Product Safety Data Sheet

LGC Lithium- Ion Rechargeable Battery Pack

LG CHEMICAL LTD

SECTION 1 Product and Company Identification

PRODUCT IDENTIFICATION

HP HSTNN-LB4T, LGC 1P3S Lithium- Ion Polymer Battery Pack
Battery pack model: SB03046XL
Name of the manufacture or supplier: LG CHEMICAL LTD
Revision date: Jan, 29, 2013
Battery pack Electric Power Capacity: 46Wh

MANUFACTURING/DISTRIBUTOR

LG Chemical Ltd. Twin Tower Youido-Dong 120, Youngdeungpo-Ku, Seoul, Korea

PHONE NUMBER

Tel: + 82-2-3773-3990

SECTION 2 Composition and Information on Ingredients

Component		%	CAS Number	Remarks
Cases(PC)		9-11	103598-77-2	No dangerous
PCB Assembly	Glass cloth	1-2	65997-17-3	No dangerous
	Copper		7440-50-8	
	Epoxy		26265-8-7	
	2-Butoxy ethyl acetate		112-07-2	
	Dipropylene glycol methyl ether		34590-94-8	
	Acrylate resins		Various	
	Epoxy resin mixture		N/A	
	Gamma-Butyrolactone		00000096-48-0	
	Other components		N/A	

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Lithium Ion Cell: LGC ICP556790L1

Hazardous Ingredients	%	CAS Number
Aluminum Foil	2-10	7429-90-5
Metal Oxide (proprietary)	20-50	
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, Nickel and inert materials	Remainder	N/A

Electric Power Capacity: 14.8 Wh

UN CLASS

1. Even classified as lithium batteries (UN3480), 2013 IATA Dangerous Goods Regulations 54th edition Packing Instruction 965 section II is applied. The product is handled as Non-Dangerous Goods by meeting the following requirements.

Lithium ion cells and batteries offered for transport are not subject to other additional requirements of the UN Regulations if they meet the following.

- . For cells or batteries in a package, without electronic equipment.

Package Limit:

≤2.7 Wh = 2.5 kg; or

>2.7 Wh but ≤ 20 Wh = 8 cells; or

>2.7 Wh but ≤ 100 Wh = 2 batteries

The Watt-hour rating must be marked on outside of the battery case.

- . 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 (subsection 38.3)

2. Even classified as lithium batteries packed with equipment (UN3481), 2013 IATA Dangerous Goods Regulations 54th edition Packing Instruction 966 section II is applied. The product is handled as Non-Dangerous Goods by meeting the following requirements.

Lithium ion cells and batteries offered for transport are not subject to other additional requirements of the UN Regulations if they meet the following.

-. For cells, the Watt-hour rating is not more than 20Wh

-. For batteries, Watt-hour rating is not more than 100Wh

The Watt-hour rating must be marked on outside of the battery case.

-. 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 (subsection 38.3)

-. Maximum quantity: Minimum needed for the operation of the equipment, plus 2 spares.

And they are out of scope for Special Provision A154 and comply with Special Provision A164.

This product passed 1.2M drop test and comply with UN38.3.

SECTION 3 Hazards Identification

EMERGENCY OVERVIEW

During a fire, may release irritating gases.
Use extinguishing media suitable for materials burning in fire.

POTENTIAL HEALTH EFFECTS

EYE
No effect under routine handling and use.

SKIN
No effect under routine handling and use. Nothing cause sensitization(allergic reaction)

INHALATION
No effect under routine handling and use.

CHRONIC EFFECTS
None known.

CARCINOGENICITY INFORMATION
The components of this product are not listed by IARC, NTP, OSHA, or ACGH as a carcinogen.

SECTION 4 First Aid Measures

If exposure to internal materials within cell due to damaged outer casing, the following actions are recommended.

EYE CONTACT

In case of eye contact, immediately flush eyes which plenty of water at least 15 minutes.
Get medical attention if irritation persists or develops later.

INHALATION

If exposed to excessive levels of DMAc, fiber dust or fly, remove to fresh air.
Get medical attention if cough or symptoms develop.

SKIN CONTACT

Wash with soap and water. Get medical attention if irritation develops or persists.
Use hand creams to soothe and moisten irritated skin.

INGESTION

Not a probable route. However, in case of gastro intestinal distress following accidental ingestion, call a physician.

SECTION 5 Fire Fighting Measures

FLAMMABLE PROPERTIES

Flash point	Not applicable
Flammable limits in air	Not applicable
Lower explosive limits	Not established
Upper explosive limits	Not established
Auto-ignition temperature	Not available

UNUSUAL FIRE AND EXPLOSION HAZARDS

During a fire, irritating and toxic gases and aerosols may be generated by thermal decomposition and Combustion.

EXTINGUISHING MEDIA

Use the following extinguishing media suitable for the materials that are burning.
: Water, Carbon Dioxide, Dry Chemical, Foam

FIRE FIGHTING INSTRUCTIONS

Keep personnel removed and upwind of fire.
Wear self-contained breathing apparatus.
Wear full protective equipment.(full Bunker gear)

SECTION 6 Accidental Release Measures

SAFEGUARDS(Personnel)

Review FIRE FIGHTING MEASURES and HANDING sections before proceeding with cleanup.
Use appropriate personal protective equipment during cleanup.

SPILL CLEANUP

Vacuum or sweep up material for salvage or disposal.

ACCIDENTAL RELEASE MEASURES

Wash, shovel or mop up and place in solid waste containers.
Do not flush to drains.

SECTION 7 Handling and Storage

HANDLING

Use good material handling practice.

STORAGE

Store in a cool, dry place.

SECTION 8 Exposure Controls / Personal Protection

ENGINEERING CONTROLS

Keep away from heat and open flame.
Good general ventilation is recommended. Local exhaust ventilation is recommended where vapors are likely to be released.

PERSONAL PROTECTIVE EQUIPMENT

EYE PROTECTION

Not required beyond safety practices of employer.
But in the event of a fire, safety glasses with side-shields for general protection are recommended.

SKIN PROTECTION

None required normal operations.
If during a fire, wear gloves to prevent skin abrasion and irritation.

RESPIRATOR PROTECTION

Respirator use must be in accordance with OSHA Standard 29 CFR 1910.134
Wear a correctly fitted, NIOSH approved, respirator or industrial type canister mask in enclosed areas with poor or no ventilation areas, or where TLV levels are likely to be exceeded.

SECTION 9 Physical and Chemical Properties

Form	Solid
Odor	Not applicable

PH	Not applicable
Evaporation rate	Not applicable
Vapor pressure	Not applicable
Vapor density	Not applicable
Viscosity	Not applicable
Boiling point	Not applicable
Solubility in water	Insoluble
Specific gravity	Not applicable
Density	Not applicable

SECTION 10 Stability and Reactivity

CHEMICAL STABILITY
Stable at normal temperatures and storage conditions.

CONDITIONS TO AVOID
Avoid exposure to heat and open flame. Do not puncture, crush or incinerate.

INCOMPATIBILITY
None during normal operation. Avoid exposure to heat, open flame, and corrosives.

DECOMPOSITION
By fire or thermal decomposition, can produce irritating and toxic gases.

HAZARDOUS POLYMERIZATION
Will not occur.

SECTION 11 Toxicological Information

IMMEDIATE (ACUTE) EFFECTS
None known

DELAYED(SUBCHRONIC & CHRONIC) EFFECTS
None known

OTHER DATA

Not available

SECTION 12 Ecological Information

No ecological information available

SECTION 13 Disposal Considerations

Store in impervious inert container and send to smelter for recycling. Must be treated as special waste. In general, this product may be discarded in accordance with the State and Local regulations.

SECTION 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), The 54th edition of International Air Transportation Association (IATA, 2013) special provision A154/A164, International Maritime Dangerous Goods (IMDG) code (2008 Edition) with special provision 188 & 230 and belong to non-dangerous goods.

SECTION 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)

IATA Dangerous Goods Regulations 54th Edition Effective 1 January 2013.

SECTION 16 Other Information

The data in this Product Safety Data Sheet relates only to the specific product designated herein and does not relate to use in combination with any other product or in any process. This PSDS may not meet regulatory requirements in other countries. This information is based on technical information believed to be reliable. It is subject to revision as additional knowledge and experiences are gained.

REFERENCE

International Chemical Safety Cards(ICSCs) International Occupational Safety and Health Information Centre(CIS) 0710 March 1999

Opinion of the scientific committee on toxicity, ecotoxicity and the environment(CSTEE)

Adopted by the CSTEE during the 43rd plenary meeting of 28 May 2004

UN-Recommendations on the Transport of Dangerous Goods Model Regulations.
(ST/SG/AC. 10/1/Rev.5)