

Material Safety Data Sheet
May be used to comply with
OSHA's Hazard Communication Standard.
29 CFR 1910.1200. Standard must be
consulted for specific requirements.

IDENTITY (As Used on Label and List) Lithium Ion Rechargeable Cell LPCS5260106 (3 Ah)	Note: Blank spaces are not permitted. If any item is not applicable, or no information is available, the space must be marked to indicate that.
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SECTION I

Manufacturer's Name SKC Co., Ltd.	
Address (Number, Street, City, State and Zip Code) #460 Chonhung-Ri, Songgo-Ub, Chonan-City, Chungchongnam-Do, 330-830 Korea	Telephone Number for Information 973-448-2394
	Date Prepared January 29, 2003
	Signature of Preparer (optional)

SECTION II – COMPOSITION/INFORMATION ON INGREDIENTS

		<u>CAS #</u>
Lithium Cobalt Oxide.....	30 – 40%.....	12190-79-3
PVDF.....	1 – 5%.....	24937-79-9
Carbon.....	10 – 30%.....	7440-44-0
PTFE.....	0.1 – 0.5%.....	9002-84-0
Electrolyte (EC/EMC/DEC/PC/1mo1LiPF6).....	15 – 20%.....	See components in Section III (1) & (2)
PP+PE.....	2 – 3%.....	9003-07-0, 9002-88-4
Copper.....	10 – 15%.....	7440-50-8
Aluminum.....	10 – 15%.....	7429-90-5
Nickel.....	0.1 – 0.5%.....	7440-02-0

SECTION III – HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

Hazardous Components (Specific Chemical Identity, Common Name(s))	OSHA PEL	ACGIH TLV	Other Limits Recommended	% Optional
(1) Organic solvents: Ethylene-Carbonate (CAS: 96-49-1) + Methyl-Ethyl-Carbonate (CAS: 623-53-0) + Diethyl-Carbonate (CAS: 105-58-8) + Propylene Carbonate (CAS: 108-32-7)			12g/cell	
(2) Lithium Salt LiPF6 (CAS: 21324-40-3)			1.8g/cell	
(3) Cobalt Oxide Compound (Non-flammable)			24g/cell	

Hazard Rating

Description	CAS #	Health	Fire	Reactivity
Ethylene Carbonate	96-49-1	2	1	1
Methyl-Ethyl Carbonate	623-53-0	1	3	0
Diethyl Carbonate	105-58-8	1	3	1
Propylene Carbonate	108-32-7	1	1	1
Lithium Salt	21324-40-3	3	0	0

*These chemicals of the cell are firmly sealed within Al laminated film case.
*The cell contains neither metallic lithium nor lithium alloy.
*Organic Solvents: Inflammable { UN Number 1993
UN Class 3

SECTION IV – PHYSICAL/CHEMICAL CHARACTERISTICS

Specific Gravity (H ₂ O=1)		
LiCoO ₂ : 4.95	Carbon: 2.2	Electrolyte: 1.2
Melting Point (degree C)		
LiCoO ₂ : about 1130 degrees C		
Flash Point (degree C)		
Organic Electrolyte Solution: 23°C as EMC, 157°C as EC, 132° as PC, 33°C as DEC		
Appearance and Odor		
LiCoO ₂ : black odorless powder	Organic Electrolyte: colorless liquid, ester odor	
Carbon: black odorless powder		
*These chemicals of the cell are firmly sealed within Al laminated film case so the cell is odorless.		

SECTION V – FIRE AND EXPLOSION HAZARD DATA

Flash Point (Method Used)	Flammable Limits	LEL	UEL
Between 23°C and 157°C	No data	No data	No data
Extinguishing Media			
CO2, Sand			
Special Fire Fighting Procedures		Basic Fire Fighting Procedures	
No special fire fighting procedures		Wear NIOSH/MSHA approved positive pressure self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.	
Unusual Fire and Explosion Hazards			
This material does not represent an unusual fire or explosion hazard.			

SECTION VI – REACTIVITY DATA

Stability	Unstable		Conditions to Avoid:
	Stable	X	
Stable			
Short-circuit, heating, overcharging and contacting water shall be avoided.			
Incompatibility (Materials to Avoid)			
Avoid contact with water.			
Hazardous Decomposition or Byproducts			
Combustion may produce CO, H ₂ , CO ₂ , LiF, HF, H ₃ PO ₄ , HFP, PF ₃			
Hazardous Polymerization	May Occur		Conditions to Avoid:
	Will Not Occur	X	
Will not occur			N/A

SECTION VII – HEALTH HAZARD DATA

Route(s) of Entry		Inhalation?	Skin?	Ingestion?
		Yes	Yes	Yes
Health Hazards (Acute and Chronic):				
If vapor of electrolyte is inhaled, it may damage bronchial tubes, skin, lungs and throat.				
Carcinogenicity:	NTP?	IARC Monographs?	OSHA Regulated?	
	N/A	None	None	
Signs and Symptoms of Exposure:				
If electrolyte leaks, it absorbs humidity and generates irritant HF gradually.				
Medical Conditions generally aggravated by exposure:				
Leaked electrolyte may irritate bronchial tubes, skin and eyes.				
Emergency and First Aid Procedures:				
Wash out in abundant water.				

SECTION VIII – PRECAUTIONS FOR SAFE HANDLING AND USE

Steps to be taken in case material is released or spilled:
Wash electrolyte out in abundant water.
Waste Disposal Method:
Dispose of according to appropriate local, state and federal waste regulations.
Precautions to be taken in handling and storing:
Keep batteries in a dark and cool place. Short-circuit shall be avoided.
Other Precautions:
Incineration, overcharging and disassemble shall be avoided.

SECTION IX – CONTROL MEASURES

Respiratory Protection (specify type):
Not necessary under condition of normal use
Ventilation:
Not necessary under condition of normal use
Protective Gloves:
Not necessary under condition of normal use
Eye Protection:
Not necessary under condition of normal use
Other Protective Clothing or Equipment:
Not necessary under condition of normal use
Work/Hygienic Practices:
Not necessary under condition of normal use