

**LG CHEM  
PRODUCT SAFETY DATA SHEET**

**LG CHEMICAL LTD  
Product Safety Data Sheet  
LGC Lithium- Ion Polymer Rechargeable Battery Pack**

**SECTION 1 Product and Company Identification**

**PRODUCT IDENTIFICATION**

LGC Lithium-Ion Polymer Rechargeable Battery Pack EY30 (3.8V)  
Pack capacity : Min 8.2Wh

**MANUFACTURING/DISTRIBUTOR**

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

**PHONE NUMBER**

Tel: + 82-2-3773-7380

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**SECTION 2 Composition and Information on Ingredients**

**COMPOSITION**

**1. Terrace insulator**

Manufacturer name <b>Mirae</b>				
Manufacturer designation <b>QA</b>				
Motorola Model Name <b>EY30</b>				
Motorola Part Number <b>(None)</b>				
<b>Part name</b>	<b>material name</b>	<b>Weight (g)</b>	<b>Constituent name</b>	<b>Constituent weight (%)</b>
Side insulator	NOMEX 410 (Backing material)	0.02025	Dupont	75%
	SDK 8103C (Adhesive tape)	0.00675	SDK	25%
Total weight		0.027g		

Table for Flame Retardants

<b>Part name</b>	<b>Flame Retardant type</b>	<b>CAS number</b>	<b>Weight (g)</b>
Side insulator	Polybrominated biphenyls(PBBs)	13654-09-6	Not Detected
	Polybrominated diphenyl ethers(PBDEs)	1163-19-5	Not Detected

Table for Banned and Restricted Substances

<b>Part name</b>	<b>Flame Retardant type</b>	<b>CAS number</b>	<b>Weight (g)</b>
Side insulator	Cadmium(Cd)	7440-43-9	Not Detected
	Lead(Pb)	7439-92-1	Not Detected
	Mercury(Hg)	7439-97-5	Not Detected
	Hexavalent Chromium (Cr VI)	18540-29-9	Not Detected

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**2. Tab insulator**

Manufacturer name <b>Mirae</b>				
Manufacturer designation <b>QA</b>				
Motorola Model Name <b>EY30</b>				
Motorola Part Number <b>(None)</b>				
<b>Part name</b>	<b>material name</b>	<b>Weight (g)</b>	<b>Constituent name</b>	<b>Constituent weight (%)</b>
Tab insulator	Polyimide film (ST-8372FL)	0.011	DST	100
Total weight		0.011g		

Table for Flame Retardants

<b>Part name</b>	<b>Flame Retardant type</b>	<b>CAS number</b>	<b>Weight (g)</b>
Tab insulator	Polybrominated biphenyls(PBBs)	13654-09-6	Not Detected
	Polybrominated diphenyl ethers(PBDEs)	1163-19-5	Not Detected

Table for Banned and Restricted Substances

<b>Part name</b>	<b>Flame Retardant type</b>	<b>CAS number</b>	<b>Weight (g)</b>
Tab insulator	Cadmium(Cd)	7440-43-9	Not Detected
	Lead(Pb)	7439-92-1	Not Detected
	Mercury(Hg)	7439-97-5	Not Detected
	Hexavalent Chromium (Cr VI)	18540-29-9	Not Detected

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**3. Side insulator**

Manufacturer name Teams				
Manufacturer designation QA				
Motorola Model Name EY30				
Motorola Part Number (None)				
Part name	material name	Weight (g)	Constituent name	Constituent weight (%)
Side insulator (MZ1087)	1MCLPETBC (Backing material)	0.21	AVERY	75%
	SP4200 (Adhesive)	0.07		25%
Total weight		0.28g		

Table for Flame Retardants

Part name	Flame Retardant type	CAS number	Weight (g)
Side insulator	Polybrominated biphenyls(PBBs)	13654-09-6	Not Detected
	Polybrominated diphenyl ethers(PBDEs)	1163-19-5	Not Detected

Table for Banned and Restricted Substances

Part name	Flame Retardant type	CAS number	Weight (g)
Side insulator	Cadmium(Cd)	7440-43-9	Not Detected
	Lead(Pb)	7439-92-1	Not Detected
	Mercury(Hg)	7439-97-5	Not Detected
	Hexavalent Chromium (Cr VI)	18540-29-9	Not Detected

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**4. PCM**

Manufacturer name ITM semiconductor					
Manufacturer designation QA					
Motorola Model Name EY30					
Motorola Part Number (None)					
Function designation					
Part name	material name	Weight (g)	Q'ty	Constituent name	Constituent weight (%)
PMP	PROTECTION ONE CHIP IC	0.000214	1	MITSUMI	0.06
	CHIP RESISTOR(0603)	0.00034244	2	YAGEO	0.09
	CHIP RESISTOR(1608)	0.003	1	YAGEO	0.82
	CHIP CAPACITOR(0603)	0.00165	5	MURATA	0.45
	LEAD FRAME	0.13713	1	TSP	37.57
	Cu WIRE	0.000144	1	HEESUNG	0.04
	Au WIRE	0.0008	1	HEESUNG	0.22
	EMC (LMC795V-P)	0.1138636	1	NEPES	31.2
	Solder (WS693CPS)	0.002	1	ALPHA METAL	0.55
	CHIP FUSE (S0603-S-5.0A)	0.0012	1	MOLEX	0.33
	FPCB	0.046	1	ZHENGXINDZ	12.6
	CONNECTOR	0.057	1	AMPHENOL	15.62
	FET	0.001656	1	MAGNACHIP	0.45
SSTotal weight		0.365g			

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Table for Banned Brominated Flame Retardants

<b>Part name</b>	<b>Flame Retardant type</b>	<b>CAS number</b>	<b>Weight (PPM)</b>
PMP	Polybrominated biphenyls(PBBs)	13654-09-6	Not Detected
	Polybrominated diphenyl ethers(PBDEs)	1163-19-5	Not Detected

Table for Banned Metals and Their Compounds

<b>Part name</b>	<b>Flame Retardant type</b>	<b>CAS number</b>	<b>Weight (PPM)</b>
PCM	Cadmium(Cd)/its compounds	7440-43-9	Not Detected
	Lead(Pb)/its compounds	7439-92-1	CHIP RESISTOR(100100) CHIP RESISTOR(7.58) SOLDER(121) FPCB SOLDER(249)
	Mercury(Hg)/its compounds	7439-97-5	Not Detected
	Hexavalent chromium	18540-29-9	Not Detected

Table for solder (if used in the component)

<b>Part name</b>	<b>Type of solder</b>	<b>Composition</b>	<b>Amount</b>
WS693CPS	Solder Paste (Halogen-free)	Tin : REM% Ag : 1~5% Cu : 0.1~1% SOLVENT : 1~5% PROPRIETARY SURFACTANT : 1~5% SURFACTANT : 1~5%	0.002g

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**5. Cell**

## Chemical Product and Company Identification

Lithium Ion Polymer Cell: LGC ICP286291L1

<b>Hazardous Ingredients</b>	<b>%</b>	<b>CAS Number</b>
Aluminum Foil	2-10	7429-90-5
Metal Oxide (proprietary)	20-50	
Polyvinylidene Fluoride (PVDF)	<5	24937-79-9
Styrene butadiene rubber	<1	
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

\* Watt-hour : 8.74 Wh

## 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.

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Inhalation

No effect under routine handling and use.

Reported as carcinogen

Not applicable

## **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.



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## 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.

## 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.

## Handling and Storage

### Handling

No special protective clothing required for handling individual cells.

### Storage

Store in a cool, dry place.

## 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.

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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.

## 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

## 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.

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## **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.

## **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.

## **Disposal Considerations**

California regulated debris

RCRA Waste Code : Non-regulated

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

## **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), the International Civil Aviation Administration(ICAO), the International Maritime Dangerous Goods (IMDG) Code.

Even classified as lithium ion batteries (UN3480), 2015 IATA Dangerous Goods Regulations 56<sup>th</sup> edition Packing Instruction 965 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 IB, Table 965-IB; and

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**TABLE 965-IB**

	Net quantity per package Passenger aircraft	Net quantity per package Cargo Aircraft Only	
Lithium ion cells and batteries	10 kg	10 kg	
<b>OUTER PACKAGINGS</b>			
Type	Drums	Jerricans	Boxes

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 II, Table 965-II.

**TABLE 965-II**

Contents	Lithium ion cells and/or batteries with a Watt-hour rating of 2.7 Wh or less	Lithium ion cells with a Watt-hour rating of more than 2.7 Wh but not more than 20 Wh	Lithium ion batteries with a Watt-hour rating of more than 2.7 Wh but not more than 100 Wh
1	2	3	4
Maximum number of cells/batteries per package	No limit	8 cells	2 Batteries
Maximum net quantity per package	2.5 kg	N/A	N/A

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.

## Regulatory Information

OSHA hazard communication standard (29 CFR 1910.1200)

Hazardous       Non-hazardous