

Material Safety Data Sheet

Name of Sample: LITHIUM-ION BATTERY, Battery Model BL481,
48Vdc, 2.0Ah, 88.8Wh

Commissioner: Intradin (Shanghai) Machinery Co., Ltd

Shanghai Truron Testing Technology Co., Ltd



Material Safety Data Sheet

Section 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Name of goods	LITHIUM-ION BATTERY
Type/Mode	BL481
Nominal Parameter:	48Vdc, 2.0Ah, 88.8Wh
Nominal Capacity:	20000mAh
Manufacturer	Intradin (Shanghai) Machinery Co., Ltd
Manufacturer address	No. 118 Duhui Road, Minhang District, Shanghai 201109, China
Inspection according to	EEC Directive 93/112/EC UN "Recommendations on the TRANSPORT OF DANGEROUS GOODS"
Emergency telephone call	021-64908190-6665
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Approved by:

Sally Ren

Reviewed by:

Sally Ren

Tested by:

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Section 2. COMPOSITION INFORMATION

Chemical Composition	Chemical Formula	CAS No.	Weight (%) (About)
Nickel cobalt manganese lithium oxide	$\text{LiNi}_x\text{Co}_y\text{Mn}_{1-x-y}\text{O}_2$	1314-23-4	41
Graphite	C	7782-42-5	21
Electrolyte	LiPF ₆	21324-40-3	16
Copper foil	Cu	7440-50-8	12
Aluminum foil	AL	7429-90-5	5
Dissepiment	PP	9003-07-0	1
Polyvinylidene fluoride	$(\text{CH}_2\text{-CF}_2)_n$	24937-79-9	1
CMC(Adhesive)	$\text{C}_6\text{H}_7\text{O}_2(\text{OH})_3$	9004-32-4	1
Styrene-butadiene rubber (Adhesive)	$(\text{C}_8\text{H}_8.\text{C}_4\text{H}_6)_x$	25053-09-2	1
Conductive agent	/	/	3

Section 3. Hazards Identification

Explosive risk	This article does not belong to the explosion dangerous goods
Flammable risk	This article does not belong to the flammable material
Oxidation risk	This article does not belong to the oxidation of dangerous goods
Toxic risk	This article does not belong to the toxic dangerous goods
Radioactive risk	This article does not belong to the radiation of dangerous goods
Mordant risk	This article does not belong to the corrosion of dangerous goods
other risk	This article is Rechargeable lithium-ion battery , Watt hour rate 88.8Wh, which belongs to the Lithium ion batteries(including lithium polymer batteries)

Section 4. First aid measures

Ingestion: Give at least 2 glasses of milk or water. Induce vomiting unless patient is unconscious. Call a physician

Inhalation: Remove from exposure and move to fresh air immediately. Use oxygen if available.

Eye: Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

Skin: Remove contaminated clothes and rinse skin with plenty of water or shower for 15 minutes, Get medical aid.

Section 5. Fire-fighting measures

Flash Point: N/A.

Auto-Ignition Temperature: N/A.

Extinguishing Media: Water, CO2

Special Fire-Fighting Procedures: Self-contained breathing apparatus.

Unusual Fire and Explosion Hazards: Cell may vent when subjected to excessive heat-exposing battery contents.

Hazardous Combustion Products: Carbon monoxide, carbon dioxide, lithium oxide fumes.

Section 6. Accidental release measures

Steps to be taken in case Material is Released or Spilled

If the battery material is released, remove personnel from area until fumes dissipate. Provide maximum ventilation to clear out hazardous gases. Wipe it up with a cloth, and dispose of it in a plastic bag and put into a steel can. The preferred response is to leave the area and allow the battery to cool and vapors to dissipate. Provide maximum ventilation. Avoid skin and eye contact or inhalation of vapors. Remove spilled liquid with absorbent and contain for disposal.

Waste Disposal Method

Despite being rechargeable, the battery has a limited life span, Replace when usage time between charges becomes short.

Please offer all used batteries for recycling according with local guidelines and regulation. Do not throw in the trash.

Section 7. Handling and storage

The battery should not be opened, destroyed or incinerate, since they may leak or rupture and release to the environment the ingredients that they contain in the hermetically sealed container. Do not short circuit terminals, or over charge the battery, forced over-discharge, throw to fire. Do not crush or puncture the battery, or immerse in any liquids.

Precautions to be taken during handling and storage

Avoid mechanical or electrical abuse. Preferably storage in cool, dry and ventilated area, which is subject to little temperature change. Storage at high temperatures should be avoided. Do not place the battery near heating equipment, nor expose to direct sunlight for long periods.

Other Precautions

The battery may explode or cause burns, if disassembled, crushed or exposed to fire or high temperatures. Do not short circuit or install with incorrect polarity.

Section 8. Exposure controls/personal protection

Respiratory Protection: In case of battery venting, provide as much ventilation as possible. Avoid confined areas with venting cell cores. Respiratory Protection is not necessary under conditions of normal use.

Ventilation: Not necessary under conditions of normal use.

Protective Gloves: Not necessary under conditions of normal use.

Other Protective Clothing or Equipment: Not necessary under conditions of normal use.

Personal Protection is recommended for venting battery: Respiratory Protection, Protective Gloves, Protective Clothing and safety glass with side shields.

Section 9. Physical and chemical properties

Appearance: Square

Odour: If leaking, smells of medical ether.

PH: Not applicable as supplied.

Flash Point: Not applicable unless individual components exposed.

Flammability: Not applicable unless individual components exposed.

Relative density: Not applicable unless individual components exposed

Solubility (water): Not applicable unless individual components exposed

Solubility (other): Not applicable unless individual components exposed

Section 10. Stability and reactivity

Stability: Product is stable under conditions described in Section 7.

Conditions to Avoid: Heat above 70°C or incinerate, deform, mutilate, crush, disassemble, overcharge, short circuit or expose over a long period to humid conditions.

Materials to avoid: Oxidizing agents, alkalis, water.

Hazardous Decomposition Products: Toxic Fumes, and may form peroxides.

Hazardous Polymerization: N/A.

If leaked, forbidden to contact with strong oxidizers, mineral acids, strong alkalies or halogenated hydrocarbons.

Section 11. Toxicological information

Signs & symptoms: None, unless battery ruptures.

In the event of exposure to internal contents, vapour fumes may be very irritating to the eyes and skin.

Inhalation: Lung irritant.

Skin contact: Skin irritant.

Eye contact: Eye irritant

Ingestion: Poisoning if swallowed..

Medical conditions generally aggravated by exposure: In the event of exposure to internal contents, moderate to severe irritation, burning and dryness of the skin may occur, Target organs nerves, liver and kidneys.

Section 12. Ecological information

There is no influence to ecology and environment when used properly.

Section 13. Disposal consideration

Depleted batteries shouldn't be treated as ordinary trash. Worn out batteries must be discharged, placed in plastic bags and then put into recycle bin. Shouldn't be thrown into fire or placed in high temperature. Shouldn't be dissected, pierced, crushed or treated similarly. The package and plastic box which contain batteries could be treated as ordinary trash. Best way is recycling.

Section 14. Transport information

Label for conveyance	Li-ion battery label
UN Number	NONE
UN Proper shipping name	Lithium-ion batteries (Including lithium-ion polymer batteries)
Packing group	II
Marine pollutant	NO

Transport information

Rechargeable lithium-ion battery (Model: BL481) is compliant with UN38.3 test requirement. The goods are complied with the requirements of Section IA of Packing Instructions 965 of 60th DGR Manual of IATA (2019 edition), Packing Instruction 903 of IMDG CODE (Amdt. 38-16) (2016 Edition), including the passing of the UN38.3 test.

Batteries must be packaged and offered for transportation in a manner that prevents the dangerous evolution of heat (for example, by the effective insulation of exposed terminals) and protects against short circuits.

Section 15. Regulation information

Law information

《Dangerous Goods Regulations》
《Recommendations on the Transport of Dangerous Goods Model Regulations》
《International Maritime Dangerous Goods》
《Technical Instructions for the Safe Transport of Dangerous Goods》
《Classification and code of dangerous goods》
《Occupational Safety and Health Act》 (OSHA)
《Toxic Substance Control Act》 (TSCA)
《Consumer Product Safety Act》 (CPSA)
《Federal Environmental Pollution Control Act》 (FEPCA)
《The Oil Pollution Act》 (OPA)
《Superfund Amendments and Reauthorization Act TitleIII (302/311/312/313)》 (SARA)
《Resource Conservation and Recovery Act》 (RCRA)
《Safety Drinking Water Act》 (CWA)
《California Proposition 65》
《Code of Federal Regulations》 (CFR)
In accordance with all Federal, State and local laws.

Section 16. Other information



This information is not effective to all the batteries manufactured by Intradin (Shanghai) Machinery Co., Ltd. This information comes from reliable sources, but no warranty is made to the completeness and accuracy of information contained. Shanghai Truron Testing Technology Co., Ltd doesn't assume responsibility for any damage or loss because of misuse of batteries. Users should grasp the correct use method and be responsible for the use of batteries.