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## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1. Product identifier

Product form : Article  
Trade name : SHIDO  
Lithium-Ion battery  
Product group : Trade product

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

#### 1.2.1. Relevant identified uses

Main use category : Professional use  
Use of the substance/mixture : Starter battery

#### 1.2.2. Uses advised against

No data available

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

DC-AFAM NV  
Venecoweg 22A - De Prijkels E17  
B 9810 Nazareth - Belgium  
T +32(0)9 243 73 90 - F +32(0)9 243 73 95  
[service@dc-afam.com](mailto:service@dc-afam.com)  
[www.afam.com](http://www.afam.com)

### 1.4. Emergency telephone number

Country	Official advisory body	Address	Emergency number
Ireland	National Poisons Information Centre Beaumont Hospital	PO Box 1297 Beaumont Road 9 Dublin	+353 1 809 2566 (Healthcare professionals-24/7) +353 1 809 2166 (public, 8am - 10pm, 7/7)
United Kingdom	National Poisons Information Service (Newcastle Centre) Regional Drugs and Therapeutics Centre, Wolfson Unit	Claremont Place Newcastle-upon-Tyne NE1 4LP Newcastle	0844 892 0111 (UK only, 24/7, healthcare professionals only)

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]


Not classified

### 2.2. Label elements

Article. According to EC directives or the corresponding national regulations there is no labelling obligation for this product.

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Not applicable.

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### 2.3. Other hazards

Other hazards : PBT/vPvB data : Not applicable . This article contains neither dangerous substances nor dangerous mixtures which are intended to be released under normal or reasonably foreseeable conditions of use.

The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

Not applicable

### 3.2. Mixtures

Substance name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
LITHIUM IRON PHOSPHATE CARBON COATED ( LiFePO4 )	(CAS-No.) 15365-14-7	28	Not classified
Copper (Cu)	(CAS-No.) 7440-50-8 (EC-No.) 231-159-6 (EC Index) -	13	Aquatic Acute 1, H400
Graphite	(CAS-No.) 7782-42-5 (EC-No.) 231-955-3	12	Not classified
Lithium hexafluorophosphate(1-)	(CAS-No.) 21324-40-3 (EC-No.) 244-334-7 (EC Index) -	9	Acute Tox. 4 (Oral), H302 Acute Tox. 3 (Dermal), H311 Skin Corr. 1B, H314
Ethylene carbonate	(CAS-No.) 96-49-1 (EC-No.) 202-510-0	9	Eye Irrit. 2, H319
Dimethyl carbonate	(CAS-No.) 616-38-6 (EC-No.) 210-478-4 (EC Index) 607-013-00-6	9	Flam. Liq. 2, H225
Aluminium powder (stabilized)	(CAS-No.) 7429-90-5 (EC-No.) 231-072-3 (EC Index) 013-002-00-1	7	Flam. Sol. 1, H228 Water-react. 2, H261
Polypropylene	(CAS-No.) 9003-07-0 (EC-No.) 618-352-4 (EC Index) -	5	Not classified
Polyethylene	(CAS-No.) 9002-88-4 (EC-No.) 618-339-3	5	Not classified
Poly(vinylidene fluoride)	(CAS-No.) 24937-79-9 (EC-No.) - (EC Index) -	2	Not classified
Sodium carboxymethyl cellulose	(CAS-No.) 9004-32-4 (EC-No.) 618-378-6	0,5	Not classified

Full text of H-statements: see section 16

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

Additional advice : First aider: Pay attention to self-protection!. Concerning personal protective equipment to use, see section 8. Never give anything by mouth to an unconscious person. In case of doubt or persistent symptoms, consult always a physician. Show this safety data sheet to the doctor in attendance.

Inhalation : Remove person to fresh air and keep comfortable for breathing. Get medical advice/attention. Artificial respiration and/or oxygen may be necessary.



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- Skin contact : Remove contaminated, saturated clothing immediately. Wash skin thoroughly with soap and water or use recognized skin cleanser. Get immediate medical advice/attention.
- Eyes contact : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician immediately.
- Ingestion : Call a physician immediately. If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label. Aspiration hazard if swallowed - can enter lungs and cause damage. Observe risk of aspiration if vomiting occurs.

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

- Inhalation : None under normal processing. Inhalation of fumes or vapours may cause respiratory irritation. (Electrolyte).
- Skin contact : None under normal processing. May cause skin irritation. Burns . (Electrolyte).
- Eyes contact : None under normal processing. May cause eye irritation. Burns . (Electrolyte).
- Ingestion : None under normal processing. May cause burns or irritation of the linings of the mouth, throat, and gastrointestinal tract . (Electrolyte).

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

Treat symptomatically.

## **SECTION 5: Firefighting measures**

### **5.1. Extinguishing media**

- Suitable extinguishing media : dry chemical powder. Dry sand. Fire class B.
- Unsuitable extinguishing media : Water.

### **5.2. Special hazards arising from the substance or mixture**

- Specific hazards : Do not allow run-off from fire-fighting to enter drains or water courses. Dispose of waste in accordance with environmental legislation.
- Explosion hazard : Heating may cause an explosion.
- Hazardous decomposition products in case of fire : Metallic oxides. Carbon oxides (CO, CO<sub>2</sub>). Copper oxides.

### **5.3. Advice for firefighters**

- Firefighting instructions : Evacuate area. Use water spray or fog for cooling exposed containers. Contain the extinguishing fluids by bunding. Prevent fire fighting water from entering the environment.
- Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus.
- Other information : Do not allow run-off from fire-fighting to enter drains or water courses. Dispose of waste in accordance with environmental legislation.

## **SECTION 6: Accidental release measures**

### **6.1. Personal precautions, protective equipment and emergency procedures**

#### **6.1.1. For non-emergency personnel**

- For non-emergency personnel : Provide adequate ventilation. Evacuate personnel to a safe area. Avoid contact with skin, eyes and clothing. Do not breathe vapours. Concerning personal protective equipment to use, see section 8. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

#### **6.1.2. For emergency responders**

- For emergency responders : Ensure procedures and training for emergency decontamination and disposal are in place. Reference to other sections 8.

### **6.2. Environmental precautions**

Do not allow to enter into surface water or drains.



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### 6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Wipe up with absorbent material (eg. cloth, fleece). Dispose of contaminated materials in accordance with current regulations.

### 6.4. Reference to other sections

Concerning disposal elimination after cleaning, see section 13. Concerning personal protective equipment to use, see section 8 .

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Precautions for safe handling : Provide adequate ventilation. Use personal protective equipment as required. Concerning personal protective equipment to use, see section 8. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Disconnect the battery before working on or near any disposed part of the vehicle electrical system. Avoid shock and friction. Take any precaution to avoid mixing with Incompatible materials. Refer to Section 10 on Incompatible Materials.

Hygiene measures : Use only in area provided with appropriate exhaust ventilation. Wash hands and face before breaks and immediately after handling of the product. When using do not eat, drink or smoke. Keep good industrial hygiene.

### 7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store in a dry, cool and well-ventilated place. Protect from moisture. Store at room temperature. Remove all sources of ignition. Avoid shock and friction. Do not store near or with any of the incompatible materials listed in section 10.

Incompatible materials : Strong oxidizing agents. Acids. Water.

Heat and ignition sources : Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Protect from sunlight.

Special rules on packaging : Do not pierce or burn, even after use.

### 7.3. Specific end use(s)

Starter battery.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

Graphite (7782-42-5)		
Austria	MAK (OEL TWA)	5 mg/m <sup>3</sup> (alveolar dust with <1% Quartz, respirable fraction)
Austria	MAK (OEL STEL)	10 mg/m <sup>3</sup> (alveolar dust with <1% Quartz, respirable fraction)
Belgium	OEL TWA	2 mg/m <sup>3</sup> (except fibers-alveolar fraction)
Bulgaria	OEL TWA	5 mg/m <sup>3</sup> (inhalable fraction)
Croatia	GVI (OEL TWA) [1]	4 mg/m <sup>3</sup> (respirable dust) 10 mg/m <sup>3</sup> (total dust, inhalable particles)
Czech Republic	PEL (OEL TWA)	2 mg/m <sup>3</sup> (dust)
Denmark	OEL TWA [1]	2,5 mg/m <sup>3</sup> (natural-respirable)
Estonia	OEL TWA	5 mg/m <sup>3</sup> (total dust (Dusts))
Finland	HTP (OEL TWA) [1]	2 mg/m <sup>3</sup>
France	VME (OEL TWA)	2 mg/m <sup>3</sup> (alveolar fraction)
Greece	OEL TWA	10 mg/m <sup>3</sup> (inhalable fraction) 5 mg/m <sup>3</sup> (respirable fraction)
Hungary	AK (OEL TWA)	5 mg/m <sup>3</sup> (respirable)
Ireland	OEL TWA [1]	2 mg/m <sup>3</sup> (all forms except fibres; respirable fraction)



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<b>Graphite (7782-42-5)</b>		
Ireland	OEL STEL	6 mg/m <sup>3</sup> (calculated-all forms except fibres; respirable fraction)
Latvia	OEL TWA	2 mg/m <sup>3</sup> (Carbon dust)
Lithuania	IPRV (OEL TWA)	5 mg/m <sup>3</sup> (dust)
Poland	NDS (OEL TWA)	4 mg/m <sup>3</sup> (natural-inhalable fraction) 1 mg/m <sup>3</sup> (natural-respirable fraction)
Portugal	OEL TWA	2 mg/m <sup>3</sup> (all forms except Graphite fibres-respirable fraction)
Romania	OEL TWA	2 mg/m <sup>3</sup> (Quartz <=5%-dust, respirable fraction)
Spain	VLA-ED (OEL TWA) [1]	2 mg/m <sup>3</sup> (see UNE EN 481:1995 on workplace atmospheres-dust; respirable fraction)
United Kingdom	WEL TWA (OEL TWA) [1]	10 mg/m <sup>3</sup> (inhalable dust) 4 mg/m <sup>3</sup> (respirable dust)
United Kingdom	WEL STEL (OEL STEL)	30 mg/m <sup>3</sup> (calculated-inhalable dust) 12 mg/m <sup>3</sup> (calculated-respirable dust)
Norway	Grenseverdi (OEL TWA) [1]	5 mg/m <sup>3</sup> (natural-total dust) 2 mg/m <sup>3</sup> (natural-respirable dust) 10 mg/m <sup>3</sup> (synthetic-total dust) 4 mg/m <sup>3</sup> (synthetic-respirable dust)
Norway	Korttidsverdi (OEL STEL)	10 mg/m <sup>3</sup> (natural-total dust) 4 mg/m <sup>3</sup> (natural-respirable dust) 15 mg/m <sup>3</sup> (synthetic-total dust) 8 mg/m <sup>3</sup> (synthetic-respirable dust)
Switzerland	MAK (OEL TWA) [1]	2,5 mg/m <sup>3</sup> (natural-respirable dust) 5 mg/m <sup>3</sup> (natural-inhalable dust)
Australia	OES TWA [1]	3 mg/m <sup>3</sup> (containing no asbestos and <1% crystalline silica-respirable dust)
Canada (Quebec)	VEMP (OEL TWA)	2 mg/m <sup>3</sup> (containing no Asbestos and <1% Crystalline silica, except Graphite fibres-respirable dust)
USA - ACGIH	ACGIH OEL TWA	2 mg/m <sup>3</sup> (all forms except graphite fibers-respirable particulate matter)
USA - IDLH	IDLH	1250 mg/m <sup>3</sup> (Graphite (natural))
USA - NIOSH	NIOSH REL TWA	2,5 mg/m <sup>3</sup> (natural-respirable dust)
USA - OSHA	OSHA PEL TWA [1]	15 mg/m <sup>3</sup> (synthetic-total dust) 5 mg/m <sup>3</sup> (synthetic-respirable fraction)
<b>Polypropylene (9003-07-0)</b>		
Czech Republic	PEL (OEL TWA)	5 mg/m <sup>3</sup> (dust)
Latvia	OEL TWA	5 mg/m <sup>3</sup> (dust (Polymers dust))
Lithuania	IPRV (OEL TWA)	10 mg/m <sup>3</sup> (not stabilized)
<b>Polyethylene (9002-88-4)</b>		
Bulgaria	OEL TWA	10 mg/m <sup>3</sup> (dust (Dust from Polyethylene))
Czech Republic	PEL (OEL TWA)	5 mg/m <sup>3</sup> (dust)
Latvia	OEL TWA	5 mg/m <sup>3</sup> (dust (Polymers dust))
Lithuania	IPRV (OEL TWA)	10 mg/m <sup>3</sup>
<b>Copper (Cu) (7440-50-8)</b>		
Austria	MAK (OEL TWA)	1 mg/m <sup>3</sup> (inhalable fraction) 0,1 mg/m <sup>3</sup> (respirable fraction, smoke)



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Copper (Cu) (7440-50-8)		
Austria	MAK (OEL STEL)	4 mg/m <sup>3</sup> (inhalable fraction) 0,4 mg/m <sup>3</sup> (respirable fraction, smoke)
Belgium	OEL TWA	0,2 mg/m <sup>3</sup> (fume) 1 mg/m <sup>3</sup> (dust and mist)
Bulgaria	OEL TWA	0,1 mg/m <sup>3</sup> (metal vapor)
Croatia	GVI (OEL TWA) [1]	0,2 mg/m <sup>3</sup> (fume) 1 mg/m <sup>3</sup> (dust)
Croatia	KGVI (OEL STEL)	2 mg/m <sup>3</sup> (dust)
Czech Republic	PEL (OEL TWA)	1 mg/m <sup>3</sup> (dust) 0,1 mg/m <sup>3</sup> (fume)
Denmark	OEL TWA [1]	1 mg/m <sup>3</sup> (dust and powder) 0,1 mg/m <sup>3</sup> (fume)
Estonia	OEL TWA	1 mg/m <sup>3</sup> (total dust) 0,2 mg/m <sup>3</sup> (respirable dust)
Finland	HTP (OEL TWA) [1]	0,02 mg/m <sup>3</sup> (respirable dust)
France	VME (OEL TWA)	0,2 mg/m <sup>3</sup> (fume) 1 mg/m <sup>3</sup> (dust)
France	VLE (OEL C/STEL)	2 mg/m <sup>3</sup> (dust)
Greece	OEL TWA	0,2 mg/m <sup>3</sup> (fume) 1 mg/m <sup>3</sup> (dust)
Greece	OEL STEL	2 mg/m <sup>3</sup> (dust)
Hungary	AK (OEL TWA)	0,1 mg/m <sup>3</sup> 0,01 mg/m <sup>3</sup> (fume)
Hungary	CK (OEL STEL)	0,2 mg/m <sup>3</sup>
Ireland	OEL TWA [1]	0,2 mg/m <sup>3</sup> (fume) 1 mg/m <sup>3</sup> (dusts and mists)
Ireland	OEL STEL	2 mg/m <sup>3</sup> (dusts and mists) 0,6 mg/m <sup>3</sup> (calculated-fume)
Latvia	OEL TWA	0,5 mg/m <sup>3</sup>
Lithuania	IPRV (OEL TWA)	1 mg/m <sup>3</sup> (inhalable fraction) 0,2 mg/m <sup>3</sup> (respirable fraction)
Netherlands	MAC-TGG (OEL TWA)	0,1 mg/m <sup>3</sup> (inhalable dust)
Poland	NDS (OEL TWA)	0,2 mg/m <sup>3</sup>
Portugal	OEL TWA	0,2 mg/m <sup>3</sup> (fume) 1 mg/m <sup>3</sup> (dust and mist)
Romania	OEL TWA	0,5 mg/m <sup>3</sup> (dust)
Romania	OEL STEL	0,2 mg/m <sup>3</sup> (fume) 1,5 mg/m <sup>3</sup> (dust)
Slovakia	NPHV (OEL TWA) [1]	1 mg/m <sup>3</sup> (inhalable fraction) 0,2 mg/m <sup>3</sup> (respirable fraction)
Spain	VLA-ED (OEL TWA) [1]	0,1 mg/m <sup>3</sup> (see UNE EN 481:1995 on workplace atmospheres-respirable fraction)
Sweden	NGV (OEL TWA)	0,01 mg/m <sup>3</sup> (respirable fraction)
United Kingdom	WEL TWA (OEL TWA) [1]	1 mg/m <sup>3</sup> (dust and mists) 0,2 mg/m <sup>3</sup> (fume)
United Kingdom	WEL STEL (OEL STEL)	0,6 mg/m <sup>3</sup> (calculated-fume) 2 mg/m <sup>3</sup> (dust and mist)
Norway	Grenseverdi (OEL TWA) [1]	0,1 mg/m <sup>3</sup> (fume) 1 mg/m <sup>3</sup> (dust)



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<b>Copper (Cu) (7440-50-8)</b>		
Norway	Korttidsverdi (OEL STEL)	3 mg/m <sup>3</sup> (value calculated-dust) 0,3 mg/m <sup>3</sup> (value calculated-fume)
Switzerland	MAK (OEL TWA) [1]	0,1 mg/m <sup>3</sup> (inhalable dust)
Switzerland	KZGW (OEL STEL)	0,2 mg/m <sup>3</sup> (inhalable dust)
Australia	OES TWA [1]	1 mg/m <sup>3</sup> (dust and mist) 0,2 mg/m <sup>3</sup> (fume)
Canada (Quebec)	VEMP (OEL TWA)	0,2 mg/m <sup>3</sup> (fume) 1 mg/m <sup>3</sup> (dust and mist)
USA - ACGIH	ACGIH OEL TWA	0,2 mg/m <sup>3</sup> (fume)
USA - IDLH	IDLH	100 mg/m <sup>3</sup> (dust, fume and mist)
USA - NIOSH	NIOSH REL TWA	1 mg/m <sup>3</sup> (dust and mist) 0,1 mg/m <sup>3</sup> (fume)
USA - OSHA	OSHA PEL TWA [1]	0,1 mg/m <sup>3</sup> (fume) 1 mg/m <sup>3</sup> (dust and mist)
<b>Aluminium powder (stabilized) (7429-90-5)</b>		
Austria	MAK (OEL TWA)	10 mg/m <sup>3</sup> (inhalable fraction)
Austria	MAK (OEL STEL)	20 mg/m <sup>3</sup> (inhalable fraction)
Belgium	OEL TWA	1 mg/m <sup>3</sup>
Bulgaria	OEL TWA	10 mg/m <sup>3</sup> 1,5 mg/m <sup>3</sup> (respirable fraction)
Croatia	GVI (OEL TWA) [1]	10 mg/m <sup>3</sup> (total dust, inhalable particles) 4 mg/m <sup>3</sup> (respirable dust)
Czech Republic	PEL (OEL TWA)	10 mg/m <sup>3</sup> (dust)
Denmark	OEL TWA [1]	5 mg/m <sup>3</sup> (dust and powder; total) 2 mg/m <sup>3</sup> (dust and powder; respirable)
Estonia	OEL TWA	10 mg/m <sup>3</sup> (total dust) 4 mg/m <sup>3</sup> (respirable dust)
France	VME (OEL TWA)	10 mg/m <sup>3</sup> (metal) 5 mg/m <sup>3</sup> (dust)
Germany	BLV	50 µg/g creatinine Parameter: Aluminum - Medium: urine - Sampling time: for long-term exposures: at the end of the shift after several shifts
Greece	OEL TWA	10 mg/m <sup>3</sup> (inhalable fraction) 5 mg/m <sup>3</sup> (respirable fraction)
Hungary	AK (OEL TWA)	1 mg/m <sup>3</sup> (respirable dust)
Ireland	OEL TWA [1]	1 mg/m <sup>3</sup> (respirable fraction)
Ireland	OEL STEL	3 mg/m <sup>3</sup> (calculated-respirable dust)
Latvia	OEL TWA	2 mg/m <sup>3</sup>
Lithuania	IPRV (OEL TWA)	5 mg/m <sup>3</sup> (inhalable fraction) 2 mg/m <sup>3</sup> (respirable fraction) 1 mg/m <sup>3</sup>
Poland	NDS (OEL TWA)	2,5 mg/m <sup>3</sup> (non-stabilized-inhalable fraction) 1,2 mg/m <sup>3</sup> (non-stabilized-respirable fraction)
Portugal	OEL TWA	10 mg/m <sup>3</sup> (metal dust)
Romania	OEL TWA	3 mg/m <sup>3</sup> (dust) 1 mg/m <sup>3</sup> (fume)
Romania	OEL STEL	10 mg/m <sup>3</sup> (dust) 3 mg/m <sup>3</sup> (fume)



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### Aluminium powder (stabilized) (7429-90-5)

Slovakia	NPHV (OEL TWA) [1]	4 mg/m <sup>3</sup> (inhalable dust) 1,5 mg/m <sup>3</sup> (respirable dust)
Spain	VLA-ED (OEL TWA) [1]	10 mg/m <sup>3</sup> (dust)
Sweden	NGV (OEL TWA)	5 mg/m <sup>3</sup> (total dust) 2 mg/m <sup>3</sup> (respirable fraction)
United Kingdom	WEL TWA (OEL TWA) [1]	10 mg/m <sup>3</sup> (inhalable dust) 4 mg/m <sup>3</sup> (respirable dust)
United Kingdom	WEL STEL (OEL STEL)	30 mg/m <sup>3</sup> (calculated-inhalable dust) 12 mg/m <sup>3</sup> (calculated-respirable dust)
Norway	Grenseverdi (OEL TWA) [1]	5 mg/m <sup>3</sup> (pyrotechnical-powder)
Norway	Korttidsverdi (OEL STEL)	10 mg/m <sup>3</sup> (pyrotechnical-powder)
Switzerland	MAK (OEL TWA) [1]	3 mg/m <sup>3</sup> (respirable dust)
Australia	OES TWA [1]	10 mg/m <sup>3</sup> (dust) 5 mg/m <sup>3</sup> (welding fume)
Canada (Quebec)	VEMP (OEL TWA)	10 mg/m <sup>3</sup>
USA - ACGIH	ACGIH OEL TWA	1 mg/m <sup>3</sup> (respirable particulate matter)
USA - NIOSH	NIOSH REL TWA	10 mg/m <sup>3</sup> (total dust) 5 mg/m <sup>3</sup> (respirable dust)
USA - OSHA	OSHA PEL TWA [1]	15 mg/m <sup>3</sup> (total dust) 5 mg/m <sup>3</sup> (respirable fraction)

Additional information : Concentration measurement in air. Personal monitoring

### 8.2. Exposure controls

Engineering measure(s) : Provide adequate ventilation. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Take precautionary measures against static discharges. Organisational measures to prevent /limit releases, dispersion and exposure : See Section 7 for information on safe handling.

Personal protective equipment : The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hand protection : Not required for normal conditions of use. Protective gloves (EN 374) -. NBR (Nitrile rubber) . The selection of specific gloves for a specific application and time of use in a working area, should also take into account other factors on the working space, such as (but not limited to): other chemicals that are possibly used, physical requirements (protection against cutting/drilling, skill, thermal protection), and the instructions/specification of the supplier of gloves.

Eye protection : Not required for normal conditions of use. Safety glasses (EN 166)

Body protection : Not required for normal conditions of use

Respiratory protection : No special respiratory protection equipment is recommended under normal conditions of use with adequate ventilation. When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. full face mask (DIN EN 136). Half-face mask (DIN EN 140). Filter type: AP (EN141).

Environmental exposure controls : Comply with applicable Community environmental protection legislation. Avoid release to the environment.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state : Solid  
Appearance : Unit. Hermetically sealed.  
Colour : black case & blue lid.





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Odour	: None.
Odour threshold	: Not applicable
pH	: Not applicable
pH solution	: Not applicable
Relative evaporation rate (butylacetate=1)	: Not applicable
Melting / freezing point	: Not applicable
Freezing point	: Not applicable
Initial boiling point and boiling range	: Not applicable
Flash point	: Not applicable
Auto-ignition temperature	: Not applicable
Decomposition temperature	: Not applicable
Flammability (solid, gas)	: Article, Not applicable
Vapour pressure	: Not applicable
Vapour pressure at 50 °C	: Not applicable
Critical pressure	: Not applicable
Vapour density	: Not applicable
Relative density	: Not applicable
Solubility	: Insoluble in water.
Partition coefficient n-octanol/water	: Not applicable
Kinematic viscosity	: Not applicable
Dynamic viscosity	: Not applicable
Explosive properties	: Not applicable. The study does not need to be conducted because there are no chemical groups associated with explosive properties present in the molecule.
Oxidising properties	: Not applicable. The classification procedure needs not to be applied because there are no chemical groups present in the molecule which are associated with oxidising properties.
Explosive limits	: Not applicable
Particle size	: Not applicable
Particle size distribution	: Not applicable
Particle shape	: Not applicable
Particle aspect ratio	: Not applicable
Particle aggregation state	: Not applicable Not applicable
Particle agglomeration state	: Not applicable
Particle specific surface area	: Not applicable
Particle dustiness	: Not applicable

### **9.2. Other information**

#### **9.2.1. Information with regard to physical hazard classes**

No data available

#### **9.2.2. Other safety characteristics**

Relative evaporation rate (butylacetate=1) : Not applicable

Further information : see technical data sheet. 12,0 V / 1,6 - 8 Ah / 19 - 96 Wh

## **SECTION 10: Stability and reactivity**

### **10.1. Reactivity**

None under normal conditions. Reference to other sections: 10.4 &amp; 10.5.



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### 10.2. Chemical stability

Stable under normal conditions.

### 10.3. Possibility of hazardous reactions

No data available

### 10.4. Conditions to avoid

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Protect from sunlight. Avoid shock and friction. See Section 7 for information on safe handling.

### 10.5. Incompatible materials

Strong oxidizing agents. Acids. Water. See Section 7 for information on safe handling.

### 10.6. Hazardous decomposition products

Carbon oxides (CO, CO<sub>2</sub>). Copper oxides. metal oxides. Reference to other sections 5.2.

## SECTION 11: Toxicological information

### 11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity : Not classified (Article: Not applicable)

#### Graphite (7782-42-5)

LC50/inhalation/4h/rat > 2000 mg/m<sup>3</sup> (Exposure time: 4 h)

#### Polyethylene (9002-88-4)

LD50/oral/rat &gt; 2000 mg/kg

#### Sodium carboxymethyl cellulose (9004-32-4)

LD50/oral/rat 27000 mg/kg

LC50/inhalation/4h/rat > 5800 mg/m<sup>3</sup> (Exposure time: 4 h)

#### Lithium hexafluorophosphate(1-) (21324-40-3)

LD50/oral/rat &gt; 1702 mg/kg (big rat)

#### Ethylene carbonate (96-49-1)

LD50/oral/rat 10 g/kg

LC50/inhalation/4h/rat > 730 mg/m<sup>3</sup> (Exposure time: 8 h)

#### Dimethyl carbonate (616-38-6)

LD50/oral/rat &gt; 6000 mg/kg (small rat) &gt;13000 mg/kg (big rat)

Skin corrosion/irritation : Not classified (Article: Not applicable)

pH: Not applicable

Serious eye damage/irritation : Not classified (Article: Not applicable)

pH: Not applicable

Respiratory or skin sensitisation : Not classified (Article: Not applicable)

Germ cell mutagenicity : Not classified (Article: Not applicable)

Carcinogenicity : Not classified (Article: Not applicable)

Reproductive toxicity : Not classified (Article: Not applicable)

STOT-single exposure : Not classified (Article: Not applicable)


STOT-repeated exposure : Not classified (Article: Not applicable)

Aspiration hazard : Not classified (Article: Not applicable)

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Kinematic viscosity : Not applicable

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## 11.2. Information on other hazards

### 11.2.1. Endocrine disrupting properties

Adverse health effects caused by endocrine disrupting properties : The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605

### 11.2.2 Other information

## SECTION 12: Ecological information

### 12.1. Toxicity

Environmental properties : Ecological injuries are not known or expected under normal use.

Hazardous to the aquatic environment, short-term (acute) : Not classified

Hazardous to the aquatic environment, long-term (chronic) : Not classified

#### Graphite (7782-42-5)

LC50 - Fish [1] > 100 mg/l (Exposure time: 96 h - Species: Danio rerio [semi-static])

#### Ethylene carbonate (96-49-1)

LC50 - Fish [1] > 100 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss)

#### Copper (Cu) (7440-50-8)

LC50 - Fish [1] 0,0068 – 0,0156 mg/l (Exposure time: 96 h - Species: Pimephales promelas)

LC50 - Fish [2] < 0,3 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static])

EC50 - Crustacea [1] (Exposure time: 48 h - Species: Daphnia magna [Static])

EC50 72h - Algae [1] ≤ 0,0535 mg/l (Species: Pseudokirchneriella subcapitata [static])

EC50 96h - Algae [1] ≤ 0,054 mg/l (Species: Pseudokirchneriella subcapitata [static])

### 12.2. Persistence and degradability

#### SHIDO Lithium-Ion battery

Persistence and degradability No data available.

### 12.3. Bioaccumulative potential

#### SHIDO Lithium-Ion battery


Partition coefficient n-octanol/water Not applicable

Bioaccumulative potential No data available.

### 12.4. Mobility in soil

#### SHIDO Lithium-Ion battery

Ecology - soil No data available.

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### 12.5. Results of PBT and vPvB assessment

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Results of PBT assessment	Not applicable.

### 12.6. Endocrine disrupting properties

Adverse effects on the environment caused by endocrine disrupting properties : Not applicable

### 12.7. Other adverse effects

Other adverse effects : No information available

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods



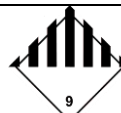


Product/Packaging disposal recommendations : Avoid release to the environment. Dispose of empty containers and wastes safely. See Section 7 for information on safe handling. Refer to manufacturer/supplier for information on recovery/recycling. Recycling is preferred to disposal or incineration. If recycling is not possible, eliminate in accordance with local valid waste disposal regulations. Handle contaminated packages in the same way as the substance itself. Dispose of contaminated materials in accordance with current regulations.

Additional information : Do not puncture or incinerate.

European waste catalogue (2001/573/EC, 75/442/EEC, 91/689/EEC) : The following Waste Codes are only suggestions: other batteries and accumulators  
Waste codes should be assigned by the user, preferably in discussion with the waste disposal authorities

## SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

ADR	IMDG	IATA	ADN	RID
<b>14.1. UN number</b>				
3480	3480	3480	3480	3480
<b>14.2. UN proper shipping name</b>				
LITHIUM ION BATTERIES	LITHIUM ION BATTERIES	Lithium ion batteries	LITHIUM ION BATTERIES	LITHIUM ION BATTERIES
<b>Transport document description</b>				
UN 3480 LITHIUM ION BATTERIES, 9, II, (E)	UN 3480 LITHIUM ION BATTERIES, 9, II	UN 3480 Lithium ion batteries, 9	UN 3480 LITHIUM ION BATTERIES, 9, II	UN 3480 LITHIUM ION BATTERIES, 9, II
<b>14.3. Transport hazard class(es)</b>				
9	9	9	9	9
				
<b>14.4. Packing group</b>				
II	II	Not applicable	II	II
<b>14.5. Environmental hazards</b>				
Dangerous for the environment : No	Dangerous for the environment : No Marine pollutant : No	Dangerous for the environment : No	Dangerous for the environment : No	Dangerous for the environment : No
Not applicable				



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### 14.6. Special precautions for user

#### **- Overland transport**

Classification code (ADR) : M4  
Special provisions : 188, 230, 310, 348, 636  
Limited quantities (ADR) : 0  
Excepted quantities (ADR) : E0  
Packing instructions (ADR) : P903, P903A, P903B  
Transport category (ADR) : 2  
Tunnel restriction code : E  
EAC code : 4W

#### **- Transport by sea**

Special provisions (IMDG) : 188, 230, 310, 348, 957  
Limited quantities (IMDG) : 0  
Excepted quantities (IMDG) : E0  
Packing instructions (IMDG) : P903  
EmS-No. (Fire) : F-A  
EmS-No. (Spillage) : S-I  
Stowage category (IMDG) : A  
Properties and observations (IMDG) : Electrical batteries containing lithium ion encased in a rigid metallic body. Lithium ion batteries may also be shipped in, or packed with, equipment. Electrical lithium batteries may cause fire due to an explosive rupture of the body caused by improper construction or reaction with contaminants.

#### **- Air transport**


PCA Excepted quantities (IATA) : E0  
PCA Limited quantities (IATA) : Forbidden  
PCA limited quantity max net quantity (IATA) : Forbidden  
PCA packing instructions (IATA) : See 965  
PCA max net quantity (IATA) : See 965  
CAO packing instructions (IATA) : See 965  
CAO max net quantity (IATA) : See 965  
Special provisions (IATA) : A88, A99, A154, A164, A183  
ERG code (IATA) : 9F

#### **- Inland waterway transport**

Classification code (ADN) : M4  
Special provisions (ADN) : 188, 23, 31, 348, 636, 661  
Limited quantities (ADN) : 0  
Excepted quantities (ADN) : E0  
Equipment required (ADN) : PP  
Number of blue cones/lights (ADN) : 0

#### **- Rail transport**

Classification code (RID) : M4  
Special provisions (RID) : 188, 230, 310, 348, 636, 661  
Limited quantities (RID) : 0  
Excepted quantities (RID) : E0  
Packing instructions (RID) : P903, P903a, P903b

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Transport category (RID) : 2  
Colis express (express parcels) (RID) : CE2  
Hazard identification number (RID) : 90

**14.7. Maritime transport in bulk according to IMO instruments**

Code: IBC : Not applicable.

**SECTION 15: Regulatory information**

**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**

**15.1.1. EU-Regulations**

Contains no substance on the REACH candidate list

**15.1.2. National regulations**

**France**

No ICPE	Installations classées Désignation de la rubrique	Code Régime	Rayon
na	Not Applicable	na	na

**Germany**

Regulatory reference : WGK 3, Highly hazardous to water (Classification according to AwSV, Annex 1)  
WGK remark : Electrolyte  
Hazardous Incident Ordinance (12. BImSchV) : Is not subject of the 12. BImSchV (Hazardous Incident Ordinance)

**Netherlands**

Waterbezwaarlijkheid : Not determined  
SZW-lijst van kankerverwekkende stoffen : None of the components are listed  
SZW-lijst van mutagene stoffen : None of the components are listed  
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Borstvoeding : None of the components are listed  
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid : None of the components are listed  
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling : None of the components are listed

**15.2. Chemical safety assessment**

Not applicable.

**SECTION 16: Other information**

Indication of changes:

1.2	Main use category	Added	
2.2	No labelling obligation	Added	
4.1	Additional advice	Modified	
5.3	Advice for firefighters	Modified	
7.2	Conditions for safe storage, including any	Modified	



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	incompatibilities		
7.3	Specific end use(s)	Modified	
8.2	Personal protective equipment	Added	
10.1	Reactivity	Modified	
10.4	Conditions to avoid	Modified	
11.2	Adverse health effects caused by endocrine disrupting properties	Added	
12.6	Adverse effects on the environment caused by endocrine disrupting properties	Added	
15.1	Installations classées	Added	
15.1	Waterbezwaarlijkheid	Added	
15.1	Water hazard class (WGK)	Modified	
16	Training advice	Added	

### Abbreviations and acronyms:


ADN = Accord Européen relatif au Transport International des Marchandises Dangereuses par voie de Navigation du Rhin
ADR = Accord européen relatif au transport international des marchandises Dangereuses par Route
CLP = Classification, Labelling and Packaging Regulation according to 1272/2008/EC
IATA = International Air Transport Association
IMDG = International Maritime Dangerous Goods Code
LEL = Lower Explosive Limit/Lower Explosion Limit
UEL = Upper Explosion Limit/Upper Explosive Limit
REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals
EC50 = Median Effective Concentration
LC50 = Median lethal concentration
LD50 = Median lethal dose
TLV = Threshold limits
TWA = time weighted average
STEL = Short term exposure limit
persistent, bioaccumulating and toxic (PBT).
vPvB = very persistent and very bioaccumulating
WGK = Wassergefährdungsklasse (Water Hazard Class under German Federal Water Management Act)

Sources of key data used to compile the datasheet : SDS Manufacturer/Supplier.

Training advice : Training staff on good practice.

### Full text of H- and EUH-statements:

Acute Tox. 3 (Dermal)	Acute toxicity (dermal), Category 3
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Aquatic Acute 1	Hazardous to the aquatic environment — Acute Hazard, Category 1
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Flam. Liq. 2	Flammable liquids, Category 2
Flam. Sol. 1	Flammable solids, Category 1
Skin Corr. 1B	Skin corrosion/irritation, Category 1, Sub-Category 1B
Water-react. 2	Substances and Mixtures which, in contact with water, emit flammable gases, Category 2
H225	Highly flammable liquid and vapour.
H228	Flammable solid.
H261	In contact with water releases flammable gases.
H302	Harmful if swallowed.
H311	Toxic in contact with skin.

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H314	Causes severe skin burns and eye damage.
H319	Causes serious eye irritation.
H400	Very toxic to aquatic life.

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878  
Classification according to Regulation (EC) No. 1272/2008 [CLP]  
Labelling according to Regulation (EC) No. 1272/2008 [CLP]

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