



SAMSUNG SDI

MATERIAL SAFETY DATA SHEET

1. PRODUCT / COMPANY IDENTIFICATION

PRODUCT IDENTIFICATION

Samsung SDI Lithium-Ion Cell/Battery

Samsung SDI Sagan

SDI P/N : P12P09-03-N02

HH P/N : 890201601-026-G

HP P/N : 430128-002

Issue Date : Dec. 09th 2008

Reference # : SDI20081209-003

Item	Nominal Value	Remark
Nominal Voltage	3.7V	
Nominal Capacity	1700mAh	
Lithium Contents	0.51g	< 8g
Wh-capacity	6Wh	< 100Wh

MANUFACTURER

Samsung SDI Co., Ltd

508 Sungsung-Dong Cheonan-Shi

Chungcheongnam-Do, Korea

Tel: 82-70-7125-1837 Emergency Contact(Chemtrec) 1-800-424-9300: US and Canada

1-703-527-3887: International

2. COMPOSITION INFORMATION

INGREDIENTS	%	CAS NUMBER
Aluminum Foil	2-10	7429-90-5
Metal Oxide (proprietary)	20-50	Confidential
Polyvinylidene Fluoride (PVDF)	<5	24937-79-9
Styrene Butadiene Rubber(SBR)	<5	9003-55-8
Copper Foil	2-10	7440-50-8
Carbon (proprietary)	10-30	7440-44-0
Electrolyte (proprietary)	10-20	Confidential
Aluminum and inert materials	Remainder	N/A

3. HAZARDS IDENTIFICATION

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PRIMARY ROUTES OF ENTRY

Skin contact, Skin absorption, Eye contact, Inhalation, and Ingestion : NO

SYMPTOMS OF EXPOSURE

Skin contact, Skin absorption, Eye contact, Inhalation

→ No effect under routine handling and use.

REPORTED AS CARCINOGEN

NOT APPLICABLE

4. FIRST AID MEASURES

INHALATION, EYE CONTACT, and 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) can explode/vent.

FIREFIGHTING EQUIPMENT

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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		

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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: NO	Teratogenicity: NO	Reproductive toxicity: NO	Acute toxicity: NO
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This product does not contain any kinds of the following substances and halogen-type flame retardants including Chlorine and Bromide type harmful flame retardants which are listed in Appendix of TCO documents and relevant international ECO requirements:

Polybromated Biphenyls	(PBB)
Polybromated Biphenyl Ethers	(PBBE)
Polybromated Biphenyl Oxides	(PBBO)
Polybromated Diphenylethers	(PBDE)
Polychlorinated Biphenyl	(PCB)
Polychlorinated Diphenylethers	(PCDE)
Tetrabromophenol A	(TBBPA)
Asbestos, Antimonytrioxide, Dioxine	

None of the following substances will be exposed, leaked, or emitted during transportation, storage or any operation and any temperature condition:

Chlorinated Fluorohydrocarbon	(FCKW)
Acrylonitrile	
Styrol	
Phenol	
Benzol	
Mercury of greater than 0.0001 wt% for alkaline battery	
Mercury of greater than 0.0005 wt% for other battery	
Lithium content of greater than 0.5g/cell, 1.5g/battery	

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Cadmium, lead, and other harmful heavy metal

This product does not contain mercury, cadmium and lithium-metal.

Mercury content: N/A

Lithium-metal: N/A

Cadmium content: N/A

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 CONSIDERATION

CALIFORNIA REGULATED DEBRIS

RCRA Waste Code: Non-regulated

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

14. REGULATORY INFORMATION

OSHA hazard communication standard (29 CFR 1910.1200)

Hazardous

Non-hazardous

15. TRANSPORT INFORMATION

Lithium ion batteries containing no more than 1.5g/cell and 8g/battery pack of lithium can be treated as “Non-dangerous goods” under the United Nations Recommendations on the Transport of Dangerous Goods, Special Provision 188, provided that packaging is strong and prevent the products from short-circuit.

With regard to air transport, the following regulations are cited and considered:

- The International Civil Aviation Organization (ICAO) Technical Instructions (2006-2007 Edition),
- The International Air Transport Association (IATA) Dangerous Goods Regulations (50th Edition, Special Provisions A88, A99, A154 and A164)

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- The International Maritime Dangerous Goods (IMDG) Code (2002 Edition),
- US Hazardous Materials Regulations 49 CFR (Code of Federal Regulations) Sections 173-185 Lithium batteries and cells,
- The UN Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria 38.3 Lithium batteries, 4th revised edition

Our products are properly classified, described, packaged, marked, and labeled, and are in proper condition for transportation according to all the applicable international and national governmental regulations, not limited to the above mentioned. We further certify that the enclosed products have been tested and fulfilled the requirements and conditions in accordance with UN Recommendations (T1 – T8) on the Transport of Dangerous Goods Model Regulations and the Manual of Tests and Criteria that can be treated as “Non-Dangerous Goods”.

Test results of the UN Recommendation on the Transport of Dangerous Goods

Manual of Test and Criteria (38.3 Lithium battery)		Test Results	Remark
No	Test item		
T1	Altitude Simulation	Pass	
T2	Thermal Test	Pass	
T3	Vibration	Pass	
T4	Shock	Pass	
T5	External Short Circuit	Pass	
T6	Impact	Pass	
T7	Overcharge	Pass	For pack only
T8	Forced Discharge	Pass	For cell only

16. OTHER INFORMATION

For further information, please contact SAMSUNG SDI sales representative.

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