


**SECTION 1. CHEMICAL PRODUCT AND COMPANY NAME**

<p><b>Lithium-Ion Rechargeable Battery Pack</b>  <b>BL1820</b></p> <p>Symbol  at the bottom of the battery.</p>
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**Safety Data Sheet**

Complies with the OSHA Hazard Communication Standard :  
 29 CFR 1910 1200

Makita U.S.A., Inc. 14930-C Northam Street La Mirada, CA 90638	Prepared By : Stan Rodrigues
	Date Revised: 08/03/2016

**EMERGENCY CONTACT INFORMATION**

<p><b>Telephone Number for Information:</b> MAKITA: 1-510-657-9881</p> <p><b>Emergency Response</b></p> <p style="text-align: center;">                     For Chemical Emergency                      Spills, Leak, Fire, Exposure, or Accident                      Call CHEMTREC Day or Night                      Within USA and Canada 1-800-424-9300                 </p>
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**SECTION 2. HAZARD IDENTIFICATION:**

<b>PROTENTIAL HEALTH EFFECTS</b>	
<b>Primary Routes Of Entry</b>	
<b>Skin contact:</b>	No
<b>Skin absorption:</b>	No
<b>Eye contact:</b>	No
<b>Inhalation:</b>	No
<b>Ingestion:</b>	No
<b>SYMPTOMS OF EXPOSURE</b>	
<b>Skin contact:</b>	No effect under routine handling and use.
<b>Skin absorption:</b>	No effect under routine handling and use.
<b>Eye contact:</b>	No effect under routine handling and use.
<b>Inhalation:</b>	No effect under routine handling and use.

**SECTION 3. COMPOSITION, INFORMATION OR INGREDIENTS:**

Battery Cell		
	<b>HAZARDOUS INGREDIENTS</b>	<b>% CAS NUMBER</b>
	Aluminum Foil	2-10 7429-90-5
	Metal Oxide (proprietary)	20-50
	Polyvinylidene Fluoride (PVDF)	<5 24937-79-9
	Copper Foil	2-10 7440-50-8
	Carbon (proprietary)	10-30 7440-44-0

**CONTINUED: SECTION 3. COMPOSITION, INFORMATION OR INGREDIENTS:**

Electrolyte (proprietary)	10-20	
Stainless steel, Nickel and inert materials Remainder N/A	Remainder	N/A

## Circuit Module

HAZARDOUS INGREDIENTS	%	CAS NUMBER
Lead	0.001	7439-92-1
Mercury	0	7439-97-6
Chromium	0	7440-47-3
Cadmium	0	7440-43-9
Plastic case and Si2O	0	N/A

## Plastic Parts and Paints

HAZARDOUS INGREDIENTS	%	CAS NUMBER
Lead	<0.1	7439-92-1
Nickle	<0.01	7440-02-0
CFCs	0	75-69-4
Polychlorinated Biphenyls	0	1336-36-3

**DESCRIPTION**

Watt-hour rating:	Under 100 WH
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**SECTION 4. FIRST AID MEASURE:**

<b>INGESTION:</b>	If swallowed, obtain medical attention immediately.
If exposure to internal materials within cell(pack) due to damaged outer casing, the Following actions are recommended.	
<b>INHALATION:</b>	Leave area immediately and seek medical attention.
<b>EYE CONTACT:</b>	Rinse eyes with water for 15 minutes and seek medical attention.
<b>SKIN CONTACT:</b>	Wash area thoroughly with soap and water and seek medical attention.
<b>INGESTION:</b>	Drink milk/water and induce vomiting; seek medical attention.

**SECTION 5. FIRE FIGHTING MEASURES:**

<b>5.1 GENERAL HAZARD:</b>	Cell is not flammable but internal organic material will burn if the cell is incinerated. Combustion products include, but are not limited to hydrogen fluoride, carbon monoxide and carbon dioxide.
<b>5.2 EXTINGUISHING MEDIA:</b>	Use extinguishing media suitable for the materials that are burning.
<b>5.3 SPECIAL FIREFIGHTING INSTRUCTIONS:</b>	If possible, remove cell(s) from firefighting area. If heated above 125°C, cell(s) can explode/vent.
<b>5.4 FIREFIGHTING EQUIPMENT:</b>	Use NIOSH/MSHA approved full-face self-contained breathing apparatus (SCBA) with full protective gear.

**SECTION 6. ACCIDENTAL RELEASE MEASURES:**

<b>6.1 ON LAND:</b>	Place material into suitable containers and call local fire/police department.
<b>6.2 IN WATER:</b>	If possible, remove from water and call local fire/ police department.

**SECTION 7. HANDLING AND STORAGE:**

<b>7.1 HANDLING:</b>	No special protective clothing required for handling individual cells.
<b>7.2 STORAGE:</b>	Store in a cool, dry place.

**SECTION 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION:**

**8.1 ENGINEERING CONTROLS:** Keep away from heat and open flame. Store in a cool dry place.

**8.2 PERSONAL PROTECTION:**

<b>Respirator:</b>	Not required during normal operations. SCBA required in the event of a fire.
<b>Eye/face protection:</b>	Not required beyond safety practices of employer.
<b>Gloves:</b>	Not required for handling of cells.
<b>Foot protection:</b>	Steel toed shoes recommended for large container handling.

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES:**

<b>State:</b>	Solid
<b>Odor:</b>	N/A
<b>PH:</b>	N/A
<b>Vapor pressure:</b>	N/A
<b>Vapor density:</b>	N/A
<b>Boiling point:</b>	N/A
<b>Solubility in water:</b>	Insoluble
<b>Specific gravity:</b>	N/A
<b>Density:</b>	N/A

**SECTION 10. STABILITY AND REACTIVITY:**

<b>10.1 REACTIVITY:</b>	None
<b>10.2 INCOMPATIBILITIES:</b>	None during normal operation. Avoid exposure to heat, open flame, and corrosives.
<b>10.3 HAZARDOUS DECOMPOSITION PRODUCTS:</b>	None during normal operating conditions. If cells are opened, hydrogen fluoride and carbon monoxide may be released.
<b>10.4 CONDITIONS TO AVOID:</b>	Avoid exposure to heat and open flame. Do not puncture, crush or incinerate.

**SECTION 11. TOXICOLOGICAL INFORMATION:**

This product does not elicit toxicological properties during routine handling and use.

<b>Sensitization:</b>	No
<b>Teratogenicity:</b>	No
<b>Reproductive toxicity:</b>	No
<b>Acute toxicity:</b>	No

**CONTINUED: SECTION 11. TOXICOLOGICAL INFORMATION:**

This product does not contain any kinds of the following substances and halogen-type flame retardants including Chlorine and Bromide type harmful flame retardants which are listed in Appendix of TCO documents and relevant international ECO requirements:

Polybromated Biphenyls (PBB)

Polybromated Diphenylethers (PBDE)

Polychlorinated Biphenyls (PCBs)

Polychlorinated Terphenyls(PCTs)

Polychlorinated Paphthalene(PCN)

Chlorinated Paraffins(C10-C13)

Chlorofluorocarbons(CFCs)

Polyvinyl Chloride(PVC)

Carbon Tetrachloride

None of the following substances will be exposed, leaked, or emitted during transportation, storage or any operation and any temperature condition:

Chlorinated Fluorohydrocarbon (FCKW)

Acrylonitrile

Styrol

Phenol

Benzol

Mercury of greater than 0.0001 wt% for alkaline battery

Mercury of greater than 0.0005 wt% for other battery

Lithium content of greater than 0.5g/battery cell

Cadmium, lead, and other harmful heavy metal

And will comply with the regulation of 49 CFR (DOT regulation), International Air Transport Association (IATA), and Deuche Forschungsgemeinschaft (DFG) regarding concentrations of emitted substances.

This product does not contain mercury and cadmium.

Mercury content: N/A

Cadmium content: N/A

If the cells are opened through misuse or damage, discard immediately. Internal components of cell are irritants and sensitizers.

**SECTION 12. ECOLOGICAL INFORMATION:**

Some materials within the cell are bio-accumulative. Under normal conditions, these materials are contained and pose no risk to persons or the surrounding environment.

**SECTION 13. DISPOSAL CONSIDERATIONS:**

**CALIFORNIA REGULATED DEBRIS**

RCRA Waste Code: Non-regulated

Dispose of according to all federal, state, and local regulations.

**SECTION 14. TRANSPORT INFORMATION:**

- The cells in these batteries have been tested and meet the requirements for the UN Manual of Tests and Criteria, Part III, subsection 38.3.
- When a number of batteries are transported by ship, vehicle and railroad avoid high temperature and dew condensation.
- Avoid transportation which may cause damage of package.
- Lithium-ion batteries are not subject to dangerous goods regulation for the purpose of transportation by the International Maritime Dangerous Goods regulations (IMDG). For Lithium-ion batteries, the Watt-hour rating is no more than 20Wh /cell and 100Wh/ battery pack can be treated as "non-dangerous goods" by the United Nations Recommendations on the Transport of Dangerous Goods/Special Provision 188, provided that the products are prevented from being short-circuited with each other and are packaged in an appropriate condition which satisfies Packing Group II performance level.
- IATA (International Air Transport Association): Dangerous Goods Regulation Packing Instruction 965 (Lithium ion or lithium polymer cells and batteries without electronic equipment) went into effect April 1, 2016: Lithium ion cells and batteries must be offered for transport at a state of charge not exceeding 30 per cent of their rated capacity. UN 3480, PI 965, Section IA and IB and II will be restricted to carriage on cargo aircraft. All packages must bear the Cargo Aircraft Only label in addition to the other marks and labels required by the Regulations.

Section II requirements apply to lithium-ion cells with a Watt-hour rating not exceeding 20 Wh and lithium-ion batteries with a Watt-hour rating not exceeding 100 Wh packed in quantities that within the allowance permitted in Section II, Table 965-11.

**TABLE 965-II**

Contents	Lithium-ion cells and/or batteries with a Watt-hour rating of 2.7 Wh or less	Lithium-ion cells with a Watt-hour rating of more than 2.7Wh but not more than 20Wh	Lithium-ion batteries with a Watt-hour rating of more than 2.7Wh but not more than 100Wh
Maximum number of cells / batteries per package	No limit	8 cells	2 Batteries
Maximum net quantity per package	2.5 kg	N/A	N/A

Lithium-ion cells and batteries meeting the requirements in this section are not subject to other additional requirements of these Regulations except for:

- Each cell and battery is of the type proven to meet the requirements of each test in the UN Manual of Tests and Criteria, Part III, subsection 38.3;
  - cells and batteries must be manufactured under a quality management program;
  - for batteries, The Watt-hour rating must be marked on the outside of the battery case;
  - Each package must be capable of withstanding a 1.2m drop test in any orientation without:
    - damage to cells or batteries contained therein;
    - shifting of the contents so as to allow battery to battery (or cell to cell) contact;
    - release of contents.
- Each package must be labeled with a lithium battery handling label.

Section IB requirements apply to lithium-ion cells with a Watt-hour rating not exceeding 20 Wh and lithium-ion batteries with a Watt-hour rating not exceeding 100 Wh packed in quantities that exceed the allowance permitted in Section II, Table 965-II.

**CONTINUED: SECTION 14. TRANSPORT INFORMATION:**

Quantities of lithium-ion cells or batteries that exceed the allowance permitted in Section II, Table 965-II must be assigned to Class 9 and are subject to all of the applicable provisions of Regulation.

Even classified as lithium batteries packed with equipment (UN3481), IATA Dangerous Goods Regulations packing instruction 966 is applied.

Even classified as lithium batteries installed in equipment (UN3481), IATA Dangerous Goods Regulations packing instruction 967 is applied.

**SECTION 15. REGULATORY INFORMATION:**

OSHA hazard communication standard (29 CFR 1910.1200)

Hazardous                       V\_Non-hazardous

**SECTION 16 OTHER INFORMATION:**

**Package if damaged:**                      Do not load or transport.