SolarEdge Home Battery 400V Safety Data Sheet

Version: 1.6 – Renamed SolarEdge Home Battery 400V

Date of Issue: 15-May 2021

Revision Date: 18 October-2022

1 Product Name and Identification

1.1	Product Identifier	
1.1.1	**Product Name:**	SolarEdge Home Battery 400V
1.1.2	**Product Numbers:**	BAT-10K1PS0B-XX
1.1.3	**Other Means of Identification:**	• Lithium-Ion Battery (NMC) • UN3480 – Lithium-Ion Batteries
1.1.4	**Product Description**	• The SolarEdge Home Battery is a Lithium-Ion battery which consists of 30S1P cells, battery management system (BMS), DCDC converter, optional fire extinguisher, miscellaneous electronics, and protective case.

1.2	Product Use	
1.2.1	**Identified Uses:**	The product is to be used as a Residential Energy Storage System. With or without photovoltaic systems.
1.2.2	**User Restrictions:**	• Temperature Range: -10°C to 50°C (ambient operation); -30°C to 60°C (ambient storage). • Do not store close to heat sources, such as furnaces or open flames.

1.3	Safety Data Sheet Supplier Details	
1.3.1	**Supplier Name:**	SolarEdge Technologies Ltd.
1.3.2	**Address:**	1 Ha'Mada St., Herzeliya, 4673335 Israel
1.3.3	**Contact:**	+972 3-763-0639

1.4	Emergency Telephone Number	
1.4.1	**Inside United States Territories and Canada:**	1-800-424-9300
1.4.2	**Inside Europe:**	See Appendix A
1.4.3	**Outside United States Territories, Canada, and Europe**	See Appendix A

1.5 Legal Remarks	
Legal remark (USA):	Safety Data Sheets are a sub-requirement of the Occupational Safety and Health Administration (OSHA) Hazard Communication Standard, 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.
Legal remark (EU):	These batteries are not "substances" or "mixtures" according to Regulation (EC) No 1907/2006 EC. Instead, they must be regarded as "articles", no substances are intended to be released during handling. Therefore, there is no obligation to supply a safety data sheet according to Regulation (EC) 1907/2006, Article 31.
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.

2 Hazard Identification

2.1 Hazard Classification and Hazard Statement:

The battery is sealed inside a 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 abused to the point where both the protective case and battery are compromised. If this occurs, exposure to spontaneously released gasses and electrolyte solutions contained within the cells may through contact to the eyes and skin and through ingestion.

- H226 - Flammable Liquid (Category 3).
- H315 - Skin Irritation (Category 2).
- H319 – Eye Irritation (Category 2/2A).

2.2 GHS Label Elements	
2.2.1 Pictogram	
2.2.2 Signal Word	WARNING

2.3 GHS Hazard Statement			
Hazard Class	**Hazard Category**	**Hazard Code**	**Hazard Statement**
Flammable Liquid	3	H226	Flammable liquid and vapor
Skin Irritation	2	H315	Causes skin irritation
Eye Irritation	2/2A	H319	Causes serious eye irritation

2.4 Precautionary Statement

If medical advice is needed: Have the product container or label in hand.

- Keep out of reach of children.
- Read the safety label before use.
- Keep away from heat, hot surfaces, sparks, an open flames and other ignition sources. No smoking.

- Wash hands thoroughly after using.
- Wear protective gloves/eye and face protection.
- If exposure to on 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 dry chemicals to extinguish.

3 Composition/Information on Substances

The following cell composition and substances may be used.

3.1 Option 1 Substances*:

Chemical Name	EU-Classification	CAS-N0.	EC-No.	Quantity
Cobalt Oxide	Xn, N R22435053	1307-96-6	215-154-6	<30%
Manganese dioxide	Xn R20/22	1313-13-9	215-202-6	<30%
Nickel oxide	Carc. Cat. 1. T R49-43-48/23--53	1313-99-1	215-215-7	<30%
Carbon		7440-44-0	231-153-3	10 - 30%
Electrolyte (*)	Carc. Cat. 3. C R10-34-40-43			10 - 20%
Polyvinylidene fluoride (PVdF)		24937-79-9		<10%
Aluminium foil		7429-90-5	231-072-3	2 – 10%
Copper foil		7440-50-8	231-159-6	2 – 10%
Aluminium and inert materials				5 – 10%

For the full text of each relevant R phrase see Other information EU on page 9.

3.2 Option 2 Substances*:

Chemical Name	Common Name (Synonyms)	CAS-N0.	EC-No.	Quantity
Cobalt lithium manganese nickel oxide	Not available	182442-95-1	695-690-9	25-33%
Carbon	Carbon activated	7440-44-0	231-153-3	10 - 20%
Aluminium	Al	7429-90-5	231-072-3	10 – 20%
Copper	Cu	7440-50-8	231-159-6	3 – 10%
Trade secret 1	Trade secret	Trade secret	Trade secret	1 - 10%
Trade secret 2	Trade secret	Trade secret	Trade secret	1 - 10%
Trade secret 3	Trade secret	Trade secret	Trade secret	1 - 10%
Trade secret 4	Trade secret	Trade secret	Trade secret	1 - 10%
Lithium Nickel Cobalt Aluminium oxide	LNCA	177997-13-6	700-042-6	1 - 10%
1-Propene, homopolymer	Polypropylene	9003-07-0	613-352-4	1 – 2.99%
Trade secret 5	Trade secret	Trade secret	Trade secret	1 – 2.99%
Aluminium oxide	Activated Alumina	1344-28-1	215-691-6	1 – 2.99%
Carbon black	Carbon	1333-89-4	215-609-9	1 – 2.99%
Polyethylene	Ethene, homopolymer	9002-88-4	618-339-3	1 – 2.99%
Trade secret 6	Trade secret	Trade secret	Trade secret	0.1 –02.99%

*For both Option 1 and Option 2 cell Lithium weight is less than 2kg per product.

3.3 Composition/Information on Fire Extinguisher Substances			
Component	**Wt %**	**CAS N0.**	**EINECS**
Potassium Nitrate	77	7757-79-1	231-818-8
Potassium Carbonate	4	584-08-7	209-529-3
Magnesium	<1	7439-95-4	231-104-6
Epoxy Resin Polymer	18	25068-38-6	Any polymerizate, polycondensate, or polyadduct is exempted by 81/437/EEG

4 First-aid Measures

The Residential Energy System has a lithium-ion battery that contains organic electrolyte and is sealed in a protective case. Risk of exposure occurs only if the cell is mechanically, thermally, or electrically abused to the point of compromising the enclosure. If the battery is physically damaged and results in gasses or electrolyte leakage, the following initial care measures should be taken if a person is exposed to the gasses or electrolyte.

4.1 Description of First Aid Measures

Exposure	First Aid Measure
4.1.1 General Advice	• Move the victim into fresh air and out of the dangerous area. • In case of contact with the electrolyte, Wash the contact area with water for at least 15 min and take the victim to receive medical treatment. • Show this safety data sheet to the medical professional in attendance.
4.1.2 Eye Contact	Immediately flush the eyes with plenty of clean water for at least 15 minutes, without rubbing. If appropriate procedures are not taken, this may cause an eye irritation. Seek medical attention if eye irritation persists.
4.1.3 Skin Contact	Take off all contaminated clothing and wash before reuse. Rinse skin with water for 15 min at least. If appropriate procedures are not taken, this may cause skin irritation. Seek medical attention if skin irritation occurs.
4.1.4 Inhalation Contact	Immediately move the victim to fresh air and remove the source of contamination from the area. Seek medical attention.
4.1.5 Ingestion	Have the victim rinse their mouth thoroughly with water. Seek medical attention.

5 Fire-Fighting Measures

5.1 Extinguishing Media

- ABC dry chemical fire extinguisher.
- Additional extinguishing media include Cold water and dry powder in large amounts are applicable. Use metal fire extinction powder or dry sand if only a few cells are involved.

5.2 Specific Hazards

- May form hydrofluoric acid if the electrolyte comes into contact with water. In case of fire, the formation of the following flue gases cannot be excluded: Hydrogen fluoride (HF), Carbon monoxide and carbon dioxide.

5.3 Special Protective Actions for Firefighters

- Wear respiratory protection and a protective suit.
- Additional information, if possible, remove cell(s) from the firefighting area. If heated above 125°C, cell(s) can explode/vent. The cell is not flammable but internal organic material will burn if the cell is incinerated.

6 Accidental Release Measures

6.1 Personal Precautions, Protective Equipment and Emergency Procedures

- Evacuate personnel to a safe area and give first aid to injured victims once in a safe area.
- Eliminate all ignition sources, no smoking, sparks, flames, hot equipment, from the immediate area around the spill.
- Do not touch or walk-through spilled material.
- Avoid breathing vapors. Ensure adequate ventilation.

6.2 Environmental Precautions

- Absorb spilled material with non-combustible, non-reactive absorbent. Prevent spilled material from being absorbed into soil or draining into sewers, and natural waterways.

6.3 Methods and Materials for Containment and Clean-Up

- Clean any residual electrolyte and liquid using non-combustible, non-reactive absorbent. Ensure that clean-up procedures do not expose spilled material to moisture.
- Containerize and place all leaking batteries in individual containers that are leak-proof, nonconductive, non-combustible and contains 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 full amount of liquid from the battery.
- Place used spill response materials in leak-proof, non-conductive, non-combustible containers that have absorbent. For example, an LDPE plastic bag that is sealed shut and contains sufficient absorbent for the contained electrolyte.
- Avoid the release of collected materials. Do not place the collected materials near an open flame.

7 Handling and Storage

7.1 Precautions for Safe Handling:

- Avoid mechanical damage of the residential energy system. Do not open or disassemble the residential energy system.
- Avoid short circuiting the cell. Remove jewelry items such as rings, wristwatches, pendants, etc. that could contact the battery terminals if the terminals are exposed.
- Keep away from open flames, hot surfaces, and sources of ignition.

7.2 Conditions for Safe Storage:

Store residential batteries under the following conditions when not in use:

- Store in a protected battery warehouse area on pallets or similar devices to enable any leaks to be visibly observed upon inspection and to ensure the items do not come into contact with water or a salty breeze.
- Store away from heat sources such as furnaces, open flames, etc.
- Keep in the closed original container.
- Store in an upright position and in areas that are not likely to be damaged or disturbed by personnel, equipment, or vehicles.
- Do not store unboxed items in areas with a source of spark generation within 30 cm, in direct sunlight, in direct exposure to exhaust gas such as those from automobiles or in places with continuous or intermittent vibration.

7.2.1 Storage Conditions and Temperature

Storage Duration	Allowable Temperature Range
Up to 3 months*	–30 °C to 60 °C (–22 °F to 140 °F)
Between 3 and 12 months	–10 °C to 30 °C (–14 °F to 86 °F)

*Start date from production date.

If the products are stored for more than 12 months in their original package DO NOT ship them before contacting the SolarEdge support team for technical guidelines.

A SolarEdge Home Battery should not be stored untended for longer than twelve months since the battery service life will probably be unfavorably affected.

8 Exposure Controls/Personal Protection

8.1 Control Parameters:

Airborne exposure to hazardous substances in the electrolyte is not expected when the cells or batteries are used for their intended purposes.

8.2 Exposure Controls

CAS-No.	Chemical name	ml/m³	mg/m³	F/ml	Category	Origin
7440-44-0	Graphite, respirable	- -	4 -		TWA (8 h) STEL (15 min)	WEL WEL

Item		Description
8.2.1	Routine Handling	The residential energy system has a lithium-ion battery that contains an organic electrolyte that is sealed in a protective case. There is no risk of exposure during routine handling. Risk of exposure occurs only if the cell is mechanically, thermally, or electrically abused to the point of compromising the enclosure. • Do not eat, drink, or smoke in work areas. Avoid storing food, drink, or tobacco near the product. Practice and maintain good housekeeping. • Remove jewellery items such as rings, wristwatches, pendants, etc., that could contact the battery terminals if the terminals are exposed and to avoid short circuiting.
8.2.2	Personal Protective Equipment	The following personal protective equipment should be worn if the residential energy system is mechanically, thermally, or electrically abused to the point where the protective case is damaged and there is a risk of exposure to the electrolyte. • Skin/body protection: Wear closed toe shoes, chemical resistant overalls, protective over boots. • Gloves: 15 mm nitrile rubber gloves. Immersion protection provided when nitrile gloves worn over laminated film barrier gloves (Ansell Barrier 2-100 or equivalent). • Eye/Face protection: Take steps to prevent exposure to eyes and face including chemical splash goggles and face shield. • Respiratory protection: Wear a full-face respirator with an Organic Vapor/Acid Gas/Particulate filter [3M Model No. 60923 or equivalent]).

9 Physical and Chemical Properties

Appearance	
Form	Solid
Color	Various
Odor	Odorless

Important health, safety, and environmental information	
Test	Method
pHValue.	n.a
Flash point:	n.a
Lower explosion limits:	n.a
Vapor pressure: n	n.a
Density:	n.a
Water solubility: Insoluble Ignition temperature:	n.a

10 Stability and Reactivity

Stability and Reactivity	
Stability	Stable
Conditions to avoid	Keep away from open flames, hot surfaces, and other sources of ignition. Do not puncture, crush, or incinerate.
Materials to avoid	No materials need to be especially mentioned.
Hazardous decomposition products	In case of open cells, there is the possibility of hydrofluoric acid and carbon monoxide being released.
Possibility of Hazardous Reactions	Will not occur.
Additional information	No decomposition should occur if stored and applied as directed.

11 Toxicological Information

Empirical data on effects on humans

- If handled appropriately and if in accordance with the general safety or hygienic rules, there is no known risk or danger to health.

12 Ecological Information

Further information

- Under normal use no known ecological damage is expected. Do not flush into surface water or a sanitary sewer system.

13 Disposal Considerations

Item	Consideration
Advice on disposal	For recycling consult local battery recyclers.
Contaminated packaging	Disposal in accordance with local regulations.

14 Transport Information

14.1 Proper Shipping Name

Lithium-ion batteries.

14.2 Hazard Class: 9

Miscellaneous Dangerous Goods.

14.3 Identification Number

UN3480.

14.4 Packing Group

II (per GHS Regulations); There are no packing groups specified under US DOT regulations.

14.5 Packing Instructions

965-IA (IATA Dangerous Goods Regulations 58th Edition).

14.6 Residential energy storage tested and in compliance with UN Model Regulations

Manual of Test Criteria, Part III, subsection 38.3, 5th revised edition, Amendment 2.

14.7 Environmental Hazards

- Lithium-ion batteries are not classified as marine pollutants in the United States under 49 CFR Part 171.101 Appendix B.
- Follow all applicable local, state, and federal requirements when identifying additional environmental hazards.

15 Regulatory Information

Location	Regulation
15.1 United States	• TSCA Status: All ingredients in these products are listed on the TSCA inventory. • OSHA: These products meet criteria as per 29 CFR 1910.1200 • EPCRA 302/304: None. • EPCRA 311/312: Reportable in excess of 10,000 lbs. • EPCRA 313: None. • CERCLA RQ: None.
15.2 European Union	• Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I: Not listed. • Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex II: Not listed. • Regulation (EC) No. 850/2004 on persistent organic pollutants, Annex I as amended: Not listed. • Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals: Not listed. Other EU Regulations • Directive 96/82/EC (Seveso II) on the control of major accident hazards involving dangerous substances: Not listed. • Directive 94/33/EC on the protection of young people at work: Not listed. • This Safety Data Sheet complies with the requirements of Regulation (EC) No. 1907/2006 and amended on 28 May 2015 by (EU) 2015/830. • Regulation (EC) No. 1272/2008 These products are not classified as hazardous.
15.3 Additional regulatory information not provided elsewhere	• 58th Edition of the IATA Dangerous Goods Regulations (DGR).

16 Other Information

- Residential energy storage: 9800Wh.

16.1 Other information USA	Information	Rating
Hazardous Materials Information Label (HMIS)	• Health • Flammability • Physical Hazard	0 1 0
NFPA Hazard Ratings	• Health • Flammability • Reactivity • Unique Hazard	0 1 0 N. A

16.2 Other information EU	R Value	R Phrase
Full text of R-phrases referred to under sections 2 and 3	• R10	Flammable.
	• R20/22	Harmful by inhalation and if swallowed.
	• R22	Harmful if swallowed.
	• R34	Causes burns.
	• R40	Limited evidence of a carcinogenic effect.
	• R43	May cause sensitization by skin contact.
	• R48/23	Toxic: danger of serious damage to health by prolonged exposure through inhalation.
	• R49	May cause cancer by inhalation.
	• R50	Very toxic to aquatic organisms.
	• R53	May cause long-term adverse effects in the aquatic environment.
Further Information USA, EU	Data of sections 4 to 8, as well as 10 to 12, do not necessarily refer to the use and the regular handling of the product (in this sense consult package leaflet and expert information), but to the release of major amounts in case of accidents and irregularities. The information describes exclusively the safety requirements for the product(s) and is based on the present level of our knowledge. This data does not constitute a guarantee for the characteristics of the product(s) as defined by the legal warranty regulations. "(n.a. = not applicable; n.d. = not determined)".	

16.3 Appendix A: Regional Emergency Phone Numbers

Country	Local Number	Toll-Free Number
Australia	+61 2 9037 2994	1800 862 115
Austria	+43 1 3649237	0800 293702
Belgium	+32 2 808 32 37	
Canada	+1 703-741-5970	1-800-424-9300
Czech Republic	+420 228 880 039	
Denmark	+45 69 91 85 73	
Finland	+358 9 42419014	
France	+33 9 75 18 14 07	
Germany	+49 69 643508409	0800 1817059
Greece	+30 21 1176 8478	
Hungary	+36 1 808 8425	
Iceland	+354 539 0655	
Ireland	+353 1 901 4670	
Israel	+972 3-763-0639	
Italy	+39 02 4555 7031	800 789 767
Latvia	+371 66 165 504	
Lithuania	+370 5 214 0238	
Luxembourg	+352 20 20 24 16	
Macedonia	+389 2 551 7456	
Mexico		800 681 9531
Netherlands	+31 85 888 0596	
New Zealand	+64 9-801 0034	0800 425 459
Panama	+507 832-2475	
Poland	+48 22 398 80 29	
Portugal	+351 308 801 773	
Romania	+40 376 300 026	
Russia		8 (800) 100-63-46
Singapore	+65 3158 1349	800 101 2201
Slovakia	+421 2/330 579 72	
Slovenia	+386 1 888 80 16	
South Africa	+27 11 043 5369	
South Korea		080 822 1374
Spain		900 868 538
Sweden	+46 8 525 034 03	
Taiwan	+886 2 7741 4207	00801-14-8954
Ukraine	+380 94 710 1374	
United Kingdom	+44 20 3807 3798	
United States	+1 703-741-5970	1-800-424-9300