Beiblatt zum Sicherheitsdatenblatt / *Supplement to the safety data sheet*

Abschnitt 1 / *Section 1*

s. Original-Datenblatt / see original safety data sheet

1.1 Produktidentifikation / *Product identification* s. Original-Datenblatt / *see original safety data sheet*

1.2 Verwendungen des Stoffs / *Uses of the substance* s. Original-Datenblatt / *see original safety data sheet*

1.3 Einzelheiten zum Lieferanten / *Details of the supplier*

Firmenname /	*Supplier*	Stürmer Maschinen GmbH,
Straße /	*Street*	Dr.-Robert-Pfleger-Str. 26,
Ort /	*City*	D-96103 Hallstadt
Tel. /	*Phone*	+49 (0)951 96555 - 0 (07:00 - 17:00 Uhr / *07:00 am - 05:00 pm*)
E-Mail /	*E-Mail*	info@stuermer-maschinen.de

1.4 Notrufnummer / *Emergency Telephone*

Wählen Sie die passende Notrufnummer anhand des GHS-Symbols auf Ihrem Gefahrgut oder entsprechend Abschnitt 2.2 des orig. Sicherheitsdatenblattes *.
*Call the appropriate emergency number using the GHS symbol on your dangerous goods or according to section 2.2 of the original safety data sheet *.*

GHS Gefahren-piktogramm / *GHS symbol*	**GHS-Kürzel/ *GHS-no.***	**Mögliche Signalwörter/ *Warning***	**Gefährdungsklassen / *Description of hazards***	**Notrufnummer */ *Emergency Phone **
	GHS01 bis GHS09			+49 (0)951 96555 **- 590** Sammelnotrufnummer Gefahrstoffe
	GHS01	Gefahr oder Achtung / *Danger or Attention*	Explosive Stoffe/Gemische und Erzeugnisse mit Explosivstoff, selbstzersetzliche Stoffe/Gemische, organische Peroxide / *Explosive substances / mixtures and products containing explosives, self-reactive substances / mixtures, organic peroxides*	**- 591**
	GHS02	Gefahr oder Achtung / *Danger or Attention*	Selbstzersetzliche Stoffe/Gemische, organische Peroxide, entzündbare Gase, Aerosole Flüssigkeiten, Feststoffe, selbsterhitzungsfähige Gemische, pyrophore Flüssigkeiten und Feststoffe, Stoffe/Gemische, die bei Berührung mit Wasser entzündbare Gase bilden / *Self-reactive substances / mixtures, organic peroxides, flammable gases, aerosols, liquids, solids, self-heating mixtures, pyrophoric liquids and solids, substances / mixtures which form flammable gases on contact with water*	**- 592**
	GHS03	Gefahr oder Achtung / *Danger or Attention*	Oxidierende Gase, Flüssigkeiten, Feststoffe / *Oxidizing gases, liquids, solids*	**- 593**
	GHS04	Achtung / *Attention*	Verdichtete, verflüssigte, gelöste und tiefgekühlt verflüssigte Gase / *Compressed, liquefied, dissolved and refrigerated liquefied gases*	**- 594**
	GHS05	Gefahr oder Achtung / *Danger or Attention*	Verätzung der Haut, schwere Augenschäden, auch metallkorrosive Eigenschaften / *Chemical burns to the skin, severe eye damage, also metal-corrosive properties*	**- 595**
	GHS06	Gefahr / *Danger*	Äußerst schwere und schwere akute Gesundheitsschäden oder Tod / *Extremely severe and severe acute damage to health or death*	**- 596**
	GHS07	Achtung / *Attention*	Akute Gesundheitsschäden, Reizung der Haut, der Augen und der Atemwege, Sensibilisierung der Haut, narkotisierende Wirkungen / *Acute damage to health, irritation of the skin, eyes and the respiratory tract, sensitization of the skin, narcotic effects*	**- 597**
	GHS08	Gefahr oder Achtung / *Danger or Attention*	Chronische Gesundheitsschäden (Organschädigungen) bei einmaliger oder mehrmaliger Exposition, krebserzeugende, erbgutverändernde und fort-pflanzungsgefährdende Wirkungen, Lungenschäden durch Eindringen von Substanzen in die Lunge (Aspirationsgefahr), Sensibilisierung der Atemwege / *Chronic damage to health (damage to organs) after single or multiple exposure, carcinogenic, mutagenic and reproductive effects, lung damage due to the penetration of substances into the lungs (risk of aspiration), sensitization of the respiratory tract*	**- 598**
	GHS09	Achtung oder ohne Signalwort/ *Attention or without wording*	Giftig für Wasserorganismen mit kurz- und langfristiger Wirkung / *Toxic to aquatic organisms with short and long-term effects*	**- 599**

* 07:00 - 17:00 Uhr, außerhalb dieses Zeitraums kann die Nummer auf dem Sicherheitsdatenblatt angerufen werden /
07:00 am - 05:00 pm, outside this time, the number on the safety data sheet can be called

Für alle anderen Informationen siehe Original-Sicherheitsdatenblatt / *For all other information, see the original safety data sheet*

Document No.	DLG(H)-Q-SDS-TDD-ZS-01(A.1)

MSDS SHEET OF PRODUCT

For Lithium-ion Rechargeable Cell

Model : INR18650-320 Series

Approved By	Checked by	Prepared By
		Bo Li
Add.	**No. 3 Xinghai Road, Binhai New Area, Fenghua Economic Development Zone, Ningbo, China**	
P.C	315506	
Hunt group number	*+49 (0) 951 96555 590*	

DLG Power Battery (Ningbo) Co., Ltd

Document No.	DLG(H)-Q-SDS-TDD-ZS-01(A.1)

Revision No.	Revision Date	Page	Item	Description	Remark
1	2018-1-17	7	A.0	New release	
2	2019-1-4	7	A.1	Update regulatory information to the latest version	

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2019 -01- 07
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Document No.	DLG(H)-Q-SDS-TDD-ZS-01(A.1)

MATERIAL SAFETY DATA SHEET

LITHIUM-ION RECHARGEABLE BATTERY

1. Product.Identification

Product: Rechargeable Battery
Trade name: LITHIUM-ION CYLINDRICAL BATTERY
Electrochemical system:
Negative Electrode: Silicon oxide / graphite
Positive Electrode: Lithium Nickel Cobalt Manganese Oxide
Electrolyte: $LiPF_6$
Cell Type: INR18650-320
Minimum Cell Capacity: 3100mAh
Nominal Voltage: 3.67 V

2. Composition

Although the chemical composition of the various cell manufacturers is proprietary, the following is typical of the chemistry.

Hazardous Components (Specific Chemical Identity; Common Name(s))	%	CAS NO.	LD50(mg/kg) (oral-rat)	LC50 (mg/L)
Aluminum foil	2-7 w/w	7429-90-5	N/A	N/A
Copper foil	5 -15 w/w	7440-50-8	3.5(ipr-mouse)	N/A
Linear and Cyclic Carbonic Solvents (See other information)	5 -16 w/w	N/APP	≈11000 (weighted avg)	N/A
Silicon oxide / graphite Powder	12-22 w/w	10097-28-6	440 (ivn-mouse)	N/A
Lithium Nickel Cobalt Manganese Oxide	30-40 w/w	182442-95-1	N/A	N/A
Poly (vinylidene fluoride) (PVDF)	0.1 -1 w/w	24937-79-9	N/A	N/A
Steel, nickel and inert polymer	0.2 -5 w/w	N/A	N/A	N/A

These chemicals and metals are contained in a sealed can.

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3. Hazard Data

3.1 Physical:

The lithium-ion batteries described in this Material Safety Data Sheet are sealed which are not hazardous when used according to the recommendations of the manufacturer.

Under normal conditions of use, electrode materials and liquid electrolyte they contain are non-reactive provided the battery integrity is maintained and seals remain intact, risk of exposure only in case of abuse, e.g. mechanical, thermal, electrical, which leads to the activation of safety valves and/or the rupture of the battery containers. Electrolyte leakage, electrode materials reaction with moisture/water of battery vent/

explosion/fire may follow depending upon circumstances.

3.2 Chemical:

Classification of dangerous Substances Contained into the Product as per Directive

Substance	Chemical symbol	*CAS No.*	Melting point	Boiling point	Exposure limit	Indication of danger	Special risk (1)	Safety advices(2)
Lithium nickel cobalt manganese oxide	$LiNi_{0.8}Co_{0.1}Mn_{0.1}O_2$	182442-95-1	> 800°C	/	/	/	R36/37/38	S22/S24/S25
Organic solvents	EC	96-49-1	38°C	243°C	None established OSHA	Flammable	R21 R22 R41 R42/43	S2 S24 S26 S36 S37 S45
	DMC	616-38-6	4°C	90°C				
	DEC	105-58-8	-43°C	127°C				

(1). Name of Special Risks:

R21 Harmful in contact with ski

R22 Harmful us swallowed

R36/37/38 Irritating to eyes, respiratory system and skin.

R41 Risk of serious damage to the eye

R42/43 May cause sensitization by inhalation and skin contact

R43 May cause sensitization by skin contact

(2). Safety Advices:

S2 Keep out of reach from children

S22 Do not breathe dust

S24 Avoid contact with skin

S25 Avoid contact with eyes.

S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical attention

S36 Wear suitable protective clothing

S37 Wear suitable gloves

S45 In case of incident, seek medical attention

4. First Aid Measures

In case of battery rupture or explosion, evacuate personnel from contaminated area and provide maximum ventilation to clear out corrosive fumes/gases and pungent odors.

In all case, seek medical advice immediately,

Eye contact: Flush with plenty of water(eyelids-held open)for at least 15 minutes

Skin contact: Remove all contaminated clothing and flush affected areas with plenty of water and sop for at least 15minutes.

Ingestion: Dilute by giving plenty of water and get immediate medical attention.

Assure that the victim does not aspirate vomited material by use of positional drainage.
Assure that mucus does not obstruct the airway.
Do not give anything by mouth to an unconscious person

Inhalation: Remove to fresh air and ventilate the contaminated area.
Give oxygen or artificial respiration if needed.

5. Fire-Fighting Measures

Fire and explosion hazard	The batteries can leak and/or spout vaporized or decomposed and combustible electrolyte fumes in case of exposure above 90°C resulting from inappropriate use or from the environment. Possible formation of hydrogen fluoride (HF) and phosphorous oxides during fire.LiPF6 salt contained in the electrolyte releases hydrogen fluoride (HF) in contact with water.
Extinguishing media	Suitable : CO2, Dry chemical or Foam extinguishers Not to be used : Type D extinguishers
Special exposure hazards:	Following cell overheating due to external source or due to improper use, electrolyte leakage or battery container rupture may occur and release inner component/material in the environment. Eye contact : The electrolyte solution contained in the battery is irritant to ocular tissues. Skin contact : The electrolyte solution contained in the battery causes skin irritation. Ingestion : The ingestion of electrolyte solution causes tissue damage to throat and gastro/respiratory tract. Inhalation : Contents of a leaking or ruptured battery can cause respiratory tract, mucus, membrane irritation and edema.
Special protective equipment	Use self-contained breathing apparatus to avoid breathing irritant fumes. Wear protective clothing and equipment to prevent boby contact with electrolyte solution.

6. Accidental Release Measures

Personal Precautions, protective equipment, and emergency procedures	Restrict access to area until completion of clean-up. Do not touch the spilled material. Wear adequate personal protective equipment as indicated in Section 8.
Environmental Precautions	Prevent material from contaminating soil and from entering sewers or waterways.
Methods and materials for Containment	Stop the leak if safe to do so. Contain the spilled liquid with dry sand or earth. Clean up spills immediately.
Methods and materials for cleaning up	Absorb spilled material with an inert absorbent (dry sand or earth). Scoop contaminated absorbent into an acceptable waste container. Collect all contaminated absorbent and dispose of according to directions in Section 13. Scrub the area with detergent and water; collect all contaminated wash water for proper disposal.

7. Handling and Storage

The batteries should not be opened destroyed nor incinerated since they may leak or rupture and release the ingredients they contain into the environment.

Handling	Do not crush, pierce, short (+) and (-) battery terminals with conductive (i.e. metal) goods. Do not directly heat or solder. Do not throw into fire. Do not mix batteries of different types and nds. Do not mix new and used batteries. Keep batteries in non-conductive (i.e. plastic) trays.
Storage	Store in a cool (preferably below 30°C) and ventilated area away from moisture, sources of heat, open flames, food and drink. Keep adequate clearance between walls and batteries. Temperature above 90°C may result in battery leakage and rupture. Since short circuit can cause burn, leakage and rupture hazard, keep batteries in original packaging until use and do not jumble them.
Other	manufacturer recommendations regarding maximum recommended currents and operating temperature range. Applying pressure on deforming the battery may lead to disassembly followed by eye, skin and throat irritation.

8. Exposure Controls/Personal Protection

Respiratory protection:	Not necessary under normal use. In case of battery rupture, use self-contained full-face respiratory equipment. equipment with type ABEK filter.
Hand protection:	Not necessary under normal use. Use rubber gloves if handling a leaking or ruptured battery.
Eye protection:	Not necessary under normal use. Wear safety goggles or glasses with side shields if handling a leaking or ruptured battery.
Skin protection:	Not necessary under normal use. Use rubber apron and protective working in case of handling of a ruptured battery.

9. Physical And Chemical Properties

9.1 Appearance (Physical shape and color as supplied:)

Lithium nickel cobalt manganese oxide is a Black Powder; Silicon oxide / graphite is a black or odorless power; Organic solvent is a colorless liquid.

9.2 Specific gravity (H_2O=1)

Lithium nickel cobalt manganese oxide :2.1 Silicon oxide / graphite: 0.8-1.0

9.3 Melting point

Silicon oxide / graphite: 2750±50°C

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10. Stability and Reactivity

Conditions to avoid	Heat above 90°C or incinerate. Deform, mutilate, crush, pierce, disassemble. Short circuit. Prolonged exposure to humid conditions.
Materials to avoid	N/A
Hazardous decomposition	Corrosive/Irritant Hydrogen fluoride (HF) is produced in case of reaction of lithium ($LiPF_6$) with water. Combustible vapors and formation of Hydrogen fluoride (HF)

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products	and phosphorous oxides during fire.

11. Toxilogical Information

The LITHIUM-ION batteries do not contain toxic materials.

12 Ecological Information

When properly used or disposed, the LITHIUM-ION batteries do not resent environmental hazard.

13. Disposal Considerations

Dispose in accordance with applicable regulations which vary from country to country.

(In more countries, the thrashing of used batteries is forbidden and the end-users are invited to dispose them properly, eventually through not-for-profit organizations, mandated by local governments or organized on a voluntary basis by professionals).

Lithium-Ion batteries should have their terminals insulated and be preferably wrapped in plastic bags prior to disposal.

13.1 Incineration : Incineration should never be performed by battery users but eventually by trained professionals in authorized facilities with proper gas and fumes treatment.

13.2 Land filling : Leach ability regulations (mg/l)

Component	Leach ability	EC limit	EPA	Other*
Iron	100			5
Nickel	500	2		0.5

13.3 Recycling : Send to authorized recycling facilities, eventually through licensed waste carrier.

14. TRANSPORT INFORMATION

14.1 Lithium ion batteries containing Watt-hour rating is not more than 100Wh.

14.2 The Lithium-ion battery have been tested under provisions of the UN Manual of Tests and Criteria, the battery is passed the UN 38.3 test, Part III, sub-section 38.3(withstanding a 1.2m drop test) and are classified as non-dangerous goods.

14.3 Lithium-ion batteries can be treated as "Non-dangerous goods" under the United Nations Recommendations on the Transport of Dangerous Goods, Special Provision 188, provided that packaging is strong and prevent the products from short-circuit.

14.4 The Li-ion battery are complied with Section II of PI967 (53nd Edition - 2012).

14.5 The consignment can be shipped as “Not Restricted” in accordance with the current edition-53nd of IATA-DGR-2012.

14.6 With regard to air transport, the following regulations are cited and considered:

- The International Civil Aviation Organization(ICAO) Technical Instructions.
- The International Air transport Association (IATA) Dangerous Goods Regulations.
- The International Maritime Dangerous Goods (IMDG) Code.
- The US Hazardous Materials Regulation (HMR) pursuant to a final rule issued by RSPA
- The Office of Hazardous Materials Safety within the US Department of Transportations' (DOT) Research and Special Programs Administration (RSPA).

15. REGULATORY INFORMATION

The LITHIUM-ION CYLINDRICAL BATTERY (≥3100mAh) according to Section Ⅱ/IA/IB of PACKING INSTRUCTION 965/966/967 of the 2018 IATA Dangerous Goods regulations 59th Editon may be transported and applicable U.S.DOT regulations for the safe transport of Li-ion Battery.

Depending on their lithium metal equivalent weight content, design, and ability to pass safety tests defined by the UN in the "Recommendations on the Transport of Dangerous Good - Manual of Tests and Criteria – 4th Revised edition - Ref. ST/SG/AC.10/11 Rev.4 Amendment 1 «Lithium Batteries»", the Lithium-ion cells and the battery packs are not be assigned to the UN N°3480 Class-9, that is restricted for transport.

Individual Lithium-ion cells and battery packs with respectively less than 20 and 100 Wh per gram that pass the UN-defined safety tests, are not restricted for transport .

16. OTHER INFORMATION/DISCLAIMER

This information has been compiled from sources considered to be dependable and is, to the best of our knowledge and belief, accurate and reliable as of the date compiled. However, no representation, warranty (either expressed or implied) or guarantee is made to the accuracy, reliability or completeness of the information contained herein.

This information relates to the specific materials designated and may not be valid for such material used in combination with any other materials or in any process. It is the user's responsibility to satisfy himself as to the suitability and completeness of this information for his particular use.

DLG does not accept liability for any loss or damage that may occur, whether direct, indirect, incidental or consequential, from the use of this information. DLG does not offer warranty against patent infringement. Additional information is available by calling the telephone number above designated purpose.

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Abschnitt 1 / *Section 1*

s. Original-Datenblatt / see original safety data sheet

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Firmenname /	*Supplier*	Stürmer Maschinen GmbH,
Straße /	*Street*	Dr.-Robert-Pfleger-Str. 26,
Ort /	*City*	D-96103 Hallstadt
Tel. /	*Phone*	+49 (0)951 96555 - 0 (07:00 - 17:00 Uhr / *07:00 am - 05:00 pm*)
E-Mail /	*E-Mail*	info@stuermer-maschinen.de

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GHS Gefahren-piktogramm / *GHS symbol*	**GHS-Kürzel/ *GHS-no.***	**Mögliche Signalwörter/ *Warning***	**Gefährdungsklassen / *Description of hazards***	**Notrufnummer */ *Emergency Phone **
	GHS01 bis GHS09			+49 (0)951 96555 **- 590** Sammelnotrufnummer Gefahrstoffe
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	GHS05	Gefahr oder Achtung / *Danger or Attention*	Verätzung der Haut, schwere Augenschäden, auch metallkorrosive Eigenschaften / *Chemical burns to the skin, severe eye damage, also metal-corrosive properties*	**- 595**
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	GHS09	Achtung oder ohne Signalwort/ *Attention or without wording*	Giftig für Wasserorganismen mit kurz- und langfristiger Wirkung / *Toxic to aquatic organisms with short and long-term effects*	**- 599**

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Für alle anderen Informationen siehe Original-Sicherheitsdatenblatt / *For all other information, see the original safety data sheet*

Document Ref. No.:YF/MSDS2450

Changzhou Yufeng Battery Co., Ltd

Material Safety Data Sheet Model No.: CR2450

Identity (As Used on Label and List)	Part Number
Lithium Metal Cell	CR2450

Section I: Information of Manufacturer

Manufacturer's Name Changzhou Yufeng Battery Co., Ltd	Emergency Telephone Number 0519-83885169
Address (Number, Street, City, State, and ZIP Code) No.115,Tianhe Road,Xinbei District, Changzhou, Jiangsu, PRC 213031	Telephone Number for information 0519-83885169
	Date of prepared and revision 2020-01-01
	Signature of Preparer (optional)

Section II: Hazardous Ingredients/Identity Information

Ingredient	CAS NO.	Weight of ingredient in one cell (mg)	Content(wt%)of total weight
Lithium	7439-93-2	143	2.2
Propylene Carbonate	108-32-7	390	6.0
Manganese dioxide	1313-13-9	1820	28
1,2-Dimethoxyethane	110-71-4	234	3.6
Lithium perchlorate	7791-03-9	71.5	1.1
Iron	7439-89-6	2925	45
Polypropylene	9003-07-0	916.5	14.1
Lead	7439-92-1	Not Detected	Not Detected
Cadmium	7440-43-9	Not Detected	Not Detected
Mercury	7439-997-6	Not Detected	Not Detected

Section III: Physical/Chemical Characteristics

Form NA	Specific Gravity (H2O =1) NA
Boiling Point NA	Melting Point NA
Vapor Pressure (mm Hg) NA	Evaporation Rate (Buty1 Acetate=1) NA
Vapor Density (AIR=1) NA	Ph NA
Solubility in Water NA	Appearance and Odor NA

Changzhou Yufeng Battery Co., Ltd

Material Safety Data Sheet Model No.: CR2450

Section IV: Hazard classification

NA

Section V: Reactivity Data

Stability Yes= (X)	Unstable ( )	Conditions to Avoid
	Stable (X)	

Incompatibility (Materials to Avoid)

Hazardous Decomposition or By products

NA

Hazardous Reactions Yes = (X)	May Occur ( )	Conditions to Avoid
	Will Not Occur (X)	

Section VI: Health Hazard Data

Route(s) of Entry Yes=(X)	Inhalation?	Skin?	Ingestion?
	(NA)	(NA)	(NA)

Health Hazard (Acute and Chronic) / Toxicological in formation

In case of electrolyte leakage, skin will be itchy when contaminated with electrolyte.

Section VII – First Aid Measures

Firs aid Procedures

If electrolyte leakage occurs and makes contact with skin, wash immediately.

If electrolyte comes into contact with eyes, wash with copious amounts of water for fifteen minutes, and contact a physician.

Section VIII: Fire and Explosion Hazard Data

Flash Point (Method Used)	Ignition temp	Flammable Limits	LEL	UEL
NA	NA	NA	NA	NA

Extinguishing Media

NA

Special Fire Fighting Procedures

Changzhou Yufeng Battery Co., Ltd

Material Safety Data Sheet Model No.: CR2450

NA

Unusual Fire and Explosion Hazards

Do not dispose of battery in fire – may explode.

Do not short – circuit battery – may cause burns.

Section IX: Accidental Release or Spillage

Steps to Be Taken in Case Material is Released or Spilled

Batteries that are leaking should be handled with rubber gloves.

Avoid direct contact with electrolyte.

Section X: Handing and Storage

Safe handing and storage advice

The battery is extremely sensitive to adverse effects of humidity. Be sure to store them in a place that is dry and subject to little temperature change. Do not place near the boiler or radiator, nor expose to direct sun light. Do not dispose of the battery in fire. Do not charge the battery. Do not short- circuit the battery. Do not put in backward position. Do not store in disorderly fashion, or allow metal objects to be mixed with stored batteries. Do not disassemble the battery, handing in such manner can cause the battery to explode, leak and injury.

Section XI: Exposure Controls / Personal Protection

<table>
<tr><td colspan="2">Occupational Exposure Limits : LTEP
NA</td><td colspan="2">STEP
NA</td></tr>
<tr><td colspan="4">Respiratory Protection (Specify Type)
NA</td></tr>
<tr><td rowspan="2">Ventilation</td><td>Local Exhausts
NA</td><td colspan="2">Special
NA</td></tr>
<tr><td>Mechanical (general)
NA</td><td colspan="2">Other
NA</td></tr>
<tr><td colspan="2">Protective Gloves
NA</td><td colspan="2">Eye Protection
NA</td></tr>
<tr><td colspan="4">Other Protective Clothing or Equipment
NA</td></tr>
<tr><td colspan="4">Work / Hygienic Practices
NA</td></tr>
</table>

Section XII: Ecological Information

NA

Section XIII: Disposal Method

Do not incinerate or subject cells to temperature in excess of 80℃.Dispose of in accordance with local regulations.

Section XIV: Transportation Information

Lithium battery model CR2450 is considered as "Not Restricted" cargo because they complied UN Recommendations.

Shipping Name Lithium Metal Batteries

UN Number UN3090

Organizations governing the transport of lithium batteries

Area	Method	Organization	Special Provision
International	Air	IATA,ICAO	Best Practice 008
International	Ocean	IMO / IMDG	188

The substance is not restricted to IMO IMDG Code according to special provision 188.

These regulations are based on the UN Recommendations. Each special provision provides specifications on exceptions for shipping lithium batteries. All Yufeng's batteries meet all special provisions.

If all of following 2 requirements are satisfied, lithium metal batteries can be transported as "Not Restricted" cargo.

1) Lithium weight or equivalent lithium content must be less than value in table.

	Lithium Cell/Battery (Lithium weight)
Cell	1g or less
Battery	2g or less

Equivalent lithium content (g) is calculated as 0.3 (g/Ah) times the rated capacity (Ah) .

2) Each cell or battery is of the type proven to meet the requirements of each test in the UN Manual of Tests and Criteria, Part III, section 38.3. T1 - T8 Test.

Because the consignor has to take the responsibility, the customer has to confirm the exception

conditions when shipping.

Lithium battery international transportation rules. Based on a United Nations recommendation, the regulation for lithium metal cell and batteries has been revised in the international Air Transport Association (IATA) dangerous goods regulations (DGR Rev.61).Each cell or battery pack meets the requirements of each test in the UN Manual of Tests and Criteria III, sub section 38.3. The Cells / Batteries are "Not Restricted" Cargo

1. Must comply with Section II of PI968-PI970 accordingly.
2. For cells, the lithium content should not be more than 1 g; while for batteries, the aggregate lithium content should not be more than 2 g.
3. For those Lithium metal cells / batteries contained in equipment, the equipment must be equipped with an effective means of preventing accidental activation.

Section XV: Regulatory Information

IATA Dangerous Goods Regulations.
ICAO Technical Instructions for the safe transport of dangerous goods by air.

Section XVI: Other Information

This MSDS is described on the basis of present materials, information and data, so, please notice that it will be revised by new information. Also this sheet is supplied to entrepreneurs as reference information in order to handle batteries safely. Please notice that entrepreneur have to deal with batteries as they think fit.

References (1) UN Recommendations on the Transportation of Dangerous Goods Model Regulations (ST/SG/AC.10/1/rEV.12)
(2) Federal Resister / Vol.65, No. 174 / Thursday, September 7, 2000 / Notices
(3) IATA Dangerous Goods Regulations 61th Edition (2020)

Section XVII: Measures for fire extinction

Suitable fire extinguishing agent: CO_2, fire extinguisher, ABC dry powder extinguisher, sand, etc. Can't quench, a small amount of can cover with the sand first, burn and need to use the fire extinguisher in a large amount. Much water can put out a fire was aroused a few battery. The fire fighter's special shelter is equipped: Wearing the air respirator, protects the helmet, glasses, etc.