

M2DM01 Diagnostic Module Battery

SECTION 1: IDENTIFICATION OF THE MATERIAL AND SUPPLIER			
Product Name:	M2DM01 Diagnostic Module Battery	Other Names:	PL402035 3.7V 200mAh lithium polymer battery
Recommended Use:	Fire Suppression System		
Supplier Name:	International Engineered Products (IEP)	Address:	Unit 1, 21 Amour St, Revesby 2212 Australia
Telephone No.:	+61 2 9914 8720	Fax No.:	+61 2 9914 8798
Email:	enquiries@musterfire.com	Website:	www.musterfire.com
Information Department:	Product Safety Department	Date Reviewed:	May 2020

SECTION 2: HAZARDS IDENTIFICATION			
Physical/Chemical Hazards:	A lithium ion cell is normally stable under appropriate handling and storage conditions. If a lithium ion cell generates abnormal heat, leave away from the cell to avoid inhaling internal-materials. Chemicals which are contained in lithium ion cells, have some toxicity and it may cause irritation.	Human Health Hazards:	Harmful if swallowed

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS		
Chemical Name*	CAS Number	Content (wt%)
Lithium Cobalt Dioxide	12190-79-3	less than 6wt%
Lithium Hexafluorophosphate	21324-40-38	less than 5wt%
Polyvinylidene fluoride	24937-79-9	less than 7wt%
Carbonate Organic solvent		less than 18wt%
Graphite	7782-42-5	less than 32wt%
Lead (Pb)*	7439-92-1	less than 0.1wt% (1000ppm)
Mercury (Hg)*	7439-97-6	less than 0.0005wt% (5ppm)
Steel		less than 42wt%
Seal Ring		less than 6wt%

\*Content information of banned or restricted material.

SECTION 4: FIRST AID MEASURES			
<b>First Aid Measures</b>			
General	Check the vital functions. Prevent cooling by covering the victim (no warming up). Keep watching the victim. Give psychological aid. Keep the victim calm, avoid physical strain. Depending on the victim's condition: doctor/hospital.		
Inhalation:	If battery is leaking, contents may be irritating to respiratory passages. Move the victim into fresh air. Consult a doctor/medical service	Skin Contact:	If battery is leaking immediately flush skin with lots of water for 15 minutes. Take victim to a doctor if irritation persists.
Ingestion:	If swallowing a battery consult a Doctor/ Medical service immediately. If contents come into mouth, immediately rinse with plenty of water and consult Doctor/ Medical service	Eye Contact:	Immediately flush eye with plenty of water for at least 15 minutes. Do not apply neutralizing agents. Take victim to an ophthalmologist.

SECTION 5: FIRE FIGHTING MEASURES			
Extinguishing Media:	Plenty of water, Water fog spray, Dry chemical powder or Carbon dioxide.	Advice for fire-fighters:	Wear self-contained breathing apparatus. Wear protective clothing to prevent contact with skin and eyes.
Exposure Hazards:	Carbon dioxide extinguishers are more effective than water.		

SECTION 6: ACCIDENTAL RELEASE MEASURES	
Personal Precautions:	Leave from contaminated area. Near ignition source should be promptly removed. Remove spilled electrolyte and batteries with absorbent not to contact with electrolyte.
Environmental Precautions and Clean-up Methods:	Do not discharge into drains or rivers. Contain the spillage using bunding. Take up liquid spill into inert absorbent material, e.g.: sand/earth. Scoop absorbed substance into closing containers. Clean contaminated surfaces with an excess of water. Wash clothing and equipment after handling.

SECTION 7: HANDLING AND STORAGE			
Handling:	<ul style="list-style-type: none"> <li>- Keep away from naked flames/heat. Observe normal hygiene standards. Keep container tightly closed.</li> <li>- Never swallow. - Never charge. - Never heat.</li> <li>- Never expose to open flame. Never disassemble.</li> <li>- Never reverse the positive and negative terminals when mounting.</li> <li>- Never short-circuit the battery.</li> <li>- Never weld the terminal or wire to the body of the battery directly.</li> <li>- Never use different batteries together.</li> <li>- Never touch the liquid leaked out of battery.</li> <li>- Never bring fire close to battery liquid.</li> </ul>	Storage:	Keep container tightly closed. Store in a cool dry area.
		Packaging Materials - Recommended Use:	Use original container.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION	
Engineering Measures:	Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective occupational exposure limits. Ensure that eyewash stations and safety showers are proximal to the work-station location.
Work Hygienic Practices:	Avoid exposure, wash hands after handling
Personal Protective Equipment:	Respiratory protection: Self-contained breathing apparatus (SCBA) with Full-face respirator with particulate/organic cartridge (spill) must be available in case of emergency. Hand protection: Protective gloves made of natural or butyl rubber. Eye protection: Tightly fitting chemical resistant safety goggles. Ensure eye bath is to hand. Skin protection: Protective clothing.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES			
Physical State:	Solid	Density (Water = 1.0):	1.5 to 2.0
Melting Point (°C):	LiCoO <sub>2</sub> (about 1100°C) Polyvinylidene fluoride (38°C) Carbonate Organic solvent (<0°C)	Boiling Point(°C):	Polyvinylidene fluoride (240°C) Carbonate Organic solvent (100-130°C)
Flash Point (°C):	Polyvinylidene fluoride (151°C) Carbonate Organic solvent (21-33°C)	Specific Gravity:	LiCoO <sub>2</sub> : 5g/cm <sup>3</sup> Graphite: 2.1g/cm <sup>3</sup>
Appearance:	LiCoO <sub>2</sub> - Black Powder Graphite - Black Powder		

## SECTION 10: STABILITY AND REACTIVITY

Stability:	Reactivity: Stable under recommended transport or storage conditions. Chemical stability: Stable under normal conditions.
Incompatibility:	Water
Hazardous Polymerization:	Hazardous reactions will not occur under normal transport or storage conditions.
Conditions to avoid:	See Section 7
Hazardous Decomposition or Byproducts:	Hydrogen

## SECTION 11: TOXICOLOGICAL INFORMATION

Lithium manganese dioxide batteries are not hazardous waste. Under normal conditions of use, lithium manganese dioxide batteries are non-toxic.

## SECTION 12: ECOLOGICAL INFORMATION

Lithium ion cells and batteries can be disposable in accordance with appropriate federal, state and local regulations. However, we recommend recycling, since these cells and batteries contain recyclable material (LiCoO<sub>2</sub>).

## SECTION 13: DISPOSAL CONSIDERATIONS

Disposal Consideration: When the battery is worn out, dispose of it under the ordinance of each Federal, State and Local government. LiMnO<sub>2</sub> batteries are not hazardous waste per the United States Resource Conservation and Recovery Act (RCRA) - 40 CFR Part 261 Subpart C. Do not incinerate or subject cells and batteries to temperatures in excess of 100 °C (212°F). Such handling may cause heat generation, explosion or fire.

## SECTION 14: TRANSPORT INFORMATION

UN Recommendation:	The regulation for lithium/lithium ion cells and battery has been revised in the International Air Transport Association (IATA) dangerous goods regulations (DGR Rev. 61 <sup>th</sup> 2020)	Class and Subsidiary Risk:	Special Provision 188 of the IMDG Code rate the product not subject to dangerous goods
Packing Group:	965 Section IB of IATA DGR	UN Proper Shipping Name:	Not hazardous

## SECTION 15: REGULATORY INFORMATION

Specific regulation:

- Lithium battery international transportation rules.
- Based on a United Nations recommendation, the regulation for lithium/lithium ion cells and batteries has been revised in the ICAO technical.
- Instructions for the safe transport of dangerous goods.
- Each cell or battery pack meets the requirements of each test in the UN Manual of Tests and Criteria III, sub section 38.3.
- The Cells / Batteries are "Not Restricted" Cargo.
- IMO IMDG CODE according to special provision 188 - IATA Dangerous Goods Regulations 61<sup>th</sup> Edition (2020)
- Safety regulations for dangerous chemical goods.
- Our products all follow the above-mentioned regulations.

## SECTION 16: OTHER INFORMATION

General:	This data is based on our present knowledge and information provided by the Manufacturer. However, it shall not constitute a guarantee for any specific product featured and shall not establish a legally valid contractual relationship.	Contact:	Product Safety Department Sydney Australia +61 2 9914 8720
Department Issuing Data Specification Sheet:	Product Safety Department		