

SAFETY DATA SHEET

This document is prepared as a courtesy to provide persons using this product with additional safety and regulatory information. Users are also encouraged to access the applicable SDS for the internal components referenced in Section 3 (Composition and Ingredients). Safety Data Sheet following the format of Regulation (EC) No 1907/2006 (REACH) and EC No 2015/830
SDS History: Date of compilation: 22.06.2018, rev. 2

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 PRODUCT IDENTIFIER:

SkelStart, SkelMod
Synonyms, Other Means of Identification: SSA12V; SSA24V; SMA51V117F; SMA102V88F; SMA170V53F;
Product Numbers:
Description: Commercial Product

1.2 RELEVANT IDENTIFIED USES OF THE SUBSTANCE OR MIXTURE AND USES ADVISED AGAINST:

Intended for use: SSA12V & SSA24V: Engine starting applications in buses, generators, heavy machinery, maritime, trucking.
SMA51V117F: Hybrid and electric buses, forklifts and AGVs in material handling, heavy transportation.
SMA102V88F: Peak power supply, voltage stabilization, load levelling, frequency regulation systems.
SMA170V53F: Heavy-duty applications: heavy electric transportation, rail applications, drivetrains, pulse power supply, regenerative power and peak assistance in power grids and industrial applications, UPS solutions, fusion reactors, hadron colliders.

Uses advised against: Not determined

1.3 DETAILS OF THE SUPPLIER OF THE SAFETY DATA SHEET:

Manufacturer / supplier: Skeleton Technologies GmbH, Schücostraße 8, 01900, Großröhrsdorf, Saxony, Germany, Tel. +49 35952 416040
info@skeletootech.com, www.skeletootech.com

SDS responsible: Product development

1.4 EMERGENCY TELEPHONE NUMBER:

Giftnotruf Berlin, Tel. 030 19240
Poison information centre Estonia, Tel. 166662 (24/7)

SECTION 2. HAZARD IDENTIFICATION

This assembly of articles is a manufactured electronic product that contains primarily non-hazardous materials, including metal, plastic and rubber. However, the assembly also includes ultracapacitors, which contain hazardous substances sealed within them. The mentioned hazardous substances ARE NOT INTENDED FOR RELEASE DURING NORMAL CONDITIONS OF USE OF THE PRODUCT*. Ultracapacitors are sealed aluminium containers, which enclose layers of activated carbon that are saturated with an electrolyte solution. The electrolyte solution contains a quaternary salt compound (tetraethylammonium tetrafluoroborate) dissolved in solvent (acetonitrile). The assembled layers of activated carbon are inserted into a metal container, saturated with the above-mentioned electrolyte solution and then sealed and stored in electrically non-charged state. If the contents of ultracapacitor remain sealed and kept uncharged, the person handling this product will avoid most of the risks described here for all hazardous components of the electrolyte. As such, precautions should be taken to avoid rupture or overheating of the sealed metal containers.

* Capacitors containing electrolyte are articles under REACH-regulation, because electrolyte is not intended to be released during use. Therefore, substance registration requirements do not apply to the substances contained in capacitors. CLP-regulation compliant classification and REACH-regulation compliant SDS are to be provided for substances and mixtures only. The current product is an assembly of articles, therefore classification, labelling and SDS are not a legal requirement.

2.1 CLASSIFICATION OF THE SUBSTANCE OR MIXTURE:

Under normal conditions of use, the ultracapacitors are hermetically sealed. Classification according EC regulation 1272/2008 (CLP): not applicable. The product is not a substance or a mixture, but an **article**. Providing the Safety Data Sheet takes place on a voluntary basis for information purposes only.

2.2 LABEL ELEMENTS:

Hazard components for labelling - not applicable. Labelling according to Regulation (EC) No. 1272/2008 [CLP] not applicable. There is no legal requirement for the product to be specially labelled.

2.3 OTHER HAZARDS:

The product should not be opened or burned. Exposure to the ingredients contained within or their combustion products could be harmful. Skin contact with the carbon may cause mild irritation. The activated carbon may be combustible and may be ignited if exposed to an ignition source or if subjected to direct flame. If involved in a fire, the chemicals contained in the case may decompose and produce toxic gases (e.g. carbon oxides, propylene glycol, hydrogen fluoride and boron compounds). During a fire involving this product care should be taken to avoid inhalation of fumes. Misuse of this product, such as overcharging, may release these toxic fumes as well.

SECTION 3. COMPOSITION AND INFORMATION ON INGREDIENTS

3.1 SUBSTANCE: not applicable

3.2 MIXTURE: not applicable

This product is an assembly of articles. Under normal use and handling, user does not come into contact with the internal materials and capacitors do not emit regulated or hazardous substances. This Safety Data Sheet is provided for informational purpose only. Most of the product is composed of non-hazardous materials: zinc-plated stainless steel, aluminium, plastic, rubber. The product also includes ultracapacitors for which components are given in the table below. In addition, sealants / adhesives are used for the assembly of the product – detailed information is given in the second table. However, the mass of sealants used in the final product is very low and/or sealants / adhesives do not pose the assigned hazards when they are in a cured state, as is the case with the current product.

The packaging of the product is made from plywood.

| ULTRACAPACITOR COMPONENTS: | | | | |
|--|----------------------|---|--|--------------------------|
| CAS# / EC # | REACH registration # | Component identification | Classification according to CLP regulation | % w/w |
| 75-05-8 / 200-835-2 | * | Acetonitrile | Flam. Liq. 2 H225; Acute Tox. 4 H302; H312; H332; Eye Irrit. 2 H319 | 20-40% |
| 7440-44-0 / 231-153-3 | * | Carbon | Not classified | <30% |
| 1333-86-4 / 215-609-9 | * | Carbon black | Not classified | < 12 % |
| 429-06-1 / 207-055-1 69444-47-9/614-970-3 | * | Tetraethylammonium tetrafluoroborate Triethylmethylammonium tetrafluoroborate Total tetrafluoroborate | Acute Tox. 4 H302; H312; H332; Eye Irrit. 2 H319; Skin Irrit. 2 H315; STOT SE 3; H335 | 0-35% 0-35% 10-35% |
| 7429-90-5 / 231-072-3 | * | Aluminum | Not classified | Proprietary |
| - | - | Paper | Not classified | |
| - | * | Other minor components that comprise the balance of the capacitor (e.g. binders, rubber, etc.) | Not classified | Balance |

| Sealants / adhesives** | | | | |
|------------------------|----------------------|---|---|------------------|
| CAS# / EC # | REACH registration # | Component identification | Classification according to CLP regulation | Percent (Weight) |
| NA (mixture) | NA (mixture) | NOALOX Anti Oxidant | Aquatic Chronic 2 H411; | Proprietary |
| NA (mixture) | NA (mixture) | LOCTITE SI 5699 GY | Eye Irrit. 2A H319; Skin Sens. 1 H317; | Proprietary |
| NA (mixture) | NA (mixture) | LOCTITE 243 | Eye Irrit. 2A H319; Skin Irrit. 2 H315; Skin Sens. 1 H317; Carc. 2 H351; | Proprietary |
| NA (mixture) | NA (mixture) | LOCTITE 542 | Eye Irrit. 2 H319; Skin Irrit. 2 H315; Skin Sens. 1 H317; Carc. 2 H351; | Proprietary |
| NA (mixture) | NA (mixture) | PENOSIL Premium Greenhouse Silicone | Skin Sens. 1 H317; Aquatic Chronic 3 H412; | Proprietary |
| NA (mixture) | NA (mixture) | ELECTROLUBE Polyethane Resin 5608, Part A | Not classified | Proprietary |

| | | | | |
|--------------|--------------|---|---|-------------|
| NA (mixture) | NA (mixture) | ELECTROLUBE Polyethane Resin 5608, Part B | Acute Tox. 4 H332; Skin Irrit. 2 H315; Eye Irrit. 2 H319; Resp. Sens. 1 H334; Skin Sens. 1 H317; Carc. 2 H351; STOT SE 3 H335; STOT RE 2 H373; | Proprietary |
|--------------|--------------|---|---|-------------|

* Not applicable for substances imported in articles in case the substances are not intended to be released during normal conditions of use of the article.

** Not all sealants/adhesives are used in all the articles. Detailed list of sealants used in the articles can be found below:

SSA12V; SSA24V – NOALOX Anti Oxidant,
SMA51V117F – LOCTITE 542, PENOSIL Premium Greenhouse Silicone, ELECTROLUBE Polyether/Ester Urethane 5608A & 5608B;
SMA102V88F – LOCTITE 243;
SMA170V53F - NOALOX Anti Oxidant; LOCTITE 243; LOCTITE 542; LOCTITE SI 5699 GY.

See Section 16 for full EU classification and hazard statements on product components.

Further Information:

Product does not contain listed SVHC substances > 0,1 % according to Regulation (EC) No. 1907/2006 Article 59 (REACH)

SECTION 4. FIRST AID MEASURES

The article is not hazardous under normal conditions of use. Damaged ultracapacitors may release electrolyte containing acetonitrile and Tetraethylammonium tetrafluoroborate. Acetonitrile is moderately toxic by inhalation and/or skin absorption. If necessary, physicians should refer to Section 11 (Toxicological Information) in the event of severe inhalation, skin contact or ingestion exposure to the electrolyte solution. Overcharging, reverse charging, incinerating or heating capacitors is prohibited. First-aid measures applicable to contamination with the electrolyte solution are as follows:

4.1 DESCRIPTION OF FIRST AID MEASURES

- **INHALATION:** If vapors or fumes from the electrolyte contained in this product are inhaled, remove exposed person to fresh air. If necessary, use artificial respiration to support vital functions and seek medical attention.
- **SKIN EXPOSURE:** If skin exposure to electrolyte occurs, flush contaminated area liberally with water. Seek medical attention if any adverse effects occur after flushing.
- **EYE EXPOSURE:** If liquid, vapors or fumes from the electrolyte contained in this product contaminate the eyes, rinse eyes under gently running water. Use sufficient force to open eyelids and then "roll" eyes while flushing. Rinse eyes in running water for minimum 20 minutes. Seek medical attention.
- **INGESTION:** In the unlikely event that the electrolyte contained in this product is swallowed, CALL PHYSICIAN OR POISON CONTROL CENTER IMMEDIATELY. If professional advice is not available, DO NOT INDUCE VOMITING. Never induce vomiting or give (milk or water) to someone who is unconscious, having convulsions, or unable to swallow. If victim is convulsing, maintain an open and obtain immediate medical attention

4.2 MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED

Skin contact with the carbon may cause mild irritation. Electrolyte solution will cause burns to mouth and throat. Ingestion of large quantities can cause tissue ulceration of the gastrointestinal tract. Inhalation of electrolyte solution mist will severely irritate the nose and throat. Electrolyte solution will cause irritation to eyes and skin.

4.3 INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED

No specific requirements.

SECTION 5. FIRE FIGHTING MEASURES

5.1 EXTINGUISHING MEDIA

SUITABLE FIRE EXTINGUISHING MATERIALS: The following fire extinguishing materials are suitable for fires involving this product:

| | | |
|--|-------------------------|---------------------------|
| Water Spray: OK (cooling only and only if products are uncharged) | Dry Chemical: OK | Carbon Dioxide: OK |
| Foam: OK | Halon: OK | Other ABC Type: OK |

UNSUITABLE FIRE EXTINGUISHING MATERIALS: None known.

5.2 SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE

If involved in a fire, the materials contained in these articles may thermally decompose and produce toxic gases (e.g. nitrogen oxides, carbon oxides, hydrogen cyanide, hydrogen fluoride and other fluoride and boron compounds).
Explosion Sensitivity to Mechanical Impact: Not sensitive. Explosion Sensitivity to Static Discharge: Not sensitive.

5.3 ADVICE FOR FIREFIGHTERS

This product is not flammable under normal operational and non-operational conditions. Due to the small amount of electrolyte solution in each device and the presence of activated carbon, these articles contain little or no freestanding liquid and are not anticipated to pose a significant fire hazard under normal conditions of storage, use and shipment. Sealed devices involved in a fire may rupture explosively if heated for a sufficiently long period of time.

Wear SCBA with a chemical protection suit only where personal (close) contact is likely. Fire fighter's clothing conforming to European standard EN469 should be used.

Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

SECTION 6. ACCIDENTAL RELEASE MEASURES

6.1 PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES

Personal Protection

Always wear impenetrable gloves and eye protection. Eliminate sources of ignition and ensure good ventilation.

6.2 ENVIRONMENTAL PRECAUTIONS

Avoid uncontrolled releases to the environment. Accidental spills of the electrolyte should be kept away from drains, surface and ground water.

6.3 METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING UP

ELECTROLYTE LEAKS: In case of electrolyte leaks, keep unnecessary personnel away, neutralize with diluted acetic or hydrochloric acid and then wipe up with absorbent paper towels. Place material into a tightly closed chemical waste container and dispose of as hazardous waste. Contact local regulatory authorities for advice regarding disposal of cleanup materials and cells. Call (+49 30 3080 7458) for emergency assistance.

6.4 REFERENCE TO OTHER SECTIONS

For additional information on protective measures see Section 8 and for waste management requirements see Section 13.

SECTION 7. HANDLING AND STORAGE

7.1 PRECAUTIONS FOR SAFE HANDLING

If the module is damaged, do not breathe fumes and/or vapors, prevent electrolyte contact with eyes, clothing and skin. Wash thoroughly after handling damaged modules. Avoid exceeding the given occupational exposure limits (see section 8). Smoking, eating and drinking should be prohibited in the application area. Follow standard hygiene measures when handling chemical products.

Advice on protection against fire and explosion: Normal measures for preventive fire protection.

Hygiene measures: Handle in accordance with good industrial hygiene and safety practice. When using, do not eat, drink and smoke. Wash hands before breaks and at the end of workday.

7.2 CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES

Store product in a well-ventilated area, keep it away from heat and flame and prevent short-circuit conditions. Do not store at temperatures over 70°C. Do not store together with: explosives, oxidizing solids and liquids, radioactive substances and infectious substances.

7.3 SPECIFIC END USE(S)

None known.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

NORMAL USE: NOT APPLICABLE. Finished commercial product. Exposure to individual components is not possible with intact, sealed, manufactured article,

FOR OPENED UNITS: If the product leaks, fails, is damaged or is otherwise manipulated in such a way that the contents are released, exposure to the internal components is possible. The only internal component that is dispersible is electrolyte. Therefore, the following information applies to electrolyte solution only.

8.1 CONTROL PARAMETERS

| Chemical Name | CAS # | Applicable Exposure Limits | | | | | | | Other |
|--|------------|----------------------------|---|------------|------------|------------|-----------|------------|--|
| | | OSHA-PELs | | ACGIH-TLVs | | ACGIH-RELS | | | |
| | | TWA (ppm) | STEL (ppm) | TWA (ppm) | STEL (ppm) | TWA (ppm) | Skin Note | IDLH (ppm) | |
| Acetonitrile | 75-05-8 | 40 | 60 (15 min.) 68 mg/m ³ | 20 | NE | 20 | Skin | 500 | DFG MAKs (skin) (vacated TWA = 20 ppm (skin) 1989 PEAK = 2.ppm MAX 15 min, average value, 1-hr interval, 4 PEL) per shift DFG MAK Pregnancy Risk Classification: C Carcinogen: EPA-CBD, EPA-D, TLV-A4 |
| Tetraethylammonium tetrafluoroborate | 429-06-1 | NE | | | | | | | - |
| Triethylmethylammonium Tetrafluoroborate | 69444-47-9 | NE | | | | | | | - |

NE = Not Established

Selection of the DNEL(s) and PNEC(s) or other hazard conclusion for critical health effects of the electrolyte.

DNELs

For Acetonitrile:

| Route of exposure | Workers | | | | Consumers | | | |
|--|----------------------|------------------------|-----------------------|--------------------------|----------------------|------------------------|-----------------------|--------------------------|
| | Acute effect local | Acute effects systemic | Chronic effects local | Chronic effects systemic | Acute effects local | Acute effects systemic | Chronic effects local | Chronic effects systemic |
| Oral | Not required | | | | 0.6 mg/kg bw/day | | No data available | |
| Inhalation | 68 mg/m ³ | 68 mg/m ³ | 68 mg/m ³ | 68 mg/m ³ | 22 mg/m ³ | 220 mg/m ³ | 4.8 mg/m ³ | 4.8 mg/m ³ |
| Dermal | No data available | | | 32.2 mg/kg bw/day | No data available | | | |
| Each of the cells should contain one of the following information: i) DNEL value with unit or ii) hazard identified but no DNEL available or iii) no exposure expected, iv) no hazard identified | | | | | | | | |

PNECs

For Acetonitrile:

| Environmental protection target | PNEC |
|---------------------------------|------------------------|
| Fresh water | 10 mg/L |
| Freshwater sediments | 7.53 mg/kg sediment dw |

| | |
|--|----------------------|
| Marine water | 1 mg/L |
| Marine sediments | no exposure expected |
| Food chain | no hazard identified |
| Microorganisms in sewage treatment | 32 mg/L |
| Soil (agricultural) | 2.41 mg/kg soil dw |
| Air | no hazard identified |
| Each of the cells should contain one of the following information: i) PNEC value with unit or ii) hazard identified but no PNEC available or iii) no exposure expected or iv) no hazard identified | |

Relevant data for Tetraethylammonium tetrafluoroborate is not available as this substance has not been registered under REACH and corresponding chemical safety assessment has not been carried out for the time being.

8.2 EXPOSURE CONTROLS

Appropriate engineering controls:

Usually not required. Keep product away from heat and open flame. Store in a cool & dry place

Personal protective equipment:

Eye and face protection - Not ordinarily required. Chemical goggles or safety glasses with side shields should be worn when handling a damaged module.

Skin protection: Not ordinarily required. Wear impervious gloves when handling damaged module. The selected protective gloves must satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.
Suitable material: Butyl rubber. Wash contaminated clothing before re-use.

Respiratory protection: Not ordinarily required during normal operations

No specific requirements when working with non-damaged finished commercial product under normal conditions.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

The product is an article – general provisions of this Section are non-applicable

VOLATILE ORGANIC COMPOUND (VOC) CONTENT: Not applicable. Product not regulated for VOC content.

SECTION 10. STABILITY AND REACTIVITY

10.1 REACTIVITY

No hazardous reaction known under conditions of normal use. Prevent manual short-circuiting across terminals in charged state and temperatures exceeding 70°C. Avoid exposure to heat and open flame. Do not puncture, crush or incinerate.

10.2 CHEMICAL STABILITY

Stable under condition of normal temperature.

10.3 POSSIBILITY OF HAZARDOUS REACTIONS

Unknown. Hazardous polymerization will not occur.

10.4 CONDITIONS TO AVOID

Avoid exposure to or contact with sparks, flames and/or other sources of ignition, extreme temperatures and incompatible chemicals.

10.5 INCOMPATIBLE MATERIALS

Electrolyte Solution: Strong reducing agents, strong oxidizers, strong acids, diphenyl sulfoxide, trichlorosilane, n-fluoro compounds, nitrating agents.

10.6 HAZARDOUS DECOMPOSITION PRODUCTS

Combustion: Products of thermal decomposition can include toxic gases (e.g. nitrogen oxides, carbon oxides, hydrogen cyanide, hydrogen fluoride and other miscellaneous fluoride and boron compounds).

SECTION 11. TOXICOLOGICAL INFORMATION

This product is a finished commercial product. It is defined as an "article" and exempt from CLP classification and REACH SDS requirements. **The following information is about the hazardous components sealed (AND NOT INTENDED FOR RELEASE) within the article and not about the article itself.**

11.1 INFORMATION ON TOXICOLOGICAL EFFECTS:

Acute toxicity: Classification criteria are not applicable for the article itself. Information about the relevant components sealed (without an intention of release) within the article is summarised in the following table.

| CAS-Nr. | Designation | | | | | |
|------------|--|---|---|-----------------|--|----------------|
| | Routes of Exposure | Dose | Method | Species | Exposure time | Results |
| 75-05-8 | Acetonitrile | | | | | |
| | Oral | LD50 calculated 617 mg/kg for male and female mice combined (with 95% confidence limits of 450-787 mg/kg) | OECD Guideline 401 | Mouse | 1 administration; observation 14 d. | Harmful |
| | Dermal | LD50 > 2 000 mg/kg bw / LD50 980 mg/kg | OECD Guideline 402 / Other: Union Carbide Chemicals Company, 1959 | Rabbit / Rabbit | 24h / Single exposure | Harmful |
| | Inhalation (vapour) | LC50 3587 ppm | OECD Guideline 403 | Mouse | 4h | Harmful |
| 1333-86-4 | Black carbon | | | | | |
| | Oral | LD50 >8000 mg/kg | OECD Guideline 401 | Rat | 1 administration; observation 4 weeks. | Not classified |
| | Inhalation | Effect level > 4.6 mg/m ³ air | Research Report no. 104: Health Effects Institute, October 2001, Vincent R, Kumarathasan P et al. | Rat | 4h | NA |
| 429-06-1 | Tetraethylammonium tetrafluoroborate | | | | | |
| | Oral | >500 mg/kg | No information | Rabbit | No information | Harmful |
| 69444-47-9 | Triethylmethylammonium Tetrafluoroborate | | | | | |
| | Oral | >500 mg/kg | No information | Rabbit | No information | Harmful |

Skin corrosion/irritation: Classification criteria are not applicable for the article itself.

Serious eye damage/ irritation: Classification criteria are not applicable for the article itself.

Respiratory or skin sensitisation: Classification criteria are not applicable for the article itself.

Summary of evaluation of the CMR properties: Classification criteria are not applicable for the article itself. Article does not contain component substances classified for CMR properties.

Specific target organ toxicity single exposure: Classification criteria are not applicable for the article itself.

STOT-repeated exposure: Classification criteria are not applicable for the article itself.

Aspiration hazard: Classification criteria are not applicable for the article itself.

SECTION 12. ECOLOGICAL TOXICITY ENVIRONMENTAL FATE AND TRANSPORT

12.1 TOXICITY:

Classification criteria are not applicable for the article itself. Information about the relevant components is summarised in the following table.

| CAS-Nr. | Designation | | | | | Results |
|-----------|---|-------------------|-------------------|---------------------------|--|---|
| | Aquatic Toxicity | Dose | Exposure time [h] | Species | Method | |
| 75-05-8 | Acetonitrile | | | | | |
| | Acute toxicity for fish | LC50 1640 mg/l | 96 h | Pimephales promelas | No data available | Based on available data not toxic to fish |
| | Acute toxicity for invertebrates | LC50 400 mg/L | 24h | Artemia salina | Acute Toxicity of Organic Solvents on Artemia salina, 1994, Barahona-Gomariz, M.V. et al | Based on available data, not toxic |
| | Toxicity to aquatic algae and cyanobacteria | LC50 9696 mg/L | 72 h | Phaeodactylum tricornutum | ISO 10253 | Based on available data, not toxic |
| 1333-86-4 | Black carbon | | | | | |
| | Acute toxicity for fish | LC0 >1000 mg/l | 96 h | Brachydanio rerio | OECD Guideline 203 | Based on available data not toxic to fish |
| | Acute toxicity for invertebrates | EC50 >5600 mg/L | 24 h | Daphnia magna | OECD Guideline 202 | Not toxic within its aqueous solubility |
| | Toxicity to aquatic algae and cyanobacteria | EC50 >10 000 mg/L | 72 h | Desmodesmus subspicatus | OECD Guideline 201 | Not toxic within its aqueous solubility |

Chronic (long-term) toxicity: Classification criteria are not applicable for the article itself. Based on the acute hazard profile of relevant components further assessment is not required.

12.2 PERSISTENCE AND DEGRADABILITY: Not applicable for articles. Acetonitrile is readily biodegradable - OECD guideline 301C. Biodegradation results after 28 days: BOD - 65%; TOC - 84%; GC - 88%.

12.3 BIOACCUMULATION POTENTIAL: Not applicable for articles. No indication of bioaccumulation potential based on data available for hazardous components. US EPA BCFWIN generated an estimated BCF of 3.162 for acetonitrile based on the experimental log Kow of -0.34.

Partition coefficient n -octanol / water:

| CAS-Nr. | Designation | Log Pow |
|---------|--------------|--------------|
| 75-05-8 | Acetonitrile | -0,34 |

12.4 MOBILITY IN SOIL: Not applicable for articles.

12.5 RESULTS OF PBT AND VPVB ASSESSMENT: The product does not contain substances classified as PBT or vPvB.

12.6 OTHER ADVERSE EFFECTS: None known.

SECTION 13. DISPOSAL CONSIDERATION

13.1 WASTE TREATMENT METHODS

The national legislation must be complied with. Waste products should be collected and handed over to a company that owns applicable treatment license. Non-contaminated packages may be supplied to recycling. According to EAKV, allocation of waste identity numbers/waste descriptions must be carried out in a specific way for every industry and process. List of proposed waste codes / waste designations in accordance with EWC (European Waste Codes):

Waste disposal number of waste from residues/unused products

160605 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; batteries and accumulators; other batteries and accumulators

Waste disposal number of used product


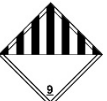
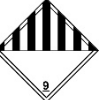

160605 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; batteries and accumulators; other batteries and accumulators

Waste disposal number of contaminated packaging

150203 WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED; absorbents, filter materials, wiping cloths and protective clothing; absorbents, filter materials, wiping cloths and protective clothing other than those mentioned in 15 02 02

Contaminated packages should be treated like the substance.

SECTION 14. TRANSPORT INFORMATION

| LAND TRANSPORT (ADR / RID): | | | | | | |
|---|--|-------------------------------|--------------------------|---|--|--|
| UN-Number | UN proper shipping name | Transport hazard class | | Packing Group | Label | |
| UN 3499 | CAPACITOR, electric double layer (with an Energy storage capacity of more than 0.3 Wh) | 9 | | Classification code: M11 (Es): 0 Transport category: 4 | Special provisions: 361 Excepted Quantities: E0 Tunnel restriction code: E | Label 9  |
| INLAND WATERWAY TRANSPORT (ADN): | | | | | | |
| UN 3499 | CAPACITOR, electric double layer (with an Energy storage capacity of more than 0.3 Wh) | 9 | | Classification code: M11 (Es): 0 Transport category: 4 | Special provisions: 361 Excepted Quantities: E0 Tunnel restriction code: E | Label 9  |
| SEA TRANSPORT (IMDG) | | | Marine pollutant: | | | |
| UN 3499 | CAPACITOR, electric double layer (with an Energy storage capacity of more than 0.3 Wh) | 9 | NO | (Es): 0 EmS: F -A , S -I | Special provisions: 361 Excepted Quantities: E0 | Label 9  |
| AIR TRANSPORT (ICAO) | | | | | | |
| UN 3499 | CAPACITOR, electric double layer (with an Energy storage capacity of more than 0.3 Wh) | 9 | | Excepted (Es) Passenger: Forbidden Passenger LQ: Forbidden (Es) Passenger: Forbidden IATA-packing instructions - Passenger : 971 IATA maximum quantity - Passenger: No limit IATA-packing instructions - Cargo : 971 IATA maximum quantity - Cargo : No limit | Special provisions: A186 Excepted Quantities: E0 | Label 9  |

SPECIAL PRECAUTIONS FOR USER: See section 6-8

Bulk according to Annex II of MARPOL 73/78 and the IBC Code not relevant

Remarks:

Maximum stored energy: SSA12V – 36,1 Wh
 SSA24V – 36,1 Wh
 SMA51V117F – 63,9 Wh
 SMA102V88F – 127,1 Wh
 SMA170V53F – 212.7 Wh

SECTION 15. REGULATORY INFORMATION**15.1 SAFETY, HEALTH AND ENVIRONMENTAL REGULATIONS / LEGISLATION SPECIFIC FOR THE SUBSTANCE OR MIXTURE:****EU-Regulations:**

Information not relevant to the IE - Directive 2010/75 / EU (VOC): Not relevant

Information pursuant to VOC Directive irrelevant 2004/42 / EC: Not relevant

Information about Seveso III Directive 2012/18 / EU: Is not subject to the Seveso III Directive additional

Directive 2012/19 / EU: Waste electrical and electronic equipment (WEEE)

Authorisations and/or restrictions on use:

Substances contained in this article are not subject to authorisation or restrictions under REACH regulation.

15.2 CHEMICAL SAFETY ASSESSMENT:

No Chemical Safety Assessment has been carried out (nor is required) for this article by the supplier. However, CSA has been conducted for some of the components: acetonitrile, carbon and aluminium.

SECTION 16. OTHER INFORMATION**16.1 TEXT OF H-STATEMENTS MENTIONED IN SECTION 3:**

| Code | Hazard class and category | Code | Hazard statement |
|-------------------|--|------|---|
| Flam. Liq. 2 | Flammable liquid, category 2 | H225 | Highly flammable liquid and vapour. |
| Acute Tox. 4 | Acute toxicity, category 4 | H302 | Harmful if swallowed. |
| Acute Tox. 4 | Acute toxicity, category 4 | H312 | Harmful in contact with skin. |
| Acute Tox. 4 | Acute toxicity, category 4 | H332 | Harmful if inhaled. |
| Skin Sens. 1 | Skin sensitisation, category 1 | H317 | May cause an allergic skin reaction. |
| Eye Irrit. 2 | Eye Irritation, category 2 | H319 | Causes serious eye irritation. |
| Skin Irrit.2 | Skin Irritation, category 2 | H315 | Causes skin irritation. |
| Carc. 2 | Carcinogenicity, category 2 | H351 | Suspected of causing cancer. |
| STOT SE 3 | Organ toxicity – Single exposure, category 3 | H335 | May cause respiratory irritation. |
| STOT RE 2 | Specific target organ toxicity, category 2 | H373 | May cause damage to organs through prolonged or repeated exposure |
| Aquatic chronic 3 | Chronic hazards to the aquatic environment, category 3 | H412 | Harmful to aquatic life with long lasting effects. |
| Aquatic chronic 2 | Chronic hazards to the aquatic environment, category 2 | H411 | Toxic to aquatic life with long lasting effects. |

16.2 CLASSIFICATION ACCORDING TO REGULATION (EC) NO 1272/2008 (CLP):

Not classified; CLP regulation is not applicable; product is an article.

16.3 LITERATURE REFERENCES AND SOURCES FOR DATA:

1. Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008.
2. Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 (Annex II).
3. Commission Regulation (EU) No 2015/ 830.
4. REACH registration dossier and chemical safety report of relevant components of the product – as available from ECHA.
5. Guidance on the compilation of safety data sheets. Version 3.1 ECHA (European Chemicals Agency), November 2015.
6. Guidance on application of classification criteria. Version 4.1 ECHA, June 2015

16.4 INFORMATION ON REVISION OF THE SAFETY DATA SHEET:

Revised points - none: This is the first version (ver 1.0) of an SDS for product 170 SkelRack.

16.5 LEGEND TO ABBREVIATIONS AND ACRONYMS:

CMR – Carcinogen, Mutagen, or Reproductive Toxicant

CSA – Chemical Safety Assessment

CSR – Chemical Safety Report

DNEL – Derived No Effect Level

LD50 – Lethal Dose to 50% of a test population (Median Lethal Dose)

NOAEL – No Observed Adverse Effect Level

PBT – Persistent, Bioaccumulative and Toxic substance

PNEC(s) – Predicted No Effect Concentration(s)

PPE – Personal Protection Equipment

RMM – Risk Mitigation Measures

STOT – Specific Target Organ Toxicity

(STOT) RE – Repeated Exposure

(STOT) SE – Single Exposure

SVHC – Substance of very high concern

vPvB – Very Persistent and Very Bioaccumulative

VOC – Volatile Organic Compounds