G Plus Rechargeable Li-Ion Battery

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878
Issue date: 20.09.2023 Revision date: 20.09.2023 Supersedes version of: 20.09.2023 Version: 1.0

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

1.1. Product identifier

Product form : Article
Trade name : **G Plus Rechargeable Li-Ion Battery**
Product code : GPT150
Other means of identification : These batteries are no “substances” or “mixtures” according to Regulation (EC) No 1907/2006 EC. Instead they have to be regarded as “articles”, no substances are intended to be released during handling. Therefore there is no obligation to supply a safety data sheet according to Regulation (EC) No 1907/2006, Article 31.

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

1.2.1. Relevant identified uses

Intended for general public
Main use category : Consumer use
Use of the substance/mixture : Rechargeable batteries

1.2.2. Uses advised against

Restrictions on use : Machinery, mechanical appliances, electrical/electronic articles

1.3. Details of the supplier of the safety data sheet

Supplier
Farecla Products Limited
Broadmeads
Ware, SG12 9HS – Hertfordshire
UK
T +44 (0)19 2046 5041 (8:30-16:30 Monday to Friday) - F +44 (0)19 2046 6557
technical@farecla.com - www.farecla.com

Only Representative
Saint-Gobain Coating Solutions
50 rue du Mourelet Z.I. Courtine Mourre Frais, B.P.
FR– 90966 84093 Avignon – Cedex
France
T 0033 (0) 4 90 85 85 00 - F 0033 (0) 4 90 82 94 52
qualité-ehs.coating-solutions@saint-gobain.com

1.4. Emergency telephone number

Emergency number : +44 (0)19 2046 5041 (8:30-16:30 Monday to Friday)

Country	Organisation/Company	Address	Emergency number	Comment
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)	
Israel	Israel Poison Information Center Rambam Health Care Campus	6 Ha'Aliya Street 31096	+972 4 854 1900	
Malta	Medicines & Poisons Info Office	Mater Dei Hospital Msida MSD 2090 Msida	+356 2545 6508	
United Kingdom	National Poisons Information Service (Birmingham Centre) City Hospital	Dudley Road B18 7QH	0344 892 0111	Only for healthcare professionals

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

Not Classified

Adverse physicochemical, human health and environmental effects

No additional information available

2.2. Label elements

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

Extra phrases : CAUTION: Keep batteries away from children. Risk of fire and burns. Do not open, crush, heat above manufacturer's specified maximum temperature or incinerate. Follow manufacturer's instructions.

2.3. Other hazards

Other hazards which do not result in classification : During charge process a lithium carbon intercalation phase is formed, which is highly flammable and corrosive, but not released under the circumstances of normal usage.

This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII
This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII
Contains no PBT/vPvB substances ≥ 0.1% assessed in accordance with REACH Annex XIII

The substance is not 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

Component	
Electrolyte salt and solvents	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 at a concentration equal to or greater than 0,1 %
Steel, Nickel, and inert components	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 at a concentration equal to or greater than 0,1 %

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Cobalt lithium dioxide (Cathode)	CAS-No.: 12190-79-3 EC-No.: 235-362-0	20 – 50	Repr. 1B, H360F
Graphite (Anode)	CAS-No.: 7782-42-5 EC-No.: 701-160-0	10 – 30	Not Classified
Electrolyte salt and solvents (Electrolyte)	-	5 – 20	Not Classified
Copper	CAS-No.: 7440-50-8 EC-No.: 231-159-6	3 – 15	Not Classified
Aluminium	CAS-No.: 7429-90-5 EC-No.: 231-072-3	2 – 10	Not Classified

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Lithium hexafluorophosphate (Electrolyte salt)	CAS-No.: 21324-40-3 EC-No.: 244-334-7	0,05 – 5	Acute Tox. 3 (Oral), H301 Skin Corr. 1A, H314 Eye Dam. 1, H318 STOT RE 1, H372
Poly(vinylidene fluoride)	CAS-No.: 24937-79-9 EC-No.: 607-458-6	< 1	Not Classified
Ethylene carbonate (Electrolyte solvent)	CAS-No.: 96-49-1 EC-No.: 202-510-0		Acute Tox. 4 (Oral), H302 Eye Irrit. 2, H319 STOT RE 2, H373
Propylene carbonate (Electrolyte solvent)	CAS-No.: 108-32-7 EC-No.: 203-572-1 EC Index-No.: 607-194-00-1		Eye Irrit. 2, H319
Diethyl carbonate (Electrolyte solvent)	CAS-No.: 105-58-8 EC-No.: 203-311-1		Flam. Liq. 3, H226
Ethyl propionate (Electrolyte solvent)	CAS-No.: 105-37-3 EC-No.: 203-291-4		Flam. Liq. 2, H225
Steel, Nickel, and inert components	-		Not Classified

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

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms: Call a poison center or a doctor.

First-aid measures after skin contact : Rinse immediately with plenty of water for 15 minutes. Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse. Brush off loose particles from skin. If skin irritation occurs: Get medical advice/attention.

First-aid measures after eye contact : Immediately rinse with plenty of water (for at least 15 minutes). Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical advice/attention.

First-aid measures after ingestion : Call a poison center or a doctor if you feel unwell. Rinse mouth out with water. Do not induce vomiting. Never give anything by mouth to an unconscious person.

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

Symptoms/effects : Under normal conditions (during charge and discharge) release of ingredients does not occur. In case of accidental release see information in sections 2 to 4 and 6.

Symptoms/effects after ingestion : Swallowing of a battery can be harmful. Call a doctor immediately, even if there are no immediate symptoms. For further information see section 4.

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 : Metal fire powder. Dry sand. In case only water is available, it can be used in large amounts.

Unsuitable extinguishing media : Carbon dioxide (CO2). Water in small quantities may have adverse effects.

5.2. Special hazards arising from the substance or mixture

Fire hazard : Cell is not flammable but internal organic material will burn if the cell is incinerated.

Explosion hazard	:	Explosion risk in case of fire. Cells may explode and release metal parts.
Reactivity in case of fire	:	At contact of electrolyte with water traces of hydrofluoric acid may be formed. In this case avoid contact and take care for good ventilation. At contact of charged anode material with water extremely flammable hydrogen gas is generated.
Hazardous decomposition products in case of fire	:	Toxic fumes may be released. Hydrogen fluoride. Carbon monoxide. Carbon dioxide.

5.3. Advice for firefighters

Precautionary measures fire	:	Eliminate all ignition sources if safe to do so. Evacuate area. Fight fire remotely due to the risk of explosion. Keep away from combustible materials. Keep cool. Protect from sunlight.
Firefighting instructions	:	Exercise caution when fighting any chemical fire. Do not let used extinguishing media penetrate into surface water or ground water. If necessary, thicken water or foam with suitable solids. Dispose of properly.
Protection during firefighting	:	Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.
Other information	:	In case of fire, corrosive and harmful gases come free.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures	:	Do not allow contact with water. Evacuate area. No flames, no sparks. Eliminate all sources of ignition.

6.1.1. For non-emergency personnel

Protective equipment	:	Wear personal protective equipment adapted to the situation (protection gloves, face protection, breathing protection).
Emergency procedures	:	Ventilate affected area. Act in accordance with local emergency plan. Evacuate area.

6.1.2. For emergency responders

Protective equipment	:	Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".
Emergency procedures	:	Place damaged cells or batteries into individual plastic bags and then place into appropriate containers and close tightly for disposal. Ensure that cleanup procedures do not expose spilled material to any moisture. Immediately transport closed containers outside. Plastic lined container is suitable for storage of damaged cells or batteries until proper disposal can be arranged. Evacuate unnecessary personnel. Cover spill with non combustible material, e.g.: sand/earth. Do not touch spilled material. Remove all sources of ignition. Keep away from combustible material. See section 5.3. of the SDS for more information. Ventilate area.

6.2. Environmental precautions

Avoid release to the environment. Do not allow water (or moist air) contact with this material. Do not discharge into drains or rivers.

6.3. Methods and material for containment and cleaning up

For containment	:	Pick up mechanically. Cover spill with non combustible material, e.g.: sand, earth, vermiculite.
Methods for cleaning up	:	If battery casing is dismantled, small amounts of electrolyte may leak. Package the battery tightly including ingredients together with lime, sand or rock salt. Then clean with water.
Other information	:	Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information see section 4. For further information refer to section 8: "Exposure controls/personal protection". For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Keep batteries away from children. Avoid shot circuiting the battery. Avoid mechanical damage of the battery. Do not open or disassemble. Batteries may explode or cause burns, if disassembled, crushed or exposed to fire or high temperatures. Do not short or install with incorrect polarity. Avoid all personal contact, including inhalation. Wear protective clothing when risk of exposure occurs. Use in a well-ventilated area. Prevent concentration in hollows and sumps.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : It is recommended to consider the “Technical Rule for Hazardous Substances TRGS 510 - Storage of hazardous substances in nonstationary containers” and to handle lithium ion batteries according to storage category 11 (“combustible solids”).

Storage conditions : Protect from moisture. Protect from sunlight. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Store in a dry place.

Storage temperature : ≥ 10 – ≤ 35 °C

Heat and ignition sources : Protect from moisture. Store away from direct sunlight or other heat sources. Keep away from any flames or sparking source.

7.3. Specific end use(s)

Refer to Section 1.2 - Relevant identified uses.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1 National occupational exposure and biological limit values

Propylene carbonate (108-32-7)	
Germany - Occupational Exposure Limits (TRGS 900)	
Local name	Propylencarbonat (4-Methyl-1,3-dioxolan-2-on)
AGW (OEL TWA) [1]	8,5 mg/m³ (the risk of damage to the embryo or fetus can be excluded when AGW and BGW values are observed)
AGW (OEL TWA) [2]	2 ppm (the risk of damage to the embryo or fetus can be excluded when AGW and BGW values are observed)
Peak exposure limitation factor	1(I)
Remark	DFG - Senatskommission zur Prüfung gesundheitsschädlicher Arbeitsstoffe der DFG (MAK-Kommission); Y - Ein Risiko der Fruchtschädigung braucht bei Einhaltung des Arbeitsplatzgrenzwertes und des biologischen Grenzwertes (BGW) nicht befürchtet zu werden; 11 - Summe aus Dampf und Aerosolen
Regulatory reference	TRGS900
Latvia - Occupational Exposure Limits	
OEL TWA	2 mg/m³
Lithuania - Occupational Exposure Limits	
IPRV (OEL TWA)	7 mg/m³
Switzerland - Occupational Exposure Limits	
Local name	4-Méthyl-1,3-dioxolan-2-one [Carbonate de propylène] / 4-Methyl-1,3-dioxolan-2-on [Propylencarbonat]
MAK (OEL TWA) [1]	25,5 mg/m³
MAK (OEL TWA) [2]	6 ppm

Propylene carbonate (108-32-7)	
KZGW (OEL STEL)	25,5 mg/m³
KZGW (OEL STEL) [ppm]	6 ppm
Critical toxicity	Yeux / Auge
Notation	SS_C / SS_C
Regulatory reference	www.suva.ch, 01.01.2023

Copper (7440-50-8)	
Austria - Occupational Exposure Limits	
MAK (OEL TWA)	1 mg/m³ (inhalable fraction) 0,1 mg/m³ (respirable fraction, smoke)
MAK (OEL STEL)	4 mg/m³ (inhalable fraction) 0,4 mg/m³ (respirable fraction, smoke)
Belgium - Occupational Exposure Limits	
Local name	Cuivre (en Cu) # Koper (als Cu)
OEL TWA	0,2 mg/m³ (fume) 1 mg/m³ (dust and mist)
Regulatory reference	Koninklijk besluit/Arrêté royal 11/05/2021
Bulgaria - Occupational Exposure Limits	
Local name	Мед
OEL TWA	0,1 mg/m³ (metal vapor)
Regulatory reference	Наредба № 13 от 30.12.2003 г. за защита на работещите от рискове, свързани с експозиция на химични агенти при работа (изм. и доп. ДВ. бр. 47 от 2021 г., в сила от 04.06.2021 г.)
Croatia - Occupational Exposure Limits	
GVI (OEL TWA) [1]	0,2 mg/m³ (fume) 1 mg/m³ (dust)
KGVI (OEL STEL)	2 mg/m³ (dust)
Czech Republic - Occupational Exposure Limits	
Local name	Měď
PEL (OEL TWA)	1 mg/m³ (dust) 0,1 mg/m³ (fume)
NPK-P (OEL C)	2 mg/m³ (prach) (V) 0,2 mg/m³ (dýmy) (R)
Remark	V - vdechovatelná frakce aerosolu, R - respirabilní frakce aerosolu.
Regulatory reference	Nařízení vlády č. 361/2007 Sb. (Předpis 195/2021 Sb.)
Denmark - Occupational Exposure Limits	
OEL TWA [1]	1 mg/m³ (dust and powder) 0,1 mg/m³ (fume)
Estonia - Occupational Exposure Limits	
OEL TWA	1 mg/m³ (total dust) 0,2 mg/m³ (respirable dust)
Finland - Occupational Exposure Limits	
Local name	Kupari, metalli

Copper (7440-50-8)	
HTP (OEL TWA) [1]	0,02 mg/m³ Cu, alveolijae
Regulatory reference	HTP-ARVOT 2020 (Sosiaali- ja terveysministeriö)
France - Occupational Exposure Limits	
Local name	Cuivre
VME (OEL TWA)	0,2 mg/m³ (fume) 1 mg/m³ (dust)
VLE (OEL C/STEL)	2 mg/m³ (dust)
Remark	Valeurs recommandées/admises
Regulatory reference	Circulaire du Ministère du travail (réf.: INRS ED 984, 2016)
Greece - Occupational Exposure Limits	
OEL TWA	0,2 mg/m³ (fume) 1 mg/m³ (dust)
OEL STEL	2 mg/m³ (dust)
Hungary - Occupational Exposure Limits	
AK (OEL TWA)	1 mg/m³ 0,1 mg/m³ (fume)
CK (OEL STEL)	4 mg/m³ 0,4 mg/m³ (fume)
Ireland - Occupational Exposure Limits	
Local name	Copper (as Cu)
OEL TWA [1]	0,2 mg/m³ (fume) 1 mg/m³ (dusts and mists)
OEL STEL	2 mg/m³ (dusts and mists) 0,6 mg/m³ (calculated-fume)
Regulatory reference	Chemical Agents Code of Practice 2021
Latvia - Occupational Exposure Limits	
OEL TWA	0,5 mg/m³
Lithuania - Occupational Exposure Limits	
IPRV (OEL TWA)	1 mg/m³ (inhalable fraction) 0,2 mg/m³ (respirable fraction)
Netherlands - Occupational Exposure Limits	
Local name	Koper
TGG-8u (OEL TWA)	0,1 mg/m³ (inhalable dust)
Regulatory reference	Arbeidsomstandighedenregeling 2023
Poland - Occupational Exposure Limits	
Local name	Miedź i jej związki nieorganiczne
NDS (OEL TWA)	0,2 mg/m³
Regulatory reference	Dz. U. 2018 poz. 1286 wraz z późn. zm.
Portugal - Occupational Exposure Limits	
OEL TWA	0,2 mg/m³ (fume) 1 mg/m³ (dust and mist)

Copper (7440-50-8)	
Romania - Occupational Exposure Limits	
OEL TWA	0,5 mg/m³ (dust)
OEL STEL	0,2 mg/m³ (fume) 1,5 mg/m³ (dust)
Slovakia - Occupational Exposure Limits	
NPHV (OEL TWA) [1]	1 mg/m³ (inhalable fraction) 0,2 mg/m³ (respirable fraction)
Spain - Occupational Exposure Limits	
Local name	Cobre
VLA-ED (OEL TWA) [1]	0,1 mg/m³ (see UNE EN 481:1995 on workplace atmospheres-respirable fraction)
Remark	d (Véase UNE EN 481: Atmósferas en los puestos de trabajo. Definición de las fracciones por el tamaño de las partículas para la medición de aerosoles).
Regulatory reference	Límites de Exposición Profesional para Agentes Químicos en España 2023. INSHT
Sweden - Occupational Exposure Limits	
Local name	Koppar, och oorg. Föreningar (som Cu)
NGV (OEL TWA)	0,01 mg/m³ (respirable fraction)
Remark	3 (Den respirabla fraktionen är de inhalerbara partiklar som når längst ner i luftvägarna, till alveolerna i lungorna)
Regulatory reference	Hygieniska gränsvärden (AFS 2018:1)
United Kingdom - Occupational Exposure Limits	
Local name	Copper
WEL TWA (OEL TWA) [1]	1 mg/m³ (dust and mists) 0,2 mg/m³ (fume)
WEL STEL (OEL STEL)	0,6 mg/m³ (calculated-fume) 2 mg/m³ (dust and mist)
Regulatory reference	EH40/2005 (Fourth edition, 2020). HSE
Norway - Occupational Exposure Limits	
Local name	Kobber
Grenseverdi (OEL TWA) [1]	0,1 mg/m³ (fume) 1 mg/m³ (dust)
Korttidsverdi (OEL STEL)	0,3 mg/m³ (value calculated-fume) 2 mg/m³ (value calculated-dust)
Regulatory reference	FOR-2021-06-28-2248
Switzerland - Occupational Exposure Limits	
Local name	Cuivre et ses composés inorganiques / Kupfer und seine anorganischen Verbindungen
MAK (OEL TWA) [1]	0,1 mg/m³ (inhalable dust)
KZGW (OEL STEL)	0,2 mg/m³ (inhalable dust)
Critical toxicity	Poumons, Fimétal / Lunge, Metallrauch
Notation	SS_C / SS_C
Remark	NIOSH
Regulatory reference	www.suva.ch, 01.01.2023

Copper (7440-50-8)	
USA - ACGIH - Occupational Exposure Limits	
Local name	Copper, as Cu
ACGIH OEL TWA	0,2 mg/m³ (fume)
Remark (ACGIH)	TLV® Basis: Irr; GI; metal fume fever
Regulatory reference	ACGIH 2023

Aluminium (7429-90-5)	
Belgium - Occupational Exposure Limits	
Local name	Aluminium # Aluminium
OEL TWA	2 mg/m³ (composés alkylés) (en Al) # Aluminiumalkylen (als Al) 1 mg/m³ (métal et composés insolubles, fraction alvéolaire) # (metaal en onoplosbare verbindingen, inadembare fractie)
Regulatory reference	Koninklijk besluit/Arrêté royal 11/05/2021
Bulgaria - Occupational Exposure Limits	
Local name	Алуминий
OEL TWA	10 mg/m³ (метален прах и оксиди). (инхалабилна фракция) 1,5 mg/m³ (метален прах и оксиди). (респирабилна фракция) 2 mg/m³ (неорганични разтворими съединения (като алуминий))
Regulatory reference	Наредба № 13 от 30.12.2003 г. за защита на работещите от рискове, свързани с експозиция на химични агенти при работа (изм. и доп. ДВ. бр. 47 от 2021 г., в сила от 04.06.2021 г.)
Czech Republic - Occupational Exposure Limits	
Local name	Hliník a jeho oxidy (s výjimkoy gama Al2O3)
PEL (OEL TWA)	10 mg/m³
Remark	Prachy s převážně nespecifickým účinkem.
Regulatory reference	Nařízení vlády č. 361/2007 Sb. (Předpis 195/2021 Sb.)
France - Occupational Exposure Limits	
Local name	Aluminium
VME (OEL TWA)	10 mg/m³ (métal) 5 mg/m³ (pulvérulent)
Remark	Valeurs recommandées/admises
Regulatory reference	Circulaire du Ministère du travail (réf.: INRS ED 984, 2016)
Greece - Occupational Exposure Limits	
Local name	Αργίλίου
OEL TWA	10 mg/m³ καπν οί συγκολλήσεων (ως Al) 10 mg/m³ πυροφορική σκόνη
Regulatory reference	Π.Δ. 90/1999 - Προστασία της υγείας των εργαζομένων που εκτίθενται σε ορισμένους χημικούς παράγοντες κατά τη διάρκεια της εργασίας τους
Ireland - Occupational Exposure Limits	
Local name	Aluminium metal
OEL TWA [1]	1 mg/m³ R (Respirable Fraction)
Regulatory reference	Chemical Agents Code of Practice 2021

Aluminium (7429-90-5)	
Poland - Occupational Exposure Limits	
Local name	Glin metaliczny, glin proszek (niestabilizowany)
NDS (OEL TWA)	2,5 mg/m³ frakcja wdychalna 1,2 mg/m³ frakcja respirabilna
Remark	Frakcja wdychalna – frakcja aerozolu wnikająca przez nos i usta, która po zdeponowaniu w drogach oddechowych stwarza zagrożenie dla zdrowia. Frakcja respirabilna – frakcja aerozolu wnikająca do dróg oddechowych, która stwarza zagrożenie dla zdrowia po zdeponowaniu w obszarze wymiany gazowej.
Regulatory reference	Dz. U. 2018 poz. 1286 wraz z późn. zm.
Spain - Occupational Exposure Limits	
Local name	Aluminio
VLA-ED (OEL TWA) [1]	1 mg/m³ Fracción respirable
Remark	d (Véase UNE EN 481: Atmósferas en los puestos de trabajo. Definición de las fracciones por el tamaño de las partículas para la medición de aerosoles).
Regulatory reference	Límites de Exposición Profesional para Agentes Químicos en España 2023. INSHT
Sweden - Occupational Exposure Limits	
Local name	Aluminium, lösliga föreningar (som Al)
NGV (OEL TWA)	1 mg/m³ totaldamm
Remark	3 (Med totaldamm menas de partiklar (aerosoler) som fastnar på ett filter i den provtagare som beskrivs i Metodserien, Provtagning av totaldamm och respirabelt damm, Metod nr 1010, Arbetarskyddsstyrelsen, numera Arbetsmiljöverket. Filterdiametern är normalt 37 mm, men kan även vara 25 mm. Trots sitt namn provtas inte den totala mängden luftburna partiklar med denna metod)
Regulatory reference	Hygieniska gränsvärden (AFS 2018:1)
United Kingdom - Occupational Exposure Limits	
Local name	Aluminium
WEL TWA (OEL TWA) [1]	2 mg/m³ alkyl compounds 2 mg/m³ salts, soluble 10 mg/m³ metal, inhalable dust 4 mg/m³ metal, respirable dust
Regulatory reference	EH40/2005 (Fourth edition, 2020). HSE
Norway - Occupational Exposure Limits	
Local name	Aluminiumpulver (pyroteknikk)
Grenseverdi (OEL TWA) [1]	5 mg/m³
Regulatory reference	FOR-2021-06-28-2248
Switzerland - Occupational Exposure Limits	
Local name	Aluminium métal / Aluminium (Metall)
MAK (OEL TWA) [1]	3 mg/m³ (a) / (a)
Critical toxicity	Formel / Formal
Notation	B / B
Remark	NIOSH
Regulatory reference	www.suva.ch, 01.01.2023

Aluminium (7429-90-5)	
Switzerland - BAT	
Local name	Aluminium métal / Aluminium (Metall)
BAT	50 µg/g creatinine (0.21 µmol/mmol cr.; Paramètre biologique: Aluminium; Substrat d'examen: Urine; Moment du prélèvement: Exposition de longue durée: après plusieurs périodes de travail.) / (0.21 µmol/mmol cr.; Biologischer Parameter: Aluminium; Untersuchungsmaterial: Urin; Probennahmezeitpunkt: Bei Langzeitexposition: nach mehreren vorangegangenen Schichten.)
Regulatory reference	Ordonnance 832.30 (OPA), article 50 al. 3, www.suva.ch/valeurs-limites / Verordnung 832.30 (VUV), Art. 50 Abs. 3, www.suva.ch/grenzwerte
USA - ACGIH - Occupational Exposure Limits	
Local name	Aluminum metal and insoluble compounds
ACGIH OEL TWA	1 mg/m³ (R - Respirable particulate matter)
Remark (ACGIH)	TLV® Basis: Pneumoconiosis; LRT irr; neurotoxicity. Notations: A4 (Not classifiable as a Human Carcinogen)
Regulatory reference	ACGIH 2023

Graphite (7782-42-5)	
Belgium - Occupational Exposure Limits	
Local name	Graphite (excepté fibres) (fraction alvéolaire) # Grafiet (vezels uitgezonderd) (inadembare fractie)
OEL TWA	2 mg/m³
Regulatory reference	Koninklijk besluit/Arrêté royal 11/05/2021
Bulgaria - Occupational Exposure Limits	
Local name	Графит
OEL TWA	5 mg/m³ (Инхалабилна фракция)
Regulatory reference	Наредба № 13 от 30.12.2003 г. за защита на работещите от рискове, свързани с експозиция на химични агенти при работа (изм. и доп. ДВ. бр. 47 от 2021 г., в сила от 04.06.2021 г.)
Czech Republic - Occupational Exposure Limits	
Local name	Grafit
PEL (OEL TWA)	10 mg/m³ (pro celkovou koncentraci) 2 mg/m³ (pro respirabilní frakci, ≤ 5 % křemen, kristobalit, tridymit nebo gama-oxid hlinitý)
Remark	Prachy s převážně fibrogennúm účinkem.
Regulatory reference	Nařízení vlády č. 361/2007 Sb. (Předpis 195/2021 Sb.)
Finland - Occupational Exposure Limits	
Local name	Grafiitti
HTP (OEL TWA) [1]	2 mg/m³
Regulatory reference	HTP-ARVOT 2020 (Sosiaali- ja terveysministeriö)
France - Occupational Exposure Limits	
Local name	Graphite
VME (OEL TWA)	2 mg/m³ (fraction alvéolaire)
Remark	Valeurs recommandées/admises
Regulatory reference	Circulaire du Ministère du travail (réf.: INRS ED 984, 2016)

Graphite (7782-42-5)	
Greece - Occupational Exposure Limits	
Local name	Γραφίτης
OEL TWA	10 mg/m³ εισπν. 5 mg/m³ αναπν.
Regulatory reference	Π.Δ. 90/1999 - Προστασία της υγείας των εργαζομένων που εκτίθενται σε ορισμένους χημικούς παράγοντες κατά τη διάρκεια της εργασίας τους
Ireland - Occupational Exposure Limits	
Local name	Graphite (all forms except fibres)
OEL TWA [1]	2 mg/m³ R (Respirable Fraction)
Regulatory reference	Chemical Agents Code of Practice 2021
Poland - Occupational Exposure Limits	
Local name	Grafit naturalny
NDS (OEL TWA)	1 mg/m³ frakcja respirabilna 4 mg/m³ frakcja wdychalna
Remark	Frakcja wdychalna – frakcja aerozolu wnikająca przez nos i usta, która po zdeponowaniu w drogach oddechowych stwarza zagrożenie dla zdrowia. Frakcja respirabilna – frakcja aerozolu wnikająca do dróg oddechowych, która stwarza zagrożenie dla zdrowia po zdeponowaniu w obszarze wymiany gazowej.
Regulatory reference	Dz. U. 2018 poz. 1286 wraz z późn. zm.
Spain - Occupational Exposure Limits	
Local name	Grafito
VLA-ED (OEL TWA) [1]	2 mg/m³ polvo. Fracción respirable
Remark	d (Véase UNE EN 481: Atmósferas en los puestos de trabajo. Definición de las fracciones por el tamaño de las partículas para la medición de aerosoles).
Regulatory reference	Límites de Exposición Profesional para Agentes Químicos en España 2023. INSHT
Switzerland - Occupational Exposure Limits	
Local name	Graphite naturel, alvéolaire / Graphit natürlich (a-Fraktion)
MAK (OEL TWA) [1]	3 mg/m³ (a) / (a)
Critical toxicity	Fibpulm / Lungenfibrose
Notation	SS_C / SS_C
Remark	OSHA
Regulatory reference	www.suva.ch, 01.01.2023
USA - ACGIH - Occupational Exposure Limits	
Local name	Graphite (all forms excepte graphite fibers)
ACGIH OEL TWA	2 mg/m³ (R - Respirable particulate matter)
Remark (ACGIH)	TLV® Basis: Pneumoconiosis
Regulatory reference	ACGIH 2023

8.1.2. Recommended monitoring procedures

Monitoring methods	
Monitoring methods	Not applicable.

8.1.3. Air contaminants formed

No additional information available

8.1.4. DNEL and PNEC

No additional information available

8.1.5. Control banding

No additional information available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Appropriate engineering controls:
Airborne exposures to hazardous substances are not expected when the batteries are used for their intended purposes. Exposure standards are not applicable to the sealed articles.

8.2.2. Personal protection equipment

8.2.2.1. Eye and face protection

Eye protection:
Eye protection is not required when handling batteries during normal use. Wear safety glasses / goggles if handling a leaking or ruptured battery.

8.2.2.2. Skin protection

Skin and body protection:
Skin protection is not required when handling the battery during normal use. Wear long sleeved clothing to avoid skin contact if handling a leaking or ruptured battery. Soiled clothing should be washed with detergent prior to re-use.

Hand protection:
Hand protection is not required when handling the battery during normal use. PVC gloves are recommended when dealing with a leaking or ruptured battery.

8.2.2.3. Respiratory protection

Respiratory protection:
During routine operation, a respirator is not required. However, if dealing with an electrolyte leakage and irritating vapors are generated, an approved half face inorganic vapor and gas/acid/particulate respirator is required.

8.2.2.4. Thermal hazards

Thermal hazard protection:
Not applicable.

8.2.3. Environmental exposure controls

Environmental exposure controls:
Avoid release to the environment.

Consumer exposure controls:
Hygiene measures.

Other information:
Special ventilation is not required when using these products in normal use scenarios. Ventilation is required if there is leakage from the battery. Provide readily accessible eye wash stations and safety showers.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Solid
Colour	:	Black.
Appearance	:	Prismatic.
Odour	:	Odourless.
Odour threshold	:	Not available
Melting point	:	Not available
Freezing point	:	Not applicable
Boiling point	:	Not available
Flammability	:	Non flammable.

Lower explosion limit	:	Not applicable
Upper explosion limit	:	Not applicable
Flash point	:	Not applicable
Auto-ignition temperature	:	Not applicable
Decomposition temperature	:	Not available
pH	:	Not available
pH solution	:	Not available
Viscosity, kinematic	:	Not applicable
Solubility	:	Not available
Partition coefficient n-octanol/water (Log Kow)	:	Not available
Vapour pressure	:	Not available
Vapour pressure at 50°C	:	Not available
Density	:	Not available
Relative density	:	Not available
Relative vapour density at 20°C	:	Not applicable
Particle size	:	Not available

9.2. Other information

9.2.1. Information with regard to physical hazard classes

No additional information available

9.2.2. Other safety characteristics

Other properties	:	Voltage = 18V Electric capacity = 5.0Ah Electric Energy = 90Wh

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use. When heated above 100°C the risk of rupture occurs.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7). Keep away from moisture and heat. No flames, no sparks. Eliminate all sources of ignition. Do not puncture, crush or incinerate.

10.5. Incompatible materials

None known.

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

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

Acute toxicity (oral)	:	Not Classified. (The electrolyte contained within the cell or battery is a corrosive liquid. Ingestion of this electrolyte would be harmful. Swallowing may result in nausea, vomiting, diarrhea, abdominal pain and chemical burns to the gastrointestinal tract. During normal usage ingestion should not be a means of exposure.)
Acute toxicity (dermal)	:	Not Classified
Acute toxicity (inhalation)	:	Not Classified

Additional information : The hazardous components of the cell or battery are contained within a sealed unit. Under recommended use conditions, the electrode materials and liquid electrolyte are non-reactive provided that the cell or battery integrity remains and the seals remain intact. The potential for exposure should not exist unless the battery leaks, is exposed to high temperature or is mechanically, electrically or physically damaged. The following toxicology data is in respect to if a person comes into contact with the electrolyte.

Lithium hexafluorophosphate (21324-40-3)	
LD50 oral rat	50 – 300 mg/kg bodyweight Animal: rat, Animal sex: female, Guideline: OECD Guideline 423 (Acute Oral toxicity - Acute Toxic Class Method), Guideline: EU Method B.1 tris (Acute Oral Toxicity - Acute Toxic Class Method), Guideline: EPA OPPTS 870.1100 (Acute Oral Toxicity)

Ethylene carbonate (96-49-1)	
LD50 oral rat	> 5000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 401 (Acute Oral Toxicity), Guideline: other:
LD50 dermal rat	> 2000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 402 (Acute Dermal Toxicity), Guideline: EU Method B.3 (Acute Toxicity (Dermal))

Propylene carbonate (108-32-7)	
LD50 oral rat	> 5000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 401 (Acute Oral Toxicity)
LD50 dermal rabbit	≥ 2000 mg/kg bodyweight Animal: rabbit, Guideline: OECD Guideline 402 (Acute Dermal Toxicity)

Diethyl carbonate (105-58-8)	
LD50 oral rat	> 15000 mg/kg bodyweight Animal: rat

Ethyl propionate (105-37-3)	
LD50 oral rat	> 5000 mg/kg bodyweight Animal: rat, Animal sex: female, Guideline: OECD Guideline 423 (Acute Oral toxicity - Acute Toxic Class Method)
LD50 dermal rat	> 2000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 402 (Acute Dermal Toxicity), Guideline: EU Method B.3 (Acute Toxicity (Dermal))

Copper (7440-50-8)	
LD50 dermal rat	> 2000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 402 (Acute Dermal Toxicity), Guideline: EU Method B.3 (Acute Toxicity (Dermal)), Guideline: EPA OTS 798.1100 (Acute Dermal Toxicity), Guideline: other:
LC50 Inhalation - Rat	> 5,11 mg/l air Animal: rat, Guideline: OECD Guideline 436 (Acute Inhalation Toxicity: Acute Toxic Class Method)

Aluminium (7429-90-5)	
LD50 oral rat	> 15900 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 401 (Acute Oral Toxicity)
LC50 Inhalation - Rat	> 0,888 mg/l air Animal: rat, Animal sex: male, Guideline: OECD Guideline 403 (Acute Inhalation Toxicity)

Cobalt lithium dioxide (12190-79-3)	
LD50 oral rat	> 5000 mg/kg bodyweight Animal: rat, Animal sex: female, Guideline: OECD Guideline 425 (Acute Oral Toxicity: Up-and-Down Procedure)
LD50 dermal rat	> 2000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 402 (Acute Dermal Toxicity)
LC50 Inhalation - Rat	5,05 mg/l air Animal: rat, Guideline: OECD Guideline 436 (Acute Inhalation Toxicity: Acute Toxic Class Method)

Graphite (7782-42-5)	
LD50 oral rat	> 2000 mg/kg bodyweight Animal: rat, Animal sex: female, Guideline: OECD Guideline 423 (Acute Oral toxicity - Acute Toxic Class Method)
LC50 Inhalation - Rat	> 2 mg/l air Animal: rat, Animal sex: male, Guideline: OECD Guideline 403 (Acute Inhalation Toxicity)

Skin corrosion/irritation : Not Classified. (The hazardous components of the cell or battery are contained within a sealed unit. Under recommended use conditions, the electrode materials and liquid electrolyte are non-reactive provided that the cell or battery integrity remains and the seals remain intact. The potential for exposure should not exist unless the battery leaks, is exposed to high temperature or is mechanically, electrically or physically damaged. The following toxicology data is in respect to if a person comes into contact with the electrolyte.)

Additional information : The electrolyte contained within the cell or battery is a corrosive liquid and it is expected that it would cause skin burns or severe irritation to the skin if not washed off immediately. Correct handling procedures should minimize the risk of skin irritation. People with pre-existing skin conditions, such as dermatitis, should take extreme care so as not to exacerbate the condition.

Propylene carbonate (108-32-7)	
pH	8,8

Serious eye damage/irritation : Not Classified (The hazardous components of the cell or battery are contained within a sealed unit. Under recommended use conditions, the electrode materials and liquid electrolyte are non-reactive provided that the cell or battery integrity remains and the seals remain intact. The potential for exposure should not exist unless the battery leaks, is exposed to high temperature or is mechanically, electrically or physically damaged. The following toxicology data is in respect to if a person comes into contact with the electrolyte.)

Additional information : The electrolyte contained within the cell or battery is a corrosive liquid and it is expected that it would cause irreversible damage to the eyes. Contact may cause corneal burns. Effects may be slow to heal after eye contact. Correct handling procedures incorporating appropriate eye protection should minimize the risk of eye irritation.

Propylene carbonate (108-32-7)	
pH	8,8

Respiratory or skin sensitisation : Not Classified

Germ cell mutagenicity : Not Classified

Carcinogenicity : Not Classified

Reproductive toxicity : Not Classified.

Lithium hexafluorophosphate (21324-40-3)	
NOAEL (animal/male, F0/P)	500 mg/kg bodyweight Animal: rat, Animal sex: male

Aluminium (7429-90-5)	
NOAEL (animal/male, F0/P)	1000 mg/kg bodyweight Animal: rat, Animal sex: male, Guideline: OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)

STOT-single exposure : Not Classified

STOT-repeated exposure : Not Classified.

Lithium hexafluorophosphate (21324-40-3)	
STOT-repeated exposure	Causes damage to organs through prolonged or repeated exposure.

Ethylene carbonate (96-49-1)	
LOAEL (oral, rat, 90 days)	554 mg/kg bodyweight Animal: rat, Animal sex: female
STOT-repeated exposure	May cause damage to organs (kidneys) through prolonged or repeated exposure (oral).

Propylene carbonate (108-32-7)	
NOAEL (oral, rat, 90 days)	> 5000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity Study in Rodents)

Diethyl carbonate (105-58-8)	
NOAEC (inhalation, rat, vapour, 90 days)	18,995 mg/l air Animal: rat

Aluminium (7429-90-5)	
LOAEC (inhalation, rat,dust/mist/fume, 90 days)	0,05 mg/l air Animal: rat, Guideline: OECD Guideline 413 (Subchronic Inhalation Toxicity: 90-Day Study)
NOAEL (subchronic, oral, animal/male, 90 days)	1034 mg/kg bodyweight Animal: dog, Animal sex: male, Guideline: OECD Guideline 409 (Repeated Dose 90-Day Oral Toxicity Study in Non-Rodents)
NOAEL (subchronic, oral, animal/female, 90 days)	1087 mg/kg bodyweight Animal: dog, Animal sex: female, Guideline: OECD Guideline 409 (Repeated Dose 90-Day Oral Toxicity Study in Non-Rodents)

Cobalt lithium dioxide (12190-79-3)	
NOAEL (oral, rat, 90 days)	3 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity Study in Rodents)

Graphite (7782-42-5)	
NOAEL (oral, rat, 90 days)	≥ 10000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 407 (Repeated Dose 28-Day Oral Toxicity Study in Rodents)
NOAEC (inhalation, rat, dust/mist/fume, 90 days)	0,000279 mg/l air Animal: rat, Guideline: OECD Guideline 413 (Subchronic Inhalation Toxicity: 90-Day Study)

Aspiration hazard : Not Classified

G Plus Rechargeable Li-Ion Battery	
Viscosity, kinematic	Not applicable

Lithium hexafluorophosphate (21324-40-3)	
Viscosity, kinematic	Not applicable

11.2. Information on other hazards

No additional information available

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.

Hazardous to the aquatic environment, short–term (acute) : Not Classified

Hazardous to the aquatic environment, long–term (chronic) : Not Classified

Not rapidly degradable

Additional information : Batteries do not contain heavy metals as defined by the European directives 2006/66/EC Article 21; they comply with the chemical composition requirements of this Directive.

Lithium hexafluorophosphate (21324-40-3)	
EC50 96h - Algae [1]	> 100 mg/l Test organisms (species): Raphidocelis subcapitata (previous names: Pseudokirchneriella subcapitata, Selenastrum capricornutum)
NOEC chronic fish	4 mg/l Test organisms (species): Duration: '21 d'

Ethylene carbonate (96-49-1)	
LC50 - Fish [1]	> 100 mg/l Test organisms (species): Oncorhynchus mykiss (previous name: Salmo gairdneri)

Ethylene carbonate (96-49-1)	
EC50 72h - Algae [1]	> 100 mg/l Test organisms (species): Raphidocelis subcapitata (previous names: Pseudokirchneriella subcapitata, Selenastrum capricornutum)

Propylene carbonate (108-32-7)	
LC50 - Fish [1]	> 1000 mg/l Test organisms (species): Cyprinus carpio
EC50 - Crustacea [1]	> 1000 mg/l Test organisms (species): Daphnia magna
EC50 72h - Algae [1]	> 929 mg/l Test organisms (species): Selenastrum sp.

Diethyl carbonate (105-58-8)	
LC50 - Fish [1]	45,1 – 419,4 mg/l Test organisms (species): other:
EC50 - Crustacea [1]	> 74,16 mg/l Test organisms (species): Daphnia magna
EC50 72h - Algae [1]	> 57,29 mg/l Test organisms (species): Raphidocelis subcapitata (previous names: Pseudokirchneriella subcapitata, Selenastrum capricornutum)
EC50 96h - Algae [1]	47,6 – 68,8 mg/l Test organisms (species): other:

Ethyl propionate (105-37-3)	
LC50 - Fish [1]	6,74 mg/l Test organisms (species): Danio rerio (previous name: Brachydanio rerio)
EC50 - Crustacea [1]	36 mg/l Test organisms (species): Daphnia magna
EC50 72h - Algae [1]	> 130 mg/l Test organisms (species): Raphidocelis subcapitata (previous names: Pseudokirchneriella subcapitata, Selenastrum capricornutum)
NOEC (chronic)	1,3 mg/l Test organisms (species): Daphnia magna Duration: '21 d'

Copper (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]	0,03 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])
EC50 72h - Algae [1]	0,0426 – 0,0535 mg/l (Species: Pseudokirchneriella subcapitata [static])
EC50 96h - Algae [1]	0,031 – 0,054 mg/l (Species: Pseudokirchneriella subcapitata [static])

Aluminium (7429-90-5)	
EC50 72h - Algae [1]	1,05 mg/l Test organisms (species): Raphidocelis subcapitata (previous names: Pseudokirchneriella subcapitata, Selenastrum capricornutum)
EC50 72h - Algae [2]	0,2 mg/l Test organisms (species): Raphidocelis subcapitata (previous names: Pseudokirchneriella subcapitata, Selenastrum capricornutum)

Cobalt lithium dioxide (12190-79-3)	
EC50 - Crustacea [1]	5,89 mg/l Test organisms (species): Daphnia magna

Graphite (7782-42-5)	
LC50 - Fish [1]	> 100 mg/l Test organisms (species): Danio rerio (previous name: Brachydanio rerio)
EC50 - Crustacea [1]	> 100 mg/l Test organisms (species): Daphnia magna
EC50 72h - Algae [1]	19 mg/l Test organisms (species): Raphidocelis subcapitata (previous names: Pseudokirchneriella subcapitata, Selenastrum capricornutum)
EC50 72h - Algae [2]	7,2 mg/l Test organisms (species): Raphidocelis subcapitata (previous names: Pseudokirchneriella subcapitata, Selenastrum capricornutum)
NOEC (chronic)	47 mg/l Test organisms (species): Daphnia magna Duration: '21 d'

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

Propylene carbonate (108-32-7)	
Partition coefficient n-octanol/water (Log Pow)	0,48 (at 25 °C)

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

G Plus Rechargeable Li-Ion Battery
This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII
This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

12.6. Endocrine disrupting properties

No additional information available

12.7. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.

Product/Packaging disposal recommendations : Handling and disposal of batteries is regulated on the basis of the DIRECTIVE 2006/66/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 6 September 2006 on batteries and accumulators and waste batteries and accumulators and repealing Directive 91/157/EEC. Customers find detailed informationon disposal in their specific countries using the website of the European Portable Batteries Association (www.epbaeurope.net).

SECTION 14: Transport information

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

ADR	IMDG	IATA	ADN	RID
14.1. UN number or ID number				
UN 3480	UN 3480	UN 3480	UN 3480	UN 3480
14.2. UN proper shipping name				
LITHIUM ION BATTERIES	LITHIUM ION BATTERIES	Lithium ion batteries	LITHIUM ION BATTERIES	LITHIUM ION BATTERIES
Transport document description				
UN 3480 LITHIUM ION BATTERIES, 9A, (E)	UN 3480 LITHIUM ION BATTERIES, 9	UN 3480 Lithium ion batteries, 9A	UN 3480 LITHIUM ION BATTERIES, 9A	UN 3480 LITHIUM ION BATTERIES, 9A
14.3. Transport hazard class(es)				
9A	9A	9A	9A	9A

ADR	IMDG	IATA	ADN	RID
				
14.4. Packing group				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.5. Environmental hazards				
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
No supplementary information available				

14.6. Special precautions for user

Special transport precautions : Do not store batteries in places of high temperature and do not allow them to be exposed to condensation. During the transportation do not allow the packaging to be damaged, as a damage of the packaging may cause fire. In the event packaging is damaged, special procedures must be used including inspection and repackaging if necessary and handle with care.

Overland transport

Classification code (ADR) : M4
Special provisions (ADR) : 188, 230, 310, 348, 376, 377, 387, 636
Limited quantities (ADR) : 0
Excepted quantities (ADR) : E0
Packing instructions (ADR) : P903, P908, P909, P910, P911, LP903, LP904, LP905, LP906
Transport category (ADR) : 2
Tunnel restriction code (ADR) : E
EAC code : 2Y

Transport by sea

Special provisions (IMDG) : 188, 230, 310, 348, 376, 377, 384, 387
Limited quantities (IMDG) : 0
Excepted quantities (IMDG) : E0
Packing instructions (IMDG) : P903, P908, P909 , P910, P911, LP903, LP904, LP905, LP906
EmS-No. (Fire) : F-A
EmS-No. (Spillage) : S-I
Stowage category (IMDG) : A
Stowage and handling (IMDG) : SW19
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) : Forbidden
PCA max net quantity (IATA) : Forbidden
CAO packing instructions (IATA) : See 965
CAO max net quantity (IATA) : See 965
Special provisions (IATA) : A88, A99, A154, A164, A183, A201, A213, A331, A334, A802
ERG code (IATA) : 12FZ

Inland waterway transport

Classification code (ADN) : M4

Special provisions (ADN)	:	188, 230, 310, 348, 376, 377, 387, 636
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, _376, 377, 387, 636
Limited quantities (RID)	:	0
Excepted quantities (RID)	:	E0
Packing instructions (RID)	:	P903, 908, 909, P910, P911, LP903, LP904, LP905, LP906
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

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

Other information, restriction and prohibition regulations : These batteries are not 'substances' or 'mixtures' according to Regulation (EC) No 1907/2006 EC. In contrast, they have to be regarded as being 'articles', the release of substances is not intended during handling. Therefore, according to Regulation (EC) 1907/2006, Article 31, there is no obligation to supply a “safety data sheet".

REACH Annex XVII (Restriction List)

Not applicable.

REACH Annex XIV (Authorisation List)

Not applicable.

REACH Candidate List (SVHC)

Contains no substance(s) listed on the REACH Candidate List

PIC Regulation (Prior Informed Consent)

Contains no substance(s) listed on the PIC list (Regulation EU 649/2012 concerning the export and import of hazardous chemicals)

POP Regulation (Persistent Organic Pollutants)

Contains no substance(s) listed on the POP list (Regulation EU 2019/1021 on persistent organic pollutants)

Ozone Regulation (1005/2009)

Contains no substance(s) listed on the Ozone Depletion list (Regulation EU 1005/2009 on substances that deplete the ozone layer)

Explosives Precursors Regulation (2019/1148)

Contains substance(s) listed on the Explosives Precursors list (Regulation EU 2019/1148 on the marketing and use of explosives precursors)
ANNEX II REPORTABLE EXPLOSIVES PRECURSORS
List of substances on their own or in mixtures or in substances for which suspicious transactions and significant disappearances and thefts are to be reported to the relevant national contact point within 24 hours.

Name	CAS-No.	Combined Nomenclature code (CN)	Combined Nomenclature code for mixture without constituents which would determine classification under another CN code
Aluminium, powders	7429-90-5	7603 10 00; ex 7603 20 00	

Please see https://home-affairs.ec.europa.eu/policies/internal-security/counter-terrorism-and-radicalisation/protection/legislation-chemicals-used-home-made-explosives_en

Drug Precursors Regulation (273/2004)

Contains no substance(s) listed on the Drug Precursors list (Regulation EC 273/2004 on the manufacture and the placing on market of certain substances used in the illicit manufacture of narcotic drugs and psychotropic substances)

15.1.2. National regulations

France

Occupational diseases	
Code	Description
RG 25	Diseases resulting from the inhalation of mineral dust containing crystalline silica (quartz, cristobalite, tridymite), crystalline silicates (kaolin, talc), graphite or coal.

Germany

Employment restrictions : Observe restrictions according Act on the Protection of Working Mothers (MuSchG). Observe restrictions according Act on the Protection of Young People in Employment (JArbSchG).

Water hazard class (WGK) : WGK 3, Highly hazardous to water (Classification according to AwSV, Annex 1).

Storage class (LGK, TRGS 510) : LGK 13 - Non-combustible solids.

Joint storage table :

LGK 1	LGK 2A	LGK 2B	LGK 3	LGK 4.1A
LGK 4.1B	LGK 4.2	LGK 4.3	LGK 5.1A	LGK 5.1B
LGK 5.1C	LGK 5.2	LGK 6.1A	LGK 6.1B	LGK 6.1C
LGK 6.1D	LGK 6.2	LGK 7	LGK 8A	LGK 8B
LGK 10	LGK 11	LGK 12	LGK 13	LGK 10-13

Joint storage not permitted for : LGK 1, LGK 6.2, LGK 7.

Joint storage with restrictions permitted for : LGK 4.1A, LGK 5.1C.

Joint storage permitted for : LGK 2A, LGK 2B, LGK 3, LGK 4.1B, LGK 4.2, LGK 4.3, LGK 5.1A, LGK 5.1B, LGK 5.2, LGK 6.1A, LGK 6.1B, LGK 6.1C, LGK 6.1D, LGK 8A, LGK 8B, LGK 10, LGK 11, LGK 12, LGK 13, LGK 10-13.

Hazardous Incident Ordinance (12. BImSchV) : Is not subject of the Hazardous Incident Ordinance (12. BImSchV)

Netherlands

ABM category : A(2) - toxic for aquatic organisms, may have longterm hazardous effects in aquatic environment

SZW-lijst van kankerverwekkende stoffen : None of the components are listed

SZW-lijst van mutagene stoffen : None of the components are listed

SZW-lijst van reprotoxische stoffen – Borstvoeding : None of the components are listed

SZW-lijst van reprotoxische stoffen – Vruchtbaarheid : None of the components are listed

SZW-lijst van reprotoxische stoffen – Ontwikkeling : None of the components are listed

Denmark

Danish National Regulations : Young people below the age of 18 years are not allowed to use the product
Pregnant/breastfeeding women working with the product must not be in direct contact with the product

Switzerland

Storage class (LK) : LK 11/13 - Solids

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information

Abbreviations and acronyms:	
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road

Abbreviations and acronyms:	
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
BLV	Biological limit value
BOD	Biochemical oxygen demand (BOD)
COD	Chemical oxygen demand (COD)
DMEL	Derived Minimal Effect level
DNEL	Derived-No Effect Level
EC-No.	European Community number
EC50	Median effective concentration
EN	European Standard
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Median lethal concentration
LD50	Median lethal dose
LOAEL	Lowest Observed Adverse Effect Level
NOAEC	No-Observed Adverse Effect Concentration
NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration
OECD	Organisation for Economic Co-operation and Development
OEL	Occupational Exposure Limit
PBT	Persistent Bioaccumulative Toxic
PNEC	Predicted No-Effect Concentration
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS	Safety Data Sheet
STP	Sewage treatment plant
ThOD	Theoretical oxygen demand (ThOD)
TLM	Median Tolerance Limit
VOC	Volatile Organic Compounds
CAS-No.	Chemical Abstract Service number
N.O.S.	Not Otherwise Specified
vPvB	Very Persistent and Very Bioaccumulative
ED	Endocrine disrupting properties

Other information : European Union: According to “DIRECTIVE 2006/66/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 6 September 2006 on batteries and accumulators and waste batteries and accumulators and repealing Directive 91/157/EEC” the batteries have to be marked with the crossed wheel bin symbol.
According to Dangerous Goods Regulations (see section 14) battery packs have to be marked with the Watt-hour rating.

Full text of H- and EUH-statements:	
Acute Tox. 3 (Oral)	Acute toxicity (oral), Category 3
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Eye Dam. 1	Serious eye damage/eye irritation, Category 1
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Flam. Liq. 2	Flammable liquids, Category 2
Flam. Liq. 3	Flammable liquids, Category 3
H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
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.
H360F	May damage fertility.
H372	Causes damage to organs through prolonged or repeated exposure.
H373	May cause damage to organs through prolonged or repeated exposure.
Repr. 1B	Reproductive toxicity, Category 1B
Skin Corr. 1A	Skin corrosion/irritation, Category 1, Sub-Category 1A
STOT RE 1	Specific target organ toxicity – Repeated exposure, Category 1
STOT RE 2	Specific target organ toxicity – Repeated exposure, Category 2

The classification complies with : ATP 12

Safety Data Sheet (SDS), EU

While Farecla Products Ltd. believes that the data and information contained herein are factual and the opinions are those of qualified experts, they are not to be taken as a warranty or representation for which Farecla assumes any legal responsibility. They are offered solely for the consideration, investigation, data and information in accordance with applicable laws and regulations.