

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, as amended by
Commission Regulation (EU) 2020/878



BATTERY LI-ION 12 V / 4,0 AH

Version	Revision Date:	SDS Number:	Date of last issue: 09.09.2024
3.0	20.09.2024	11279680-00006	Date of first issue: 28.09.2023

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

1.1 Product identifier

Trade name : BATTERY LI-ION 12 V / 4,0 AH
Product code : 5700996400

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

Use of the Sub-stance/Mixture : Battery
Recommended restrictions on use : Not applicable

1.3 Details of the supplier of the safety data sheet

Company : Adolf Wuerth GmbH & Co. KG
Reinhold-Würth-Str. 12-17
74653 Künzelsau
Telephone : +49 794015 0
Telefax : +49 794015 10 00
E-mail address of person responsible for the SDS : isi@wuerth.com

1.4 Emergency telephone number

+49 (0)6132 – 84463

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Not a hazardous substance or mixture.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

No hazard pictogram, no signal word, no hazard statement(s), no precautionary statement(s) required.

Additional Labelling

||EUH210 Safety data sheet available on request.

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2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Ecological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Toxicological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Chemical nature : Battery

Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
Lithium chloride	7447-41-8 231-212-3	Acute Tox. 4; H302 Skin Irrit. 2; H315 Eye Irrit. 2; H319 Repr. 1A; H360FD Lact.; H362 Acute toxicity estimate Acute oral toxicity: 526 mg/kg	>= 1 - < 10
Lithium hexafluorophosphate	21324-40-3 244-334-7	Acute Tox. 3; H301 Skin Corr. 1A; H314 Eye Dam. 1; H318 STOT RE 1; H372 (Bone, Teeth) EUH029, EUH071 Acute toxicity estimate Acute oral toxicity: 100 mg/kg	>= 1 - < 3

For explanation of abbreviations see section 16.

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SECTION 4: First aid measures

4.1 Description of first aid measures

Protection of first-aiders	:	No special precautions are necessary for first aid responders.
If inhaled	:	If inhaled, remove to fresh air.
	:	Get medical attention if symptoms occur.
In case of skin contact	:	Wash with water and soap as a precaution.
	:	Get medical attention if symptoms occur.
In case of eye contact	:	Flush eyes with water as a precaution.
	:	Get medical attention if irritation develops and persists.
If swallowed	:	Not applicable

4.2 Most important symptoms and effects, both acute and delayed

None known.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : Treat symptomatically and supportively.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media	:	Water spray Alcohol-resistant foam Carbon dioxide (CO ₂) Dry chemical
Unsuitable extinguishing media	:	None known.

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire-fighting	:	Exposure to combustion products may be a hazard to health.
Hazardous combustion products	:	Metal oxides
	:	Carbon oxides
	:	Fluorine compounds
	:	Oxides of phosphorus
	:	Chlorine compounds

5.3 Advice for firefighters

Special protective equipment for firefighters	:	Wear self-contained breathing apparatus for firefighting if necessary. Use personal protective equipment.
Specific extinguishing meth-	:	Use extinguishing measures that are appropriate to local cir-

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cumstances and the surrounding environment.
Use water spray to cool unopened containers.
Remove undamaged containers from fire area if it is safe to do so.
Evacuate area.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Not applicable

6.2 Environmental precautions

Environmental precautions : No special environmental precautions required.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Not applicable

6.4 Reference to other sections

See sections: 7, 8, 11, 12 and 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Technical measures : Not applicable
Local/Total ventilation : Not applicable
Advice on safe handling : Not applicable
Hygiene measures : When using do not eat, drink or smoke.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Store in accordance with the particular national regulations.
Ensure proper labeling

Advice on common storage : Do not store with the following product types:
Strong oxidizing agents

Storage class (TRGS 510) : 11

Recommended storage temperature : < 50 °C

7.3 Specific end use(s)

Specific use(s) : No data available

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SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
Lithium chloride	7447-41-8	AGW (Inhalable fraction)	0,2 mg/m ³ (Lithium)	DE TRGS 900
		Peak-limit: excursion factor (category): 1;(I)		
		Further information: When there is compliance with the OEL and biological tolerance values, there is no risk of harming the unborn child		
		MAK (inhalable fraction)	0,2 mg/m ³ (Lithium)	DE DFG MAK
		Peak-limit: excursion factor (category): 1; I		
		Further information: Damage to the embryo or foetus is unlikely when the MAK value or the BAT value is observed		
Lithium hexafluorophosphate	21324-40-3	AGW (Inhalable fraction)	1 mg/m ³ (Fluorine)	DE TRGS 900
		Peak-limit: excursion factor (category): 4;(II)		
		Further information: Skin absorption, When there is compliance with the OEL and biological tolerance values, there is no risk of harming the unborn child		
		TWA	2,5 mg/m ³ (Fluorine)	2000/39/EC
		Further information: Indicative		
		MAK (inhalable fraction)	1 mg/m ³ (Fluorine)	DE DFG MAK
		Peak-limit: excursion factor (category): 4; II		
		Further information: Danger of absorption through the skin, Damage to the embryo or foetus is unlikely when the MAK value or the BAT value is observed		

Occupational exposure limits of decomposition products

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
Phosphoric acid	7664-38-2	TWA	1 mg/m ³	2000/39/EC
		Further information: Indicative		
		STEL	2 mg/m ³	2000/39/EC
		Further information: Indicative		
		AGW (Inhalable fraction)	2 mg/m ³	DE TRGS 900
		Peak-limit: excursion factor (category): 2;(I)		
		Further information: When there is compliance with the OEL and biological tolerance values, there is no risk of harming the unborn child		
		MAK (inhalable fraction)	2 mg/m ³	DE DFG MAK
		Peak-limit: excursion factor (category): 2; I		
		Further information: Damage to the embryo or foetus is unlikely when the MAK value or the BAT value is observed		

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Hydrofluoric acid	7664-39-3	TWA	1,8 ppm 1,5 mg/m ³	2000/39/EC
Further information: Indicative				
		STEL	3 ppm 2,5 mg/m ³	2000/39/EC
Further information: Indicative				
		AGW	1 ppm 0,83 mg/m ³	DE TRGS 900
Peak-limit: excursion factor (category): 2;(I)				
Further information: Skin absorption, When there is compliance with the OEL and biological tolerance values, there is no risk of harming the unborn child				
		MAK	1 ppm 0,83 mg/m ³	DE DFG MAK
Peak-limit: excursion factor (category): 2; I				
Further information: Damage to the embryo or foetus is unlikely when the MAK value or the BAT value is observed				
Lithium fluoride	7789-24-4	AGW (Inhalable fraction)	1 mg/m ³ (Fluorine)	DE TRGS 900
Peak-limit: excursion factor (category): 4;(II)				
Further information: Skin absorption, When there is compliance with the OEL and biological tolerance values, there is no risk of harming the unborn child				
		AGW (Inhalable fraction)	0,2 mg/m ³ (Lithium)	DE TRGS 900
Peak-limit: excursion factor (category): 1;(I)				
Further information: When there is compliance with the OEL and biological tolerance values, there is no risk of harming the unborn child				
		TWA	2,5 mg/m ³ (Fluorine)	2000/39/EC
Further information: Indicative				
		MAK (inhalable fraction)	1 mg/m ³ (Fluorine)	DE DFG MAK
Peak-limit: excursion factor (category): 4; II				
Further information: Danger of absorption through the skin, Damage to the embryo or foetus is unlikely when the MAK value or the BAT value is observed				
		MAK (inhalable fraction)	0,2 mg/m ³ (Lithium)	DE DFG MAK
Peak-limit: excursion factor (category): 1; I				
Further information: Damage to the embryo or foetus is unlikely when the MAK value or the BAT value is observed				

Biological occupational exposure limits

Substance name	CAS-No.	Control parameters	Sampling time	Basis
Lithium hexafluorophosphate	21324-40-3	fluoride (Fluorine): 4 mg/l (Urine)	Immediately after exposure or after working hours	TRGS 903
		fluoride: 4 mg/l (Urine)	Immediately after exposition or after working hours	DE DFG BAT

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006

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Substance name	End Use	Exposure routes	Potential health effects	Value
Carbon	Workers	Inhalation	Long-term local effects	1,84 mg/m ³
	Consumers	Inhalation	Long-term local effects	0,9 mg/m ³
Lithium chloride	Workers	Inhalation	Long-term systemic effects	10 mg/m ³
	Workers	Inhalation	Acute systemic effects	30 mg/m ³
	Workers	Skin contact	Long-term systemic effects	73,2 mg/kg bw/day
	Workers	Skin contact	Acute systemic effects	100 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	10 mg/m ³
	Consumers	Inhalation	Acute systemic effects	30 mg/m ³
	Consumers	Skin contact	Long-term systemic effects	72,3 mg/kg bw/day
	Consumers	Skin contact	Acute systemic effects	50 mg/kg bw/day
Lithium hexafluorophosphate	Consumers	Ingestion	Long-term systemic effects	7,32 mg/kg bw/day
	Consumers	Ingestion	Acute systemic effects	21,96 mg/kg bw/day
	Workers	Inhalation	Long-term systemic effects	0,931 mg/m ³
	Workers	Skin contact	Long-term systemic effects	0,133 mg/kg bw/day

Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006

Substance name	Environmental Compartment	Value
Carbon	Soil	10 mg/kg dry weight (d.w.)
Lithium chloride	Fresh water	10,4 mg/l
	Marine water	1,04 mg/l
	Intermittent use/release	10,4 mg/l
	Sewage treatment plant	140,2 mg/l
	Fresh water sediment	49,9 mg/kg
	Marine sediment	4,99 mg/kg
	Soil	4,13 mg/kg
Lithium hexafluorophosphate	Fresh water	0,31 mg/l
	Marine water	0,031 mg/l
	Intermittent use/release	0,68 mg/l
	Sewage treatment plant	48 mg/l
	Fresh water sediment	7,73 mg/kg dry weight (d.w.)
	Marine sediment	1,55 mg/kg dry weight (d.w.)
	Soil	13,5 mg/kg dry weight (d.w.)

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8.2 Exposure controls

Engineering measures

Not applicable

Personal protective equipment

Eye/face protection : Not applicable

Hand protection

Remarks : not required

Skin and body protection : Not applicable

Respiratory protection : If adequate local exhaust ventilation is not available or exposure assessment demonstrates exposures outside the recommended guidelines, use respiratory protection.

Equipment should conform to DIN EN 14387

Filter type : Combined particulates and acidic gas/vapour type (E-P)

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state : solid

Colour : No data available

Odour : odourless

Odour Threshold : No data available

Melting point/freezing point : No data available

Initial boiling point and boiling range : No data available

Flammability (solid, gas) : Not classified as a flammability hazard

Upper explosion limit / Upper flammability limit : Not applicable

Lower explosion limit / Lower flammability limit : Not applicable

Flash point : Not applicable

Auto-ignition temperature : Not applicable

Decomposition temperature : No data available

pH : substance/mixture is non-soluble (in water)

Viscosity
Viscosity, kinematic : Not applicable

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Solubility(ies)
Water solubility : insoluble

Partition coefficient: n-
octanol/water : Not applicable

Vapour pressure : Not applicable

Relative density : No data available

Relative vapour density : Not applicable

Particle characteristics
Particle size : No data available

9.2 Other information

Explosives : Not explosive

Oxidizing properties : The substance or mixture is not classified as oxidizing.

Evaporation rate : Not applicable

SECTION 10: Stability and reactivity

10.1 Reactivity

Not classified as a reactivity hazard.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions : Can react with strong oxidizing agents.
Hazardous decomposition products will be formed upon contact with water or humid air.

10.4 Conditions to avoid

Conditions to avoid : Exposure to moisture

10.5 Incompatible materials

Materials to avoid : Oxidizing agents
Water

10.6 Hazardous decomposition products

Contact with water or humid
air : Phosphoric acid
Hydrofluoric acid
Lithium fluoride

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SECTION 11: Toxicological information

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

Information on likely routes of exposure : Skin contact
Ingestion
Eye contact

Acute toxicity

Not classified based on available information.

Product:

Acute oral toxicity : Acute toxicity estimate: > 2.000 mg/kg
Method: Calculation method

Components:

Lithium chloride:

Acute oral toxicity : LD50 (Rat): 526 mg/kg
Acute inhalation toxicity : LC50 (Rat): > 5,57 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403
Acute dermal toxicity : LD50 (Rat): > 2.000 mg/kg
Method: OECD Test Guideline 402
Assessment: The substance or mixture has no acute dermal toxicity

Lithium hexafluorophosphate:

Acute oral toxicity : LD50 (Rat): > 50 - 300 mg/kg
Method: OECD Test Guideline 423
Acute inhalation toxicity : Assessment: Corrosive to the respiratory tract.

Skin corrosion/irritation

Not classified based on available information.

Product:

Result : No skin irritation
Remarks : Based on bioavailability assessment according to 1.3.2.4.5
UN GHS/CLP article 12

Components:

Lithium chloride:

Species : Rabbit
Result : Skin irritation

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Lithium hexafluorophosphate:

Species : reconstructed human epidermis (RhE)
Method : OECD Test Guideline 431
Result : Corrosive after 3 minutes or less of exposure

Serious eye damage/eye irritation

Not classified based on available information.

Product:

Result : No eye irritation
Remarks : Based on bioavailability assessment according to 1.3.2.4.5
UN GHS/CLP article 12

Components:

Lithium chloride:

Species : Rabbit
Result : Irritation to eyes, reversing within 21 days

Lithium hexafluorophosphate:

Result : Irreversible effects on the eye
Remarks : Based on skin corrosivity.

Respiratory or skin sensitisation

Skin sensitisation

Not classified based on available information.

Respiratory sensitisation

Not classified based on available information.

Components:

Lithium chloride:

Test Type : Buehler Test
Exposure routes : Skin contact
Species : Guinea pig
Method : OECD Test Guideline 406
Result : negative

Lithium hexafluorophosphate:

Test Type : Local lymph node assay (LLNA)
Exposure routes : Skin contact
Species : Mouse
Method : OECD Test Guideline 429
Result : negative

Germ cell mutagenicity

Not classified based on available information.

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Components:

Lithium chloride:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)
Method: OECD Test Guideline 471
Result: negative
Remarks: Based on data from similar materials

Test Type: Chromosome aberration test in vitro
Method: OECD Test Guideline 473
Result: negative
Remarks: Based on data from similar materials

Test Type: In vitro mammalian cell gene mutation test
Method: OECD Test Guideline 476
Result: negative
Remarks: Based on data from similar materials

Lithium hexafluorophosphate:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)
Method: OECD Test Guideline 471
Result: negative

Test Type: In vitro mammalian cell gene mutation test
Result: positive
Remarks: Based on data from similar materials

Test Type: Chromosome aberration test in vitro
Result: positive
Remarks: Based on data from similar materials

Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo
cytogenetic assay)
Species: Rat
Application Route: Ingestion
Result: negative
Remarks: Based on data from similar materials

Germ cell mutagenicity- Assessment : Weight of evidence does not support classification as a germ
cell mutagen.

Carcinogenicity

Not classified based on available information.

Product:

Result : negative
Remarks : Based on bioavailability assessment according to 1.3.2.4.5
UN GHS/CLP article 12

Reproductive toxicity

Not classified based on available information.

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Product:

Effects on fertility : Result: negative
Remarks: Based on bioavailability assessment according to
1.3.2.4.5 UN GHS/CLP article 12

Components:

Lithium chloride:

Effects on fertility : Test Type: Fertility/early embryonic development
Species: Rat
Application Route: Ingestion
Result: positive
Remarks: Based on data from similar materials

Reproductive toxicity - Assessment : Positive evidence of adverse effects on development from
human epidemiological studies., Clear evidence of adverse
effects on sexual function and fertility, based on animal exper-
iments.

Studies indicating a hazard to babies during the lactation peri-
od

Lithium hexafluorophosphate:

Effects on fertility : Test Type: Two-generation reproduction toxicity study
Species: Rat
Application Route: Ingestion
Result: negative
Remarks: Based on data from similar materials

Effects on foetal develop- : Test Type: Embryo-foetal development
ment
Species: Rat
Application Route: Ingestion
Result: negative
Remarks: Based on data from similar materials

STOT - single exposure

Not classified based on available information.

STOT - repeated exposure

Not classified based on available information.

Product:

Assessment : The substance or mixture is not classified as specific target
organ toxicant, repeated exposure.

Remarks : Based on bioavailability assessment according to 1.3.2.4.5
UN GHS/CLP article 12

Components:

Lithium hexafluorophosphate:

Exposure routes : Ingestion

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Target Organs : Bone, Teeth
Assessment : Shown to produce significant health effects in animals at concentrations of 10 mg/kg bw or less.

Exposure routes : inhalation (gas)
Target Organs : Bone, Teeth
Assessment : Shown to produce significant health effects in animals at concentrations of 50 ppmV/6h/d or less.

Repeated dose toxicity

Components:

Lithium chloride:

Species : Rat, male
NOAEL : 84,8 mg/kg
Application Route : Ingestion
Exposure time : 2 yr

Lithium hexafluorophosphate:

Species : Rat
LOAEL : < 50 ppm
Application Route : inhalation (gas)
Exposure time : 1 Months
Remarks : Based on data from similar materials

Aspiration toxicity

Not classified based on available information.

11.2 Information on other hazards

Endocrine disrupting properties

Product:

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Experience with human exposure

Components:

Lithium chloride:

General Information : Target Organs: Heart
Symptoms: Visceral malformations

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SECTION 12: Ecological information

12.1 Toxicity

Components:

Lithium chloride:

Toxicity to fish	: LC50 (Oncorhynchus mykiss (rainbow trout)): 158 mg/l Exposure time: 96 h Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	: EC50 (Daphnia magna (Water flea)): 249 mg/l Exposure time: 48 h Method: OECD Test Guideline 202
Toxicity to algae/aquatic plants	: ErC50 (Desmodesmus subspicatus (green algae)): > 400 mg/l Exposure time: 72 h Method: OECD Test Guideline 201 NOEC (Desmodesmus subspicatus (green algae)): 25 mg/l Exposure time: 72 h Method: OECD Test Guideline 201
Toxicity to microorganisms	: EC50 : 180,8 mg/l Exposure time: 3 h Method: OECD Test Guideline 209 Remarks: Based on data from similar materials
Toxicity to fish (Chronic toxicity)	: NOEC: 17,35 mg/l Exposure time: 34 d Species: Danio rerio (zebra fish) Method: OECD Test Guideline 210 Remarks: Based on data from similar materials
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	: NOEC: 1,7 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea) Method: OECD Test Guideline 211 Remarks: Based on data from similar materials

Lithium hexafluorophosphate:

Toxicity to fish	: LC50 : > 10 - 100 mg/l Exposure time: 96 h Remarks: Based on data from similar materials
Toxicity to daphnia and other aquatic invertebrates	: EC50 (Daphnia magna (Water flea)): > 10 - 100 mg/l Exposure time: 48 h Remarks: Based on data from similar materials
Toxicity to algae/aquatic plants	: EC50 : > 10 - 100 mg/l Exposure time: 96 h Remarks: Based on data from similar materials

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Toxicity to microorganisms : NOEC : > 100 mg/l
Exposure time: 3 h
Method: OECD Test Guideline 209
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: > 1 - 10 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)
Remarks: Based on data from similar materials

12.2 Persistence and degradability

Components:

Lithium hexafluorophosphate:

Biodegradability : Result: rapidly degradable

12.3 Bioaccumulative potential

Components:

Lithium chloride:

Partition coefficient: n-octanol/water : log Pow: -0,46
Remarks: Calculation

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

Product:

Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Endocrine disrupting properties

Product:

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

12.7 Other adverse effects

No data available

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SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product	:	Dispose of in accordance with local regulations. According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user, preferably in discussion with the waste disposal authorities. Do not dispose of waste into sewer.
Contaminated packaging	:	Empty containers should be taken to an approved waste handling site for recycling or disposal. If not otherwise specified: Dispose of as unused product.
Waste Code	:	The following Waste Codes are only suggestions: used product 16 06 05, other batteries and accumulators unused product 16 06 05, other batteries and accumulators uncleaned packagings 15 01 06, mixed packaging

SECTION 14: Transport information

14.1 UN number or ID number

ADN	:	UN 3480
ADR	:	UN 3480
RID	:	UN 3480
IMDG	:	UN 3480
IATA (Cargo)	:	UN 3480
IATA (Passenger)	:	UN 3480 Not permitted for transport

14.2 UN proper shipping name

ADN	:	LITHIUM ION BATTERIES
ADR	:	LITHIUM ION BATTERIES
RID	:	LITHIUM ION BATTERIES
IMDG	:	LITHIUM ION BATTERIES
IATA (Cargo)	:	Lithium ion batteries
IATA (Passenger)	:	Lithium ion batteries Not permitted for transport

14.3 Transport hazard class(es)

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	Class	Subsidiary risks
ADN	: 9	
ADR	: 9	
RID	: 9	
IMDG	: 9	
IATA (Cargo)	: 9	LITH_BAT_M
IATA (Passenger)	: Not permitted for transport	

14.4 Packing group

ADN	
Packing group	: Not assigned by regulation
Classification Code	: M4
Labels	: LITH_BAT_M
Remarks	: Transport in accordance with special regulation 188

ADR	
Packing group	: Not assigned by regulation
Classification Code	: M4
Labels	: LITH_BAT_M
Tunnel restriction code	: (E)
Remarks	: Transport in accordance with special regulation 188

RID	
Packing group	: Not assigned by regulation
Classification Code	: M4
Hazard Identification Number	: 90
Labels	: LITH_BAT_M
Remarks	: Transport in accordance with special regulation 188

IMDG	
Packing group	: Not assigned by regulation
Labels	: LITH_BAT_M
EmS Code	: F-A, S-I
Remarks	: Transport in accordance with special regulation 188

IATA (Cargo)	
Packing instruction (cargo aircraft)	: 965
Packing group	: Not assigned by regulation
Labels	: Lithium battery,
IATA (Passenger)	: Not permitted for transport

14.5 Environmental hazards

ADN
Environmentally hazardous : no

ADR

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Environmentally hazardous : no

RID

Environmentally hazardous : no

IMDG

Marine pollutant : no

14.6 Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

14.7 Maritime transport in bulk according to IMO instruments

Remarks : Not applicable for product as supplied.

SECTION 15: Regulatory information

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

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII) : Not applicable

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59). : Not applicable

Regulation (EC) on substances that deplete the ozone layer : Not applicable

Regulation (EU) 2019/1021 on persistent organic pollutants (recast) : Not applicable

Regulation (EU) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals : Not applicable

REACH - List of substances subject to authorisation (Annex XIV) : Not applicable

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.

Water hazard class (Germany) : Not applicable
WGK 1 slightly hazardous to water
Classification according to AwSV, Annex 1 (5.2)

TA Luft List (Germany) : 5.2.1: Total dust:
Not applicable
5.2.2: Inorganic substances in powdered form:
Class 3: 1 % Lithium hexafluorophosphate
5.2.4: Inorganic substances in gaseous form:
Not applicable
5.2.5: Organic Substances:
Not applicable
5.2.7.1.1: Carcinogenic substance:
Not applicable
5.2.7.1.1: Quartz fine dust PM4:
Not applicable

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5.2.7.1.1: Formaldehyde:
Not applicable
5.2.7.1.1: fibres:
Not applicable
5.2.7.1.2: Germ cell mutagens:
Not applicable
5.2.7.1.3: Substances toxic to reproduction:
others: 1 % Lithium chloride
5.2.7.2: Poorly degradable, easily enrichable and highly toxic
organic substances:
Not applicable

Volatile organic compounds : Directive 2010/75/EU of 24 November 2010 on industrial
emissions (integrated pollution prevention and control)
Remarks: Not applicable

15.2 Chemical safety assessment

A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

Other information : Items where changes have been made to the previous version
are highlighted in the body of this document by two vertical
lines.

Full text of H-Statements

H301 : Toxic if swallowed.
H302 : Harmful if swallowed.
H314 : Causes severe skin burns and eye damage.
H315 : Causes skin irritation.
H318 : Causes serious eye damage.
H319 : Causes serious eye irritation.
H360FD : May damage fertility. May damage the unborn child.
H362 : May cause harm to breast-fed children.
H372 : Causes damage to organs through prolonged or repeated
exposure.
EUH029 : Contact with water liberates toxic gas.
EUH071 : Corrosive to the respiratory tract.

Full text of other abbreviations

Acute Tox. : Acute toxicity
Eye Dam. : Serious eye damage
Eye Irrit. : Eye irritation
Lact. : Effects on or via lactation
Repr. : Reproductive toxicity
Skin Corr. : Skin corrosion
Skin Irrit. : Skin irritation
STOT RE : Specific target organ toxicity - repeated exposure
2000/39/EC : Europe. Commission Directive 2000/39/EC establishing a first
list of indicative occupational exposure limit values

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DE DFG BAT	:	Germany. MAK BAT Annex XIII
DE DFG MAK	:	Germany. MAK BAT Annex IIa
DE TRGS 900	:	Germany. TRGS 900 - Occupational exposure limit values.
TRGS 903	:	TRGS 903 - Biological limit values
2000/39/EC / TWA	:	Limit Value - eight hours
2000/39/EC / STEL	:	Short term exposure limit
DE DFG MAK / MAK	:	MAK value
DE TRGS 900 / AGW	:	Time Weighted Average

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Further information

Sources of key data used to compile the Safety Data Sheet : Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agency, <http://echa.europa.eu/>

Items where changes have been made to the previous version are highlighted in the body of this document by two vertical lines.

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 is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only

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to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified in the text. Material users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user's end product, if applicable.

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