Technical Data Sheet

SEACRAFT Lithium-Ion Battery Pack
Battery Voltage: 32,4V
Battery Capacity: 750Wh (23Ah), 1000Wh (31Ah), 1500Wh (46Ah), 2000Wh (62Ah) and others, with all unique numbers

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

Product Name:
Lithium-Ion Battery Pack—Rechargeable

Model Number: 70209081 (32,4V 750Wh, 4,9kg)
70209092 (32,4V 1000Wh, 5,5kg)
700509171 (32,4V 1500Wh, 9,3kg)
700509202 (32,4V 2000Wh, 10,5kg)

Issue Date: May 2017

Company:
MARINE TECH SA
ul. Franciszka Żwirki i Stanisława Wigury 17, 38-400 Krosno

Company Phone Number: +48 502 741 715

Emergency Contact Number:

(International): +48 502 741 715

SECTION 2: HAZARDS IDENTIFICATION

Refer to battery cell SDS for more information.

No exposure to hazards during routine handling of product.

⚠ **WARNING:**

- To reduce the risk of injury, user must read operator's manual.
- Risk of fire and burns.
- Do not open, crush, heat above 50°C, incinerate, or short terminals.
- Follow manufacturer's instructions.
- Use only with charger listed in operator's manual.
- Remove battery from tool when storing, changing attachments, or making adjustments.
- To reduce the risk of explosion and possible injury, do not place battery near fire or heat.
- Do not crush, drop, or damage battery pack.
- Do not use a battery pack that has been dropped or received a sharp blow. A damaged battery is subject to explosion. Properly dispose of a dropped or damaged battery immediately.
- Under extreme usage or temperature conditions, battery leakage may occur. If fluid comes in contact with your skin, wash immediately with soap and water. If fluid gets into your eyes, flush them with clean water for at least 10 minutes, then seek immediate medical attention. Following this rule will reduce the risk of serious personal injury.
- Battery cells and battery pack assembly will burn if incinerated.

SECTION 3: COMPOSITION/INFORMATION OF INGREDIENTS

Refer to battery cell SDS for more information.

SECTION 4: FIRST AID MEASURES

Refer to battery cell SDS for more information.

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- Under extreme usage or temperature conditions, battery leakage may occur. If fluid comes in contact with your skin, wash immediately with soap and water. If fluid gets into your eyes, flush them with clean water for at least 10 minutes, then seek immediate medical attention. Following this rule will reduce the risk of serious personal injury.
- Battery cells and battery pack assembly will burn if incinerated.
- No exposure during routine handling of product. Risk of exposure occurs only if the battery is mechanically or electrically abused.
- No effect under routine handling and use to eyes, skin, or if inhaled. Ingestion is not likely, given the physical size and state of the cell. If swallowed, seek medical attention immediately.
- If exposure to internal materials within cell due to damaged outer casing, the following actions are recommended:

EYE CONTACT:

Flush with water for 10 minutes without rubbing and immediately seek medical attention.

SKIN CONTACT:

Wash area immediately with soap and water. If irritation continues, seek medical attention.

INHALATION:

Leave area immediately, move to fresh air, and seek medical attention.

INGESTION:

If swallowed, contact POISON CONTROL CENTER immediately.

SECTION 5: FIRE FIGHTING MEASURES

Refer to battery cell SDS for more information.

SECTION 6: ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS:

- Use standard industrial clothing in normal use.
- If handling large containers of cells, wear steel-toed footwear.

ENVIRONMENTAL PRECAUTIONS:

No special precautions necessary.

METHODS FOR CONTAINMENT:

- Transport container outdoors.
- Always consult and obey all international, federal, and local environmental laws.

METHODS FOR CLEANUP:

No data available

OTHER INFORMATION:

No data available

SECTION 7: HANDLING AND STORAGE

HANDLING:

- Use only approved charging equipment.
- Do not disassemble battery or battery pack.
- Do not puncture, crush, or dispose of in fire.

STORAGE:

To obtain the longest possible battery life, we suggest the following:

- Remove the battery pack from the charger once it is fully charged and ready for use. For battery pack storage longer than 30 days:
- Store the battery pack where the temperature is 10- 27°C and away from moisture.
- Store battery packs in a 30%-50% charged condition.
- Every six months of storage, charge the pack as normal.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Refer to battery cell SDS for more information.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Battery pack consists of battery cells assembled in resin enclosure and is a solid odorless product that will burn if incinerated.

SECTION 10: STABILITY AND REACTIVITY

Refer to battery cell SDS for more information.

No exposure to hazards during routine handling of product.

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- Risk of fire and burns.
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- Follow manufacturer's instructions.
- Use only with charger listed in operator's manual.
- Remove battery from tool when storing, changing attachments, or making adjustments.
- To reduce the risk of explosion and possible injury, do not place battery near fire or heat.
- Do not crush, drop, or damage battery pack.
- Do not use a battery pack that has been dropped or received a sharp blow. A damaged battery is subject to explosion. Properly dispose of a dropped or damaged battery immediately.
- Under extreme usage or temperature conditions, battery leakage may occur. If fluid comes in contact with your skin, wash immediately with soap and water. If fluid gets into your eyes, flush them with clean water for at least 10 minutes, then seek immediate medical attention. Following this rule will reduce the risk of serious personal injury.
- Battery cells and battery pack assembly will burn if incinerated.

SECTION 11: TOXICOLOGY INFORMATION

Refer to battery cell SDS for more information.

No exposure to hazards during routine handling of product.

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- To reduce the risk of injury, user must read operator's manual.
- Risk of fire and burns.
- Do not open, crush, heat above 50°C, incinerate, or short terminals.
- Follow manufacturer's instructions.
- Use only with charger listed in operator's manual.
- Remove battery from tool when storing, changing attachments, or making adjustments.
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- Do not crush, drop, or damage battery pack.
- Do not use a battery pack that has been dropped or received a sharp blow. A damaged battery is subject to explosion. Properly dispose of a dropped or damaged battery immediately.
- Under extreme usage or temperature conditions, battery leakage may occur. If fluid comes in contact

with your skin, wash immediately with soap and water. If fluid gets into your eyes, flush them with clean water for at least 10 minutes, then seek immediate medical attention. Following this rule will reduce the risk of serious personal injury.

- Battery cells and battery pack assembly will burn if incinerated.

SECTION 12: ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION:

None in routine handling of product.

TOXICITY:

No data available

PERSISTENCE AND DEGRADABILITY (BIOPERSISTENCY & BIODEGRADABILITY):

None in routine handling of product.

POTENTIAL OF BIOACCUMULATION:

None in routine handling of product.

MOBILITY IN SOIL:

None in routine handling of product.

OTHER ADVERSE EFFECTS:

No data available

DISPOSAL:

Follow guidelines in Section 13.

SECTION 13: DISPOSAL CONSIDERATIONS

This product contains Lithium-ion batteries. Local, state or federal laws may prohibit disposal of batteries in ordinary trash. Consult your local waste authority for information regarding available recycling and/or disposal options.

DISPOSAL:

- Dispose in accordance with appropriate regulations.
- Always consult and obey all international, federal, provincial/state, and local hazardous waste disposal laws. Some jurisdictions require recycling of this spent product. Battery recycling is encouraged.
- Lithium-ion batteries are safe for disposal in the normal municipal waste stream since they are not defined by the federal government as hazardous waste. However, Lithium-ion batteries are recyclable.
- To preserve natural resources, please recycle or dispose of batteries properly.

WARNING:

- Upon removal, cover the battery pack's terminals with heavy-duty adhesive tape.
- Do not attempt to destroy or disassemble battery pack or remove any of its components.
- Batteries must be recycled or disposed of properly.

- Also, never touch both terminals with metal objects and/or body parts as short circuit may result.
- Keep away from children. Failure to comply with these warnings could result in fire and/or serious injury.
- This product does not contain mercury, cadmium or Lithium (metal).
- DO NOT INCINERATE battery cells.

SECTION 14: TRANSPORTATION INFORMATION

U.S. DOT Hazardous Material Regulations (Re: Ground Transport)

UN3480 Lithium-ion batteries over 101 watt hours or UN3481 Lithium-ion batteries packed with equipment over 101 watt hours when packaged correctly can travel under 49 CFR 173.185 when traveling by ground in the continental U.S.

Canada Transport Dangerous Goods (Re: Ground Transport)

UN3480 Lithium-ion batteries over 101 watt hours or UN3481 Lithium-ion batteries packed with equipment over 101 watt hours when traveling by ground in Canada must be declared as Dangerous Goods. The batteries must be packaged according to Packing Instruction 965. The following labels must be on the package: DG9 diamond, Red Bordered Lithium-ion warning label (ICAO). The package must also include a UN3480 Lithium-ion batteries label or a UN3481 Lithium-ion batteries with equipment label with the net weight of the batteries in kgs. The BOL must also state UN3480, Lithium-ion batteries,9,PGII or UN3481 Lithium-ion batteries packed with equipment,9,PGII.

International Dangerous Goods Regulations (Re: Air, Sea, Ground Transport)

UN3480 Lithium-ion batteries over 101 watt hours or UN3481 Lithium-ion batteries over 101 watt hours packed with equipment when shipped by sea will be considered Class 9 Dangerous Goods must be packaged according to Packing Instruction 965, and contain the following labels: DG9 diamond, Red Bordered Lithium-ion warning label (ICAO).

UN3480 Lithium-ion batteries over 101 watt hours or UN3481 Lithium-ion batteries over 101 watt hours packed with equipment when shipped by air will be considered Class 9 Dangerous Goods must be packaged according to Packing Instruction 965, and contain the following labels: DG9 diamond, Red Bordered Lithium-ion warning label (ICAO), Cargo Aircraft Only.

This rechargeable Lithium-ion battery has passed the relevant transportation test requirements as described in the UN Manual of Tests and Criteria, Part III, section 38.3. UN 38.3 Test Reports are maintained by the company.

SECTION 15: REGULATORY INFORMATION

Compliant with, relevant transportation test requirements as described in the UN Manual of Tests & Criteria, Part lll, Sub section 38.3.

CALIFORNIA PROPOSITION 65 WARNING:

This product may contain chemicals, including lead, known to the State of California to cause cancer, birth defects or other reproductive harm. Wash hands after handling.

SECTION 16: OTHER INFORMATION

The information contained within this document is provided for your information only. In case of any discrepancy, the information provided in the battery cell Safety Data Sheet takes precedence over the information provided in the battery pack Technical Data Sheet.

Prepared by: MARINE TECH SA.

The batteries referenced herein are considered exempt articles and are not subject to the OSHA Hazard Communication Standard; therefore an SDS is not required. This sheet is being provided as a service to our customers.

The information and recommendations set forth are made in good faith and believed to be accurate as of the date of preparation. MARINE TECH SA makes no warranty, expressed or implied, regarding the accuracy of this data or the results to be obtained from the use thereto.

Safety data sheet (SDS) for product

1. PRODUCT AND COMPANY IDENTIFICATION
Product name: Lithium ion rechargeable battery cell Product code: None
(All models Sanyo manufactured and whose capacity is less than or equal to 5.4Ah, including the cell branded as Panasonic, excluding the cell whose shape is prismatic and two or more short / middle / long side excess 12mm/85mm/110mm.)
Company name: Sanyo Electric Co., Ltd., Panasonic group
Address: 222-1 , Kaminaizen, Sumoto City, Hyogo, Japan Telephone number: +81-799-24-4111
Fax number: +81-799-23-2879

Emergency telephone number: [Weekday] +81-799-23-3931 [Night and holiday] +81-799-24-4131

2. HAZARDS IDENTIFICATION
For the battery cell, chemical materials are stored in a hermetically sealed metal or metal laminated plastic case, designed to withstand temperatures and pressures encountered 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 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, hazardous materials may be released.
Moreover, if heated strongly by the surrounding fire, acrid gas may be emitted.

GHS classification: Not available
(This product is outside the scope of GHS system since it's considered as an "article".)

Most important hazard and effects Human health effects:

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.
Environmental effects: Since a battery cell remains in the environment, do not throw out it into the environment.

Specific hazards:

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.

3. COMPOSITION / INFORMATION ON INGREDIENTS Substance or preparation: Preparation

Information about the chemical nature of product: *1

Portion	Material name	CAS No.	Concentration range (wt %)
Positive electrode	Lithium transition metal oxidate ($Li[M]_m[O]_n$ *2)	12190-79-3 12057-17-9 182442-95-1	20~60

Positive electrode's base	Aluminum	7429-90-5	1~10
Negative electrode	Carbon	7782-42-5 7440-44-0	10~30
Negative electrode's base	Copper	7440-50-8	1~15
Electrolyte	Ethyl methyl carbonate Diethyl carbonate Ethylene carbonate	623-53-0 105-58-8 96-49-1	5~25
Outer case	Aluminum, iron, aluminum laminated plastic	7429-90-5 7439-89-6	1~30

**1 Not every product includes all of these materials.*

**2 The letter M means transition metal and candidates of M are Co, Mn, Ni and Al. One compound includes one or more of these metals and one product includes one or more of the compounds. The letter m and n means the number of atoms.*

4. FIRST-AID MEASURES

Spilled internal cell materials 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.

A battery cell and spilled internal cell materials

Ingestion:

Make the victim vomit. When it is impossible or the feeling is not well after vomiting, seek medical attention.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media: Plenty of water, carbon dioxide gas, nitrogen gas, chemical powder fire extinguishing medium and fire foam.

Specific hazards: Corrosive gas may be emitted during fire.

Specific methods of fire-fighting: When the battery burns with other combustibles simultaneously, take fire-extinguishing method which correspond to the combustibles. Extinguish a fire from the windward as much as possible.

Special protective equipment for firefighters:

Respiratory protection: Respiratory equipment of a gas cylinder style or protection-against-dust mask
Hand protection: Protective gloves
Eye protection: Goggle or protective glasses designed to protect against liquid splashes Skin and body protection: Protective cloth.

6. ACCIDENTAL RELEASE MEASURES

Spilled internal cell materials, such as electrolyte leaked from a battery cell, are carefully dealt with according to the followings.

Precautions for human body:

Remove spilled materials with protective equipment (protective glasses and protective gloves). Do not inhale the gas as much as possible. Moreover, avoid touching with as much as possible.

Environmental precautions: Do not throw out into the environment.

Method of cleaning up: The spilled solids are put into a container. The leaked place is wiped off with dry cloth.

Prevention of secondary hazards: Avoid re-scattering. Do not bring the collected materials close to fire.

7. HANDLING AND STORAGE

Handling suggestions

Do not connect the positive terminal to the negative terminal with electrical wire or chain. Avoid polarity reverse connection when installing the battery to an instrument.

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.

Storage

Do not store the battery with metalware, water, seawater, strong acid or strong oxidizer.
Make the charge amount 30~50% then store at room temperature or less (temperature= -20~35 degree C) in a dry (humidity: 45~85%) place. Avoid direct sunlight, high temperature, and high humidity.
Use insulative and adequately strong packaging material to prevent short circuit between positive and negative terminal when the packaging breaks during normal handling. Do not use conductive or easy to break packaging material.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION (WHEN THE ELECTROLYTE LEAKS)

Control parameters

ACGIH has not been mentioned control parameter of electrolyte.

Personal protective equipment

Respiratory protection: Respirator with air cylinder, dust mask
Hand protection: Protective gloves
Eye protection: Goggles or protective glasses designed to protect against liquid splashes
Skin and body protection: Working clothes with long sleeve and long trousers

9. PHYSICAL AND CHEMICAL PROPERTIES Appearance

Physical state: Solid
Form: Cylindrical or Prismatic or Pouch (laminated)
Color: Metallic color or black(without tube if it has tube) Odor: No odor

10. STABILITY AND REACTIVITY

Stability: Stable under normal use

Hazardous reactions occurring under specific conditions

Conditions to avoid: When a battery cell is exposed to an external short-circuit, crushes, deformation, high temperature above 100 degree C, it will be the cause of heat generation and ignition. Direct sunlight and high humidity.
Materials to avoid: Conductive materials, water, seawater, strong oxidizers and strong acids. Hazardous decomposition products: Acrid or harmful gas is emitted during fire.

11. TOXICOLOGICAL INFORMATION

Organic Electrolyte

Acute toxicity:

LD_{50}, oral - Rat 2,000mg/kg or more Irritating nature: Irritative to skin and eye.

12. ECOLOGICAL
INFORMATION
Persistence/degradability:

Since a battery cell and the internal materials remain in the environment, do not bury or throw out into the environment.

13. DISPOSAL CONSIDERATIONS
Recommended methods for safe and environmentally preferred disposal:
Product (waste from residues)

Specified collection or disposal of lithium ion battery is required by the law like as "battery control law" in several nations. Collection or recycle of the battery is mainly imposed on battery's manufacturer or importer in the nations recycle is required.

Contaminated packaging

Neither a container nor packing is contaminated during normal use. When internal materials leaked from a battery cell contaminates, dispose as industrial wastes subject to special control.

14. TRANSPORT INFORMATION

In the case of transportation, avoid exposure to high temperature and prevent the formation of any condensation. Take in a cargo of them without falling, dropping and breakage. Prevent collapse of cargo piles and wet by rain. The container must be handled carefully. Do not give shocks that result in a mark of hitting on a cell. Please refer to Section 7-HANDLING AND STORAGE also.

UN regulation

- UN number: 3480 (3481 when the battery is contained in equipment or packed with equipment)
- Proper shipping name:
  Lithium ion batteries ("lithium ion batteries contained in equipment" or "lithium ion batteries packed with equipment")
- Class: 9 *

** Although this product meets the criteria of "dangerous goods" and are classified as "lithium ion batteries", depending on the battery's total capacity in the packaging, etc., they may not be subject to the fully regulated provisions.*

Regulation depends on region and transportation mode

- Worldwide - Air transportation:
  ICAO/IATA-DGR [packing instruction 965 section IB or II]

  (When shipping batteries "packed with" or "contained in" equipment, use packing instruction 966 or 967 as appropriate.)
- Worldwide - Ocean transportation:

  IMO-IMDG Code [special provision 188]
- Europe - Ground
  transportation: ADR
  [special provision 188]

** Instructions or provisions in the box brackets are conditions to make the battery cell exempted from full regulation.*

15. REGULATORY INFORMATION

Regulations specifically applicable to the product:

Wastes Disposal and Public Cleaning Law
[Japan]

Law for Promotion of Effective Utilization of resources [Japan]
US Department of Transportation 49 Code of Federal Regulations [USA]

** About overlapping regulations, please refer to Section 14-TRANSPORT INFOMATION.*

16. OTHER INFORMATION

- This safety data sheet is offered an agency who handles this product to handle it safely.
- The agency should utilize this safety data sheet effectively (put it up, educate person in charge) and take proper measures.
- ***The information contained in this Safety data sheet is based on the present state of knowledge and current legislation.***
- This safety data sheet provides guidance on health, safety and environmental aspects of the product and should not be construed as any guarantee of technical performance or suitability for particular applications.

Reference

Dangerous Goods Regulations – 58th Edition Effective 1 January 2017: International Air Transport Association (IATA)

IMDG Code – 2016 Edition: International Maritime Organization (IMO)
The European Agreement concerning the International Carriage of Dangerous Goods by Road – 2017: The United Nations Economic Commission for Europe (UNECE)

First edition: Apr. 28, 2010
Prepared and approved by: Technology Planning Department

Rechargeable Battery Business Division Sanyo Electric Co., Ltd.
Panasonic group