SAFETY DATA SHEET

Section 1 – Product & Company Identification

Product Name	:	Lithium Ion Batteries for Power Tools
Product Catalog No.	:	47723, 47728, 47733, 47738
Recommended Use	:	RIDGID Non-Pressing Power Tools
Company Name	:	Ridge Tool Company
Address	:	400 Clark Street
	:	Elyria, Ohio 44036-2023
Telephone	:	1-800-519-3456 (USA) (8:00 am – 5:00 pm EST, M-F)
Emergency Telephone	:	call 9-1-1 or local emergency number
Website	:	www.RIDGID.com
Issue Date	:	25 May 2016

Section 2 – Hazards Identification

This product is defined as an article per US OSHA 29CFR 1910.1200 (HazCom 2012).

GHS Label Elements: Not applicable

The materials in these Li-Ion batteries are hermetically sealed in a case and do not leak electrolyte under normal usage conditions. However, if exposed to a fire, explosion, extreme abuse, misuse or improper disposal that results in breaching of the battery cell case, hazardous materials may be released. Also, battery terminal contact with other metals may generate heat or cause electrolyte leakage. Electrolyte is flammable. Direct contact with electrolyte may cause severe irritation and chemical burns. Short-term skin exposure may cause chemical burns and sores. Inhalation and injection are not anticipated routes of exposure with leakage of small amounts of electrolyte.

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Section 3 – Composition / Information On Ingredients

Composition:

	Chemical Name	CAS No.	Mass %
Electrolyte	Contains electrolyte salt and solvents		5-20
Electrolyte salt	Lithium hexafluorophosphate	21324-40-3	0.05-5
Electrolyte solvent	Includes one or more of the following: Ethylene carbonate Propylene carbonate Diethyl carbonate	 96-49-1 108-32-7 105-58-8	5-20
PVDF (binder)	Polyvinylidenfluoride	24937-79-9	<1
Copper	Cu	7440-50-8	3-15
Aluminum	Al	7429-90-5	2-10
Cathode	Lithium cobalt oxide	12190-79-3	20-50
Anode	Graphite	7782-42-5	10-30
Steel, Nickel, and inert components			balance

Does not contain heavy metals such as mercury, cadmium, lead or chromium

Nominal Voltage (V)	Rated Capacity	Wh rating
3.6	2000mAh (7.2 Wh)	7.20 Wh

Section 4 – First Aid Measures

EYE CONTACT:

If contents from an opened battery comes in contact with the eyes, immediately flush eyes thoroughly with water and continue flushing for at least 15 minutes without rubbing. Seek medical attention.

SKIN CONTACT:

If the contents from an opened battery come in contact with the skin, wash with soap and water. If irritation persists or contact has been prolonged, seek medical attention.

INHALATION:

If exposure to fumes or dusts occurs, remove immediately to fresh air and seek medical attention.

INGESTION:

If contents from an opened battery are swallowed, do not induce vomiting. Seek medical attention immediately.

Section 5 – Fire Fighting Measures

Cold water and dry powder in large amounts are applicable. Use metal fire extinction powder or dry sand if only a few cells are involved.

Use protective equipment (gloves, breathing apparatus, goggles etc.)

May form hydrofluoric acid if electrolyte comes into contact with water. Gases from the burning fire will include Hydrogen Fluoride, carbon monoxide, and carbon dioxide.

Section 6 – Accidental Release Measures

PERSONAL PRECAUTIONS:

Use rubber gloves and safety glasses, and a gas mask for organic gases when handling leaking battery. Move batteries and contents away from open fire.

ENVIRONMENTAL:

No additional information.

CLEAN-UP MEASURES:

Spills and leaks are unlikely because cells are contained in a hermetically sealed case. If the battery case is breached, wear protective clothing that is impervious to caustic materials and absorb or pack spill residues in inert material.

Section 7 – Handling And Storage

HANDLING:

Accidental short circuit (contacting positive and negative battery terminals with a conductive object) will bring high temperature evaluation to the battery as well as shorter battery life. Be sure to avoid prolonged short circuit since the heat can burn attendant skin and can even rupture the battery cell case. Batteries placed in bulk containers should not be shaken. Metallic objects in tool boxes can cause short circuit. Do not disassemble, remodel, or solder.

STORAGE:

Store in a cool, well-ventilated location. Prevent condensation on cell or battery terminals. Store within the recommended temperature range of -4°F (-20°C) and 113°F (45°C). Do not expose to temperature above 140°F (60°C). Avoid exposure to static electricity so that no damage will be caused to the protective circuitry of the battery pack. Do not store with metal jewelry, metal covered tables, or metal belts.

CAUTION: Do not dispose in fire, mix with other battery types, charge above specified rate, connect improperly, or short circuit, which may result in overheating, explosion, or leakage of cell contents.

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Section 8 – Exposure Controls / Personal Protection

EXPOSURE GUIDELINES:

Not specified

ENGINEERING CONTROLS:

None required under conditions of normal use. Provide appropriate ventilation in case of electrolyte leakage or exposure.

PERSONAL PROTECTIVE EQUIPMENT:

- Eye Protection
  None required under conditions of normal use, safety goggles in case of electrolyte leakage.

- Skin Protection
  None required under conditions of normal use, safety gloves in case of electrolyte leakage.

- Respiratory Protection
  None required under conditions of normal use, gas mask in case of electrolyte leakage.

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Section 9 – Physical And Chemical Properties

Appearance	
Physical State	Sealed Battery
Form	Solid
Color	Various
Odor	Odorless
Odor Threshold	No data available
pH	No data available
Melting point/freezing point	No data available
Initial boiling point and boiling range	No data available
Flash point	No data available
Evaporation rate	No data available
Flammability (solid, gas)	No data available
Upper/lower limit on flammability or explosive limits	
Flammability limit - upper (%)	No data available
Flammability limit - lower (%)	No data available
Explosive limit – upper (%)	No data available
Explosive limit – lower (%)	No data available
Vapor pressure	No data available
Vapor density	No data available
Relative density	No data available
Solubility(ies)	
Solubility in water	Insoluble
Solubility (other)	No data available
Partition coefficient (n-octanol/water)	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Viscosity	No data available

Section 10 – Stability And Reactivity

STABILITY:

Since batteries utilize a chemical reaction they are 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, if 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. The battery is stable under normal operating conditions.

CONDITIONS TO AVOID:

Open flames, heat, sparks and moisture. Battery should not be incinerated, crushed, or abused. Do not subject battery to temperatures in excess of 140°F (60°C).

INCOMPATIBLE MATERIALS:

No additional information known.

DECOMPOSITION PRODUCTS MAY INCLUDE:

No additional information known.

POSSIBILITY OF HAZARDOUS REACTIONS:

Will not occur.

Section 11 – Toxicological Information

ACUTE TOXICITY: No further toxicological data known.

CHRONIC: No further toxicological data known.

SENSITIZATION: No further toxicological data known.

REPRODUCTIVE EFFECTS: No further toxicological data known.

TERATOGENIC EFFECTS: No further toxicological data known.

MUTAGENICITY: No further toxicological data known.

SYNERGISTIC MATERIALS: No further toxicological data known.

CARCINOGENICITY: No further toxicological data known.

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Section 12 – Ecological Information

ECOGICAL INFORMATION:

No information available.

Section 13 – Disposal Consideration

WASTE DISPOSAL:

Li-Ion batteries should not be incinerated or subjected to temperatures in excess of 140°F (60°C). Such treatment can cause cell rupture. In the event of disposal, dispose only in accordance with federal, state and local regulations.

These Li-Ion batteries are classified as hazardous waste and are not safe for disposal in the normal waste stream. The Ridge Tool Company encourages recycling, as these batteries do contain recyclable materials that can be reused. The battery packs bear the Rechargeable Battery Recycling Corporation (RBRC) symbol, indicating RIDGID has already paid the cost of recycling the lithium-ion battery packs once they have reached the end of their useful life. For recycling center locations, call 1-800-822-8837.

Section 14 – Transportation Information

UN Number: 3480
Proper Shipping Name: Lithium Ion Batteries

This battery is less that 100WH and has successfully passed UN safety testing. Batteries are packaged in a manner that prevents short circuits and other damage that could lead to failure.

Regulations governing dangerous goods will be relevant when transporting batteries. Follow applicable laws and regulations for transport and disposal.

Special procedures must be followed in the event batteries are damaged, including inspection and repacking. Damaged or defective batteries must not be transported by air.

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Section 15 – Regulatory Information

Check with the appropriate regulatory agencies as regulations may have quantity restrictions, operator variations, or other special provisions

Section 16 – Other Information

Prepared by: Ridge Tool Company

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