



Material Safety Data Sheet

LIM50EN 50Ah 3.75V Lithium-ion Cell

GS Yuasa International Ltd.

Section 1 Identification of the product and the company

Product details

Product Name Lithium-ion Cell
Product Code LIM50EN
Nominal Capacity 50 Ah
Nominal Voltage 3.75 V
Watt Hour Rating 178 Wh

Supplier details

Address GS Yuasa International Ltd.
 1, Inobanba-cho, Nishinosho, Kisshoin, Minami-ku, Kyoto 601-8520, Japan
Telephone Number: +81-75-316-3064 (office)
Fax Number: +81-75-316-3062 (office)

Section 2 Hazards identification

The cell is hermetically sealed, but has a vent that will open under extreme mechanical, electrical or thermal abuse. This could allow the liquid and dissolved solid chemicals listed above to escape and exposure of harmful ingredients may occur.

Section 3 Composition / information on ingredients

The cell do not contain heavy metals as defined by the European directives 2006/66/EC Article 21.

LIM50EN ingredients

Ingredient	Mass proportion (%)	CAS No
Lithium manganese oxide	20 – 25	12057-17-9
Lithium cobalt dioxide	2 – 4	12190-79-3
Lithium nickel dioxide	2 – 4	12031-65-1
Graphite	8 – 13	7782-42-5
Ethylene carbonate	3 – 5	96-49-1
Ethyl Methyl Carbonate	8 – 13	623-53-0
Lithium hexafluorophosphate	1 – 3	21324-40-3

Section 4 First - aid measures	
<p>Under normal condition of use, these chemicals are contained in sealed can. Risk of electrolyte leakage occurs only if the cells are mechanically abused.</p>	
<u>Emergency Measures</u>	
Skin contact	Immediately wash thoroughly with soap and water.
Eye contact	Immediately flush with plenty of water for at least 15 minutes.
Inhalation	Remove to fresh air. Get medical attention.
Swallowed	Wash the stomach with large quantity of a dilute brine solution. Get medical attention.
Section 5 Fire – fighting measures	
<u>LIM50EN</u> Fire extinguishing materials: Spray water, dry chemical, carbon dioxide, and nitrogen.	
<u>Electrolyte</u> Flammable. HF and POF ₃ gases may be formed in contact with moisture. Fire extinguishing materials: Spray water, dry chemical, carbon dioxide, and nitrogen.	
Section 6 Accidental release measures	
<p>Under normal condition of use, these chemicals are contained in sealed can. Risk of electrolyte leakage occurs only if the cells are mechanically abused.</p>	
<u>For Person</u> Remove all sources of ignition. Wear suitable protector such as self-contained breathing apparatus or organic canister mask, safety goggles and gloves.	
<u>For Environment protection</u> Absorb it using absorbent and inert material, and seal it up in a suitable container. Then clean with water. Dispose off according to the local law and rules.	
Section 7 Handling and Storage	
<p>The cell shall not be disassembled or shall be kept away from any heat sources, such as fire, since the following ingredients contained within the product could be harmful under some circumstances if exposed or misused.</p>	
Storage:	Store in cool, well ventilated area. Do not expose to high temperatures (60°C). Since short circuit can cause burn hazard or safety vent to open, the cell shall be kept away from electrically conductive articles, such as metal plates and metal bars, during any time of storage. If the cell is installed in a battery module or battery pack that is adequately designed to prevent short circuits, it is not the case.
Handling:	Do not short + and - terminals with a metal.
Charging:	Charge at temperatures not more than 60°C. Charge with specified charger designed for this battery. Charge by the charge voltage below 4.1V.
Discharging:	Discharge at temperature not more than 60°C.

Disposal:	Do not dispose at in fire or incinerate.
Crushing:	Burn hazard. Do not disassemble or crush, puncture. Do not short external contacts.
Section 8 Exposure controls / personal protection	
Under normal conditions (during charge and discharge) release of ingredients dose not occur.	
Section 9 Physical and chemical properties	
Physical state	Solid – above materials contained within hermetically sealed, prismatic stainless steel cell casing
Flash point (°C)	N / A
Vapor pressure (mmHg)	N / A
Vapor density	N / A
Boiling point (°C)	N / A
Freezing point (°C)	N / A
PH	N / A
N / A Not applicable unless individual components exposed	
Section 10 Stability and reactivity	
Possibility of hazardous reactions	When heated above 100°C, the risk of rupture occurs.
Section 11 Toxicological information	
Under normal conditions (during charge and discharge) release of ingredients dose not occur. In case of accidental release see information in chapter 2, 3, 4.	
Section 12 Ecological information	
The cell does not contain heavy metals as defined by the directives 2006 / 66 / EC Article 21.	
Section 13 Disposal considerations	
Used cell shall be properly disposed and/or recycled.	
Section 14 Transport information	
<u>United Nations</u>	
UN Number	3480
Name and Description	Lithium-ion batteries
Hazard Class	9
UN packing group	II
Special provision	188, 230, 310

Water, IMO

Hazard Class 9
Packing Group II

Air, IATA

Hazard Class 9
Packing Group II

U.S. DOT/IMDG/IATA Shipping information

Lithium-ion cell and battery transportation is regulated by authorities such as US-DOT, IATA, and IMDG. The regulations comply with the UN Guidelines ("Sub-section 38.3 of Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria, Rev. 5")

The watt hour rating LIM50EN cell is 178Wh which exceeds the threshold for mandatory CLASS 9 Hazardous Goods. (UN 3480 shipping code). The cell complies with the regulations of "Sub-section 38.3 of Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria, Rev. 5". Therefore, subject to the other restrictions of UN CLASS 9 Hazardous Goods and each authority, the cell can be transported.

Section 15 Regulatory information

- Sub-section 38.3 of Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria, Rev. 5"
- Directive 2000 / 53 / EC
- Directive 91 / 157 / EEC , Directive 2006 / 66 / EC

Section 16 Other information

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Issued by GS Yuasa International Ltd.

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