

|                                                                      |                               |                                         |                                                                                                             |         |         |                                      |        |        |
|----------------------------------------------------------------------|-------------------------------|-----------------------------------------|-------------------------------------------------------------------------------------------------------------|---------|---------|--------------------------------------|--------|--------|
| RICO INDUSTRIAL CO. ,                                                |                               |                                         |                                                                                                             |         |         |                                      |        |        |
|                                                                      |                               |                                         |                                                                                                             |         |         |                                      |        |        |
| 物质安全资料表(MSDS)                                                        |                               |                                         |                                                                                                             |         |         |                                      |        |        |
| 一、物品资料/Product Identification                                        |                               |                                         |                                                                                                             |         |         |                                      |        |        |
| 物品名称/Product Name                                                    |                               |                                         | 锂-二氧化锰扣式电池/Li-MnO <sub>2</sub> BUTTON CELL                                                                  |         |         |                                      |        |        |
| 物品型号/Product Code                                                    |                               |                                         | CR2016/CR2025/CR2032                                                                                        |         |         |                                      |        |        |
| 二、成份辨识资料/Composition, Information on Ingredients                     |                               |                                         |                                                                                                             |         |         |                                      |        |        |
| 成份名称/Component Chemical Name &Common Names                           |                               | 化學文摘社登記號碼/CAS No.                       | 约重量 (mg) /about weight (mg)                                                                                 |         |         | 濃度(成份百分比)/Concentration (Percentage) |        |        |
|                                                                      |                               |                                         | CR2016                                                                                                      | CR2025  | CR2032  | CR2016                               | CR2025 | CR2032 |
| 铅 (Lead)                                                             |                               | 7439-92-1                               | 0                                                                                                           | 0       | 0       | 0ppm                                 | 0ppm   | 0ppm   |
| 镉 (Cadmium)                                                          |                               | 7440-43-9                               | 0                                                                                                           | 0       | 0       | 0ppm                                 | 0ppm   | 0ppm   |
| 汞(Mercury)                                                           |                               | 7439-97-6                               | 0                                                                                                           | 0       | 0       | 0ppm                                 | 0ppm   | 0ppm   |
| 三丁基锡化合物, 三苯基锡化合物(Tributy Tin Compounds,Chiorotripheny Tin Compounds) |                               | 1461-22-9<br>4618-18-2                  | 0                                                                                                           | 0       | 0       | 0ppm                                 | 0ppm   | 0ppm   |
| 石棉 (As Bestos)                                                       |                               | 14567-83-0                              | 0                                                                                                           | 0       | 0       | 0ppm                                 | 0ppm   | 0ppm   |
| 甲醛(Formaldehyde)                                                     |                               | 50-00-0                                 | 0                                                                                                           | 0       | 0       | 0ppm                                 | 0ppm   | 0ppm   |
| 合计                                                                   |                               |                                         | 0%                                                                                                          | 0%      | 0%      | 0%                                   | 0%     | 0%     |
| 正极壳 (Nickel)                                                         | (不锈钢) Stainless steel         | 12597-68-1                              | 695                                                                                                         | 760     | 820     | 40.52%                               | 31.67% | 28.98% |
| 负极盖 (Negative can)                                                   | (不锈钢) Stainless steel         | 12597-68-1                              | 533                                                                                                         | 625     | 609     | 31.08%                               | 26.04% | 21.52% |
| 密封圈 (Copper)                                                         | (聚丙烯) Polypropylene           | 9003-07-0                               | 33                                                                                                          | 59      | 97      | 1.92%                                | 2.46%  | 3.43%  |
| 正极片 (Positive Plate(Electrolysis MnO <sub>2</sub> ))                 | 电解二氧化锰 (Manganese powder)     | 1313-13-9                               | 312                                                                                                         | 625     | 877     | 18.19%                               | 26.04% | 30.99% |
|                                                                      | 乙炔黑 (Teflon)                  | 9002-84-0                               | 19                                                                                                          | 43      | 61      | 1.11%                                | 1.79%  | 2.16%  |
|                                                                      | 石墨粉 (Graphite)                | 7782-42-5                               | 19                                                                                                          | 43      | 61      | 1.11%                                | 1.79%  | 2.16%  |
| 锂片 (Lithium sheet)                                                   |                               | 7439-93-2                               | 21                                                                                                          | 40      | 54      | 1.22%                                | 1.67%  | 1.91%  |
| 电解液 (Electrolyte)                                                    | 高氯酸锂 (Lithium Perchlorate)    | 7791-03-9                               | 13                                                                                                          | 90      | 113     | 0.76%                                | 3.75%  | 3.99%  |
|                                                                      | 碳酸丙烯脂 (Propylene carbonate)   | 108-32-7                                | 35                                                                                                          | 72      | 85      | 2.04%                                | 3.00%  | 3.00%  |
|                                                                      | 乙二醇二甲醚 (1,2-dimmethoxyethane) | 110-71-4                                | 27                                                                                                          | 34      | 42      | 1.57%                                | 1.42%  | 1.48%  |
| 隔膜 (Diaphragm)                                                       | (聚丙烯) Polypropylene           | 9003-07-0                               | 8                                                                                                           | 9       | 11      | 0.47%                                | 0.38%  | 0.39%  |
| 合计                                                                   |                               |                                         | 1715.00                                                                                                     | 2400.00 | 2830.00 | 100%                                 | 100%   | 100%   |
| 三、危害辨識資料/ Hazard Identification                                      |                               |                                         |                                                                                                             |         |         |                                      |        |        |
| 最重要危害效應 /Most Important Health Hazards and Reactions                 |                               | 健康危害效應 /Health Hazards and Reactions    | 吞食可能造成肠胃不适感, 腹痛等/Derour possibility bringing about indisposed feeling of belly, Abdominal pain wailing ect. |         |         |                                      |        |        |
|                                                                      |                               | 環境影響 /Environmental Impact              | 無/NO                                                                                                        |         |         |                                      |        |        |
|                                                                      |                               | 物理性及化学性危害/Physical and Chemical Hazards | 無/NO                                                                                                        |         |         |                                      |        |        |
|                                                                      |                               | 特殊危害 /Specific Hazards                  | 無/NO                                                                                                        |         |         |                                      |        |        |
| 主要症狀/Cardinal Symptoms                                               |                               |                                         | 無/NO                                                                                                        |         |         |                                      |        |        |
| 物品危害分類/Hazard Classification                                         |                               |                                         |                                                                                                             |         |         |                                      |        |        |
| 四、急救措施/ First Aid Measures                                           |                               |                                         |                                                                                                             |         |         |                                      |        |        |
| 最重要症狀及危害效應/Most Important Symptoms and Hazard Reactions              |                               |                                         | 腹痛/ Abdominal pain                                                                                          |         |         |                                      |        |        |
| 對急救人員之防護/Protection to First-Aid Attendants                          |                               |                                         | 無/NO                                                                                                        |         |         |                                      |        |        |
| 對醫師之提示/Suggestions to Doctors                                        |                               |                                         | 無/NO                                                                                                        |         |         |                                      |        |        |

| 五、滅火措施/ Fire Fighting Measures                                      |                                                                                                                  |
|---------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| 適用滅火劑/Suitable Extinguishing Media                                  | 黃沙、水泥、泥土等 / Yellow Sand, Cement, Soil, ect                                                                       |
| 滅火時可能遭遇之特殊危害/Special Hazards in Fire                                | 爆炸/Explosion                                                                                                     |
| 特殊滅火程序/Special Fire-Fighting Procedures                             | 無/NO                                                                                                             |
| 消防人員之特殊防護設備/Required Special Protective Equipment for Fire-Fighters | 正常/Normal                                                                                                        |
| 六、洩漏處理方法/ Accidental Release Measures                               |                                                                                                                  |
| 個人應注意事項/ Personal Precautions                                       | 無/NO                                                                                                             |
| 環境注意事項/Environmental Precautions                                    | 因產品為固態，故不存在滲透潛在性危害/As a result of solid products, so there is no infiltration of potential hazards               |
| 清理方法/Methods for Cleaning                                           | 请勿随意丢弃，可交当地有资质的金属回收公司回收/Do not arbitrarily discarded ,can pay qualified local metal recycling companies recovery |
| 七、安全處置與儲存方法/ Handling and Storage                                   |                                                                                                                  |
| 處置/Handling                                                         | 请勿埋入土壤中，避免对土壤产生污染./Do not buried in the soil ,prevent soil pollution                                             |
| 儲存/ Storage                                                         | 在常温下，请避免电池相互叠放/At room temperature, avoid mutual stacked battery                                                 |
| 八、物理及化學性質/ Physical and Chemical Properties                         |                                                                                                                  |
| 物質狀態/ State of Substance                                            | 固体/Soild                                                                                                         |
| 形狀/Appearance                                                       | 扁圓形/Obrate shape                                                                                                 |
| 氣味/Odor                                                             | 無/NO                                                                                                             |
| 顏色/Color                                                            | 金屬色/Metal Color                                                                                                  |
| pH值/pH Value                                                        | 中性/Neutral                                                                                                       |
| 沸點/沸點範圍/Boiling Point                                               | N/A                                                                                                              |
| 分解溫度/Decomposing Temperature                                        | N/A                                                                                                              |
| 閃火點/Flashpoint: °F °C; 測試方法/ Test Methods                           | N/A                                                                                                              |
| 自燃溫度/Self-Igniting Temperature                                      | N/A                                                                                                              |
| 爆炸界限/Explosion Limits                                               | N/A                                                                                                              |
| 蒸氣壓/Vapor Pressure                                                  | N/A                                                                                                              |
| 蒸氣密度/Vapor Density                                                  | N/A                                                                                                              |
| 密度/Density                                                          | N/A                                                                                                              |
| 溶解度/Dissolution                                                     | N/A                                                                                                              |
| 九、安定性及反應性/Stability and Reactivity                                  |                                                                                                                  |
| 安定性/Stability                                                       | 安定/Stability                                                                                                     |
| 特殊狀況下可能之危害反應/Possible Hazard Reaction Under Special Conditions      | 無/NO                                                                                                             |
| 應避免之狀況/Conditions to Avoid                                          | 避免强酸物质/Aviod strong Acid Substances                                                                              |
| 應避免之物質/Materials to Avoid                                           | 避免强酸物质/Aviod strong Acid Substances                                                                              |
| 危害分解物/Hazardous Decomposition Products                              | 無/NO                                                                                                             |
| 十、毒性資料/ Toxicological Information                                   |                                                                                                                  |
| 急毒性/Acute Toxicity                                                  | 無/NO                                                                                                             |
| 局部效應/Local Reactions                                                | 無/NO                                                                                                             |
| 致敏感性/Sensitivity                                                    | 無/NO                                                                                                             |
| 慢性或長期毒性/Chronic or Long Term Toxicity                               | 無/NO                                                                                                             |
| 特殊效應/Special Reactions                                              | 無/NO                                                                                                             |
| 十一、生態資料/ Ecological information                                     |                                                                                                                  |

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| 可能之環境影響/環境流佈/Possible Environmental Impact/Environmental Run-offs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                      | 無/NO                                                                                  |
| 十二、廢棄處置方法/Disposal considerations                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                      |                                                                                       |
| 廢棄處置方法/Disposal Methods                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 可交当地有资质的金属回收公司回收/Deliverable the local metal recyng companies which have qualited to recovery                                                                        |                                                                                       |
| 十三、運送資料/Transport information                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                      |                                                                                       |
| 國際運送規定/International Transportation Regulations:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 该电池符合UN38.3安全运输规定要求. Cell and batteries must meet the requirements of the UN Manual of Tests and Criteria, Part III, sub-section 38.3. (The docment No. is UN07-040) |                                                                                       |
| 十四、Exposure Controls / Personal Protection/ 接触控制和个人防护措施                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                      |                                                                                       |
| Engineering Controls: Use ventilation equipment if available.<br>Personal Protective Equipment:<br>Clothing:Wear appropriate protective clothing.<br>Hand: Safety gloves.<br>Other Protect: No smoking, drinking and eating at working site.Wash thoroughly after handling.                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                      |                                                                                       |
| 十五、TRANSPORT INFORMATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                      |                                                                                       |
| <p>DOT<br/>Non-Hazardous for Transport: This substance is considered to be non-hazardous for transport.</p> <p>IATA<br/>Non-Hazardous for Air Transport: Non-hazardous for air transport.</p> <p>IMO<br/>Non-Hazardous for Sea Transport: Non-hazardous for sea transport.</p> <p>ADR/RD Class: None<br/>Non-Hazardous for Transport: This substance is considered to be non-hazardous for transport.</p> <p>UN Number: None</p>                                                                                                                                                                                                                                         |                                                                                                                                                                      |                                                                                       |
| 十六、REGULATORY INFORMATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                      |                                                                                       |
| <p>EU Classification and Labelling Information:<br/>This material is not classified in the Annex I of Directive 67/548/EEC.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                      |                                                                                       |
| 十七、其他資料/Other information                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                      |                                                                                       |
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| 製表單位/Department                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 名稱/Dept. Name                                                                                                                                                        | RICO INDUSTRIAL CO.,                                                                  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 地址/Address                                                                                                                                                           | Lot.2108 C TianXiu Building, No.300 HuanShiZhong Road, Guangzhou, China.              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Emergency contact tel                                                                                                                                                | 18925089136                                                                           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 簽章(Signature)                                                                                                                                                        |  |
| 製表日期 / Date Prepared                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 2021.01.04                                                                                                                                                           |                                                                                       |