

Greenworks (Jiangsu) Co., Ltd
Safety data sheet

Section 1: Identification**1.1 product identifier**

Name of the substance: 18V 2Ah 36WH (20V 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	<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:

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	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: UN3481
UN proper shipping name: LITHIUM ION BATTERIES PACKED WITH EQUIPMENT
Transport rules: International Maritime Dangerous Goods Code(Special provision 188)
Packing group : PI 966
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