

Safety Data Sheet

Regulation (EU) 2015/830 (REACH Annex II)

Applicant: Leifheit AG

Address: Leifheitstraße 56377 Nassau/Lahn, Germany

Attn.: Mr. Detlef Baetza

Sample Description: Li-ion cell

Model No.: 205513

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

1.1. Product identifier

Product form : Article
Trade name : /
Model No.: : 205513

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

1.2.1. Relevant identified uses

Use of the substance/mixture : No information available

1.2.2. Uses advised against

Restrictions on use : No information available

1.3. Details of the supplier of the safety data sheet

Supplier

Leifheit AG
Leifheistraße 56377 Nassau/Lahn, Germany
56377
Tel: +49 (2604) 977 456
E-mail: detlef.baetza@leifheit.com

1.4. Emergency telephone number

Emergency number :

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

To our knowledge, this product does not present any particular risk, provided it is handled in accordance with good occupational hygiene and safety practice.

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP] Extra labelling to display Extra classification(s) to display

Hazard pictograms (CLP) : None
None
Signal word (CLP) : None
Hazard statements (CLP) : None.
Precautionary statements (CLP) : None.
EUH-statements : None.

2.3. Other hazards

No additional information available

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]
Lithium nickel-cobalt-manganese oxide		23 - 35	

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Aluminum	(CAS-No.) 7429-90-5 (EC-No.) 231-072-3 (EC Index-No.) 013-002-00-1	3 - 8	Flam. Sol. 1, H228 Water-react. 2, H261
Graphite	(CAS-No.) 7782-42-5 (EC-No.) 231-955-3	13 - 20	Not classified
Iron	(CAS-No.) 7439-89-6 (EC-No.) 215-168-2;231-096-4	15 - 20	Not classified
Nickel	(CAS-No.) 7440-02-0 (EC-No.) 231-111-4 (EC Index-No.) 028-002-00-7	15 - 20	Skin Sens. 1, H317 Carc. 2, H351 STOT RE 1, H372
Copper	(CAS-No.) 7440-50-8 (EC-No.) 231-159-6	6 - 11	Not classified
1,1-Difluoroethylene polymer	(CAS-No.) 24937-79-9 (EC-No.) 607-458-6	0.2 – 0.6	Not classified
Phosphate(1-), hexafluoro-, lithium	(CAS-No.) 21324-40-3 (EC-No.) 244-334-7	1 - 3	Not classified
Ethylene carbonate	(CAS-No.) 96-49-1 (EC-No.) 202-510-0	2 - 3	Not classified
Ethene, homopolymer	(CAS-No.) 9002-88-4 (EC-No.) 618-339-3	0 - 1	Not classified
Polypropylene	(CAS-No.) 9003-07-0 (EC-No.) 618-352-4	0 - 1	Not classified
Styrene-butadiene copolymer	(CAS-No.) 9003-55-8 (EC-No.) 618-370-2	0.4 - 1	Not classified

Full text of H-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures general : If you feel unwell, seek medical advice (show directions for use or safety data sheet if possible).
- First-aid measures after inhalation : Not an expected route of exposure.
- First-aid measures after skin contact : Not expected to present a significant skin hazard under anticipated conditions of normal use. No special technical protective measures required.
- First-aid measures after eye contact : Not an expected route of exposure.
- First-aid measures after ingestion : Rinse mouth out with water. If you feel unwell, seek medical advice.

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

No additional information available

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 : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Unsuitable extinguishing media : No information available.

5.2. Special hazards arising from the substance or mixture

Hazardous decomposition products in case of fire : Toxic fumes may be released.

5.3. Advice for firefighters

- Precautionary measures fire : Eliminate every possible source of ignition. Keep container tightly closed and away from heat, sparks and flame.
- Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

Other information : Ensure adequate ventilation, especially in confined areas. Evacuate personnel to a safe area. Avoid contact with skin, eyes and inhalation of vapors. Move containers from fire area if it can be done without personal risk. Cool tanks/drums with water spray/remove them into safety. Stay upwind.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Evacuate personnel to safe areas. Ensure adequate ventilation, especially in confined areas. Remove all sources of ignition. Avoid contact with skin, eyes and inhalation of vapors.

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 : Stop leak if safe to do so. Do not touch spilled material; Avoid breathing dust, mist or spray; Remove all sources of ignition

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Use a clean shovel to collect it in a properly sealed waste container with a label and completely sealed. Such containers shall be stored in suitable locations for the purpose of handling or disposing in accordance with national law

Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. Wear personal protective equipment. Do not open, destroy, or incinerate batteries because the battery may explode, break, or vent during these processes. Do not short-circuit the battery, overcharge, forced discharge or thrown into the fire. Do not squeeze the battery or immerse the battery in the solution.

Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Prohibited high temperature storage. Store in a well-ventilated place. Store in a dry place. Keep container tightly closed. Keep cool.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Aluminum (7429-90-5)	
Austria - Occupational Exposure Limits	
MAK (mg/m ³)	10 mg/m ³ (inhalable fraction)
MAK Short time value (mg/m ³)	20 mg/m ³ (inhalable fraction)
Belgium - Occupational Exposure Limits	
Limit value (mg/m ³)	1 mg/m ³
Bulgaria - Occupational Exposure Limits	
OEL TWA (mg/m ³)	10 mg/m ³ (metal dust) 1.5 mg/m ³ (respirable fraction)



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Aluminum (7429-90-5)	
Croatia - Occupational Exposure Limits	
GVI (granična vrijednost izloženosti) (mg/m ³)	10 mg/m ³ (total dust) 4 mg/m ³ (respirable dust)
Croatia - Biological limit values	
Croatia - BLV	200 mg/l Parameter: Aluminum - Medium: urine - Sampling time: at the end of the work shift
Czech Republic - Occupational Exposure Limits	
Expoziční limity (PEL) (mg/m ³)	10 mg/m ³ (dust)
Denmark - Occupational Exposure Limits	
Grænseværdie (langvarig) (mg/m ³)	5 mg/m ³ (dust, fume and powder, total) 2 mg/m ³ (dust and powder, respirable)
Estonia - Occupational Exposure Limits	
OEL TWA (mg/m ³)	10 mg/m ³ (total dust) 4 mg/m ³ (respirable dust)
France - Occupational Exposure Limits	
VME (mg/m ³)	10 mg/m ³ (metal) 5 mg/m ³ (dust)
Greece - Occupational Exposure Limits	
OEL TWA (mg/m ³)	10 mg/m ³ (inhalable fraction) 5 mg/m ³ (respirable fraction)
Hungary - Occupational Exposure Limits	
AK-érték	6 mg/m ³ (respirable dust)
Ireland - Occupational Exposure Limits	
OEL (8 hours ref) (mg/m ³)	1 mg/m ³ (respirable fraction)
OEL (15 min ref) (mg/m ³)	3 mg/m ³ (calculated-respirable dust)
Latvia - Occupational Exposure Limits	
OEL TWA (mg/m ³)	2 mg/m ³
Lithuania - Occupational Exposure Limits	
IPRV (mg/m ³)	5 mg/m ³ (inhalable fraction) 2 mg/m ³ (respirable fraction) 1 mg/m ³
Poland - Occupational Exposure Limits	
NDS (mg/m ³)	2.5 mg/m ³ (non-stabilized-inhalable fraction) 1.2 mg/m ³ (non-stabilized-respirable fraction)
Portugal - Occupational Exposure Limits	
OEL TWA (mg/m ³)	10 mg/m ³ (metal dust)
Romania - Occupational Exposure Limits	
OEL TWA (mg/m ³)	3 mg/m ³ (dust) 1 mg/m ³ (fume)
OEL STEL (mg/m ³)	10 mg/m ³ (dust) 3 mg/m ³ (fume)
Romania - Biological limit values	
Romania - BLV	200 µg/l Parameter: Aluminum - Medium: urine - Sampling time: end of shift



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Aluminum (7429-90-5)	
Slovakia - Biological limit values	
Slovakia - BLV	60 µg/g creatinine Parameter: Aluminum - Medium: urine - Sampling time: not critical
Spain - Occupational Exposure Limits	
VLA-ED (mg/m ³)	10 mg/m ³ (dust)
Sweden - Occupational Exposure Limits	
nivågränsvärde (NVG) (mg/m ³)	5 mg/m ³ (total dust) 2 mg/m ³ (respirable dust)
United Kingdom - Occupational Exposure Limits	
WEL TWA (mg/m ³)	10 mg/m ³ (inhalable dust) 4 mg/m ³ (respirable dust)
WEL STEL (mg/m ³)	30 mg/m ³ (calculated-inhalable dust) 12 mg/m ³ (calculated-respirable dust)
Norway - Occupational Exposure Limits	
Grenseverdier (AN) (mg/m ³)	5 mg/m ³ (pyrotechnical-powder)
Grenseverdier (Korttidsverdi) (mg/m ³)	10 mg/m ³ (pyrotechnical-powder)
Switzerland - Occupational Exposure Limits	
MAK (mg/m ³)	3 mg/m ³ (respirable dust)
Switzerland - Biological limit values	
Switzerland - BLV	60 µg/g creatinine Parameter: Aluminum - Medium: urine - Sampling time: no restrictions
USA - ACGIH - Occupational Exposure Limits	
ACGIH TWA (mg/m ³)	1 mg/m ³ (respirable particulate matter)
ACGIH chemical category	Not Classifiable as a Human Carcinogen
Graphite (7782-42-5)	
Austria - Occupational Exposure Limits	
MAK (mg/m ³)	5 mg/m ³ (alveolar dust with <1% Quartz, respirable fraction)
MAK Short time value (mg/m ³)	10 mg/m ³ (alveolar dust with <1% Quartz, respirable fraction)
Belgium - Occupational Exposure Limits	
Limit value (mg/m ³)	2 mg/m ³ (except fibers-alveolar fraction)
Bulgaria - Occupational Exposure Limits	
OEL TWA (mg/m ³)	5 mg/m ³ (inhalable fraction)
Croatia - Occupational Exposure Limits	
GVI (granična vrijednost izloženosti) (mg/m ³)	4 mg/m ³ (respirable dust) 10 mg/m ³ (total dust)
Czech Republic - Occupational Exposure Limits	
Expoziční limity (PEL) (mg/m ³)	2 mg/m ³ (dust)
Denmark - Occupational Exposure Limits	
Grænseværdie (langvarig) (mg/m ³)	2.5 mg/m ³ (natural-respirable)
Estonia - Occupational Exposure Limits	
OEL TWA (mg/m ³)	5 mg/m ³ (total dust)

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Graphite (7782-42-5)	
Finland - Occupational Exposure Limits	
HTP-arvo (8h) (mg/m ³)	2 mg/m ³
France - Occupational Exposure Limits	
VME (mg/m ³)	2 mg/m ³ (alveolar fraction)
Greece - Occupational Exposure Limits	
OEL TWA (mg/m ³)	10 mg/m ³ (inhalable fraction) 5 mg/m ³ (respirable fraction)
Ireland - Occupational Exposure Limits	
OEL (8 hours ref) (mg/m ³)	2 mg/m ³ (all forms except fibres; respirable fraction)
OEL (15 min ref) (mg/m ³)	6 mg/m ³ (calculated-all forms except fibres; respirable fraction)
Latvia - Occupational Exposure Limits	
OEL TWA (mg/m ³)	2 mg/m ³
Lithuania - Occupational Exposure Limits	
IPRV (mg/m ³)	5 mg/m ³ (dust)
Poland - Occupational Exposure Limits	
NDS (mg/m ³)	4 mg/m ³ (natural-inhalable fraction) 1 mg/m ³ (natural-respirable fraction)
Portugal - Occupational Exposure Limits	
OEL TWA (mg/m ³)	2 mg/m ³ (all forms except Graphite fibers-respirable fraction)
Romania - Occupational Exposure Limits	
OEL TWA (mg/m ³)	2 mg/m ³ (Quartz <=5%-dust, respirable fraction)
Spain - Occupational Exposure Limits	
VLA-ED (mg/m ³)	2 mg/m ³ (see UNE EN 481:1995 on workplace atmospheres-dust; respirable fraction)
United Kingdom - Occupational Exposure Limits	
WEL TWA (mg/m ³)	10 mg/m ³ (inhalable dust) 4 mg/m ³ (respirable dust)
WEL STEL (mg/m ³)	30 mg/m ³ (calculated-inhalable dust) 12 mg/m ³ (calculated-respirable dust)
Norway - Occupational Exposure Limits	
Grenseverdier (AN) (mg/m ³)	5 mg/m ³ (natural-total dust) 2 mg/m ³ (natural-respirable dust) 10 mg/m ³ (synthetic-total dust) 4 mg/m ³ (synthetic-respirable dust)
Grenseverdier (Korttidsverdi) (mg/m ³)	10 mg/m ³ (natural-total dust) 4 mg/m ³ (natural-respirable dust) 15 mg/m ³ (synthetic-total dust) 8 mg/m ³ (synthetic-respirable dust)
Switzerland - Occupational Exposure Limits	
MAK (mg/m ³)	2.5 mg/m ³ (natural-respirable dust) 5 mg/m ³ (natural-inhalable dust)
USA - ACGIH - Occupational Exposure Limits	
ACGIH TWA (mg/m ³)	2 mg/m ³ (all forms except graphite fibers-respirable particulate matter)

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Copper (7440-50-8)	
Austria - Occupational Exposure Limits	
MAK (mg/m ³)	1 mg/m ³ (inhalable fraction) 0.1 mg/m ³ (respirable fraction, smoke)
MAK Short time value (mg/m ³)	4 mg/m ³ (inhalable fraction) 0.4 mg/m ³ (respirable fraction, smoke)
Belgium - Occupational Exposure Limits	
Limit value (mg/m ³)	0.2 mg/m ³ (fume) 1 mg/m ³ (dust and mist)
Bulgaria - Occupational Exposure Limits	
OEL TWA (mg/m ³)	0.1 mg/m ³ (metal vapor)
Croatia - Occupational Exposure Limits	
GVI (granična vrijednost izloženosti) (mg/m ³)	0.2 mg/m ³ (fume) 1 mg/m ³ (dust)
KGVI (kratkotrajna granična vrijednost izloženosti) (mg/m ³)	2 mg/m ³ (fume and dust)
Czech Republic - Occupational Exposure Limits	
Expoziční limity (PEL) (mg/m ³)	1 mg/m ³ (dust) 0.1 mg/m ³ (fume)
Denmark - Occupational Exposure Limits	
Grænseværdie (langvarig) (mg/m ³)	1 mg/m ³ (dust and powder) 0.1 mg/m ³ (fume)
Estonia - Occupational Exposure Limits	
OEL TWA (mg/m ³)	1 mg/m ³ (total dust) 0.2 mg/m ³ (respirable dust)
Finland - Occupational Exposure Limits	
HTP-arvo (8h) (mg/m ³)	0.02 mg/m ³ (respirable dust)
France - Occupational Exposure Limits	
VME (mg/m ³)	0.2 mg/m ³ (fume) 1 mg/m ³ (dust)
VLE (mg/m ³)	2 mg/m ³ (dust)
Greece - Occupational Exposure Limits	
OEL TWA (mg/m ³)	0.2 mg/m ³ (fume) 1 mg/m ³ (dust)
OEL STEL (mg/m ³)	2 mg/m ³ (dust)
Hungary - Occupational Exposure Limits	
AK-érték	1 mg/m ³ 0.1 mg/m ³ (fume)
CK-érték	4 mg/m ³ 0.4 mg/m ³ (fume)
Ireland - Occupational Exposure Limits	
OEL (8 hours ref) (mg/m ³)	0.2 mg/m ³ (fume) 1 mg/m ³ (dusts and mists)
OEL (15 min ref) (mg/m ³)	2 mg/m ³ (dusts and mists) 0.6 mg/m ³ (calculated-fume)



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Copper (7440-50-8)	
Latvia - Occupational Exposure Limits	
OEL TWA (mg/m ³)	0.5 mg/m ³
Lithuania - Occupational Exposure Limits	
IPRV (mg/m ³)	1 mg/m ³ (inhalable fraction) 0.2 mg/m ³ (respirable fraction)
Netherlands - Occupational Exposure Limits	
Grenswaarde TGG 8H (mg/m ³)	0.1 mg/m ³ (inhalable fraction)
Poland - Occupational Exposure Limits	
NDS (mg/m ³)	0.2 mg/m ³
Portugal - Occupational Exposure Limits	
OEL TWA (mg/m ³)	0.2 mg/m ³ (fume) 1 mg/m ³ (dust and mist)
Romania - Occupational Exposure Limits	
OEL TWA (mg/m ³)	0.5 mg/m ³ (powder)
OEL STEL (mg/m ³)	0.2 mg/m ³ (fume) 1.5 mg/m ³ (dust)
Slovakia - Occupational Exposure Limits	
NPHV (priemerná) (mg/m ³)	1 mg/m ³ (inhalable fraction) 0.2 mg/m ³ (respirable fraction)
Slovenia - Occupational Exposure Limits	
OEL TWA (mg/m ³)	1 mg/m ³ (inhalable fraction) 0.1 mg/m ³ (respirable fraction, fume)
OEL STEL (mg/m ³)	4 mg/m ³ (inhalable fraction) 0.4 mg/m ³ (respirable fraction, fume)
Spain - Occupational Exposure Limits	
VLA-ED (mg/m ³)	0.2 mg/m ³ (fume) 1 mg/m ³ (dust and mist)
Sweden - Occupational Exposure Limits	
nivågränsvärde (NVG) (mg/m ³)	0.01 mg/m ³ (respirable dust)
United Kingdom - Occupational Exposure Limits	
WEL TWA (mg/m ³)	1 mg/m ³ (dust and mists) 0.2 mg/m ³ (fume)
WEL STEL (mg/m ³)	0.6 mg/m ³ (calculated-fume) 2 mg/m ³ (dust and mist)
Norway - Occupational Exposure Limits	
Grenseverdier (AN) (mg/m ³)	0.1 mg/m ³ (fume) 1 mg/m ³ (dust)
Grenseverdier (Korttidsverdi) (mg/m ³)	0.3 mg/m ³ (value calculated-fume) 2 mg/m ³ (value calculated-dust)
Switzerland - Occupational Exposure Limits	
MAK (mg/m ³)	0.1 mg/m ³ (inhalable dust)
KZGW (mg/m ³)	0.2 mg/m ³ (inhalable dust)

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USA - ACGIH - Occupational Exposure Limits	
ACGIH TWA (mg/m ³)	0.2 mg/m ³ (fume)
Ethene, homopolymer (9002-88-4)	
Bulgaria - Occupational Exposure Limits	
OEL TWA (mg/m ³)	10 mg/m ³ (dust)
Czech Republic - Occupational Exposure Limits	
Expoziční limity (PEL) (mg/m ³)	5 mg/m ³ (dust)
Latvia - Occupational Exposure Limits	
OEL TWA (mg/m ³)	5 mg/m ³ (dust)
Lithuania - Occupational Exposure Limits	
IPRV (mg/m ³)	10 mg/m ³
Polypropylene (9003-07-0)	
Czech Republic - Occupational Exposure Limits	
Expoziční limity (PEL) (mg/m ³)	5 mg/m ³ (dust)
Latvia - Occupational Exposure Limits	
OEL TWA (mg/m ³)	5 mg/m ³ (dust)
Lithuania - Occupational Exposure Limits	
IPRV (mg/m ³)	10 mg/m ³ (not stabilized)
Iron (7439-89-6)	
Bulgaria - Occupational Exposure Limits	
OEL TWA (mg/m ³)	6 mg/m ³ (containing <2% free Crystalline silicon dioxide in respirable fraction-dust, inhalable fraction)
Slovakia - Occupational Exposure Limits	
NPHV (priemerná) (mg/m ³)	6 mg/m ³ (total aerosol)
Nickel (7440-02-0)	
Austria - Occupational Exposure Limits	
TEL TRK (mg/m ³)	0.5 mg/m ³ (dust, inhalable fraction)
OEL chemical category (AT)	Group A1 Carcinogen dust/aerosol, Respiratory sensitizer dust, Skin sensitizer
Belgium - Occupational Exposure Limits	
Limit value (mg/m ³)	1 mg/m ³
Bulgaria - Occupational Exposure Limits	
OEL TWA (mg/m ³)	0.05 mg/m ³
Bulgaria - Biological limit values	
Bulgaria - BLV	45 µg/l Parameter: Nickel - Medium: urine - Sampling time: after several shifts
Croatia - Occupational Exposure Limits	
GVI (granična vrijednost izloženosti) (mg/m ³)	0.5 mg/m ³
OEL chemical category (HR)	Carcinogen category 3



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Nickel (7440-02-0)	
Czech Republic - Occupational Exposure Limits	
Expoziční limity (PEL) (mg/m ³)	0.5 mg/m ³
OEL chemical category (CZ)	Sensitizer
Czech Republic - Biological limit values	
Czech Republic - BLV	0.077 µmol/mmol Creatinine Parameter: Nickel - Medium: urine - Sampling time: discretionary 0.04 mg/g creatinine Parameter: Nickel - Medium: urine - Sampling time: discretionary
Denmark - Occupational Exposure Limits	
Grænseværdie (langvarig) (mg/m ³)	0.05 mg/m ³ (dust and powder)
Estonia - Occupational Exposure Limits	
OEL TWA (mg/m ³)	0.5 mg/m ³
OEL chemical category (ET)	Sensitizer
Finland - Occupational Exposure Limits	
HTP-arvo (8h) (mg/m ³)	0.01 mg/m ³ (respirable dust)
Finland - Biological limit values	
Finland - BLV	0.1 µmol/l Parameter: Nickel - Medium: urine - Sampling time: after the shift after a working week or exposure period
France - Occupational Exposure Limits	
VME (mg/m ³)	1 mg/m ³ 1 mg/m ³ (metal gratings)
OEL chemical category (FR)	Carcinogen category 2
Germany - Occupational Exposure Limits (TRGS 900)	
TRGS 900 Occupational exposure limit value (mg/m ³)	0.03 mg/m ³ (The risk of damage to the embryo or fetus can be excluded when AGW and BGW values are observed-respirable fraction)
TRGS 900 chemical category	Skin sensitization
Greece - Occupational Exposure Limits	
OEL TWA (mg/m ³)	1 mg/m ³
Hungary - Occupational Exposure Limits	
MK-érték	0.1 mg/m ³
OEL chemical category (HU)	Carcinogenic substance, Sensitizer
Ireland - Occupational Exposure Limits	
OEL (8 hours ref) (mg/m ³)	0.5 mg/m ³
OEL (15 min ref) (mg/m ³)	1.5 mg/m ³ (calculated)
OEL chemical category (IE)	Sensitizer
Latvia - Occupational Exposure Limits	
OEL TWA (mg/m ³)	0.05 mg/m ³
Lithuania - Occupational Exposure Limits	
IPRV (mg/m ³)	0.5 mg/m ³
OEL chemical category (LT)	Carcinogen, Sensitizer

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Nickel (7440-02-0)	
Poland - Occupational Exposure Limits	
NDS (mg/m ³)	0.25 mg/m ³
Portugal - Occupational Exposure Limits	
OEL TWA (mg/m ³)	1.5 mg/m ³ (inhalable fraction)
OEL chemical category (PT)	A5 - Not Suspected as a Human Carcinogen
Romania - Occupational Exposure Limits	
OEL TWA (mg/m ³)	0.1 mg/m ³
OEL STEL (mg/m ³)	0.5 mg/m ³
OEL chemical category (RO)	Substances likely to cause cancer
Romania - Biological limit values	
Romania - BLV	3 µg/l Parameter: Nickel - Medium: urine - Sampling time: end of shift (SCOEL)
Slovakia - Biological limit values	
Slovakia - BLV	0.03 mg/l Parameter: Nickel - Medium: blood - Sampling time: end of exposure or work shift
Slovenia - Occupational Exposure Limits	
OEL TWA (mg/m ³)	0.5 mg/m ³ (inhalable fraction)
OEL STEL (mg/m ³)	2 mg/m ³ (inhalable fraction)
OEL chemical category (SL)	Category 2
Spain - Occupational Exposure Limits	
VLA-ED (mg/m ³)	1 mg/m ³ (manufacturing, commercialization and use restrictions according to REACH)
OEL chemical category (ES)	Sensitizer
Sweden - Occupational Exposure Limits	
nivågränsvärde (NVG) (mg/m ³)	0.5 mg/m ³ (total dust)
OEL chemical category (SE)	Sensitizer
United Kingdom - Occupational Exposure Limits	
WEL TWA (mg/m ³)	0.5 mg/m ³
WEL STEL (mg/m ³)	1.5 mg/m ³ (calculated)
WEL chemical category	Potential for cutaneous absorption
Norway - Occupational Exposure Limits	
Grenseverdier (AN) (mg/m ³)	0.05 mg/m ³
Grenseverdier (Korttidsverdi) (mg/m ³)	0.15 mg/m ³ (value calculated)
OEL chemical category (NO)	Carcinogen, Potential reproductive hazard, Sensitizing substance
Switzerland - Occupational Exposure Limits	
MAK (mg/m ³)	0.5 mg/m ³ (inhalable dust)
OEL chemical category (CH)	Category C2 carcinogen, Sensitizer
Switzerland - Biological limit values	
Switzerland - BLV	45 µg/l Parameter: Nickel - Medium: urine - Sampling time: end of shift, and after several shifts (for long-term exposures)



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Nickel (7440-02-0)	
USA - ACGIH - Occupational Exposure Limits	
ACGIH TWA (mg/m ³)	1.5 mg/m ³ (inhalable particulate matter)
ACGIH chemical category	Not Suspected as a Human Carcinogen

8.2. Exposure controls

Appropriate engineering controls:

Ensure good ventilation of the work station.

Hand protection:
Protective gloves
Eye protection:
Safety glasses
Skin and body protection:
Wear suitable protective clothing
Respiratory protection:
In case of insufficient ventilation, wear suitable respiratory equipment

Environmental exposure controls:

Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Solid
Colour	: Khaki
Odour	: Odourless
Odour threshold	: No data available
pH	: No data available
Relative evaporation rate (butylacetate=1)	: No data available
Melting point	: No data available
Freezing point	: Not applicable
Boiling point	: No data available
Flash point	: Not applicable
Auto-ignition temperature	: Not applicable
Decomposition temperature	: No data available
Flammability (solid, gas)	: Non flammable.
Vapour pressure	: No data available
Relative vapour density at 20 °C	: No data available
Relative density	: 2.66
Solubility	: No
Log Pow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No
Oxidising properties	: No data available
Explosive limits	: Not applicable

9.2. Other information

No additional information available

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.

10.4. Conditions to avoid

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No deformation, destruction, crushed, disassemble, overcharge, short circuit. Prolonged exposure to damp conditions

10.5. Incompatible materials

Strong acid, Strong bases.

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 toxicological effects

Acute toxicity (oral) : Not classified

Acute toxicity (dermal) : Not classified

Acute toxicity (inhalation) : Not classified

Ethene, homopolymer (9002-88-4)	
LD50 oral rat	> 2000 mg/kg
Ethylene carbonate (96-49-1)	
LD50 oral rat	10 g/kg
Iron (7439-89-6)	
LD50 oral rat	30 g/kg
Nickel (7440-02-0)	
LD50 oral rat	> 9000 mg/kg
LC50 inhalation rat (mg/l)	> 10.2 mg/l (Exposure time: 1 h)
Skin corrosion/irritation	: Not classified
Serious eye damage/irritation	: Not classified
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Styrene-butadiene copolymer (9003-55-8)	
IARC group	3 - Not classifiable
Ethene, homopolymer (9002-88-4)	
IARC group	3 - Not classifiable
Polypropylene (9003-07-0)	
IARC group	3 - Not classifiable
Nickel (7440-02-0)	
IARC group	2B - Possibly carcinogenic to humans

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Reproductive toxicity	: Not classified
STOT-single exposure	: Not classified
STOT-repeated exposure	: Not classified
Aspiration hazard	: Not classified

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.
Acute aquatic toxicity	: Not classified
Chronic aquatic toxicity	: Not classified

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 Daphnia 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])

Nickel (7440-02-0)	
LC50 fish 1	> 100 mg/l (Exposure time: 96 h - Species: Brachydanio rerio)
LC50 fish 2	1.3 mg/l (Exposure time: 96 h - Species: Cyprinus carpio [semi-static])
EC50 Daphnia 1	> 100 mg/l (Exposure time: 48 h - Species: Daphnia magna)
EC50 Daphnia 2	1 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])
EC50 72h algae (1)	0.18 mg/l (Species: Pseudokirchneriella subcapitata)
EC50 96h algae (1)	0.174 - 0.311 mg/l (Species: Pseudokirchneriella subcapitata [static])

12.2. Persistence and degradability

Ethene, homopolymer (9002-88-4)	
Persistence and degradability	No information available.

12.3. Bioaccumulative potential

Ethene, homopolymer (9002-88-4)	
Bioaccumulative potential	Unlikely (1).

12.4. Mobility in soil

Ethene, homopolymer (9002-88-4)	
Ecology - soil	No information available.

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. 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.
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SECTION 14: Transport information

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

ADR	IMDG	IATA	ADN	RID
14.1. UN number				
UN 3481	UN 3481	UN 3481	UN 3481	UN 3481
14.2. UN proper shipping name				
LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT	LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT	LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT	LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT	LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT
Transport document description				
UN 3481 LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT, 9A, (E)	UN 3481 LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT, 9	UN 3481 LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT, 9A	UN 3481 LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT, 9A	UN 3481 LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT, 9A
14.3. Transport hazard class(es)				
9A	9A	9A	9A	9A
				
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

Overland transport

Classification code (ADR) : M4
 Special provisions (ADR) : 188, 230, 310, 348, 360, 376, 377, 387, 670
 Limited quantities (ADR) : 0
 Excepted quantities (ADR) : E0
 Packing instructions (ADR) : P903, P908, P909, P910, LP903, LP904
 Transport category (ADR) : 2
 Tunnel restriction code (ADR) : E
 EAC code : 4W

Transport by sea

Special provisions (IMDG) : 188, 230, 348, 360, 376, 377, 384
 Packing instructions (IMDG) : P903, P908, P909, P910, LP903, LP904
 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)	: 967
PCA max net quantity (IATA)	: 5kg
CAO packing instructions (IATA)	: 967
CAO max net quantity (IATA)	: 35kg
Special provisions (IATA)	: A48, A88, A99, A154, A164, A181, A185, A206, A213
ERG code (IATA)	: 12FZ

Inland waterway transport

Classification code (ADN)	: M4
Special provisions (ADN)	: 188, 230, 310, 348, 360, 376, 377, 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, 360, _376, 377, 387, 670
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. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

Contains no substance on the REACH candidate list

Contains no substance subject to REGULATION (EU) No 649/2012 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 4 July 2012 concerning the export and import of hazardous chemicals.

Substance(s) are not subject to Regulation (EC) No 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC.

15.1.2. National regulations

Germany

Reference to AwSV : Water hazard class (WGK) nwg, Non-hazardous to water (Classification according to AwSV, Annex 1)

12th Ordinance Implementing the Federal Immission Control Act - 12.BImSchV : Is not subject of the 12. BImSchV (Hazardous Incident Ordinance)

Netherlands

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

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

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Borstvoeding : None of the components are listed



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NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid : None of the components are listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling : None of the components are listed

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
 The requirements from the Danish Working Environment Authorities regarding work with carcinogens must be followed during use and disposal

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
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
CLP	Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
DMEL	Derived Minimal Effect level
EC50	Median effective concentration
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
NOEC	No-Observed Effect Concentration
PBT	Persistent Bioaccumulative Toxic
PNEC	Predicted No-Effect Concentration
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS	Safety Data Sheet
STP	Sewage treatment plant

Data sources : Loli. ECHA reference.

Training advice : Normal use of this product shall imply use in accordance with the instructions on the packaging.

Other information : None.

Full text of H- and EUH-statements:	
Carc. 2	Carcinogenicity, Category 2
Flam. Sol. 1	Flammable solids, Category 1
Skin Sens. 1	Skin sensitisation, Category 1
STOT RE 1	Specific target organ toxicity — Repeated exposure, Category 1

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Water-react. 2	Substances and Mixtures which, in contact with water, emit flammable gases, Category 2
H228	Flammable solid.
H261	In contact with water releases flammable gases.
H317	May cause an allergic skin reaction.
H351	Suspected of causing cancer.
H372	Causes damage to organs through prolonged or repeated exposure.

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

ADR	: European Agreement Concerning the International Carriage of Dangerous Goods by Road
IMDG	: International Maritime Dangerous Goods
IATA	: International Air Transport Association
ADN	: European Agreement Concerning the International Carriage of Dangerous Goods by Inland Waterway
RID	: Regulations Concerning the International Carriage of Dangerous Goods by Rail
PBT	: Persistent, Bioaccumulative and Toxic
vPvB	: Very Persistent and Very Bioaccumulative
DNEL	: Derived No Effect Level
PNEC	: Predicted No Effect Concentration
LC50	: Lethal Concentration 50
LD50	: Lethal Dose 50
EC50	: Effective Concentration 50
TWA	: Time Weighted Average
STEL	: Short Term Exposure Limit



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Key literature references and sources for data

ECHA: <http://echa.europa.eu/>

IFA GESTIS: [http://gestis-en.itrust.de/nxt/gateway.dll?f=templates\\$fn=default.htm\\$vid=gestiseng:sdbeng](http://gestis-en.itrust.de/nxt/gateway.dll?f=templates$fn=default.htm$vid=gestiseng:sdbeng)

HSDB: <http://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>

ICSC: <http://www.ilo.org/dyn/icsc/showcard.home>

eChemPortal: http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en

NITE-CHRIP: http://www.nite.go.jp/en/chem/chrip/chrip_search/srhInput

SDS EU (REACH Annex II)

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product

