

Material Safety Data Sheet

Section 1 · Product and Company Identification

Product Name : battery
model NO : USM GO
Manufacturer's Name, Address and Tel : Tian Yu Communication Technology(KunShan)Co.,Ltd, Addr: no.1Jin Zhu Road, East Industrial Zone, Kunshan Jiangsu, P.R.China(215331), Tel: 0512-82600088
Urgent Tel/Fax : 13773126767/0512-82600188

Section 2 · Hazardous Ingredients / Identity

Pure components :

English/Chinese name : lithium ion rechargeable battery
Other name : Lithium ion secondary battery (CGR-, CGP-, CGA-)
CAS No. : not specified
Hazardous contents (wt%) :

Mixture components :

Chemical Characteristics : Lithium ion rechargeable battery		
Hazardous name	Content range(wt%)	classification
Lithium cobalt oxide	20-35 wt%	
carbon	5-20 wt%	
Electrolyte	10-20 wt%	

Section 3 · Physical/Chemical Characteristics

Main hazard	health hazard effect:
	environment effect:
	Physics and chemical hazard: it may cause heat generation or electrolyte leakage if battery terminals contact with other metals. Electrolyte is flammable. in case of electrolyte leakage, move the battery from fire immediately
	Special hazard:
Main symptom: vapor generated from burning batteries may make eyes, skin and throat irritate	
components hazard classification:	

Section 4、 First Aid Measures

First Aid Measures for different case :
breathe in: Remove to fresh air immediately. Take a medical treatment.
skin contact: Flush the eyes with plenty of clean water for at least 15 minutes immediately, without rubbing. Take a medical treatment.
eye contact : Flush the eyes with plenty of clean water for at least 15 minutes immediately, without rubbing. Take a medical treatment.
ingestion:
Main symptom and hazard effect: If appropriate procedures are not taken, this may cause an eye irritation.
protection for first-aid person:
tips for doctor:

Section 5、 Fire Fighting Measures

Extinguishant: Dry chemical, alcohol-resistant foam, carbon dioxide and plenty of water are effective.
Special hazard when extinguishing: vapor, generated from burning batteries may make eyes, nose and throat irritate,
extinguish procedure: be sure to extinguish the fire on the windward side
special defend device for fireman: Wear the respiratory protection equipment in some cases.

Section 6、 Accidental Release Measures

tips for personal: Take up with absorbent cloth
Tips for environmen :
Clean methods: Move the battery away from the fire.

Section 7、 Handling and Storage

Handle: -When packing the batteries, do not allow battery terminals to contact each other, or contact with other metals. Be sure to pack batteries by providing partitions in the packaging box,or in a separate plastic bag so that the single batteries are not mixed together. (1)(2) - Use strong material for packaging boxes so that they will not be damaged by vibration,

<p>impact, dropping and stacking during their transportation. (1)(2)(3)</p> <p>- Do not let water penetrate into packaging boxes during their storage and transportation.</p>
<p>Storage:</p> <p>- The batteries will be stored at room temperature, charged to about 30—50% of capacity.</p> <p>- Do not store the battery in places of the high temperature exceeding 35 deg. C or under direct sunlight or in front of a stove. Please also avoid the places of high humidity. Be sure not to expose the battery to condensation, water drop or not to store it under frozen condition.</p> <p>- Batteries are sure to be packed in such a way as to prevent short circuits under conditions normally encountered in transport. (1)(2)(3)</p> <p>- Please avoid storing the battery in the places where it is exposed to the static electricity so that no damage will not be caused to the protection circuit of the battery pack.</p>

Section 8、 Exposure Controls, Personal Protection

<p>engineering control: Provide appropriate ventilation system such as local ventilator in the storage place.</p>
<p>control parameter: Not specified in ACGIH. (4)</p> <p>biology KPI:</p>
<p>personal protection device:</p> <p>Respiratory protection: Gas mask for organic gases,</p> <p>Hand protection: safety glove.</p> <p>Eye protection: safety goggle,</p> <p>Skin protection:</p>
<p>hygiene measure:</p>

Section 9、 physics and chemistry character

<p>substance state: Single cell:</p>	<p>shape: Cylindrical or Prismatic cell</p>
<p>colour:</p>	<p>smell:</p>
<p>voltage: 3.6 volts</p>	<p>Boiling point /spread:</p>
<p>resolve temperature:</p>	<p>flash point: °F °C</p> <p>test method: open close</p>
<p>dieseling temperature:</p>	<p>explode limit:</p>
<p>vapour pressure:</p>	<p>vapor density:</p>
<p>density:</p>	<p>solubility:</p>

Section 10、 Stability and Reactivity

Stability: batteries utilize a chemical reaction they are actually considered a chemical product.
hazard reaction in special situation: such battery performance will deteriorate over time even if stored for a long period of time without being used.
avoid situation: the various usage conditions such as charge, discharge, ambient temperature, etc. are not maintained within the specified ranges the life expectancy of the battery may be shortened or the device in which the battery is used may be damaged by electrolyte leakage.
Avoid substance:
hazard solvent:

Section 11、 Toxicological Information

Emergency toxicity: LD50 >2g/kg (estimated)
local effect: Irritating to eyes and skin.
Cause sensibility: Not specified.
Slow toxicity: Not specified.
special effect:

Section 12、 ecological information

potential environmental effect: - In case of the worn-out battery was disposed in land, the battery case may be corroded, and leak electrolyte. But, we have no ecological information. - Heavy metal quantity for cell Hg < 0.5ppm Measurement Analysis: Atomic Absorption Spectrometer Cd < 4.0ppm Measurement Analysis: Atomic Absorption Spectrometer

Section 13、 waste disposal

waste disposal methods : - When the battery is worn out, dispose of it under the ordinance of each local government or the law issued by relating government. - Disposal of the worn-out battery may be subjected to Collection and Recycling Regulation.

Section 14、 Transportation Information

United Nations recommendation,:

1. Each packages shall be marked indicating that it contains lithium batteries and special procedures shall be followed in the event that the package is damaged.
2. Each shipment shall be accompanied with a document indicating that packages contain Lithium batteries and that special procedures shall be followed in the event that the package is damaged.
3. Same documents shall be provided to air carriers.
4. Packages shall not exceed 30kg.
5. Packages shall be strong boxes, at the Packing Group II performance level.
6. The substance is not restricted to IATA DRG and it is safe for air-transportation.

United Nations NO: Register/ Vol.65, No.174/ Thursday, September 7, 2000/ Notices.
(2)

domestic transportation rule:

- During the transportation of a large amount of batteries by ship, trailer or railway, do not leave them in the places of high temperatures and do not allow them to be exposed to condensation.
- During the transportation do not allow packages to be fallen down or damaged.
- For shipping, batteries are recommended to be in a less than 50% charged state (SOC).
- For air shipment that contain more than 40 new lithium ion rechargeable cells, or more than 20

special transportation methods and tips:

Section 15、Regulatory Information

regulation:

- IATA Dangerous Goods Regulations-
- ICAO Technical Instructions for the safe transport of dangerous goods by air

Section 16、Other Information

References	(1) UN Recommendations on the Transportation of Dangerous Goods Model Regulations (ST/SG/AC.10/1/Rev.11) (2) Federal Resister/ Vol. 65, No. 174/Thursday, September7, 2000/Notices (3) IATA Dangerous Goods Regulations 42nd Edition Effective 1 January 2001 (4) TLVs and BEIs 1999 ACGIH
tabulation	name: Tian Yu Communication Technology(KunShan)Co.,Ltd Adde/Tel: no.1Jin Zhu Road,Easr Industrial Zone,Kunshan Jiangsu,P.R.China(215331)
maker	title: name:
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KUNSHAN CO., LTD.