

KTS Batteries

材料安全資料表 Material Safety Data Sheet

| 1 化學品及企業標識(Chemical Product and Company Identification) | | | |
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| 產品名稱 Product Name | 鈕扣式鋰電池 CR2032 3.0V 220mAh Lithium manganese dioxide button cell CR2032 3.0V 220mAh | | |
| 供應商名稱 Supplier Name | 仕野股份有限公司 VIC-DAWN ENTERPRISE CO., LTD. | | |
| 地址 Address | 231 新北市新店區中正路四維巷 1 弄 2 號 4 樓 4F., No.2, Aly. 1, Siwei Ln., Zhongzheng Rd., Xindian Dist., New Taipei City 231, Taiwan (R.O.C.) | | |
| 製造商名稱 Manufacturers Name | 武漢力興（火炬）電源有限公司 WUHAN LIXING (TORCH) POWER SOURCES CO.,LTD. | | |
| 地址 Address | 武漢市東湖高新技術開發區關東工業園 430074 The Guandong industrialized country of East Lake high and new technology development zone , Wuhan 430074 | | |
| 品牌 Brand | KTS | | |
| 緊急聯絡電話 Emergency Number | 886-2-22185115 | | |
| 傳真 Fax | 886-2-22189119 | | |
| | | | |
| 2 成分/組成資訊(Composition/Information on Ingredients) | | | |
| 名稱 Description | 含量 Approximate Percent (wt %) | 重量 Approximate weight (mg) | 化學文摘號 CAS No. |
| 二氧化錳 Manganese dioxide | 26.8 | 804 | 1313-13-9 |
| 碳 Graphite | 2.2 | 66 | 7782-42-5 |
| Teflon (PTFE) | 1.5 | 45 | 9002-84-0 |
| PP 塑膠 | 4.7 | 141 | 9003-07-0 |

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| Plastic | | | |
| 不銹鋼 SUS430 Stainless Steel | 53.6 | 1608 | 12597-68-1 |
| 鋰 Lithium | 2.1 | 63 | 7439-93-2 |
| 高氯酸鋰 Lithium Perchlorate | 0.9 | 27 | 7791-03-9 |
| 碳酸丙烯酯 Propylene carbonate | 6.5 | 195 | 108-32-7 |
| 乙二醇二甲醚 1,2 Dimethoxyethane | 1.7 | 51 | 110-71-4 |
| 總計 Total | 100 | 3000 | - |

3 危險性概述(Hazards Summarizing)

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| 鋰 Lithium | 與水接觸劇烈反應,易燃燒。只能用蘇打粉,沙子等滅火。 It reacts violently when in contact with water,and it is flammable.Use only soda ash or sand to extinguish flame. |
| 二氧化錳 Manganese dioxide | 強氧化劑,具腐蝕性,攝入有毒。可用 CO ₂ 滅火。 A toxic material also an corrosive and an oxidising agent.Use only CO ₂ or halon to extinguish flame. |
| 碳酸丙烯酯 Propylene carbonate | 可腐蝕眼睛和皮膚。 可用 CO ₂ 滅火。 Will irritate the eyes and the skin by absorption,harmful if ingested or inhaled. Use only CO ₂ or halon to extinguish flame. |
| 乙二醇二甲醚 1,2 Dimethoxyethane | 極易燃。吸入和攝入有害。可用 CO ₂ 滅火。 Highly flammable. Harmful if ingested or inhaled. Use only CO ₂ or halon to extinguish flame. |

其他組分不活潑,或者危害較小。

Other materials are either inert or have low hazard associated with their exposure.

4 急救措施(First-aid Measures)

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| <p>眼睛:用水沖洗,立即就醫。</p> <p>Eyes:irrigate thoroughly with water.Obtain medical attention.</p> |
| <p>皮膚:用水徹底沖洗,脫掉受污染的衣物並清洗。除非少量接觸,否則就醫。</p> <p>Skin:drench the skin thoroughly with water.Remove contaminated clothing and wash before re-use.Unless contact has been slight,obtain medical attention.</p> |
| <p>吸入:離開污染場所,休息並保暖。嚴重時就醫。</p> <p>Inhalation:remove from exposure,rest and keep warm.In severe cases,obtain medical attention.</p> |
| <p>食入:用水徹底沖洗口部後大量飲水。就醫。</p> <p>Ingestion:wash out mouth thoroughly with water and give plenty of water to drink.Obtain medical attention.</p> |
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| <p>5 消防措施(Fire-fighting Measures)</p> |
| <p>大量電池燃燒,可能發生爆炸。適合的滅火介質為 CO₂,乾粉滅火器和沙子。不可用水滅火。消防人員應配戴空氣呼吸器,防護頭盔,眼鏡等。</p> <p>There would be explosion in the case where significant quantities of lithium-manganese dioxide batteries have been involved in a fire. Applicable extinguishing media: CO₂ fire extinguisher , ABC dry powder extinguisher , sand ,etc.Do not use water as extinguishing agent. Firemen should wear the air breathe machine, helmet, glasses ,etc.</p> |
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| <p>6 洩露應急處理(Accidental Release Measures)</p> |
| <p>不可呼吸洩漏液蒸汽,或用手接觸液體。若皮膚已接觸電解質,立即用大量水沖洗。可用泥土和沙子吸收洩漏液。將漏液電池和沙子按特殊廢棄物處理。</p> <p>Do not breath vapours or touch liquid with bare hands.If the skin has come into contact with the electrolyte it should be washed thoroughly with water.Earth or sand should be used to absorb the exudation.Seal leaking battery and earth in a heavy-duty Polythene bag and dispose of as special waste.</p> |
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| <p>7 操作處置與儲存(Handling and Storage)</p> |
| <p>保證電池包裝完整,避免短路。</p> <p>Pack the batteries well,and avoid short circuit.</p> |
| <p>不要拆卸電池。</p> |

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| Never disassemble batteries. |
| 不要吸入電池蒸汽或用光手接觸電池內部物質。 |
| Do not breathe cell vapors or touch internal material with bare hands. |
| 將電池儲存在陰涼通風的地方,避免陽光直射。 |
| Store batteries in cool well-ventilated area,keep out of direct sunlight. |
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| 8 接觸控制/個體防護(Exposure Controls/Personal Protection) |
| 外部含鎳殼蓋的腐蝕可能生成有毒產物。避免吞咽電池。接觸後洗手。 |
| External corrosion of the nickle can could result in theformation of toxic metal salts.Avoid ingestion,Wash hands after contact. |
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| 9 理化特性(Physical and Chemical Properties) |
| 本品為固態,無味。其他指標不適用。 |
| This battery is solid state , and inodorous.The other items are not applicable. |
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| 10 穩定性和反應性(Stability and Reactivity) |
| 有害物質被密封在殼體內,在正常情況下本產品穩定,無害。 |
| Hazardous materials are housed within a sealed unit,under normal conditions this unit is stable and non-hazardous. |
| 若電池密封被損壞,金屬鋰會與水反應放出可燃性氣體。 |
| Lithium will react with water and produce flammable gas if the seal of battery is damaged. |
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| 11 毒理學資料(Toxicological Information) |
| 若電池不損壞,無毒。 |
| No toxicity unless the battery is damaged. |
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| 12 生態學資料(Ecological Information) |
| 不適用。 |
| Not Applicable. |
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| 13 廢棄處置(Disposal) |
| 不要焚燒電池或將電池加熱超過 80°C。根據當地法規處理電池。 |
| Do not incinerate or subject cells to temperature in excess of 80°C.Dispose of in |

accordance with local regulations.

14 運輸資訊(Transport Information)

國際運送規定:

鋰電池國際運輸規程

World transports and stipulates :

Lithium battery international transportation rules

Effective April 1, 2016 all KTS lithium batteries are not subject to the requirements of the U.S. Department of Transportation (DOT), Subchapter C, Hazardous Material Regulations if shipped in compliance with 49 CFR 173.185 and Special Provision 188. Currently all KTS lithium batteries can be transported under the International Civil Aviation Organization (ICAO) and the Packing Instructions (PI) 968 Section IB(Batteries), PI 969 Section II(Batteries, packed with equipment) and PI 970 Section II (Batteries, contained in equipment).

They are considered to be non-dangerous by the IATA Dangerous Goods regulations as below:

- The goods with lithium metal cells and should complies with IATA DGR IATA Dangerous Goods Regulations 59th edition.
- The substance is not restricted to IMO IMDG code according to special provision 188.
- Section IB of PI968 ; Section II of PI969 、PI970
- A lithium metal cell, the lithium content is not more than 1g.
- For these lithium cells/batteries contained in equipment, the equipment is equipped and protected with an effective means to

prevent short circuits, dangerous reverse current flow and accidental activation.

- This consignment does not contain any recalled and/or defective batteries that have the potential of producing a dangerous evolution of heat, fire or short circuit.
- Each package of batteries must be capable of withstanding a 1.2m-drop test in any orientation without damage to cells or batteries contained therein, shifting of the contents so as to allow battery to battery(or cell to cell) contact and/or release of contents.
- 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 as of the Material Safety Data Sheet.

The only requirement for shipping these batteries, in all modes of transportation, are that they must be separated to prevent short-circuits and to prevent movement that could lead to short-circuits. They must also be packed in strong packaging that can withstand the rigors normal to transportation.

運輸時,應避免電池短路。

The batteries being transported must be protected from shorting-circuiting and protected from movement that could lead to short-circuiting.

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.

15 法規資訊(Regulatory Information)

特殊要求依據當地法規。
Special requirement be according to the local regulations.

16 其他資訊(Other Information)

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| 填表時間 Date of Issue | 2018.01.01 |
| 填表部門 Dept. of Issue | 仕野股份有限公司 VIC-DAWN ENTERPRISE CO., LTD. |
| 文件號 Document Number | LX-QR-824-38 |
| 備註 Remarks | 以上資料只基於對產品目前狀態的瞭解。 The above information is given based on the present state of our knowledge of this product. |