



Hangzhou Wanma High-energy Battery Co., Ltd

Add: No.1 Wanma Road, Lin'an city, Hangzhou, China Postalcode: 311300

TEL: 86571-88195313 86571-88195329 FAX: 86-0571-88195322

MATERIAL SAFETY DATA SHEET

Model: All polymer lithium ion batteries. Revised date: Apr. 23, 2007

1. PRODUCT & COMPANY IDENTIFICATION

PRODUCT NAME

Polymer Lithium Ion rechargeable batteries

MODEL/SIZE

All

MANUFACTURER

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2. COMPOSITION/INFORMATION ON INGREDIENTS

	CAS RN	Approximate percent of total weight
Lithium Cobalt Oxide(LiCoO ₂)	12190-79-3	20~40%
Carbon(Graphite):	7440-11-0	10~20%
Electrolyte(LiPF ₆ /EC/DMC/EMC)	21324-40-3 /96-49-1 /616-38-6 / 623-53-0	5~20%
Aluminum	7429-90-5	3~10%
Copper	7440-50-8	5~20%
Poly-Vinylidene-Fluoride(PVDF)	9011-17-0	3~15%
PP/PE/		1~10%

3. HAZARDS/HEALTH IDENTIFICATION

Emergency Overview (including Signs and Symptoms, Route(s) of Entry, etc.)

Intact batteries present no specific hazards.

Acute Health Hazards (e.g., Inhalation, Eye Contact, Skin Contact, Ingestion, etc.):

Burning batteries: AVOID inhalation of toxic fumes. Burning batteries emit toxic fumes, which are irritating to the lungs. Leaking batteries: AVOID exposure to leaking electrolyte, it can cause severe irritation and/or damage to the skin, mucous membrane or eyes.

Chronic Health Effects (e.g., Carcinogenicity, Teratology, Reproduction, Mutagenicity, etc.):

Cobalt: Suspected human carcinogenic agent.

Medical Conditions Generally Aggravated by Exposure: None.

4. FIRST-AID MEASURES

Inhalation: If battery is burning, leave the area immediately. If exposed to fumes, seek medical attention promptly.

Skin Contact: If battery electrolyte leaks on to the skin flush the affected area for at least 15 minutes with clean water. DO NOT attempt to neutralize. Seek medical attention promptly.

5. FIRE-FIGHTING AND EXPLOSION HAZARD DATA

Flammable Properties: N/A

Flashpoint: Method:

Autoignition Temperature:

Flammable Limits: N/A

Lower flammable limit: Upper flammable limit:

Hazardous Combustion Products: Burning batteries may emit acrid smoke irritating fumes, and toxic fumes of



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fluoride.

Extinguishing Media: Carbon dioxide (CO₂) or dry chemical fire extinguisher, 10-B:C.

Fire Fighting Instructions:

Personnel: Fight the fire in a defensive mode, while exiting the area. When using a CO₂ fire extinguisher, DO NOT re-enter the area until it has been thoroughly ventilated (i.e., purged) of the CO₂ extinguishing agent.

Firefighters: Use a self-contained breathing apparatus (SCBA).

6. ACCIDENTAL RELEASE MEASURES

Small Spill: If batteries show signs of leaking, AVOID skin or eye contact with the material leaking from the battery. Use chemical resistant rubber gloves and non-flammable absorbent materials for clean-up. Coordinate disposition with the Installation Environmental Office.

7. HANDLING & STORAGE

Handling: Recharge batteries IAW methods specified in applicable technical manuals.

DO NOT:

- Overcharge this battery.
- Abuse, mutilate or short circuit the battery.

Storage: Gain approval for storage areas from the Installation Fire Department. Store batteries in a cool (i.e., <130°F), dry and well ventilated area.

DO NOT:

- Store batteries in direct sunlight or under hot conditions.
- Smoke and keep batteries away from open flame or heat.
- Store batteries in the same stacks with hazardous materials.
- Store batteries in office areas, or other areas where personnel congregate.

Work/Hygienic Practices: Thoroughly wash hands after cleaning-up a battery spill (i.e., leaking or venting batteries). NO eating, drinking or smoking in battery storage areas.

8. PERSONAL PROTECTION

Personal protective equipment:

Respiration protection: Self-contained breathing apparatus;

Eye protection: Safety glasses

Skin protection: Rubber gloves;

9. PHYSICAL & CHEMICAL PROPERTIES

Boiling Point @ 760 mm Hg (°C): NA

Vapor Pressure (mm Hg @ 25°C): NA

Vapor Density (Air = 1): NA

Density (grams/cc): NA

Percent Volatile by Volume (%): NA

Evaporation Rate (Butyl Acetate = 1): NA

Physical State: NA

Solubility in Water (% by Weight): NA

pH: NA

Appearance and Odor: geometric solid object

10. STABILITY & REACTIVITY

Stable or unstable: Stable

Incompatibility (Materials to avoid): NA

Hazardous decomposition products: NA

Decomposition temperature (°F): NA



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Hazardous polymerization: Will Not Occur

Condition to Avoid: Avoid electrical shorting.

11. TOXICOLOGICAL INFORMATION

Acute toxicity: None

12. ECOLOGICAL INFORMATION

NA

13. DISPOSAL CONSIDERATION

Wanma Polymer Lithium Ion rechargeable cells and batteries contain no toxic metals, only naturally occurring trace elements. Lithium Cells and batteries are exempted from hazardous waste standards under the Universal Waste Regulations, therefore, it is advisable to consult with local state or federal authorities as disposal regulations may vary dependent on location.

14. TRANSPORT INFORMATION

Polymer Lithium Ion rechargeable batteries are regulated during shipment by the Dept. of Transportation (USDOT) and United Nation's (International) requirements. Batteries tested and found in compliance with UN Chapter 38.3 requirements may be shipped without designation as "Class 9" hazardous material if all other marking, labeling, packaging, and unit volumes are met. For specific details, please visit: <http://www.wanmabattery.com> .
the International Air Transport Association (IATA) 45th Edition, Dangerous Goods Transportation, or 49 CFR Transportation regulations for further details to your shipping situation.

15. REGULATORY INFORMATION

None

16. OTHER INFORMATION

The information contained herein is furnished without warranty of any kind. Users should consider this data only as a supplement to other information gathered by them and must make independent determinations of the suitability and completeness of information from all sources to assure proper use and disposal of these materials and the safety and health of employees and customers.