SAFETY DATA SHEET

BN Products-LLC, USA

Revision date 11-AUG-2020
Version 3

SECTION 1. IDENTIFICATION

PRODUCT IDENTIFIER
Product Name: Lithium ion rechargeable battery
Product code: ALC4640N (21.6V 6000mAh 129.6Wh weight:0.73kg)

RECOMMENDED USE
For powering TJEP RC20A and TJEP RC30A Battery Powered Saw

MANUFACTURER / DISTRIBUTOR
BN PRODUCTS-USA, LLC
3450 SABIN BROWN RD.
WICKENBURG, AZ 85390
P: 800-992-3833
F: 928-684-7041

EMERGENCY PHONE NUMBER

For Hazardous Materials [or Dangerous Goods] Incident
Spill, Leak, Fire, Exposure, or Accident
Call CHEMTREC
+1 703-741-5970 / 1-800-424-9300 CCN 826088

SECTION 2. HAZARDS IDENTIFICATION

Label and Markings:

Note: Under normal conditions of battery use, internal components will not present a health hazard. The following information is provided for battery electrolyte (acid) for exposure that may occur during container breakage or under extreme heat conditions such as fire.

EMERGENCY OVERVIEW:
The battery should not be opened or burned. Exposure to the ingredients contained within or their combustion products could be harmful. If the battery is opened or broken then the following hazards apply:

ROUTES OF ENTRY:

EYE CONTACT: Contact with the battery electrolyte can cause severe irritation, burns, and cornea damage upon contact.

SKIN CONTACT: Battery electrolyte (acid) can cause severe irritation, burns and ulceration.

SKIN ABSORPTION: Not a significant route of entry.

INHALATION: Acid mist generated during battery charging or spillage of the electrolyte in a confined area may cause respiratory irritation.

INGESTION: The electrolyte ingestion irritates the mouth and the throat seriously resulting in serious burns to the mouth and gastrointestinal tract.

ACUTE HEALTH EFFECTS: Exposure and/or contact with battery electrolyte (acid) may lead to acute irritation of the skin, corneal damage of the eyes, and irritation of the mucous membranes of the eyes and upper respiratory system, including lung.

CHRONIC HEALTH EFFECTS: Chronic overexposure to nickel may result in cancer; dermal contact may result in dermatitis in sensitive individuals.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: A knowledge of the available toxicology information and of the physical and chemical properties of the material suggests that overexposure in unlikely to aggravate existing medical conditions.

SECTION 3. COMPOSITION / INFORMATION ON INGREDIENTS

Material	% by Wt.	CAS Number	Molecular Formula
Lithium cobalt	28.4%	12190-79-3	LiCoO2
Graphite	17.1%	7782-42-5	C
Lithium Hexaflurophosphate	1.3%	21324-40-3	LiPF6
Ethylene carbonate	3.4%	96-49-1	C3H4O3
Diethyl carbonate	4.7%	105-58-8	C5H10O3
Polypropylene	2%	9003-07-0	(C3H6)n
Steel	31.1%	7439-89-6	Fe
Copper	5.7%	7440-50-8	Cu
Aluminum	2.5%	7429-90-5	Al

SECTION 4. FIRST AID MEASURES

EYE CONTACT: Immediately rinse with cool running water for at least 15 minutes. Seek medical attention immediately after rinsing.

SKIN CONTACT: Wash thoroughly with soap and water. If acid is splashed on clothing or shoes, remove immediately and discard. Acid cannot be removed from leather.

INHALATION: Remove from exposure to fresh air and consult a physician if any of the acute effects listed above develop.

INGESTION: Lead: Consult a physician. Battery Electrolyte: Do not induce vomiting. Refer to a physician immediately.

SECTION 5. FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Dry chemical, foam, or CO_2

SPECIAL PROTCTIVE EQUIPMENT AND PRCAUTIONS FOR FIRE-FIGHTERS: Use positive pressure, self-contained breathing apparatus and full protective clothing.

SPECIFIC HAZARDS: Batteries may burst and release hazardous decomposition products when exposed to a fire situation.

SECTION 6. ACCIDENTAL RELEASE MEAURES

Remove combustible materials and all sources of ignition. Contain spill by diking with soda ash (sodium carbonate) or quicklime (calcium oxide). Cover spill with either chemical. Mix well. Make certain the mixture is neutral, and then collect residue and place in a drum or other suitable container. Dispose of as a hazardous waste. Wear acid-resistant boots, chemical face shield, chemical splash goggles, and acid-resistant gloves. DO NOT RELEASE UNNEUTRALIZED ACID!

SECTION 7. HANDLING AND STORAGE

WORK PRACTICES: Accidental short circuit will bring high temperature elevation to the battery as well as shorten the battery life. Be sure to avoid prolonged short circuit since the heat can burn attendant skin and even rupture of the battery cell case. Batteries packaged in bulk containers should not be shaken. Metal covered tables or belts used for assembly of batteries into devices can be the source of short circuits; apply insulating material to assembly work surface.

SPECIAL PRECAUTIONS: Do not damage or remove the external tube. Batteries may rupture or vent if disassembled, crushed, or exposed to high temperatures. Do not use unauthorized charger or other charging method. Terminate charging when the charging process doesn’t end within a specific time.

STORAGE: Store Lith-Ion batteries in a dry place at normal room temperature. Avoid direct sunlight, high temperature and high humidity. Avoid contact with conductive materials, water, seawater, strong oxidizers and strong acids.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

VENTILATION: Not required under normal handling conditions. Battery should not be opened. Should a cell become disassembled, the electrode should be stored in a fireproof cabinet, away from combustibles.

RESPIRATORY PROTECTION: None required under normal handling conditions. If respiratory irritation occurs, wear a respirator suitable for protection against acid mist.

GLOVES: None required under normal handling conditions. Use neoprene or natural rubber gloves if handling an open or leaking battery.

EYE PROTECTION: None required under normal handling conditions. Wear safety glasses with side shields if handling an open or leaking battery.

OTHER PROTECTIVE EQUIPMENT: None required under normal handling conditions.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

- **APPEARANCE (PHYSICAL STATE, & COLOR) :** Solid & metallic
- **ODOR:** Odorless
- **ODOR THRESHOLD:** Not applicable
- **PH:** Not applicable
- **MELTING POINT/FREEZING POINT:** Not applicable
- **INITIAL BOILING POINT AND BOILING RANGE:** Not applicable
- **FLASH POINT:** Not applicable
- **EVAPORATION RATE:** Not applicable
- **FLAMMABILITY (SOLID, GAS):** Not determined
- **UPPER/LOWER FLAMMABILITY OR EXPLOSIVE LIMITS:** Not determined
- **VAPOR PRESSURE:** Not applicable
- **VAPOR DENSITY:** Not applicable
- **RELATIVE DENSITY:** Not applicable
- **SOLUBILITY(IES):** Not applicable
- **PARTITION COEFFICIENT: N-OCTANOL/WATER**: Not applicable
- **AUTO-IGNITION TEMPERATURE:** Not applicable
- **DECOMPOSITION TEMPERATURE:** Not applicable

SECTION 10. STABILITY AND REACTIVITY

STABILITY:

☐ Unstable ☑ Stable

CONDITIONS TO AVOID:

Flames, sparks, and other sources of ignition

INCOMPATIBILITY: Conductive materials, water, seawater, strong oxidizers and strong acids.

HAZARDOUS DECOMPOSITION PRODUCTS: Acid or harmful fumes are emitted during fire.

HAZARDOUS POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: Flames, sparks, and other sources of ignition, incompatible materials. Also avoid direct sunlight and high humidity

SECTION 11. TOXICOLOGICAL INFORMATION

There is no data available on the product itself. The information of the internal cell materials is as follows.

Acute toxicity:

Copper: 60-100mg sized coarse particulate causes a gastrointestinal disturbance with nausea and inflammation. TDLo, hypodermic - Rabbit 375mg/kg

Organic electrolyte: LD50, oral - Rat 2,000mg/kg or more
Irritating nature: Irritative to skin and eye

Further toxicological information:

Aluminum: By the long-term inhalation of coarse particulate or fume, it is possible to cause lung damage (aluminum lungs).

Graphite: Long-term inhalation of high levels of graphite coarse particulate may cause lung disease or a tracheal disease.

SECTION 12. ECOLOGICAL INFORMATION

Persistence/degradability: Since a battery cell and the internal materials remain in the environment, do not bury or throw out into the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Intact, spent batteries are not considered to be hazardous waste.

Waste Lit-ion batteries should be recycled according to local code and regulations.

SECTION 14. TRANSPORT INFORMATION

In the case of transportation, avoid exposure to high temperature and prevent the formation of any condensation. Take in a cargo of them without falling, dropping, and breakage. Prevent collapse of cargo piles and getting wet.

Batteries Packed alone.
UN NUMBER: UN3480
UN PROPER SHIPPING NAME: Lithium-ion batteries
TRANSPORT HAZARD CLASS: Class 9
PACKING GROUP: II

International transport regulations:

1. International Air Transport Association (IATA): pursuant to Packing Instruction P965,
2. International Maritime Dangerous Goods Code (IMDG): A230
3. European Agreements Concerning the International Carriage of Dangerous Goods by Rail (RID) and by Road (ADR): Tunnel category E ADR/RID – Labels 9, Special Provisions 230, 310, 636 and Packaging Instruction P903, P903a and P903b.
4. UN Performance Oriented Packaging Required

Batteries Packed with Equipment
UN NUMBER: UN3481
UN PROPER SHIPPING NAME: Lithium-Ion Batteries packed with equipment including lithium ion polymer batteries
TRANSPORT HAZARD CLASS: Class 9
PACKING GROUP: II

International transport regulations:

1. International Air Transport Association (IATA) pursuant to Packing Instruction 966, Section I
2. International Maritime Dangerous Goods Code (IMDG) pursuant to Special Provisions and A230.
3. U.S. hazardous materials regulations pursuant to 49 CFR 173.185.
5. European Agreements Concerning the International Carriage of Dangerous Goods by Rail (RID) and by Road (ADR): Tunnel category E ADR/RID – Labels 9, Special Provisions 230, 310, 636 and Packaging Instruction P903, P903a and P903b.

Package requires UN POP packaging.

Our Li-ion cells pass the tests defined in UN model regulation section 38.3. Cells and batteries are packed according to the requirement of 56th Edition of the IATA Dangerous Goods Regulations (DGR).

Package contains (2) two batteries per tool, and (2) two tools per outer carton. This means that there are (4) batteries per carton. Each battery is rated at 144Wh and weights 0.73kg. This means that each carton has 2.92kg of batteries that are >100Wh making them ok to travel by (PAX).

Maximum (PAX) requirement of 5kg will be met with 1 package of tools with 4 batteries per package. (1x4x0.73kg=2.92kg)

Maximum (CAO) requirement of 35kg will be met with 11 packages of tools with 4 batteries per package. (11x4x0.73kg=32kg)

SECTION 15. REGULATORY INFORMATION

The transport of rechargeable Lithium-Ion batteries regulated by the united nations as detailed in the "model Regulations on the transport of dangerous Goods Ref. ST/SG/AC.10/1 Revision 18 2013".

Defined by UN in the "Recommendations on the transport of Dangerous Goods Chapter 38.3 Manual of Tests and Criteria Ref. ST/SG/AC.10/11 Fifth revised edition 2011". The Lithium-Ion Cells and the battery packs may or may not be assigned to the UN3480 Class 9 that is restricted for transport.

SECTION 16. OTHER INFORMATION

SDS REVISION DATE: January 30, 2018

REASON FOR UPDATE: INITIAL CREATION

SDS REVISION DATE: February 14, 2020

REASON FOR UPDATE:

Section 1:

Add weight of battery 0.73kg to battery description

update to emergency contact information from "928-232-2449" to "For Hazardous Materials [or Dangerous Goods] Incident Spill, Leak, Fire, Exposure, or Accident Call CHEMTREC +1 703-741-5970 / 1-800-424-9300 CCN 826088"

Section 14:

Change UN Number from UN3480/3481 to UN3481

change packing group from II to I due to the fact that batteries are >100Wh

add the following

Package contains (2) two batteries per tool, and (2) two tools per outer carton. This means that there are (4) batteries per carton. Each battery is rated at 129.6Wh and weights 0.73kg. This means that each carton has 2.92kg of batteries that are >100Wh making them ok to travel by (PAX).

Maximum (PAX) requirement of 5kg will be met with 1 package of tools with 4 batteries per package. (1x4x0.73kg=2.92kg)

Maximum (CAO) requirement of 35kg will be met with 11 packages of tools with 4 batteries per package. (11x4x0.73kg=32kg)

SDS REVISION DATE: July 6, 2020 R2

REASON FOR UPDATE:

Add identification stickers.

Add UN3480 information.

SDS REVISION DATE: August 11, 2020 R3

REASON FOR UPDATE:

Section 14:

Removed References to A188 special provision which is only applicable to batteries under 100Wh.

Removed from IMDG, and CFR.

DISCLAIMER