

Material Safety Data Sheet (MSDS)

Lithium Battery ES004104-01



EmergoStar B.V.
Informaticastraat 20
4538 BT Terneuzen
The Netherlands



085 - 2011820



info@emergostar.com
www.emergostar.com

Member of Emergo Company

SECTION 1 CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

| | |
|---------------------|---|
| Document number | GJW2019-1885 |
| Product name | Li-ION NMC Battery |
| Model number | ES004104-01 & ES004104-** |
| Ratings | 3.6V 104Ah 375Wh |
| Weight | ≈ 2 kg |
| Manufacturer | Hangzhou EmergoEast Trading Co., Ltd. |
| Address | Room 304, Unit 3, Building 5, No.4 Fengdu Road, Pingyao, Yuhang, Hangzhou, Zhejiang, P.R. China |
| Emergency telephone | +31 85 2011 820 |
| E-mail | info@emergostar.com |

SECTION 2 COMPOSITION/INFORMATION ON INGREDIENT

| Material or ingredient | Chemical Formula | CAS No. | Weight % |
|-----------------------------|--|------------|--------------|
| Nickle compound | Ni | 7440-02-0 | 10-25 |
| Manganese compound | Mn | 7439-96-5 | 6-15 |
| Cobalt compound | Cl ₂ CoH ₁₂ O ₆ | 7791-13-1 | 4-10 |
| Carbon | C | 7440-44-0 | 10-30 |
| Lithium Hexafluorophosphate | LiPF ₆ | 21324-40-3 | 10-20 |
| Aluminum Foil | Al | 7429-90-5 | 2-10 |
| Copper Foil | Cu | 7440-50-8 | 2-10 |
| Lead | Pb | 7439-92-1 | Not Detected |
| Cadmium | Cd | 7440-43-9 | Not Detected |
| Mercury | Hg | 7439-97-6 | Not Detected |

SECTION 3 HAZARDS IDENTIFICATION

| | |
|------------------|--|
| Explosive risk | This article does not belong to the explosion dangerous goods |
| Flammable risk | This article does not belong to the flammable material |
| Oxidation risk | This article does not belong to the oxidation of dangerous goods |
| Toxic risk | This article does not belong to the toxic dangerous goods |
| Radioactive risk | This article does not belong to the radiation of dangerous goods |
| Mordant risk | This article does not belong to the corrosion of dangerous goods |
| Other risk | Watt hour rate 750Wh, which belong to Dangerous Goods Class 9 |

SECTION 4 FIRST AID MEASURES

Once battery shell rupture, content contact with the human body will produce harm, once contact, should take the following emergency measures:

➤ **Eye:**

Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

➤ **Skin:**

Remove contaminated clothes and rinse skin with plenty of water or shower for 15 minutes. Get medical aid.

➤ **Inhalation:**

Remove from exposure and move to fresh air immediately. Use oxygen if available.

➤ **Ingestion:**

Give at least 2 glasses of milk or water. Induce vomiting unless patient is unconscious. Call a physician.

SECTION 5 FIRE-FIGHTING MEASURES

➤ **Flash point:**

N/A

➤ **Auto-Ignition Temperature:**

N/A

➤ **Extinguishing Media:**

Water, CO₂

➤ **Special Fire-Fighting Procedures:**

Self-contained breathing apparatus.

➤ **Unusual Fire And Explosion Hazards:**

Cell may vent when subjected to excessive heat-exposing battery contents.

➤ **Hazardous Combustion Products:**

Carbon monoxide, Carbon dioxide, Lithium oxide fumes

SECTION 6 ACCIDENTAL RELEASE MEASURES

➤ **Steps to be taken in case Material is Released or Spilled**

If the battery material is released, remove operators from area until fumes dissipate. Provide maximum ventilation to clear out hazardous gases. Wipe it up with a cloth, and dispose of it in a plastic bag and put into a steel can. The preferred response is to leave the area and allow the battery to cool and vapors to dissipate. Provide maximum ventilation. Avoid skin and eye contact or inhalation of vapors. Remove spilled liquid with absorbent and incinerate.

➤ **Waste Disposal Method**

It is recommended to discharge the battery to the end. Use up the metal lithium inside the lithium metal battery, and delivered to professional institutions for further treatment.

SECTION 7 HANDLING AND STORAGE

The battery should not be opened, destroyed or incinerated, since they may leak or rupture and release to the environment the ingredients that they contain in the hermetically sealed container. Do not short circuit terminals, or over charge the battery, forced over-discharge, throw to fire. Do not crush or puncture the battery, or immerse in liquids.

➤ **Precautions to be taken in handling and storing**

Avoid mechanical or electrical abuse. Storage preferably in cool, dry and ventilated area, which is subject to little temperature change. Storage at high temperatures should be avoided. Do not place the battery near heating equipment, nor expose to direct sunlight for long periods.

➤ **Other Precautions**

The battery may explode or cause burns, if disassembled, crushed or exposed to fire or high temperatures. Do not short or install with incorrect polarity.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

➤ **Respiratory Protection**

In case of battery venting, provide as much ventilation as possible. Avoid confined areas with venting cell cores. Respiratory Protection is not necessary under conditions of normal use.

➤ **Ventilation**

Not necessary under conditions of normal use.

➤ **Protective Gloves**

Not necessary under conditions of normal use

➤ **Other Protective Clothing or Equipment**

Not necessary under conditions of normal use

➤ **Personal Protection is recommended for venting battery**

Respiratory Protection, Protective Gloves, Protective Clothing and safety glass with side shields.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

➤ **Appearance:** Irregular shape

➤ **Ref, No :** RZUN2019-1626

➤ **Odor:** If leaking, smells of medical ether.

➤ **pH:** Not applicable as supplied.

➤ **Flash Point:** Not applicable unless individual components exposed.

➤ **Flammability:** Not applicable unless individual components exposed.

➤ **Relative density:** Not applicable unless individual components exposed.

➤ **Solubility (water):** Not applicable unless individual components exposed.

➤ **Solubility (other):** Not applicable unless individual components exposed.

SECTION 10 STABILITY AND REACTIVITY

- **Stability:** Product is stable under conditions described in Section 7.
- **Conditions to Avoid :** Heat above 70°C or incinerate. Deform. Mutilate. Crush. Disassemble. Overcharge. Short circuit. Expose over a long period to humid conditions.
- **Materials to avoid:** Oxidizing agents, alkalis, water.
- **Hazardous Decomposition Products :** Toxic Fumes, and may form peroxides.
- **Hazardous Polymerization :** N/A.

If leaked, forbidden to contact with strong oxidizers, mineral acids, strong alkalis, halogenated hydrocarbons.

SECTION 11 TOXICOLOGICAL INFORMATION

- **Signs & symptoms:** None, unless battery ruptures.
In the event of exposure to internal contents, vapor fumes may be very irritating to the eyes and skin.
- **Inhalation:** Lung irritant.
- **Skin contact:** Skin irritant.
- **Eye contact:** Eye irritant
- **Ingestion:** Poisoning if swallowed.

Medical conditions generally aggravated by exposure: In the event of exposure to internal contents. moderate to server irritation, burning and dryness of the skin may occur, Target organs nerves, liver and kidneys.

SECTION 12 ECOLOGICAL INFORMATION

- **Mammalian effects:** None known at present.
- **Eco-toxicity:** None known at present
- **Bioaccumulation potential:** Slowly Bio-degradable.
- **Environmental fate:** None known environmental hazards at present.

SECTION 13 DISPOSAL CONSIDERATION

Do not incinerate, or subject cells to temperature in excess of 70°C, Such abuse can result in loss of seal leakage, and/or cell explosion. Dispose of in accordance with appropriate local regulations

SECTION 14 TRANSPORT INFORMATION

- **Label for conveyance:** Class 9—Lithium Battery hazard label, Cargo Aircraft Only Label
- **UN Number:** UN3480
- **Packaging Group:** II
- **EmS No:** F-A ,S-I
- **Marine pollutant:** No

- **Proper Shipping name:** Lithium ion batteries (Including lithium ion polymer batteries)
- **Hazard Classification:** The goods are complied with the requirements of section IA of Packing Instruction 965 of 60th DGR Manual of IATA(2019 Edition) , Packing Instruction 903 of IMDG CODE (Amdt. 38-16) 2016 Edition, including the passing of the UN38.3 test.

SECTION 15 REGULATION INFORMATION

Law information

- (Dangerous Goods Regulations)
- (Recommendations on the Transport of Dangerous Goods Model Regulations)
- (International Maritime Dangerous Goods)
- (List of dangerous goods)
- (European Agreement concerning the International Carriage of Dangerous Goods by Road)
- (Technical Instructions for the Safe Transport of Dangerous Goods.)
- (Classification and code of dangerous goods)
- (Occupational Safety and Health Act) (OSHA)
- (Toxic Substance Control Act) (TSCA)
- (Consumer Product Safety Act) (CPSA)
- (Federal Environmental Pollution Control Act) (FEPCA)
- (The Oil Pollution Act) (OPA)
- (Superfund Amendments and Reauthorization Act Thiel!! (30213111312/313)) (SARA)
- (Resource Conservation and Recovery Act) (RCRA)
- (Safety Drinking Water Act) (CWA)
- (California Proposition 65)
- (Code of Federal Regulations) (CFR)

In accordance with all Federal, State and local laws.

SECTION 16 OTHER INFORMATION

This file is only effective to the batteries (ES004104-01 & ES004104-**) provided by commissioner EmergoStar B.V., which manufactured by Hangzhou EmergoEast Trading Co., Ltd.. The commissioner provides the composition information of batteries, and promises its integrity and accuracy. Users should read this file carefully, and use the batteries in correct method. EmergoStar doesn't assume responsibility for any damage or loss because of misuse of batteries.