

### Material Safety Data Sheet for GP Lithium battery (Lithium Metal Battery)

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IDENTITY (As Used on Label and List) Lithium Metal batteries	Note: Blank spaces are not permitted if any item is not apprinformation is available, the space must be marked to indicate	
Section 1- Identification		
Manufacturer's Name GPI International Ltd.	Emergency Telephone Number	
Address ( Number, Street, City State, and ZIP Code) 8/F GP Building, 30 Kwai Wing Road,	Telephone Number for information Within USA and Canada: 1-800-424-9300 Outside USA and Canada: +1 703-527-3887	
Kwai Chung, N.T. H.K.	Date of prepared and revision Jan 1, 2015 Signature of Prepare (optional)	

#### Section 2 – Hazards Identification

Classification:

N.A.

Hazardous Components:			
Description:	CAS Number	Approximate % of total weight	
Lead	7439-92-1	<0.004 Wt%	
Mercury	7439-97-6	<0.0005 Wt%	
Cadmium	7440-43-9	<0.002 Wt%	
Lithium	7439-93-2	1.2-6.7 Wt%	

|--|

> 0.1 Wt%1,2-dimethoxyethane; ethylene glycol 110-71-4

dimethyl ether (EGDME)

#### **Section 4 – First Aid Measures**

First Aid Procedures

If electrolyte leakage occurs and makes contact with skin, wash with plenty of water immediately.

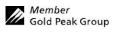
If electrolyte comes into contact with eyes, wash with copious amounts of water for fifteen (15) minutes, and contact a physician.

If electrolyte vapors are inhaled, provide fresh air and seek medical attention if respiratory irritation develops. Ventilate the contaminated area.



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Section 5 – Fire-Fighting Measures						
Flash Point (Method Used)	Ignition Temp.	Flammable Limits	LEL	UEL		
N.A.	N.A.	N.A.	N.A.	N.A.		
Extinguishing Media						
Carbon Dioxide, Dry	Chemical or Foam ext	inguishers				
Special Fire Fighting Proced	lures					
N.A.						
Unusual Fire and Explosion	Hazards					
Do not dispose of bat	tery in fire - may explo	ode.				
Do not short-circuit b	attery - may cause bur	ns.				
Section 6 - Accident	tal Release Meas	sures				
Steps to Be Taken in Case M	aterial is Released or S	Spilled				
Batteries that are lea	kage should be handle	d with rubber gloves.				
Avoid direct contact	with electrolyte.					
Wear protective clot	hing and a positive pre	ssure Self-Contained Br	reathing Apparatus (SCI	BA).		
Section 7 – Handling	and Storage					
Safe handling and storage ad	vice					
		refully to avoid short cir				
		w metal objects to be mi	ixed with stored batterie	S.		
Never disassemble						
Do not breathe cell	vapors or touch intern	al material with bare ha	nds.			
The cells and batter	ries shall not be stored	in high temperature, the	maximum temperature	allowed is 60°C for a short		
period during the s	hipment, Otherwise th	e cells maybe leakage a	nd can result in shortene	ed service life		
Section 8– Exposure Controls / Person Protection						
Occupational Exposure Limit	its: LTEP	STEP				
	N.A.		N.A.			
Respiratory Protection (Spec	cify Type) N.	A.				
Ventilation Local Exhau	ists N.A	A. Special	N.A.			
Mechanical	(General) N	A. Other	N.A.			
Protective Gloves	N	.A. Eye Protection	N.A.			
Other Protective Clothing or	Equipment N	.A.				



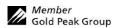
Work / Hygienic Practices

N.A.



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Section 9	- Physical / Cher	mical P	roperties			
Boiling Point			Specific Gravity (H <sub>2</sub> C			
N.A.		,	N.A.			
Vapor Pressure (mm Hg) N.A.		]	Melting Point		N.A.	
Vapor Density (AIR=1)		]	Evaporation Rate (Bu		11.71.	
N.A. N.A.			N.A.			
Solubility in	Water N.A.					
Appearance a	and Odor		Cylindrical Shape	e, odorless		
Section 1	0 – Stability and	Reacti	vity			
Stability	Unstable		Conditions to Avoid			
	Stable	X				
Incompatibili	ty (Materials to Avoid)					
Hazardous D	ecomposition or Byprod	lucts				
Hazardous	May Occur	1	Conditions to	Avoid		
Polymerizati on	May Occur		Conditions to 2	Avoid		
	Will Not Occur	X				
Section 1	1 – Toxicologica	Inforn	nation			
Route(s) of E	ntry Inhalati	on?	N.A. Skin?	N.A.	Ingestion?	N.A.
Healtl	h Hazard (Acute and Ch	ronic) / T	oxicological informa	tion		
In case	e of electrolyte leakage,	skin will	be itchy when contan	ninated with elec	trolyte.	
In con	tact with electrolyte can	cause se	vere irritation and che	emical burns.		
Inhala	tion of electrolyte vapor	rs may car	use irritation of the up	pper respiratory to	ract and lungs.	
Section 1	2 – Ecological In	format	ion			
	N.A.					
Section 1	3 – Disposal Cor	sidera	tions			
	of batteries according t					





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#### **Section 14 – Transportation Information**

In general, all batteries in all forms of transportation (ground, air, or ocean) must be packaged in a safe and responsible manner. Regulatory concerns from all agencies for safe packaging require that batteries be packaged in a manner that prevents short circuits and be contained in "strong outer packaging" that prevents spillage of contents. All original packaging for GP lithium batteries are compliant with these regulatory concerns.

GP lithium manganese dioxide batteries are exempt from the classification as dangerous goods as they meet the requirements of the special provisions listed below. (Essentially, they are properly packaged and labeled, contain less than 1 gram of lithium and pass the tests defined in UN model regulation section 38.3).

Regulatory Body	Special Provisions	
ADR	188, 230, 310, 636, 656	
IMDG Code 36-12	188, 230, 310, 957	
UN	UN 3090, UN 3091	
US DOT	29, A54, A100, A101	
ICAO, IATA 56 <sup>th</sup> edition	Packaging Instructions 968 - 970	
Transport Canada TDG	34	

#### WEIGHT OF LITHIUM FOR LITHIUM BATTERY

Battery type	Model	Weight of cell (g)	Aggregated lithium equivalent
			content (g)
	GPCR2	10	0.27
Cell	GPCR1/3N	2.3	0.06
	GPCR14250	10	0.27
	GPCR123A	16	0.56
	GP15LF	14.5	0.96
	GPCR-P2	37	1.12
Battery	GP2CR5	37	1.12
	GPCR-V9	34	0.81

<sup>\*\*</sup> The battery models meet the UN manual of Tests and Criteria, Part III, Sub-section 38.3 \*\*

#### Section 15 - Regulatory Information

Special requirement be according to the local regulatory.

#### Section 16 - Other Information

The data in this Material Safety Data Sheet relates only to the specific material designated herein.

#### Section 17 - Measures for fire extinction

In case of fire, it is permissible to use any class of extinguishing medium on these batteries or their packing material. Cool exterior of batteries if exposed to fire to prevent rupture.

Fire fighters should wear self-contained breathing apparatus.

