

## **MKC BRAND LiFePO4 Battery**

Attached to this document is the relevant MDS - MATERIAL SAFETY DATA SHEET to the products described below:

**491463602** Batteria MKC LiFePO4 LFP1290 12.8V-9Ah  
**491463605** Batteria MKC LiFePO4 LFP1212 12V-12Ah, T2  
**491463610** Batteria MKC LiFePO4 LFP1218 12V-18Ah, M5  
**491463615** Batteria MKC LiFePO4 LFP12100 12V - 100ah, M8  
**491463620** Batteria MKC LiFePO4 LFP2411 24V-11Ah, M5

10 total pages

Melchioni Spa

## MATERIAL SAFETY DATA SHEET

### SECTION 1: PRODUCT IDENTIFICATION

<b>Product Name:</b>	LiFePO4 Battery
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<b>DOT Description:</b>	Rechargeable Li-ion Battery
<b>Chemical Family:</b>	LiFePO4 Battery
<b>Manufacturer's Name:</b>	Melchioni S.p.A.
<b>Address:</b>	Via Colletta 37, 20135 Milano Italy
<b>Emergency tel no:</b>	+39 02 49.486.022
<b>Date Issued:</b>	Nov. 01, 2022






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### 2. Hazards identification




**Classification** LITHIUM ION BATTERIES

**Hazard statement** No dangerous in normal use & without damage.

**Hazards caused by spilled internal cell materials and precautionary statements as following:**

Classification			Labelling				Hazard statement codes
Hazard class	Hazard category		Pictogram		Signal word	Hazard statement	
			GHS	UN Model Regulations			
Aspiration hazard	2			Not required	Warning	May be harmful if swallowed and enters airways	H305
Acute toxicity	3	Oral		Not required	Warning	Harmful if swallowed	H302
		Dermal				Harmful in contact with skin	H312
		Inhalation				Harmful if inhaled	H332
Skin corrosion/irritation	2			Not required	Warning	Causes skin irritation	H315
Serious eye damage/eye irritation	2/2A			Not required	Warning	Causes serious eye irritation	H319
Skin sensitization	1、1A <sup>a</sup> 、1B <sup>a</sup>			Not required	Warning	May cause an allergic skin reaction	H317

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Skin corrosion/ irritation	1 1A, 1B, 1Ca			Danger	Causes severe skin burns and eye damage	H314
Serious eye damage/eye irritation	1		Not required	Danger	Causes serious eye damage	H318

**Note:**

a - categories may be applied where data are sufficient and where required by a competent authority.

### 3. Ingredients/Composition Information

Pure chemical ☐ Mixture ☒

Chemical name	CAS No.	Weight-%	Remark
Lithium iron phosphate	15365-14-7	20 - 40	-
Graphite	7782-42-5	10 - 30	-
Carbon black	1333-86-4	5 - 10	-
Phosphate(1-), hexafluoro-, lithium	21324-40-3	10 - 30	-
Copper	7440-50-8	7 - 13	-
Aluminum foil	7429-90-5	5 - 10	-
Polyethylene	9002-88-4	1 - 5	-

### 4. First aid measures

The lithium ion batteries are not hazardous with eye and skin contact under normal circumstance. In case of internal hazardous substance leaking an hazardous substance, following measures should be taken if body parts contact with these substance:

**After Skin Contact:** In case of contact, immediately wash skin with soap and copious amounts of water.

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**After Eye Contact:** In case of contact, flush eyes with clean water for 15 minutes while lifting eyelids. Get prompt medical attention.

**After Inhalation:** If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

**After Ingestion:** If swallowed, wash out mouth with water provided person is conscious. Call a physician.

### 5. Fire-fighting measures

**Characteristics of Hazard:** Toxic fumes; gases or vapors may evolve on burning.

**Hazardous Combustion Products:** CO, CO<sub>2</sub>, HF, phosphorus fluoride.

**Fire-extinguishing Methods and Extinguishing Media:** Copious amounts of cold water are an effective extinguishing medium for lithium-ion batteries.  
Don't use warm or hot water. Don't use Halon type extinguishing material. Dry powder, sand and earth might be used.

**Attention in Fire-extinguishing:** The Firemen should put on antigas masks and full fire-fighting suits.

### 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 incinerate.

#### Waste Disposal Method

It is recommended to discharge the battery to the end, to use up the metal lithium inside the battery, and to bury the discharged battery in soil.

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### 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 liquids.

#### Precautions to be taken in handling and storing

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.

### 8. Exposure control and 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.

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### 9. Physical and chemical properties

**Appearance:** Prismatic

**Color:** Black

**Odors:** 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.

### 10. Stability and reactivity

**Stability:** Stable under normal temperatures and pressures.

**Incompatibility:** oxidizing agents

**Conditions to Avoid:** Heat and open flame, short circuit, and water

**Hazardous polymerization:** Will not occur

**Decomposition Products:** CO, CO<sub>2</sub>, HF, phosphorus fluoride

### 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.

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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.

### 12. Ecological Information

**Mammalian effects:** None known at present.

**Eco-toxicity:** None known at present.

**Bioaccumulation potential:** Slowly Bio-degradable.

**Environmental fate:** None known environmental hazards at present.

### 13. Waste Disposal

**Waste Treatment:** Recycle or dispose of in accordance with government, state & local regulations.

**Attention for Waste Treatment:** Deserted batteries couldn't be treated as ordinary trash. Couldn't be thrown into fire or placed in high temperature. Couldn't be dissected, pierced, crushed or treated similarly. The best way is recycling.

### 14. Transport Information

**UN No.** UN 3480, UN 3481

**Proper Shipping Name** Lithium ion batteries (Including lithium ion polymer batteries) or;  
Lithium ion batteries contained in equipment (Including lithium ion polymer batteries) or;  
Lithium ion batteries packed with equipment (Including lithium ion polymer batteries)

**Labels for Package** Class 9

<b>ICAO / IATA:</b>	Can be shipped by air in accordance with International Civil Aviation Organization (ICAO), TI or International Air Transport Association (IATA), DGR Packing Instructions (PI) 965 Section IA, PI 966 Section I and PI 967 Section I appropriate of IATA DGR 62 <sup>nd</sup> (2021 Edition) for transportation.
<b>IMDG CODE:</b>	《International Maritime Dangerous Goods》 Code (IMDG Code 39-18) .



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<b>ADR:</b>	«European Agreement concerning the International Carriage of Dangerous Goods by Road» (ADR 2021).
<b>RID:</b>	«Regulations concerning the International Carriage of Dangerous Goods by Rail» (ADR 2021).
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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.	

### 15. Regulatory Information

#### Regulatory 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»

«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 Title III (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 according with all Federal, State and local laws.

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### 16. Other Information

**Reference:** National standard of People's Republic of China. (GB/T 6483-2008) Safety data sheet for chemical products-Content and order of sections, National standard of People's Republic of China. (GB/T 17519-2013) Guidance on the compilation of safety data sheet for chemical products.

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