

# MATERIAL SAFETY DATA SHEET

## 1. PRODUCT & COMPANY IDENTIFICATION

### 1.1 PRODUCT IDENTIFICATION

PRODUCT NAME: Electric tools using lithium ion battery  
MODEL NUMBER: TNL-ITR18650-H

### 1.2 COMPANY IDENTIFICATION

COMPANY NAME : ZHEJIANG TIANNENG ENERGY TECHNOLOGY Co., LTD  
COMPANY ADDRESS : ZHICHENG INDUSTRY ZONE CHANGXING ZHEJIANG CHINA  
TELEPHONE NUMBER: 86-572-6216888  
FAX : 86-572-6216158

## 2. COMPOSITION INFORMATION

<u>COMPONENTS</u>	<u>PERCENT OF TOTAL WEIGHT (%)</u>
ALUMINUM	2-10
COPPER	5-15
CARBON	10-30
POLYVINYLIDENE FLUORIDE (PVDF)	<2
NICKEL AND COBALT MANGANESE COMPOUNDS	25-50
Li	2-3
NICKEL PLATING STEEL SHELL	5-15
ELECTROLYTE	10-20
NICKEL	0.5-5

## 3. PHYSICAL & CHEMICAL PROPERTIES

N/A

## 4. HAZARDS IDENTIFICATION

### 4.1 PRIMARY ROUTES OF ENTRY

Skin contact/absorption, Eye contact, Inhalation and Ingestion: NO

### 4.2 SYMPTOMS OF EXPOSURE (No effect under routine handling and use)

Skin contact/absorption  
Eye contact  
Inhalation and Ingestion

## 5.EMERGENCY RELEASE INFORMATION

If exposure to the internal materials from a damaged or ruptured cell, the following actions are recommended:

**Skin contact:** Washing with water & soap thoroughly, or seek medical attention immediately.

**Eye contact:** Rinsing eyes with water for 15 minutes, and seek medical attention immediately.

**Inhalation :** Leave to fresh air immediately and seek medical attention.

**Ingestion :** Seek medical attention immediately.

## 6. FIRE FIGHTING INFORMATION

Cell is not flammable but the internal organic material will burn if the cell is incinerated, if cells or battery are involved in a fire or exposed to excessive heat. Cells or battery may flame or leak potentially hazardous organic vapors.

**Extinguishing Media:** Dry chemicals.

**Fire-Fighting Instructions:** Use self-contained breathing apparatus and protective clothing to extinguish, and remove cells from the fire fighting area if possible, or call local fire/police department.

## 7. STABILITY & REACTIVITY

**7.1 REACTIVITY:** NONE.

**7.2 STABILITY:** The cell/battery is stable during normal operation. Avoid exposure to heat or open flame, don't puncture, crush or incinerate.

## 8. HANDLING & STORAGE

8.1 Keep the cell in a cool & dry environment, do not immerse the cell in water or seawater, do not use or leave the cell near a heat source such as fire or heater.

8.2 Do not make terminal to short circuit by directly connecting the positive (+) and negative (-) with metal objects such as wire, or reverse the position (+) and negative (-) terminals. Because it may cause the battery/cell to flame or emit gases.

8.3 Battery/cell charging & recharging should following the recommendation described as below:

To ensure safety, the cells need to be assembled with PTC and protective circuitry to prevent abusive situations occur such as over charge and over discharge or over current. The charger and protective circuitry should be consistent with the requirements listed below:

No	Device	Items	Requirements
1	Charger	Charge termination voltage	4.200±0.025V
2	Protective Circuitry (For reference only)	Overcharge detection voltage	4.28±0.025V
3		Discharge termination voltage	2.50±0.05V
4		Over discharge detection voltage	2.50±0.05V
5		Discharge current protection	10~20A
6		Operation Static Current	≤7.0uA
7		Storage Wasting Current	≤0.1uA

8.4 Do not disassemble or puncture or crush or incinerate the battery/cell.

## **9. EXPOSURE CONTROL & PERSONAL PROTECTION**

### **9.1 EXPOSURE CONTROL:**

Storing in a dry place and keeping away from a heat source such as fire or heater.

### **9.2 PERSONAL PROTECTION:**

**EYE/FACE PROTECTION:** Not required during the normal operation.

**INHALATION PROTECTION:** Not required during the normal operation.

**SKIN & BODY PROTECTION:** Not required during the normal operation.

## **10. TOXICOLOGICAL INFORMATION**

The materials contained in cell/battery are described in paragraph 2., it does not elicit any toxicological properties during routine handling and use.

## **11. ECOLOGICAL INFORMATION**

The materials contained in cell/battery are described in paragraph 2., this materials have no risk to persons or the surrounding environment under normal conditions.

## **12. DISPOSAL RECOMMENDATION**

Dispose of the battery/cell according to local regulation.

## **13. TRANSPORTATION & USE**

13.1 The battery/cell does not elicit toxic properties during routine handling and use, none of toxic substances will be exposed, emitted or leaked during transportation or storage or any normal operation.

13.2 The user has to operate the products according to the instructions printed on the battery label or follow the advices described in this "Product Specification for Electric tools using lithium ion battery" by ZHEJIANG TIANNENG ENERGY TECHNOLOGY Co., LTD.