Safety Data Sheet

1. Identification of product and company

Product Information	**Rechargeable Lithium-Ion Battery Pack**		
Manufacturer	BON CHEF, INC.		
Address			
Telephone	(973) 383-8848		
GETAC P/N	Customer P/N	Model Name	Energy(Wh)
CA402S50-IH-H	BON CHEF, Inc.CA402S50-IH-H	CA402S50-IH-H	411.642

2. Hazards Identification

This product is outside the scope of GHS system since it's considered as an "article".

In suitable operating and storing (reference to manufacturer ’ s specification / recommendations), the product is non-
hazardous.
The abnormal activity(machinery, temperature, electricity) will break safety valve / battery container and may increase following risk: electrolyte leaking, electrode materials damping, battery venting / firing / burning / exploding.
The short-circuiting, puncturing, incinerating, crushing, immersing in water, force-discharging, exceeding temperature range(manufacturer’s specified temperature range) and other abnormal operating may cause the product to risk of fire or explosion.

Human Health Effects	
Inhalation	The steam of the electrolyte will stimulate a respiratory tract.
Skin Contact	The steam of the electrolyte stimulates a skin. The electrolyte skin contact causes a sore and stimulation on the skin.
Eye Contact	The steam of the electrolyte stimulates eyes. The electrolyte eye contact causes a sore and stimulation on the eye. Especially, substance that causes a strong inflammation of the eyes is contained.

Environmental Effects
Since a battery cell remains in the environment, do not throw out it into the environment.
Specific Hazards
If the electrolyte contacts with water, it will generate detrimental hydrogen fluoride. Since the leaked electrolyte is inflammable liquid, do not bring close to fire.

3. Composition Information

Cell is the only one component of battery pack that may produce risk of harm in abnormal situation.

Cell		
Composition	**CAS NO.**	% [weight] Content / Content range
Cobalt lithium manganese nickel oxide	182442-95-1	34
Carbon	7440-44-0	10-30
1,3-Dioxolan-2-one	96-49-1	2-10
Lithium hexafluorophosphate(1-)	21324-40-3	2-10
Copper	7440-50-8	2-10
Aluminum	7429-90-5	2-10
Others(non-hazardous ingredients)	-	<11

4. First Aid Measures (in case of leaking or accidentally opened cells)

In case of battery pack breakage or burst, please evacuate employees from the contaminated area and ensure maximum
ventilation in order to disperse corrosive gas, smoke and unpleasant odors. If it occurs accident, following measures must be taken:

Inhalation	No effect under routine handling and use. Leave contaminated area immediately and make it ventilate. Take rest and keep warm. If needed, give oxygen and breathing aid. Consult a doctor immediately.
Skin Contact	No effect under routine handling and use. Remove contaminated clothes and shoes immediately. Wash skin thoroughly with cold water more than 15 minutes. Consult a doctor.

Eye Contact	No effect under routine handling and use. Do not rub one's eyes. Immediately and thoroughly wash eyes with cold water at least 15 to 30 minutes. Seek medical attention immediately.
Ingestion	The product can't ingest under routine handling and use. Wash mouth with cold water thoroughly. If the patient is awake, let patient drink large milk / water. Seek medical attention immediately.

5. Fire-Fighting Measures

Extinguishing Agent	Suitable extinguishing media: Plenty of water, carbon dioxide gas, nitrogen gas, chemical powder fire extinguishing medium and fire foam. Be careful of burning pieces of flammable particles may be ejected from the fire.
Extinguishing Method	Extinguishing agent can be used to cool down burning Li-ion cells and batteries. Be careful of burning pieces of flammable particles may be ejected from the fire.
Specific Protection Equipment	Respiratory protection： Respiratory equipment of a gas cylinder style or protection-against-dust mask Hand protection： Protective gloves Eye protection： Goggle or protective glasses designed to protect against liquid splashes Skin and body protection： Protective cloth
Other Attention	The hazardous substance may be exposure when being heated over +100 ° C (+212 ° F) or disposed in fire. The electrolyte is flammable liquid and must be kept away from any kind of ignition source. If cell / battery exposed to fire, cool the accumulator outside to avoid its breaking. Evacuate all persons from immediate area of fire. Do not re-enter the area until the fire was extinguished.

6. Accidental Release Measures

Individual Precautions	Evacuate people immediately when the accident happens. In case of electrolyte leakage from a cell or battery, do not inhale the gas as possible. In case of skin or eye contact, inhalation or ingestion, follow the measured described in Section 4.
Environmental Precautions	Avoid water (including surface water and groundwater) contamination. Avoid ground and atmosphere contamination. Keep internal materials of cell away from heat and open flame.
Ways of Cleaning	Using protective glasses and gloves, use absorbent material (sand, earth or vermiculite) to absorb any exuded material. Seal leaking battery (unless hot) and contaminated absorbent material in plastic bag and dispose of as Special Waste in accordance with local regulations.
Prevention of Secondary Hazards	Avoid re-scattering. Do not bring the collected materials close to fire.

7. Handling and Storage

It is not dangerous when battery pack is in normal situation.

Handling	Do not shock, impact, crush, vibrate, puncture, and short-circuit the battery pack. Do not be heated, solder and throw into fire. Do not mix products of different types and brands. Do not mix new and used products. Keep battery pack in non conductive (i.e. plastic) package. Do not disassemble, mutilate or mechanically abuse products.
Storage	Store in a cool (below 30 ° C), dry and ventilated area. Keep away moisture, sources of heat, open flame. High temperature may result in battery pack leakage and rupture. Keep battery pack in original packaging until use and do not jumble them. The battery pack should be between 25% and 75% of full charge when stored for a long period of time(The longest time is not over six months).

Other	Follow Manufacturers recommendations regarding maximum recommended currents, operating temperature range, maximum charge and discharge states. Applying pressure on deforming the battery may lead to disassembly followed by eye, skin and throat irritation. Do not immerse in water. The cells and batteries are not designed to be recharged from external power sources besides specific charger models approved by manufacturers. Connecting to inappropriate power supplies can result in fire or explosion.

8. Exposure Controls / Personal Protection

Engineering Measures	
In normal situation, engineer measures is not require. When the internal materials of cell leak, keep internal materials of cell away from heat and open flame, then operate the local exhaust or improve ventilation.	
Personal Protective Equipment	
Respiratory Protection	Not required during normal operations. SCBA is required in the event of a fire.
Hand Protection	Not required during normal operations. Protective gloves are required when battery Pack rupture.
Eye / Face Protection	Goggle or protective glasses designed to protect against liquid splashes.
Body / Skin Protection	Working clothes with long sleeve and long trousers.
Foot Protection	Steel toed shoes recommended for large container handling.

9. Physical and Chemical Properties

The following points are not applicable unless in case of leaking or damaged batteries with internal components sipping out.

Appearance	Solid
Odor	Odorless (unless in case of damaged product with leaking electrolyte)
pH	Not applicable
Vapor Pressure	Not applicable
Vapor Density	Not applicable
Boiling Point	Not applicable
Flash Point	Not applicable
Solubility in Water	Not applicable (unless inner components are exposed)
Density	Not applicable

10. Stability and Reactivity

Stability	The battery pack is stable under conditions described in Section 7.
Conditions to Avoid	Heat, incinerate, shock, impact, crush, vibrate, puncture, short-circuit, disassemble and store in humid enviroment.
Materials to Avoid	Strong mineral acids, alkali solutions, strong oxidising materials and conductive materials.
Hazardous Decomposition Products	Electrolyte may react with water in the atmosphere and produce toxic materials including fluorhydric acid. Thermal decomposition of the cells may produce of noxious or toxic fumes containing CO_2, CO, H_2, CH_4, C_2H_4 and C_2H_6. Thermal decomposition of the cell may produce releasing of electrolyte liquid / vapor, noxious materials dust and methane.

11. Toxicological Information

The battery pack does not have any hazardous substance in normal situation. If battery pack leak or rupture, the inside materials may be exposed, and release toxic substance or elicit toxicological properties.

Signs & Symptoms	The corrosive fumes will be very irritating to skin, eyes and mucous membranes. Overexposure can cause symptoms of non-fibrotic lung injury and membrane irritation.
Inhalation	The leaked or ruptured battery pack can cause respiratory system and mucosa irritation. If gas is generated, throat irritation and nausea may occur. The inside materials of battery pack may cause an allergic reaction.
Skin Contact	Electrolyte can cause a skin irritation. Contact with Nickel and its compounds may cause allergic dermatitis.
Eye Contact	The leaked or ruptured battery pack can cause eye irritation. Dust may cause inflammation of eyelids.
Ingestion	Electrolyte ingestion may cause damages to body tissues and to respiratory and digestive systems.
Carcinogenetic	Nickel derivates are classified in suspected carcinogenetic list by the National Toxicology Program of the US. Public Health Service.
Medical conditions generally aggravated by exposure	It may occur eczema, skin allergies, lung injuries, asthma and other respiratory disorders

12. Ecological Information

Some materials within the cell are bioaccumulative. Under normal conditions, these materials are contained and pose no risk to persons or the surrounding environment. Do not discard products arbitrarily. Dispose the waste product according to the relevant regulations.

13. Disposal Consideration

Product (waste from residues)	Do not throw out a used battery pack. Recycle it through the recycling company.
Contaminated packaging	Neither a container nor packing is contaminated during normal use. When internal materials leaked from a battery pack contaminates, dispose as industrial wastes subject to special control.

14. Transport Information

UN No/Shipping Name	UN3480—LITHIUM ION BATTERIES (including lithium ion polymer batteries) UN3481—LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT or LITHIUM ION BATTERIES PACKED WITH EQUIPMENT (including lithium ion polymer batteries) UN3171- BATTERY-POWERED VEHICLE or BATTERY-POWERED EQUIPMENT
DGR Class	9 (UN, IATA) None (IMO, IMDG Code Special provision 188)
Packing Group	
Packing Instruction	P903 (Recommendations on the Transport of Dangerous Goods, 19th) 965 *Section IA / Section IB* (IATA, Dangerous Goods Regulations, 63th) 966 or 967 Section IA / Section II** (IATA, Dangerous Goods Regulations, 63th)
Other Applicable Information	In the case of transportation, avoid exposure to high temperature and prevent the formation of any condensation. During the transportation, avoid falling, dropping, wet and damage. Please refer toSection 7─Handling and Storage. The battery is fitted in the equipment Bike for UN3171

* *Section IA / Section IB / Section II*

Section IA：Battery pack greater than 100 Wh；

Section IB：Battery pack equal to (or less than) 100 Wh

** Section I / Section II
966─

Section I：The equipment is packed with battery pack with a Watt-hour rating in excess of 100 Wh；
Section II：The equipment is packed with battery pack with a Watt-hour rating not exceeding 100 Wh.
967─
Section I：The equipment is contained with battery pack with a Watt-hour rating in excess of 100 Wh；
Section II：The equipment is contained with battery pack with a Watt-hour rating not exceeding 100 Wh.
The battery pack complies with the applicable requirements in the UN3481.
The product is defined as above, it is not recognized as "DANGEROUS GOODS" or is treated as almost "Non- DANGEROUS GOODS" when its transport condition accords with instructions or provisions depend on region and transportation mode.
About the instructions or provisions, please see descriptions in Section 15–Regulatory Information.

Regulatory Information
Code of Federal Regulations (CFR) : Title 29 Labor 1910.1200 Hazard communication.
Code of Federal Regulations (CFR) : Title 49 Transportation 173.185 Lithium cells and batteries.
United Nations (UN) : Recommendations on the Transportation of Dangerous Goods Model Regulations (19th revised edition, 2015)
International Air Transport Association (IATA) : Dangerous Goods Regulations (57th edition, 2016)
International Maritime Organization (IMO) : International Maritime Dangerous Goods (IMDG) Code is 41-22
Recommendations on the Transportation of Dangerous Goods Model Regulations, Manual of Tests and Criteria (5th revised edition Amendment 1, 2011)

15. Other Information

The information contained in this Safety data sheet is based on the present state of knowledge and current legislation.
This safety data sheet provides guidance on health, safety and environmental aspects of the product and should not be construed as any guarantee of technical performance or suitability for particular applications.

— (Reference)—

Material Safety Data Sheet for Battery Cell

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