

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

1.1. Product identifier

Product form	: Article
Product name	: NICKEL CADMIUM BATTERY (NiCd)
Product code	: YU-Lite
Other means of identification	: Cylindrical Nickel Cadmium

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 : Emergency Lighting, Wireless Security, Fire, and other industrial applications

1.2.2. Uses advised against

Restrictions on use : Anything other than the above

1.3. Details of the supplier of the safety data sheet

Only representative:

Europark Fichtenhain B 17
47807 Krefeld
Germany
Telephone: +49 (0) 2151 82095 00
E-mail: info@gs-yuasa.de

Supplier:

GS Yuasa Battery Europe Limited
Unit 22 Rassau Industrial Estate
Ebbw Vale, Gwent
Telephone: +44 (0) 1495 350121
E-mail: tech.info@gs-yuasa.uk

1.4. Emergency telephone number

Emergency number : United Kingdom
GS Yuasa Battery Sales UK Ltd.
Telephone: (+44) 01793-833-555
E-mail: info@gs-yuasa.uk
Language: English language only
Monday - Friday 9:00am – 5:00pm (09:00 - 17:00)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

Not classified

Adverse physicochemical, human health and environmental effects

No additional information available

2.2. Label elements

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

No labelling applicable

2.3. Other hazards

Other hazards which do not result in classification : This product meets the definition of an "article" as defined in Regulation (EC) No. 1907/2006 (REACH), and is therefore out of scope of CLP.

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This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII

This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

Contains no PBT/vPvB substances $\geq 0.1\%$ assessed in accordance with REACH Annex XIII

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]
cadmium oxide (non-pyrophoric) substance listed as REACH Candidate (Cadmium oxide)	CAS-No.: 1306-19-0 EC No.: 215-146-2 EC index No.: 048-002-00-0	20 – 50	Carc. 1B, H350 Muta. 2, H341 Repr. 2, H361fd Acute Tox. 2 (Inhalation), H330 STOT RE 1, H372 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
nickel dihydroxide	CAS-No.: 12054-48-7 EC No.: 235-008-5 EC index No.: 028-008-00-X	10 – 20	Carc. 1A, H350i Repr. 1B, H360D Muta. 2, H341 STOT RE 1, H372 Acute Tox. 4 (Inhalation), H332 (ATE=1.5 mg/l) Acute Tox. 4 (Oral), H302 (ATE=430 mg/kg bodyweight) Skin Irrit. 2, H315 Resp. Sens. 1, H334 Skin Sens. 1, H317 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
Nickel (Ni) substance with a Community workplace exposure limit	CAS-No.: 7440-02-0 EC No.: 231-111-4 EC index No.: 028-002-01-4	3 – 10	Carc. 2, H351 STOT RE 1, H372 Skin Sens. 1, H317 Aquatic Chronic 3, H412
Potassium hydroxide	CAS-No.: 1310-58-3 EC No.: 215-181-3 EC index No.: 019-002-00-8	3 – 10	Met. Corr. 1, H290 Acute Tox. 4 (Oral), H302 (ATE=333 mg/kg) Skin Corr. 1A, H314 Eye Dam. 1, H318
Cadmium substance listed as REACH Candidate substance with a Community workplace exposure limit	CAS-No.: 7440-43-9 EC No.: 231-152-8 EC index No.: 048-002-00-0	3 – 10	Carc. 1B, H350 Muta. 2, H341 Repr. 2, H361fd Acute Tox. 2 (Inhalation), H330 (ATE=0.05 mg/l/4h) STOT RE 1, H372 Aquatic Acute 1, H400 Aquatic Chronic 1, H410

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Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Cobalt oxide	CAS-No.: 1307-96-6 EC No.: 215-154-6 EC index No.: 027-002-00-4	1 – 3	Acute Tox. 3 (Oral), H301 (ATE=100 mg/kg bodyweight) Acute Tox. 2 (Inhalation), H330 (ATE=0.05 mg/l/4h) Resp. Sens. 1B, H334 Skin Sens. 1, H317 Carc. 1B, H350i Repr. 1B, H360Fd Aquatic Acute 1, H400 (M=10) Aquatic Chronic 1, H410 (M=10)
Nickel powder, [particle diameter < 1 mm] substance with a Community workplace exposure limit	CAS-No.: 7440-02-0 EC No.: 231-111-4 EC index No.: 028-002-01-4	< 1	Carc. 2, H351 STOT RE 1, H372 Skin Sens. 1, H317 Aquatic Chronic 3, H412

Specific concentration limits:

Name	Product identifier	Specific concentration limits
Potassium hydroxide	CAS-No.: 1310-58-3 EC No.: 215-181-3 EC index No.: 019-002-00-8	(0.5 ≤C < 2) Eye Irrit. 2, H319 (0.5 ≤C < 2) Skin Irrit. 2, H315 (2 ≤C < 5) Skin Corr. 1B, H314 (5 ≤C ≤ 100) Skin Corr. 1A, H314

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

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general	: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
First-aid measures after inhalation	: If a battery ruptures, move to fresh air in case of accidental inhalation of mist. Remove person to fresh air and keep comfortable for breathing. If symptoms develop, obtain medical attention.
First-aid measures after skin contact	: Remove contaminated clothing immediately. Immediately call a POISON CENTRE or doctor/physician. Wash immediately with lots of water (15 minutes)/shower.
First-aid measures after eye contact	: Rinse immediately with plenty of water (for at least 15 minutes). Ensure that folded skin of eyelids is thoroughly washed with water. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical advice/attention.
First-aid measures after ingestion	: Rinse mouth. Do NOT induce vomiting. Give 100 - 200 ml of water to drink. Immediately call a POISON CENTRE or doctor/physician.

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

Symptoms/effects after inhalation	: Harmful if inhaled. If a battery ruptures, may be harmful or fatal if inhaled in a confined area.
Symptoms/effects after skin contact	: Causes severe burns. Direct contact with internal components of a battery can be severely irritating to the skin and may result in redness, swelling, burns and severe skin damage.
Symptoms/effects after eye contact	: Causes serious eye damage. If a battery ruptures, direct contact with the liquid or exposure to vapours or mists may cause tearing, redness, swelling, corneal damage and irreversible eye damage.
Symptoms/effects after ingestion	: Harmful if swallowed.

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

Treat symptomatically. Contact ophthalmologist immediately.

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SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Use extinguishing media appropriate for surrounding fire. If a battery ruptures, use dry chemical, soda ash, lime, sand or carbon dioxide.

Unsuitable extinguishing media : None known.

5.2. Special hazards arising from the substance or mixture

Fire hazard : Battery may rupture due to pressure buildup when exposed to excessive heat and may be result in the release of corrosive materials.

Hazardous decomposition products in case of fire : Nickel. nickel oxide. Cadmium oxide. cobalt oxide.

5.3. Advice for firefighters

Firefighting instructions : Exercise caution when fighting any chemical fire. Use water spray or fog for cooling exposed containers. Avoid fire-fighting water entering the environment.

Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Protective equipment : Use personal protective equipment as required.

Emergency procedures : Ventilate area. Evacuate unnecessary personnel. Do not get in eyes, on skin, or on clothing.

6.1.2. For emergency responders

Protective equipment : Wear suitable protective clothing and eye or face protection. Where excessive dust may result, wear approved mask. Do not get in eyes, on skin, or on clothing. Do not breathe dust.

Emergency procedures : Ventilate area. Do not get in eyes, on skin, or on clothing.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if large amounts of the product enters sewers or public waters. Do not allow contact with water.

6.3. Methods and material for containment and cleaning up

For containment : Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.

Methods for cleaning up : Small spills: collect all released material in a plastic lined metal container. Take up liquid spill into absorbent material or Neutralize with sodium bicarbonate. Large spills: Take up liquid spill into absorbent material, e.g.: sand/earth. Dispose in a safe manner in accordance with local/national regulations.

6.4. Reference to other sections

SECTION 8: Exposure controls/personal protection. SECTION 13: Disposal considerations.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Do not get in eyes, on skin, or on clothing. Prolonged short circuits will cause high cell temperatures which can cause skin burns. Accidental short circuit for a few seconds will not seriously affect the battery. However, this battery is capable of delivering very high short circuit currents.

Ensure that when handling and transporting new or spent cells/packs adequate provision is made to prevent short circuit of live conductors. Take measures to avoid storage of product next to or near flammable materials or propellant substances.

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Hygiene measures : Do not eat, drink or smoke when using this product. Handle in accordance with good industrial hygiene and safety practice. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Take precautionary measures against static discharge. Provide local exhaust or general room ventilation.
Storage conditions : Store in a dry, cool and well-ventilated place. Store away from direct sunlight or other heat sources.
Incompatible materials : None known.

7.3. Specific end use(s)

Emergency Lighting, Wireless Security, Fire, and other industrial applications.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1 National occupational exposure and biological limit values

nickel dihydroxide (12054-48-7)	
EU - Indicative Occupational Exposure Limit (IOEL)	
Local name	Nickel hydroxide
Notes	(Year of adoption 2011)
Regulatory reference	SCOEL Recommendations
EU - Biological Limit Value (BLV)	
Local name	Nickel hydroxide
Regulatory reference	SCOEL List of recommended health-based BLVs and BGVs
cadmium oxide (non-pyrophoric) (1306-19-0)	
United Kingdom - Occupational Exposure Limits	
Local name	Cadmium oxide
WEL TWA (mg/m ³)	0.025 mg/m ³ fume (as Cd)
WEL STEL (mg/m ³)	0.05 mg/m ³ fume (as Cd)
Remark (WEL)	Carc (Capable of causing cancer and/or heritable genetic damage)
Regulatory reference	EH40/2005 (Fourth edition, 2020). HSE
Cadmium (7440-43-9)	
EU - Indicative Occupational Exposure Limit (IOEL)	
Local name	Cadmium
IOELV TWA (mg/m ³)	0.004 mg/m ³ (respirable fraction)
Notes	SCOEL Recommendations (2010)
EU - Binding Occupational Exposure Limit (BOEL)	
Local name	Cadmium and its inorganic compounds
BOEL TWA	0.001 mg/m ³ (Inhalable fraction) 0.004 mg/m ³ (Inhalable fraction. Respirable fraction in those Member States that implement, on the date of the entry into force of this Directive, a biomonitoring system with a biological limit value not exceeding 0,002 mg Cd/g creatinine in urine. Limit value until 11 July 2027)

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Cadmium (7440-43-9)	
Regulatory reference	DIRECTIVE (EU) 2019/983 (amending Directive 2004/37/EC)
EU - Biological Limit Value (BLV)	
Local name	Cadmium
BLV	2 µg/g creatinine Parameter: Cd - Medium: urine
Regulatory reference	SCOEL List of recommended health-based BLVs and BGVs
United Kingdom - Occupational Exposure Limits	
Local name	Cadmium
WEL TWA (mg/m ³)	0.025 mg/m ³ and cadmium compounds except cadmium oxide fume, cadmium sulphide and cadmium sulphide pigments (as Cd)
Remark (WEL)	Carc (Capable of causing cancer and/or heritable genetic damage. See paragraphs 49–51) (cadmium metal, cadmium chloride, fluoride and sulphate)
Regulatory reference	EH40/2005 (Fourth edition, 2020). HSE
Potassium hydroxide (1310-58-3)	
United Kingdom - Occupational Exposure Limits	
Local name	Potassium hydroxide
WEL STEL (mg/m ³)	2 mg/m ³
Regulatory reference	EH40/2005 (Fourth edition, 2020). HSE
Nickel (Ni) (7440-02-0)	
EU - Indicative Occupational Exposure Limit (IOEL)	
Local name	Nickel metal
IOELV TWA (mg/m ³)	0.005 mg/m ³ (respirable fraction) 0.01 mg/m ³ (inhalable fraction)
Notes	(Year of adoption 2011)
Regulatory reference	SCOEL Recommendations
EU - Biological Limit Value (BLV)	
Local name	Nickel and nickel compounds
Regulatory reference	SCOEL List of recommended health-based BLVs and BGVs
United Kingdom - Occupational Exposure Limits	
Local name	Nickel
WEL TWA (mg/m ³)	0.1 mg/m ³ and its inorganic compounds (except nickel tetracarbonyl): water-soluble nickel compounds (as Ni) 0.5 mg/m ³ and its inorganic compounds (except nickel tetracarbonyl): nickel and water insoluble nickel compounds (as Ni)
Remark (WEL)	Sk (Can be absorbed through the skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity), Carc (Capable of causing cancer and/or heritable genetic damage (nickel oxides and sulphides)), Sen (Capable of causing occupational asthma (nickel sulphate))
Regulatory reference	EH40/2005 (Fourth edition, 2020). HSE
Nickel powder, [particle diameter < 1 mm] (7440-02-0)	
EU - Indicative Occupational Exposure Limit (IOEL)	
Local name	Nickel metal

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Nickel powder, [particle diameter < 1 mm] (7440-02-0)	
IOELV TWA (mg/m ³)	0.005 mg/m ³ (respirable fraction) 0.01 mg/m ³ (inhalable fraction)
Notes	(Year of adoption 2011)
Regulatory reference	SCOEL Recommendations
EU - Biological Limit Value (BLV)	
Local name	Nickel and nickel compounds
Regulatory reference	SCOEL List of recommended health-based BLVs and BGVs
United Kingdom - Occupational Exposure Limits	
Local name	Nickel
WEL TWA (mg/m ³)	0.1 mg/m ³ and its inorganic compounds (except nickel tetracarbonyl): water-soluble nickel compounds (as Ni) 0.5 mg/m ³ and its inorganic compounds (except nickel tetracarbonyl): nickel and water insoluble nickel compounds (as Ni)
Remark (WEL)	Sk (Can be absorbed through the skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity), Carc (Capable of causing cancer and/or heritable genetic damage (nickel oxides and sulphides)), Sen (Capable of causing occupational asthma (nickel sulphate))
Regulatory reference	EH40/2005 (Fourth edition, 2020). HSE

8.1.2. Recommended monitoring procedures

No additional information available

8.1.3. Air contaminants formed

No additional information available

8.1.4. DNEL and PNEC

No additional information available

8.1.5. Control banding

No additional information available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Appropriate engineering controls:

Emergency safety showers should be available in the immediate vicinity of any potential exposure. Provide adequate ventilation to minimise dust concentrations.

8.2.2. Personal protection equipment

Personal protective equipment:

Avoid all unnecessary exposure.

8.2.2.1. Eye and face protection

Eye protection:

Wear goggles or safety glasses with side shields if contact with the eyes is possible

8.2.2.2. Skin protection

Skin and body protection:

Impervious clothing. EN 13034. Large quantities: EN 14605. Corrosionproof suit

Hand protection:

Not required for normal conditions of use. Use neoprene or natural rubber gloves if handling an open or leaking battery.

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8.2.2.3. Respiratory protection

Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment. Wear a respirator conforming to EN140 with Type A/P2 filter or better

8.2.2.4. Thermal hazards

Thermal hazard protection:

Not required for normal conditions of use.

8.2.3. Environmental exposure controls

Environmental exposure controls:

Avoid release to the environment. Do not allow to enter drains or water courses.

Other information:

Do not eat, drink or smoke during use. Handle in accordance with good industrial hygiene and safety procedures. Contaminated work clothing should not be allowed out of the workplace. Keep away from food, drink and animal feeding stuffs.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

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

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Stable under recommended handling and storage conditions (see section 7).

10.2. Chemical stability

Stable under recommended handling and storage conditions (see section 7).

10.3. Possibility of hazardous reactions

Hazardous polymerisation will not occur.

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10.4. Conditions to avoid

Overcharging. Remove all sources of ignition. If battery ruptures, avoid contact with organic materials and alkaline materials. mechanical impacts.

10.5. Incompatible materials

None known.

10.6. Hazardous decomposition products

Nickel. nickel oxide. Cadmium oxide. cobalt oxide.

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.

nickel dihydroxide (12054-48-7)

LD50 oral, rat	430 mg/kg bodyweight
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Cobalt oxide (1307-96-6)

LD50 oral, rat	202 mg/kg bodyweight (OECD 401 method)
LC50 inhalation, rat (mg/l)	0.06 mg/l - 4 Hours, dust (OECD 436 method)

cadmium oxide (non-pyrophoric) (1306-19-0)

LD50 oral, rat	2330 mg/kg bodyweight
LC50 inhalation, rat (mg/l)	56 mg/m ³ air

Potassium hydroxide (1310-58-3)

LD50 oral, rat	333 mg/kg (OECD 425 method)
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Nickel (Ni) (7440-02-0)

LD50 oral, rat	> 9000 mg/kg bodyweight
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Nickel powder, [particle diameter < 1 mm] (7440-02-0)

LD50 oral, rat	> 9000 mg/kg bodyweight
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Skin corrosion/irritation : Not classified.
Serious eye damage/irritation : Not classified
Respiratory or skin sensitisation : Not classified. Not classified.
Germ cell mutagenicity : Not classified.
Carcinogenicity : Not classified.

Nickel (Ni) (7440-02-0)

IARC group	2B - Possibly carcinogenic to humans
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Nickel powder, [particle diameter < 1 mm] (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.

nickel dihydroxide (12054-48-7)

STOT-repeated exposure	Causes damage to organs through prolonged or repeated exposure.
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cadmium oxide (non-pyrophoric) (1306-19-0)	
STOT-repeated exposure	Causes damage to organs through prolonged or repeated exposure.
Cadmium (7440-43-9)	
STOT-repeated exposure	Causes damage to organs through prolonged or repeated exposure.
Nickel (Ni) (7440-02-0)	
STOT-repeated exposure	Causes damage to organs through prolonged or repeated exposure.
Nickel powder, [particle diameter < 1 mm] (7440-02-0)	
STOT-repeated exposure	Causes damage to organs through prolonged or repeated exposure.

Aspiration hazard : Not classified

SECTION 12: Ecological information

12.1. Toxicity

Hazardous to the aquatic environment, short-term (acute) : Not classified.

Hazardous to the aquatic environment, long-term (chronic) : Not classified.

nickel dihydroxide (12054-48-7)	
EC50 Daphnia	13 µg/l - 48 Hours (Ceriodaphnia dubia), (Read-across, nickel dichloride)
EC50 72h - Algae [1]	81.5 – 148 µg/L - 48 Hours (Ceriodaphnia dubia), (Read-across, nickel dichloride)
NOEC chronic fish	108.9 µg/L - 30 days (Pimephales promelas), (Read-across, Nickel sulphate)
NOEC chronic crustacea	0.061 mg/l - 36 days (Americamysis bahia), (Read-across, Nickel)
Cobalt oxide (1307-96-6)	
LC50 fish	1.512 mg/l - 96 Hours (Oncorhynchus mykiss), (Read-across, Cobalt dichloride hexahydrate)
EC50 Daphnia	0.61 mg/l - 48 Hours (Ceriodaphnia dubia), (Read-across)
EC50 - Crustacea [2]	2.32 mg/l - 48 Hours (Dendraster excentricus), (Read-across)
EC50 - Other aquatic organisms [1]	52 µg/L - 7 days (Lemna minor, reproduction), (Read-across, Cobalt dichloride hexahydrate), (OECD 221 method)
EC50 72h - Algae [1]	24.1 µg/L - 7 days (Champia parvula), (Read-across, Cobalt dichloride hexahydrate)
ErC50 algae	197 µg/L - 72 Hours (Pseudokirchneriella subcapitata), (Read-across, Cobalt dichloride hexahydrate)
EC10, fish, Chronic	351.4 µg/l (34 days, Pimephales promelas, Biomass (Read-across, Cobalt dichloride hexahydrate))
EC10, fish, Chronic	31,802 µg/l (28 days, Cyprinodon variegatus, Biomass (Read-across, Cobalt dichloride hexahydrate))
EC10, aquatic invertebrates, Chronic	7.55 µg/l (28 Hours, Hyalella azteca, growth (Read-across, Cobalt dichloride hexahydrate))
EC10, aquatic invertebrates, Chronic	206.4 µg/l (113 days, Neanthes arenaceodentata, juvenile emergence (Read-across, Cobalt dichloride hexahydrate))
EC10, algae	66.9 µg/l (72 Hours, Pseudokirchneriella subcapitata, Yield (Read-across, Cobalt dichloride hexahydrate))
EC10, algae	1.23 µg/l (7 days, Champia parvula, cystocarp development (Read-across, Cobalt dichloride hexahydrate))

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Cobalt oxide (1307-96-6)	
EC10, aquatic plants	10.4 µg/l (7 days, Lemna minor, reproduction, (Read-across, Cobalt dichloride hexahydrate), (OECD 221 method))
cadmium oxide (non-pyrophoric) (1306-19-0)	
LC50 fish	1500 µg/l - 96 Hours (Pimephales promelas), (Read-across, cadmium chloride)
EC50 Daphnia	1900 - 24 Hours (Daphnia magna), (Read-across, cadmium chloride)
EC50 72h - Algae [1]	23 µg/L - 72 Hours (Pseudokirchneriella subcapitata), (Read-across, cadmium chloride)
NOEC chronic fish	20 µg/L - 8 weeks (Daphnia magna), (Read-across, cadmium chloride)
NOEC chronic crustacea	1000 µg/L - 21 days (Ctenodrilus serratus), (Read-across, cadmium chloride)
NOEC chronic algae	2.4 µg/L - 3 days (Pseudokirchneriella subcapitata), (Read-across, cadmium chloride)
Nickel (Ni) (7440-02-0)	
LC50 fish	15.3 mg/l - 96 Hours (Oncorhynchus mykiss)
Nickel powder, [particle diameter < 1 mm] (7440-02-0)	
LC50 fish	15.3 mg/l - 96 Hours (Oncorhynchus mykiss)
12.2. Persistence and degradability	
Cobalt oxide (1307-96-6)	
Persistence and degradability	Not relevant for inorganic substances.
cadmium oxide (non-pyrophoric) (1306-19-0)	
Persistence and degradability	Not relevant for inorganic substances.
Potassium hydroxide (1310-58-3)	
Persistence and degradability	Not relevant for inorganic substances.
Nickel (Ni) (7440-02-0)	
Persistence and degradability	Not relevant for inorganic substances.
Nickel powder, [particle diameter < 1 mm] (7440-02-0)	
Persistence and degradability	Not relevant for inorganic substances.
12.3. Bioaccumulative potential	
Cobalt oxide (1307-96-6)	
BCF - Fish [1]	> 100 - 5000 (Read-across)
Potassium hydroxide (1310-58-3)	
Bioaccumulative potential	Low bioaccumulation potential.
Nickel (Ni) (7440-02-0)	
BCF - Fish [1]	45
Nickel powder, [particle diameter < 1 mm] (7440-02-0)	
BCF - Fish [1]	45

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12.4. Mobility in soil

Cobalt oxide (1307-96-6)

Ecology - soil	Slightly soluble in: Water.
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Potassium hydroxide (1310-58-3)

Mobility in soil	Not expected to adsorb to soil
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12.5. Results of PBT and vPvB assessment

NICKEL CADMIUM BATTERY (NiCd)

This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII

This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

Component

cadmium oxide (non-pyrophoric) (1306-19-0)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII
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Cadmium (7440-43-9)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII
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12.6. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.
Ensure that when handling and transporting new or spent cells/packs for disposal, adequate provision is made to prevent short circuit of live conductors. Take measures to avoid storage of product next to or near flammable materials or propellant substances.

SECTION 14: Transport information

In accordance with ADR / IMDG / IATA

14.1 UN number

UN-No. (ADR)	: Not applicable
UN-No. (IMDG)	: Not applicable
UN-No. (IATA)	: Not applicable

14.2. UN proper shipping name

Proper Shipping Name	: Not applicable
Proper Shipping Name (IMDG)	: Not applicable
Proper Shipping Name (IATA)	: Not applicable

14.3. Transport hazard class(es)

ADR
Transport hazard class(es) (ADR) : Not applicable

IMDG
Transport hazard class(es) (IMDG) : Not applicable

IATA
Transport hazard class(es) (IATA) : Not applicable

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14.4. Packing group

Packing group	: Not applicable
Packing group (IMDG)	: Not applicable
Packing group (IATA)	: Not applicable

14.5. Environmental hazards

Dangerous for the environment	: No
Marine pollutant	: No
Other information	: No supplementary information available

14.6. Special precautions for user

Overland transport

Not applicable

Transport by sea

Not applicable

Air transport

Not applicable

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

REACH Annex XVII (Restriction List)

Not applicable.

REACH Annex XIV (Authorisation List)

Not applicable.

REACH Candidate List (SVHC)

Contains one substance (s) from the list of candidate substances of REACH: Cadmium oxide (EC 215-146-2, CAS 1306-19-0), Cadmium (EC 231-152-8, CAS 7440-43-9)

PIC Regulation (Prior Informed Consent)

Substances 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: cadmium oxide (non-pyrophoric) (1306-19-0), cadmium (non-pyrophoric) (7440-43-9)

POP Regulation (Persistent Organic Pollutants)

Contains no substance subject to Regulation (EU) No 2019/1021 of the European Parliament and of the Council of 20 June 2019 on persistent organic pollutants

Ozone Regulation (1005/2009)

Contains no substance subject to REGULATION (EU) No 1005/2009 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 September 2009 on substances that deplete the ozone layer.

Explosives Precursors Regulation (2019/1148)

Contains no substance subject to Regulation (EU) 2019/1148 of the European Parliament and of the Council of 20 June 2019 on the marketing and use of explosives precursors.

Drug Precursors Regulation (273/2004)

Contains no substance(s) listed on the Drug Precursors list (Regulation EC 273/2004 on drug precursors)

15.1.2. National regulations

No additional information available

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15.2. Chemical safety assessment

No additional information available

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
CAS-No.	Chemical Abstract Service number
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
BLV	Biological limit value
CLP	Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
DMEL	Derived Minimal Effect level
DNEL	Derived-No Effect Level
EC No.	European Community number
EC50	Median effective concentration
ED	Endocrine disrupting properties
EN	European Standard
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Median lethal concentration
IOELV	Indicative Occupational Exposure Limit Value
LD50	Median lethal dose
LOAEL	Lowest Observed Adverse Effect Level
NOAEC	No-Observed Adverse Effect Concentration
NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration
OECD	Organisation for Economic Co-operation and Development
OEL	Occupational Exposure Limit
PBT	Persistent Bioaccumulative Toxic
PNEC	Predicted No-Effect Concentration
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
WGK	Water Hazard Class
vPvB	Very Persistent and Very Bioaccumulative

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Data sources

: REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

Full text of H- and EUH-statements:	
Acute Tox. 2 (Inhalation)	Acute toxicity (inhal.), Category 2
Acute Tox. 3 (Oral)	Acute toxicity (oral), Category 3
Acute Tox. 4 (Inhalation)	Acute toxicity (inhal.), Category 4
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Aquatic Acute 1	Hazardous to the aquatic environment – Acute Hazard, Category 1
Aquatic Chronic 1	Hazardous to the aquatic environment – Chronic Hazard, Category 1
Aquatic Chronic 3	Hazardous to the aquatic environment – Chronic Hazard, Category 3
Carc. 1A	Carcinogenicity (inhalation) Category 1A
Carc. 1B	Carcinogenicity (inhalation) Category 1B
Carc. 2	Carcinogenicity, Category 2
Eye Dam. 1	Serious eye damage/eye irritation, Category 1
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
H290	May be corrosive to metals.
H301	Toxic if swallowed.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H330	Fatal if inhaled.
H332	Harmful if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H341	Suspected of causing genetic defects.
H350	May cause cancer.
H350i	May cause cancer by inhalation.
H351	Suspected of causing cancer.
H360D	May damage the unborn child.
H360Fd	May damage fertility. Suspected of damaging the unborn child.
H361fd	Suspected of damaging fertility. Suspected of damaging the unborn child.
H372	Causes damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.
Met. Corr. 1	Corrosive to metals, Category 1
Muta. 2	Germ cell mutagenicity, Category 2

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Full text of H- and EUH-statements:	
Repr. 1B	Reproductive toxicity, Category 1B
Repr. 2	Reproductive toxicity, Category 2
Resp. Sens. 1	Respiratory sensitisation, Category 1
Resp. Sens. 1B	Respiratory sensitisation, Category 1B
Skin Corr. 1A	Skin corrosion/irritation, Category 1, Sub-Category 1A
Skin Corr. 1B	Skin corrosion/irritation, Category 1, Sub-Category 1B
Skin Irrit. 2	Skin corrosion/irritation, Category 2
Skin Sens. 1	Skin sensitisation, Category 1
STOT RE 1	Specific target organ toxicity – Repeated exposure, Category 1

Safety Data Sheet (SDS), EU

- BATTERY WARNING: KEEP OUT OF REACH OF CHILDREN
 - Store spare batteries securely
 - Dispose of used batteries immediately and safely; and
 - If you think batteries might have been swallowed or place inside any part of the body, seek immediate medical attention
-
- All batteries are supplied with only a residual charge and should be charged at the continuous charge rate before use - they are not pre-charged for use
 - Do not mix different types of battery
 - Always install the batteries correctly as per instruction
 - Ensure that the contact points are clean and conductive

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.