

SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:
Regulation (EC) No. 1907/2006 and Regulation (EC) No. 1272/2008



PHILIPS

Authoring date: 07-Jul-2023
Revision date: 07-Jul-2023

Revision Number: 1

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

1.1. Product identifier

Safety data sheet number 50076
12NC 688001000025
Product Name XV1633/01 Battery Pack [50.4 Watt-Hour, weight 437,3 gram]

Other means of identification

Article Yes
As an article, this product presents negligible health and physical hazards under reasonably anticipated conditions of use. Accordingly, a Safety Data Sheet (SDS) is not required for this product under the standards cited above. This document is prepared as a courtesy to provide persons using this product with additional safety and regulatory information.

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

Recommended use No information available
Uses advised against No information available

1.3. Details of the supplier of the safety data sheet

supplier
Foshan City Shunde District Donlim Intelligent Electrical Appliances Technology Co., Ltd.
NO.26 Shunye East Road
Xingtan Town, Shunde District, Foshan City
China
Tel.: 83-757-25335262

For further information, please contact

E-Mail address hazcom@philips.com

1.4. Emergency telephone number

Emergency Telephone +31 497 598315(EMERG)

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

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008

This article does not contain hazardous substances or mixtures intended to be released under normal or reasonably foreseeable conditions of use.

2.2. Label elements

Not classified

Hazard statements

Not classified

2.3. Other hazards

No information available.

SECTION 3: Composition/information on ingredients

3.1 Substances

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)
GRAPHITE (POWDER) 7782-42-5	17	01-2119486977-12	231-955-3	No data available	-	-	-
LITHIUM NICKEL DIOXIDE 12031-65-1	16	No data available	(028-057-00-7)	Skin Sens. 1 (H317) STOT RE 1 (H372) Carc. 1A (H350)	-	-	-
ALUMINIUM 7429-90-5	12	01-2119529243-45	231-072-3	Flam. Sol. 1 (H228) Water-react. 2 (H261)	-	-	-
LITHIUM MANGANESE OXIDE 12057-17-9	9.6	No data available	601-724-5	Acute Tox. 4 (H302) Acute Tox. 4 (H332) Aquatic Chronic 4 (H413)	-	-	-
COPPER (FOIL) 7440-50-8	8	01-2119480154-42	231-159-6	Aquatic Chronic 2 (H411)	-	-	-
METHYL ETHYL CARBONATE 623-53-0	7	01-0000017964-59 01-2119896901-25 01-2119888889-03	433-480-9	Flam. Liq. 2 (H225)	-	-	-
LITHIUM COBALT OXIDE 12190-79-3	6.4	01-2119974118-31	235-362-0	Skin Sens. 1 (H317) Carc. 1B (H350)	-	-	-
POLY(ETHYLENE TEREPHTHALATE) 25038-59-9	6	No data available	425-750-1	No data available	-	-	-
POLYVINYLIDENE FLUORIDE 24937-79-9	4	No data available	607-458-6	No data available	-	-	-
ETHYLENE CARBONATE 96-49-1	4	01-2119540523-46	202-510-0	Acute Tox. 4 (H302) Eye Irrit. 2 (H319) STOT RE 2 (H373)	-	-	-
POLYETHYLENE 9002-88-4	3	No data available	618-339-3	No data available	-	-	-
NICKEL	2	01-2119438727-29	231-111-4	Carc. 2 (H351)	-	-	-

7440-02-0				STOT RE 1 (H372) Skin Sens. 1 (H317)			
LITHIUM HEXAFLUOROPHO SPHATE 21324-40-3	2	01-2119383485-29 01-2119962901-34	244-334-7	Acute Tox. 3 (H301) Skin Corr. 1A (H314) Eye Dam. 1 (H318) STOT RE 1 (H372)	-	-	-
CARBON 7440-44-0	2	No data available	231-153-3	No data available	-	-	-
PROPYLENE CARBONATE 108-32-7	1	01-2119537232-48	203-572-1	Eye Irrit. 2 (H319)	-	-	-

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

Acute Toxicity Estimate
No information available

Chemical name	Oral LD50 mg/kg	Dermal LD50 mg/kg	Inhalation LC50 - 4 hour - dust/mist - mg/L	Inhalation LC50 - 4 hour - vapor - mg/L	Inhalation LC50 - 4 hour - gas - ppm
ALUMINIUM 7429-90-5	No data available	No data available	0.888	No data available	No data available
METHYL ETHYL CARBONATE 623-53-0	15000	No data available	No data available	No data available	No data available
LITHIUM COBALT OXIDE 12190-79-3	5000	2000	No data available	No data available	No data available
ETHYLENE CARBONATE 96-49-1	10000	26420	1.46	No data available	No data available
POLYETHYLENE 9002-88-4	8000	No data available	No data available	No data available	No data available
NICKEL 7440-02-0	9000	No data available	No data available	No data available	No data available
CARBON 7440-44-0	10000	No data available	No data available	No data available	No data available
PROPYLENE CARBONATE 108-32-7	29000	3000	No data available	No data available	No data available

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

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation No hazards which require special first aid measures.

Eye contact No hazards which require special first aid measures.

Skin contact No hazards which require special first aid measures.
Ingestion No hazards which require special first aid measures.

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

Symptoms No information available.

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

Note to physicians Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable Extinguishing Media Dry chemical, CO₂, water spray or regular foam.
Large Fire CAUTION: Use of water spray when fighting fire may be inefficient.
Unsuitable extinguishing media Do not scatter spilled material with high pressure water streams.

5.2. Special hazards arising from the substance or mixture

Specific hazards arising from the chemical No information available.
Hazardous combustion products Carbon monoxide. Carbon dioxide (CO₂). Hydrogen fluoride. Phosphorus oxides. Metal 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 Ensure adequate ventilation.
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. Prevent product from entering drains. Do not allow to enter into soil/subsoil. See Section 12 for additional Ecological Information.

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 Take up mechanically, placing in appropriate containers for disposal.

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 Ensure adequate ventilation.

General hygiene considerations Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Storage Conditions Keep container tightly closed in a dry and well-ventilated place. Protect from sunlight. Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity). Keep at a temperature not exceeding 30 °C.

7.3. Specific end use(s)

Risk Management Methods (RMM) The information required is contained in this Safety Data Sheet.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure Limits This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Chemical name	European Union	Austria	Belgium	Bulgaria	Croatia
GRAPHITE (POWDER) 7782-42-5	-	TWA: 5 mg/m ³ STEL 10 mg/m ³	TWA: 2 mg/m ³	TWA: 5.0 mg/m ³	TWA: 4 mg/m ³ TWA: 10 mg/m ³
LITHIUM NICKEL DIOXIDE 12031-65-1	TWA: 0.01 mg/m ³ TWA: 0.1 mg/m ³ TWA: 0.05 mg/m ³ *	Sa+	TWA: 0.2 mg/m ³	TWA: 0.05 mg/m ³	TWA: 0.5 mg/m ³ STEL: 1 mg/m ³
ALUMINIUM 7429-90-5	-	TWA: 10 mg/m ³ STEL 20 mg/m ³	TWA: 1 mg/m ³	TWA: 10.0 mg/m ³ TWA: 1.5 mg/m ³	TWA: 10 mg/m ³ TWA: 4 mg/m ³
LITHIUM MANGANESE OXIDE 12057-17-9	-	TWA: 0.2 mg/m ³ STEL 1.6 mg/m ³	TWA: 0.05 mg/m ³	TWA: 0.05 mg/m ³	TWA: 0.2 mg/m ³ TWA: 0.05 mg/m ³
COPPER (FOIL) 7440-50-8	-	TWA: 1 mg/m ³ TWA: 0.1 mg/m ³ STEL 4 mg/m ³ STEL 0.4 mg/m ³	TWA: 0.2 mg/m ³ TWA: 1 mg/m ³	TWA: 0.1 mg/m ³	TWA: 0.2 mg/m ³ TWA: 1 mg/m ³ STEL: 2 mg/m ³
LITHIUM COBALT OXIDE 12190-79-3	-	H* Sa+	-	TWA: 0.1 mg/m ³	TWA: 0.1 mg/m ³ Skin Sensitisation
POLYETHYLENE 9002-88-4	-	-	-	TWA: 10.0 mg/m ³	-
NICKEL 7440-02-0	-	Sa+ Sh+	TWA: 1 mg/m ³	TWA: 0.05 mg/m ³	TWA: 0.5 mg/m ³ Skin Sensitisation

CARBON 7440-44-0	-	TWA: 5 mg/m ³ STEL 10 mg/m ³	-	-	-
Chemical name	Cyprus	Czech Republic	Denmark	Estonia	Finland
GRAPHITE (POWDER) 7782-42-5	-	TWA: 2.0 mg/m ³	TWA: 2.5 mg/m ³ STEL: 5 mg/m ³ natural	TWA: 5 mg/m ³	TWA: 2 mg/m ³
LITHIUM NICKEL DIOXIDE 12031-65-1	-	TWA: 0.05 mg/m ³ Ceiling: 0.25 mg/m ³	TWA: 0.05 mg/m ³ STEL: 0.1 mg/m ³	S+ TWA: 0.1 mg/m ³	TWA: 0.05 mg/m ³ TWA: 0.01 mg/m ³
ALUMINIUM 7429-90-5	-	TWA: 10.0 mg/m ³	TWA: 5 mg/m ³ TWA: 2 mg/m ³ STEL: 10 mg/m ³ STEL: 4 mg/m ³	TWA: 10 mg/m ³ TWA: 4 mg/m ³	TWA: 1.5 mg/m ³
LITHIUM MANGANESE OXIDE 12057-17-9	TWA: 0.2 mg/m ³ TWA: 0.05 mg/m ³	TWA: 1 mg/m ³ Ceiling: 2 mg/m ³	TWA: 0.2 mg/m ³ TWA: 0.05 mg/m ³ STEL: 0.4 mg/m ³ STEL: 0.1 mg/m ³	TWA: 0.2 mg/m ³ TWA: 0.05 mg/m ³	TWA: 0.2 mg/m ³ TWA: 0.02 mg/m ³
COPPER (FOIL) 7440-50-8	-	TWA: 1 mg/m ³ TWA: 0.1 mg/m ³ Ceiling: 2 mg/m ³ Ceiling: 0.2 mg/m ³	TWA: 1.0 mg/m ³ TWA: 0.1 mg/m ³ STEL: 2 mg/m ³ STEL: 0.2 mg/m ³	TWA: 1 mg/m ³ TWA: 0.2 mg/m ³	TWA: 0.02 mg/m ³
LITHIUM COBALT OXIDE 12190-79-3	-	TWA: 0.05 mg/m ³ Ceiling: 0.1 mg/m ³	TWA: 0.01 mg/m ³ STEL: 0.02 mg/m ³	S+ TWA: 0.05 mg/m ³	TWA: 0.02 mg/m ³
POLYETHYLENE 9002-88-4	-	TWA: 5 mg/m ³	-	-	-
NICKEL 7440-02-0	-	TWA: 0.5 mg/m ³ Ceiling: 1 mg/m ³ S+	TWA: 0.05 mg/m ³ STEL: 0.1 mg/m ³	S+ TWA: 0.5 mg/m ³	TWA: 0.01 mg/m ³
LITHIUM HEXAFLUOROPHOSPH ATE 21324-40-3	-	-	TWA: 2.5 mg/m ³ STEL: 5 mg/m ³ except those mentioned elsewhere in the list	TWA: 2.5 mg/m ³	-
Chemical name	France	Germany TRGS	Germany DFG	Greece	Hungary
GRAPHITE (POWDER) 7782-42-5	TWA: 2 mg/m ³	TWA: 1.25 mg/m ³ TWA: 10 mg/m ³	TWA: 0.3 mg/m ³ TWA: 4 mg/m ³ Peak: 2.4 mg/m ³	TWA: 10 mg/m ³ TWA: 5 mg/m ³	TWA: 5 mg/m ³ TWA: 2 mg/m ³
LITHIUM NICKEL DIOXIDE 12031-65-1	-	TWA: 0.03 mg/m ³ Sh+	-	TWA: 1 mg/m ³	TWA: 0.01 mg/m ³ sz+
ALUMINIUM 7429-90-5	TWA: 10 mg/m ³ TWA: 5 mg/m ³	TWA: 1.25 mg/m ³ TWA: 10 mg/m ³	TWA: 4 mg/m ³ TWA: 1.5 mg/m ³	TWA: 10 mg/m ³ TWA: 5 mg/m ³	TWA: 1 mg/m ³
LITHIUM MANGANESE OXIDE 12057-17-9	-	TWA: 0.2 mg/m ³ TWA: 0.02 mg/m ³	TWA: 0.2 mg/m ³ TWA: 0.02 mg/m ³ Peak: 1.6 mg/m ³ Peak: 0.16 mg/m ³	TWA: 0.2 mg/m ³ TWA: 0.05 mg/m ³	-
COPPER (FOIL) 7440-50-8	TWA: 0.2 mg/m ³ TWA: 1 mg/m ³ STEL: 2 mg/m ³	-	TWA: 0.01 mg/m ³ Peak: 0.02 mg/m ³	TWA: 0.2 mg/m ³ TWA: 1 mg/m ³ STEL: 2 mg/m ³	TWA: 0.1 mg/m ³ TWA: 0.01 mg/m ³ STEL: 0.2 mg/m ³
LITHIUM COBALT OXIDE 12190-79-3	-	-	*	TWA: 0.1 mg/m ³	TWA: 0.02 mg/m ³ sz+
POLY(ETHYLENE TEREPHTHALATE) 25038-59-9	-	TWA: 1.25 mg/m ³ TWA: 10 mg/m ³	-	-	-
NICKEL 7440-02-0	TWA: 1 mg/m ³	TWA: 0.03 mg/m ³ TWA: 0.006 mg/m ³ Sh+	respiratory and skin sensitizer inhalable fraction, respiratory	TWA: 1 mg/m ³	TWA: 0.01 mg/m ³ sz+

			sensitization confirmed for water soluble Nickel compounds only		
LITHIUM HEXAFLUOROPHOSPHATE 21324-40-3	-	TWA: 1 mg/m ³	TWA: 1 mg/m ³ *	TWA: 2.5 mg/m ³	TWA: 2.5 mg/m ³ b*
PROPYLENE CARBONATE 108-32-7	-	TWA: 2 ppm TWA: 8.5 mg/m ³	TWA: 2 ppm TWA: 8.5 mg/m ³ Peak: 2 ppm Peak: 8.5 mg/m ³	-	-
Chemical name	Ireland	Italy MDLPS	Italy AIDII	Latvia	Lithuania
GRAPHITE (POWDER) 7782-42-5	TWA: 2 mg/m ³ STEL: 6 mg/m ³	-	TWA: 2 mg/m ³	TWA: 2 mg/m ³	TWA: 5 mg/m ³
LITHIUM NICKEL DIOXIDE 12031-65-1	TWA: 0.5 mg/m ³ STEL: 1.5 mg/m ³	-	TWA: 0.2 mg/m ³	TWA: 0.05 mg/m ³	-
ALUMINIUM 7429-90-5	TWA: 1 mg/m ³ STEL: 3 mg/m ³	-	TWA: 1 mg/m ³	TWA: 2 mg/m ³	TWA: 5 mg/m ³ TWA: 2 mg/m ³ TWA: 1 mg/m ³
LITHIUM MANGANESE OXIDE 12057-17-9	TWA: 0.2 mg/m ³ TWA: 0.05 mg/m ³ STEL: 0.6 mg/m ³ STEL: 0.15 mg/m ³	TWA: 0.05 mg/m ³	TWA: 0.1 mg/m ³	TWA: 0.2 mg/m ³ TWA: 0.05 mg/m ³	TWA: 0.2 mg/m ³ TWA: 0.05 mg/m ³
COPPER (FOIL) 7440-50-8	TWA: 0.2 mg/m ³ TWA: 1 mg/m ³ STEL: 2 mg/m ³ STEL: 0.6 mg/m ³	-	TWA: 0.2 mg/m ³	TWA: 0.5 mg/m ³ STEL: 1 mg/m ³	TWA: 1 mg/m ³ TWA: 0.2 mg/m ³
LITHIUM COBALT OXIDE 12190-79-3	TWA: 0.02 mg/m ³ STEL: 0.3 mg/m ³ Sens+	-	TWA: 0.02 mg/m ³	-	J+ TWA: 0.05 mg/m ³
POLY(ETHYLENE TEREPHTHALATE) 25038-59-9	-	-	-	TWA: 5 mg/m ³	TWA: 5 mg/m ³
POLYETHYLENE 9002-88-4	-	-	-	TWA: 5 mg/m ³	TWA: 10 mg/m ³
NICKEL 7440-02-0	TWA: 0.5 mg/m ³ STEL: 1.5 mg/m ³ Sens+	-	TWA: 1.5 mg/m ³	TWA: 0.05 mg/m ³	J+ TWA: 0.5 mg/m ³
LITHIUM HEXAFLUOROPHOSPHATE 21324-40-3	TWA: 2.5 mg/m ³ STEL: 7.5 mg/m ³	-	TWA: 2.5 mg/m ³	-	TWA: 2.5 mg/m ³
PROPYLENE CARBONATE 108-32-7	-	-	-	TWA: 2 mg/m ³	TWA: 7 mg/m ³
Chemical name	Luxembourg	Malta	Netherlands	Norway	Poland
GRAPHITE (POWDER) 7782-42-5	-	-	-	TWA: 5 mg/m ³ TWA: 2 mg/m ³ TWA: 10 mg/m ³ TWA: 4 mg/m ³ STEL: 10 mg/m ³ STEL: 4 mg/m ³ STEL: 20 mg/m ³ STEL: 8 mg/m ³	TWA: 4.0 mg/m ³ TWA: 1.0 mg/m ³
LITHIUM NICKEL	-	-	-	TWA: 0.05 mg/m ³	TWA: 0.25 mg/m ³

DIOXIDE 12031-65-1				A+ STEL: 0.15 mg/m ³	
ALUMINIUM 7429-90-5	-	-	-	TWA: 5 mg/m ³ STEL: 10 mg/m ³	TWA: 2.5 mg/m ³ TWA: 1.2 mg/m ³
LITHIUM MANGANESE OXIDE 12057-17-9	TWA: 0.2 mg/m ³ TWA: 0.05 mg/m ³	-	TWA: 0.2 mg/m ³ TWA: 0.05 mg/m ³	TWA: 0.2 mg/m ³ TWA: 0.05 mg/m ³ STEL: 0.6 ppm STEL: 0.15 mg/m ³	TWA: 0.2 mg/m ³ TWA: 0.05 mg/m ³
COPPER (FOIL) 7440-50-8	-	-	TWA: 0.1 mg/m ³	TWA: 0.1 mg/m ³ TWA: 1 mg/m ³ STEL: 3 mg/m ³ STEL: 0.3 mg/m ³	TWA: 0.2 mg/m ³
LITHIUM COBALT OXIDE 12190-79-3	-	-	-	TWA: 0.02 mg/m ³ A+ STEL: 0.06 mg/m ³	TWA: 0.02 mg/m ³
NICKEL 7440-02-0	-	-	-	TWA: 0.05 mg/m ³ A+ STEL: 0.15 mg/m ³	TWA: 0.25 mg/m ³
LITHIUM HEXAFLUOROPHOSPH ATE 21324-40-3	-	-	-	-	TWA: 2 mg/m ³
CARBON 7440-44-0	-	-	-	-	TWA: 6 mg/m ³
Chemical name	Portugal	Romania	Slovakia	Slovenia	Spain
GRAPHITE (POWDER) 7782-42-5	TWA: 2 mg/m ³	TWA: 2 mg/m ³	TWA: 10 mg/m ³ TWA: 2 mg/m ³	-	TWA: 2 mg/m ³
LITHIUM NICKEL DIOXIDE 12031-65-1	TWA: 0.2 mg/m ³	TWA: 0.1 mg/m ³ STEL: 0.5 mg/m ³	STEL: 0,05 mg/m ³	-	TWA: 0.2 mg/m ³
ALUMINIUM 7429-90-5	TWA: 1 mg/m ³	TWA: 3 mg/m ³ TWA: 1 mg/m ³ STEL: 10 mg/m ³ STEL: 3 mg/m ³	TWA: 4 mg/m ³ TWA: 1.5 mg/m ³	-	TWA: 1 mg/m ³
LITHIUM MANGANESE OXIDE 12057-17-9	TWA: 0.2 mg/m ³ TWA: 0.05 mg/m ³	TWA: 0.2 mg/m ³ TWA: 0.05 mg/m ³	TWA: 0.2 mg/m ³	TWA: 0.05 mg/m ³ STEL: 0.4 mg/m ³	TWA: 0.2 mg/m ³ TWA: 0.05 mg/m ³
COPPER (FOIL) 7440-50-8	TWA: 0.2 mg/m ³ TWA: 1 mg/m ³	TWA: 0.5 mg/m ³ STEL: 0.2 mg/m ³ STEL: 1.5 mg/m ³	TWA: 1 mg/m ³ TWA: 0.2 mg/m ³	-	TWA: 0.01 mg/m ³
LITHIUM COBALT OXIDE 12190-79-3	TWA: 0.02 mg/m ³	-	TWA: 0.05 mg/m ³ S+	-	TWA: 0.02 mg/m ³
NICKEL 7440-02-0	TWA: 1.5 mg/m ³	TWA: 0.1 mg/m ³ STEL: 0.5 mg/m ³	TWA: 0.5 mg/m ³ STEL: 0.05 mg/m ³ S+	TWA: 0.006 mg/m ³ STEL: 0.048 mg/m ³	TWA: 1 mg/m ³ Sen+
LITHIUM HEXAFLUOROPHOSPH ATE 21324-40-3	TWA: 2.5 mg/m ³	-	TWA: 2.5 mg/m ³	-	-
Chemical name	Sweden		Switzerland		United Kingdom
GRAPHITE (POWDER) 7782-42-5	-		TWA: 3 mg/m ³ TWA: 10 mg/m ³		TWA: 10 mg/m ³ TWA: 4 mg/m ³ STEL: 30 mg/m ³ STEL: 12 mg/m ³
LITHIUM NICKEL DIOXIDE 12031-65-1	NGV: 0.1 mg/m ³ S+		S+ TWA: 0.05 mg/m ³		TWA: 0.5 mg/m ³ STEL: 1.5 mg/m ³ Sk*

ALUMINIUM 7429-90-5	NGV: 5 mg/m ³ NGV: 2 mg/m ³	TWA: 3 mg/m ³ TWA: 10 mg/m ³	TWA: 10 mg/m ³ TWA: 4 mg/m ³ STEL: 30 mg/m ³ STEL: 12 mg/m ³
LITHIUM MANGANESE OXIDE 12057-17-9	NGV: 0.2 mg/m ³ NGV: 0.05 mg/m ³	TWA: 0.5 mg/m ³	TWA: 0.2 mg/m ³ TWA: 0.05 mg/m ³ STEL: 0.6 mg/m ³ STEL: 0.15 mg/m ³
COPPER (FOIL) 7440-50-8	NGV: 0.01 mg/m ³	TWA: 0.1 mg/m ³ STEL: 0.2 mg/m ³	TWA: 1 mg/m ³ TWA: 0.2 mg/m ³ STEL: 0.6 mg/m ³ STEL: 2 mg/m ³
LITHIUM COBALT OXIDE 12190-79-3	NGV: 0.02 mg/m ³ H* S+	S+ TWA: 0.05 mg/m ³ H*	TWA: 0.1 mg/m ³ STEL: 0.3 mg/m ³ Sen+
NICKEL 7440-02-0	NGV: 0.5 mg/m ³ S+	S+ TWA: 0.5 mg/m ³	TWA: 0.5 mg/m ³ STEL: 1.5 mg/m ³ Sk*
LITHIUM HEXAFLUOROPHOSPHATE 21324-40-3	NGV: 2 mg/m ³	-	-
PROPYLENE CARBONATE 108-32-7	-	TWA: 6 ppm TWA: 25.5 mg/m ³ STEL: 6 ppm STEL: 25.5 mg/m ³	-

Biological occupational exposure limits This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies.

Chemical name	European Union	Austria	Bulgaria	Croatia	Czech Republic
LITHIUM NICKEL DIOXIDE 12031-65-1	-	7 µg/L (urine - spontaneous urine after end of work day, at the end of a work week/end of the shift) (-)	-	-	-
ALUMINIUM 7429-90-5	-	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	-
LITHIUM MANGANESE OXIDE 12057-17-9	-	20 µg/L (blood - whole blood not provided) (-)	-	-	-
LITHIUM COBALT OXIDE 12190-79-3	-	10 µg/L (urine - spontaneous urine after end of work day, at the end of a work week/end of the shift) (-)	-	-	-
NICKEL 7440-02-0	-	7 µg/L (urine - spontaneous urine	45 µg/L - urine (Nickel) - after	10 µg/L - plasma (Nickel) - at the end	0.077 µmol/mmol Creatinine (urine -

Chemical name	Denmark	Finland	France	Germany DFG	Germany TRGS
LITHIUM NICKEL DIOXIDE 12031-65-1	-	-	-	3 µg/L - BAR (for long-term exposures: at the end of the shift after several shifts) urine	-
ALUMINIUM 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)
LITHIUM MANGANESE OXIDE 12057-17-9	-	-	-	15 µg/L - BAR (end of exposure or end of shift) blood 15 µg/L - BAR (for long-term exposures: at the end of the shift after several shifts) blood	-
LITHIUM COBALT OXIDE 12190-79-3	-	-	0.015 mg/L - urine (Cobalt) - end of shift at end of workweek 0.001 mg/L - blood (Cobalt) - end of shift at end of workweek	35 µg/L - BLW (for long-term exposures: at the end of the shift after several shifts) urine 1.5 µg/L - BAR (for long-term exposures: at the end of the shift after several shifts) urine	-
NICKEL 7440-02-0	-	0.1 µmol/L (urine - Nickel after the shift after a working week or exposure period)	-	3 µg/L - BAR (for long-term exposures: at the end of the shift after several shifts) urine 15 µg/L - (long-term exposure: at the end of the shift after several shifts) - urine 30 µg/L - (long-term exposure: at the end of the shift after several shifts) - urine	-

				45 µg/L - (long-term exposure: at the end of the shift after several shifts) - urine	
LITHIUM HEXAFLUOROPHOSPHATE 21324-40-3	-	-	3 mg/g creatinine - urine (Fluorides) - beginning of shift 10 mg/g creatinine - urine (Fluorides) - end of shift	-	-
Chemical name	Hungary	Ireland	Italy MDLPS	Italy AIDII	
LITHIUM NICKEL DIOXIDE 12031-65-1	-	3 µg/L (urine - Nickel after several consecutive working shifts)	-	-	
LITHIUM COBALT OXIDE 12190-79-3	-	-	-	15 µg/L - urine (Cobalt) - end of shift at end of workweek	
NICKEL 7440-02-0	0.003 mg/L (urine - Nickel at end of workweek, end of shift) 0.051 µmol/L (urine - Nickel at end of workweek, end of shift)	3 µg/L (urine - Nickel after several consecutive working shifts)	-	-	
LITHIUM HEXAFLUOROPHOSPHATE 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	
ALUMINIUM 7429-90-5	-	-	200 µg/L - urine (Aluminum) - end of shift	60 µg/g creatinine (urine - Aluminum not critical)	
POLYVINYLIDENE FLUORIDE 24937-79-9	-	-	5 mg/g Creatinine - urine (Fluorine) - end of shift	-	
NICKEL 7440-02-0	3 µg/L - urine (Nickel) -	-	3 µg/L - urine (Nickel) - end of shift	0.03 mg/L (blood - Nickel end of exposure or work shift)	
LITHIUM HEXAFLUOROPHOSPHATE 21324-40-3	-	-	5 mg/g Creatinine - urine (Fluorine) - end of shift	-	
Chemical name	Slovenia	Spain	Switzerland	United Kingdom	
ALUMINIUM 7429-90-5	50 µg/L - urine (Aluminum) - for long-term exposure: at the end of the work shift after several consecutive workdays	-	50 µg/g creatinine (urine - Aluminum after several shifts (for long-term exposures)) 0.21 µmol/mmol creatinine (urine - Aluminum after several shifts (for long-term exposures))	-	
NICKEL	-	-	45 µg/L (urine - Nickel)	-	

7440-02-0			end of shift, and after several shifts (for long-term exposures)) 766.6 nmol/L (urine - Nickel end of shift, and after several shifts (for long-term exposures))	
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Derived No Effect Level (DNEL) No information available.

Derived No Effect Level (DNEL)

GRAPHITE (POWDER) (7782-42-5)

Type	Exposure route	Derived No Effect Level (DNEL)	Safety factor	Reference sources
long-term	Inhalation	1.2 mg/m ³	systemic	ECHA
long-term	Inhalation	1.2 mg/m ³	local	ECHA

ALUMINIUM (7429-90-5)

Type	Exposure route	Derived No Effect Level (DNEL)	Safety factor	Reference sources
long-term	Inhalation	3.72 mg/m ³	systemic	ECHA
long-term	Inhalation	3.72 mg/m ³	local	ECHA

COPPER (FOIL) (7440-50-8)

Type	Exposure route	Derived No Effect Level (DNEL)	Safety factor	Reference sources
long-term	Dermal	137 mg/kg bw/day	systemic	ECHA
long-term	Dermal	273 mg/kg bw/day	local	ECHA

METHYL ETHYL CARBONATE (623-53-0)

Type	Exposure route	Derived No Effect Level (DNEL)	Safety factor	Reference sources
long-term	Inhalation	10.3 mg/m ³	systemic	ECHA
short-term	Inhalation	9900 mg/m ³	systemic	ECHA
long-term	Dermal	2.92 mg/kg bw/day	systemic	ECHA
short-term	Dermal	417 mg/kg bw/day	systemic	ECHA

ETHYLENE CARBONATE (96-49-1)

Type	Exposure route	Derived No Effect Level (DNEL)	Safety factor	Reference sources
long-term	Inhalation	15 mg/m ³	systemic	ECHA
long-term	Dermal	4.3 mg/kg bw/day	systemic	ECHA

NICKEL (7440-02-0)

Type	Exposure route	Derived No Effect Level (DNEL)	Safety factor	Reference sources
long-term	Inhalation	0.05 mg/m ³	systemic	ECHA
long-term	Inhalation	0.05 mg/m ³	local	ECHA
long-term	Dermal	0.035 mg/cm ²	local	ECHA

LITHIUM HEXAFLUOROPHOSPHATE (21324-40-3)

Type	Exposure route	Derived No Effect Level (DNEL)	Safety factor	Reference sources
long-term	Inhalation	0.931 mg/m ³	systemic	ECHA
long-term	Dermal	0.133 mg/kg bw/day	systemic	ECHA

PROPYLENE CARBONATE (108-32-7)

Type	Exposure route	Derived No Effect Level (DNEL)	Safety factor	Reference sources
long-term	Inhalation	70.53 mg/m ³	systemic	ECHA
long-term	Inhalation	20 mg/m ³	local	ECHA
long-term	Dermal	20 mg/kg bw/day	systemic	ECHA

Predicted No Effect Concentration (PNEC) No information available.

Predicted No Effect Concentration (PNEC)
COPPER (FOIL) (7440-50-8)

Environmental compartment	Predicted No Effect Concentration (PNEC)	Remarks	Reference sources
Freshwater	0.0078 mg/l		ECHA
Marine water	0.0052 mg/l		ECHA
Microorganisms in sewage treatment	0.23 mg/l		ECHA
Freshwater sediment	87 mg/kg sediment dw		ECHA
Marine sediment	676 mg/kg sediment dw		ECHA
Soil	65 mg/kg soil dw		ECHA

METHYL ETHYL CARBONATE (623-53-0)

Environmental compartment	Predicted No Effect Concentration (PNEC)	Remarks	Reference sources
Freshwater	0.062 mg/l		ECHA
aquatic, intermittent release	0.62 mg/l		ECHA
Marine water	0.0062 mg/l		ECHA
Microorganisms in sewage treatment	76 mg/l		ECHA
Freshwater sediment	0.233 mg/kg sediment dw		ECHA
Marine sediment	0.0233 mg/kg sediment dw		ECHA
Soil	0.0102 mg/kg soil dw		ECHA

ETHYLENE CARBONATE (96-49-1)

Environmental compartment	Predicted No Effect Concentration (PNEC)	Remarks	Reference sources
Freshwater	5.9 mg/l		ECHA
Marine water	0.59 mg/l		ECHA
aquatic, intermittent release	>= 0.059 - <= 59 mg/l		ECHA
Freshwater sediment	28.3 mg/kg sediment dw		ECHA
Marine sediment	2.83 mg/kg sediment dw		ECHA
Soil	2.2 mg/kg soil dw		ECHA

NICKEL (7440-02-0)

Environmental compartment	Predicted No Effect Concentration (PNEC)	Remarks	Reference sources
Freshwater	0.0071 mg/l		ECHA
Marine water	0.0086 mg/l		ECHA
Microorganisms in sewage treatment	0.33 mg/l		ECHA
Freshwater sediment	109 mg/kg sediment dw		ECHA
Marine sediment	109 mg/kg sediment dw		ECHA
Soil	29.9 mg/kg soil dw		ECHA

LITHIUM HEXAFLUOROPHOSPHATE (21324-40-3)

Environmental compartment	Predicted No Effect Concentration (PNEC)	Remarks	Reference sources
Freshwater	0.31 mg/l		ECHA

Marine water	0.031 mg/l		ECHA
aquatic, intermittent release	0.68 mg/l		ECHA
Microorganisms in sewage treatment	48 mg/l		ECHA
Freshwater sediment	7.73 mg/kg sediment dw		ECHA
Marine sediment	1.55 mg/kg sediment dw		ECHA
Soil	13.5 mg/kg soil dw		ECHA

PROPYLENE CARBONATE (108-32-7)

Environmental compartment	Predicted No Effect Concentration (PNEC)	Remarks	Reference sources
Freshwater	0.9 mg/l		ECHA
aquatic, intermittent release	9 mg/l		ECHA
Marine water	0.09 mg/l		ECHA
Microorganisms in sewage treatment	7400 mg/l		ECHA
Soil	0.81 mg/kg soil dw		ECHA

8.2. Exposure controls

Personal protective equipment

Eye/face protection	No special protective equipment required.
Hand protection	No special protective equipment required.
Skin and body protection	No special protective equipment required.
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	Handle in accordance with good industrial hygiene and safety practice.
Environmental exposure controls	No information available.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Solid
Odor threshold	No information available
Appearance	Battery
Color	gray
Odor	Odorless.
Odor threshold	No information available

Property	Values	Remarks • Method
Melting point / freezing point	No data available	None known
Initial boiling point and boiling range	No data available	None known
Flammability	No data available	None known
Flammability Limit in Air		None known
Upper flammability or explosive limits	No data available	
Lower flammability or explosive	No data available	

limits		
Flash point	No data available	None known
Autoignition temperature	No data available	None known
Decomposition temperature		None known
pH	No data available	None known
pH (as aqueous solution)	No data available	None known
Kinematic viscosity	No data available	None known
Dynamic viscosity	No data available	None known
Water solubility	Insoluble in water	None known
Solubility(ies)	No data available	None known
Partition coefficient	No data available	None known
Vapor pressure	No data available	None known
Relative density	No data available	None known
Bulk density	No data available	
Liquid Density	No data available	
Relative vapor density	No data available	None known
Particle characteristics		
Particle Size	No information available	
Particle Size Distribution	No information available	

9.2. Other information

9.2.1. Information with regard to physical hazard classes
Not applicable

9.2.2. Other safety characteristics
No information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity No information available.

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 processing.

10.4. Conditions to avoid

Conditions to avoid Keep away from open flames, hot surfaces and sources of ignition. Extremes of temperature and direct sunlight.

10.5. Incompatible materials

Incompatible materials None known based on information supplied.

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

Inhalation	Specific test data for the substance or mixture is not available.
Eye contact	Specific test data for the substance or mixture is not available.
Skin contact	Specific test data for the substance or mixture is not available.
Ingestion	Specific test data for the substance or mixture is not available.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms No information available.

Acute toxicity

Numerical measures of toxicity

No information available

Component Information

GRAPHITE (POWDER) (7782-42-5)

Method	Species	Exposure route	Effective dose	Exposure time	Results	Reference sources
OECD 423	Rat	Oral	> 2000 mg/kg		LD50:	ECHA
OECD 403	Rat	Inhalation Dust/Mist	> 2 mg/L		LC50:	ECHA

METHYL ETHYL CARBONATE (623-53-0)

Method	Species	Exposure route	Effective dose	Exposure time	Results	Reference sources
OECD 401	Rat	Oral	> 5000 mg/kg		LD50:	ECHA
OECD 403	Rat	Inhalation Vapor	> 17.6 mg/L	4 hours	LC50:	ECHA

LITHIUM COBALT OXIDE (12190-79-3)

Method	Species	Exposure route	Effective dose	Exposure time	Results	Reference sources
OECD 402	Rat	Dermal	> 2000 mg/kg		LD50:	ECHA
OECD 425	Rat	Oral	> 5000 mg/kg		LD50:	ECHA
OECD 436	Rat	Inhalation Dust/Mist	> 5.05 mg/L	4 hours	LC50:	ECHA

ETHYLENE CARBONATE (96-49-1)

Method	Species	Exposure route	Effective dose	Exposure time	Results	Reference sources
OECD 401	Rat	Oral	10400 mg/kg		LD50:	ECHA
OECD 402	Rat	Dermal	> 2000 mg/kg		LD50:	ECHA

POLYETHYLENE (9002-88-4)

Method	Species	Exposure route	Effective dose	Exposure time	Results	Reference sources
not traceable	Rat	Oral	> 2000 mg/kg		LD50:	HSDB

NICKEL (7440-02-0)

Method	Species	Exposure route	Effective dose	Exposure time	Results	Reference sources
OECD 401	Rat	Oral	> 9000 mg/kg		LD50:	ECHA

LITHIUM HEXAFLUOROPHOSPHATE (21324-40-3)

Method	Species	Exposure route	Effective dose	Exposure time	Results	Reference sources
OECD 423	Rat	Oral	>= 50 - <= 300 mg/kg		LD50:	ECHA

CARBON (7440-44-0)

Method	Species	Exposure route	Effective dose	Exposure time	Results	Reference sources
not traceable	Rat	Oral	> 10 g/kg		LD50:	LOLI

PROPYLENE CARBONATE (108-32-7)

Method	Species	Exposure route	Effective dose	Exposure time	Results	Reference sources
OECD 401	Rat	Oral	> 5000 mg/kg		LD50:	ECHA
OECD 402	Rabbit	Dermal	> 2000 mg/kg		LD50:	ECHA

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
GRAPHITE (POWDER)	-	-	> 2000 mg/m ³ (Rat) 4 h
ALUMINIUM	-	-	> 0.888 mg/L (Rat) 4 h
COPPER (FOIL)	-	-	> 5.11 mg/L (Rat) 4 h
METHYL ETHYL CARBONATE	> 15000 mg/kg (Rat)	-	> 17.6 mg/L (Rat) 4 h
LITHIUM COBALT OXIDE	> 5000 mg/kg (Rat)	> 2000 mg/kg (Rat)	> 5.05 mg/L (Rat) 4 h
ETHYLENE CARBONATE	= 10 g/kg (Rat)	> 26420 mg/kg (Rabbit)	> 730 mg/m ³ (Rat) 8 h
POLYETHYLENE	> 8 g/kg (Rat)	-	-
NICKEL	> 9000 mg/kg (Rat)	-	> 10.2 mg/L (Rat) 1 h
CARBON	> 10000 mg/kg (Rat)	-	-
PROPYLENE CARBONATE	= 29000 mg/kg (Rat)	> 3000 mg/kg (Rabbit)	-

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

Skin corrosion/irritation No information available.

Serious eye damage/eye irritation No information available.

Respiratory or skin sensitization No information available.

Germ cell mutagenicity No information available.

Carcinogenicity No information available.

Chemical name	European Union
LITHIUM NICKEL DIOXIDE	Carc. 1A
NICKEL	Carc. 2

Reproductive toxicity No information available.

STOT - single exposure No information available.

STOT - repeated exposure No information available.

Aspiration hazard No information available.

11.2. Information on other hazards

11.2.1. Endocrine disrupting properties

Endocrine disrupting properties No information available.

11.2.2. Other information

Other adverse effects No information available.

SECTION 12: Ecological information

12.1. Toxicity

Ecotoxicity The environmental impact of this product has not been fully investigated.

GRAPHITE (POWDER) (7782-42-5)

Method	Species	Effective dose	Endpoint type	Exposure time	Results
OECD 203	Fish	> 100 mg/L	LC50	96 hour(s)	
OECD 202	Daphnia	> 100 mg/L	EC50	48 hour(s)	
OECD 201	Algae	> 100 mg/L	IC50:	72 hour(s)	

ALUMINIUM (7429-90-5)

Method	Species	Effective dose	Endpoint type	Exposure time	Results
not traceable	Fish	>= 0.12 - <= 5.2 mg/L	LC50	96 hour(s)	

METHYL ETHYL CARBONATE (623-53-0)

Method	Species	Effective dose	Endpoint type	Exposure time	Results
OECD 202	Daphnia magna	> 100 mg/L	EC50	48 hour(s)	
OECD 202	Daphnia magna	100 mg/L	NOEC	48 hour(s)	
OECD 203	Oncorhynchus mykiss (rainbow)	> 100 mg/L	LC50	96 hour(s)	

	trout)				
OECD 203	Oncorhynchus mykiss (rainbow trout)	100 mg/L	NOEC	96 hour(s)	
OECD 201	Desmodesmus subspicatus	> 62 mg/L	EC50	72 hour(s)	
OECD 201	Desmodesmus subspicatus	62 mg/L	NOEC	72 hour(s)	

LITHIUM COBALT OXIDE (12190-79-3)

Method	Species	Effective dose	Endpoint type	Exposure time	Results
not traceable	Fish	1.512 mg/L	LC50	96 hour(s)	
not traceable	Daphnia	0.386 mg/L	EC50	48 hour(s)	
not traceable	Algae	0.0288 mg/L	IC50:	72 hour(s)	

ETHYLENE CARBONATE (96-49-1)

Method	Species	Effective dose	Endpoint type	Exposure time	Results
OECD 203	Fish	> 100 mg/L	LC50	96 hour(s)	
not traceable	Daphnia	5900 mg/L	EC50	48 hour(s)	
OECD 201	Algae	> 100 mg/L	IC50:	72 hour(s)	

NICKEL (7440-02-0)

Method	Species	Effective dose	Endpoint type	Exposure time	Results
not traceable	Algae	0.0237 mg/L	IC50:	72 hour(s)	
not traceable	Fish	1.3 mg/L	LC50	96 hour(s)	
not traceable	Daphnia	0.0276 mg/L	EC50	48 hour(s)	

LITHIUM HEXAFLUOROPHOSPHATE (21324-40-3)

Method	Species	Effective dose	Endpoint type	Exposure time	Results
not traceable	Fish	68 mg/L	LC50	96 hour(s)	
OECD 202	Daphnia	> 100 mg/L	EC50	48 hour(s)	
OECD 201	Algae	> 100 mg/L	IC50:	72 hour(s)	

PROPYLENE CARBONATE (108-32-7)

Method	Species	Effective dose	Endpoint type	Exposure time	Results
not traceable	Fish	> 1000 mg/L	LC50	96 hour(s)	
not traceable	Daphnia	> 1000 mg/L	EC50	48 hour(s)	
OECD 201	Algae	900 mg/L	NOEC	72 hour(s)	

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
GRAPHITE (POWDER)	-	LC50: >100mg/L (96h, Danio rerio)	-	-
COPPER (FOIL)	EC50: 0.0426 - 0.0535mg/L (72h, Pseudokirchneriella subcapitata) EC50: 0.031 - 0.054mg/L (96h, Pseudokirchneriella subcapitata)	LC50: 0.0068 - 0.0156mg/L (96h, Pimephales promelas) LC50: <0.3mg/L (96h, Pimephales promelas) LC50: =0.2mg/L (96h, Pimephales promelas) LC50: =0.052mg/L (96h, Oncorhynchus mykiss) LC50: =1.25mg/L (96h, Lepomis macrochirus) LC50: =0.3mg/L (96h, Cyprinus carpio)	-	EC50: =0.03mg/L (48h, Daphnia magna)

		LC50: =0.8mg/L (96h, Cyprinus carpio) LC50: =0.112mg/L (96h, Poecilia reticulata)		
METHYL ETHYL CARBONATE	-	LC50: >100mg/L (96h, Oncorhynchus mykiss)	-	-
ETHYLENE CARBONATE	-	LC50: >100mg/L (96h, Oncorhynchus mykiss)	-	-
NICKEL	EC50: =0.18mg/L (72h, Pseudokirchneriella subcapitata) EC50: 0.174 - 0.311mg/L (96h, Pseudokirchneriella subcapitata)	LC50: >100mg/L (96h, Brachydanio rerio) LC50: =1.3mg/L (96h, Cyprinus carpio) LC50: =10.4mg/L (96h, Cyprinus carpio)	-	EC50: >100mg/L (48h, Daphnia magna) EC50: =1mg/L (48h, Daphnia magna)
PROPYLENE CARBONATE	EC50: >500mg/L (72h, Desmodemus subspicatus)	LC50: >1000mg/L (96h, Cyprinus carpio)	-	EC50: >500mg/L (48h, Daphnia magna)

12.2. Persistence and degradability

Persistence and degradability No information available.

Chemical name	Code	Method	Reference sources
GRAPHITE (POWDER)	No information available.	not traceable	not traceable
LITHIUM NICKEL DIOXIDE	No information available.	not traceable	not traceable
ALUMINIUM	No information available.	not traceable	not traceable
LITHIUM MANGANESE OXIDE	No information available.	not traceable	not traceable
COPPER (FOIL)	No information available.	not traceable	not traceable
METHYL ETHYL CARBONATE	Readily biodegradable (according to OECD criteria).	OECD 302C	ECHA
LITHIUM COBALT OXIDE	No information available.	not traceable	not traceable
POLY(ETHYLENE TEREPHTHALATE)	No information available.	not traceable	not traceable
POLYVINYLIDENE FLUORIDE	No information available.	not traceable	not traceable
ETHYLENE CARBONATE	Readily biodegradable (according to OECD criteria).	not traceable	not traceable
POLYETHYLENE	No information available.	not traceable	not traceable
NICKEL	No information available.	not traceable	not traceable
LITHIUM HEXAFLUOROPHOSPHATE	No information available.	not traceable	not traceable
CARBON	No information available.	not traceable	not traceable
PROPYLENE CARBONATE	Readily biodegradable (according to OECD criteria).	OECD 301B	ECHA

12.3. Bioaccumulative potential

Bioaccumulation There is no data for this product.

Chemical name	Partition coefficient
METHYL ETHYL CARBONATE	0.972
ETHYLENE CARBONATE	0.11
PROPYLENE CARBONATE	0.48

12.4. Mobility in soil

Mobility in soil No information available.

12.5. Results of PBT and vPvB assessment

PBT and vPvB assessment No information available.

Chemical name	PBT and vPvB assessment
GRAPHITE (POWDER)	The substance is not PBT / vPvB
ALUMINIUM	The substance is not PBT / vPvB
COPPER (FOIL)	The substance is not PBT / vPvB
METHYL ETHYL CARBONATE	The substance is not PBT / vPvB
LITHIUM COBALT OXIDE	PBT assessment does not apply
ETHYLENE CARBONATE	The substance is not PBT / vPvB
NICKEL	The substance is not PBT / vPvB
LITHIUM HEXAFLUOROPHOSPHATE	The substance is not PBT / vPvB
CARBON	The substance is not PBT / vPvB
PROPYLENE CARBONATE	The substance is not PBT / vPvB

12.6. Endocrine disrupting properties

Endocrine disrupting properties No information available.

12.7. 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.

SECTION 14: Transport information

IATA

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 regulated
Description UN3480, Lithium ion batteries, 9
14.5 Environmental hazards Yes
14.6 Special precautions for user
Special Provisions A88, A99, A154, A164, A183, A201, A213, A331, A334, A802
Packing instructions - passenger Forbidden
Packing instructions - cargo only See 965
ERG Code 12FZ

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 regulated
Description	UN3480, Lithium ion batteries, 9, Marine pollutant
14.5 Environmental hazards	Yes
14.6 Special precautions for user	
Special Provisions	188, 230,310, 348, 376, 377, 384, 387
Packing instructions	P903, P908, P909, P910, P911, LP903, LP904, LP905, LP906
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 regulated
Description	UN3480, Lithium ion batteries, 9, Environmentally Hazardous
14.5 Environmental hazards	Yes
14.6 Special precautions for user	
Special Provisions	188, 230, 310, 348, 376, 377, 387, 636
Packing instructions	P903, P908, P909, P910, P911, LP903, LP904, LP905, LP906
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 regulated
Description	UN3480, Lithium ion batteries, 9, (E), Environmentally Hazardous
14.5 Environmental hazards	Yes
14.6 Special precautions for user	
Special Provisions	188, 230, 310, 348, 376, 377, 387, 636
Packing instructions	P903, P908, P909, P910, P911, LP903, LP904, LP905, LP906
Classification code	M4
Tunnel restriction code	(E)

SECTION 15: Regulatory information

Chemical name	French RG number
GRAPHITE (POWDER) 7782-42-5	RG 16 RG 25
ALUMINIUM 7429-90-5	RG 32 RG 16, RG 16bis
POLYETHYLENE 9002-88-4	RG 66

Netherlands

Water contaminating class (Netherlands)

Chemical name	Netherlands - List of Carcinogens	Netherlands - List of Mutagens	Netherlands - List of Reproductive Toxins
LITHIUM NICKEL DIOXIDE	Present	-	-
LITHIUM MANGANESE OXIDE	-	-	Fertility Category 2 Development Category 2

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.

Authorizations and/or restrictions on use:

This product does not contain substances subject to authorization (Regulation (EC) No. 1907/2006 (REACH), Annex XIV) This product does not contain substances subject to restriction (Regulation (EC) No. 1907/2006 (REACH), Annex XVII)

Chemical name	Restricted substance per REACH Annex XVII	Substance subject to authorization per REACH Annex XIV
LITHIUM NICKEL DIOXIDE - 12031-65-1	28. 75.	-
ALUMINIUM - 7429-90-5	75.	-
COPPER (FOIL) - 7440-50-8	75.	-
NICKEL - 7440-02-0	27. 75.	-
CARBON - 7440-44-0	75.	-
PROPYLENE CARBONATE - 108-32-7	75.	-

Persistent Organic Pollutants

Not applicable

Chemical name	Lower-tier requirements (tons)	Upper-tier requirements (tons)
LITHIUM NICKEL DIOXIDE - 12031-65-1	-	1

Ozone-depleting substances (ODS) regulation (EC) 1005/2009

Not applicable

Chemical name	EU - Plant Protection Products (1107/2009/EC)
GRAPHITE (POWDER) - 7782-42-5	Plant protection agent
CARBON - 7440-44-0	Plant protection agent

Chemical name	Biocidal Products Regulation (EU) No 528/2012 (BPR)
COPPER (FOIL) - 7440-50-8	PT8 PT21

Chemical name	EU - Water Framework Directive (2000/60/EC)
NICKEL - 7440-02-0	Priority substance

Chemical name	EU - Environmental Quality Standards (2008/105/EC)
NICKEL - 7440-02-0	Priority substance

International Inventories

TSCA	Contact supplier for inventory compliance status
DSL/NDSL	Contact supplier for inventory compliance status
EINECS/ELINCS	Contact supplier for inventory compliance status
ENCS	Contact supplier for inventory compliance status
IECSC	Contact supplier for inventory compliance status
KECL	Contact supplier for inventory compliance status
PICCS	Contact supplier for inventory compliance status
AIIC	Contact supplier for inventory compliance status
NZIoC	Contact supplier for inventory compliance status

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AIIC - Australian Inventory of Industrial Chemicals
NZIoC - New Zealand Inventory of Chemicals

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

Legend

SVHC: Substances of Very High Concern for Authorization:

Legend Section 8: Exposure controls/personal protection

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation
+	Sensitizers		

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)
EPA (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)
National Institute of Technology and Evaluation (NITE)
Australia 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)
National Toxicology Program (NTP)
New Zealand's Chemical Classification and Information Database (CCID)
Organization for Economic Co-operation and Development Environment, Health, and Safety Publications
Organization for Economic Co-operation and Development High Production Volume Chemicals Program
Organization for Economic Co-operation and Development Screening Information Data Set
World Health Organization

Revision date 07-Jul-2023

Further information

Lithium batteries are highly flammable. Caution! Increased risk of explosion and fire.

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH)

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet