Greenworks （Jiangsu）Co., Ltd

Safety data sheet

Section 1: Identification

1.1 product identifier

Name of the substance: **72V 20Ah 1440Wh（82V MAX） lithium battery**

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: **Greenworks （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

Chemical Name	Percent of Content	CAS No.	OSHA (PEL)	ACGIH (TLV)
Lithium nickel manganese cobalt (LiNixCoyMn1-x-yO2)	32%	346417-97-8	N/A	N/A
Graphite (C)	19%	7782-42-5	N/A	N/A
Poly Vnylidene Fluoride (PVDF)	2%	24937-79-9	N/A	N/A
Ethylene carbonate	4%	96-49-1	N/A	N/A
Dimethyl carbonate	4%	616-38-6	N/A	N/A
Lithium hexafluorophosphate (LiPF6)	3%	21324-40-3	N/A	N/A
Copper	12%	7440-50-8	N/A	N/A
Aluminum	10%	7429-90-5	N/A	N/A
Can	14%	7439-89-6	N/A	N/A

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：

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.**

7.2 Conditions for safe storage, including any incompatibilities：

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

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	**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

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： UN3480

UN proper shipping name： LITHIUM ION BATTERIES

Transport rules:

International Maritime Dangerous Goods Code- Dangerous Goods Class 9

US Hazardous Materials Regulations 49 CFR(Code of Federal Regulations)- Dangerous Goods Class 9

Packing group, ： **PI 965**

Environmental hazards: No

Special precautions: No

Section 15: Regulatory information

Safety: UL 2595

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

Version contained : 1

Training information: follow instruction when handling