*CoreSWX LLC.*

# Certificate of Package Drop test for Lithium ion Battery

January 5, 2018

Model: HCXL-AG / HCXL-V

| Test Item | Test Results | Note |
|---|---|---|
| Package Drop Test | Pass | The package shall be dropped from 1.2meter high on to a concrete surface (flat and horizontal) with five orientations<br>(1)flat on the bottom, (2)flat on the top,<br>(3)flat on the long side,<br>(4)flat on the short side, (5)on a corner |

Packing Instruction 965 Section II

## Lithium ion battery Specification

| Item | Value | Note |
|---|---|---|
| Nominal Voltage | 14.8V | |
| Capacity(mAh) | 19800 | |
| Capacity(Wh) | 293 | |
| Lithium equivalent content(g) | 1.5 | |

We declare that above-mentioned test is passed.

# Certificate of Package Drop test for Lithium ion Battery

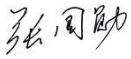
January 4, 2020

Model: HCXL-AG / HCXL-V

91B Commercial Street
Plainview, NY 11803 USA
Email : sales@coreswx.com **http://www.coreswx.com**

***CoreSWX LLC.***

Core SWX LLC.
Products Division



Zhang Guoxun,
General Manager
Technical Development

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Packing Instruction 965 Section IB

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# SAFETY DATA SHEET FOR PRODUCT

1. PRODUCT AND COMPANY IDENTIFICATION

- Product Name: Lithium Ion Battery Pack
- Product code: HCXL-AG/ HCXL-V

91B Commercial Street
Plainview, NY 11803 USA
Email : sales@coreswx.com **http://www.coreswx.com**

***CoreSWX LLC.***

・Company Name: CoreSWX, LLC.

・Address: 91B Commercial Street Plainview, NY 11803 USA

・TEL: +01-516-595-7488

・FAX: +01-516-595-7492

・Emergency Telephone Number: +01-516-5434442

## 2. COMPOSITION / INFORMATION ON INGREDIENTS

**For cell**

・Substance or preparation: Preparation

・Information about the chemical nature of product:*1

| Common chemical name / General name | CAS number | Classification and hazard labeling |
|---|---|---|
| Lithium transition metal oxidate (Li[M]m[O]n *2) | 12190-79-3<br>12057-17-9<br>182442-95-1 | |
| Iron | 7439-89-6 | |
| Aluminum | 7429-90-5 | |
| Graphite<br>(Natural graphite)<br>(Artificial graphite) | 7782-42-5<br>7440-44-0 | |
| Copper | 7440-50-8 | |
| Organic electrolyte | - | Inflammable liquid |

**1 Not every product includes all of these materials.*

**2 The letter M means transition metal and candidates of M are Co, Mn, Ni and Al. One compound includes one or more of these metals and one product includes one or more of the compounds. The letter m and n means the number of atoms.*

**For molding case**

Chemical Name: Acrylonitrile-butadiene-styrene copolymer

Composition: Acrylonitrile-butadiene-styrene copolymer>65%
Tetrabromobisphenol A <17%
Antimony Trioxide <5%

Chemical Formula: C45H51N3X2

CAS Registry No.: 9003-56-9

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## 3. HAZARDS IDENTIFICATION

**For cell**

For the battery cell, chemical materials are stored in a hermetically sealed metal or metal laminated plastic case, designed to withstand temperatures and pressures encountered during normal use.
As a result, during normal use, there is no physical danger of ignition or explosion and chemical danger of hazardous materials' leakage.
However, if exposed to a fire, added mechanical shocks, decomposed, added electric stress by miss-use, the gas release vent will be operated. The battery cell case will be breached at the extreme, hazardous materials may be released.
Moreover, if heated strongly by the surrounding fire, acrid gas may be emitted.

・Most important hazard and effects
Human health effects

- ・Inhalation: The steam of the electrolyte has an anesthesia action and stimulates 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 pack 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.

**For molding case**

- ・Classification of the substance or mixture:
  Classification according to Directive 67/548/EEC or 1999/45/EC: Not classified as hazardous (polymeric state)
  Classification according to Regulation (EC) N° 1272/2008 (CLP): Not classified as hazardous (polymeric state)
- ・Label elements: Not labelled as hazardous
- ・Other hazards: vPvB/PBT assessment: not available FIRST-AID MEASURES

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## 4. First-Aid Measures

**For cell Spilled internal cell materials**

- ・Inhalation: Make the victim blow his/her nose, gargle. Seek medical attention necessary.
- ・Skin contact: Remove contaminated clothes and shoes immediately. Wash extraneous matter or contact region with soap and plenty of water immediately.
- ・Eye contact: Do not rub eyes. Immediately flush eyes with water continuously for at least 15 minutes. Seek medical attention immediately.

**A battery cell and spilled internal cell materials**

- ・Ingestion: Make the victim vomit. When it is impossible or the feeling is not well after vomiting, seek medical attention.

**For molding case**

- General notes: Remove affected persons from the danger area, at the same time ensuring your own safety. Remove all contaminated clothing immediately
- Inhalation: In case of gases evolving from melted resin, move subject to fresh air. Treat symptomatically.
- Skin contact: In case of pellets or powder, wash with water. In case of smelt, wash affected skin area and clothing with plenty of (soap and) water immediately. Seek medical advice.
- Eye contact: In case of pellets or powder, flush with plenty of water for at least 15 minutes. Seek medical advice if any dust particles still remain immediately.
  In case of gases evolving from melted resin of high temperature, flush with plenty of water for at least 15 minutes. Seek medical advice immediately

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## 5. FIRE-FIGHTING MEASURE

**For cell**

- Suitable extinguishing media: Plenty of water, carbon dioxide gas, nitrogen gas, chemical powder fire extinguishing medium, and fire foam.
- Specific hazards: Corrosive gas may be emitted during fire.
- Specific methods of fire-fighting: When the battery burns with other combustibles simultaneously, take fire-extinguishing method which corresponds to the combustibles. Extinguish a fire from the windward as much as possible.

- Special protective equipment for firefighters
  - 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.

**For molding case**

- Extinguishing media: Suitable extinguishing agents: alcohol foam, carbon dioxide, dry chemical, regular foam extinguishing agent, or water spray when fighting fires involving this material.
  For safety reasons unsuitable extinguishing agents: High power water jet
- Special hazards arising from the substance or mixture:

  May Ignite by heat, sparks, flames. Some of these materials may burn, but none ignite readily.
  Non-combustible, substance itself does not burn but may decompose upon heating, then produce corrosive and/or toxic fumes. Inhalation of materials may be harmful.

- Advice for firefighters
  Protective equipment: Self-contained breathing apparatus. Using unattended water devices in case of large fire and leave alone to burn if you do not imperative.

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**6. ACCIDENTAL RELEASE MEASURES**

**Spilled internal cell materials, such as electrolyte leaked from a battery cell, are carefully dealt with according to the followings.**

- Precautions for human body: Remove spilled materials with protective equipment (protective glasses and protective gloves). Do not inhale the gas as much as possible. Moreover, avoid touching with as much as possible.
- Environmental precautions : Do not throw out into the environment.
- Method of cleaning up : The spilled solids are put into a container. The leaked place is wiped off with dry cloth.
- Prevention of secondary hazards : Avoid re-scattering. Do not bring the collected materials close to fire.

**In general for molding case**

Gather pellets and powder thoroughly to avoid birds or fishes taking from draining water. Do not allow product to reach sewage system or water bodies. Inform respective authorities in case product reaches water, sewage system or soil.

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**7. HANDLING AND STORAGE**

- **Handling suggestions**
  **For cell**
- Do not connect the positive terminal to the negative terminal with electrical wire or chain.
- Avoid polarity reverse connection when installing the battery to an instrument.
- Do not wet the battery with water, seawater, drink or acid; or expose to strong oxidizer.
- Do not damage or remove the battery case.
- Keep the battery away from heat and fire.
- Do not disassemble or reconstruct the battery; or solder the battery directly.
- Do not give a mechanical shock or deform.
- Do not use unauthorized charger or other charging method. Terminate charging when the charging process doesn't end within specified time.
- In the case of charging, use only dedicated charger or charge according to the conditions specified by Core SWX LLC.

**For molding case**

Avoid breathing processing fumes and vapors. Processing fumes and vapors may cause eye, skin and respiratory tract irritation, and in case of overexposure, nausea and headache. Clean dust form cutting and sanding operation to prevent its accumulation, since it may cause spark due to static electricity or dust explosion. Properly ground air transportation lines including hoppers, bad filters to prevent accumulation of static electricity.

- **Storage**

**For cell**

- Do not store the battery with metalware, water, seawater, strong acid or strong oxidizer.
- Make the charge amount 30~50% then store at room temperature or less (temperature= -20~35 degree C) in a dry (humidity: 45~85%) place. Avoid direct sunlight, high temperature, and high humidity.
- Use insulative and adequately strong packaging material to prevent short circuit between positive and negative terminal when the packaging breaks during normal handling. Do not use conductive or easy to break packaging material.

**For molding case**

Store this product in place not subject to direct sunlight or elevated temperatures or where there are no ignition sources. Take measures to prevent an accident due to static electricity from occurring.

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## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION (WHEN THE ELECTROLYTE LEAKS)

**For cell**

- Control parameters
  ACGIH has not been mentioned control parameter of electrolyte.
- Personal protective equipment
  - Respiratory protection : Respirator with air cylinder, dust mask
  - Hand protection : Protective gloves
  - Eye protection : Goggle or protective glasses designed to protect against liquid splashes
  - Skin and body protection : Working clothes with long sleeve and long trousers

**For molding case**

- Personal protections
  - respiratory protection : Avoid breathing dust, vapors or fumes. Use NIOSH/OSHA approved respiratory protection equipment (full facepiece recommended) when airborne exposure limits are exceeded.
  - Eye protection : Does not cause significant eye irritation or eye toxicity requiring special protection, except when in molten state. Use good industrial practice to avoid eye contact. Processing of this product releases vapors or fumes which may cause eye irritation. Where there is significant potential for eye contact, wear appropriate eye protection and have eye flushing equipment available.
  - Skin protection : Does not present a significant skin concern requiring special protection at room temperature. Minimize skin contamination by following good industrial hygiene practice. Processing of this product releases vapors or fumes which may cause skin irritation.Wash hands and contaminated skin thoroughly after contact with processing vapors or fumes. Wear rubber glove when handling molten resin.

ACGIH : American Conference of Governmental Industrial Hygienists, Inc.
NIOSH : National Institute for Occupational Safety and Health
OSHA : Occupational Safety & Health Administration

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**For cell**

- Appearance
- Physical stat : Solid
- Form : Cylindrical
- Color : Metallic color(without tube if it has tube)
- Odor : No odor

**For molding case**

- Appearance : Pellet
- Boiling point : Not applicable
- flash point : 404°C
- Ignition point : 466°C
- Vapor pressure : Not applicable
- Melting point : Not applicable

- Specific gravity : 1.19
- Oxidizibility : None under normal handling conditions
- Flammability : combustible
- Explosion Limit : Not applicable

- Solubility in water : Unsoluble
- Odor : None

## 10. STABILITY AND REACTIVITY

**For cell**

- Stability : Stable under recommended conditions of storage and handling.
- Hazardous reactions occurring under specific conditions
- Conditions to avoid : When a battery cell is exposed to an external short-circuit, crushes, deformation, high temperature above 100 degrees Celsius, it will be the cause of heat generation and ignition. Direct sunlight and high humidity.
- Materials to avoid : Conductive materials, water, seawater, strong oxidizers and strong acids.
- Hazardous decomposition products : Acrid or harmful gas is emitted during fire.

**For molding case**

- Reactivity: Non-reactive under normal handling and storage conditions
- Chemical stability: Stable under normal handling and storage conditions
- Possible hazardous reaction: Hazardous Polymerization will not occur.
  Containers may explode if heated.
  Easy to burn, but not easy to fire.
  Irritating, or toxic gases may occur by fire.
  Inhalation of materials may be harmful.

Non-combustible, substance itself does not burn but may decompose upon heating, then produce corrosive and/or toxic fumes

- Conditions to avoid: Avoid excessive heat, flames and all sources of ignition. Avoid contact with incompatible materials and condition
- Incompatible materials: Combustible materials, irritating, toxic gases
- Hazardous decomposition products: Not available.

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## 11. TOXICOLOGICAL INFORMATION

**For cell**

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

**For molding case**

- Skin corrosivity, Irritation : None
- Acute Toxicity, Sub-acute toxicity, Chronic Toxicity, Mutagenic effects : Not known
- Carcinogenic effects : IARC group 3 (not classifiable as to its carcinogenicity to humans)

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## 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.

**For molding case**

Relevant information is not available.

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## 13. DISPOSAL CONSIDERATIONS

- Recommended methods for safe and environmentally preferred disposal :

**Product (waste from residues)**

Specified collection or disposal of lithium ion battery is required by the law like as "battery control law" in several nations. Collection or recycle of the battery is mainly imposed on battery's manufacturer or importer if recycle is required.

**Contaminated packaging**

Neither a container nor packing is contaminated during normal use. When internal materials leaked from a battery cells contaminates, dispose as industrial wastes subject to special control.

- Waste disposal : Efforts to recycle material should be made. If unable to use recycle, material should be buried in approved landfill or incinerated in accordance all applicable with federal, state and local regulations.

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## 14. TRANSPORT INFORMATION

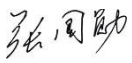
## *CoreSWX LLC.*

- 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.
- Core SWX LLC. makes no warranty, expressed or implied regarding the accuracy of these data or the results to be obtained from the use thereof. Core SWX LLC. assumes no responsibility for injury from the use to the product described herein.

- **Reference**
  Dangerous Goods Regulations – 57th Edition Effective from 4 January 2020: International Air Transport Association (IATA)
  MSDS of raw materials prepared by the manufactures

Prepared and approved by



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