MATERIAL SAFETY DATA SHEET

ICR18650M26 Lithium-Ion Battery

LG CHEMICAL LIMITED

1. Chemical Product and Company Identification

Product Identification
ICR18650 Lithium-Ion Battery

<table>
<thead>
<tr>
<th>Model</th>
<th>Wh (nominal)</th>
</tr>
</thead>
<tbody>
<tr>
<td>M26</td>
<td>9.4</td>
</tr>
</tbody>
</table>

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

Emergency Telephone Number
82-2-3773-6671

2. Composition Information

<table>
<thead>
<tr>
<th>Hazardous Ingredients</th>
<th>%</th>
<th>CAS Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nickel compound</td>
<td>0-25</td>
<td>1313-99-1</td>
</tr>
<tr>
<td>Manganese compound</td>
<td>0-15</td>
<td>1313-13-9</td>
</tr>
<tr>
<td>Cobalt compound</td>
<td>4-50</td>
<td>1307-96-6</td>
</tr>
<tr>
<td>Styrene-Butadiene-Rubber</td>
<td>&lt;1</td>
<td>27288-99-9</td>
</tr>
<tr>
<td>Polyvinylidene Fluoride (PVDF)</td>
<td>&lt;5</td>
<td>24937-79-9</td>
</tr>
<tr>
<td>Aluminum Foil</td>
<td>2-10</td>
<td>7429-90-5</td>
</tr>
<tr>
<td>Copper Foil</td>
<td>2-10</td>
<td>7440-50-8</td>
</tr>
<tr>
<td>Carbon</td>
<td>10-30</td>
<td>7440-44-0</td>
</tr>
<tr>
<td>Electrolyte (Ethylene carbonate)</td>
<td>10-20</td>
<td>96-49-1</td>
</tr>
</tbody>
</table>
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**

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

**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.

**Ingestion**
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**

<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 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 : Non-regulated

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 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 ☑