SAFETY DATA SHEET

HCS-2012 APPENDIX D TO §1910.1200

Version 1 **Issue date** 28-Jun-2017
Product name Ni-MH Battery **Revision date** 28-Jun-2017

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product identifier

Product name	Ni-MH Battery
Chemical Name	Nickel and Metal Hydride

Other means of identification

Model	AA600
Voltage	1.2 V
Watt-Hour	0.72 WH
Battery Weight	15.4 g

Recommended use of the chemical and restrictions on use

Recommended use	Power supply.
Uses advised against	No information available.

Details of the supplier of the safety data sheet

Supplier	Guangzhou Great Power Energy & Technology Co., Ltd.
Address	No.912,West Village Segment,Shi Liang Road,Shawan Town,Panyu Guangdong Province P.R.China
Postal Code	511483
Phone	0086-20-39196828
FAX	0086-20-39196828
E-mail	lcni@greatpower.net

Emergency telephone number

+86-20-39196828

2. HAZARDS IDENTIFICATION

GHS classification

The batteries are not hazardous when used according to the instructions of manufacturer under normal conditions. In case of abuse, there's risk of rupture,fire,heat,leakage of internal components,which could cause casualty loss, Abuses include but not limited to the following cases: charged for long time, short circuited,put into fire, whacked with hard object, punctured with acute object, crushed, and broken.
Skin corrosion/irritation, Category 2
Serious eye damage/eye irritation, Category 2
Respiratory sensitisation, Category 1
Skin sensitisation, Category 1
Germ cell mutagenicity, Category 2
Carcinogenicity, Category 1A
Reproductive toxicity, Category 1B
Hazardous to the aquatic environment — Acute Hazard, Category 1
Hazardous to the aquatic environment — Chronic Hazard, Category 1

Label elements

Symbols/Pictograms

Signal word Danger

Hazard statements	Causes skin irritation. May cause an allergic skin reaction. Causes serious eye irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled. Suspected of causing genetic defects. May cause cancer. May damage fertility or the unborn child. Very toxic to aquatic life. Very toxic to aquatic life with long lasting effects.
Precautionary statements	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid breathing dust/fume/gas/mist/vapours/spray. Wash hands, forearms and face thoroughly after handling. Contaminated work clothing must not be allowed out of the workplace Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection. [In case of inadequate ventilation] wear respiratory protection. If on skin: Wash with plenty of water/… If inhaled: If breathing is difficult, remove person to fresh air and keep comfortable for breathing IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If exposed or concerned: Get medical advice/attention. Specific treatment (see supplemental first aid instruction on this label) If skin irritation occurs: Get medical advice/attention. If skin irritation or rash occurs: Get medical advice/attention. If eye irritation persists: Get medical advice/attention. If experiencing respiratory symptoms: Call a poison center/doctor/… Take off contaminated clothing and wash it before reuse. Wash contaminated clothing before reuse. Collect spillage. Store locked up. Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation

Hazards not otherwise classified (HNOC)

Batteries may vent, ignite and produce sparks when subjected to high temperature, when damaged or abused (e.g., mechanical damage); may burn rapidly with flare-burning effect; may ignite other batteries in clothes proximity.

This product should not present a health hazard when used under reasonable conditions. If contact with the internal components of the battery may be irritating to skin, eyes and mucous membranes. Fire will produce irritating, corrosive and/or toxic gases. Burning batteries may produce toxic hydrogen fluoride gas. Fumes may cause dizziness or suffocation.

If the battery is discarded into the environment, the harmful contents inside may be dangerous.

Unknown acute toxicity

No information available.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature Substance

Chemical name	CAS No	Weight-%
Nickel	7440-02-0	43.9
Nickel hydroxide	12054-48-7	29.2
Polypropylene	9003-07-0	7.1
Iron	7439-89-6	6.7
Cobalt	7440-48-4	6.3

Manganese	7439-96-5	3.2
Cobalt(II) oxide	1307-96-6	2.1
Potassium hydroxide	1310-58-3	0.7
Aluminum	7429-90-5	0.7
Lithium hydroxide	1310-65-2	0.1

4. FIRST AID MEASURES

Description of first aid measures

General advice — No effect under routine handling and use. If exposure to internal materials within cells due to damaged outer metal casing, the following actions are recommended.

Inhalation — If potential for exposure to fumes or dusts occurs, remove immediately to fresh air and seek medical attention.

Skin Contact — In case of skin contact with contents of battery, flush immediately with water. If irritation persists, get medical help.

Eye contact — For eye contact, flush with copious amounts of water for 15 minutes. Do not inhale leaked material. If irritation persists, get medical help.

Ingestion — Do not induce vomiting. If the injured is fully conscious: wash mouth out with water, then give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately.

Most important symptoms and effects, both acute and delayed

No information available.

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Extinguishing media

Suitable extinguishing media — Any class of extinguishing medium may be used on the batteries or their packing material.

Unsuitable extinguishing media — No information available.

Specific hazards arising from the chemical

Exposure to temperatures of above 212°F can cause venting of the liquid electrolyte. Internal shorting could also cause venting of the electrolyte. There is potential for exposure to iron, nickel, cobalt, rare earth metals (cerium, lanthanum neodymium, and praseodymium), manganese, and aluminum fumes during fire; use self-contained breathing apparatus.

Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

No action shall be taken involving any personal risk or without suitable training. Review Section 5 and Section 7 sections before proceeding with clean-up. Use proper personal protective equipment as indicated in Section 8. Appropriate ventilation.

Evacuate and ventilate spill area. Remove all sources of ignition or heat. Stop leak if safe to do so. Move containers from spill area. Keep unnecessary and unprotected personnel from entering. Review Section 5 and Section 7 sections before proceeding with clean-up.

Methods and material for containment and cleaning up

Avoid dispersal of spilled material and runoff and contact with soil, water ways, drains and sewers.

Remove all sources of ignition or heat. Stop leak if safe to do so. Move containers from spill area. Carefully collect undamaged batteries in a clean, dry and appropriate container for reuse or disposal. If electrolyte leaks or spills, collect all released material in an appropriate container before proper disposal.

7. HANDLING AND STORAGE

Precautions for safe handling

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. Prolonged short circuits will cause high cell temperatures which can cause skin burns. Sources of short circuits include jumbled batteries in bulk containers, metal jewelry, and metal covered tables or metal belts used for assembly of batteries into devices.

If soldering or welding to the battery is required, use of tabbed batteries is recommended. If this cannot be done, consult your Great Power Battery Company representative for proper precautions to prevent seal damage or short circuit.

Do not open battery. The negative electrode material may be pyrophoric. Should an individual cell from a battery become disassembled, spontaneous combustion of the negative electrode is possible. This is much more likely to happen if the electrode is removed from its metal container. Here can be a delay between exposure to air and spontaneous combustion.

Conditions for safe storage, including any incompatibilities

Store in a cool and dry area, but prevent condensation on cell or battery terminals. High temperature may damage the performance of the battery. Protect from physical damage and short circuits. To avoid risk of fire or explosion, keep sparks and other sources of ignition away from the battery. Do not allow metal objects to simultaneously contact both positive and negative terminal of batteries. Do not stack battery directly on another battery. Do not store batteries on electrically conductive surfaces.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH	Denmark	European Union
Nickel (CAS #: 7440-02-0)	TWA: 1.5 mg/m^3 inhalable fraction	TWA: 1 mg/m^3 (vacated) TWA: 1 mg/m^3	IDLH: 10 mg/m^3 IDLH: 10 mg/m^3 Ni TWA: 0.015 mg/m^3 TWA: 0.015 mg/m^3 except Nickel carbonyl Ni	TWA: 0.05 mg/m^3	-
Nickel hydroxide (CAS #: 12054-48-7)	TWA: 0.2 mg/m^3 Ni inhalable fraction	TWA: 1 mg/m^3 Ni (vacated) TWA: 1 mg/m^3 Ni	IDLH: 10 mg/m^3 Ni TWA: 0.015 mg/m^3 except Nickel carbonyl Ni	TWA: 0.05 mg/m^3	-
Cobalt (CAS #: 7440-48-4)	TWA: 0.02 mg/m^3 TWA: 0.02 mg/m^3 Co	TWA: 0.1 mg/m^3 dust and fume (vacated) TWA: 0.05 mg/m^3 dust and fume	IDLH: 20 mg/m^3 dust and fume TWA: 0.05 mg/m^3 dust and fume	TWA: 0.01 mg/m^3	-
Manganese (CAS #: 7439-96-5)	TWA: 0.02 mg/m^3 respirable fraction TWA: 0.1 mg/m^3 inhalable fraction TWA: 0.02 mg/m^3 Mn TWA: 0.1 mg/m^3 Mn	-	IDLH: 500 mg/m^3 IDLH: 500 mg/m^3 Mn TWA: 1 mg/m^3 fume TWA: 1 mg/m^3 Mn STEL: 3 mg/m^3 STEL: 3 mg/m^3 Mn	TWA: 0.2 mg/m^3 TWA: 0.1 mg/m^3	-
Cobalt(II) oxide (CAS #: 1307-96-6)	TWA: 0.02 mg/m^3 Co	-	-	TWA: 0.01 mg/m^3	-
Potassium hydroxide (CAS #: 1310-58-3)	Ceiling: 2 mg/m^3	(vacated) Ceiling: 2 mg/m^3	Ceiling: 2 mg/m^3	Ceiling: 2 mg/m^3	-

Aluminum (CAS #: 7429-90-5)	TWA: 1 mg/m^3 respirable fraction	TWA: 15 mg/m^3 total dust TWA: 5 mg/m^3 respirable fraction (vacated) TWA: 15 mg/m^3 total dust (vacated) TWA: 5 mg/m^3 respirable fraction (vacated) TWA: 5 mg/m^3 Al Aluminum	TWA: 10 mg/m^3 total dust TWA: 5 mg/m^3 respirable dust TWA: 5 mg/m^3 Al	TWA: 5 mg/m^3 TWA: 2 mg/m^3	-

Chemical name	Latvia	France	Finland	Germany	Italy
Nickel (CAS #: 7440-02-0)	TWA: 0.05 mg/m^3	TWA: 1 mg/m^3	TWA: 1 mg/m^3 TWA: 0.1 mg/m^3	Skin	-
Nickel hydroxide (CAS #: 12054-48-7)	TWA: 0.05 mg/m^3	TWA: 1 mg/m^3	TWA: 0.1 mg/m^3	Skin	-
Polypropylene (CAS #: 9003-07-0)	TWA: 5 mg/m^3	-	-	-	-
Cobalt (CAS #: 7440-48-4)	TWA: 0.5 mg/m^3	-	TWA: 0.02 mg/m^3	Skin	-
Manganese (CAS #: 7439-96-5)		TWA: 1 mg/m^3	TWA: 0.2 mg/m^3 TWA: 0.02 mg/m^3	TWA: 0.2 mg/m^3 TWA: 0.02 mg/m^3 Ceiling / Peak: 1.6 mg/m^3 Ceiling / Peak: 0.16 mg/m^3 TWA: 0.5 mg/m^3	-
Cobalt(II) oxide (CAS #: 1307-96-6)	TWA: 0.5 mg/m^3	-	TWA: 0.02 mg/m^3	Skin	-
Potassium hydroxide (CAS #: 1310-58-3)	-	STEL: 2 mg/m^3	STEL: 2 mg/m^3 Ceiling: 2 mg/m^3	-	-
Aluminum (CAS #: 7429-90-5)	TWA: 2 mg/m^3	TWA: 10 mg/m^3 TWA: 5 mg/m^3	TWA: 1.5 mg/m^3	TWA: 4 mg/m^3 TWA: 1.5 mg/m^3	-

Chemical name	Poland	Portugal	Spain	Switzerland	Netherlands
Nickel (CAS #: 7440-02-0)	TWA: 0.25 mg/m^3	TWA: 1.5 mg/m^3	TWA: 1 mg/m^3	TWA: 0.5 mg/m^3	-
Nickel hydroxide (CAS #: 12054-48-7)	TWA: 0.25 mg/m^3	TWA: 0.2 mg/m^3	TWA: 0.2 mg/m^3	TWA: 0.05 mg/m^3	-
Cobalt (CAS #: 7440-48-4)	STEL: 0.2 mg/m^3 TWA: 0.02 mg/m^3	TWA: 0.02 mg/m^3	TWA: 0.02 mg/m^3	Skin TWA: 0.05 mg/m^3	TWA: 0.02 mg/m^3
Cobalt(II) oxide (CAS #: 1307-96-6)	TWA: 0.02 mg/m^3	TWA: 0.02 mg/m^3	TWA: 0.02 mg/m^3	Skin TWA: 0.05 mg/m^3	-
Potassium hydroxide (CAS #: 1310-58-3)	STEL: 1 mg/m^3 TWA: 0.5 mg/m^3	Ceiling: 2 mg/m^3	STEL: 2 mg/m^3	TWA: 2 mg/m^3	-
Aluminum (CAS #: 7429-90-5)	TWA: 2.5 mg/m^3 TWA: 1.2 mg/m^3	TWA: 10 mg/m^3 TWA: 5 mg/m^3	TWA: 10 mg/m^3 TWA: 5 mg/m^3	TWA: 3 mg/m^3	-

Chemical name	Norway	United Kingdom	Australia	Austria	Belgium
Nickel (CAS #: 7440-02-0)	TWA: 0.05 mg/m^3 STEL: 0.05 mg/m^3	STEL: 1.5 mg/m^3 TWA: 0.5 mg/m^3	1 mg/m^3	-	-
Nickel hydroxide (CAS #: 12054-48-7)	TWA: 0.05 mg/m^3 STEL: 0.05 mg/m^3	TWA: 0.5 mg/m^3	-	-	-
Cobalt (CAS #: 7440-48-4)	TWA: 0.02 mg/m^3 STEL: 0.06 mg/m^3 STEL: 0.02 mg/m^3	STEL: 0.3 mg/m^3 TWA: 0.1 mg/m^3	0.05 mg/m^3	Skin	-
Manganese (CAS #: 7439-96-5)	TWA: 1 mg/m^3 TWA: 0.1 mg/m^3 STEL: 1 ppm STEL: 0.1 mg/m^3	-	1 mg/m^3 3 mg/m^3 STEL	STEL 2 mg/m^3 TWA: 0.5 mg/m^3	-
Cobalt(II) oxide (CAS #: 1307-96-6)	TWA: 0.02 mg/m^3 STEL: 0.02 mg/m^3 STEL: 0.06 mg/m^3	TWA: 0.1 mg/m^3	-	Skin	-
Potassium hydroxide (CAS #: 1310-58-3)	Ceiling: 2 mg/m^3	STEL: 2 mg/m^3	2 mg/m^3 Peak	TWA: 2 mg/m^3	-
Aluminum (CAS #: 7429-90-5)	TWA: 5 mg/m^3 STEL: 5 mg/m^3	STEL: 30 mg/m^3 STEL: 12 mg/m^3 TWA: 10 mg/m^3 TWA: 4 mg/m^3	10 mg/m^3 5 mg/m^3	STEL 20 mg/m^3 TWA: 10 mg/m^3	-

Appropriate engineering controls

Showers. Eyewash stations. Use with local exhaust ventilation.

Individual protection measures, such as personal protective equipment

Respiratory protection	If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.
Hand protection	Wear protective gloves.
Eye/face protection	Wear safety glasses with side shields (or goggles).
Skin and body protection	Wear suitable protective clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	Solid
Color	No information available
Odor	Odorless
Odor Threshold	Not determined
pH	Not determined
Melting point/freezing point	Not determined
Boiling point / boiling range	Not determined
Flash point	Not applicable
Evaporation rate	Not determined
Flammability (solid)	Not flammable
Flammability Limit in Air	Not applicable
Vapor pressure	Not determined
Vapor density	Not determined
Density	Not determined
Relative density	Not determined
Bulk density	Not determined
Specific gravity	Not determined
Water solubility	Insoluble in water
Partition coefficient (LogPow)	Not determined
Autoignition temperature	Not determined
Decomposition temperature	Not determined
Kinematic viscosity	Not determined
Dynamic viscosity	Not determined
Explosive properties	Not an explosive
Oxidizing properties	Not determined

Other information

No information available

10. STABILITY AND REACTIVITY

Reactivity

No known effects under normal use conditions.

Chemical stability

Stable under normal conditions

Possibility of hazardous reactions

When a battery cell is exposed to an external short-circuit, crushed, modification, high temperature, open flames, it will be the cause of heat generation and ignition.

Conditions to avoid

Exposed to an external short-circuit, crushed, modification, high temperature, open flames, incompatible materials, direct sunlight and high humidity.

Incompatible materials

Conductive materials, water, seawater, strong oxidants, strong acid, strong bases, etc.

Hazardous decomposition products

In case of a fire or high temperature, metal oxides and irritating/harmful fumes/smoke may be generated.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Inhalation	Contents of an open battery can cause respiratory irritation. Hypersensitivity to nickel can cause allergic pulmonary asthma.
Eye contact	Contents of an open battery can cause severe irritation and chemical burns.
Skin contact	Contents of an open battery can cause skin irritation and/or chemical burns. Nickel, nickel compounds, cobalt, and cobalt compounds can cause skin sensitization and an allergic contact dermatitis.
Ingestion	Swallowing a battery can be harmful. Contents of an open battery can cause serious chemical burns of mouth, esophagus, and gastrointestinal tract.

Information on toxicological effects

Acute toxicity

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Nickel (CAS #: 7440-02-0)	> 9000 mg/kg (Rat)	-	-
Nickel hydroxide (CAS #: 12054-48-7)	= 1515 mg/kg (Rat)	> 2 g/kg (Rat)	= 1200 mg/m^3 (Rat) 4 h
Polypropylene (CAS #: 9003-07-0)	>5 g/kg	-	-
Iron (CAS #: 7439-89-6)	98.6 g/kg bw (rat)	-	-
Cobalt (CAS #: 7440-48-4)	= 6171 mg/kg (Rat)	-	> 10 mg/L (Rat) 1 h
Manganese (CAS #: 7439-96-5)	= 9 g/kg (Rat)	-	-
Cobalt(II) oxide (CAS #: 1307-96-6)	= 159 mg/kg (Rat) = 202 mg/kg (Rat)	-	-
Potassium hydroxide (CAS #: 1310-58-3)	= 333 mg/kg (Rat)	-	-
Aluminum (CAS #: 7429-90-5)	LD50> 15900 mg/kg bw(rat)	-	LC50> 0.888 mg/L/4 h(rat)
Lithium hydroxide (CAS #: 1310-65-2)	210 mg/kg (Rat)	-	0,96 mg/l/4 h rat

Skin corrosion/irritation

No effect under routine handling and use for sealed battery. Exposure to the electrolyte contained inside the battery may result in chemical burns.

Serious eye damage/eye irritation

No effect under routine handling and use for sealed battery. Exposure to the electrolyte contained inside the battery may result in irritation.

Sensitization

No information available.

Germ cell mutagenicity

No information available.

Carcinogenicity

Chemical name	ACGIH	IARC	NTP	OSHA

Nickel (CAS #: 7440-02-0)	-	Group 2B	Reasonably Anticipated	X
Nickel hydroxide (CAS #: 12054-48-7)	A1	Group 1	Known	X
Polypropylene (CAS #: 9003-07-0)	-	Group 3	-	-
Cobalt (CAS #: 7440-48-4)	A3	Group 2B	Reasonably Anticipated	X
Cobalt(II) oxide (CAS #: 1307-96-6)	A3	Group 2B	-	X

Reproductive toxicity
No information available.

STOT - single exposure
No information available.

STOT - repeated exposure
No information available.

Aspiration hazard
No information available.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Chemical name	Algae/Aquatic plants EC50	Fish LC50	Crustacea EC50
Nickel (CAS #: 7440-02-0)	-	100 mg/L/96h Brachydanio rerio	100 mg/L/48h Daphnia magna
Nickel hydroxide (CAS #: 12054-48-7)	-	-	712.9 µg/L/42 d
Iron (CAS #: 7439-89-6)	-	13.6: 96 h Morone saxatilis mg/L LC50 static	> 100 mg/L/48h (Daphnia magna)
Cobalt (CAS #: 7440-48-4)	-	100: 96 h Brachydanio rerio mg/L LC50 static	-
Potassium hydroxide (CAS #: 1310-58-3)	-	80mg/L/96h Gambusia affinis static	-
Aluminum (CAS #: 7429-90-5)	-	> 50 mg/L/96h	-

Persistence and degradability
No information available.

Bioaccumulative potential

Chemical name	Partition coefficient (LogPow)
Potassium hydroxide (CAS #: 1310-58-3)	0.83

Mobility in soil
No information available.

Other adverse effects
No information available.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal of wastes	Disposal should be in accordance with applicable regional, national and local laws and regulations.
Contaminated packaging	Dispose of in accordance with federal, state and local regulations.

Chemical name	RCRA	RCRA - Basis for Listing	RCRA - D Series Wastes	RCRA - U Series Wastes
Nickel 7440-02-0	-	Included in waste streams: F006, F039	-	-

Chemical name	California Hazardous Waste Status
Nickel 7440-02-0	Toxic powder Ignitable powder
Cobalt 7440-48-4	Toxic powder Ignitable powder Toxic
Manganese 7439-96-5	Ignitable powder
Cobalt(II) oxide 1307-96-6	Toxic
Potassium hydroxide 1310-58-3	Toxic Corrosive
Aluminum 7429-90-5	Ignitable powder

14. TRANSPORT INFORMATION

DOT

UN/ID No. Not regulated
UN proper shipping name Not regulated
Hazard class Not regulated
Packing group Not regulated
Special precautions No information available
Marine pollutant Not applicable

15. REGULATORY INFORMATION

International inventories

Component	AICS	DSL/NDSL	EINECS/ELINCS	ENCS	IECSC	KECL	PICCS	TSCA
Nickel 7440-02-0 (43.9)	X	X	X	Exempted	X	X	X	X
Nickel hydroxide 12054-48-7 (29.1)	X	X	X	X	X	X	X	X
Polypropylene 9003-07-0 (7.1)	X	X	-	X	X	X	X	X
Iron 7439-89-6 (6.7)	X	X	X	-	X	X	X	X
Cobalt 7440-48-4 (6.4)	X	X	X	X	X	X	X	X
Manganese 7439-96-5 (3.2)	X	X	X	Exempted	X	X	X	X
Cobalt(II) oxide 1307-96-6 (2.1)	X	X	X	X	X	X	X	X
Potassium hydroxide 1310-58-3 (0.7)	X	X	X	X	X	X	X	X
Aluminum 7429-90-5 (0.7)	X	X	X	Exempted	X	X	X	X
Lithium hydroxide 1310-65-2 (0.1)	X	X	X	X	X	X	X	X

"-" Not Listed
"X" Listed

US Federal Regulations

SARA 313

Not applicable

Chemical name	SARA 313 - Threshold Values %
Nickel - 7440-02-0	0.1
Nickel hydroxide - 12054-48-7	0.1

Cobalt - 7440-48-4	0.1
Cobalt(II) oxide - 1307-96-6	0.1
Aluminum - 7429-90-5	1.0

SARA 311/312 Hazard Categories

Not applicable

CWA (Clean Water Act)

Not applicable

Chemical name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Nickel 7440-02-0	-	X	X	-
Nickel hydroxide 12054-48-7	-	X	-	X
Potassium hydroxide 1310-58-3	1000 lb	-	-	X

CERCLA

Not applicable

Chemical name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Nickel 7440-02-0	100 lb	-	RQ 100 lb final RQ RQ 45.4 kg final RQ
Nickel hydroxide 12054-48-7	10 lb	-	RQ 10 lb final RQ RQ 4.54 kg final RQ
Potassium hydroxide 1310-58-3	1000 lb	-	RQ 1000 lb final RQ RQ 454 kg final RQ

US State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals

Chemical name	California Proposition 65
Nickel - 7440-02-0	Carcinogen
Nickel hydroxide - 12054-48-7	Carcinogen
Cobalt - 7440-48-4	Carcinogen
Cobalt(II) oxide - 1307-96-6	Carcinogen

U.S. State Right-to-Know Regulations

This product does not contain any substances regulated under applicable state right-to-know regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
Nickel 7440-02-0	X	X	X
Nickel hydroxide 12054-48-7	X	X	X
Cobalt 7440-48-4	X	X	X
Manganese 7439-96-5	X	X	-
Cobalt(II) oxide 1307-96-6	X	-	X
Potassium hydroxide 1310-58-3	X	X	X
Aluminum 7429-90-5	X	X	X

16. OTHER INFORMATION

Revision note

Issue date	28-Jun-2017
Revision date	28-Jun-2017
Revision note	Not applicable

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

TWA - TWA (Time Weighted Average)

STEL - STEL (Short Term Exposure Limit)
Ceiling - Maximum limit value
TSCA - Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European INventory of Existing Commercial chemical Substances/European LIst of Notified Chemical Substances
ENCS - Japanese Existing and New Chemical Substances
IECSC - Chinese Inventory of Existing Chemical Substances
KECL - Korea Existing Chemicals List
PICCS - The Philippine Inventory of Chemicals and Chemical Substances
AICS - The Australian Inventory of Chemical Substances

Disclaimer

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

-------- End of Safety Data Sheet --------