

# Sony Lithium Ion Rechargeable Battery Pack BL1860B

Makita (Australia) Pty Ltd

Chemwatch: 5188-48

Version No: 5.1.1.1

Safety Data Sheet according to WHS and ADG requirements

Chemwatch Hazard Alert Code: 1

Issue Date: 01/05/2020

Print Date: 01/05/2020

S.GHS.AUS.EN

## SECTION 1 IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

### Product Identifier

Product name	Sony Lithium Ion Rechargeable Battery Pack BL1860B
Synonyms	Not Available
Proper shipping name	LITHIUM ION BATTERIES (including lithium ion polymer batteries)
Other means of identification	Not Available

### Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses	The battery pack uses ten US18650VTC5 lithium ion rechargeable cell and control circuit on the PWB. The cells are connected in 2 parallel strings of 5 cells in series. Average operating voltage: 18.0V. NOTE: Chemical materials are stored in sealed case. The toxic properties of the electrode materials are hazardous only if the materials are released by damaging the cell or if exposed to fire. The sealed battery is not hazardous in normal use. The chemical hazards are related to the leaked battery contents. Use according to manufacturer's directions.
--------------------------	--

### Details of the supplier of the safety data sheet

Registered company name	Makita (Australia) Pty Ltd
Address	2 Litton Close Pemulwuy NSW 2145 Australia
Telephone	1300 361 690
Fax	1300 361 770
Website	http://www.makita.com.au
Email	Not Available

### Emergency telephone number

Association / Organisation	Chemwatch Emergency Response
Emergency telephone numbers	1800 951 288 (Toll free - use within AU)
Other emergency telephone numbers	+61 2 9186 1132 (Alternative global number)

## SECTION 2 HAZARDS IDENTIFICATION

### Classification of the substance or mixture

**DANGEROUS GOODS. NON-HAZARDOUS CHEMICAL.** According to the WHS Regulations and the ADG Code.

Poisons Schedule	Not Applicable
Classification [1]	Not Applicable

### Label elements

Hazard pictogram(s)	Not Applicable
SIGNAL WORD	<b>NOT APPLICABLE</b>

### Hazard statement(s)

Not Applicable

### Precautionary statement(s) Prevention

Not Applicable

### Precautionary statement(s) Response

Not Applicable

### Precautionary statement(s) Storage

Not Applicable

### Precautionary statement(s) Disposal

Not Applicable

## SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

## Sony Lithium Ion Rechargeable Battery Pack BL1860B

## Substances

See section below for composition of Mixtures

## Mixtures

CAS No	%[weight]	Name
Not Available	100	Cathode with graphite conductive material and
Not Available		lithium nickel cobalt oxides
Not Available		polyvinylidene fluoride binder
Not Available		Anode containing graphite
Not Available		binder, as
Not Available		styrene-butadiene rubber / carboxymethyl cellulose sodium salt
Not Available		organic solvent / lithium salt as electrolyte

## SECTION 4 FIRST AID MEASURES

## Description of first aid measures

<b>Eye Contact</b>	<p>If this product comes in contact with the eyes:</p> <ul style="list-style-type: none"> <li>Wash out immediately with fresh running water.</li> <li>Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.</li> <li>Seek medical attention without delay; if pain persists or recurs seek medical attention.</li> <li>Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.</li> </ul>
<b>Skin Contact</b>	<p>If skin contact occurs:</p> <ul style="list-style-type: none"> <li>Immediately remove all contaminated clothing, including footwear.</li> <li>Flush skin and hair with running water (and soap if available).</li> <li>Seek medical attention in event of irritation.</li> </ul>
<b>Inhalation</b>	Remove patient to fresh air and seek medical attention.
<b>Ingestion</b>	<p>Not considered a normal route of entry.</p> <ul style="list-style-type: none"> <li>If swallowed do <b>NOT</b> induce vomiting.</li> <li>If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.</li> <li>Observe the patient carefully.</li> <li>Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.</li> <li>Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.</li> <li>Seek medical advice.</li> </ul>

## Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

## SECTION 5 FIREFIGHTING MEASURES

## Extinguishing media

Small fires: Use specified extinguishers (gas, foam, powder) and extinguishing system under the Fire Defense Law. Since corrosive gas may be produced at the time of fire extinguishing, use an air inhalator when danger is predicted. Large fires: use a large amount of water as a supportive measure in order to get cooling effect if needed. (Indoor / outdoor fire hydrant). Carry away flammable materials immediately in case of fire. Move batteries to a safer place immediately in case of fire. [Manufacturer]

## Special hazards arising from the substrate or mixture

<b>Fire Incompatibility</b>	None known.
-----------------------------	-------------

## Advice for firefighters

<b>Fire Fighting</b>	<ul style="list-style-type: none"> <li>Alert Fire Brigade and tell them location and nature of hazard.</li> <li>Wear breathing apparatus plus protective gloves in the event of a fire.</li> <li>Prevent, by any means available, spillage from entering drains or water courses.</li> <li>Use fire fighting procedures suitable for surrounding area.</li> <li><b>DO NOT</b> approach containers suspected to be hot.</li> <li>Cool fire exposed containers with water spray from a protected location.</li> <li>If safe to do so, remove containers from path of fire.</li> <li>Equipment should be thoroughly decontaminated after use.</li> </ul>
<b>Fire/Explosion Hazard</b>	<ul style="list-style-type: none"> <li>Non combustible.</li> <li>Not considered to be a significant fire risk.</li> <li>Heating may cause expansion or decomposition leading to violent rupture of containers.</li> <li>May emit acrid smoke. May emit corrosive and poisonous fumes.</li> </ul>
<b>HAZCHEM</b>	4W

## SECTION 6 ACCIDENTAL RELEASE MEASURES

## Personal precautions, protective equipment and emergency procedures

See section 8

## Environmental precautions

See section 12

## Methods and material for containment and cleaning up

Continued...

## Sony Lithium Ion Rechargeable Battery Pack BL1860B

<b>Minor Spills</b>	Clean up all spills immediately. Avoid contact with skin and eyes. Place in suitable containers for disposal.
<b>Major Spills</b>	<ul style="list-style-type: none"> <li>▶ Clean up all spills immediately.</li> <li>▶ Wear protective clothing, safety glasses, dust mask, gloves.</li> <li>▶ Secure load if safe to do so. Bundle/collect recoverable product.</li> <li>▶ Use dry clean up procedures and avoid generating dust.</li> <li>▶ Vacuum up (consider explosion-proof machines designed to be grounded during storage and use).</li> <li>▶ Water may be used to prevent dusting.</li> <li>▶ Collect remaining material in containers with covers for disposal.</li> <li>▶ Flush spill area with water.</li> </ul>

Personal Protective Equipment advice is contained in Section 8 of the SDS.

## SECTION 7 HANDLING AND STORAGE

## Precautions for safe handling

<b>Safe handling</b>	Do not connect the positive terminal to the negative terminal with conductors. Avoid polarity reverse connection when installing the battery to an instrument. Do not mix different type batteries or mix new and old ones together. Do not wet the battery or expose to strong oxidizer. Do not open the battery. Keep the battery away from heat and fire. Do not give a mechanical shock or deform. Do not use the unit without its electronic management system. Do not directly heat, solder or throw into fire. Such unsuitable use can cause leakage or spout vaporized electrolyte fumes and may cause fire or explosion. Immediately disconnect the batteries if, during operation, they emit an unusual smell, feel hot, change shape, or appear abnormal in any other way. Keep batteries in original packaging until use and do not jumble them. Use good occupational work practice. Observe manufacturer's storage and handling recommendations contained within this SDS. Avoid physical damage to containers.
<b>Other information</b>	<ul style="list-style-type: none"> <li>▶ Keep dry.</li> <li>▶ Store under cover.</li> <li>▶ Protect containers against physical damage.</li> <li>▶ Observe manufacturer's storage and handling recommendations contained within this SDS.</li> </ul> Keep out of reach of children. Store out of direct sunlight

## Conditions for safe storage, including any incompatibilities

<b>Suitable container</b>	Store in original containers.
<b>Storage incompatibility</b>	Batteries should be separated from other materials and stored in a non-combustible, well ventilated structure with sufficient clearance between walls and battery stacks. Do not place batteries near heating equipment, nor expose to direct sunlight for long periods. Store within the recommended limit of -30 degC and 45 degC, well-ventilated area. Do not expose to high temperature (40degC). Since short circuit can cause burn hazard or safety vent to open, do not store with metal jewelry, metal covered tablets or metal belt.[Manufacturer] <ul style="list-style-type: none"> <li>▶ Avoid reaction with oxidising agents</li> <li>▶ Avoid strong acids, acid chlorides, acid anhydrides and chloroformates.</li> </ul>



+ + + + + + +

**X** — Must not be stored together  
**0** — May be stored together with specific precautions  
**+** — May be stored together

## SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

## Control parameters

## OCCUPATIONAL EXPOSURE LIMITS (OEL)

## INGREDIENT DATA

Not Available

## EMERGENCY LIMITS

Ingredient	Material name	TEEL-1	TEEL-2	TEEL-3
Sony Lithium Ion Rechargeable Battery Pack BL1860B	Not Available	Not Available	Not Available	Not Available

  

Ingredient	Original IDLH	Revised IDLH
Sony Lithium Ion Rechargeable Battery Pack BL1860B	Not Available	Not Available

## Exposure controls

<b>Appropriate engineering controls</b>	General exhaust is adequate under normal operating conditions.
<b>Personal protection</b>	

Continued...

## Sony Lithium Ion Rechargeable Battery Pack BL1860B

<b>Eye and face protection</b>	None under normal operating conditions. <b>OTHERWISE:</b> ▸ Safety glasses.
<b>Skin protection</b>	See Hand protection below
<b>Hands/feet protection</b>	None under normal operating conditions. <b>OTHERWISE:</b> ▸ Rubber Gloves
<b>Body protection</b>	See Other protection below
<b>Other protection</b>	None under normal operating conditions. <b>OTHERWISE:</b> Rubber apron

**Respiratory protection**

- Respirators may be necessary when engineering and administrative controls do not adequately prevent exposures.
- The decision to use respiratory protection should be based on professional judgment that takes into account toxicity information, exposure measurement data, and frequency and likelihood of the worker's exposure - ensure users are not subject to high thermal loads which may result in heat stress or distress due to personal protective equipment (powered, positive flow, full face apparatus may be an option).
- Published occupational exposure limits, where they exist, will assist in determining the adequacy of the selected respiratory protection. These may be government mandated or vendor recommended.
- Certified respirators will be useful for protecting workers from inhalation of particulates when properly selected and fit tested as part of a complete respiratory protection program.
- Use approved positive flow mask if significant quantities of dust becomes airborne.
- Try to avoid creating dust conditions.

**SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES****Information on basic physical and chemical properties**

<b>Appearance</b>	Lithium ion rechargeable cells set in a resin case. Average operating voltage: 18 V. Watt-hour rating: 108 Wh for battery pack.		
<b>Physical state</b>	Manufactured	<b>Relative density (Water = 1)</b>	Not Applicable
<b>Odour</b>	Not Available	<b>Partition coefficient n-octanol / water</b>	Not Available
<b>Odour threshold</b>	Not Available	<b>Auto-ignition temperature (°C)</b>	Not Applicable
<b>pH (as supplied)</b>	Not Applicable	<b>Decomposition temperature</b>	Not Available
<b>Melting point / freezing point (°C)</b>	Not Applicable	<b>Viscosity (cSt)</b>	Not Applicable
<b>Initial boiling point and boiling range (°C)</b>	Not Applicable	<b>Molecular weight (g/mol)</b>	Not Applicable
<b>Flash point (°C)</b>	Not Applicable	<b>Taste</b>	Not Available
<b>Evaporation rate</b>	Not Applicable	<b>Explosive properties</b>	Not Available
<b>Flammability</b>	Not Applicable	<b>Oxidising properties</b>	Not Available
<b>Upper Explosive Limit (%)</b>	Not Applicable	<b>Surface Tension (dyn/cm or mN/m)</b>	Not Applicable
<b>Lower Explosive Limit (%)</b>	Not Applicable	<b>Volatile Component (%vol)</b>	Not Applicable
<b>Vapour pressure (kPa)</b>	Not Applicable	<b>Gas group</b>	Not Available
<b>Solubility in water</b>	Immiscible	<b>pH as a solution (1%)</b>	Not Applicable
<b>Vapour density (Air = 1)</b>	Not Applicable	<b>VOC g/L</b>	Not Applicable

**SECTION 10 STABILITY AND REACTIVITY**

<b>Reactivity</b>	See section 7
<b>Chemical stability</b>	Leaked electrolyte may form toxic and corrosive fumes on contact with water. ▸ Unstable in the presence of incompatible materials. ▸ Product is considered stable. ▸ Hazardous polymerisation will not occur.
<b>Possibility of hazardous reactions</b>	See section 7
<b>Conditions to avoid</b>	See section 7
<b>Incompatible materials</b>	See section 7
<b>Hazardous decomposition products</b>	See section 5

**SECTION 11 TOXICOLOGICAL INFORMATION****Information on toxicological effects**

<b>Inhaled</b>	Not normally a hazard due to physical form of product.
<b>Ingestion</b>	Not normally a hazard due to physical form of product. Accidental ingestion of the material may be damaging to the health of the individual.
<b>Skin Contact</b>	The electrolyte may cause skin irritation. Not normally a hazard due to physical form of product.

## Sony Lithium Ion Rechargeable Battery Pack BL1860B

Eye	Contents of an opened cell within a battery can cause eye irritation. Not normally a hazard due to physical form of product.
Chronic	The chemicals in this product are contained in a sealed case and exposure does not occur during normal handling and use. Not normally a hazard due to physical form of product.

Sony Lithium Ion Rechargeable Battery Pack BL1860B	TOXICITY	IRRITATION
	Not Available	Not Available
<b>Legend:</b>	1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. * Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances	

Acute Toxicity	✗	Carcinogenicity	✗
Skin Irritation/Corrosion	✗	Reproductivity	✗
Serious Eye Damage/Irritation	✗	STOT - Single Exposure	✗
Respiratory or Skin sensitisation	✗	STOT - Repeated Exposure	✗
Mutagenicity	✗	Aspiration Hazard	✗

**Legend:** ✗ – Data either not available or does not fill the criteria for classification  
 ✔ – Data available to make classification

## SECTION 12 ECOLOGICAL INFORMATION

## Toxicity

Sony Lithium Ion Rechargeable Battery Pack BL1860B	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	Not Available	Not Available	Not Available	Not Available	Not Available
<b>Legend:</b>	Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 (QSAR) - Aquatic Toxicity Data (Estimated) 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data				

**DO NOT** discharge into sewer or waterways.

## Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
	No Data available for all ingredients	No Data available for all ingredients

## Bioaccumulative potential

Ingredient	Bioaccumulation
	No Data available for all ingredients

## Mobility in soil

Ingredient	Mobility
	No Data available for all ingredients

## SECTION 13 DISPOSAL CONSIDERATIONS

## Waste treatment methods

Product / Packaging disposal	<ul style="list-style-type: none"> <li>▶ Recycle wherever possible or consult manufacturer for recycling options.</li> <li>▶ Consult State Land Waste Management Authority for disposal.</li> <li>▶ Bury residue in an authorised landfill.</li> <li>▶ Recycle containers if possible, or dispose of in an authorised landfill.</li> </ul>
------------------------------	--

## SECTION 14 TRANSPORT INFORMATION

## Labels Required

	
Marine Pollutant	NO
HAZCHEM	4W

## Land transport (ADG)

UN number	3480
-----------	------

## Sony Lithium Ion Rechargeable Battery Pack BL1860B

<b>UN proper shipping name</b>	LITHIUM ION BATTERIES (including lithium ion polymer batteries)	
<b>Transport hazard class(es)</b>	Class	9
	Subrisk	Not Applicable
<b>Packing group</b>	Not Applicable	
<b>Environmental hazard</b>	Not Applicable	
<b>Special precautions for user</b>	Special provisions	188 230 310 348 376 377 384 387
	Limited quantity	0

## Air transport (ICAO-IATA / DGR)

<b>UN number</b>	3480	
<b>UN proper shipping name</b>	Lithium ion batteries (including lithium ion polymer batteries)	
<b>Transport hazard class(es)</b>	ICAO/IATA Class	9
	ICAO / IATA Subrisk	Not Applicable
	ERG Code	12FZ
<b>Packing group</b>	Not Applicable	
<b>Environmental hazard</b>	Not Applicable	
<b>Special precautions for user</b>	Special provisions	A88 A99 A154 A164 A183 A201 A206 A213 A331 A334 A802
	Cargo Only Packing Instructions	See 965
	Cargo Only Maximum Qty / Pack	See 965
	Passenger and Cargo Packing Instructions	Forbidden
	Passenger and Cargo Maximum Qty / Pack	Forbidden
	Passenger and Cargo Limited Quantity Packing Instructions	Forbidden
	Passenger and Cargo Limited Maximum Qty / Pack	Forbidden

## Sea transport (IMDG-Code / GGVSee)

<b>UN number</b>	3480	
<b>UN proper shipping name</b>	LITHIUM ION BATTERIES (including lithium ion polymer batteries)	
<b>Transport hazard class(es)</b>	IMDG Class	9
	IMDG Subrisk	Not Applicable
<b>Packing group</b>	Not Applicable	
<b>Environmental hazard</b>	Not Applicable	
<b>Special precautions for user</b>	EMS Number	F-A , S-I
	Special provisions	188 230 310 348 376 377 384 387
	Limited Quantities	0

## Transport in bulk according to Annex II of MARPOL and the IBC code

Not Applicable

## SECTION 15 REGULATORY INFORMATION

## Safety, health and environmental regulations / legislation specific for the substance or mixture

## National Inventory Status

National Inventory	Status
Australia - AICS	Yes
Canada - DSL	Yes
Canada - NDSL	Yes
China - IECSC	Yes
Europe - EINEC / ELINCS / NLP	Yes
Japan - ENCS	Yes
Korea - KECI	Yes
New Zealand - NZIoC	Yes
Philippines - PICCS	Yes
USA - TSCA	Yes
Taiwan - TCSI	Yes
Mexico - INSQ	Yes

Continued...

## Sony Lithium Ion Rechargeable Battery Pack BL1860B

Vietnam - NCI	Yes
Russia - ARIPS	Yes
<b>Legend:</b>	<i>Yes = All CAS declared ingredients are on the inventory</i> <i>No = One or more of the CAS listed ingredients are not on the inventory and are not exempt from listing(see specific ingredients in brackets)</i>

## SECTION 16 OTHER INFORMATION

<b>Revision Date</b>	01/05/2020
<b>Initial Date</b>	15/07/2015

## SDS Version Summary

Version	Issue Date	Sections Updated
4.1.1.1	01/11/2019	One-off system update. NOTE: This may or may not change the GHS classification
5.1.1.1	01/05/2020	Physical Properties, Transport Information, Use

## Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

## Definitions and abbreviations

PC—TWA: Permissible Concentration-Time Weighted Average  
PC—STEL: Permissible Concentration-Short Term Exposure Limit  
IARC: International Agency for Research on Cancer  
ACGIH: American Conference of Governmental Industrial Hygienists  
STEL: Short Term Exposure Limit  
TEEL: Temporary Emergency Exposure Limit.  
IDLH: Immediately Dangerous to Life or Health Concentrations  
OSF: Odour Safety Factor  
NOAEL :No Observed Adverse Effect Level  
LOAEL: Lowest Observed Adverse Effect Level  
TLV: Threshold Limit Value  
LOD: Limit Of Detection  
OTV: Odour Threshold Value  
BCF: BioConcentration Factors  
BEI: Biological Exposure Index

This document is copyright.

Apart from any fair dealing for the purposes of private study, research, review or criticism, as permitted under the Copyright Act, no part may be reproduced by any process without written permission from CHEMWATCH.

TEL (+61 3) 9572 4700.