

Safety Data Sheet (SDS)

OSHA HazCom Standard 29 CFR 1910.1200(g) and GHS Rev 03.

Issue date 01/31/2019

Reviewed on 01/31/2019

1 Identification

· **Product Identifier**

· **Trade Name: Sirius Energy Storage**

· **Relevant identified uses of the substance or mixture and uses advised against:** Energy storage device

· **Product Description:**

Sirius Energy Storage products are supercapacitor-based energy storage devices that are available in a number of voltages, capacities, and form factors. The energy storage media are supercapacitors cells; each individual cell is approximately 2.4 volts and 3.1 Wh, and is enclosed in an aluminum casing. Each storage module contains a group of cells, other hardware and software, and is also enclosed in aluminum casing.

· **Details of the Supplier of the Safety Data Sheet:**

· **Manufacturer/Supplier:**

Kilowatt Labs, Inc.
142 West 57th Street, 11th Floor
New York, NY 10019
www.kilowattlabs.com

· **Emergency telephone number:** 1-917-960-1380

2 Hazard(s) Identification

· **Classification of the substance or mixture:**

The product does not need classification according to OSHA HazCom Standard 29 CFR paragraph (d) of §1910.1200(g) and GHS Rev 03.

· **Label elements:**

· **GHS label elements:** Non-Regulated Material

· **Hazard pictograms:** Non-Regulated Material

· **Signal word:** Non-Regulated Material

· **Hazard statements:** Non-Regulated Material

· **Precautionary statements:** None

· **Unknown acute toxicity:**

This value refers to knowledge of known, established toxicological or ecotoxicological values.

15 % of the mixture consists of component(s) of unknown toxicity.

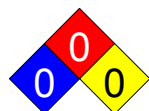
· **Hazard description:**

This product is considered an Article and is not considered hazardous under the OSHA Hazard Communication Standard. The definition in 29 CFR 1910.1200 is as follows: "Article" means a manufactured item: (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 does not release or otherwise result in exposure to a hazardous chemical under normal conditions of use. As an Article, this SDS is not legally required, but has been prepared as a courtesy to provide persons using this product with additional safety and regulatory information.

This Article is a manufactured electronic product which contains primarily non-hazardous materials, including aluminum, plastic and paper. However, it also includes sealed supercapacitor cells that include hazardous substances which are detailed in section 3 of this Safety Data Sheet. The hazardous substances mentioned ARE NOT INTENDED FOR RELEASE DURING NORMAL CONDITION OR USE OF THE PRODUCT. If the contents of these supercapacitor cells remain sealed, persons handling this product will avoid most of the associated risks.

· **Classification system:** NFPA/HMIS Definitions: 0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme

· **NFPA ratings (scale 0 - 4)**



Health = 0

Fire = 0

Reactivity = 0

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Trade Name: Sirius Energy Storage**· HMIS-ratings (scale 0 - 4)**

HEALTH	0	Health = 0
FIRE	0	Fire = 0
REACTIVITY	0	Physical Hazard = 0

· Hazard(s) not otherwise classified (HNOC): None known**3 Composition/Information on Ingredients****· Non-hazardous components:**

CAS: 7440-44-0 RTECS: FF 5250100	Activated Carbon	15-35%
	Paper	2-12%
CAS: 7429-90-5 RTECS: BD 0330000	Aluminium	25-50%

· Chemical characterization: Mixtures**· Description:** Mixture of substances listed below with non-hazardous additions.**· Dangerous Components:**

CAS: 429-06-1	Tetraethylammonium tetrafluoroborate ⚠ Acute Tox. 4, H302; Acute Tox. 4, H312; Acute Tox. 4, H332; Skin Irrit. 2, H315; Eye Irrit. 2A, H319; STOT SE 3, H335	5-10%
CAS: 75-05-8 RTECS: AL 7700000	acetonitrile ⚠ Flam. Liq. 2, H225; ⚠ Acute Tox. 4, H302; Acute Tox. 4, H312; Acute Tox. 4, H332; Eye Irrit. 2A, H319	5-10%

· Additional information:

The exact percentages of the ingredients of this mixture are considered to be proprietary and are withheld in accordance with the provisions of paragraph (i) of §1910.1200 of 29 CFR 1910.1200 Trade Secrets.

The chemicals in this product are sealed inside the supercapacitor cells and pose no direct hazard to the end user under normal use and operating conditions.

4 First-Aid Measures**· Description of first aid measures**

· General information: This product is not hazardous under normal conditions of use.

· After inhalation: Not anticipated under normal use.

· After skin contact: Generally, the product does not irritate the skin.

· After eye contact: Not anticipated under normal use.

· After swallowing: Not a normal route of entry.

· Information for doctor

· Most important symptoms and effects, both acute and delayed: No further relevant information available.

· Indication of any immediate medical attention and special treatment needed:

No further relevant information available.

5 Fire-Fighting Measures**· Extinguishing media**

· Suitable extinguishing agents: Use fire fighting measures that suit the environment.

· For safety reasons unsuitable extinguishing agents: No further relevant information.

· Special hazards arising from the substance or mixture:

This product is not anticipated to pose a significant fire hazard under normal conditions of storage, use and shipment. If this product is exposed to direct flames as may be encountered in a fire situation, the product may be impacted and may emit gases. In such a situation, care should be taken to avoid inhalation of any fumes.

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- **Advice for firefighters**
- **Special protective equipment for firefighters:**
As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent) and full protective gear to prevent contact with skin and eyes.

6 Accidental Release Measures

- **Personal precautions, protective equipment and emergency procedures:** Not required.
- **Environmental precautions:**
Because the hazardous components of this product are contained within the supercapacitor cells, this product does not present a threat to the environment under normal conditions of use.
- **Methods and material for containment and cleaning up:**
Dispose of the collected material according to regulations.
- **Reference to other sections:**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.
- **Protective Action Criteria for Chemicals**

· **PAC-1:**

7440-44-0	Activated Carbon	6 mg/m ³
75-05-8	acetonitrile	13 ppm

· **PAC-2:**

7440-44-0	Activated Carbon	330 mg/m ³
75-05-8	acetonitrile	50 ppm

· **PAC-3:**

7440-44-0	Activated Carbon	2,000 mg/m ³
75-05-8	acetonitrile	150 ppm

7 Handling and Storage

- **Handling**
- **Precautions for safe handling:**
Follow any specific use instructions supplied with the product and handle in accordance with good industrial hygiene and safety practices.
- **Information about protection against explosions and fires:** No special measures required.
- **Conditions for safe storage, including any incompatibilities**
- **Storage**
- **Requirements to be met by storerooms and receptacles:**
Store in a safe, dry location and keep the product away from excessive heat, flames and short circuit conditions.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** None.
- **Specific end use(s):** No further relevant information available.

8 Exposure Controls/Personal Protection

- **Additional information about design of technical systems:** No further data; see section 7.
- **Control parameters:**
- **Components with occupational exposure limits:**
The following constituent is the only constituent of the product which has a PEL, TLV or other recommended exposure limit.

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At this time, the remaining constituents have no known exposure limits.

75-05-8 acetonitrile

PEL	Long-term value: 70 mg/m ³ , 40 ppm
REL	Long-term value: 34 mg/m ³ , 20 ppm
TLV	Long-term value: 34 mg/m ³ , 20 ppm
	Skin

Additional information:

Finished commercial product. As an intact, sealed, manufactured Article, exposure to individual components is not anticipated and personal protective equipment should not be necessary.

Exposure controls:**Personal protective equipment****Breathing equipment:** Not required.**Protection of hands:** Not necessary under normal conditions.**Material of gloves:** Not applicable.**Penetration time of glove material:** Not applicable.**Eye protection:** Not necessary under normal conditions.**9 Physical and Chemical Properties****Information on basic physical and chemical properties****General Information**

Finished commercial product: various shapes and sizes

Appearance:**Form:**

Solid

Color:

No data available

Odour:

No data available

Odor threshold:

Not determined.

pH-value:

Not applicable.

Change in condition**Melting point/Melting range:**

Not determined.

Boiling point/Boiling range:

Not determined.

Flash point:

None

Flammability (solid, gaseous):

Not determined.

Ignition temperature:

Not applicable

Decomposition temperature:

Not determined.

Auto igniting:

Product is not self-igniting.

Danger of explosion:

Product does not present an explosion hazard.

Explosion limits:**Lower:**

Not determined.

Upper:

Not determined.

Vapor pressure:

Not applicable.

Density:**Relative density:**

Not determined.

Vapor density:

Not applicable.

Evaporation rate:

Not applicable.

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Trade Name: Sirius Energy Storage· **Solubility in / Miscibility with:**· **Water:** Insoluble.· **Partition coefficient (n-octanol/water):** Not determined.· **Viscosity:**· **Dynamic:** Not applicable.· **Kinematic:** Not applicable.· **Other information:** No further relevant information available.**10 Stability and Reactivity**· **Reactivity:** The product is stable under normal conditions· **Chemical stability:** Stable under normal conditions.· **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.· **Possibility of hazardous reactions:** No dangerous reactions known.· **Conditions to avoid:**

Avoid exposure to or contact with sparks, flames, other sources of ignition or extreme temperatures. Prevent short-circuiting across terminals, do not puncture, crush or incinerate.

· **Incompatible materials:** No further relevant information available.· **Hazardous decomposition products:** No dangerous decomposition products known.**11 Toxicological Information**· **Information on toxicological effects:**· **Acute toxicity:**· **LD/LC50 values that are relevant for classification:****75-05-8 acetonitrile**

Oral LD50 2,730 mg/kg (Rat)

Dermal LD50 1,250 mg/kg (Rabbit)

· **Primary irritant effect:**· **On the skin:** No irritating effect.· **On the eye:** No irritating effect.· **Additional toxicological information:**· **Carcinogenic categories:**· **IARC (International Agency for Research on Cancer):**

None of the ingredients are listed.

· **NTP (National Toxicology Program):**

None of the ingredients are listed.

· **OSHA-Ca (Occupational Safety & Health Administration):**

None of the ingredients are listed.

12 Ecological Information· **Toxicity:**· **Aquatic toxicity:** No further relevant information available.· **Persistence and degradability:** No further relevant information available.· **Behavior in environmental systems:**· **Bioaccumulative potential:** No further relevant information available.· **Mobility in soil:** No further relevant information available.

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Trade Name: Sirius Energy Storage**Results of PBT and vPvB assessment:**

- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects:** No further relevant information available.

13 Disposal Considerations**Waste treatment methods****Recommendation:**

Observe all federal, state and local environmental regulations when disposing of this material.

Uncleaned packaging

- **Recommendation:** Disposal must be made according to official regulations.

14 Transport Information*UN-Number:**

- **DOT, ADR/ADN, ADN, IMDG, IATA** UN3499

UN proper shipping name:

- **DOT, ADR/ADN, IMDG, IATA** CAPACITOR, ELECTRIC DOUBLE LAYER

Transport hazard class(es):

Not applicable

Environmental hazards:

Not applicable.

Special precautions for user:

Not applicable.

Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code:

Not applicable.

Transport/Additional information:

The supercapacitor cells used in Sirius Energy Storage modules fall under United Nations materials classification number UN 3499 CAPACITOR, electric double layer (with an energy storage capacity greater than 0.3 Wh). UN Special Provision 361 identifies the conditions under which cells with an energy storage capacity of greater than 0.3 Wh but less than 10 Wh, and modules containing such cells, may be transported WITHOUT being treated as dangerous goods (hazardous materials). Sirius Energy Storage meets these conditions and therefore may be transported WITHOUT being treated as dangerous goods (hazardous materials).

DOT

This product may be transported WITHOUT being treated as dangerous goods (hazardous materials) under US DOT regulations, under 49 CFR 172.101, pursuant to UN Special Provision 361 and 49 CFR §173.176.

ADR/ADN

This product may be transported WITHOUT being treated as dangerous goods (hazardous materials), pursuant to Special Provision 361 of the UN Model Regulations.

IMDG

This product may be transported WITHOUT being treated as dangerous goods (hazardous materials), pursuant to Special Provision 361 of the UN Model Regulations.

IATA

This product may be transported WITHOUT being treated as dangerous goods (hazardous materials) under IATA . See A186.

UN "Model Regulation":

Non-Regulated Material

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Trade Name: Sirius Energy Storage**15 Regulatory Information**

- **Safety, health and environmental regulations/legislation specific for the substance or mixture:**
- **SARA (Superfund Amendments and Reauthorization):**

· **Section 355 (extremely hazardous substances):**

None of the ingredients are listed.

· **Section 313 (Specific toxic chemical listings):**

75-05-8 acetonitrile

7429-90-5 Aluminium

· **TSCA (Toxic Substances Control Act):**

7429-90-5 Aluminium

7440-44-0 Activated Carbon

429-06-1 Tetraethylammonium tetrafluoroborate

75-05-8 acetonitrile

· **California Proposition 65:**· **Chemicals known to cause cancer:**

None of the ingredients are listed.

· **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients are listed.

· **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients are listed.

· **Chemicals known to cause developmental toxicity:**

None of the ingredients are listed.

· **New Jersey Right-to-Know List:**

7429-90-5 Aluminium

429-06-1 Tetraethylammonium tetrafluoroborate

75-05-8 acetonitrile

· **New Jersey Special Hazardous Substance List:**

7429-90-5 Aluminium

F3, R1

75-05-8 acetonitrile

F3

· **Pennsylvania Right-to-Know List:**

7429-90-5 Aluminium

429-06-1 Tetraethylammonium tetrafluoroborate

75-05-8 acetonitrile

· **Pennsylvania Special Hazardous Substance List:**

7429-90-5 Aluminium

E

75-05-8 acetonitrile

E

· **Carcinogenic categories:**· **EPA (Environmental Protection Agency):**

75-05-8 acetonitrile

CBD, D

· **TLV (Threshold Limit Value established by ACGIH):**

7429-90-5 Aluminium

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75-05-8	acetonitrile	A4
· NIOSH-Ca (National Institute for Occupational Safety and Health):		
None of the ingredients are listed.		
· GHS label elements Non-Regulated Material		
· Hazard pictograms: Non-Regulated Material		
· Signal word: Non-Regulated Material		
· Hazard statements: Non-Regulated Material		
· National regulations:		
None of the ingredients are listed.		
· Chemical safety assessment: A Chemical Safety Assessment has not been carried out.		

16 Other Information

The information and recommendations in this safety data sheet are, to the best of our knowledge, accurate as of the date of issue. Nothing herein shall be deemed to create warranty, expressed or implied, and shall not establish a legally valid contractual relationship. It is the responsibility of the user to determine applicability of this information and the suitability of the material or product for any particular purpose.

· **Date of preparation / last revision:** 01/31/2019 / 7

· **Abbreviations and acronyms:**

ADR: The European Agreement concerning the International Carriage of Dangerous Goods by Road
 ADN: The European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
 IMDG: International Maritime Code for Dangerous Goods
 DOT: US Department of Transportation
 IATA: International Air Transport Association
 ACGIH: American Conference of Governmental Industrial Hygienists
 EINECS: European Inventory of Existing Commercial Chemical Substances
 ELINCS: European List of Notified Chemical Substances
 CAS: Chemical Abstracts Service (division of the American Chemical Society)
 NFPA: National Fire Protection Association (USA)
 HMIS: Hazardous Materials Identification System (USA)
 LC50: Lethal concentration, 50 percent
 LD50: Lethal dose, 50 percent
 PBT: Persistent, Bioaccumulative and Toxic
 vPvB: very Persistent and very Bioaccumulative
 NIOSH: National Institute for Occupational Safety and Health
 OSHA: Occupational Safety & Health Administration
 TLV: Threshold Limit Value
 PEL: Permissible Exposure Limit
 REL: Recommended Exposure Limit
 Flam. Liq. 2: Flammable liquids – Category 2
 Acute Tox. 4: Acute toxicity – Category 4
 Skin Irrit. 2: Skin corrosion/irritation – Category 2
 Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A
 STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

· *** Data compared to the previous version altered.**

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