Technical Data Sheet

RYOBI Lithium-Ion Battery Pack
Battery Voltage: 18V
Battery Capacity: 8Ah / 144Wh

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

Product Name: Lithium-Ion Battery — Rechargeable

Model Number: PBP1008
Issue Date: November 2023

TTI CONSUMER POWER TOOLS, INC.
P.O. Box 1288
Anderson, SC 29622

Company Phone Number: 1-800-525-2579

Emergency Contact Number:
Chemtrec (United States only): 1-800-424-9300
(International): +1-703-741-5970

SECTION 2: HAZARDS IDENTIFICATION

Refer to battery cell SDS for more information.

No exposure to hazards during routine handling of product.

⚠ WARNING:

- To reduce the risk of injury, user must read operator's manual.
- Risk of fire and burns.
- Do not open, crush, heat above 50˚C, incinerate, or short terminals.
- Follow manufacturer's instructions.
- Use only with charger listed in operator's manual.
- Remove battery from tool when storing, changing attachments, or making adjustments.
- To reduce the risk of explosion and possible injury, do not place battery near fire or heat.
- Do not crush, drop, or damage battery pack.
- Do not use a battery pack that has been dropped or received a sharp blow. A damaged battery is subject to explosion. Properly dispose of a dropped or damaged battery immediately.
- Under extreme usage or temperature conditions, battery leakage may occur. If fluid comes in contact with your skin, wash immediately with soap and water. If fluid gets into your eyes, flush them with clean water for at least 10 minutes, then seek immediate medical attention. Following this rule will reduce the risk of serious personal injury.
- Battery cells and battery pack assembly will burn if incinerated.

SECTION 3: COMPOSITION/INFORMATION OF INGREDIENTS

Composition

成分名称 COMPONENTS-Chemical Name and Common Names	CAS#	%wt
金属氧化物 Metal Oxide	193214-24-3	25-35wt%
铝 Aluminum	7429-90-5	3-8wt%
石墨 Graphite Carbon	7782-42-5	12-20wt%
铜 Copper	7440-50-8	8-15wt%
有机电解液溶剂 1# Organic electrolyte 1#	616-38-6	4-8wt%
有机电解液溶剂 2# Organic electrolyte 2#	96-49-1	2-4wt%
有机锂盐 Organic Lithium Salt	21324-40-3	1-3wt%
铁 Iron	7439-89-6	10-18 wt%

SECTION 4: FIRST AID MEASURES

Refer to battery cell SDS for more information.

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- Risk of fire and burns.
- Do not open, crush, heat above 50˚C, incinerate, or short terminals.
- Follow manufacturer's instructions.
- Use only with charger listed in operator's manual.
- Remove battery from tool when storing, changing attachments, or making adjustments.
- To reduce the risk of explosion and possible injury, do not place battery near fire or heat.
- Do not crush, drop, or damage battery pack.
- Do not use a battery pack that has been dropped or received a sharp blow. A damaged battery is subject to explosion. Properly dispose of a dropped or damaged battery immediately.
- Under extreme usage or temperature conditions, battery leakage may occur. If fluid comes in contact with your skin, wash immediately with soap and water. If fluid gets into your eyes, flush them with clean water for at least 10 minutes, then seek immediate medical attention. Following this rule will reduce the risk of serious personal injury.
- Battery cells and battery pack assembly will burn if incinerated.
- No exposure during routine handling of product. Risk of exposure occurs only if the battery is mechanically or electrically abused.
- No effect under routine handling and use to eyes, skin, or if inhaled. Ingestion is not likely, given the physical size and state of the cell. If swallowed, seek medical attention immediately.
- If exposure to internal materials within cell due to damaged outer casing, the following actions are recommended:

EYE CONTACT:

Flush with water for 10 minutes without rubbing and immediately seek medical attention.

SKIN CONTACT:

Wash area immediately with soap and water. If irritation continues, seek medical attention.

INHALATION:

Leave area immediately, move to fresh air, and seek medical attention.

INGESTION:

If swallowed, contact POISON CONTROL CENTER immediately.

SECTION 5: FIRE FIGHTING MEASURES

Refer to battery cell SDS for more information.

SECTION 6: ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS:

- Use standard industrial clothing in normal use.
- If handling large containers of cells, wear steel-toed footwear.

ENVIRONMENTAL PRECAUTIONS:

No special precautions necessary.

METHODS FOR CONTAINMENT:

- Transport container outdoors.
- Always consult and obey all international, federal, and local environmental laws.

METHODS FOR CLEAN UP:

No data available

OTHER INFORMATION:

No data available

SECTION 7: HANDLING AND STORAGE

HANDLING:

- Use only approved charging equipment.
- Do not disassemble battery or battery pack.
- Do not puncture, crush, or dispose of in fire.

STORAGE:

To obtain the longest possible battery life, we suggest the following:

- Remove the battery pack from the charger once it is fully charged and ready for use.

For battery pack storage longer than 30 days:

- Store the battery pack where the temperature is below 80°f and away from moisture.
- Store battery packs in a 30%-50% charged condition.
- Every six months of storage, charge the pack as normal.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Refer to battery cell SDS for more information.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Battery pack consists of battery cells assembled in resin enclosure and is a solid odorless product that will burn if incinerated.

SECTION 10: STABILITY AND REACTIVITY

Refer to battery cell SDS for more information.

No exposure to hazards during routine handling of product.

⚠ WARNING:

- To reduce the risk of injury, user must read operator's manual.
- Risk of fire and burns.
- Do not open, crush, heat above 50˚C, incinerate, or short terminals.
- Follow manufacturer's instructions.
- Use only with charger listed in operator's manual.
- Remove battery from tool when storing, changing attachments, or making adjustments.
- To reduce the risk of explosion and possible injury, do not place battery near fire or heat.
- Do not crush, drop, or damage battery pack.
- Do not use a battery pack that has been dropped or received a sharp blow. A damaged battery is subject to explosion. Properly dispose of a dropped or damaged battery immediately.
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- Battery cells and battery pack assembly will burn if incinerated.

SECTION 11: TOXICOLOGY INFORMATION

Refer to battery cell SDS for more information.

No exposure to hazards during routine handling of product.

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- To reduce the risk of injury, user must read operator's manual.
- Risk of fire and burns.
- Do not open, crush, heat above 50˚C, incinerate, or short terminals.
- Follow manufacturer's instructions.
- Use only with charger listed in operator's manual.
- Remove battery from tool when storing, changing attachments, or making adjustments.
- To reduce the risk of explosion and possible injury, do not place battery near fire or heat.
- Do not crush, drop, or damage battery pack.
- Do not use a battery pack that has been dropped or received a sharp blow. A damaged battery is subject to explosion. Properly dispose of a dropped or damaged battery immediately.
- Under extreme usage or temperature conditions, battery leakage may occur. If fluid comes in contact with your skin, wash immediately with soap and water. If fluid gets into your eyes, flush them with clean water for at least 10 minutes, then seek immediate medical attention. Following this rule will reduce the risk of serious personal injury.
- Battery cells and battery pack assembly will burn if incinerated.

SECTION 12: ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION:

None in routine handling of product.

TOXICITY:

No data available

PERSISTENCE AND DEGRADABILITY (BIOPERSISTENCY & BIODEGRADABILITY):

None in routine handling of product.

POTENTIAL OF BIOACCUMULATION:

None in routine handling of product.

MOBILITY IN SOIL:

None in routine handling of product.

OTHER ADVERSE EFFECTS:

No data available

DISPOSAL:

Follow guidelines in Section 13.

SECTION 13: DISPOSAL CONSIDERATIONS

This product contains Lithium-ion batteries. Local, state or federal laws may prohibit disposal of batteries in ordinary trash. Consult your local waste authority for information regarding available recycling and/or disposal options.

DISPOSAL:

- Dispose in accordance with appropriate regulations.
- Always consult and obey all international, federal, provincial/state, and local hazardous waste disposal laws. Some jurisdictions require recycling of this spent product. Battery recycling is encouraged.
- Lithium-ion batteries are safe for disposal in the normal municipal waste stream since they are not defined by the federal government as hazardous waste. However, Lithium-ion batteries are recyclable.
- To preserve natural resources, please recycle or dispose of batteries properly.

⚠ WARNING:

- Upon removal, cover the battery pack's terminals with heavy-duty adhesive tape.
- Do not attempt to destroy or disassemble battery pack or remove any of its components.
- Batteries must be recycled or disposed of properly.
- Also, never touch both terminals with metal objects and/or body parts as short circuit may result.
- Keep away from children. Failure to comply with these warnings could result in fire and/or serious injury.
- This product does not contain mercury, cadmium or Lithium (metal).
- DO NOT INCINERATE battery cells.

SECTION 14: TRANSPORTATION INFORMATION

U.S. DOT Hazardous Material Regulations (Re: Ground Transport)

UN3480 Lithium-ion batteries over 101 watt hours or UN3481 Lithium-ion batteries packed with equipment over 101 watt hours when packaged correctly can travel under 49 CFR 173.185 when traveling by ground in the continental U.S. Must have the IACO label (UN3480 for batteries only, UN3481 for batteries packed with equipment).

Canada Transport Dangerous Goods (Re: Ground Transport)

UN3480 Lithium-ion batteries over 101 watt hours or UN3481 Lithium-ion batteries packed with equipment over 101 watt hours when traveling by ground in Canada must be declared as Dangerous Goods. The batteries must be packaged according to Packing Instruction 965. The following labels must be on the package: DG9 diamond, Red Bordered Lithium-ion warning label (ICAO). The package must also include a UN3480 Lithium-ion batteries label with the net weight of the batteries in kgs. The BOL must also state UN3480, Lithium-ion batteries,9,PGII or UN3481 Lithium-ion batteries packed with equipment,9,PGII.

International Dangerous Goods Regulations (Re: Air, Sea, Ground Transport)

UN3480 Lithium-ion batteries over 101 watt hours or UN3481 Lithium-ion batteries over 101 watt hours packed with equipment when shipped by sea will be considered Class 9 Dangerous Goods must be packaged according to Packing Instruction 965, and contain the following labels: DG9 diamond, Red Bordered Lithium-ion warning label (ICAO), and UN3480/3481 label with the kg of lithium label.

UN3480 Lithium-ion batteries over 101 watt hours or UN3481 Lithium-ion batteries over 101 watt hours packed with equipment when shipped by air will be considered Class 9 Dangerous Goods must be packaged according to Packing Instruction 965, and contain the following labels: DG9 diamond, Red Bordered Lithium-ion warning label (ICAO), Cargo Aircraft Only, and a label stating the amount of kgs of lithium in the box.

This rechargeable Lithium-ion battery has passed the relevant transportation test requirements as described in the UN Manual of Tests and Criteria, Part III, section 38.3. UN 38.3 Test Reports are maintained by the company.

SECTION 15: REGULATORY INFORMATION

Compliant with, relevant transportation test requirements as described in the UN Manual of Tests & Criteria, Part III, Sub-section 38.3.

CALIFORNIA PROPOSITION 65

⚠ **WARNING: Cancer and Reproductive Harm – www.P65Warnings.ca.gov**

SECTION 16: OTHER INFORMATION

The information contained within this document is provided for your information only. In case of any discrepancy, the information provided in the battery cell Safety Data Sheet takes precedence over the information provided in the battery pack Technical Data Sheet.

Prepared by: TTI Consumer Power Tools, Inc.

The batteries referenced herein are considered exempt articles and are not subject to the OSHA Hazard Communication Standard; therefore an SDS is not required. This sheet is being provided as a service to our customers.

The information and recommendations set forth are made in good faith and believed to be accurate as of the date of preparation. TTI CONSUMER POWER TOOLS, INC. makes no warranty, expressed or implied, regarding the accuracy of this data or the results to be obtained from the use thereto.

MATERIAL SAFETY DATA SHEET

材料安全数据表

制造商

公司名称 :

Name of Company :

公司地址 :

Address

电话号码

Telephone number

传真号码

Facsimile number

修订日期: 2023年1月1日
Issued or revised date: Jan.1. 2023

产品名称 圆型可充放锂离子电池

Name of Product Lithium ion rechargeable cell

(型号名称)

(Model name)

物质鉴定

Substance Identification

物质名称 Substance	圆型可充放锂离子电池 Lithium ion rechargeable cell
CAS编号 CAS number	无 Not specified
联合国危险货物分类 UN Class	虽然归类于锂离子电池(UN/ID No,3480)，但并不属于危险品。 Even classified as lithium batteries(UN/ID No,3480), they are exempted from Dangerous Goods. 可充放锂离子电池如果满足下列条件，将不受联合国危险货物规定限制。 （188特别规定） Lithium ion rechargeable cells are not subject to the UN Regulations if they meet the following provisions. (Special provision 188) 按照额定容量（Ah）的0.3倍计算，锂含量不超过1.5g。 The equivalent Lithium content calculated by 0.3 times of the rated capacity in Ampere-hour(Ah) is not more than 1.5g. 各类型的单体电池均满足UN38.3第三部分的测试要求。 Each cell is of type proved to meet the requirements of each test in the UN Manual of Test and Criteria, Part III, sub-section 38.3

成分信息

Composition

成分名称 COMPONENTS-Chemical Name and Common Names	CAS#	%wt
金属氧化物 Metal Oxide	193214-24-3	25-35wt%
铝 Aluminum	7429-90-5	3-8wt%
石墨 Graphite Carbon	7782-42-5	12-20wt%
铜 Copper	7440-50-8	8-15wt%
有机电解液溶剂 1# Organic electrolyte 1#	616-38-6	4-8wt%
有机电解液溶剂 2# Organic electrolyte 2#	96-49-1	2-4wt%
有机锂盐 Organic Lithium Salt	21324-40-3	1-3wt%
铁 Iron	7439-89-6	10-18 wt%

危险性和毒性概述

Hazardous and Toxicity Class

分类名称	：无规定的分类
Class name	: Not applicable for regulated class
危险性	：如果电池端子与其他金属接触，可能会到导致发热或者漏液，电解液是易燃的，如果出现了电解液泄露，立即将电池从火中移开。
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.
毒性	：电池燃烧产生的气体会刺激眼睛、皮肤和喉咙。
Toxicity	Vapor generated from burning batteries, may make eyes, skin and throat irritate.

急救措施

First Aid Measures

该产品含有有机电解液，如果电池出现漏液，则需要进行以下操作

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

眼睛接触	：立即用大量干净的水冲洗眼睛至少15分钟，不要揉搓。严重者立即就医。如果不采取适当的措施，可能会引起眼睛不适。
Eye contact	Flush the eyes with plenty of clean water for at least 15 minutes immediately, without rubbing. Take a medical treatment. If appropriate procedures are not taken, this may cause an eye irritation.
皮肤接触	：立即用大量的水和肥皂清洗接触区域。如果应对措施不当，可能会引起皮肤刺激和化学灼伤。
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.
吸入	：立即转移到新鲜空气流通处。严重者立即就医。.
Inhalation	Remove to fresh air immediately. Take a medical treatment.

消防措施
Fire Fighting Measures

灭火方法 Extinguishing method	：由于电池燃烧产生的气体会刺激眼睛、鼻子和喉咙，所以一定要站在上风处把火扑灭，在某些情况下需要使用呼吸保护设备。 Since vapor, generated from burning batteries may make eyes, nose and throat irritate, be sure to extinguish the fire on the windward side. Wear the respiratory protection equipment in some cases.
灭火剂 Fire extinguishing agen	：使用干粉、泡沫、二氧化碳和大量的水灭火是很有效的。 Dry chemical, alcohol-resistant foam, carbon dioxide and plenty of water are effective.

泄露应对措施
Measures for electrolyte leakage from the battery

-使用吸附能力强的抹布

- Take up with absorbent cloth.

-将电池远离火源

- Move the battery away from the fire.

操作处置与储存
Handling and Storage

-在包装电池时，不要让电池端子相互接触或与其他金属接触。一定要装在有挡板的包装盒中，或单独的包装袋中，这样电池就不会混乱在一起了。

-- When packing the batteries, do not allow battery terminals to contact each other, or contact with other metals. Be sure to pack batteries by providing partitions in the packaging box, or in a separate plastic bag so that the single batteries are not mixed together.

-存储和运输过程中不要让水渗入。

- Do not let water penetrate into packaging boxes during their storage and transportation.

-将电池以10%-30%的电态存储于室温下。

- The Cell will be stored at room temperature, charged to about 10－30% of capacity.

-不要将电池存放在超过35℃的地方，也不要在阳光直射或靠近热源的地方存放。同时要避免湿度太高的环境。不要将电池暴露在冰点以下的环境中。

- Do not store the battery in places of the high temperature exceeding 35 deg. C or under direct sunlight or in front of a stove. Please also avoid the places of high humidity. Be sure not to expose the battery to condensation, water drop or not to store it under frozen condition.

-在常规运输过程中，电池的包装要防止造成电池短路。

- Cells are sure to be packed in such a way as to prevent short circuits under conditions normally encountered in transport.

-请避免将电池储存在接触静电的地方，以免对电池组的保护电路造成损坏。

- Please avoid storing the battery in the places where it is exposed to the static electricity so that no damage will not be caused to the protection circuit of the battery pack.

漏液控制

Exposure Control

可接受的浓度	:在ACGIH中未注明
Acceptable concentration	: Not specified in ACGIH.
设施	:提供适当的通风系统，如在贮存地方的局部通风机。
Facilities	: Provide appropriate ventilation system such as local ventilator in the storage place
防护服	:有机气体防毒面具，安全护目镜，安全手套。
Protective clothing	:Gas mask for organic gases, safety goggle, safety glove

理化性质

Physical and Chemical Properties

外观	:单体电芯 ： 圆柱型电池
Appearance	: Single cell: Cylindrical or Prismatic cell
额定电压	:单体电芯 ：3.60V
Nominal voltage	: Single cell: 3.60volts

稳定性和反应性

Stability and Reactivity

由于电池使用化学反应，所以它们实际上被认为是一种化学产品。因此，即便储存很长一段时间也不被使用 ，电池性能也会随着时间的推移而恶化。此外，不同的使用条件，如没有在规定的温度范围内进行充电、放电，电池的寿命可能缩短，或电池使用的设备可能因电解液泄漏而损坏。

Since batteries utilize a chemical reaction they are actually considered a chemical product. As such, battery performance will deteriorate over time even if stored for a long period of time without being used. In addition, the various usage conditions such as charge, discharge, ambient temperature, etc. are not maintained within the specified ranges the life expectancy of the battery may be shortened or the device in which the battery is used may be damaged by electrolyte leakage.

毒理学资料

Toxicological Information

急性毒性	:口服(老鼠) 半数致死量50 > 2 g /公斤(估计)
Acute toxicity	:Oral（rat）LD50 >2g/kg (estimated)
刺激	: 刺激眼睛和皮肤
Irritation	: Irritating to eyes and skin.
诱变	:不明确
Mutagenicity	: Not specified
慢性毒性	:不明确
Chronic toxicity	: Not specified

生态学资料

Ecological Information

-如果在土地上处理破损的电池，电池壳可能会被腐蚀，并泄漏电解液。但是遗憾的是我们没有生态信息。

- In case of the worn-out battery was disposed in land, the battery case may be corroded, and leak electrolyte. But, we have no ecological information.

-电池中的重金属

-Heavy metal in cell

电池中既不含有也不使用汞和镉。

Mercury (Hg) and Cadmium (Cd) are neither contained nor used in cell.

废弃处置(回收措施)

Disposal Considerations (Precautions for recycling)

-当电池耗尽时，应根据当地政府的条例或有关部门发出的规定进行处理。

- When the battery is worn out, dispose of it under the ordinance of each local government or the low issued by relating government.

-废旧电池的处理可能受到回收部门的管制。

- Disposal of the worn-out battery may be subjected to Collection and Recycling Regulation.

运输信息

Transport Information

- 运输时，避免暴露于高温下，并且防止冷凝形成。集装箱必须小心操作。防止货物堆叠倒塌或者淋雨而受潮。防止跌落，打破和损坏。请参考“操作处置与存储”指示。

- Do not store the battery in places of the high temperature exceeding 35 deg. C or under direct sunlight or in front of a stove. Please also avoid the places of high humidity. Be sure not to expose the battery to condensation, water drop or not to store it under frozen condition. Prevent cargo from collapsing or getting wet in the rain. Prevent fall, break and damage. Please refer to “Handling and Storage”.

UN 规则

The UN rules

UN 3480-38.3 (当电池被放在设备内或与设备组装在一起) 合适的运输名称：锂离子电池组

UN 3480-38.3 (when the battery is placed in the device or assembled with the device) suitable transport name: lithium ion battery pack.

运输时电池是“危险品”或“非危险品”是根据不同地区和运输条件来决定。不同的地区和运输条件有不同的规则。

The battery is "dangerous goods" or "non-dangerous goods" according to different areas and conditions of transportation. Different areas and conditions of transportation have different rules.

全世界范围空运

Air travel worldwide.

IATA-DGR（被认为是非危险品）包装建议965 章节 II

IATA-DGR (considered non-dangerous goods) packaging recommendation 965 chapter II.

被认为是危险品， 包装按965 章节IB

It is considered dangerous goods, packed in section 965 IB.

(当电池与设备组合或设备内包含电池组，参考建议966或967)

(when the battery and equipment are included in the battery pack, refer to recommendation 966 or 967)

全世界范围海运

Ocean shipping all over the world

IMO-IMDG Code（特别条款188）

IMO-IMDG Code (special clause 188)

欧洲 陆运

European land transportation

ADR（特别条款188）

ADR (special clause 188)

法规信息
Regulatory Information

- IATA危险品条例第64版，2023年1月1日生效。
- IATA Dangerous Goods Regulations 64th Edition Effective 1 January 2023
-民航组织安全运输危险品的技术指导
-- ICAO Technical Instructions for the safe transport of dangerous goods by air

其他信息
Others

引用
References

(1) 联合国关于运输危险货物规例的建议(ST/SG/AC.10/1/Rev.15)

(1) UN Recommendations on the Transportation of Dangerous Goods Model Regulations (ST/SG/AC.10/1/Rev.15)

(2) IATA危险品条例第64版，2023年1月1日生效。

(2) IATA Dangerous Goods Regulations 64th Edition Effective 1 January 2023

(3) TLVs和BEIs2010 ACGUIH

(3)TLVs and BEIs 2010 ACGIH

拟定：　　复审：　　批准：

Prepared:　　recheck:　　approve: