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**MATERIAL SAFETY DATA SHEET****INR18650 Lithium-Ion Battery****LG CHEMICAL LIMITED****1. Chemical Product and Company Identification****Product Identification**

INR18650 MH1 (3200mAh, 3.7V ) Lithium-Ion Battery.

**Manufacturer**

LG Chemical Limited

Twin Tower

Youido-Dong, Youngdeungpo-Ku

Seoul, Korea

**Emergency Telephone Number**

82-2-3773-7256

**2. Composition Information**

<b>Hazardous Ingredients</b>	<b>%</b>	<b>CAS Number</b>
Aluminum Foil	2-10	7429-90-5
Nickel compound (proprietary)	0-80	
Manganese compound (proprietary)	0-15	
Cobalt compound (proprietary)	0-15	
Styrene-Butadiene-Rubber	<1	
Polyvinylidene Fluoride (PVDF)	<5	24937-79-9
Copper Foil	2-10	7440-50-8
Carbon (proprietary)	10-30	7440-44-0
Electrolyte (proprietary)	10-20	
steel, Nickel and inert materials	Remainder	N/A

### 3. Hazards Identification

#### Primary routes of entry

Skin contact	:	NO
Skin absorption	:	NO
Eye contact	:	NO
Inhalation	:	NO
Ingestion	:	NO

#### Symptoms of exposure

#### Emergency Overview

May explode in a fire, which could release hydrogen fluoride gas.  
Use extinguishing media suitable for materials burning in fire.

#### 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

## 4. First Aid Measures

### **Inhalation**

Not a health hazard.

### **Eye contact**

Not a health hazard.

### **Skin contact**

Not a health hazard.

### **Ingestion**

If swallowed, obtain medical attention immediately.

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

### **Inhalation**

Leave area immediately and seek medical attention.

### **Eye contact**

Rinse eyes with water for 15 minutes and seek medical attention.

### **Skin contact**

Wash area thoroughly with soap and water and seek medical attention.

### **Ingestion**

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

## 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 125°C, cell(s) may explode/vent.

### Firefighting Equipment

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

## 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.

## 7. Handling and Storage

### Handling

No special protective clothing required for handling individual cells.

### Storage

Store in a cool, dry place.

## 8. Exposure Controls / Personal Protection

### Engineering controls

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

### Personal Protection

#### Respirator

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

#### Eye/face protection

Not required beyond safety practices of employer.

#### Gloves

Not required for handling of cells.

#### Foot protection

Steel toed shoes recommended for large container handling.

## 9. Physical and Chemical Properties

State	Solid
Odor	N/A
PH	N/A
Vapor pressure	N/A
Vapor density	N/A
Boiling point	N/A
Solubility in water	Insoluble
Specific gravity	N/A
Density	N/A

## 10. Stability and Reactivity

### Reactivity

None

### Incompatibilities

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

### Hazardous Decomposition Products

None during normal operating conditions. If cells are opened, hydrogen fluoride and carbon monoxide may be released.

### Conditions To Avoid

Avoid exposure to heat and open flame. Do not puncture, crush or incinerate.

## 11. Toxicological Information

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

Sensitization	Teratogenicity	Reproductive toxicity	Acute toxicity
NO	NO	NO	NO

If the cells are opened through misuse or damage, discard immediately. Internal components of cell are irritants and sensitizers.

## 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.

## 13. Disposal Considerations

California regulated debris

RCRA Waste Code : Nonregulated

Dispose of according to all federal, state, and local regulations.

## 14. Transport Information

Lithium batteries are classified in Class 9 – Miscellaneous dangerous goods as:

- UN 3480, Lithium ion batteries
- UN 3481, Lithium ion batteries contained in equipment; or
- UN 3481, Lithium ion batteries packed with equipment.

With regard to transport of the product, the following regulations are cited and considered:

The International Civil Aviation Organization (ICAO) Technical Instructions,

The International Air Transport Association (IATA) Dangerous Goods Regulations

The International Maritime Dangerous Goods (IMDG) Code,

US Hazardous Materials Regulations 49 CFR(Code of Federal Regulations) Sections 173-185 Lithium batteries and cells,

The UN Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria 38.3 Lithium batteries,

If those lithium-ion batteries are packed with or contained in an equipment, then it is the responsibility of the shipper to ensure that the consignment are packed in compliance to the latest edition of the IATA Dangerous Goods Regulations Section II of either Packing Instruction 966 or 967 in order for that consignment to be declared as NOT RESTRICTED (non-hazardous/non-Dangerous). If those lithium-ion batteries are packed with or contained in an equipment, UN No. is UN3481

Each cell or battery is of the type proven to meet the requirements of each test in the UN Manual of Tests and Criteria, Part III, subsection 38.3;

## 15. Regulatory Information

This product is not hazardous under the criteria of the Federal Occupational Safety and Health Administration(OSHA) Hazard Communication Standard.(29 CFR 1910.1200)

Hazardous

Non-hazardous