



Safety Information
SMA HOME STORAGE
HS-BM-3.28-10



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1 Identification of the Substance/Mixture and of the Company/Undertaking

1.1 Product identifier

Product name	Lithium Iron Phosphate (LiFePO ₄) rechargeable battery
Model	SMA Home Storage
Material number	HS-BM-3.28-10
Product use	Electric storage battery (according to UN3480)

1.2 Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses:

Industrial/Professional uses spec: Industrial (For professional use only)

Uses advised against:

Not applicable

1.3 Details of the supplier of the safety data sheet





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2 Hazards Identification

2.1 Classification of the substance or mixture

This product is not hazardous in the solid form supplied. This product is an article, a sealed battery and a SDS is not required unless battery is opened. Hazards stated are for an opened battery.

2.2 Label elements

Label elements, including precautionary statements	
	Label for Transport of Dangerous Goods on carton box
	Beware of electrical voltage (located on the product)
	Potentially explosive substances warning (located on the product)
	Corrosive substances warning (located on the product)

2.3 Other hazards

SMA Home Storage is a Lithium Iron Phosphate Battery with certified compliance under the UN Recommendations on Transport of Dangerous Goods, Manual of Tests and Criteria, Part III, sub-section 38.3.

CAUTION: Battery can explode or leak if heated, disassembled, shorted, recharged, exposed to fire or high temperature or inserted incorrectly. Keep in original package until ready to use. Keep batteries away from children. Under certain misuse conditions and by abusively opening the battery, exposed lithium can react with water or moisture in the air causing potential thermal burns or fire.

3 Composition / Information on Ingredients

3.1 Substances and Mixtures

NAME	CAS NO.	Weight
Lithium iron phosphate (LiFePO ₄)	1 5365-14-7	≤ 39.8 %
Graphite (C)	7782-42-5	≤ 19.8 %
Polyvinylidene Fluoride (PVDF)	24937-79-9	≤ 0.8 %
Carboxymethyl cellulose	9004-32-4	≤ 0.4 %
Polymerized Styrene Butadiene Rubber	9003-55-8	≤ 0.8 %
Ethylene carbonate	96-49-1	≤ 4 %
Dimethyl carbonate	616-38-6	≤ 4 %
Lithium hexafluorophosphate	21324-40-3	≤ 1.9 %
Copper	7440-50-8	≤ 6.2 %
Aluminum	7429-90-5	≤ 3.8 %
Aluminum Case	/	≤ 3.6 %
Cathode cover	/	≤ 2.1 %
Anode cover	/	≤ 2.5 %
Other material	/	≤ 10.3 %

4 First Aid Measures

4.1 Description of first aid measures

General

The chemicals and metals in this product are contained in a sealed housing. Exposure to the contents will not occur unless the battery leaks, is exposed to high temperatures or is mechanically, physically, or electrically abused.

Eye contact

Rinse eyes with running water for 15 minutes and seek medical attention.

Skin contact

Wash the affected area thoroughly with soap and water for 15 minutes and seek medical attention.

Inhalation

If internal contents are inhaled, evacuate the contaminated area, and seek medical attention.

Swallowing

Do not induce vomiting. Get medical attention.

4.2 Most important symptoms and effects, both acute and delayed

Adverse effects not expected from this product. Exposure to battery contents may cause irritation and potential burns.

4.3 Indication of any immediate medical attention and special treatment needed

Note to physician: Treat symptomatically.

5 Firefighting Measures

5.1 Extinguishing media

In case of fire, suitable extinguishing media: carbon dioxide or dry chemical. Use Novec 1230, FM-200, or dioxide extinguisher. ABC extinguishers are not effective when the battery pack is on fire.

5.2 Special hazards arising from the substance or mixture

Contents react with water. May explode if exposed to high temperatures due to pressure build-up in battery housing. Lithium may burn in a fire situation and may escape the battery. Damaged cells may evolve toxic and flammable vapors.

5.3 Advice for firefighters

Evacuate area and contact emergency services. Toxic gases may be evolved in a fire situation. Remain on the upwind side and notify those on the downwind side of the hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) and protective gear in compliance with the Directive on Personal Protective Equipment 89/686/EEC when combating fire. Use water fog to cool intact containers and nearby storage areas.

Hazchem code	
4	Dry agent (water must not be allowed to come into contact with substance).
Model	Risk of violent reaction or explosion. Wear liquid-tight chemical protective clothing and breathing apparatus. Contain spill and run-off.

6 Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

Wear Personal Protective Equipment (PPE) as detailed in SECTION 8 of the safety information. Avoid contact with skin and eyes.

6.2 Environmental precautions

See Section 12 for additional Ecological Information.

6.3 Methods and material for containment and cleaning up

If split, collect and reuse where possible. If battery is broken or damaged, absorb liquid with sand or similar. Contain spillage, then collect and place in suitable containers for disposal.

CAUTION: Avoid exposure to contents.

6.4 Reference to other sections

For waste disposal, see Section 13 of the safety information.

7 Handling and Storage

7.1 Precautions for safe handling

Before use, carefully read the product manuals. Use of safe work practices is recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas. Avoid short circuiting the cell.

7.2 Conditions for safe storage, including any incompatibilities

Store tightly sealed in a cool, dry, well-ventilated area, removed from water, incompatible substances, heat or ignition sources and food. Ensure containers are adequately labeled, protected from physical damage and sealed when not in use. Check regularly for leaks or spills. Store within the recommended limit of -20 °C to 45 °C. Do not expose to high temperature (55 °C). Since short circuit can cause burn hazard or safety vent to open, do not store with metal jewelry, metal covered tables, or metal belt.

7.3 Specific end use(s)

See Section 1

8 Exposure Controls/Personal Protection

8.1 Control parameters

This product presents no health hazards to the user when used according to label directions for its intended purposes.

8.2 Exposure controls

This product presents no health hazards to the user when used according to label directions for its intended purposes.

Biological monitoring

Ingredient	Determinant	Sampling time	BEI
Polyvinylidene / Fluoride	Fluoride in urine	Prior to shift	2 mg/L
Polyvinylidene / Fluoride	Fluoride in urine	End of shift	3 mg/L

Reference: ACGIH Biological Exposure Indices

Control banding

Control banding is not used.

Engineering controls

Use local exhaust ventilation or other engineering controls to control sources of dust, mist, fume and vapor.

Personal protective equipment (PPE):

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

Skin Protection: Not necessary under normal use for hands and body. Wear PVC or rubber gloves if handling a ruptured or leaking battery cell.

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

Environmental exposure controls

Avoid release to the environment.

Other information

In case of electrolyte leakage: Do not breathe gas/fumes, avoid contact with skin, eyes and clothing, Eliminate ignition sources, Wear personal protective equipment.

9 Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Appearance:	Battery
Color:	Not Determined
Odour type:	Odorless
Melting point:	Not Determined
Boiling point:	Not Determined
Flash point	Not Determined
Flammability:	Not Determined
Oxidizing properties:	Not Determined
Relative density:	Not Determined
Solubility in Water:	Insoluble
Water/ oil distribution coefficient:	Not Determined
Decomposition temperature:	Not Determined
Saturated vapor concentration	Not Determined
Particle size	Not Determined
Size distribution	Not Determined
Crystallinity	Not Determined
Surface area	1.35 m ²
Redox potential	Not Determined
Surface coating or chemistry	Polyester Resin
Physical state:	Solid
Ph:	Not Determined
Odour threshold:	Not Determined
Freezing point:	Not Determined
Boiling range:	Not Determined
Evaporative rate:	Not Determined
Flammability/explosive limits:	Not Determined
Viscosity:	Not Determined
Auto-ignition Temperature	Not Determined
Partition coefficient: n-octanol /water	Not Determined
Vapor pressure	Not Determined
Vapor density: (air = 1)	Not Determined
Specific heat value	Not Determined
Release of invisible flammable vapors and gases	Not Determined
Shape and aspect ratio	Not Determined
Dustiness	Not Determined
Degree of aggregation or agglomeration, and dispersibility	Not Determined
Biodurability or biopersistence	Not Determined

9.2 Other Information

Not applicable

10 Stability and Reactivity

10.1 Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2 Chemical stability

Stable under normal use and conditions.

10.3 Possibility of hazardous reactions

Polymerization will not occur.

10.4 Conditions to avoid

Heat above 70°C or incinerate. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. Deform. Damage. Crush. Pierce. Disassemble. Short-circuit. Expose over a long period to humid conditions.

10.5 Incompatible materials

Battery contents are incompatible with water (evolving flammable gas), oxidizing agents (e.g. hypochlorites), acids (e.g. nitric acid), alkalis (e.g. sodium hydroxide), heat and ignition sources.

10.6 Hazardous decomposition products

Under normal condition of storage and use, hazardous decomposition products should not be produced. May evolve hydrogen and lithium oxides when heated to decomposition.

11 Toxicological Information

11.1 Information on hazard classes as defined in Regulation (EC) No. 1272/2008

Acute toxicity

No specific acute toxicity data exists for this product. Batteries consist of a hermetically sealed metallic container containing a number of chemicals and materials of construction that may be hazardous upon release. Overexposure considered unlikely unless battery ruptures and contact with contents occurs. Contents may be harmful.

Inhalation: Toxicity data and effects of inhalation exposure are not available. Not a likely route of exposure under normal use.

Ingestion: Toxicity data and effects of ingestion exposure are not available. Not a likely route of exposure under normal use.

Skin Contact: Toxicity data and effects of skin contact exposure are not available. Not a likely route of exposure under normal use.

Eye Contact: Toxicity data and effects of eye contact exposure are not available. Not a likely route of exposure under normal use.

Early onset symptoms and delayed health effect from exposure

See Section 4 of this safety information for symptoms.

Numerical measures of toxicity

Not determined

Component information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Carbon 7440-44-0	> 8000 mg/kg (rat)	-	-

11.2 Information on other hazards

Not applicable

12 Ecological Information

12.1 Toxicity

Not applicable

12.2 Persistence and degradability

Not applicable

12.3 Bioaccumulative potential

Not applicable

12.4 Mobility in soil

Not applicable

12.5 Results of PBT and vPvB assessment

Not applicable

12.6 Endocrine-disrupting properties

Not applicable

12.7 Other adverse effects

Ecotoxicity

The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. Avoid release to the environment.

13 Disposal Consideration

13.1 Waste treatment methods

Disposal of wastes

Recycling is encouraged. Do **not** dump into sewage or water bodies. Dispose of in accordance with local, state and federal laws and regulations.

Contaminated packaging

Disposal must be made according to local official regulations.

14 Transport Information

In accordance with ADR and IMDG

14.1 UN number or ID number

ADR	IMDG
UN 3480	UN 3480

14.2 UN proper shipping name

ADR	IMDG
LITHIUM ION BATTERIES	LITHIUM ION BATTERIES

14.3 Transport hazard class(es)

ADR	IMDG
9	9



14.4 Packing group

ADR	IMDG
Not applicable	Not applicable

14.5 Environmental hazards

ADR	IMDG
Dangerous for the environment: No	Dangerous for the environment: No
	Marine pollutant: No

14.6 Special precautions for user

Overland transport

Classification code (ADR)	M4
Special provisions (ADR)	230, 348, 376, 377
Limited quantities (ADR)	0
Excepted quantities (ADR)	E0
Packing instructions (ADR)	P903, P908, P909, P911, LP903, LP904, LP906
Transport category (ADR)	2
Tunnel restriction code (ADR)	E

Transport by sea

Special provisions (IMDG)	230, 348, 376, 377, 384
Limited quantities (IMDG)	0
Excepted quantities (IMDG)	E0
Packing instructions (IMDG)	P903, P908, P909, P911, LP903, LP904, LP906
EmS-No. (Fire)	F-A
EmS-No. (Spillage)	S-I
Stowage category (IMDG)	A
Stowage and handling (IMDG)	SW19
MFAG-No	147

14.7 Maritime transport in bulk according to IMO instruments

Not applicable

15 Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Poison schedule

A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

Classifications

The classifications and phrases listed below are based on the Approved Criteria for Classifying Hazardous Substances [NOHSC: 1008(2004)].

Hazard codes

None allocated.

Risk phrases

None allocated.

Safety phrases

None allocated.

15.2 Chemical safety assessment

Not applicable

16 Other Information

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Users should read this file carefully and use the batteries correctly. Additional information is documented in the user manual of the product SMA Home Storage and can be found in the download area on the product page. www.sma-solar.com

