SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:
Regulation (EC) No. 1907/2006 as amended by Commission Regulation (EU) 2020/878 and Regulation (EC) No. 1272/2008

Issuing Date 05-Jan-2024 **Revision Date** 05-Jan-2024 **Revision Number** 1

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

1.1. Product identifier

Product Name Li-ion battery pack HC2240T 56V 40Ah 2240Wh

Synonyms None

Pure substance/mixture Mixture

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

Recommended use Battery

Uses advised against Do not short circuit or expose to temperatures higher than the maximum temperature rating specified by the manufacturer. Do not over charge or crush any cell or pack. Ensure cells and batteries are safely handled and stored. Review Section 7 completely before use

1.3. Details of the supplier of the safety data sheet

Importer
EGO Europe GmbH
Autenbachstraße 11
71711 Steinheim an der Murr
Germany
Tel: 0044 1494 957 514

Manufacturer
Nanjing Chervon Industry Co., Ltd.
529 South Jiang Jun Rd. Jiangning
Economic & Technical Development Zone
Nanjing, Jiangsu 211106 P.R. China
Phone: +862552101133

For further information, please contact
E-mail address james.mccrory@eu.chervongroup.com

1.4. Emergency telephone number

Emergency telephone 0044 1235 239 670 (Available 24/7)

Emergency telephone - §45 - (EC)1272/2008	
Europe	**112**

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]
This product is a battery. No exposure to hazardous chemicals is expected to occur during intended product use. Misuse of the product may result in exposure to hazardous chemicals. The hazard classification information below relates to the mixture of components contained within the battery.

Acute toxicity - Oral	Category 4 - (H302)
Skin corrosion/irritation	Category 2 - (H315)
Serious eye damage/eye irritation	Category 2 - (H319)
Specific target organ toxicity — repeated exposure	Category 2 - (H373)
Chronic aquatic toxicity	Category 3 - (H412)

2.2. Label elements

Contains Phosphate(1-), hexafluoro-, lithium

Signal word
Warning

Hazard statements
H302 - Harmful if swallowed.
H315 - Causes skin irritation.
H319 - Causes serious eye irritation.
H373 - May cause damage to organs through prolonged or repeated exposure.
H412 - Harmful to aquatic life with long lasting effects.

Precautionary Statements - EU (§28, 1272/2008)
P260 - Do not breathe dust/fume/gas/mist/vapours/spray.
P264 - Wash face, hands and any exposed skin thoroughly after handling.
P280 - Wear protective gloves and eye/face protection.
P337 + P313 - If eye irritation persists: Get medical advice/attention.
P501 - Dispose of contents/ container to an approved waste disposal plant.

Unknown acute toxicity
67.8 % of the mixture consists of ingredient(s) of unknown acute oral toxicity.

Additional information
This product requires tactile warnings if supplied to the general public.

2.3. Other hazards
May be harmful in contact with skin.

Endocrine Disruptor Information This product does not contain any known or suspected endocrine disruptors.

SECTION 3: Composition/information on ingredients

3.1 Substances

Not applicable

3.2 Mixtures

Chemical name	Weight-%	REACH registration number	EC No (EU Index No)	Classification according to Regulation (EC) No. 1272/2008 [CLP]	Specific concentration limit (SCL)	M-Factor	M-Factor (long-term)
Ferrous lithiumphosphate 15365-14-7	<= 39.8	No data available	476-700-9	[F]	-	-	-
Graphite 7782-42-5	<= 19.8	No data available	231-955-3	[C]	-	-	-
Other material -	<= 10.3	No data available	No information available	[F]	-	-	-
Copper 7440-50-8	<= 6.2	No data available	231-159-6 (029-024-00-X)	Aquatic Chronic 2	-	-	-

				(H411)			
Ethylene carbonate 96-49-1	<= 4	No data available	202-510-0	Acute Tox. 4 (H302) Eye Irrit. 2 (H319) STOT RE 2 (kidney)(oral) (H373)	-	-	-
Dimethyl carbonate 616-38-6	<= 4	No data available	210-478-4 (607-013-00-6)	Flam. Liq. 2 (H225)	-	-	-
Aluminum 7429-90-5	<= 3.8	No data available	231-072-3 (013-002-00-1)	Flam. Sol. 1 (H228) Water-react. 2 (H261)	-	-	-
Aluminum Case -	<= 3.6	No data available	No information available	[F]	-	-	-
Anode cover -	<= 2.5	No data available	No information available	[F]	-	-	-
Cathode cover -	<= 2.1	No data available	No information available	[F]	-	-	-
Phosphate(1-), hexafluoro-, lithium 21324-40-3	<= 1.9	No data available	244-334-7	Acute Tox. 3 (H301) Skin Corr. 1A (H314) Eye Dam. 1 (H318) STOT RE 1 (tooth, bone) (H372)	-	-	-
Styrene-Butadiene polymer 9003-55-8	<= 0.8	No data available	No information available	[F]	-	-	-
1,1-Difluoroethylene polymer 24937-79-9	<= 0.8	No data available	No information available	[F]	-	-	-
Sodium carboxymethyl cellulose 9004-32-4	<= 0.4	No data available	No information available	[A]	-	-	-

Classification according to Regulation (EC) No. 1272/2008 [CLP] - Notes
[C] - Components with occupational exposure limits and/or biological occupational exposure limits requiring monitoring
[F] - Although non-hazardous, the manufacturer chooses to disclose the composition

Full text of H- and EUH-phrases: see section 16

Acute Toxicity Estimate
If LD50/LC50 data is not available or does not correspond to the classification category, then the appropriate conversion value from CLP Annex I, Table 3.1.2, is used to calculate the acute toxicity estimate (ATEmix) for classifying a mixture based on its components

Chemical name	Oral LD50 mg/kg	Dermal LD50 mg/kg	Inhalation LC50 - 4 hour - dust/mist - mg/L	Inhalation LC50 - 4 hour - vapour - mg/L	Inhalation LC50 - 4 hour - gas - ppm
Ferrous lithiumphosphate 15365-14-7	No data available	2000	No data available	No data available	No data available
Graphite 7782-42-5	No data available	No data available	2	No data available	No data available
Copper 7440-50-8	No data available	No data available	5.11	No data available	No data available

Chemical name	Oral LD50 mg/kg	Dermal LD50 mg/kg	Inhalation LC50 - 4 hour - dust/mist - mg/L	Inhalation LC50 - 4 hour - vapour - mg/L	Inhalation LC50 - 4 hour - gas - ppm
Ethylene carbonate 96-49-1	10000	26420	1.46	No data available	No data available
Dimethyl carbonate 616-38-6	13000	5000	No data available	No data available	No data available
Aluminum 7429-90-5	No data available	No data available	0.888	No data available	No data available
Sodium carboxymethyl cellulose 9004-32-4	27000	No data available	5.8	No data available	No data available

This product does not contain candidate substances of very high concern at a concentration >=0.1% (Regulation (EC) No. 1907/2006 (REACH), Article 59)

SECTION 4: First aid measures

4.1. Description of first aid measures

General advice First aid is upon rupture of sealed battery. Show this safety data sheet to the doctor in attendance.

Inhalation IF INHALED: Remove to fresh air. Get medical attention immediately if symptoms occur.

Eye contact IF IN EYES: Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Keep eye wide open while rinsing. Do not rub affected area. Get medical attention if irritation develops and persists.

Skin contact IF ON SKIN: Wash off immediately with soap and plenty of water for at least 15 minutes. Get medical attention if irritation develops and persists.

Ingestion IF SWALLOWED: Do NOT induce vomiting. Rinse mouth. Never give anything by mouth to an unconscious person. Call a doctor.

Self-protection of the first aider Avoid contact with skin, eyes or clothing. Wear personal protective clothing (see section 8).

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

Symptoms May cause redness and tearing of the eyes. Burning sensation.

Effects of Exposure May cause damage to organs through prolonged or repeated exposure. See Section 11 for additional Toxicological Information.

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

Note to doctors Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable Extinguishing Media Water. Carbon dioxide (CO2).

Unsuitable extinguishing media Use of water spray when fighting a lithium fire may be inefficient. However, copious amounts of water may be used to cool a battery fire and extinguish any surrounding

combustible fires.

5.2. Special hazards arising from the substance or mixture

Specific hazards arising from the chemical Cell may vent when subjected to excessive heat-exposing battery contents.

Hazardous combustion products Carbon monoxide. Carbon dioxide (CO2). Lithium oxides.

5.3. Advice for firefighters

Special protective equipment and precautions for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions In case of rupture: Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required.

Other information Refer to protective measures listed in Sections 7 and 8.

For emergency responders Use personal protection recommended in Section 8.

6.2. Environmental precautions

Environmental precautions Prevent further leakage or spillage if safe to do so. Should not be released into the environment. Do not allow to enter into soil/subsoil. Prevent product from entering drains.

6.3. Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up During a release, ensure the Personal Protection listed in Section 8 is worn. Neutralize any electrolyte contaminated surfaces with baking soda, soda lime or sodium bicarbonate. Transfer damaged battery and any clean up materials to a sealed container with a neutralizing material as stated above. Ensure the container is properly labeled.

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

6.4. Reference to other sections

Reference to other sections See section 8 for more information See section 13 for more information

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling In case of rupture: Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash it before reuse. Do not crush, pierce, short circuit (+) and (-) battery terminals with conductive (metal) goods. Do not directly heat or solder. Do not throw into fire. Do not mix batteries of different types and brands. Do not mix new and used batteries. Keep batteries in non-conductive (plastic) trays. Batteries should be packaged and transported in such a way to prevent direct contact with each other.

General hygiene considerations Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Avoid contact with skin, eyes or clothing.

7.2. Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children. Store at room temperature. Do not store near combustible materials. Store away from other materials. Do not store in high humidity environments. Never stack heavy objects on top of battery boxes. Keep batteries in original packaging until use and do not expose them to unnecessary or excessive handling. Elevated temperature (> 70°C) can shorten battery life.

Storage class (TRGS 510) LGK 11.

7.3. Specific end use(s)

Specific use(s) The identified uses for this product are detailed in Section 1.2.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure Limits

Chemical name	European Union	Austria	Belgium	Bulgaria	Croatia
Graphite 7782-42-5	-	TWA: 5 mg/m³ STEL 10 mg/m³	TWA: 2 mg/m³	TWA: 5.0 mg/m³	TWA: 4 mg/m³ TWA: 10 mg/m³
Copper 7440-50-8	-	TWA: 1 mg/m³ TWA: 0.1 mg/m³ STEL 4 mg/m³ STEL 0.4 mg/m³	TWA: 0.2 mg/m³ TWA: 1 mg/m³	TWA: 0.1 mg/m³	TWA: 0.2 mg/m³ TWA: 1 mg/m³ STEL: 2 mg/m³
Aluminum 7429-90-5	-	TWA: 10 mg/m³ STEL 20 mg/m³	TWA: 1 mg/m³	TWA: 10.0 mg/m³ TWA: 1.5 mg/m³	TWA: 10 mg/m³ TWA: 4 mg/m³

Chemical name	Cyprus	Czech Republic	Denmark	Estonia	Finland
Graphite 7782-42-5	-	TWA: 2.0 mg/m³	TWA: 2.5 mg/m³ STEL: 5 mg/m³ natural	TWA: 5 mg/m³	TWA: 2 mg/m³
Copper 7440-50-8	-	TWA: 1 mg/m³ TWA: 0.1 mg/m³ Ceiling: 2 mg/m³ Ceiling: 0.2 mg/m³	TWA: 1.0 mg/m³ TWA: 0.1 mg/m³ STEL: 2 mg/m³ STEL: 0.2 mg/m³	TWA: 1 mg/m³ TWA: 0.2 mg/m³	TWA: 0.02 mg/m³
Aluminum 7429-90-5	-	TWA: 10.0 mg/m³	TWA: 5 mg/m³ TWA: 2 mg/m³ STEL: 10 mg/m³ STEL: 4 mg/m³	TWA: 10 mg/m³ TWA: 4 mg/m³	TWA: 1.5 mg/m³
Phosphate(1-), hexafluoro-, lithium 21324-40-3	-	-	TWA: 2.5 mg/m³ STEL: 5 mg/m³ except those mentioned elsewhere in the list	TWA: 2.5 mg/m³	-

Chemical name	France	Germany TRGS	Germany DFG	Greece	Hungary
Graphite 7782-42-5	TWA: 2 mg/m³	TWA: 1.25 mg/m³ TWA: 10 mg/m³	TWA: 0.3 mg/m³ TWA: 4 mg/m³ Peak: 2.4 mg/m³	TWA: 10 mg/m³ TWA: 5 mg/m³	TWA: 5 mg/m³ TWA: 2 mg/m³
Copper 7440-50-8	TWA: 0.2 mg/m³ TWA: 1 mg/m³ STEL: 2 mg/m³	-	TWA: 0.01 mg/m³ Peak: 0.02 mg/m³	TWA: 0.2 mg/m³ TWA: 1 mg/m³ STEL: 2 mg/m³	TWA: 0.1 mg/m³ TWA: 0.01 mg/m³ STEL: 0.2 mg/m³
Aluminum 7429-90-5	TWA: 10 mg/m³ TWA: 5 mg/m³	TWA: 1.25 mg/m³ TWA: 10 mg/m³	TWA: 4 mg/m³ TWA: 1.5 mg/m³	TWA: 10 mg/m³ TWA: 5 mg/m³	TWA: 1 mg/m³
Phosphate(1-), hexafluoro-, lithium	-	TWA: 1 mg/m³	TWA: 1 mg/m³ Sk*	TWA: 2.5 mg/m³	TWA: 2.5 mg/m³ Sk*

21324-40-3					
Chemical name	Ireland	Italy MDLPS	Italy AIDII	Latvia	Lithuania
Graphite 7782-42-5	TWA: 2 mg/m³ STEL: 6 mg/m³	-	TWA: 2 mg/m³	TWA: 2 mg/m³	TWA: 5 mg/m³
Copper 7440-50-8	TWA: 0.2 mg/m³ TWA: 1 mg/m³ STEL: 2 mg/m³ STEL: 0.6 mg/m³	-	TWA: 0.2 mg/m³	TWA: 0.5 mg/m³ STEL: 1 mg/m³	TWA: 1 mg/m³ TWA: 0.2 mg/m³
Aluminum 7429-90-5	TWA: 1 mg/m³ STEL: 3 mg/m³	-	TWA: 1 mg/m³	TWA: 2 mg/m³	TWA: 5 mg/m³ TWA: 2 mg/m³ TWA: 1 mg/m³
Phosphate(1-), hexafluoro-, lithium 21324-40-3	TWA: 2.5 mg/m³ STEL: 7.5 mg/m³	-	TWA: 2.5 mg/m³	-	TWA: 2.5 mg/m³
Chemical name	Luxembourg	Malta	Netherlands	Norway	Poland
Graphite 7782-42-5	-	-	-	TWA: 5 mg/m³ TWA: 2 mg/m³ TWA: 10 mg/m³ TWA: 4 mg/m³ STEL: 10 mg/m³ STEL: 4 mg/m³ STEL: 20 mg/m³ STEL: 8 mg/m³	TWA: 4.0 mg/m³ TWA: 1.0 mg/m³ TWA: 6 mg/m³
Copper 7440-50-8	-	-	TWA: 0.1 mg/m³	TWA: 0.1 mg/m³ TWA: 1 mg/m³ STEL: 3 mg/m³ STEL: 0.3 mg/m³	TWA: 0.2 mg/m³
Aluminum 7429-90-5	-	-	-	TWA: 5 mg/m³ STEL: 10 mg/m³	TWA: 2.5 mg/m³ TWA: 1.2 mg/m³
Phosphate(1-), hexafluoro-, lithium 21324-40-3	-	-	-	-	TWA: 2 mg/m³
Chemical name	Portugal	Romania	Slovakia	Slovenia	Spain
Graphite 7782-42-5	TWA: 2 mg/m³	TWA: 2 mg/m³	TWA: 10 mg/m³ TWA: 2 mg/m³	-	TWA: 2 mg/m³
Copper 7440-50-8	TWA: 0.2 mg/m³ TWA: 1 mg/m³	TWA: 0.5 mg/m³ STEL: 0.2 mg/m³ STEL: 1.5 mg/m³	TWA: 1 mg/m³ TWA: 0.2 mg/m³	-	TWA: 0.01 mg/m³
Aluminum 7429-90-5	TWA: 1 mg/m³	TWA: 3 mg/m³ TWA: 1 mg/m³ STEL: 10 mg/m³ STEL: 3 mg/m³	TWA: 4 mg/m³ TWA: 1.5 mg/m³	-	TWA: 1 mg/m³
Phosphate(1-), hexafluoro-, lithium 21324-40-3	TWA: 2.5 mg/m³	-	TWA: 2.5 mg/m³	-	-

Chemical name	Sweden	Switzerland	United Kingdom
Graphite 7782-42-5	-	TWA: 3 mg/m³ TWA: 10 mg/m³	TWA: 10 mg/m³ TWA: 4 mg/m³ STEL: 30 mg/m³ STEL: 12 mg/m³
Copper 7440-50-8	NGV: 0.01 mg/m³	TWA: 0.1 mg/m³ STEL: 0.2 mg/m³	TWA: 1 mg/m³ TWA: 0.2 mg/m³ STEL: 0.6 mg/m³ STEL: 2 mg/m³
Aluminum 7429-90-5	NGV: 5 mg/m³ NGV: 2 mg/m³	TWA: 3 mg/m³ TWA: 10 mg/m³	TWA: 10 mg/m³ TWA: 4 mg/m³ STEL: 30 mg/m³ STEL: 12 mg/m³
Phosphate(1-), hexafluoro-,	NGV: 2 mg/m³	-	-

lithium 21324-40-3			

Biological occupational exposure limits

Chemical name	European Union	Austria	Bulgaria	Croatia	Czech Republic
Aluminum 7429-90-5	-	Check 60 µg/g Creatinine (urine - Aluminum after end of work day, at the end of a work week/end of the shift) (-)	-	200 µg/L - urine (Aluminum) - at the end of the work shift	-

Chemical name	Denmark	Finland	France	Germany DFG	Germany TRGS
Aluminum 7429-90-5	-	-	-	50 µg/g Creatinine (urine - Aluminum for long-term exposures: at the end of the shift after several shifts) 50 µg/g Creatinine - BAT (for long-term exposures: at the end of the shift after several shifts) urine 15 µg/g Creatinine - BAR (for long-term exposures: at the end of the shift after several shifts) urine	50 µg/g Creatinine (urine - Aluminum for long-term exposures: at the end of the shift after several shifts)
Phosphate(1-), hexafluoro-, lithium 21324-40-3	-	-	- urine (Fluorides) - beginning of shift - urine (Fluorides) - end of shift	-	-

Chemical name	Hungary	Ireland	Italy MDLPS	Italy AIDII
Phosphate(1-), hexafluoro-, lithium 21324-40-3	7 mg/g Creatinine (urine - Fluoride end of shift) 4 mg/g Creatinine (urine - Fluoride prior to next shift) 42 µmol/mmol Creatinine (urine - Fluoride end of shift) 24 µmol/mmol Creatinine (urine - Fluoride prior to next shift)	-	-	2 mg/g Creatinine - urine (Fluorides) - prior to shift 3 mg/g Creatinine - urine (Fluorides) - end of shift

Chemical name	Latvia	Luxembourg	Romania	Slovakia
Aluminum 7429-90-5	-	-	200 µg/L - urine (Aluminum) - end of shift	60 µg/g creatinine (urine - Aluminum not critical)
Phosphate(1-), hexafluoro-, lithium 21324-40-3	-	-	5 mg/g Creatinine - urine (Fluorine) - end of shift	-
1,1-Difluoroethylene polymer 24937-79-9	-	-	5 mg/g Creatinine - urine (Fluorine) - end of shift	-

Chemical name	Slovenia	Spain	Switzerland	United Kingdom
Aluminum 7429-90-5	50 µg/L - urine (Aluminum) - for long-term exposure: at the end of	-	50 µg/g creatinine (urine - Aluminum after several shifts (for long-term	-

	the work shift after several consecutive workdays		exposures)) 0.21 µmol/mmol creatinine (urine - Aluminum after several shifts (for long-term exposures))	

Derived No Effect Level (DNEL) - Workers

Chemical name	Oral	Dermal	Inhalation
Ferrous lithiumphosphate 15365-14-7	-	1 mg/kg bw/day [4] [6]	4.2 mg/m³ [4] [6]
Graphite 7782-42-5	-	-	1.2 mg/m³ [4] [6] 1.2 mg/m³ [5] [6]
Copper 7440-50-8	-	137 mg/kg bw/day [4] [6] 273 mg/kg bw/day [4] [7]	-
Ethylene carbonate 96-49-1	-	4.3 mg/kg bw/day [4] [6]	15 mg/m³ [4] [6]
Dimethyl carbonate 616-38-6	-	5 mg/kg bw/day [4] [6]	34.9 mg/m³ [4] [6]
Phosphate(1-), hexafluoro-, lithium 21324-40-3	-	133 µg/kg bw/day [4] [6]	0.931 mg/m³ [4] [6]

Notes

[4] Systemic health effects.
[5] Local health effects.
[6] Long term.
[7] Short term.

Derived No Effect Level (DNEL) - General Public

Chemical name	Oral	Dermal	Inhalation
Graphite 7782-42-5	813 mg/kg bw/day [4] [6]	-	0.3 mg/m³ [5] [6]
Copper 7440-50-8	0.041 mg/kg bw/day [4] [6]	273 mg/kg bw/day [4] [6] 273 mg/kg bw/day [4] [7]	1 mg/m³ [5] [6] 1 mg/m³ [5] [7]
Ethylene carbonate 96-49-1	2.1 mg/kg bw/day [4] [6]	-	3.7 mg/m³ [4] [6]
Dimethyl carbonate 616-38-6	2.5 mg/kg bw/day [4] [6]	-	8.7 mg/m³ [4] [6]

Notes

[4] Systemic health effects.
[5] Local health effects.
[6] Long term.
[7] Short term.

Predicted No Effect Concentration (PNEC)

Chemical name	Freshwater	Freshwater (intermittent release)	Marine water	Marine water (intermittent release)	Air
Copper 7440-50-8	7.8 µg/L	-	5.2 µg/L	-	-
Ethylene carbonate 96-49-1	5.9 mg/L	59 mg/L	0.59 mg/L	0.059 mg/L	-
Dimethyl carbonate	0.5 mg/L	1 mg/L	0.05 mg/L	-	-

Chemical name	Freshwater	Freshwater (intermittent release)	Marine water	Marine water (intermittent release)	Air
616-38-6					
Phosphate(1-), hexafluoro-, lithium 21324-40-3	0.31 mg/L	0.68 mg/L	0.031 mg/L	-	-

Chemical name	Freshwater sediment	Marine sediment	Sewage treatment	Soil	Food chain
Ferrous lithiumphosphate 15365-14-7	-	-	10 mg/L	-	0.33 mg/kg food
Copper 7440-50-8	87 mg/kg sediment dw	676 mg/kg sediment dw	230 µg/L	65 mg/kg soil dw	-
Ethylene carbonate 96-49-1	28.3 mg/kg sediment dw	2.83 mg/kg sediment dw	-	2.2 mg/kg soil dw	-
Dimethyl carbonate 616-38-6	-	-	188 mg/L	-	-
Aluminum 7429-90-5	-	-	20 mg/L	-	-
Phosphate(1-), hexafluoro-, lithium 21324-40-3	7.73 mg/kg sediment dw	1.55 mg/kg sediment dw	48 mg/L	13.5 mg/kg soil dw	-

8.2. Exposure controls

Engineering controls

Showers
Eyewash stations
Ventilation systems.

Personal protective equipment

Eye/face protection

None required for normal handling of the finished product. If necessary to handle damaged product where exposure to the electrolyte is a possibility, chemical splash goggles and a face shield are recommended. Eye protection must conform to standard EN 166.

Hand protection

None required for normal handling of the finished product. If necessary to handle damaged product where exposure to the electrolyte is a possibility, chemically resistant gloves are recommended. Gloves must conform to standard EN 374.

Skin and body protection

None required for normal handling of the finished product. If necessary to handle damaged product where exposure to the electrolyte is a possibility, a chemically resistant apron is recommended (EN ISO 6529).

Respiratory protection

No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

General hygiene considerations

Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Avoid contact with skin, eyes or clothing.

Environmental exposure controls

See Section 6 for more information.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	Cylindrical
Physical state	Solid
Colour	No information available
Odour	If leaking: Smells of medical ether
Odour threshold	No information available

Property	Values	Remarks • Method
Melting point / freezing point		No data available
Initial boiling point and boiling range		No data available
Flammability		Not applicable unless individual components exposed
Flammability Limit in Air		
Upper flammability or explosive limits		No data available
Lower flammability or explosive limits		No data available
Flash point		No data available
Autoignition temperature		No data available
Decomposition temperature		No data available
pH		Not applicable as supplied
pH (as aqueous solution)		No data available
Kinematic viscosity		No data available
Dynamic viscosity		No data available
Water solubility		Not applicable unless individual components exposed
Solubility(ies)		Not applicable unless individual components exposed
Partition coefficient		No data available
Vapour pressure		No data available
Relative density		Not applicable unless individual components exposed
Bulk density		No data available
Liquid Density		No data available
Relative vapour density		No data available
Particle characteristics		
Particle Size		No data available
Particle Size Distribution		No data available

9.2. Other information

9.2.1. Information with regards to physical hazard classes
Not applicable

9.2.2. Other safety characteristics
No information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity None under normal use conditions.

10.2. Chemical stability

Stability Stable under normal conditions.

Explosion data
Sensitivity to mechanical impact None.
Sensitivity to static discharge None.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions None under normal use conditions. In the event of a leak or rupture: electrolyte and lithium will react with water.

10.4. Conditions to avoid

Conditions to avoid Incompatible materials. Temperatures above 70 °C. Do not heat, crush, disassemble or short circuit. Do not exceed manufacturer's recommendation for charging or use battery for an application for which it was not specifically designed.

10.5. Incompatible materials

Incompatible materials Strong oxidising agents. Under normal use, batteries are not incompatible. The electrolyte is incompatible with: Strong alkalis. Mineral acids. Halogenated hydrocarbons.

10.6. Hazardous decomposition products

Hazardous decomposition products None known based on information supplied.

SECTION 11: Toxicological information

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

Information on likely routes of exposure

Product Information Exposure is not expected for product under normal conditions of use. In the event of an exposure to electrolyte the following toxicological information is provided:

Inhalation Specific test data for the substance or mixture is not available. May cause irritation of respiratory tract.

Eye contact Specific test data for the substance or mixture is not available. Causes serious eye irritation. (based on components). May cause redness, itching, and pain.

Skin contact Specific test data for the substance or mixture is not available. Causes skin irritation. (based on components). May be harmful in contact with skin.

Ingestion Specific test data for the substance or mixture is not available. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea. Harmful if swallowed. (based on components).

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms Redness. May cause redness and tearing of the eyes.

Acute toxicity Harmful if swallowed.

Numerical measures of toxicity

The following values are calculated based on chapter 3.1 of the GHS document:

ATEmix (oral)	1,192.60 mg/kg
ATEmix (dermal)	> 2,000.00 mg/kg

Unknown acute toxicity

67.8 % of the mixture consists of ingredient(s) of unknown acute oral toxicity.

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Ferrous lithiumphosphate	-	> 2000 mg/kg (Rat)	> 3.2 mg/L (Rat) 4 h
Graphite	-	-	> 2000 mg/m³ (Rat) 4 h
Copper	-	-	> 5.11 mg/L (Rat) 4 h
Ethylene carbonate	= 10 g/kg (Rat)	> 26420 mg/kg (Rabbit)	> 730 mg/m³ (Rat) 8 h
Dimethyl carbonate	= 13 g/kg (Rat)	> 5 g/kg (Rabbit)	> 5.36 mg/L (Rat) 4 h
Aluminum	-	-	> 0.888 mg/L (Rat) 4 h
Sodium carboxymethyl cellulose	= 27000 mg/kg (Rat)	-	> 5800 mg/m³ (Rat) 4 h

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation Classification based on data available for ingredients. Causes skin irritation.

Serious eye damage/eye irritation Classification based on data available for ingredients. Causes serious eye irritation.

Respiratory or skin sensitisation Based on available data, the classification criteria are not met.

Germ cell mutagenicity Based on available data, the classification criteria are not met.

Carcinogenicity Based on available data, the classification criteria are not met.

Reproductive toxicity Based on available data, the classification criteria are not met.

STOT - single exposure Based on available data, the classification criteria are not met.

STOT - repeated exposure May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard Based on available data, the classification criteria are not met.

11.2. Information on other hazards

11.2.1. Endocrine disrupting properties

Endocrine disrupting properties This product does not contain any known or suspected endocrine disruptors.

11.2.2. Other information

Other adverse effects No information available.

SECTION 12: Ecological information

12.1. Toxicity

Ecotoxicity Harmful to aquatic life with long lasting effects.

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Graphite 7782-42-5	-	LC50: >100mg/L (96h, Danio rerio)	-	-
Copper 7440-50-8	EC50: 0.0426 - 0.0535mg/L (72h, Pseudokirchneriella subcapitata) EC50: 0.031 - 0.054mg/L (96h,	LC50: 0.0068 - 0.0156mg/L (96h, Pimephales promelas) LC50: <0.3mg/L (96h, Pimephales promelas) LC50: =0.2mg/L (96h,	-	EC50: =0.03mg/L (48h, Daphnia magna)

	Pseudokirchneriella subcapitata)	Pimephales promelas) LC50: =0.052mg/L (96h, Oncorhynchus mykiss) LC50: =1.25mg/L (96h, Lepomis macrochirus) LC50: =0.3mg/L (96h, Cyprinus carpio) LC50: =0.8mg/L (96h, Cyprinus carpio) LC50: =0.112mg/L (96h, Poecilia reticulata)		
Ethylene carbonate 96-49-1	-	LC50: >100mg/L (96h, Oncorhynchus mykiss)	-	-
Dimethyl carbonate 616-38-6	-	LC50: >=100mg/L (96h, Danio rerio)	-	-

12.2. Persistence and degradability

Persistence and degradability No information available.

12.3. Bioaccumulative potential

Bioaccumulation

Component Information

Chemical name	Partition coefficient
Ferrous lithiumphosphate	0.564
Ethylene carbonate	0.11
Dimethyl carbonate	0.354

12.4. Mobility in soil

Mobility in soil No information available.

12.5. Results of PBT and vPvB assessment

PBT and vPvB assessment

Chemical name	PBT and vPvB assessment
Ferrous lithiumphosphate 15365-14-7	PBT assessment does not apply
Graphite 7782-42-5	The substance is not PBT / vPvB
Copper 7440-50-8	The substance is not PBT / vPvB
Ethylene carbonate 96-49-1	The substance is not PBT / vPvB
Dimethyl carbonate 616-38-6	The substance is not PBT / vPvB
Aluminum 7429-90-5	The substance is not PBT / vPvB
Phosphate(1-), hexafluoro-, lithium 21324-40-3	The substance is not PBT / vPvB

12.6. Endocrine disrupting properties

Endocrine disrupting properties This product does not contain any known or suspected endocrine disruptors.

12.7. Other adverse effects

Other adverse effects No information available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging Do not reuse empty containers.

Waste codes / waste designations according to EWC / AVV According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user based on the application for which the product was used.

SECTION 14: Transport information

IMDG

14.1 UN number or ID number UN3480
14.2 UN proper shipping name LITHIUM ION BATTERIES
14.3 Transport hazard class(es) 9
14.4 Packing group Not applicable
Description UN3480, LITHIUM ION BATTERIES, 9
14.5 Environmental hazards Not applicable
14.6 Special Precautions for Users
Special Provisions 188, 230,310, 348, 376, 377, 384, 387
EmS-No. F-A, S-I
14.7 Maritime transport in bulk according to IMO instruments No information available

RID

14.1 UN number or ID number UN3480
14.2 UN proper shipping name LITHIUM ION BATTERIES
14.3 Transport hazard class(es) 9
14.4 Packing group Not applicable
Description UN3480, LITHIUM ION BATTERIES, 9
14.5 Environmental hazards Not applicable
14.6 Special Precautions for Users
Special Provisions 188, 230, 310, 348, 376, 377, 387, 636
Classification code M4

ADR

14.1 UN number or ID number UN3480
14.2 UN proper shipping name LITHIUM ION BATTERIES
14.3 Transport hazard class(es) 9
14.4 Packing group Not applicable
Description UN3480, LITHIUM ION BATTERIES, 9
14.5 Environmental hazards Not applicable
14.6 Special Precautions for Users
Special Provisions 188, 230, 310, 348, 376, 377, 387, 636
Classification code M4
Tunnel restriction code (E)

IATA Forbidden for transport by Passenger Air.
14.1 UN number or ID number UN3480
14.2 UN proper shipping name Lithium ion batteries
14.3 Transport hazard class(es) 9

14.4 Packing group Not applicable
Description UN3480, Lithium ion batteries, 9
14.5 Environmental hazards Not applicable
14.6 Special Precautions for Users
Special Provisions A88, A99, A154, A164, A183, A201, A213, A331, A334, A802
ERG Code 12FZ
Note: None

SECTION 15: Regulatory information

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

National regulations

France
Occupational Illnesses (R-463-3, France)

Chemical name	French RG number
Graphite 7782-42-5	RG 16 RG 25
Aluminum 7429-90-5	RG 32 RG 16,RG 16bis

Germany
Water hazard class (WGK) obviously hazardous to water (WGK 2)
TA Luft (German Air Pollution Control Regulation)

Chemical name	Number	Class
Copper	5.2.2	Class III
Phosphate(1-), hexafluoro-, lithium	5.2.4	Class II
1,1-Difluoroethylene polymer	5.2.4	Class II

European Union
Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work.

Authorisations and/or restrictions on use:
This product contains one or more substance(s) subject to restriction (Regulation (EC) No. 1907/2006 (REACH), Annex XVII)

Chemical name	Restricted substance per REACH Annex XVII	Substance subject to authorisation per REACH Annex XIV
Copper - 7440-50-8	75.	-
Aluminum - 7429-90-5	75.	-

Persistent Organic Pollutants
Not applicable

Dangerous substance category per Seveso Directive (2012/18/EU)
E1 - Hazardous to the Aquatic Environment in Category Acute 1 or Chronic 1

Ozone-depleting substances (ODS) regulation (EC) 1005/2009
Not applicable

Biocidal Products Regulation (EU) No 528/2012 (BPR)

Chemical name	Biocidal Products Regulation (EU) No 528/2012 (BPR)
Copper - 7440-50-8	Product-type 8: Wood preservatives Product-type 21: Antifouling products

International Inventories
Contact supplier for inventory compliance status

15.2. Chemical safety assessment

Chemical Safety Report No information available

SECTION 16: Other information

Key or legend to abbreviations and acronyms used in the safety data sheet

Full text of H-Statements referred to under section 3
H228 - Flammable solid
H261 - In contact with water releases flammable gases
H301 - Toxic if swallowed
H302 - Harmful if swallowed
H314 - Causes severe skin burns and eye damage
H318 - Causes serious eye damage
H319 - Causes serious eye irritation
H372 - Causes damage to organs through prolonged or repeated exposure
H373 - May cause damage to organs through prolonged or repeated exposure
H411 - Toxic to aquatic life with long lasting effects

Legend
SVHC: Substances of Very High Concern for Authorisation:
PBT: Persistent, Bioaccumulative, and Toxic (PBT) Substances
vPvB: Very Persistent and very Bioaccumulative (vPvB) Substances
STOT: Specific Target Organ Toxicity
ATE: Acute Toxicity Estimate
LC50: 50% Lethal Concentration
LD50: 50% Lethal Dose

Legend Section 8: Exposure controls/personal protection

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	Sk*	Skin designation
SCBA	Self-contained breathing apparatus		

Classification procedure	
Classification according to Regulation (EC) No. 1272/2008 [CLP]	Method Used
Acute oral toxicity	Calculation method
Acute dermal toxicity	Calculation method
Acute inhalation toxicity - gas	Calculation method
Acute inhalation toxicity - vapour	Calculation method
Acute inhalation toxicity - dust/mist	Calculation method
Skin corrosion/irritation	Calculation method
Serious eye damage/eye irritation	Calculation method
Respiratory sensitisation	Calculation method
Skin sensitisation	Calculation method
Mutagenicity	Calculation method
Carcinogenicity	Calculation method
Reproductive toxicity	Calculation method

STOT - single exposure	Calculation method
STOT - repeated exposure	Calculation method
Acute aquatic toxicity	Calculation method
Chronic aquatic toxicity	Calculation method
Aspiration hazard	Calculation method
Ozone	Calculation method

Key literature references and sources for data used to compile the SDS
Agency for Toxic Substances and Disease Registry (ATSDR)
U.S. Environmental Protection Agency ChemView Database
European Food Safety Authority (EFSA)
European Chemicals Agency (ECHA) Committee for Risk Assessment (ECHA_RAC)
European Chemicals Agency (ECHA) (ECHA_API)
Environmental Protection Agency
Acute Exposure Guideline Level(s) (AEGL(s))
U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
U.S. Environmental Protection Agency High Production Volume Chemicals
Food Research Journal
Hazardous Substance Database
International Uniform Chemical Information Database (IUCLID)
Japan GHS Classification
Australian National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
NIOSH (National Institute for Occupational Safety and Health)
National Library of Medicine's ChemID Plus (NLM CIP)
National Library of Medicine’s PubMed database (NLM PUBMED)
U.S. National Toxicology Program (NTP)
New Zealand's Chemical Classification and Information Database (CCID)
Organisation for Economic Co-operation and Development Environment, Health, and Safety Publications
Organisation for Economic Co-operation and Development High Production Volume Chemicals Programme
Organisation for Economic Co-operation and Development Screening Information Data Set
World Health Organization

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End of Safety Data Sheet