

MATERIAL SAFETY DATA SHEET

Model ICR18650C2 Lithium-Ion Battery

LG CHEMICAL LIMITED

1. Chemical Product and Company Identification

Product Identification

LGCHEM ICR18650C2 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

| Hazardous Ingredients | % | CAS Number |
|--|-----------|------------|
| Aluminum Foil | 2-10 | 7429-90-5 |
| Nickel compound (proprietary) | 10-25 | |
| Manganese compound (proprietary) | 6-15 | |
| Cobalt compound (proprietary) | 4-10 | |
| 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 | |
| Stainless steel and Nickel and inert materials | Remainder | N/A |

* Lithium Equivalent Content: 0.84g, Electric Power Capacity: 10.40 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

| | | |
|-----------------|---|----|
| 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.

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 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), 2010 IATA Dangerous Goods Regulations 51th edition Packing Instruction 965 Part II is applied. The Product is handled as Non-Dangerous Goods by meeting the following requirements. (1)

Lithium ion cells and batteries offered for transport are not subject to other additional requirements of the UN Regulations if they meet the following ; (1)–(5)

1. for cells, the Watt-hour rating is not more than 20Wh.
2. for batteries, Watt-hour rating is not more than 100Wh.
3. 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.
4. each cells comply with Special Provision A154.
5. Quantity per Package shall not exceed 10kg.

15. Regulatory Information

OSHA hazard communication standard (29 CFR 1910.1200)

Hazardous

Non-hazardous