

Safety Data Sheet

Mastervolt MLI-E 12/1200

1. IDENTIFICATION OF THE PRODUCT AND THE COMPANY	
1.1 Product: Rechargeable Li-ion battery	
Part number:	66011200
Description:	Mastervolt MLI-E 12/1200
Synonyms:	Secondary (Rechargeable) Li-ion battery, Lithium Iron Phosphate Battery, Energy Lithium Ion Battery Cells, Phosphate Based
Specifications:	1200Wh, 90Ah, 13,2V
Chemical name:	Lithium Iron Phosphate
Chemical family:	Lithium Ion
Chemical formula:	LiFePO4
Each MLI-E 12/1200 Li-ion battery contains 240 lithium cells of 42 grams each.	
1.2 Supplier	
EU: Mastervolt BV Snijdersbergweg 93, 1105AN Amsterdam The Netherlands tel: INT. +31 20 3422100 info@mastervolt.com	USA: Power Products, LLC N85 W12545 Westbrook Crossing Menomonee Falls , WI 53051 United States of America Tel. 262-293-0600
1.3 Emergency contact	
EU: tel: INT. +31 20 3422100	USA: tel: INT. +1 262-293-0600

2. HAZARDS IDENTIFICATION
<p>Emergency overview The Rechargeable Li-ion battery cells described in this Safety Data Sheet are sealed units which are not hazardous when used according to the recommendations of the manufacturer. The battery should not be disassembled or incinerated. Exposure to the ingredients contained within or their combustion products could be harmful.</p> <p>Appearance, color, and odor: Solid object, no odor.</p> <p>Routes of entry Risk of exposure will only occur if the battery cell is mechanically, thermally, or electrically abused and the enclosure is compromised. If this occurs, exposure to electrolyte solutions contained within the battery cell may occur by inhalation, eye contact, skin contact and ingestion.</p> <p>Potential health effects Eyes: Contact between the battery and eye will not cause any harm. Eye contact with the contents of a ruptured battery can cause severe irritation to the eye. Skin: Contact between the battery and skin will not cause any harm. Skin contact with positive and negative terminals of high voltages may cause burns to the skin. Skin contact with a ruptured battery can cause skin irritation. Ingestion: Swallowing of material from a sealed battery is not an expected route of exposure. Swallowing mists from a ruptured battery may cause respiratory irritation, chemical burns of the mouth and gastrointestinal tract irritation. Inhalation: Inhalation of material from a sealed battery is not an expected route of exposure. Vapors or mists from a ruptured battery may cause respiratory irritation.</p> <p>Medical conditions generally aggravated by exposure: Not Available</p>

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3. COMPOSITION / INFORMATION ON INGREDIENTS

Under normal use, this battery is not expected to expose user to hazardous ingredients. USA: This battery is an article pursuant to 29 CFR. 1910.1200 and, as such, is not subject to the OSHA Hazard Communication Standard requirement. The information contained in this Material Safety Data Sheet contains valuable information critical to the safe handling and proper use of the product. This MSDS should be retained and available for employees and other users of this product.

Canada: This is not a controlled product under WHMIS. This product meets the definition of a “manufactured article” and is not subject to the regulations of the Hazardous Products Act.

4. FIRST AID MEASURES

Eyes: Wash affected eye with lukewarm water for at least 30 minutes. Rinse with saline solution if possible. Seek medical attention.

Skin: Wash affected area with lukewarm water for at least 30 minutes. If irritation or pain persists, seek medical attention.

Ingestion: Move victim to fresh air and remove source of contamination from area. Seek medical attention.

Inhalation: Move victim to fresh air and remove source of contamination from area. Seek medical attention.

Caution: In all cases if irritation persists, seek medical assistance at once.

5. FIRE-FIGHTING MEASURES

Extinguishing media: Water, carbon dioxide, dry chemical powder and foam are most effective means to extinguish a battery fire.

Firefighting procedure: Put on fully protective gear, including self-contained breathing apparatus, goggles, fireproofing jacket and gloves

Unusual fire and explosion hazards: Exposing battery cell to excessive heat, fire or over voltage condition may cause a leak, fire, hazardous vapors and hazardous decomposition products. Damaged or opened cells or batteries can result in rapid heating and the release of flammable vapors.

6. ACCIDENT RELEASE MEASURES

Accident release measures:

The material contained within the batteries cells is only expelled under abusive conditions. Use a shovel and cover battery with sand or vermiculite, place in an approved container and dispose in accordance with section 13.

7. HANDLING AND STORAGE

The Rechargeable Li-ion battery cells should not be opened or destroyed nor incinerate since they may leak and release in the environment the ingredients they contain.

Handling: The Li-ion battery must be transported in its original or equivalent (i.e. non-conductive) packaging and in an upright position. Do not place upside down or on its side. Do not expose battery or cell to extreme temperatures or fire. Do not disassemble, crush or puncture battery. Never lift the battery at the terminals. Only lift the battery at the handles.

Storage: Keep Li-ion battery its original or equivalent (i.e. non-conductive) packaging. Store the Li-ion battery in a cool and ventilated area away from moisture, sources of heat and open flames. Keep adequate clearance between walls and batteries. Insulate positive and negative terminals to avoid short circuit. Elevated temperatures can result in reduced battery life.

Other: Follow manufacturer’s instructions for use and installation as described in the User’s manual that is supplied with the Li-ion Battery

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8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Respiratory protection: Not necessary under normal use. In case of battery or cell rupture, use a self contained full face respiratory mask.

Eye protection: Not necessary under normal use. Wear safety goggles if handling a ruptured or leaking battery cell.

Hand protection: Not necessary under normal use. Wear Viton rubber gloves if handling a ruptured or leaking battery cell.

Skin protection: Not necessary under normal use. Wear rubber apron and Viton rubber gloves if handling a ruptured or leaking battery cell.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Solid	Odor Type:	Odorless
Appearance:	Battery	Odor Threshold:	Not applicable
pH:	Not applicable	Evaporative Rate: (n-Butyl Acetate = 1)	Not applicable
Relative Density:	Not applicable	Auto Ignition Temperature (°C):	Not applicable
Boiling Point:	Not applicable	Flammability Limits (%):	Not applicable
Melting Point:	Not applicable	Vapor Pressure: (mm Hg @ 20 °C)	Not applicable
Viscosity:	Not applicable	Vapor Density: (Air = 1)	Not applicable
Oxidizing Properties:	Not applicable	Solubility in Water:	Insoluble
Flash Point and Method (°C):	Not applicable	Water/ Oil distribution coefficient:	Not applicable

10. STABILITY AND REACTIVITY

Stability: Stable

Conditions to avoid: Avoid exposing battery to high temperatures or fire. Do not incinerate, deform, mutilate, crush, pierce, short circuit or disassemble.

Materials to avoid: Not applicable.

Hazardous decomposition products: Combustible vapors may be released if exposed to fire.

Possibility of Hazardous Reactions: Not available.

11. TOXOLOGICAL INFORMATION

Irritation: Risk of irritation only occurs if battery cells are mechanically, thermally or electrically abused and the enclosure is compromised.

Neurological Effects: Not applicable.

Sensitization: Not applicable.

Teratogenicity: Not applicable.

Reproductive Toxicity: Not applicable.

Mutagenicity (Genetic Effects): Not applicable.

Toxicologically Synergistic Materials: Not available

12. ECOLOGICAL INFORMATION

Bioaccumulative potential: Not available.

Persistence and degradability: Not available.

Mobility: Not available.

Ecotoxicity: Not available.

Other adverse effects: Not available.

When properly used and disposed (i.e. in accordance with the directions stated in the User's manual), Mastervolt MLI-E 12/1200 Li-Ion battery can be recycled and do not present environmental hazard during and after their life time.

13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD: Dispose in accordance with the applicable regulations which vary from country to country. Refer to the directions in the User's manual. Avoid short circuits! The terminals of the Mastervolt MLI-E 12/1200 Li-Ion battery and/or Li-ion battery cells must be insulated prior to disposal. Do not dispose of the Li-ion batteries and/or Li-ion battery cells into fire. Spent batteries may not be mixed with domestic or industrial waste but must be collected and recycled separately. Contact your supplier for recollection and recycling of batteries or contact an authorized waste management company.

USA: Dispose of in accordance with local, state and federal laws and regulations.

Canada: Dispose of in accordance with local, state and federal laws and regulations.

EC: Dispose of in accordance with relevant EC Directives.

14. TRANSPORTATION

Mastervolt MLI-E 12/1200 Li-Ion battery and/or Li-ion battery cells must be transported in its original or equivalent package and in an upright position. Never lift the battery at the terminals. Only lift the battery at the handles. The batteries must be protected against short circuits, slipping, upsetting or damaging.

14.1 Transportation information

Mastervolt Rechargeable Li-ion batteries are tested according to UN Manual of Tests and Criteria, Part III, subsection 38.3. Use Class 9 Miscellaneous Dangerous Goods and UN Identification labels for transportation of lithium ion batteries which are assigned Class 9. Refer to relevant transportation documents. Lithium and lithium ion cells and batteries are regulated in the U.S. in accordance with Part 49 of the Code of Federal Regulations, (49 CFR Sections 105-180) of the U.S. Hazardous Materials Regulations.



Safety Data Sheet**14.2 Transport classification****Air transport (ICAO/IATA):**

UN 3480 Lithium ion batteries, Class 9, packing instruction 965, Section IA

Rail transport (RID):

UN 3480 Lithium ion batteries, Class 9, packing instruction P903

Road transport (ADR):

UN 3480 Lithium ion batteries, Class 9, packing instruction P903

Sea transport (IMDG code):

UN 3480 Lithium ion batteries, Class 9, packing instruction P903

Note: Damaged or defective or waste lithium ion batteries are forbidden for transport by air.

These batteries can only be transported by road, rail or sea in compliance with packaging instruction P908 of the applicable transport regulation for damaged or defective batteries or packing instruction P909 for batteries which are shipped for disposal or recycling.

15. REGULATORY INFORMATION**USA**

TSCA Status: All ingredients in the product are listed on the TSCA inventory.

SARA Title III: Sec. 302/304: None
Sec. 311/312: None
Sec. 313: None
CERCLA RQ: None

California Prop 65: This product contains DEHP and other chemicals known to the State of California to cause cancer and birth defect, or other reproductive harm. For more information go to www.P65Warnings.ca.gov

Canada

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

WHMIS Classification: Not Controlled

New Substance Notification Regulations: Lithium hexafluorophosphate is listed on the NDSL. All other ingredients in the product are listed, as required, on Canada's Domestic Substances List (DSL).

NPRI Substances (National Pollutant Release Inventory): This product does not contain any NPRI chemicals.

European Union**EC Classification for the Substance/ Preparation**

Symbol: This product is not classified as dangerous according to Directive 1999/45/EC and it's amendments.

Risk Phrases: None.

Safety Phrases: S2: Keep out of the reach of children.

EU directives. The following EU directives are applicable for the Mastervolt MLI-E 12/1200 Li-Ion battery:

2006/66/EC: Battery directive
2011/65/EU: RoHS Directive
2014/30/EU: EMC directive
2014/35/EU: Low Voltage Directive

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EINECS Status:

Cell component	Chemical name	CAS No.	EINECS	Concentration range in electrolyte (w/w %)	Mass range in cell (g/g %)
Electrolyte salt	Lithium hexafluorophosphate	21324-40-3	244-334-7	10 - 20	1 - 5
Electrolyte solvents	Includes one or more of the following: Ethylene Carbonate Propylene Carbonate Diethyl Carbonate Dimethyl Carbonate Ethyl Methyl Carbonate	96-49-1 108-32-7 105-58-8 616-38-6 623-53-0	202-510-0 203-572-1 203-311-1 210-478-4 Not Listed	80 - 90	10 - 20

16. OTHER INFORMATION/DISCLAIMER

Avoid mechanical or electrical abuse. DO NOT short circuit or install incorrectly. The Li-ion battery may explode, pyrolize or vent if disassembled, crushed, recharged incorrectly or exposed to high temperatures. Install and use the Li-ion battery in accordance with the instructions provided in the user's manual.

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