

SECTION 1. CHEMICAL PRODUCT AND COMPANY NAME

**Lithium-Ion Rechargeable Battery Pack
BL1850**

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

Telephone Number for Information: MAKITA: 1-510-657-9881

Emergency Response

For Chemical Emergency
Spills, Leak, Fire, Exposure, or Accident
Call CHEMTREC Day or Night
Within USA and Canada 1-800-424-9300

SECTION 2. HAZARD IDENTIFICATION

Class Name: Not applicable for regulated class

Hazard: It may cause heat generation or electrolyte leakage if battery terminals contact with other metals. Electrolyte is flammable. In case of electrolyte leakage, move the battery from fire immediately.

Toxicity: Vapor generated from burning batteries, may make eyes, skin and throat irritate.

SECTION 3. COMPOSITION, INFORMATION OR INGREDIENTS

IMPORTANT NOTE:

The battery pack should not be opened or burned since the following ingredients contained within the cell that could be harmful under some circumstance if exposed or misused.

The cell contains neither metallic lithium nor lithium alloy.

Cathode: Lithium Nickel Cobalt Oxides Manganese Oxides (active material)
Polyvinylidene Fluoride (binder)
Graphite (conductive material)

Anode: Graphite (active material)
Polyvinylidene Fluoride (binder)

Electrolyte: Organic Solvent (non-aqueous liquid)
Lithium Salt

Others: Heavy metals such as Mercury, Cadmium, Lead, and Chromium are not used in the cell.

Enclosure: Plastic (PC)

UN number: UN3480

Watt-hour rating: 72Wh for battery pack

SECTION 4. FIRST AID MEASURE

The product contains organic electrolyte. In case of electrolyte leakage from the battery, actions described below are required.

- Eye Contact:** Flush the eyes with plenty of clean water for at least 15 minutes immediately, without rubbing, and call a doctor. If appropriate procedures are not taken; this may cause an eye irritation.
- Skin Contact:** Wash the contact areas off immediately with plenty of water and soap. If appropriate procedures are not taken, this may cause sores on the skin.
- Inhalation:** Remove to fresh air immediately, and call a doctor.

SECTION 5. FIRE FIGHTING MEASURES

- 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.
- 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.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Wipe off with dry cloth
- Keep away from fire
- Wear safety goggles, safety gloves as needed

SECTION 7. HANDLING AND STORAGE

- Storage:** Store within the recommended limit of -30°C to 45°C (-22°F to 113°F), well-ventilated area. Do not expose to high temperature (60°C/140°F). Since short circuit can cause bum hazard or safety vent to open, do not store with metal jewelry, metal covered tables, or metal belt.
- Handling:** Do not disassemble, alter, or solder. Do not short + and – terminals with metal.
Do not open the battery pack.
- Charging:** Charge within the limits of 0°C to 40°C (32°F to 104°F) temperature. Charge with specified charger designed for this battery pack
- Discharging:** Discharge within the limits of -20°C to 60°C (-4 °F to 140°F) temperature.
- Disposal:** Dispose in accordance with applicable federal, state and local regulations.
- Caution:** Do not incinerate. Do not disassemble.
Do not expose to high temperatures. (140°F/60°C) Do not impact, pierce or crush the battery.
Use specified charger only. Dispose of properly.

SECTION 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

(In case electrolyte is leaked from battery)

- Acceptable Concentration:** Not specified in ACGIH.
- Facilities:** Provide appropriate ventilation such as local ventilation system in the storage.
- Protective Clothing:** Gas mask for organic gases, safety goggle, safety glove.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Lithium-ion rechargeable cells are set in a resin case.

Average Operating Voltage : 18V

SECTION 10. STABILITY AND REACTIVITY

External short-circuit, deformation by crush, high temperature (over 100°C) exposure of the battery may cause generation of heat and ignition.

SECTION 11. TOXICOLOGICAL INFORMATION

Acute Toxicity: No information as a battery

Local Effects: No information as a battery

SECTION 12. ECOLOGICAL INFORMATION

If battery is buried in the ground, corrosion may occur on the outer plastic case of battery and the electrolyte may leak out. There is no information on environmental influence.

SECTION 13. DISPOSAL CONSIDERATIONS

When battery is disposed, isolate positive (+) and negative (-) terminals of the battery to avoid those terminals from touching each other. Batteries may be short-circuited when piled up or mixed with the other batteries. Dispose in accordance with applicable 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.

CONTINUED: SECTION 14. TRANSPORT INFORMATION

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.

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.

Lithium batteries packed without equipment are classified under (UN3480), IATA Dangerous Goods Regulations packing instruction 965 is applied.

Lithium batteries packed with equipment are classified under (UN3481), IATA Dangerous Goods Regulations packing instruction 966 is applied.

Lithium batteries installed in equipment are classified under (UN3481), IATA Dangerous Goods Regulations packing instruction 967 is applied.

SECTION 15. REGULATORY INFORMATION

- IMDG Code: International Maritime Dangerous Goods (IMDG) Code
- ICAO TI: International Civil Aviation Organization (ICAO) Technical Instructions for the Safe Transport of Dangerous Goods by Air
- IATA DGR: International Air Transport Association (IATA) Dangerous Goods Regulations

SECTION 16. OTHER INFORMATION

The information contained within is provided for your information only. The information and recommendations set forth herein are made in good faith and are believed to be accurate as of the date of preparation. However, Makita U.S.A, Inc. MAKES NO WARRANTY, EITHER EXPRESSED OR IMPLIED, WITH RESPECT TO THIS INFORMATION AND DISCLAIMS ALL LIABILITY FROM RELIANCE ON IT.

AKKU BL1850 18V 5,0AH LI

196672-8

Batteri kapacitet	5,0 Ah
Batteri	Li-ion
Akku spænding	18 V
Batteri type	BL1850
Ladetid min.	45
Antal	1

EAN: 0088381437974

DB: 1726429

Senest opdateret: 27-10-2015

Standard udstyr og specifikationer kan variere. Vægt og dim. kan variere efter batteritype. Der tages forbehold for trykfejl.



LITHIUM BATTERIES TEST SUMMARY

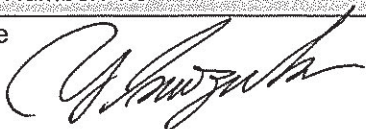
IN ACCORDANCE WITH SUB-SECTION 38.3 OF UN MANUAL OF TESTS AND CRITERIA

1	Product Manufacturer	Makita Corporation 3-11-8, Sumiyoshi-cho, Anjo, Aichi, 446-8502, Japan Phone : +81 (0)566-98-1711 www.makita.com
2	Model	Detachable Lithium-ion Batteries – Rechargeable Makita Type : BL Integral Lithium-ion Batteries – Rechargeable for Makita Cordless Cleaner Integral Lithium-ion Batteries – Rechargeable for Makita Cordless Screwdriver For detailed list of models see product test information table
3	Voltage rating	3.6V / 7.2V / 10.8V (12Vmax.) / 14.4V / 18V / 36V (40Vmax.)
4	Ah rating	1.3Ah / 1.5Ah / 2.0Ah / 2.5Ah / 3.0Ah / 4.0Ah / 5.0Ah / 6.0Ah
5	Wh rating	5.4Wh / 10.8Wh / 14.0Wh / 17.0Wh / 22.0Wh / 27.0Wh / 36.0Wh / 44.0Wh / 54.0Wh / 58.0Wh / 72.0Wh / 80.0Wh / 87.0Wh / 90.0Wh / 94.0Wh / 108.0Wh / 144.0Wh

These models of Lithium ion batteries have been successfully tested and comply with the UN Model Regulations, Manual of Test and Criteria, Part III, subsection 38.3

PERFORMED TESTS		RESULTS
38.3.4.1 T1	Altitude Simulation	Passed
38.3.4.2 T2	Thermal Test	Passed
38.3.4.3 T3	Vibration	Passed
38.3.4.4 T4	Shock	Passed
38.3.4.5 T5	External Short Circuit	Passed
38.3.4.7 T7	Overcharge	Passed

(Note that tests T6 and T8 are not applicable to batteries.)

Revision Date: 2019-12-12	Revision Number: 1.0
RESEARCH & DEVELOPMENT PLANNING DEPARTMENT GENERAL MANAGER Yoshihisa Inuzuka	Signature 

The UN 38.3 tests were performed by one of the following test houses and were tested to UN Manual Test and Criteria Revision 3 Amendment 1 or subsequent revisions or amendments.

<p>Tohoku Murata Manufacturing Co., Ltd. 1-1 Shimosugishita, Takakura, Hiwada-machi, Koriyama-shi, Fukushima, 963-0531 Japan Phone: +81-24-955-7770 e-mail: tmm-ga-compliance@murata.com Website: https://www.murata.com/en-global/group/tohokumurata</p>	<p>Samsung SDI Co., Ltd 467, Beonyeong-ro, Seobuk-gu, Cheonan-si, Chungcheongnam-do, Korea +82-41-560-3114 / e-mail: lian55.kim@samsung.com Website: http://samsungsdi.co.kr</p>
<p>CQC Intime Testing Technology Co.,Ltd. East Taihu Technology and Finance City, No.1368 Wuzhong Dadao Rd., Wuzhong Economic Development Zone, Suzhou, Jiangsu. Phone: 0512-66303623 e-mail: cqc_iszlb@126.com Website: http://www.cqc-it.com</p>	<p>Celxpert(Kunshan) Energy Co.Ltd NO.1111,Hanpu Road,Yushan Town,Kunshan City,Jiangsu Province,P.R.China Phone: +86-0512-57775999-8239 e-mail: Frank_Gao@cn.celxpert.com Website: http://www.celxpert.com.tw</p>

Lithium cells or batteries test summary in accordance with sub-section 38.3 of UN manual of tests and criteria

Product Test Information

Model numbers	Physical Description	Battery weight (kg)	Wh rating	Test report number	Test report date	Applicable UN Numbers acc. to UN Model Regulations
BL0715 7.2V 1.5 Ah	Detachable cluster lithium-ion accumulator	0.12	10.8	QA-7349	10-Oct-2017	UN3480/ UN3481
BL1013/BL1014 10.8V/12Vmax. 1.3Ah	Detachable cluster lithium-ion accumulator	0.17	14.0	QA-7332 QA-7357	4-Oct-2017 20-Oct-2017	UN3480/ UN3481
BL1013/BL1014 10.8V/12Vmax. 1.3Ah	Detachable slide in lithium-ion accumulator	0.18	14.0	MT0038801	4-Mar-2011	UN3480/ UN3481
BL1015/BL1016 10.8V/12Vmax. 1.5Ah	Detachable slide in lithium-ion accumulator	0.25	17.0	CPK-QA-Lab- UN383PACK1402 CPK-Lab- UN383PACK15060	16-Aug-2014 16-Aug-2015	UN3480/ UN3481
BL1021B 12Vmax. 2.0Ah	Detachable slide in lithium-ion accumulator	0.24	22.0	CPK-QA-Lab- UN383PACK15063	20-Aug-2015	UN3480/ UN3481

BL1040B/BL1041B 10.8V/12Vmax. 4.0Ah	Detachable slide in lithium-ion accumulator	0.43	44.0	CPK-Lab- UN383PACK14042 CPK-QA-Lab- UN383PACK15062	23-Dec-2014 23-Aug-2015	UN3480/ UN3481
BL1415N 14.4V 1.5Ah	Detachable slide in lithium-ion accumulator	0.32	22.0	SDI-UN-131101-02	17-Dec-2017	UN3480/ UN3481
BL1415NA 14.4V 1.5Ah	Detachable slide in lithium-ion accumulator	0.40	21.6	MT0045738	15-Jul-2011	UN3480/ UN3481
BL1430B 14.4V 3.0Ah	Detachable slide in lithium-ion accumulator	0.50	44.0	SDI-UN-P160118-01	18-Jan-2016	UN3480/ UN348
BL1440 14.4V 4.0Ah	Detachable slide in lithium-ion accumulator	0.53	58.0	QA-7358	20-Oct-2017	UN3480/ UN3481
BL1450 14.4V 5.0Ah	Detachable slide in lithium-ion accumulator	0.51	72.0	SDI-UN-P140807-01	11-Aug-2014	UN3480/ UN348
BL1460A 14.4V 6.0Ah	Detachable slide in lithium-ion accumulator	0.54	87.0	CPK-QA-Lab- UN383PACK15061	12-June-2015	UN3480/ UN3481
BL1460B 14.4V 6.0Ah	Detachable slide in lithium-ion accumulator	0.54	87.0	CPK-QA-Lab- UN383PACK15027	12-June-2015	UN3480/ UN3481
BL1415G 14.4V 1.5Ah	Detachable slide in lithium-ion accumulator	0.33	22.0	CPK-QA-Lab- UN383PACK16008	01-Mar-2016	UN3480/ UN3481
BL1815N 18V 1.5Ah	Detachable slide in lithium-ion accumulator	0.36	27.0	MT0059172	15-Feb-2012	UN3480/ UN3481
BL1815N 18V 1.5Ah	Detachable slide in lithium-ion accumulator	0.36	27.0	CPK-QA-Lab- UN383PACK13025	13-Oct-2013	UN3480/ UN3481
BL1820B 18V 2.0Ah	Detachable slide in lithium-ion accumulator	0.38	36.0	QA-7337	5-Oct-2017	UN3480/ UN3481
BL1830B 18V 3.0Ah	Detachable slide in lithium-ion accumulator	0.64	54.0	QA-7344	5-Oct-2017	UN3480/ UN3481
BL1830B 18V 3.0Ah	Detachable slide in lithium-ion accumulator	0.60	54.0	SDI-UN-P160314-01	14-Mar-2016	UN3480/ UN3481

BL1840B 18V 4.0Ah	Detachable slide in lithium-ion accumulator	0.65	72.0	QA-7285	1-Sep-2017	UN3480/ UN3481
BL1840B 18V 4.0Ah	Detachable slide in lithium-ion accumulator	0.60	72.0	SDI-UN-P150209-01	10-Feb-2015	UN3480/ UN3481
BL1850B 18V 5.0Ah	Detachable slide in lithium-ion accumulator	0.64	90.0	QA-7286	1-Sep-2017	UN3480/ UN3481
BL1850B 18V 5.0Ah	Detachable slide in lithium-ion accumulator	0.62	90.0	SDI-UN-P160104-01	4-Jan-2016	UN3480/ UN3481
BL1860B 18V 6.0Ah	Detachable slide in lithium-ion accumulator	0.67	108.0	2017126J17835	7-Dec-2017	UN3480/ UN3481
BL1815G 18V 1.5Ah	Detachable slide in lithium-ion accumulator	0.39	27.0	CPK-QA-Lab- UN383PACK16012	23-Mar-2016	UN3480/ UN3481
BL3626 36V 2.6Ah	Detachable slide in lithium-ion accumulator	1.34	94.0	QA-7346	6-Oct-2017	UN3480/ UN3481
BL3622A 36V 2.2Ah	Detachable slide in lithium-ion accumulator	1.33	80.0	QA-7348	6-Oct-2017	UN3480/ UN3481
Integral Batteries for DF001D	Integral lithium- ion accumulator	0.13	5.4	CPK-QA-Lab- UN383PACK16026	26-Dec-2016	UN3480/ UN3481
Integral Batteries for CL105D	Integral lithium- ion accumulator	0.18	14.0	CPK-QA-Lab- UN383PACK13028- K092-1-1	18-May-2014	UN3480/ UN3481
Integral Batteries for CL104D	Integral lithium- ion accumulator	0.18	17.0	CPK-QA-Lab- UN383PACK16022-1- 1-1-1	27-Feb-2018	UN3480/ UN3481