

Globe (Jiangsu) Co.,Ltd**Safety data sheet****Section 1: Identification****1.1 product identifier**Name of the substance: **48V 2Ah lithium battery**

Identification number : CAS number

1.2 Recommended use of the chemical : Lithium ion

restrictions on use: not known

1.3 Details of the supplier of the safety data sheetProducer/Supplier: **Globe(Jiangsu) Co.,Ltd**

Add: N0.65-15 Xinggang Road Zhonglou Economic Development zone, Jiangsu ,China

Name of consultant: Feng Feng

1.4: Emergency Number: 0519-81286921**Section 2: Hazards identification****2.1 Classification of the chemical:**

This product is out of scope of GHS system .

2.2 Hazard summary:

absorbed and inhaled by human body, spilt into eyes, and contacts skin.)	Inhalation: The steam of the electrolyte has an anesthesia action and stimulates a respiratory tract. Skin contact: The steam of the electrolyte stimulates a skin. The electrolyte skin contact causes a sore and stimulation on the skin. Eye contact: The steam of the electrolyte stimulates eyes. The electrolyte eye contact causes a sore and stimulation on the eye. Especially, substance that causes a strong inflammation of the eyes is contained.
Environment impact:	Since a battery cell remains in the environment, do not throw out it into the environment
Physical and chemical harms:	Exposure of damaged battery
Special harm:	If the electrolyte contacts with water, it will generate detrimental hydrogen fluoride. Since the leaked electrolyte is inflammable liquid, do not bring close to fire.

2.3 label

Signal word : None

Hazard Symbols: None

Hazard statements : None

Precautionary statements: Prevention

Section 3 : Composition/ information on ingredients**3.1 Substances**

Material Name	Chemical Name	CAS No.	Wt%
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FR4	Glass fabric 玻璃纤维	65997-17-3	45
	Epoxy Resin 环氧树脂	26265-08-7	28
	Copper Foin 铜箔	7440-50-8	17
Green paste (绿漆)	O-Cresol novolac epoxy (甲醛与环氧氯丙烷和邻甲基苯酚的聚合物)	29690-82-2	56
	Barium sulfate (硫酸钡)	7727-43-7	25
	Acrylic ester (聚二季戊四醇六丙烯酸酯)	29570-58-9	19
White Ink (白色油墨)	Epoxy Acrylate (环氧丙烯酸酯)	N/A	42
	Pigment (酞菁绿)	1328-53-6	22
	Z-Ethgl-4-methgeimidazole (2-乙基-4-甲基咪唑)	931-36-2	18
	Filler (滑石粉)	14807-96-6	18
Fillers (填充物)	Fillers (滑石粉)	14807-96-6	60
Silicone modified polymer (硅树脂聚合物)	Silicone modified polymer	N/A	30
Paraffin (石蜡)	Paraffin	N/A	5
Carbon black (炭黑)	Carbon black	1333-86-4	5
Solder (焊料)	Tin (锡)	7440-31-7	89
	Silver (银)	7440-22-4	5
	Copper (铜)	7440-50-8	1
	Resin (松香)	65997-05-9	5
Plating (电镀)	Sn (锡) 粉状	7440-31-7	99.5
	others	N/A	0.5
Lead Eire-Dumet (导线)	Ni (镍)	7440-02-0	42.15
	Fe	7439-89-6	57.85
	Cu	7440-50-8	100
Dice	Si (硅)	7440-21-3	70.9
	Al (铝)	7429-90-5	0.1
	Ag	7440-22-4	28.6
	Ni	7440-02-0	0.4
Ink (油墨)	C	7440-44-0	100

BaTiO3 (钛酸钡)	BaTiO3	12047-27-7	69
Nickel (镍)	Nickel	7440-02-0	2.5 ~ 7
Copper (铜)	Copper	7440-50-8	21
Tin (锡)	Tin	7440-31-5	0.2 ~ 3
MAXBOND 1603HFR - 1 Glue (黄胶)	CR Rubber	9010-98-4	10~20
	Phenolic resins	9003-35-4	10~20
	Flame Retardants	1309-6404	5
	Solvents	108-88-3	60
		1975/9/2	
		78-93-3	
		110-82-7	
110-54-3			
Additive	N/A	1	
Glue (9333 胶)	Cadmium (镉)	7440-43-9	N.D.
	Calcium oxide(氧化镉)	1306-19-0	N.D.
	Dipentyl phthalate (邻苯二甲酸二戊脂)	131-18-0	N.D.
Carbon (碳)	Carbon	N/A	50
CP (化学纯)	Sn (锡 粒状)	7440-31-5	11
	Fe (碳化铁)	12011-67-5	67
	Cu	7440-50-8	22
ALUMINUM CALCIUM SODIUM SILICATE (碳酸铝钙 钠)	SODIUM SILICATE (二氧化硅)	14808-60-7	60
TITANIUM DIOXIDE (二氧化 钛)	TITANIUM DIOXIDE	13463-67-7	30
DIBUTYLBIS(LAUROYLOXY) STANNANE (二月桂酸二丁基 锡)	DIBUTYLBIS(LAUROYLOXY)STANN A NE	77-58-7	10
Conductor (导体)	Copper	7440-50-8	99
	Tin	7440-31-5	1
Insulation (绝缘)	Polyethylene (聚乙烯)	9002-88-4	30
	Magnesium Compound (镁聚合物)	N/A	55

	Other	N/A	15
Tin (锡)	Sn	7440-31-5	99.4
	Cu	7440-50-8	0.6
Positive electrode	Lithium transition metal oxidate(Li[M]m[O]n *2)	12190-79-3	20~60
		12057-17-9	
		182442-95-1	
Positive electrode' s base	Aluminum	7429-90-5	1~10
Negative electrode	Carbon	7782-42-5	10~30
		7440-44-0	
Negative electrode' s base	Copper	7440-50-8	1~15
Electrolyte	Organic electrolyte principally involves ester carbonate	N/A	5~25
Outer case	Iron	7439-89-6	1~30

Section 4 : First-aid measures

4.1 Description of first aid measures

Inhalation: Make the victim blow his/her nose, gargle. Seek medical attention if necessary

Skin contact: Remove contaminated clothes and shoes immediately. Wash extraneous matter or contact region with soap and plenty of water immediately

Eye contact: Do not rub one's eyes. Immediately flush eyes with water continuously for at least 15 minutes. Seek medical attention immediately.

Most important symptoms/effects, acute and delayed: finger, Skin and eye burns

Indication of immediate medical attention and special treatment needed: ask doctor for help .

Section 5: Fire-fighting measures

5.1 Suitable (and unsuitable) extinguishing media: Plenty of water. carbon dioxide gas. Nitrogen gas .chemical power fire extinguishing medium and fire foam .

5.2 Specific hazards arising from the chemical: it can be heated and unstable when press ,drop and other mechanical pressure .fire from the battery may produce irritating, corrosive and/or toxic gases.

5.3 Special protective equipment and precautions for fire-fighters:

Handle protection : wear gloves

Eye protection: Goggle and protective glasses

Skin and body protection: protective cloth

Breath protection: Wear self-contained breathing apparatus

Section 6: Accidental release measures

6.1 Personal precautions, protective equipment, and emergency procedures: wear protective gloves and glasses, remove spilled material and do not inhale the gas as much as possible . do not touch as much as possible .

6.2 environmental precaution: Do not throw out into the environment especially water source and sewer.

6.3 Methods and materials for containment and cleaning up: The spilled solid are put into the container, the leaked place is wiped off with dry cloth .

Section 7: Handling and Storage

7.1 Precautions for safe handling :

处置 Handling	<p>Do not wet the battery with water, seawater, drink or acid; or expose to strong oxidizer.</p> <ul style="list-style-type: none">• Do not damage or remove the external tube.• Keep the battery away from heat and fire.• Do not disassemble or reconstruct the battery; or solder the battery directly.• Do not give a mechanical shock or deform.• Do not use unauthorized charger or other charging method. <p>Terminate charging when the charging process doesn' t end within specified time.</p>
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7.2 Conditions for safe storage, including any incompatibilities :

儲存 Storage	<p>Do not store the battery with water, seawater, strong acid or strong oxidizer. Avoid direct sunlight, high temperature, and high humidity.</p>
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Section 8: Exposure Control / Personal Protection

8.1 Control parameters:

Occupational exposure limits: no exposure limit

Biological limit values: no exposure limit

exposure weather limit : forbidden to exposure in water .

8.2 Appropriate engineering controls: Leak from a damaged or opened battery: Provide adequate ventilation if fumes or vapours are generated

8.3 Individual protection measures, such as personal protective equipment

Hand protection : not necessary under normal condition

Eye protection : not necessary under normal condition

Body protection: not necessary under normal condition

Summarize ; personal protective equipment should be used when the battery is damaged .

SECTION 9: Physical and chemical properties

Appearance:

Physical state :	solid	
Form:	solid	
Color:	various	
Odor:	no odor	
Odour threshold	Not applicable	
pH	Not applicable.	
Melting point/freezing point		Not applicable.
Initial boiling point and boiling range		Not applicable.
Flash point		Not applicable.
Evaporation rate		Not applicable.
Flammability (solid, gas)		Not available.
Upper/lower flammability or explosive limits		
Flammability limit - lower(%)		Not available.
Flammability limit - upper(%)		Not available.
Vapour pressure		Not applicable.
Vapour density		Not applicable.
Relative density		Not available.
Solubility(ies)		Insoluble.
Partition coefficient(n-octanol/water)		Not applicable.
Auto-ignition temperature		Not applicable.
Decomposition temperature		Not applicable.
Viscosity		Not applicable.

Section 10: Stability and reactivity

10.1. Reactivity	Stable under normal use ,storage and transport
10.2. Chemical stability	Stable under normal use ,storage and transport
10.3. Possibility of hazardous reactions	no hazardous
10.4. Conditions to avoid humidity °	Prevent static during processing · high
10.5. Incompatible materials	Conductive materials, water, seawater, strong oxidizers and strong acids
10.6. Hazardous decomposition products	Acrid or harmful gas is emitted during fire.

Section 11 Toxicological information

Information on the likely routes of exposure:	Expected to be a low hazard for usual industrial or commercial handling by trained personnel
Symptoms related to the physical, chemical and toxicological characteristics:	Skin · eye burns
Delayed and immediate effects and also chronic effects from short- and long-term exposure:	not applicable
Numerical measures of toxicity:	LD50, oral - Rat 2,000mg/kg or more

Irritating nature: Irritative to skin and eye

Section 12 Ecological information

Ecotoxicity : no impact under normal use
Persistence and degradability : no data available
Bioaccumulative potential : no data available
Mobility in soil : no data available

Section 13 : Disposal considerations

Residual waste : Dispose in accordance with applicable federal, state, and local regulations

Disposal methods/information : Do not dispose in fire. Dispose waste and residues in accordance with applicable federal, state, and local regulations.

Section 14: Transport information

UN number : UN3481
UN proper shipping name : LITHIUM ION BATTERIES PACKED WITH EQUIPMENT
Transport rules: International Maritime Dangerous Goods Code
Packing group : PI 966
Environmental hazards: No
Special precautions: Special provision 188

Section 15: Regulatory information

Safety: UL 2054

Section 16: Other information, including date of preparation or last revision

Version contained : 1

Training information: follow instruction when handling