

# **SAFETY** MSDS

**Material Safety Data Sheet**

**Enerland Co., Ltd**

**R&D Center**

## MODEL : Rechargeable Polymer Li-ion Battery

### ■ SECTION 1 [ Chemical Product & Company Identification]

<b>Product Identification</b>	Rechargeable Polymer Li-ion Battery
<b>Manufacturer</b>	Enerland Co., LTD.
<b>Address</b>	254-1, Maegok-ri, Hobeop-Myeon, Icheon-si, Gyeonggi-do, 467-821, Korea
<b>Emergency Telephone No.</b>	82-31-639-2800
<b>Telephone No. for Information</b>	82-11-422-0722
<b>Date Prepared</b>	2004.03.16

### ■ SECTION 2 [ Hazardous Ingredients / Identity Information]

#### ※ Hazardous Components ( Specific Material Identity, Common Names)

<b>Hazardous Components</b>	<b>Contents, %</b>	<b>CAS No.</b>
Aluminum Foil	3-12	7429-90-5
Transition Metal Oxide	20-50	-
Carbon(Graphite, Proprietary)	15-35	7440-44-0
PVDF( Poly-vinylidene Fluoride)	<8	24937-79-9
Copper Foil	3-12	7440-50-8
Electrolyte (Proprietary)	10-20	-
Al Film Cover	Reminder	N/A

#### Remark:

The Lithium Equivalent mount of each cell is less than 1.5g.

**✖ Primary routes of entry**

<b>Skin contact</b>	No
<b>Skin absorption</b>	No
<b>Eye contact</b>	No
<b>Inhalation</b>	No
<b>Ingestion</b>	No

**✖ Signs and Symptoms of Exposure**

[Skin Contact](#)

No effect under routine handling and use

[Skin absorption](#)

No effect under routine handling and use

[Eye Contact](#)

No effect under routine handling and use

[Inhalation](#)

No effect under routine handling and use

[Reported as carcinogen](#)

Not applicable

### ■ SECTION 3 [ Physical/Chemical Characteristics]

<b>Appearance</b>	Solid
<b>Odor</b>	N/A
<b>Vapor Pressure(mmHg)</b>	N/A
<b>Vapor Density(air=1)</b>	N/A
<b>Boiling Point</b>	N/A
<b>Solubility in water</b>	insoluble
<b>Specific Gravity</b>	N/A
<b>Density</b>	N/A

### ■ SECTION 4 [ Emergency and First Aid Procedures]

#### Inhalation

Not a health hazard

#### Eye contact

Not a health hazard.

#### Skin contact

Not a health hazard.

#### Ingestion

If Swallowed, obtain medical attention immediately.

< Caution >

IF EXPOSURE TO INTERNAL MATERIALS WITHIN CELL DUE TO DAMAGED OUTER AI CASING, THE FOLLOWING ACTIONS ARE RECOMMENDED ;

#### Inhalation

If inhaled, remove to fresh air. If not breathing give artificial respiration, preferably mouth-to-mouth and seek medical attention.

#### [Eye & Skin contact](#)

In case of contact, immediately flush eyes or skin with copious amounts of water for at least 15 minutes while removing contaminated clothing and shoes.; seek medical attention.

#### [Ingestion](#)

Drink milk / water and induce vomiting ; seek medical attention.

## ■ SECTION 5 [ Fire Fighting Measures]

#### [General Hazard](#)

Cell is not flammable but internal organic material will burn if the cell is incinerated. Combustion products include, but are not limited to hydrogen fluoride, carbon monoxide and carbon dioxide.

#### [Extinguishing Media](#)

Use extinguishing media. suitable for the materials that are burning.

#### [Special Firefighting Instructions](#)

If possible, remove cell(s) from fire fighting area. If heated above 130°C, Cell(s) may explode/swell or leak.

#### [Firefighting Equipment](#)

Use NISH/MSHA approved full-face self-contained breathing apparatus(SCBA) with full protective gear.

## ■ SECTION 6 [ Accidental Release Measures]

### [On Land](#)

Place material into suitable containers and call local fire/police department.

### [In Water](#)

If possible, remove from water and call local fire/police department.

## ■ SECTION 7 [ Handling and Storage]

### [Handling](#)

No special protective clothing required for handling individual cells.

### [Storage](#)

Keep away from heat and open flame. Store in a cool and dry place

## ■ SECTION 8 [ Handling and Storage]

### [Respirator](#)

Not required during normal operations. SCBA required in the event of a fire.

### [Eye/face protection](#)

Not required beyond safety practices of employer.

### [Foot protection](#)

Steel toed shoes recommended for large container handling.

### [Gloves](#)

Not required for handling of cells.

## ■ SECTION 9 [ Reactivity and Stability Data]

### Reactivity

None during normal operating or handling conditions.

### Hazardous decomposition

None during normal operating conditions. If Cells are leaked, hydrogen fluoride, carbon monoxide and carbon dioxide may be released.

### Incompatibilities

None during normal operation. Avoid exposure to heat, open flame and corrosives.

### Conditions to avoid

Don't short terminals and immerse in water or pour.

Don't heat or throw in fire and solder.

Don't attempt to crush or drop.

Don't put it in microwave oven, oven or pressure container.

Don't attempt to modify

## ■ SECTION 10 [ Toxicological Information]

This product does not elicit toxicological properties during routine handling and use.

<b>Sensitization</b>	No
<b>Teratogenicity</b>	No
<b>Reproductive toxicity</b>	No
<b>Acute toxicity</b>	No

If the cells are leaked through misuse or damage, discard immediately.

Internal components of cell are irritants and sensitizers.

## ■ SECTION 11 [ Ecological Information]

Some materials within the cell are bio-accumulative. Under normal conditions, these materials are contained and pose no risk to persons or the surrounding environment.

## ■ SECTION 12 [ Transport Information]

DOT Hazard Class : **Non-regulated**

## ■ SECTION 13 [ Transport Information]

OSHA hazard communication standard (29CFR 1910.1200) : **Non - Hazardous**