VITZRO CELL



REV. 21 / MARCH. 1 .2026

MATERIAL/PRODUCT SAFETY DATA SHEET

1. Identification of the Substance or Preparation and Company

1.1 Product : Lithium/Thionyl Chloride($Li/SOCl_2$) Cells & Batteries(serial-parallel)
and / Sulfuryl Chloride (Li/SO_2Cl_2) Cells & Batteries(serial-parallel)

1.2 Model :

Bobbin type	High Temp. Type (Cell)	High Temp. Type (Pack)
SB-D02, AA02, AA11, A01, C02 SB-AA02HP	DD-SC 100, D-SC 100, C-SC 100 FAT-D 150, DD-HR 100, DD-HR 150, DD-HR 165, DD-MR 165, DD-MR 180, D-HR 165, CC-MR 165 21mm, CC-MR 165 25mm, CC-MR 165 26mm,	DD-SC 100 2S Pack MGDD16A00002 MGDD16A00003 MGDD16A00004 MGDD16A00005 MGDD16A00006 MGDD16A00009 MGDD18A00002 HGDD15A00002 HGDD15A00003 HGDD15A00011 HGDD15A00016 HG0D16A00003 HLFD15A00002 HLFD15A00003 HLFD15A00006 MG2516A00003 PGDD10A00010 PGDD10A00015
Wound type		
SW-AA01, AA11, A01, C01, D02, D03		

1.3 Company

Name : Vitzrocell, Co. Ltd
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Tel : +82-41-332-8642
Fax : +82-41-332-8646
Website : www.vitzrocell.com

2. Hazards Identification



The batteries described in this MSDS are hermetically sealed unit, which are not hazardous when used according to the recommendations of the manufacturer. Under normal condition of use of the batteries, the electrode materials and the liquid electrolyte they contained are non-reactive provided the battery integrity is maintained. Risk of exposure exists only in case of mechanical, electrical or thermal abuse. Thus, the batteries should not short circuit, recharge, puncture, incinerate, crush, immerse in water, force discharge, or expose to above the temperature range of the cell or battery. In these cases, there is risk of fire or explosion.

3. Composition & Information on Ingredients

Ingredient	Content (%)	CAS No.	etc
Lithium(Li)	3.0 ~ 4.5%	7439-93-2	
Carbon (C)	3.0 ~ 4.5%	1333-86-4	
Electrolyte($SOCl_2$/ SO_2Cl_2)	30 ~ 45%	7719-09-7	
Aluminium Chloride($AlCl_3$)	2.0 ~ 4.0%	7446-70-0	
Gallium Chloride($GaCl_3$)	2.0~4.0%	13450-90-3	Only used for SW-D03 and High temp Series instead of $AlCl_3$

4. First Aid Measures

Handle according to emergency measures under in case of battery rupture, explosion or leakage and evacuate personnel from contaminated area and provide good ventilation to clear out corrosive fumes, gases or the pungent odour. Seek immediate medical attention.

Inhalation – Remove from exposure, rest and keep warm. In severe cases, obtain medical attention

Skin Contact – Wash off skin thoroughly with flow water for 10~15 minutes and obtain medical attention.

Eye Contact – Irrigate thoroughly with Water for at least 15 minutes and obtain medical attention.



Ingestion – Wash out mouth thoroughly with water and give plenty of water to drink for vomit and obtain medical attention.

5. Fire Fighting Measures

It is effective to use cold water in order to prevent spread of fire caused by lithium cells. However, never use hot water.

Lith-X(Class D extinguishing media) is the only effective on fires involving a few lithium batteries. If the cells are directly involved in a fire, DO NOT USE WATER, SAND, CO2, HALON and DRY POWDER or SODA ASH EXTINGUISHERS.

If a fire is in adjacent area, and cells are packed in their original containers, the fire can be fought based on fuelling material, e.g. paper and plastic products.

6. Accidental Release Measures

Do not breathe vapours or touch liquid with bare hand. If the skin has come into contact with the electrolyte, take an action in accordance with 4. First Aid Measures.

Graphite powder should be used to absorb the exudation, seal leaking battery and graphite powder in plastic bag and dispose of Special Waste.

7. Handling and Storage

Handling – Prevent short circuit and do not use the battery above the temperature rating of battery. Do not recharge, force over-discharge (voltage below 0.0V), puncture and compress.

Storage – Storage preferably in cool (below 30°C) and non- elevated temperatures place. Storage in high temperatures can result in shortened battery life and degrade performance. Do not store batteries in high humidity, shock and vibration environments.

Others – Do not charge primary battery which is not chargeable battery.
Follow manufacturer's recommendations regarding maximum recommended current and operating temperature range.



8. Exposure Controls & Personal Protection

The following safety measures are not necessary in normal use.
They need only be applied if there is a risk that, in use or handling, the recommendations, as outlined in Section 3, have not been followed.

Respiratory protection – In all fire situations, use filter mask or self- contained breathing Apparatus for harmful gases or other material prevention.

Hand protection – In leakage situations, use specific gloves for leaking chemical substance and heat prevention.

Eye protection – Use safety goggles or face shield which can separate eyes and the outside for chemical substance and heat prevention.

Other protective equipment – Additional equipments are needed to prevent from chemical substance, harmful material and heat. (Clothes, boots etc.)

9. Physical and Chemical Properties

Appearance	Cylindrical shape
Odour	Odourless. If leaking, gives off a pungent and corrosive odour.
pH	Not applicable (Unless individual components exposed)
Boiling point	Not applicable (Unless individual components exposed)
Vapour pressure (mmHg,25ºC)	Not applicable (Unless individual components exposed)
Relative density	Not applicable (Unless individual components exposed)
Flash point	Not applicable (Unless individual components exposed)
Flammability	Not applicable (Unless individual components exposed)
Solubility (water)	Not applicable (Unless individual components exposed)
Solubility (other)	Not applicable (Unless individual components exposed)



Physical state	Solid

10. Stability and Reactivity

Product is stable under conditions described in Section 7 (Handling and storage).

Conditions to avoid – heating and incineration above 90℃, transformation, abscission, compression, puncture, disassembly, charge, a short circuit, storage in high humidity for a long time.

Material to avoid – Prevent to contact Oxidizer, Strong carbonated water, Alkali solutions, Water (H_2O), Aluminium, Zinc, and Electrolyte.

Harmful materials caused by disassembly

1. Water (H_2O) reacts with lithium metal to form powder such as lithium hydroxide (LiOH), lithium oxide and hydrogen gas (H_2)

2. In case of heating the electrolyte above 150℃, chlorine(Cl_2), sulfur dioxide(SO_2), sulphur trioxide(SO_3), disulfur dichloride(S_2Cl_2), sulphur dichloride (SCl_2), lithium oxide(Li_2O) may occur.

3. Water (H_2O) reacts with the electrolyte in room temperature to form hydrochloric acid(HCl) and sulphur dioxide(SO_2).

11. TOXICOLOGICAL INFORMATION

Symptoms and Signs – None, unless battery ruptures. In the event of exposure to internal contents, corrosive fumes will be very irritating to skin, eyes and mucous membranes.

Inhalation – Lung irritant.

Skin contact – Skin irritant

Eye contact – Eye irritant



Ingestion – if swallow, it can be poisoned.

Medical condition aggravated by exposure – In the event of exposure to internal contents, eczema, skin allergies, lung injuries, asthma and other respiratory disorders may occur.

12. Ecological Information

When properly used of disposed the battery does not present environmental hazard.

Cells of Vitzrocell do not contain mercury, cadmium, lead and Cr^{6+} which has a bad influence on environment.

13. Disposal Considerations

Do not incinerate or subject cells to temperatures in excess of 85°C. In the event of such abuse can result in loss of seal that causes explosion.

Cells should be separated after use in order to prevent short circuit terminal by using tape or other tools and dispose of in accordance with regulations.

14. Transportation

Compliance with IATA Dangerous Goods Regulation and IMDG SP188

VITZRO CELL



Model	D.G Class : Class 9 UN3090	IMDG SP188
SB-AA02	Section II	Non D.G
SB-AA02HP	Section II	Non D.G
SB-AA11	section IB	Non D.G
	section II (less than 8cell)	
SB-A01	section IB	Non D.G
	section II (less than 8cell)	
SB-C02	section IA Class9	D.G
SB-D02	section IA Class9	D.G
SB-D02(Cap)	section IA Class9	D.G
SW-AA11	section IB	D.G
	section II (less than 8cell)	D.G
SW-AA01	Section II	D.G
SW-C01	section IA Class9	D.G
SW-D02	section IA Class9	D.G
SW-D03	section IA Class9	D.G
FAT-D 150	section IA Class9	D.G
DD-HR 100	section IA Class9	D.G
DD-HR 150	section IA Class9	D.G
DD-HR 165	section IA Class9	D.G
DD-MR 165	section IA Class9	D.G
DD-MR 180	section IA Class9	D.G
D-HR 165	section IA Class9	D.G
CC-MR 165 21mm	section IA Class9	D.G
CC-MR 165 25mm	section IA Class9	D.G
CC-MR 165 26mm	section IA Class9	D.G
FAT-D 150	section IA Class9	D.G
DD-SC 100	section IA Class9	D.G
D-SC 100	section IA Class9	D.G
C-SC 100	section IA Class9	D.G
DD-SC 100 2S Pack	section IA Class9	D.G
MGDD16A00002	section IA Class9	D.G
MGDD16A00003	section IA Class9	D.G
MGDD16A00004	section IA Class9	D.G
MGDD16A00005	section IA Class9	D.G
MGDD16A00006	section IA Class9	D.G
MGDD16A00009	section IA Class9	D.G



MGDD18A00002	section IA Class9	D.G
HGDD15A00002	section IA Class9	D.G
HGDD15A00003	section IA Class9	D.G
HLFD15A00002	section IA Class9	D.G
HLFD15A00003	section IA Class9	D.G
HLFD15A00006	section IA Class9	D.G
HGDD15A00011	section IA Class9	D.G
HGDD15A00016	section IA Class9	D.G
HG0D16A00003	section IA Class9	D.G
MG2516A00003	section IA Class9	D.G
PGDD10A00010	section IA Class9	D.G
PGDD10A00015	section IA Class9	D.G

Lithium cell must pass relevant examination regardless of lithium content. Relevant regulation and examination regulation for product are as follows.

The UN Recommendations on the Transport of Dangerous Goods, Model Regulations

The UN recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria, Part III, Section 38.3

Hazard Classification: Class9
UN Number: 3090 Lithium batteries, 3091 Lithium batteries contained in equipment or Lithium batteries packed with equipment.

Other regulation and guideline
ADR, RID 188, 230, 310, P903
IATA A88, A99, A154, A164

IMDG code 188, 230, 310, P903

15. Regulatory Information

None

16. Other Information



TEKCELL (manufacturer: Vitzrocell) was recognized safety by UL (Underwriters Laboratories) located in Northbrook, U.S.A. (UL File No. : MH 18384)

(Some cells and batteries are not UL certified)

Vitzrocell has all authorities about this MSDS. In case of use of relevant data by outside presentation, should get permission by Vitzrocell.