

Globe(Jiangsu) Co.,Ltd**Safety data sheet****Section 1: Identification****1.1 product identifier**Name of the substance: **80V 4Ah lithium battery**Model: **G80B4**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 sheet**Producer/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:

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| 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 labelSignal 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% |
|------------------------------------|---|------------|-------|
| 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-Ethyl-4-methylimidazole (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 |

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|---|------------------------------------|------------|-------|
| 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)STANNA 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 (錫) | 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:

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| 处置 Handling | Do not wet the battery with water, seawater, drink or acid; or expose to strong oxidizer. ·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. Terminate charging when the charging process doesn' t end within specified time. |
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7.2 Conditions for safe storage, including any incompatibilities:

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| 儲存 Storage | Do not store the battery with water, seawater, strong acid or strong oxidizer. Avoid direct sunlight, high temperature, and high humidity. |
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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:

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| 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

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| 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 | Prevent static during processing, high humidity. |
| 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

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| 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: UN 3480
UN proper shipping name: LITHIUM ION BATTERIES
Transport rules: International Maritime Dangerous Goods Code
Transport hazard class(es): DG9
Packing group: PI965
Environmental hazards: No
Special precautions: No

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