Schneider Boost

Safety Data Sheet

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Schneider Electric

Legal Information

Contact Information

For country-specific details, please contact your local Schneider Electric Sales Representative or visit the Schneider Electric website at: https://www.se.com/

Document Number: TME49803A **Date:** August 2024

Contents

Scope

This document is in addition to the primary product manual for the Schneider Boost battery (*Schneider Boost Installation Guide (TME12665)*. Unless specified, information on safety, specifications, installation and operation is as shown in the primary documentation for this product. Ensure you are familiar with that information before proceeding.

1.0 Product Name and Identification

Product Identification	
Product name	Schneider Boost battery, 10 kWh
Product model number	BAT10K1
Other means of identification	Lithium Iron Phosphate, LiFePO4 (LFP)
Product description	Schneider Boost is a high voltage, Lithium Iron Phosphate (LFP) battery storage system.

Product Use	
Intended uses	The Schneider Boost will be used as an alternating current (AC)-coupled energy system, primarily with photovoltaic systems.
Restrictions on use	Transport and store the battery under the following conditions: ▪ Maximum Altitude: 13100 ft (4000 m) ▪ Storage Temperature: 14 to 104°F (-10 to 40°C) ▪ Do not store the battery near heat sources such as furnaces or open flames. ▪ Store the battery in a dry location. ▪ Protect the battery from physical damage. Do not open, disassemble, crush, or burn the battery.

Supplier Details	
Supplier name	Schneider Electric USA, Inc.
Address	201 Washington St, Suite 2700, One Boston Place Boston, Massachusetts 02108 United States
Contact	877-SEHOME1 (1-877-734-6631) or 513-605-8000 (for carriers that don't support 877 in Puerto Rico)

Emergency Contact Information	
Provider name	VelocityEHS
Contract number	MIS4803271
Phone number	1-888-533-7762

Legal Remarks	
Legal remark (USA)	Safety Data Sheets are a sub-requirement of the Occupational Safety and Health Administration (OSHA) Hazard Communication Standard (GHS), 29 CFR Subpart 1910.1200. This Hazard Communication Standard does not apply to various subcategories including anything defined by OSHA as an “article”. According to OSHA, Article means a manufactured item other than a fluid or particle: (i) which is formed to a specific shape or design during manufacture; (ii) which has end use function(s) dependent in whole or in part upon its shape or design during end use; and (iii) which under normal conditions of use does not release more than very small quantities, e.g., minute or trace amounts of a hazardous chemical (as determined under paragraph (d) of this section), and does not pose a physical hazard or health risk to employees. Because all our batteries are defined as “articles”, they are exempt from the requirements of the Hazard Communication Standard.
General remark	This information is provided as a service to our customers. The details presented are in accordance with our present knowledge and experiences. They are not contractual assurances of product attributes. Specification are subject to change without notice. See https://www.se.com/us/en/product-range/234852991 for the latest specifications.

2.0 Hazard(s) Identification

2.1 Hazard Classification According to GHS

The product meets the definition of "article". In the Globally Harmonized Chemical Classification and Labeling System (GHS), the "articles" defined by the US Occupational Safety and Health Administration "Hazard Communication Standard" (29 CFR 1910.1200) or similar definitions do not fall within the scope of this system. [Rev. 9 (2021) Part 1.3.2.1.1]. According to GHS system (9th revised edition), this system is not classified as a hazardous chemical.

GHS Label Elements	
Pictogram	Not applicable
Signal word	Not applicable

2.2 Precautionary Statements

2.2.1 Prevention

- Read the safety labels before use.
- Keep out of reach of children.
- Do not open or disassemble.
- Wear protective gloves/eye and face protection.

2.2.2 Response

If medical advice is needed, call your local emergency service and have the product package or this datasheet in hand.

- Wash hands thoroughly after use.
- If exposure to skin or hair occurs: Take off all contaminated clothing and immediately wash before reuse. Rinse skin with water.
- If skin irritation occurs or eye irritation persists, get medical attention or advice.
- In case of fire, use ABC or dry chemical fire extinguishers

2.2.3 Storage

- Keep away from heat, hot surfaces, sparks, open flames and other ignition sources.

2.2.4 Disposal

- This equipment must only be disassembled or recycled by qualified personnel.
- Always follow local guidelines for recycling and disposal.
- Do not dispose of the Schneider Boost in a fire or with general household waste.

2.2.5 Physical and Chemical Hazards

If the outer enclosure and safety circuits have been compromised or have been significantly damaged, there will likely be a substantial electrical charge that can cause injury or death if mishandled. Battery products exposed to high temperature conditions may result in thermal runaway andfire.

2.2.6 Health Hazards

The battery comprises a sealed, rigid, solid protective case and is not expected to expose users to hazardous ingredients under normal use conditions. Risk of exposure occurs only if the protective case and battery are mechanically, thermally, or electrically mishandled to the point where both the protective case and battery are compromised. If this occurs, exposure to electrolyte solutions within the cell may occur through eye contact, skin contact, and ingestion.

Inhaled	Inhalation of vapors from a leaking cell or battery is expected to cause severe irritation of the mouth and upper respiratory tract with a burning sensation, pain, burns and inflammation in the nose and throat. There may also be coughing or difficulty breathing.
Ingestion	The electrolyte contained within the cell or battery is a corrosive liquid. Ingestion of this electrolyte would be harmful. Swallowing may result in nausea, vomiting, diarrhea, abdominal pain and chemical burns to the gastrointestinal tract.
Skin Contact	The electrolyte contained within the cell or battery is a corrosive liquid and it is expected that it would cause skin burns or severe irritation to the skin if not washed off immediately. Correct handling procedures should minimize the risk of skin irritation. People with pre-existing skin conditions, such as dermatitis, should take extreme care so as not to exacerbate the condition.
Eye Contact	The electrolyte contained within the cell or battery is a corrosive liquid and it is expected that it would cause irreversible damage to the eyes. Contact may cause corneal burns. Effects may be slow to heal after eye contact. Correct handling procedures, such as incorporating appropriate eye protection, should help to minimize the risk of eye irritation.

2.2.7 Environmental Hazards

Lithium-ion batteries are not classified as marine pollutants.

Follow all applicable local, state, and federal requirements when identifying additional environmental hazards.

3.0 Composition/Information on Substances

3.1 Substance/Mixture

Mixture

Substance	CAS No.	EC No.	Concentration (weight percentage %)
Lithium iron phosphate (LFP)	15365-14-7	604- 917-2	40.5
Graphite	7782-42-5	231-955-3	25
Electrolyte (EMC/EC/PC/LiPFG)	-	-	20
Copper	74-40-50-8	231-159-6	8.5
Aluminum	7429-90-5	231-072-3	6

4.0 First Aid Measures

IMPORTANT: The following table contains recommendations only, and should not replace advice from medical professionals.

4.1 Description of First Aid Measures

Exposure type	First Aid action
General advice	■ Move victims from the dangerous area to an area with fresh air. ■ Show this Safety Data Sheet to the medical professionals in attendance. ■ Quickly transport the victim to emergency care during eye contact, skin irritation, ingestion, or inhalation.
Eye Contact	■ Immediately flush the eyes with clean water for at least 15 minutes, without rubbing. ■ If appropriate action is not taken, exposure may cause eye irritation. ■ Seek medical attention if eye irritation persists.
Skin Contact	■ Immediately remove all contaminated clothing and wash before reuse. ■ Rinse skin with water for at least 15 minutes. ■ If appropriate procedures are not taken, this may cause skin irritation. ■ Seek medical attention if skin irritation occurs.
Ingestion	■ Have the victim rinse their mouth thoroughly with water and seek medical attention: Call Poison Control or emergency services immediately. ■ Do not induce vomiting. ■ Never give anything by mouth to an unconscious person.
Inhalation	■ Immediately move the victim to fresh air and remove the source of contamination from the area. Seek medical attention. ■ If the victim has difficulty breathing, give oxygen. Do not use mouth-to-mouth resuscitation if the victim ingested or inhaled hazardous substances. If the victim is not breathing, give artificial respiration and seek medical attention immediately.
Protecting first-aid attendants	Ensure that medical personnel are aware of the substance involved, take precautions to protect themselves, and prevent the spread of contamination.

4.2 Most Important Symptoms/Effects, Acute and Delayed

- See Health Hazards on page 8 for symptoms.
- See Toxicological Information on page 17 for acute toxicity.

4.3 Indication of Immediate Medical Attention and Special Treatment Needed

- Treat symptomatically.
- Symptoms may be delayed.

5.0 Fire Fighting Measures

5.1 Extinguishing Equipment

Suitable extinguishing equipment	Use ABC or dry chemical fire extinguishers or regular foam. Additional extinguishing media include carbon dioxide, or alcohol-resistant foams.
Unsuitable extinguishing equipment	Do not use water.

5.2 Specific Hazards Arising from the Substance or Mixture

1	Wear self-contained breathing apparatus (MSHA/NIOSH approved or equivalent) and full protective gear.
2	The interaction of water or water vapor with exposed lithium hexafluorophosphate may generate hydrogen and hydrogen, hydrogen fluoride (HF) gas, hydrocarbons, and carbon monoxide.

5.3 Special Protective Equipment and Precautions for Firefighters

1	Lithium-ion phosphate batteries contain flammable liquid electrolytes that may vent, ignite, and generate vapors.
2	Fight fire from a safe distance, with adequate cover.

6.0 Accidental Release Measures

6.1 Personal Precautions, Protective Equipment and Emergency Procedures

1	Use personal protective equipment. Avoid breathing vapors, mist, gas or dust.
2	Evacuate personnel to a safe area. Keep away from and upwind of spill/leak.
3	Ensure adequate ventilation. Remove all sources of ignition.

6.2 Environmental Precautions

1	If safe to do so, prevent further leakage or spillage.
2	Discharge into the environment must be avoided.

6.3 Methods and Materials for Containment and Cleaning Up

1	Contaminant removal and clean-up should only be completed by qualified personnel.
2	If safe to do so, stop the leak.
3	Clean any residual electrolyte and liquid using a non-combustible, non-reactive absorbent. Ensure that clean-up procedures do not expose spilled material to moisture.
4	Containerize and place all leaking batteries in individual containers that are leak-proof, non-conductive, non-combustible, and absorbent (for example, an LDPE plastic bag that is sealed shut and contains sufficient absorbent for the contained electrolyte). Ensure sufficient absorbent is used to absorb the total amount of liquid from the battery.
5	Place used spill response materials in leak-proof, non-conductive, non-combustible containers containing absorbent and separate from batteries that have absorbent (for example, LDPE plastic bag that is sealed shut and contains sufficient absorbent for the contained electrolyte).
6	Avoid the release of collected materials. Do not bring the collected materials near an open flame.

7.0 Handling and Storage

7.1 Precautions for Handling

1	Avoid mechanical damage to the Battery. Do not disassemble Battery
2	Avoid short-circuiting the battery.
3	Never use a battery that has signs of damage.

7.2 Precautions for Storage

1	Store indoors and on pallets or similar devices so that any leaks can be visibly observed upon inspection, and to ensure the items do not come into contact with water or salty breeze.
2	Store in a dry location and away from heat sources such as furnaces or open flames. Do not store the battery in location that is outside the range of 14 to 104°F (-10 to 40°C).
3	Do not open, disassemble, crush, or burn the battery.
4	It is recommended that the battery be kept at room temperature (when possible) 77°F (25°C) ±5° to minimize adverse effects on performance. Elevated temperatures can result in shortened battery life.
5	Store in an upright position and in areas that are not likely damaged or disturbed by personnel, equipment, or vehicles.
6	Do not store unboxed items in areas with a source of spark generation within 30 cm, in direct sunlight, in direct exposure to exhaust gases, such as those from automobiles, or in places with continuous or intermittent vibration.

8.0 Exposure Controls/Personal Protection

8.1 Control Parameters

Component	Country/Region	Limit value Eight hours		Limit value Short term	
		ppm	mg/m³	ppm	mg/m³
Graphite	USA - OSHA	-	15	-	-
	South Korea	-	2	-	-
	Ireland	-	10	-	-
	Germany (DFG)	-	4	-	-
	Penmark	-	2.5	-	5
	Australia	-	3 (4)	-	-
	USA-ACGIH	-	2	-	-
Copper	The Netherlands	-	0.1	-	-
	Poland	-	0.2	-	-
	Latvia	-	0.5	-	1
	Germany (DFG)	-	0.01	-	0.02
Aluminum	USA OSHA	-	15	-	-
	South Korea	-	10	-	-
	Ireland	-	1	-	-
	Germany (DFG)	-	4	-	-
	Denmark	-	5	-	10
	Australia	-	10	-	-
	USA-ACGIH	-	1	-	-

Lithium Hexafluorophosphate (as fluoride)	Austria	-	2.5	-	12.5 (30 minutes)
	Belgium	-	2.5	-	None
	Denmark	-	2.5	-	5
	European Union	-	None	-	None
	France	-	2.5	-	None
	Germany	-	1.0	-	4 (15 minutes)
	Hungary	-	2.5	-	10
	Poland	-	2.0	-	None
	Spain	-	2.5	-	None
	Sweden	-	1.0	-	None
	Switzerland	-	1.0	-	4 (15 minutes)
	The Netherlands	-	None	-	2 (15 minutes)
	United Kingdom	-	2.5	-	None

8.1.1 Biological limit values

Lithium hexafluorophosphate (as fluoride)	▪ USA, OSHA PEL: 2.5 mg/m3 (TWA) ▪ USA, ACGIH TVL: 2.5 mg/m3 (TWA) ▪ USA, ACGIH BEI: 2 mg/L (urine−before shift), 3 mg/L (urine−end of shift)
Other	There are no published exposure limits for the remaining electrolyte components

8.1.2 Monitoring Methods

1	EN 14042 Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents.
2	GBZ/T 300 series standard Determination of toxic substances in workplace air.

8.2 Engineering Controls

1	Ensure adequate ventilation, especially in confined areas.
2	Ensure that eye wash stations and safety showers are close to the workstation location.
3	Set up an emergency exit and necessary risk-elimination area.
4	Handle in accordance with standard industrial hygiene and safety practices.

8.3 Personal Protection Equipment (PPE)

If the protective case and battery are mechanically, thermally, or electrically mishandled to the point where both the protective case and battery are compromised, and there is a risk of electrolyte exposure, wear appropriate PPE, following local codes and regulations.

General requirement	The following personal protective equipment should be worn if the battery is mechanically, thermally, or electrically mishandled to the point where the protective case is damaged, which results in a risk of electrolyte exposure.
Eye Protection	Take steps to prevent exposure to the eyes and face, including chemical splash goggles and a face shield.
Hand Protection	15 mils nitrile rubber gloves. Immersion protection is provided when nitrile gloves are worn over laminated film barrier gloves (Ansell Barrier 2-100 or equivalent).
Respiratory protection	Wear a full-face respirator with an organic vapor/acid gas/particulate filter (3M Model No. 60923 or equivalent).
Skin and Body Protection	Wear closed-toe shoes, chemical-resistant overalls, and protective over boots.

9.0 Physical and Chemical Properties

Physical state	Solid
Colour	—
Odor	None
Odor threshold	—
pH	—
Melting point/freezing point(°C)	—
Initial boiling point and boiling range(°C)	—
Flash point(Closed cup,°C)	Not applicable
Evaporation rate	Not applicable
Flammability	Not flammable
Upper/lower explosive limits[%(v/v)]	—
Vapor pressure	Not applicable
Relative vapour density(Air = 1)	Not applicable
Relative density(Water=1)	—
Solubility	Insoluble in water
n-octanol/water partition coefficient	—
Auto-ignition temperature(°C)	—
Decomposition temperature(°C)	—
Kinematic viscosity	Not applicable
Particle characteristics	—

For all lines with '—' , no information is available

10.0 Stability and Reactivity

Chemical stability	Contact with incompatible substances can cause decomposition or other chemical reactions.
Possibility of hazardous reactions	▪ Fire may occur if the battery is physically damaged or exposed to high-temperature conditions. ▪ Do not expose the battery to temperatures outside -40°F to 140°F (-40°C to 60°C) during storage. Keep away from heat sources such as furnaces, and open flames. ▪ Do not disassemble, crush, short, or install with incorrect polarity. Avoid mechanical or electrical damage or electrical shorts.
Conditions to avoid	Incompatible materials, heat, flame and sparks.
Incompatible materials	Oxidants, halogen, interhalogen, and mercury
Hazardous decomposition products	Hydrofluoric acid and carbon monoxide may be released if a cell or battery is physically damaged to the point where the case is compromised, and the electrolyte is released.

11.0 Toxicological Information

11.1 Acute Toxicity

	Electrolyte: ▪ Oral: Lithium hexafluorophosphate is classified as acute toxic−oral (Category 3 (H301)). Ethylene carbonate and 1,3-Propanesultone are classified as acute toxic−oral (Category 4 (H302)). No oral toxicity data is available for the electrolyte. The electrolyte is presumed to be acutely toxic−oral per GHS mixture rules. ▪ Dermal/Eye: 1,3-Propanesultone is classified as acute toxic–dermal (Category 4 (H312)). The electrolyte is not acutely toxic−derma l per GHS mixture rules.

11.2 Carcinogenicity

	Electrolyte: 1,3-Propanesultone is identified as a substance that may be carcinogenic (Category 1A/2B – H350).

11.3 Ecological information

11.3.1 Acute aquatic toxicity

Component	Fish	Crustaceans	Algae
Lithium Iron phosphate(LFP)	LC_{50} : > 28 mg/L (96h)(Fresh water fish)	EC_{50} : > 28 mg/L (48h)(Aquatic invertebrates)	- -

Graphite	LC_{50} : 100 mg/L (96h)(Fresh water fish)	--	--
Aluminum	LC_{50} : 1.55 mg/L (96h)(Fish)	--	--
Copper	LC_{50} : 0.665 mg/L (96h)(Fish)	EC_{50} : 0.02 mg/L (48h)(Daphnia magna)	ErC_{50} : 7.9 mg/L (96h)(Chlorella vulgaris)

11.3.2 Persistence and Degradability

Component	Persistence (water/soil)	Persistence (air)
Graphite	Low	Low

11.3.3 Bioaccumulative Potential

Component	Bioaccumulative potential	Details
Graphite	Low	Log Kow=0.5294

11.4 Mobility in Soil

Component	Bioaccumulative potential	Details
Graphite	Low	23.74

11.4.1 Results of PBT and vPvB assessment

Component	Results of PBT and vPvB assessment [according to (EC) No 1907/2006]
Lithium Iron phosphate(LFP)	Not available
Graphite	Not applicable
Copper	Not applicable
Aluminum	Not applicable

12.0 Disposal Considerations

Waste chemicals	Always follow the relevant national and local laws and regulations for disposal.
Contaminated packaging	Containers may still present a chemical hazard when empty. Keep away from heat and sources of fire. Return to supplier for recycling if possible.
Disposal recommendations	See above.

13.0 Transport Information

13.1 Label

Transport Label	

13.2 IMDG-CODE

UN number	3480
UN proper shipping name	LITHIUM ION BATTERIES (including lithium ion polymer batteries)
Transport Hazard Class	9
Transport Subsidiary	None
Packing Group	Packaging shall conform to the packing group II performance level
Marine pollutant	No

13.3 ICAO/IATA-DGR

UN number	3480
UN proper shipping name	LITHIUM ION BATTERIES (including lithium ion polymer batteries)
Transport subsidiary hazard class	9
Packing group	Packaging shall conform to the packing group Ⅱperformance level

13.4 UN-ADR

UN number	3480
UN proper shipping name	LITHIUM ION BATTERIES (including lithium ion polymer batteries)
Transport subsidiary hazard class	9
Packing group	Packaging shall conform to the packing group Ⅱperformance level

14.0 Regulatory Information

14.1 International Chemical Inventory

Component	EC Inventory	TSCA	DSL	IECSC	NZIoC	PICCS	KECI	AICS	ENCS
Lithium iron phosphate (LFP)	x	✓	✓	✓	x	x	✓	x	✓
Graphite	✓	✓	✓	✓	✓	✓	✓	✓	x
Electrolyte (EMC/EC/PC/LiPF 6)	x	x	x	x	x	x	x	x	x
Copper	✓	✓	x	✓	✓	✓	✓	✓	✓
Aluminum	✓	✓	✓	✓	✓	✓	✓	✓	✓

EC Inventory	European Inventory of Existing Commercial Chemical Substances.
TSCA	United States Toxic Substances Control Act Inventory.
DSL	Canadian Domestic Substances List.
IECSC	China Inventory of Existing Chemical Substances.
NZIOC	New Zealand Inventory of Chemicals.
PICCS	Philippines Inventory of Chemicals and Chemical Substances.
KECI	Existing and Evaluated Chemical Substances
AICS	Australia Inventory of Chemical Substances.
ENCS	Existing And New Chemical Substances.

Note:

"√" Indicates that the substance included in the regulations.

"×" No data or not included in the regulations.

15.0 Other Information

15.1 Information on revision

Creation Date	2023/06/16
Revision Date	2023/06/16

15.2 Reference

[1] IPCS: The International Chemical Safety Cards (ICSC), website:http://www.ilo.org/dyn/icsc/showcard.home。

[2] IARC, website:http://www.iarc.fr/。

[3] OECD: The Global Portal to Information on Chemical Substances, website: https://www.echemportal.org/echemportal/substancesearch/index.action。

[4] CAMEO Chemicals, website:http://cameochemicals.noaa.gov/search/simple。

[5] NLM: ChemIDplus, website:http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp。

[6] EPA: Integrated Risk Information System, website:http://cfpub.epa.gov/iris/。

[7] U.S. Department of Transportation: ERG, website:http://www.phmsa.dot.gov/hazmat/library/erg。

15.3 Abbreviations and acronyms

CAS	Chemical Abstracts Service	UN	The United Nations
PC-STEL	Short term exposure limit	OECD	Organization for Economic Co-operation and Development
PC-TWA	Time Weighted Average	IMDG- CODE	International Maritime Dangerous Goods CODE
MAC	Maximum Allowable Concentration	IARC	International Agency for Research on Cancer
DNEL	Derived No Effect Level	ICAO	International Civil Aviation Organization
PNEC	Predicted No Effect Concentration	IATA	International Air Transportation Association
NOEC	No Observed Effect Concentration	ACGIH	American Conference of Governmental Industrial Hygienists
LC50	Lethal Concentration 50%	NFPA	National Fire Protection Association
LD50	Lethal Dose 50%	NTP	National Toxicology Program
EC50	Effective Concentration 50%	PBT	Persistent, Bioaccumulative, Toxic
ECX	Effective Concentration X%	vPvB	very Persistent, very Bioaccumulative
POW	Partition coefficient Octanol: Water	CMR	Carcinogens, mutagens or substances toxic to reproduction
BCF	Bioconcentration factor	RPE	Respiratory Protective Equipment
ED	Endocrine disruptor		

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As standards, specifications, and designs change from time to time, please ask for confirmation of the information given in this publication.

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