Explanatory sheet about safety of product for transportation
(Safety data sheet for transportation)

1. Basic item

Product name: Lithium ion battery (“Lithium ion battery” includes lithium ion polymer battery in this document)
UN number: 3480
Product Part Number: Refer to Table 1.
Manufacturer: LG Chemical, Ltd.
Address: LG Twin Towers, 128 Yeoui-daero, Yeongdeungpo-gu Seoul 07336, Korea
Phone number: +82-2-3773-1114

2. Product information

Basic composition of the product
This product is a battery which consists of such main component as core battery pack assembled with some Lithium ion cells. And it consists of any combination of plastic casing, tube casing, protection circuit boards, safety devices and interface terminals.

3. Safety information

- LG Chemical certifies the battery has passed and satisfied the UN Manual of Tests and Criteria Part III, sub-section 38.3 testing in LG Chemical Shipping.
- LG Chemical manufactured the battery under the quality management program required in UN model regulations 2.9.4(e).

3-1) Component cell

The Watt-hour rating of the component Lithium ion cells is not more than 20Wh.

3-2) Battery pack

1. The Watt-hour rating of the battery is not more than 100Wh.
2. Package of the battery satisfies the following conditions when LG Chemical ships.
   (1) The product name “Lithium ion batteries” and how to deal with the damage of the package are written on the label.
   (2) The package has passed the drop test from the height of 1.2m.
   (3) The package net weight is not more than 10kg.
   (4) The product and package specification follow and meet IMDG SP188.

3. The battery is not defective for safety reasons, not damaged. It is not collected battery for recycling or disposal.
4. The battery is not subject to the fully regulated requirements for Dangerous Goods in ocean and ground transportation.
5. The battery should be transported by Cargo aircraft as UN3480, class 9 Dangerous Goods, and state of charge not exceeding 30%, attached by required marks and labels, according to Packing Instruction 965 Section IB of the ICAO and IATA regulations.

Jan, 1, 2020
Hak Cheol Shin
Vice Chairman & CEO
LG Chem, Ltd.

LG Chemical Ltd
<table>
<thead>
<tr>
<th>Lenovo ASM Lenovo PN Part Number</th>
<th>Lenovo FRU Part Number</th>
<th>Lenovo model name</th>
<th>MSDS Type #</th>
<th>UN DOT 38.3 Test Certificate</th>
<th>Cell Voltage (V)</th>
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<th>Watt hour Rating (Wh)</th>
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</table>
MATERIAL SAFETY DATA SHEET

Product Name: Lithium Ion Rechargeable Battery

Product Code: None

(All Cylindrical Cell LG Chem. manufactured and whose capacity is less than 20Wh, And All Cylindrical pack capacity is less than 100Wh)

1. Chemical Product and Company Identification

Manufacturer

LG Chemical Limited
Twin Tower
Youido-Dong, Youngdeungpo-Ku
Seoul, Korea

Emergency Telephone Number

82-2-3773-7256

2. Composition Information

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<tr>
<th>Hazardous Ingredients</th>
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<td>Nickel compound (proprietary)</td>
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<td>Manganese compound (proprietary)</td>
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<tr>
<td>Cobalt compound (proprietary)</td>
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<td>Polyvinylidene Fluoride (PVDF)</td>
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<td>Carbon (proprietary)</td>
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3. Hazards Identification

Primary routes of entry

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<tr>
<td>Skin absorption</td>
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</tr>
<tr>
<td>Eye contact</td>
<td>NO</td>
</tr>
<tr>
<td>Inhalation</td>
<td>NO</td>
</tr>
<tr>
<td>Ingestion</td>
<td>NO</td>
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</tbody>
</table>

Emergency Overview

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

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
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**

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<th>Property</th>
<th>Value</th>
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<td>Odor</td>
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<td>Vapor pressure</td>
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<tr>
<td>Density</td>
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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.

<table>
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<th>Sensitization</th>
<th>Teratogenicity</th>
<th>Reproductive toxicity</th>
<th>Acute toxicity</th>
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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,
- 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 61st edition of 2020 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**

OSHA hazard communication standard (29 CFR 1910.1200)

_____ Hazardous       ☑️ Non-hazardous

16. **Model list of application**

Refer to Table 1.