

General Information

Item Name : BATTERY,NONRECHARGEABLE
Company's Name : VITZROCELL CO., LTD.
Company's Street : 256-41, DUGOK-LL, SHINAM-MYON
Company's City : YESAN
Company's State : CHUNGNAM
Company's Country : KOREA
Company's Zip Code : 340-860
Company's Emergency Phone Number : 82-41-332-8642
Company's Information Phone Number : 82-41-363-1130
Status : SE
Date MSDS Prepared : 10MAY99
Supply Item Manager : CX
Hazard Characteristic Code : N1
Unit Of Issue : EA

IDENTIFICATION

PRODUCT NAME : Lithium Thionyl Chloride Cells and Batteries

CHEMICAL REACTION : $4\text{Li} + 2\text{SOCl}_2 \rightarrow 4\text{LiCl} + \text{S} + \text{SO}_2$

HAZARDOUS INGREDIENTS :

NAME	CAS #	OSHA/NIOSH/ACGIH TLV
Lithium(Li)	7439-93-2	Not established
Thionyl Chloride(SOCl ₂)	7719-09-07	Not established
Carbon (C)	1333-86-4	3.5 mg/m ³ (ACGIH)

PHYSICAL DATA

BOILING POINT : N/A
SPECIFIC GRAVITY : N/A
VAPOR PRESSURE : N/A
MELTING POINT : N/A
VAPOR DENSITY : N/A
EVAPORATION RATE : N/A
SOLUBILITY IN WATER : N/A
APPERANCE : Cylindrical Shape
WATER REACTIVE : If forced open, the ingredients hydrolyze to form SO₂, HCl, LiOH and H₂ upon contact with water.
ODOR : If leaking, sharp, pungent order

FIRE AND EXPLOSION HAZARD DATA

FLASH POINT : N/A
FLAMMABLE LIMITS : N/A
EXTINGUISHER MEDIA : Lith-X or other metal(Class D) fire extinguisher powder.
AUTO IGNITION : N/A
SPECIAL FIRE FIGHTING PROCEDURES : Do not use water, sand, carbon dioxide or soda ash extinguisher. Water protective breathing apparatus and protective garments.
UNUSUAL FIRE AND EXPLOSION HAZARDS : Do not short circuit, recharge, overdischarge, puncture, incinerate, crush or expose to temperature above the temperature rating of the battery.

REACTIVITY DATA

STABILITY : Stable
CONDITIONS TO AVOID : Fire, heat over the temperature rating of the battery, electrical shorting, recharging, disassembly. Refer to vitzrocell form(shipped with product) for safe handling information.
INCOMPATIBILITY : Do not expose internal components to water.
HAZARDOUS DECOMPOSITION PRODUCTS : SO₂, HCl, LiOH and H₂
HAZARDOUS POLYMERIZATION : Will not occur

HEALTH HAZARD DATA

ROUTES OF ENTRY (Under normal conditions) :

INHALATION : NO

INGESTION : NO

SKIN : NO

HEALTH HAZARD : None

CARCINOGEN LISTED IN : Not listed

SIGNS AND SYMPTOMS OF EXPOSURE : None, unless battery ruptures. In the event of exposure to internal contents, corrosive fumes will be very irritating to skin, eyes and mucous membranes. Overexposure can cause symptoms of non-fibrotic lung injury and membrane irritation.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE : In the event of exposure to internal contents, eczema, skin allergies, lung injuries, asthma and other respiratory disorders may occur.

EMERGENCY FIRST AID PROCEDURES :

Eye Contact : Flush with running water for at least 15 minutes. Hold eyelids apart. Seek immediate medical treatment.

Skin Contact : Rinse with large amounts of running water. If burns develop seek medical treatment.

Inhalation : Remove to fresh air. If breathing is difficult, administer

Ingestion : Oxygen and seek medical treatment. Seek immediate medical treatment.

PRECAUTIONS FOR SAFE HANDLING AND USE

STEPS TO BE TAKEN IF MATERIAL IS SPILLED OR RELEASED : Do not breathe vapors or touch liquid with bare hands.

WASTE DISPOSAL METHOD : Neutralize spill with soda lime, seal leaking battery and soda lime in plastic bag and dispose of as hazardous waste.

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE : Do not short circuit or expose to temperatures above the temperature rating of the battery. Do not recharge, overdischarge, puncture or crush.

OTHER PRECAUTIONS AND/OR SPECIAL HAZARDS : Do not store batteries in high humidity environments for long periods. High temperature storage will degrade performance.

Refer to vitzrocell form (shipped with product) for safe handling information.

CONTROL MEASURES

RESPIRATORY PROTECTION : As in any fire or chemical spill situation, use self contained breathing apparatus if a cell vent or fire occurs.

EYE PROTECTION : Safety glasses are recommended during handling of any lithium cell or battery.

PROTECTIVE GLOVES : In the event of leakage, wear gloves.

OTHER PROTECTIVE CLOTHING : In the event of leakage, wear chemical apron.

VENTILATION :

LOCAL EXHAUST : Recommended in a vent or leak situation.

MECHANICAL : N/A

SPECIAL : N/A

OTHER : N/A

TRANSPORTATION

PROPER SHIPPING NAME : Lithium Batteries

UN No : 3090

HAZARD CLASSIFICATION : Class 9 (Miscellaneous)

PACKING GROUP : II

OTHER : Cargo Aircraft Only


NON-HAZARDOUS BATTERIES (PER IATA AND USDOT) If the cells contain less than 0.5 grams of lithium and the batteries contain less than 1.0 grams total quantity of lithium, they are not restricted for shipping purpose.

REGULATORY INFORMATION

OSHA Status : The internal component (thionyl chloride) is hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29 CFR 1920.1200.

Shipping Requirements : The cell and batteries are subject to the shipping requirement and exceptions under 49 CFR 173.185. The cells with a lithium content of greater than 0.5 grams and less than 12 grams are restricted, and they are subject to DOT (49 CFR) and IATA shipping regulations. Cells that contain less than 0.5 grams of lithium and batteries that contain less than 1.0 grams of lithium are unrestricted, and they can be shipped by any means [49 CFR 173.185 (a)(c)].

VITZROCELL CO., LTD.



DONG-YUN KIM / PRESIDENT

