDS IDENTIFICATION

2.1 Classification of the mixture

This product is an article as defined in the REACH Regulation therefore SDS is not required. As a whole (article) the product is not hazardous to human health and the environment.

In case of tear, unseal or corrosion of the article, the following hazards resulting from the classification of the mixture – components inside the package are possible (see Section 3 of the safety datasheet).

Carcinogenicity, Hazard Category 1A (Carc. 1A)

May cause cancer by inhalation. (H350i)

Specific target organ toxicity — Repeated exposure, Hazard Category 1 (STOT RE 1)

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

Skin corrosion, Hazard Category 1A (Skin Corr. 1A)

Causes severe skin burns and eye damage. (H314)

Acute toxicity (oral), Hazard Category 3 (Acute Tox. 3)

Toxic if swallowed. (H301)

Acute toxicity (inhalation), Hazard Category 4 (Acute Tox. 4)

Harmful if inhaled. (H332)

Sensitisation — Skin, Hazard Category 1 (Skin Sens. 1)

May cause an allergic skin reaction. (H317)

Hazardous to the aquatic environment — Acute Hazard, Category 1 (Aquatic Acute 1)

Very toxic to aquatic life. (H400)

Hazardous to the aquatic environment — Chronic Hazard, Category 1 (Aquatic Chronic 1)

Very toxic to aquatic life with long lasting effects. (H410)

Classification according to Directive (EC) No 1272/2008

Carcinogenic, Category 1

May cause cancer by inhalation. (R49)

Corrosive (C)

Causes severe burns. (R35)

Toxic (T)

Toxic: danger of serious damage to health by prolonged exposure through inhalation. (R48/23)

Toxic if swallowed. (R25)

Harmful (Xn)

Harmful by inhalation. (R20)

May cause sensitisation by skin contact. (R43)

Dangerous to the environment (N)

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. (R50/53)

Harmful effects on human health:

Product components are hermetically sealed in metal containers, which under normal conditions of use are not hazardous. In case of tear, unseal or corrosion of the article, its content has local toxic and corrosive effect. May cause burns to the skin, conjunctiva, cornea. May cause irritation of the mucous membranes and respiratory system characterized by scratching in the throat, cough. In case of ingestion, there is a risk of burns to mouth, throat, digestive tract, and perforation of the stomach walls. Symptoms: nausea, vomiting, severe pain. In people who are allergic may cause severe allergic reaction to even very small amounts of the product. With repeated exposure to intense inhalation may cause respiratory diseases. May cause cancer by inhalation.

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Environmental effects:

Very toxic to aquatic life with long lasting effects.

Adverse effects associated with physio-chemical properties:

Unknown hazardous effects associated with physicochemical properties. With normal use there is no risk of fire or explosion, or the danger of electrolyte leakage from the product. Contact of product poles with other metals can lead to heating or leakage.

2.2 Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms



Signal Word (CLP) : Not required

Hazard Statements (CLP): Not required

2.3 Other Hazards

This mixture meets neither PBT nor vPvB criteria

Section 3: COMPOSITION / INFORMATION ON INGREDIENTS

The Lithium-ion battery is hermetically sealed; among its components, the following could potentially be hazardous upon release.

3.2 Mixtures

Product identifier: Lithium-ion Battery Pack for SLK1770BP4 Battery powered generator

Mixture components

Each battery pack consists of 4 separate batteries with a total 168 cells per battery which are in hermetically sealed metallic containers containing a number of chemicals and materials of construction of which the following could potentially be hazardous upon release.



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Substance	Material name	Concentration range (%)
Positive electrode	Lithium transition metal oxidate	20 - 60
Positive electrode's base	Aluminium	1 - 10
Negative electrode	Carbon	10 - 30
Negative electrode's base	Copper	1 - 15
Electrolyte	Organic electrolyte principally involves ester carbonate	5 - 25
Outer case	Aluminium, iron, aluminium laminated plastic	1 - 30

Section 4. FIRST AID MEASURES

4.1 Description of first aid measures

Inhalation: Exposure occurs when product is damaged: remove casualty from exposure site to fresh air, place in reclining or sitting position, keep at rest and protect against heat loss. If necessary, call a physician.

Skin contact: Exposure occurs when product is damaged: in case of pouring fused product, rinse skin immediately with copious amount of water. Do not remove clothing. Cover burns with a sterile dressing. Call a physician.

Eye contact: Exposure occurs when product is damaged: rinse immediately with copious amount of lukewarm water for at least 15 min. Remove contact lenses. To avoid cornea damage, don't use jet stream. If irritation persists, seek ophthalmologist's advice.

Ingestion: Exposure occurs when product is damaged: if swallowed, don't provoke vomiting. Rinse mouth with water. Make casualty drink large amount of water (unless unconscious). If necessary, consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

Product components are hermetically sealed in metal containers, which under normal conditions of use are not hazardous. In case of tear, unseal or corrosion of the article, its content has local toxic and corrosive effect. May cause burns to the skin, conjunctiva, cornea. May cause irritation of the mucous membranes and respiratory system characterized by scratching in the throat, cough. In case of ingestion, there is a risk of burns to mouth, throat, digestive tract, and perforation of the stomach walls. Symptoms: nausea, vomiting, severe pain. In people who are allergic may cause severe allergic reaction to even very small amounts of the product. With repeated exposure to intense inhalation may cause respiratory diseases. May cause cancer by inhalation.

4.3 Indication of any immediate medical attention and special treatment needed

In case of an allergic reaction (rash, swelling, redness) call a physician and show him the label or safety data sheet to apply appropriate antihistamines. Provide the assisting physician with SDS.



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Section 5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media:

Non-flammable mixture. Fire in the surroundings should be extinguished with the media suitable for the materials involved in fire. Product exposed to fire should be cooled from a safe distance with water spray (danger of explosion); if possible, remove them from the endangered area.

Unsuitable extinguishing media:

Do not use a direct water-jet.

5.2 Special hazards arising from the mixture

In case of fire, carbon oxides, metal oxides, hydrogen fluoride may be formed.

5.3 Advice for firefighters

Wear gas-tight protective suit and self-contained breathing apparatus.

Section 6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear protective clothing made of natural fabrics (cotton) or synthetic fibres, gloves made of nitrile (thickness 0.4 ± 0.05 mm, penetration time > 480 min.) or butyl (thickness 0.3 ± 0.05 mm, penetration time > 480 min.), safety goggles. Eliminate sources of ignition (extinguish open fire, announce prohibition of smoking and usage of sparking tools). Remove from the affected area unprotected persons who do not participate in removal of the failure. Avoid direct contact with the contents of damaged or open battery.

6.2 Environmental precautions

Protect from releasing to a sewage system, surface, ground water and soil.

6.3 Methods and materials for containment and cleaning up

Leakage is possible from damaged or unsealed package. Secure sink basins. Damaged packaging place in an overpack. Vapours dilute with water spray. Eliminate sources of ignition (extinguish open fire, announce prohibition of smoking and usage of sparking tools). Small amounts absorb into chemically inert binding material (sand, diatomaceous earth), transfer to tight containers and deliver to an authorized waste recipient. Wash contaminated surface with large amount of water.

6.4 Reference to other sections

Remove according to recommendations listed in section 13.

Section 7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Do not open, disassemble, crush or burn the product. Do not connect the positive terminal or the negative terminal with electrical wire or chain. Avoid polarity reverse connection when installing the battery to an instrument. Do not wet the battery with water, seawater, drink or acid; or expose to strong oxidizer. Do not give a mechanical shock or deform. Do not use unauthorized charger or other charging method. Protect from exposure to heat or open flame. It is recommended to take special precautions when working with an open or damaged product to avoid contact with skin and eyes. Protect from releasing to a sewage system, surface, ground water and soil. Do not eat, drink or smoke while handling. Wash hands during intervals and after finishing work. Take off contaminated clothing and wash before reusing.

7.2 Conditions for safe storage, including any incompatibilities

Store in original containers, in a dry, ventilated storage room at temperatures up to 30°C . Keep away from heat and ignition sources, oxidizers, acids. Temperatures above 70°C may cause bursting of the product and leakage of the electrolyte. Protect from sunlight. Keep away from water and moisture.

If this document is printed, it is to be considered uncontrolled and for reference only.



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7.3 Specific end use(s)

Follow Manufacturers recommendations regarding maximum recommended currents and operating temperature range. Applying pressure on deforming the battery may lead to disassembly followed by eye, skin and throat irritation.

Section 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Exposure controls

8.1.1 *Appropriate engineering controls*

Install proper general and local workplace ventilation.

8.1.2 *Individual protective measures such as personal protective equipment*

Eye/face protection: In case of contact with contents of open or damaged product wear safety goggles.

Hands and skin protection: In case of contact with contents of open or damaged product wear protective clothing

and gloves made of nitrile (thickness 0.4 ± 0.05 mm, penetration time > 480 min.) or

butyl (thickness 0.3 ± 0.05 mm, penetration time > 480 min).

Respiratory protection: In normal conditions not required. In case of contact with contents of open or damaged product and exceeding permissible concentrations of vapours, use respiratory protection with particle filter marked white and labelled P2 and vapour filter marked brown and labelled A. You can apply combined filters AP.

Occupational hygiene: General industrial hygiene rules apply. Don't allow exceeding occupational exposure levels. After finishing work remove contaminated clothes. Wash hands and face before work breaks. Wash entire body after finishing work. Do not drink, eat and smoke during handling and use.

8.1.3 *Environmental exposure controls*

Prevent from draining to a municipal sewage system and watercourses.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a) Appearance

Mixture in hermetically sealed containers.

b) Odour

Odourless.

c) Odour threshold

Not applicable since the mixture is odourless.

d) pH

No data available.

e) Melting/freezing point

No data available.

f) Initial boiling point and boiling range

No data available.

g) Flash point

The mixture - contents of the accumulator is non-flammable.



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h) Evaporation rate
Negligible.

i) Flammability
Non-flammable mixture.

j) Upper/lower flammability or explosive limits
Not applicable. The mixture does not pose an explosion hazard.

k) Vapour pressure
No data available.

l) Vapour density
No data available.

m) Relative density
No data available.

n) Solubility(ies)
Water insoluble.

o) Partition coefficient: n-octanol/water
No data available.

p) Auto-ignition temperature
No data available.

q) Decomposition temperature
No data available.

r) Viscosity
No data available.

s) Explosive properties
No explosion hazard.

t) Oxidising properties
Not expected to have oxidising properties.

9.2 Other information
No data.

Section 10. STABILITY AND REACTIVITY

10.1 Reactivity
No reactivity if stored and used according to the identified uses.

10.2 Chemical stability
Stable in standard conditions of storage and use.

10.3 Possibility of hazardous reactions
None identified.

10.4 Conditions to avoid
Sources of ignition, open flame.

10.5 Incompatible materials



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Water, strong oxidizing agents, strong acids.

10.6 Hazardous decomposition products

None identified.

Section 11. TOXICOLOGICAL INFORMATION

Efficient and tight battery pack is not hazardous to human health. The battery pack is a threat in case of tear, unseal or corrosion, resulting in possibility of releasing its contents:

Organic Electrolyte

Acute toxicity:

LD50, – oral – rat 2,000mg/kg or more

Irritating nature: Irritative to skin and eye

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Product components are hermetically sealed, which under normal conditions of use are not hazardous to the environment.

In case of tear, unseal or corrosion of the article, the mixture is very toxic to aquatic life with long lasting effects.

12.2 Persistence and degradability

No data available.

12.3 Bioaccumulative potential

Partition coefficient octanol/water: (Kow): Not determined for the mixture.

Bioconcentration factor (BCF): Not determined for the mixture.

12.4 Mobility in soil

No data available.

12.5 Results of PBT and vPvB assessment

The mixture meets neither PBT nor vPvB criteria.

12.6 Other adverse effects

No data available.

Section 13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Do not dispose together with municipal waste. Do not allow ground, surface, ground water contamination.

European Waste Code:

16 06 05 other batteries and accumulators.



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Section 14. TRANSPORT INFORMATION

ADR/RID, IMDG, IATA

14.1 UN number

3481

14.2 UN proper shipping name

LITHIUM ION BATTERIES in Equipment

14.3 Transport hazard class(es)

9

14.4 Packing group

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14.5 Environmental hazards

The mixture is not hazardous to the environment according to the UN Model Regulations.

14.6 Special precautions for user

No special precautions.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable.

14.8 Worldwide air transportation

IATA [Packing Instruction 965 section IA and IB]

14.9 Europe, road transportation:

ADR [Packing Instruction 903]

14.10 Worldwide, sea transportation:

IMO-IMDG

Section 15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the mixture

COMMISSION REGULATION (EU) No 109/2012 of 9 February 2012 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) as regards Annex XVII (CMR substances);

REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 (OJ EU L353 of December, 31 2008, with later amendments 1-6 ATP);

REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC (OJ EU L396 of December 30, with later amendments).

Council Directive 67/548/EEC of 27 June 1967 on the approximation of laws, regulations and administrative provisions relating to the classification, packaging and labelling of dangerous substances (Series I Volume 1967 P. 234 – 256)

Directive 1999/45/EC of the European Parliament and of the Council of 31 May 1999 concerning the approximation of the laws, regulations and administrative provisions of the Member States relating to the classification, packaging and labelling of dangerous preparations (OJ L 200, 30.7.1999, p. 1–68)

Commission Regulation (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)(OJ L 133, 31.5.2010, p. 1–43)

15.2 Chemical safety assessment

Supplier has not assessed the chemical safety of the mixture.



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Section 16. OTHER INFORMATION

The information contained in this safety data sheet describes the product exclusively from the safety requirements perspective. The user is responsible for setting up the conditions for safe use of the product and bears a sole responsibility for the consequences of its incorrect use.