MSDS REPORT

SECTION 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name:	Lithium-ion Battery
Model:	Next Level Systems, 12V, 180Ah
EAN Code:	4262501720290
Item Code:	12180L210
Specification:	180Ah, 12V
Weight:	17,9kg
Dimensions:	353 x 190 x 175 mm (L x H x W)
Supplier:	Next Level Systems GmbH
Address:	Ostendstrasse 111, 90482 Nürnberg
Contact Person:	Laura Kräutner
Phone:	+49 176 80670708
E-Mail:	info@next-level-systems.com

SECTION 2: COMPOSITION INFORMATION

Chemical Composition	Concentration (%)	CAS Number
Iron Lithium Posphate (LiFePO4)	24	15365-14-7
Graphite (C)	10 – 30	21324-40-3
Lithium hexafluorophosphate (LiPF6)	23	21324-40-3
Aluminum Foils (Al)	5 – 10	7429-90-5
Copper Foils (Cu)	7 – 13	7440-50-8
Nickel (Ni)	1 -5	7440-02-0

SECTION 3: HAZARDS IDENTIFICATION

Emergency Overwiev:	Not appliable
Label elements:	
Hazard pictogram (s):	Not applicable
Signal word:	Not applicable

Hazard Statement (s):	Not applicable
Precautionary Statement (s):	
Prevention:	Not applicable
Response:	Not applicable
Disposal:	Not applicable
Environmental hazards:	No relevant information.
Important symptoms:	See section 11 for more information.

SECTION 4: FIRST AID MEASURES

Eye contact:	Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.
Skin contact:	Remove contaminated clothes and rinse skin with plenty of water or shower for 15 minutes. Get medical aid.
Inhalation:	Remove from exposure and move to fresh air immediately. Use oxygen if available.
Ingestion:	Give at least 2 glasses of milk or water. Induce vomiting unless patient is unconscious. Call a physician.

SECTION 5: FIRE FIGHTING MEASURES

Flash Point:	Not applicable
Auto-Ignition Temperature:	Not applicable
Extinguishing Media:	Hydrocarbon surfactant, CO2
Special Fire-Fighting Procedures:	Self-contained breathing apparatus
Unsusual Fire and Explosion Hazards:	Cell may vent when subjected to excessive heat-composing battery contents.
Hazardous Combustion Products:	Carbon monoxide, carbon dioxide, lithium oxide fumes.

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SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures:
If the battery is released, remove personnel from area until fumes dissipate. Provide maximum ventilation to clear out hazardous gases. The preferred response is to leave the area and allow the vapors to dissipate, Avoid skin and eyes contact or inhalation of vapors. Remove spilled liquid with absorbent and incinerated. If leakage of the battery happens, liquid could be absorbed by using sand, earth or other inert substance and contaminated area should be ventilated meantime.

Environment precautions:
Do not allow product to reach sewage system or any water source.
Inform respective authorities in case of seepage into water course or sewage system.
Do not allow to enter sewers/ surface or ground water.

Methods and material for containment and cleaning up:
If battery casing is dismantled, small amounts of electrolyte may leak. Collect all released material in a plastic lined container. Dispose off according to the local law and rules, Avoid leached substances to get into the earth, canalization or waters.

SECTION 7: HANDLING AND STORAGE

Handling:	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 liquids.
Storage	Avoid mechanical or electrical abuse. Storage preferably 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 or install with incorrect polarity.

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SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls:	Use local exhaust ventilation or other engineering controls to control sources of dust, mist, fumes and vapor. Keep away from heat and open flame. Store in a cool, dry place.
Personal Protective Equipment:	**Eye and Face Protection:** Not necessary under normal conditions, Wear safety glasses if handling an open or leaking battery. **Skin and Body Protection:** Not necessary under normal conditions, Wear suitable protective clothing and gloves if handling an open or leaking battery. **Respiratory Protection:** Not necessary under normal conditions. **Hand Protection:** Wear suitable gloves if handling an open or leaking battery.
Other Protective Equipment:	Have a safety shower and eye wash fountain readily available in the immediate work area.
Hygiene Measures:	Do not eat, drink, or smoke in work area. Maintain good housekeeping.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Color:	Black
Odour:	Not applicable
pH:	Not applicable
Melting point/freezing Point:	Not applicable
Boiling Point and Boiling Range:	Not applicable
Flash Point:	Not applicable
Upper/lower Flammability or explosive limits:	Not applicable
Vapor Pressure:	Not applicable
Vapor Density:	Not applicable
Relative Density:	Not applicable
Solubility in Water:	Not applicable
Auto-ignition temperature:	Not applicable

Decomposition temperature:	Not applicable
Evaporation rate:	Not applicable
Viscosity:	Not applicable

SECTION 10: STABILITY AND REACTIVITY

Stability:	The product is stable under conditions described Section 7.
Possibility of Hazardous Reactions:	Not applicable
Conditions to Avoid:	Heat above 70°C or incinerate. Deform, Mutilate, Crush, Disassemble, Overcharge, Short circuit, Expose over a long period to humid conditions.
Incompatible materials:	Acids, Oxidizing agents, Base.
Hazardous Decomposition Products:	Carbon monoxide, carbon dioxide, lithium oxide fumes.

SECTION 11: TOXICOLOGICAL INFORMATION

Irritation:	Risk of irritation occurs only if the cell is mechanically, thermally or electrically abused to the point of compromising the enclosure. If this occurs, irritation to the skin, eyes and respiratory tract may occur.
Sensitization:	Not applicable
Reproductive Toxicity:	Not applicable
Toxicologically Synergistics Materials:	Not applicable
Neuorlogical Effects:	Not applicable
Teratogenicity:	Not applicable
Mutagenicity (Genetic Effects):	Not applicable

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SECTION 12: ECOLOGICAL INFORMATION

Ecological Toxicity:	Not applicable
Mobility in soil:	Not applicable
Persistence and Degradability:	Not applicable
Bioaccumulation potential:	Not applicable
Other Adverse Effects:	Not applicable

SECTION 13: DISPOSAL CONSIDERATIONS

Product Disposal Recommendation:	Observe local, state and federal laws and regulations.
Packaging Disposal Recommenation:	Disposal must be made according to official regulations.

SECTION 14: TRANSPORT INFORMATION

Label for conveyance:	Lithium Battery Label
UN Number:	UN 3480 or UN 3481
Transport Hazard Class(es):	9
Packing Group:	965 or 966 Ⅱ, 967
Marine Pollutant:	No
Proper shipping name:	Lithium ion Batteries (including lithium ion polymer batteries) Lithium ion Batteries packed with Equipment (including lithium ion polymer batteries) Lithium ion Batteries contained in Equipments (including lithium ion polymer batteries)
ICAO / IATA:	Can be shipped by air in accordance with International Civil Aviation Organization (ICAO), TI or International Air Transport Association (IATA), DGR 66th Packing Instructions Section IA of 965 or Section I of 966～967 appropriately.
IMDG Code:	International Maritime Dangerous Goods Code IMDG CODE (Amdt 42-24)

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ADR:	European Agreement concerning the International Carriage of Dangerous Goods by Road
RID:	Regulations concerning the International Carriage of Dangerous Goods by Rail

The dangerous goods regulations require that each battery design be subject to tests contained in Section 38.3 of the UN Manual of Tests and Criteria prior to being offered for transport.

SECTION 15: REGULATORY INFORMATION

Law Information

- Dangerous Goods Regulations
- Recommendation 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
- Consumer Product Safety Act (CPSA)
- Federal Environmental Pollution Control Act (FEPCA)
- Resource Conservation and Recovery Act (RCRA)
- European Agreement concerning the International Carriage of Dangerous
- Regulations concerning the International Carriage of Dangerous

In according with all Federal, State and local laws.

SECTION 16: OTHER INFORMATION

The information above is believed to be accurate and represents the best information currently available to us. However, this document makes no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. Although reasonable precautions have been taken in the preparation of the data contained herein, it is offered solely for your information, consideration and investigation. This material safety data sheet provides guidelines for the safe handling and use of this product; it does not and cannot advise on all possible situations, therefore, your specific use of this product should be evaluated to determine if additional precautions are required.

-- End of Report --

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