

# **MATERIAL SAFETY DATA SHEET**

Issued/Revised date : Jan 20, 2009 Document No. : AC-090120001

# 1. Product and Company Identification Product Identification :

Lithium-Ion Rechargeable Battery Pack

Tooling	Cell type	SMP P/N	Model Name	acer Part Number
AS2007A	CGR18650DAF	934T2170F	AS07A71	BT.00607.013
AS2007A	CGR18650D	934T2160F	AS07A72	BT.00607.014
AS2007A	CGR18650CG	934T2510F	AS07A71	BT.00607.015
AS2007A	ICR18650 S3	934T2570F	AS07A73	BT.00607.019
AS2007A	ICR18650-24B	934T2580F	AS07A74	BT.00607.020
AS2007A	ICR18650-22F	934T2840F	AS07A75	BT.00607.034
AS2009A	CGR18650CG	934T3620F	AS09A71	BT.00607.066
AS2009A	ICR18650 S3	934T3610F	AS09A73	BT.00607.067
AS2009A	ICR18650-22F	934T3670F	AS09A75	BT.00607.068
AS2009A	ICR18650-28A	934T3760F	AS09A70	BT.00607.069
AS2009A	ICR18650 C1	934T3750F	AS09A78	BT.00607.070
AS2009C	CGR18650CG	934T3900F	AS09C71	BT.00607.072
AS2009C	ICR18650-22F	934T3890F	AS09C75	BT.00607.073
AS2009D (B)	CGR18650CG	934T4020H	AS09D71	BT.00607.078
AS2009D (B)	ICR18650-22F	934T4010H	AS09D75	BT.00607.080
AS2009D (W)	ICR18650 S3	934T4000H	AS09D73	BT.00607.079
AS2009D (W)	ICR18650-28A	934T4070H	AS09D70	BT.00607.082
AS2007B	CGR18650DAF	934T2190F	AS07B71	BT.00607.010
AS2007B	CGR18650D	934T2180F	AS08B72	BT.00807.014
AS2007B	CGR18650CG	934T2500F	AS07B71	BT.00607.016
AS2007B	CGR18650DA	934T2590F	AS07B72	BT.00807.015
TM2007	CGR18650DAF	934T2230F	CONIS71	BT.00607.008



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TM2007	CGR18650D	934T2220F	CONIS72	BT.00807.013
TM2007	CGR18650CG	934T2490F	CONIS71	BT.00607.017
TM2007	CGR18650DA	934T2600F	CONIS72	BT.00807.016
TM2009A	CGR18650CG	934T3990F	TM09A71	BT.00607.081
TM2009A	ICR18650-26C	934T4030F	TM09A7D	BT.00807.023
TM2009A	ICR18650 B3	934T4060F	TM09A7C	BT.00807.022
TM2007A	CGR18650DAF	934T2130F	BTP-B2J1	BT.00607.003
TM2007A	CGR18650D	934T2210F	TM07A72	BT.00607.009
TM-2007A	CGR18650CG	934T2480F	BTP-B2J1	BT.00607.018
TM-2007B	CGR18650DA	934T2360F	TM07B71	BT.00907.003
Macles(B)	CGR18650CG	934T2790F	UM08A71	BT.00307.001
Macles(B)	ICR18650-24B	934T2780F	UM08A72	BT.00307.003
Macles(B)	ICR18650-22F	934T2800F	UM08A73	BT.00307.002
Macles(W)	CGR18650CG	934T2880F	UM08A71	BT.00307.004
Macles(W)	ICR18650-22F	934T2870F	UM08A73	BT.00307.005
Macles 6C(B)	CGR18650CG	934T2820F	UM08B71	BT.00607.032
Macles 6C(B)	ICR18650-22F	934T2810F	UM08B72	BT.00607.033
Macles 6C(B)	CGR18650EA	934T3300F	UM08B73	BT.00607.041
Macles 6C(B)	ICR18650-26C	934T3280F	UM08B74	BT.00607.042
Macles 6C(B)	ICR18650 B3	934T3420F	UM08B75	BT.00607.055
Macles 6C(W)	CGR18650CG	934T2900F	UM08B71	BT.00607.039
Macles 6C(W)	ICR18650-22F	934T2940F	UM08B72	BT.00607.040
Macles 6C(W)	CGR18650EA	934T3310F	UM08B73	BT.00607.043
Macles 6C(W)	ICR18650-26C	934T3290F	UM08B74	BT.00607.044
Macles 6C(W)	ICR18650 B3	934T3410F	UM08B75	BT.00607.056
Macles (B) -NECFuse	ICR18650-22F	934T3470F	UM08A73	BT.00307.006
Macles (W) -NECFuse	ICR18650-22F	934T3460F	UM08A73	BT.00307.007
Macles (B) -NECFuse	ICR18650-26C	934T3540F	UM08B74	BT.00607.057
Macles (W) -NECFuse	ICR18650-26C	934T3530F	UM08B74	BT.00607.058
Macles (B)	ICR18650-26C	934T3780F	UM08A74	BT.00307.011
Macles (W)	ICR18650-26C	934T3790F	UM08A74	BT.00307.012
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ICR18650-22F	934T3400F	BATBL50L6	BT.00607.052
CGR18650CG	934T3950F	UM09A71	BT.00307.013
ICR18650-22F	934T3930F	UM09A75	BT.00307.014
ICR18650 S3	934T3910F	UM09A73	BT.00307.015
CGR18650CG	934T3940F	UM09A71	BT.00307.016
ICR18650-22F	934T3920F	UM09A75	BT.00307.017
ICR18650 S3	934T3960F	UM09A73	BT.00307.018
ICR18650-26C	934T3970F	UM09B7D	BT.00607.074
ICR18650 B3	934T3980F	UM09B7C	BT.00607.075
	ICR18650-22F CGR18650CG ICR18650-22F ICR18650 S3 CGR18650CG ICR18650-22F ICR18650 S3 ICR18650 S3	ICR18650-22F 934T3400F   CGR18650CG 934T3950F   ICR18650-22F 934T3930F   ICR18650 S3 934T3910F   CGR18650CG 934T3940F   ICR18650-22F 934T3940F   ICR18650-22F 934T3920F   ICR18650 S3 934T3960F   ICR18650-26C 934T3970F	ICR18650-22F 934T3400F BATBL50L6   CGR18650CG 934T3950F UM09A71   ICR18650-22F 934T3930F UM09A75   ICR18650-22F 934T3930F UM09A75   ICR18650 S3 934T3910F UM09A73   CGR18650CG 934T3940F UM09A71   ICR18650-22F 934T3940F UM09A71   ICR18650-22F 934T3940F UM09A73   ICR18650-22F 934T3920F UM09A75   ICR18650-22F 934T3960F UM09A73   ICR18650-26C 934T3970F UM09B7D

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# 2. Hazards Identification

Primary routes of entry : Skin contact, Skin absorption; Eye contact, Inhalation and 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. Inhalation : No effect under routine handling and use. Reported as carcinogen : Not applicable

# 3. Composition / Identification on Ingredients

Substance : Lithium Ion Battery

CAS number : Not specified

UN Class : Even classified as lithium batteries, they are exempted from dangerous goods.

UN-Recommendations on the Transport of Dangerous Goods Model Regulations.

- \* Lithium ion cells and batteries may be offered for transport if they meet the following :
- \* for cells, the Watt-hour rating is not more than 20 Wh;
- \* for batteries, Watt-hour rating is not more than 100 Wh. The Watt-hour rating must be marked on the outside of the battery case except those manufactured before 1 January 2009 which may be transported without this marking until 31 December 2010;
- \* 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 III, subsection 38.3.
- \* General Requirements and Additional Requirements, Please see packing instruction 965,966 of IATA Rev. 50 or UN 3480, UN3481.

Composition :



3-1. Cases: Plastic	Not dangerous
3-2. Printed Circuit Board Assembly	Not dangerous
3-3. Lithium Ion Cell :	
Aluminum	2-10 %
Metal Oxide (proprietary)	20-50 %
Polyvinylidene Fluoride (PVDF)	<5 %
Copper	2-10 %
Carbon (proprietary)	10-30 %
Electrolyte (proprietary)	10-20 %

# 4. First Aid Measures

Inhalation : Make the victim blow his/her nose, gargle. Seek medical attention if necessary.

- <u>Skin contact</u>: Remove contaminated clothes and shoes immediately. Wash extraneous matter or contact region with soap and plenty of water immediately.
- <u>Eve contact :</u> Do not rub one's eyes. Immediately flush eyes with water continuously for at least 15 minutes. Seek medical attention immediately.
- <u>Ingestion :</u> Make the victim vomit. When it is impossible or the feeling is not well after vomiting, seek medical attention.

# 5. Fire Fighting Measures

Extinguishing Media : Use suitable extinguishing media. <u>Firefighting Equipment</u> : Use NIOSH/MSHA approved full-face self-contained breathing apparatus (SCBA) with full protective gear.

## 6. Accidental Release Measures

<u>On Land :</u> Place material into suitable containers and call local fire/police department. <u>In Water :</u> If possible, Remove from water and call local fire/police department.

# 7. Handling and Storage

## Handling :

Do not expose the battery to excessive physical shock or vibration. Short-circuiting should be avoided. However, accidental short-circuiting for a few seconds will not seriously affect the battery. Prolonged short circuits will cause the battery to rapidly lose energy, could generate enough heat to burn skin. Sources of short circuits include jumbled batteries in bulk containers, coins, metal jewelry, metal covered tables, or metal belts used for assembly of batteries in devices. To minimize risk of short-circuiting, the protective case supplied with the battery should be used to cover the terminals when transporting or storing the battery. Do not disassemble or deform the battery. Should an individual cell within a battery become ruptured, do not allow contact with water. Storage :

The lithium ion battery should be between 25% and 75% of full charge when stored for a long period of time. Store in a cool, dry, well ventilated area. And temperature above 100 degree can result in loss of battery performance, leakage, or rust. Do not expose the battery to open flames.

# 8. Exposure Controls / Personal Protection

<u>Engineering Controls</u>: Keep away from heat and open flame. Store in a cool dry place Personal Protection :

<u>Respirator :</u> Not required during normal operations. SCBA required in the event of a fire. <u>Eye/Face Protection :</u> Not required beyond safety practices of employer. Gloves : Not required for handling of battery.



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

# 10. Stability and Reactivity

Reactivity : None Incompatibilities : None during normal operation. Avoid exposure to heat, open flame, and corrosives.

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.

# **12. Ecological Information**

Lithium ion battery pack can be disposable in accordance with appropriate federal, state and local regulations.

# **13. Disposal Consideration**

Recommended methods for safe and environmentally preferred disposal: Product(waste from residues) Do not throw out a used battery cell. Recycle it through the recycling company. Contaminated packaging Neither a container nor packing is contaminated during normal use. When internal materials leaked from a battery cell contaminates, dispose as industrial wastes subject to special control.

# 14. Transport Information

International Air Transport Association (IATA) Dangerous Goods Regulations (50th Edition). Packing instruction 965, 966, 967 for Lithium Ion battery. Regulations specifically applicable to the product: Special Prevision A88, A99, A154 and A164, IATA UN 3480 (Li-ion Batteries) and UN3481 (Li-ion Batteries with equipment) US Department of Transportation (DOT) 49 code of Federal Regulations [USA] International Civil Aviation Organization (ICAO) Technical Instructions (2009-2010 Edition)

# 15. Regulatory Information

Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria (ST/SG/AC.10/11/Rev.4)

OSHA Hazard communication standard (29 CFR 1910.1200)



Hazardous V Non-hazardous

# 16. Other Information

The information contained in this Safety data sheet is based on the present state of knowledge and current legislation.

This safety data sheet provides guidance on health, safety and environmental aspects of the product and should not be construed as any guarantee of technical performance or suitability for particular applications.

Chemical substances information: Japan Advanced Information center of Safety and Health International Chemical Safety Cards (ICSCs):

International Occupational Safety and Health Information Centre (CIS)

1999 TLVs and BEIs: American Conference of Governmental Industrial Hygienists (ACGIH) Wastes Disposal and Public Cleaning Law [Japan]

Law for Promotion of Effective Utilization of resources [Japan]

Production of MSDS proving UN Manual of Tests and Criteria, Part III, sub-section 38.3 is met.