| SUNGROW | Safety Data Sheet (SDS) | Version: 1.0<br>Date of issue: 2020-11-20 |
|---|---|---|
| | CB3914895EA (3.2V 50Ah 160Wh)<br>SBR096 / SBR128 / SBR160 / SBR192 / SBR224 / SBR256 contain CB3914895EA | Revision date: 2020-11-20<br>Change List: see Section 16.1 |

# 1 Product and Company Identification USA, EU

## 1.1 Product identifier

Trade name/designation: CB3914895EA (3.2V 50Ah 160Wh)

The below products contain CB3914895EA cell:

* SBR096 / SBR128 / SBR160 / SBR192 / SBR224 / SBR256

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

### 1.2.1 Relevant identified uses

Lithium-Ion battery

### 1.2.2 Uses advised against

Not available

## 1.3 Details of the supplier of the safety data sheet

| | |
|---|---|
| Manufacturer/Supplier | Sungrow Power Supply Co., Ltd. |
| Address | No. 1699 Xiyou Rd., New & High Technology Industrial Development Zone, Hefei, P. R. China. |
| Telephone | +86 551 6532 7834, +86 551 6532 7845, +61 2 9922 1522 (AU) |
| Email | info@sungrow.cn, service@sungrow.cn, service@sungrowpower.com.au |

**Further Information**

Battery-System: Lithium-Ion (Li-ion)

Voltage: 3.2V

Anode (negative electrode): based on intercalation graphite

Cathode (positive electrode): based on lithiated metal oxide (LFP)

## 1.4 Emergency telephone number

Company: Sungrow Australia Group Pty Ltd

Add: Suite 1703, 99 Mount St, North Sydney NSW 2060

AU-wide emergency number: +61 2 9922 1522

Here is a link to more contact information, which includes for other offices around the world: https://en.sungrowpower.com/contact_us.

**Legal Remark**

### U.S.A

- The Occupational Safety and Health Administration (OSHA) Hazard Communication Standard, 29 CFR Subpart 1910.1200 does not apply to various subcategories including anything defined by OSHA as an "article". The products are defined as "articles", and are exempted from the requirements for Material Safety Data Sheets.

### EU

- The products are no “substances” or “mixtures” according to Regulation (EC) No 1907/2006 EC. Instead they have to 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 Safety Data Sheet is provided as a service to our customers. This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only.
- It should not therefore be construed as guaranteeing any specific property of the product.
- The information and recommendations set forth are made in good faith and believed to be accurate as of the date of preparation. Sungrow Power Supply Co., Ltd. makes no warranty, expressed or implied, with respect to this information and disclaims all liabilities from reliance on it.

# 2 Hazards Identification

## 2.1 Hazards Identification USA

**Route(s) of Entry**

There is no hazard when the measures for handling and storage are followed.

**Signs and Symptoms of Exposure**

In case of cell damage, possible release of dangerous substances and a flammable gas mixture.

OSHA Hazard Communication: This material is not considered hazardous by the OSHA Hazard Communication Standard 29CFR 1910.1200.

| | |
|---|---|
| Carcinogenicity (NTP): | Not listed |
| Carcinogenicity (IARC): | Not listed |
| Carcinogenicity (OSHA): | Not listed |

**Special hazards for human health and environment**

There is no hazard when the measures for handling and storage are followed.

In case of cell damage, possible release of dangerous substances and a flammable gas mixture.

## 2.2 Hazards Identification USA, EU

Explication of special hazards for human health and environment

Not classified as dangerous according to directive 1999/45/EEC

There is no hazard when the measures for handling and storage are followed.

In case of cell damage, possible release of dangerous substances and a flammable gas mixture.

# 3 Composition/Information on Ingredients USA, EU

## 3.1 Substances

Not applicable

## 3.2 Mixtures

Not applicable

* No classification is presented since the product is legally an article which is subject to EU CLP and/or to 67/548/EEC

## 3.3 Hazardous components

| EC-No. | CAS-No. | Chemical name | Quantity | EU-Classification |
|---|---|---|---|---|
| | 7429-90-5 | Aluminum Foil | 3.5% | |
| | 7440-50-8 | Copper Foil | 7.8% | |
| | 15365-14-7 | Lithium Iron Phosphate | 34.1% | |
| | 7782-42-5 | Carbon (proprietary) | 16.7% | |
| | 9003-07-0 | Separator (proprietary) | 3% | |
| | | Electrolyte (proprietary) | 20.3% | |
| | 7429-90-5 | Aluminum Alloy | 14.6% | |
| | 7439-92-1 | Lead | Not Detected | |
| | 7440-43-9 | Cadmium | Not Detected | |
| | 7439-97-6 | Mercury | Not Detected | |

Full text of each relevant R phrase can be found in "**16.4 Other Information EU**".

Further Information

For information purposes:

(*) Main ingredients: Lithium hexafluorophosphate, organic carbonates

Because of the cell structure the dangerous ingredients will not be available if used properly.

During charge process a lithium graphite intercalation phase is formed.

| | |
|---|---|
| Mercury content: | Hg < 0.1mg/kg |
| Cadmium content: | Cd < 1mg/kg |
| Lead content: | Pb: < 10mg/kg |

# 4 First Aid Measures USA, EU

## 4.1 Description of first aid measures

**General**

Not a health hazard.

**Inhalation**

Not a health hazard.

**Skin contact**

Not a health hazard.

**Eye contact**

Not a health hazard.

**Ingestion**

Get immediate medical advice/attention.

**IF EXPOSURE TO INTERNAL MATERIALS WITHIN CELL DUE TO DAMAGED OUTER CASING, THE FOLLOWING ACTIONS ARE RECOMMENDED;**

**General information**

- The following first aid measures are required only in case of exposure to interior battery components after damage of the external battery casing.
- Undamaged, closed cells do not represent a danger to the health.

**After inhalation**

Ensure of fresh air. Consult a physician.

**After contact with skin**

In case of contact with skin wash off immediately with plenty of water. Consult a physician.

**After contact with eyes**

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Seek medical treatment by eye specialist.

**After ingestion**

- Drink plenty of water.
- Call a physician immediately.

### 4.2 Most important symptoms and effects, both acute and delayed

- Not available

### 4.3 Indication of any immediate medical attention and special treatment needed

- Notify medical personnel of contaminated situations and have them take appropriate protective measures.
- If exposed or concerned, get medical attention/advice.

## 5 Fire Fighting Measures USA, EU

### 5.1 Suitable extinguishing media

Cold water and dry powder in large amount are applicable.

Use metal fire extinction powder or dry sand if only few cells are involved.

### 5.2 Special hazards arising from the chemical

May form hydrofluoric acid if 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 Protective equipment and precautions for firefighters

Wear self-contained breathing apparatus and protective suit.

Additional information:

If possible, remove cell(s) from fire fighting area. If heated above 125°C, cell(s) can explode/vent. Cell is not flammable but internal organic material will burn if the cell is incinerated.

## 6 Accidental Release Measures USA, EU

### 6.1 Personal precautions

Use personal protective clothing.

Avoid contact with skin, eyes and clothing. Avoid breathing fume and gas.

## 6.2 Environmental precautions

Do not discharge into the drains/surface waters/groundwater.

Methods for cleaning up/taking up

Take up mechanically and send for disposal.

# 7 Handling and Storage USA, EU

## 7.1 Handling

Advice on safe handling:

- Avoid short circuiting the cell.
- Avoid mechanical damage of the cell. Do not open or disassemble.

Advice on protection against fire and explosion:

- Keep away from open flames, hot surfaces and sources of ignition.

## 7.2 Storage

Requirements for storage rooms and vessels

Storage at room temperature at 15℃~25℃, approx. 20-30% of the nominal capacity.

Keep in closed original container.

# 8 Exposure Controls/Personal Protection Exposure limit values Exposure limits USA, (EH40) EU

**Additional advice on limit values**

During normal charging and discharging there is no release of product.

**Occupational exposure controls**

No specific precautions necessary.

**Protective and hygiene measures**

When using do not eat, drink or smoke. Wash hands before breaks and after work.

**Respiratory protection**

No specific precautions necessary.

**Hand protection**

No specific precautions necessary.

**Eye protection**

No specific precautions necessary.

**Skin protection**

No specific precautions necessary.

# 9 Physical and Chemical Properties USA, EU

**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.

Vapour pressure: n.a.

Density: n.a.

Water solubility: Insoluble

Ignition temperature: n.a.

# 10 Stability and Reactivity USA, EU

## 10.1 Reactivity

None

## 10.2 Stability

Stable

## 10.3 Possibility of hazardous reactions

None during normal operating conditions.

## 10.4 Conditions to avoid

Keep away from open flames, hot surfaces and sources of ignition. Do not puncture, crush or incinerate.

## 10.5 Materials to avoid

No materials to be especially mentioned.

## 10.6 Hazardous decomposition products

In case of open cells, there is the possibility of hydrofluoric acid and carbon monoxide release.

## 10.7 Possibility of Hazardous Reactions

Will not occur.

## 10.8 Additional information

No decomposition if stored and applied as directed.

# 11 Toxicological Information USA, EU

## 11.1 Acute toxicity

- Oral
  - This product does not elicit toxicological properties during routine handling and use.
- - Dermal
  - This product does not elicit toxicological properties during routine handling and use.
- - Inhalation
  - This product does not elicit toxicological properties during routine handling and use.

## 11.2 Skin corrosion/irritation

No irritation.

- If the cells are opened through misuse or damage, discard immediately. Internal components of cell are irritants and sensitizers.

## 11.3 Serious eye damage/irritation

Not available

## 11.4 Respiratory sensitization

Not available

## 11.5 Skin sensitization

No sensitization.

- If the cells are opened through misuse or damage, discard immediately. Internal components of cell are irritants and sensitizers.

## 11.6 Germ cell mutagenicity

Not available

## 11.7 Carcinogenicity

Not available

## 11.8 Reproductive toxicity

This product does not elicit toxicological properties during routine handling and use.

## 11.9 Specific target organ toxicity (single exposure):

Not available

## 11.10 Specific target organ toxicity (repeated exposure):

Not available

### 11.11 Aspiration hazard

Not available

### 11.12 Other Information

Not available

### 11.13 Empirical data on effects on humans

If appropriately handled and if in accordance with the general hygienic rules, no damages to health have become known.

## 12 Ecological Information USA, EU

### 12.1 Toxicity

#### 12.1.1 Fish

Not available

#### 12.1.2 Invertebrate

Not available

#### 12.1.3 Algae

Not available

### 12.2 Persistence and degradability

#### 12.2.1 Persistence

Not available

#### 12.2.2 Degradability

Not available

### 12.3 Bioaccumulative potential

#### 12.3.1 Bioaccumulation

Some materials within the cell are bioaccumulative. Under normal conditions, these materials are contained and pose no risk to persons or the surrounding environment.

#### 12.3.2 Biodegradability

Not available

### 12.4 Mobility in soil

Not available

### 12.5 Results of PBT and vPvB assessment

Not available

### 12.6 Other adverse effects

Not available

### 12.7 Further information

Ecological injuries are not known or expected under normal use. Do not flush into surface water or sanitary sewer system.

## 13 Disposal Considerations USA, EU

### 13.1 Advice on disposal

For recycling consult manufacturer.

### 13.2 Contaminated packaging

Disposal in accordance with local regulations.

# 14 Transport Information USA, EU

## 14.1 US DOT 49 CFR 172.101

| | |
|---|---|
| Proper shipping name | |
| Lithium-ion batteries | |
| ID Number: | UN3480 |
| Hazard Class or Division: | 9 |
| Packing group: | II |
| Label: | 9 |

## 14.2 Land transport (ADR/RID)

| | |
|---|---|
| UN number: | 3480 |
| ADR/RID class: | 9 |
| Classification code: | M4 |
| Warning plate | |
| Hazard label: | 9 |

- 

| | |
|---|---|
| ADR/RID packing group: | II |
| Limited quantity: | LQ 0 |
| Tunnel restriction code: | E |
| Description of the goods | Lithium-ion batteries |

## 14.3 Other applicable information (land)

- LQ 0: No exemption under the conditions of 3.4.2.
- Transport category: 2
- Marine transport

| | |
|---|---|
| UN number: | 3480 |
| IMDG code: | 9 |
| Marine pollutant: | No |
| Hazard label: | 9 |

- 

| | |
|---|---|
| IMDG packing group: | II |
| EmS: | F-A, S-I |

| | |
|---|---|
| Limited quantity: | None |
| Description of the goods | Lithium-ion batteries |

## 14.4 Air transport

| | |
|---|---|
| UN/ID number: | 3480 |
| ICAO/IATA-DGR: | 9 |
| Hazard label: | 9 |



| | |
|---|---|
| ICAO packing group: | II |
| Limited quantity Passenger: | - |
| IATA-packing instructions - Passenger: | 965 |
| IATA-max. quantity - Passenger: | 5 kg G |
| IATA-packing instructions - Cargo: | 965 |
| IATA-max. quantity - Cargo: | 35 kg G |
| Description of the goods | Lithium-ion batteries |

# 15 Regulatory Information USA, EU

## 15.1 U.S. Regulations

**National Inventory TSCA**

SAMSUNG SDI certifies that all chemical components of the Model CM0940R0003A (94 Ah capacity) Lithium-Ion Battery are listed on the US EPA TSCA 8(b) Inventory or are exempt from listing.

**SARA**

To the best of our knowledge this product contains no toxic chemicals subject to the supplier notification requirements of Section 313 of the Superfund Amendments and Reauthorization Act (SARA/EPCRA) and the requirements of 40 CFR Part 372.

## 15.2 Regulatory information EU

**Labeling**

Hazardous components which must be listed on the label

As an article the product does not need to be labeled in accordance with EC directives or respective national laws.

**EU regulatory information**

1999/13/EC (VOC): 0 %

# 16 Other Information USA, EU

## 16.1 Indication of changes

None

## 16.2 Training advice

Not available

## 16.3 Other Information USA

**Hazardous Materials Information Label (HMIS)**

- Health: 0
- Flammability: 0
- Physical Hazard: 0

**NFPA Hazard Ratings**

- Health: 0
- Flammability: 0
- Reactivity: 0 Unique Hazard:

## 16.4 Other Information EU

- 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.

## 16.5 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 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)"
- The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.