

3. FIRST AID MEASURES

a) For the battery cell, chemical materials are stored in a hermetically sealed case, designed to withstand temperatures and pressures during normal use. As a result, during normal use, there is no physical danger of ignition or explosion and chemical danger of hazardous materials' leakage.

However, if the battery is exposed to a fire, added mechanical shocks, decomposed, added electric stress by miss-use, the gas release vent will be operated. The battery cell case will be breached at the extreme, and hazardous materials may be released.

Moreover, if it is heated strongly by the surrounding fire, acrid gas may emit.

In case of battery rupture, fume or fire, evacuate personnel from contaminated area and provide maximum ventilation to clean out fumes/gases. Meantime, spray the battery with water or put the smoking battery into basin at once.

b) In case the following occur, seek medical attention immediately.

*Eye contact: Flush with plenty of water (eyelids held open) for at least 15 minutes or go to the hospital for help immediately.

**Skin contact : Remove all contaminated clothing and flush affected areas with plenty of Water and soap for at least 15 minutes Do not apply greases or ointments.

***Ingestion: Dilute by giving plenty of water and get immediate medical attention, swallowed part of the substance of the battery will not cause immediate danger. Assure that the victim does not aspirate vomited material by use of positional drainage. Assure that mucus does not obstruct the airway. Seek for medical attention.

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

4. FIRE-FIGHTING MEASURES

a) Extinguishing media: spray the battery with water or put the smoking /fire battery into water at once if the battery fume or fire.

b) Extinguishing tools : Type D extinguishers , Co2, Dry chemical or Foam extinguishers.

5. ACCIDENT RELEASE MEASURES

In case of battery rupture, or fume/fire under abuse, put the smoking /fire battery into water at once ,or soak under water or spray with copious amounts of water , place in approved container after cooling, and dispose in accordance with local regulations.

6. HANDLING AND STORAGE

a) Carriage: can use forklifts or pallets, stand up the battery gently when move. Do not upside down or on its side or throw.

b) Storage: Store in a cool preferably condition (optimum temperature at $+25^{\circ}\text{C}\pm 5^{\circ}\text{C}$) and ventilated area away from moisture, sources of heat, open flames. Keep adequate clearance between walls and batteries. Do not crush, pierce, short (+) and (-) battery terminals with conductive goods. Do not directly heat or solder batteries. Do not mix batteries of different types and brands. Do not mix new and used batteries; keep batteries in non-conductive or plastic trays. If need long term storage, do not store upside down, charge the batteries to 40-60% at first, and check the battery's open circuit voltage monthly is needed, make sure the voltage in the same batch to be consistent or difference within permitted extent. Charge the batteries immediately if the voltage of the batteries under 3.0V. The regular self-discharge rate is less than 3% every month. Charge the batteries once per half a year.



7. CONTACT CONTROLS/PERSONAL PROTECTION

- Keep out of reach from children.
- Avoid contact with skin when the battery leak or rupture.
- Skin protection: Not necessary under normal use. Use rubber apron and protective working in case of handling of a ruptured battery.
- Eye protection: Not necessary under normal use. Wear safety goggles or glasses with side shields if handling a leaking or ruptured battery.
- Respiratory protection: Not necessary under normal use. In case of battery rupture, use self-contained full-face respiratory equipment.

8. PHYSICAL AND CHEMICAL PROPERTIES

a) Physical characteristics:

The lithium-ion rechargeable batteries are with sealed case, and under normal use and the seals remain intact, Winston LYP/LP series batteries are with no risk of explosion or fire. Only in case of abuse (i.e. over normal mechanical power, heat, electrical power and under the influence of external sources of ignition), which leads to the activation of the safety valve or the rupture of the battery container, which cause the electrolyte leak, electrode materials reaction with moisture/water or battery vent. In case of excessive internal pressure, Winston batteries design with a safety vent to protect the cell case from rupture.

b) Chemical Characteristics:

Classification of dangerous substances contained into the product as directive 67/548/EEC

Substance	Melting Point	Boiling Point	Classification				
			Exposure Limit	Indication Of Danger	Special Risk(1)	Safety Advice(2)	
CASNO	Chemical Formula						
12190-79-3	LiFeYPO4	>1000°C	N/A		R22 R43	S2 S22 S24 S26 S36 S37 S43 S45	
EC: 96-49-111 DMC:616-38-6 DEC:105-58-8 EA: 141-78-6	(DC-DMC DEC-EA) Organic Solution	EC: 38°C DMC: 4°C DEC: -43°C EA: -84°C	EC: 24°C DMC: 90°C DEC: 127°C EA: 77°C	Unfound OSHA	Inflammable	R21 R22 R41 R42 R43	S2 S24 S26 S36 S37 S45
21324-40-3	LiPF 6	N/A (Decomposing in 160°C)	N/A	Unfound OSHA	Stimulator Corrosion	R14 R21 R22 R41 R43	S2 S8 S22 S24 S26 S36 S37 S45

9. STABILITY AND REACTIVITY

- Conditions To Avoid: Heat above 85 °C or incinerate. Deform, mutilate, crush, disassemble, elongate or exposure to humid condition.
- Reaction of LiPF₆ with water to form Oxyfluoride and CO₂.
- Formation of Hydrogen fluoride (HF) and phosphorous oxides during fire.

10. TOXICOLOGICAL INFORMATION

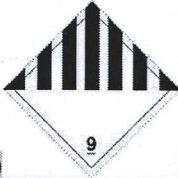
Winston lithium rechargeable battery does not contain toxic materials.

11. ECOLOGICAL INFORMATION

Under normal conditions of use till the end of the battery life, it can recycle and won't bring any pollution to the environment.

12. DISPOSAL CONSIDERATIONS

- a) Dispose in accordance with applicable regulations, which vary from country to country.
- b) Lithium-Ion batteries should have their terminals insulated and be preferably wrapped in individual plastic bags prior to disposal.
- c) Do not dispose of the battery into fire except for authorized agency.

13. TRANSPORT INFORMATION**Danger Sign:**

a) UN-NO.3480

ARD /RID:

Class 9 Packing Group II ADR/RID-Labels 9

Proper shipping name Lithium-ion batteries, UN3480

IMO:

Class Packing Group II IMO-Labels 9

Proper shipping name Lithium-ion batteries, UN3480

IATA-DGR:

Class Packing Group II ICAO-Labels 9

Proper shipping name Lithium-ion batteries, UN3480

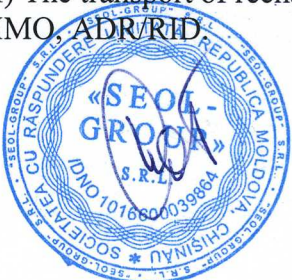
b) Winston Battery Ltd. declares that UN Manual of Tests and Criteria, Part III, sub-section 38.3 is met.

c) In airfreight, small Lithium-ion batteries (cells ≤ 20 WH or packs ≤ 100 WH) are considered as "Expected Lithium-ion Batteries", when they meet the requirements of Ed. 54 of IATA regulations (UN3480) and ICAO Packing Instruction 965 section II, specifying less than 35kg gross per package. Caption shipment can move as normal cargo under current IATA .

d) In other cases (mainly for large cells > 20 WH or packs > 100 WH), they are considered as Class 9. They must meet the requirements of DGR (See Packing Instruction PI965 section IA for airfreight).

e) In the shipping by sea , sealed Lithium-ion batteries are considered as " Lithium-ion Batteries-Not Restricted " , when they meet the requirements of IMDG of IMO Dangerous Goods Regulations (UN3480).

f) The transport of rechargeable lithium-ion batteries is regulated by various bodies, refer to: IATA, IMO, ADR/RID



No	ITEMS	RESULT	REMARKS
1	Altitude simulation	Pass	Test 1 to 5 must be conducted in sequence on the same cell or battery.
2	Thermal test	Pass	
3	Vibration	Pass	
4	Shock	Pass	
5	External short circuit	Pass	
6	Impact	Pass	Only battery do need this test
7	Overcharge	Pass	
8	Forced Discharge	Pass	

14. MANAGEMENT INFORMATION

a) Temperature range:

	Continuous	Instant
Storage	+25°C ±5°C	-45°C
Discharge	-25°C /+75°C	/+85°C
Charge	-25°C /+75°C	-45°C /+85°C

b) Specific Energy: (Note: Wh = Normal voltage x Rated Ah) kg = Average battery weight)

c) Specific Pulse Power: 600w-1200w/kg Varies depending upon size

d) Mechanical Resistance : As defined in relevant IEC standard

15. OTHER INFORMATION/DISCLAIMER

a) 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.

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