1. Chemical Product and Company Identification

Product Identification
LG CHEM ICP 523450D2 Lithium-Ion Battery

Manufacturer
LG Chem
Twin Tower
Youido-Dong 120, Youngdeungpo-Ku
Seoul, Korea

Emergency Telephone Number
82-2-3773-7387

2. Composition Information

<table>
<thead>
<tr>
<th>Hazardous Ingredients</th>
<th>%</th>
<th>CAS Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum Foil</td>
<td>2-10</td>
<td>7429-90-5</td>
</tr>
<tr>
<td>Metal Oxide (proprietary)</td>
<td>20-50</td>
<td></td>
</tr>
<tr>
<td>Polyvinylidene Fluoride (PVDF)</td>
<td>&lt;5</td>
<td>24937-79-9</td>
</tr>
<tr>
<td>Copper Foil</td>
<td>2-10</td>
<td>7440-50-8</td>
</tr>
<tr>
<td>Carbon (proprietary)</td>
<td>10-30</td>
<td>7440-44-0</td>
</tr>
<tr>
<td>Electrolyte (proprietary)</td>
<td>10-20</td>
<td></td>
</tr>
<tr>
<td>Stainless steel, Nickel and inert materials</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stylene-butadiene-rubber</td>
<td></td>
<td>N/A</td>
</tr>
</tbody>
</table>

* Watt-hour : 4.255 Wh
3. **Hazards Identification**

**Emergency Overview**

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

**Primary routes of entry**

<table>
<thead>
<tr>
<th>Route of Entry</th>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin contact</td>
<td>NO</td>
</tr>
<tr>
<td>Skin absorption</td>
<td>NO</td>
</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>
</tr>
</tbody>
</table>

**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. 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 160°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

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>State</td>
<td>Solid</td>
</tr>
<tr>
<td>Odor</td>
<td>N/A</td>
</tr>
<tr>
<td>PH</td>
<td>N/A</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>N/A</td>
</tr>
<tr>
<td>Vapor density</td>
<td>N/A</td>
</tr>
<tr>
<td>Boiling point</td>
<td>N/A</td>
</tr>
<tr>
<td>Solubility in water</td>
<td>Insoluble</td>
</tr>
<tr>
<td>Specific gravity</td>
<td>N/A</td>
</tr>
<tr>
<td>Density</td>
<td>N/A</td>
</tr>
</tbody>
</table>
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>
<thead>
<tr>
<th>Sensitization</th>
<th>Teratogenicity</th>
<th>Reproductive toxicity</th>
<th>Acute toxicity</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO</td>
<td>NO</td>
<td>NO</td>
<td>NO</td>
</tr>
</tbody>
</table>

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 bio-accumulative. 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 : Non-regulated

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

14. **Transport Information**

Lithium Ion batteries are considered to be "Rechargeable batteries" and meet the requirements of transportation by the U.S. Department of Transportation(DOT), International Civil Aviation Administration(ICAO).

Even classified as lithium ion batteries (UN3480), 2015 IATA Dangerous Goods Regulations 56th edition Packing Instruction 965, 966 or 967 Section IB or II is applied.

The general and additional requirements apply to all lithium ion cells and batteries prepared for transport according to this packing instruction:

1) Section IB applies to lithium ion cells with a Watt-hour rating not exceeding 20 Wh and lithium ion batteries with a Watt-hour rating not exceeding 100 Wh packed in quantities that exceed the allowance permitted in Section II, Table 965-II;and

<table>
<thead>
<tr>
<th>Outer Packagings</th>
<th>Net quantity per package</th>
<th>Net quantity per package</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Passenger aircraft</td>
<td>Cargo Aircraft Only</td>
</tr>
<tr>
<td>Lithium ion cells and batteries</td>
<td>10 kg</td>
<td>10 kg</td>
</tr>
</tbody>
</table>

2) Section II applies to lithium ion cells with a Watt-hour rating not exceeding 20 Wh and lithium ion batteries with a Watt-hour rating not exceeding 100 Wh packed in quantities not exceeding the allowance permitted in Section IB, Table 965-IB.
Cells and/or batteries specified in columns 2, 3 and 4 of Table 965-II must not be combined in the same package.

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 3 subsection 38.3.

15. **Regulatory Information**

OSHA hazard communication standard (29 CFR 1910.1200)

- [X] Hazardous
- [ ] Non-hazardous