

# SAFETY DATA SHEET

HCS-2012 APPENDIX D TO §1910.1200

Version 1  
Product Name Alkaline battery - LR23A 12V

Issue Date 07-May-2015  
Revision date 07-May-2015

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

### Product identifier

Product Name Alkaline battery - LR23A 12V  
Chemical Name Alkaline battery

### Other means of identification

Product Type: Alkaline battery  
Voltage: 12V  
Watt-Hour: 120Wh  
Battery Weight: 8.1g

### 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 Ningbo Jiangdong Qianshou Fuhuan Battery Co., Ltd.  
Address The side of Yong River, The old temple community, Jiangdong District, Ningbo  
City  
Postal Code 315000  
Phone +86-574-87308637  
E-mail 1026129258@qq.com

### Emergency telephone number

+86-15306660771

## 2. HAZARDS IDENTIFICATION

### GHS Classification

Not a dangerous substance or mixture according to the Globally Harmonized System (GHS)

### Label elements

Symbols/Pictograms None  
Signal word None  
Hazard Statements None  
Precautionary Statements  
Prevention None  
Response None  
Storage None  
Disposal None

### Hazards not otherwise classified (HNOC)

No information available

### Unknown acute toxicity

No information available

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature Mixture

Chemical Name	CAS No	Weight-%
Iron	7439-89-6	48.80
Manganese dioxide	1313-13-9	22.20
Zinc	7440-66-6	12
Water	7732-18-5	5
Potassium hydroxide	1310-58-3	4
Graphite	7782-42-5	3.80
Nickel	7440-02-0	2.00
Nylon-66	32131-17-2	1.20
Copper	7440-50-8	1.00
Lead	7439-92-1	<0.0030
Cadmium and compounds (as Cd)	7440-43-9	<0.0003
Mercury	7439-97-6	<0.0001
Arsenic	7440-38-2	<0.0001

#### 4. FIRST AID MEASURES

##### Description of first aid measures

General advice	Remove contaminated clothing and shoes. If symptoms persist, call a physician.
Inhalation	Not an expected route of exposure. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
Skin Contact	Wash hands thoroughly after handling. .
Eye contact	Not an expected route of exposure. .
Ingestion	Rinse mouth. Get medical attention. Never give anything by mouth to an unconscious person.

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

##### Specific hazards arising from the chemical

Thermal decomposition can lead to release of irritating and toxic gases and vapors

##### 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

Evacuate personnel to safe areas  
 Ensure adequate ventilation, especially in confined areas  
 Remove all sources of ignition  
 Use personal protection recommended in Section 8

##### Methods and material for containment and cleaning up

Prevent further leakage or spillage if safe to do so  
 Pick up and transfer to properly labeled containers

Avoid release to the environment

## 7. HANDLING AND STORAGE

### Precautions for safe handling

Handle in accordance with good industrial hygiene and safety practice  
 Ensure adequate ventilation, especially in confined areas  
 Avoid creating dust  
 Avoid contact with eyes  
 Wash thoroughly after handling  
 Use personal protection recommended in Section 8

### Conditions for safe storage, including any incompatibilities

Keep containers tightly closed in a dry, cool and well-ventilated place  
 Keep away from heat

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control parameters

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH	Denmark	European Union
Manganese dioxide (CAS #: 1313-13-9)	TWA: 0.02 mg/m <sup>3</sup> Mn TWA: 0.1 mg/m <sup>3</sup> Mn	(vacated) Ceiling: 5 mg/m <sup>3</sup> Ceiling: 5 mg/m <sup>3</sup> Mn	IDLH: 500 mg/m <sup>3</sup> Mn TWA: 1 mg/m <sup>3</sup> Mn STEL: 3 mg/m <sup>3</sup> Mn	TWA: 0.2 mg/m <sup>3</sup>	-
Potassium hydroxide (CAS #: 1310-58-3)	Ceiling: 2 mg/m <sup>3</sup>	(vacated) Ceiling: 2 mg/m <sup>3</sup>	Ceiling: 2 mg/m <sup>3</sup>	Ceiling: 2 mg/m <sup>3</sup>	-
Graphite (CAS #: 7782-42-5)	TWA: 2 mg/m <sup>3</sup> respirable fraction all forms except graphite fibers	-	-	TWA: 2.5 mg/m <sup>3</sup>	-
Nickel (CAS #: 7440-02-0)	TWA: 1.5 mg/m <sup>3</sup> inhalable fraction	TWA: 1 mg/m <sup>3</sup> (vacated) TWA: 1 mg/m <sup>3</sup>	IDLH: 10 mg/m <sup>3</sup> IDLH: 10 mg/m <sup>3</sup> Ni TWA: 0.015 mg/m <sup>3</sup> TWA: 0.015 mg/m <sup>3</sup> except Nickel carbonyl Ni	TWA: 0.05 mg/m <sup>3</sup>	-
Copper (CAS #: 7440-50-8)	TWA: 0.2 mg/m <sup>3</sup> fume TWA: 1 mg/m <sup>3</sup> Cu dust and mist	-	-	TWA: 1.0 mg/m <sup>3</sup> TWA: 0.1 mg/m <sup>3</sup>	-
Lead (CAS #: 7439-92-1)	TWA: 0.05 mg/m <sup>3</sup> TWA: 0.05 mg/m <sup>3</sup> Pb	-	-	TWA: 0.05 mg/m <sup>3</sup>	-
Cadmium and compounds (as Cd) (CAS #: 7440-43-9)	TWA: 0.01 mg/m <sup>3</sup> TWA: 0.002 mg/m <sup>3</sup> respirable fraction TWA: 0.01 mg/m <sup>3</sup> Cd TWA: 0.002 mg/m <sup>3</sup> Cd respirable fraction	TWA: 0.1 mg/m <sup>3</sup> fume applies to any operations or sectors for which the Cadmium standard is stayed or otherwise not in effect TWA: 0.2 mg/m <sup>3</sup> dust applies to any operations or sectors for which the Cadmium standard is stayed or otherwise not in effect TWA: 5 µg/m <sup>3</sup> (vacated) STEL: 0.3 ppm fume Ceiling: 0.3 mg/m <sup>3</sup> fume applies to any operations or sectors for which the Cadmium standard is stayed or otherwise not in effect Ceiling: 0.6 mg/m <sup>3</sup> dust applies to any operations or sectors for which the Cadmium standard is stayed or	IDLH: 9 mg/m <sup>3</sup> dust IDLH: 9 mg/m <sup>3</sup> Cd dust and fume	TWA: 0.005 mg/m <sup>3</sup>	-

		otherwise not in effect			
Mercury (CAS #: 7439-97-6)	TWA: 0.025 mg/m <sup>3</sup> TWA: 0.025 mg/m <sup>3</sup> Hg S*	(vacated) TWA: 0.05 mg/m <sup>3</sup> vapor (vacated) STEL: 0.03 mg/m <sup>3</sup> (vacated) S* (vacated) Ceiling: 0.1 mg/m <sup>3</sup> (vacated) Ceiling: 0.1 mg/m <sup>3</sup> Hg Ceiling: 0.1 mg/m <sup>3</sup>	IDLH: 10 mg/m <sup>3</sup> IDLH: 10 mg/m <sup>3</sup> Hg Ceiling: 0.1 mg/m <sup>3</sup> Ceiling: 0.1 mg/m <sup>3</sup> Hg TWA: 0.05 mg/m <sup>3</sup> vapor TWA: 0.05 mg/m <sup>3</sup> except Organo alkyls Hg vapor	TWA: 0.02 mg/m <sup>3</sup> Skin	-
Arsenic (CAS #: 7440-38-2)	TWA: 0.01 mg/m <sup>3</sup> TWA: 0.01 mg/m <sup>3</sup> As	TWA: 10 µg/m <sup>3</sup> As (vacated) TWA: 0.5 mg/m <sup>3</sup>	IDLH: 5 mg/m <sup>3</sup> IDLH: 5 mg/m <sup>3</sup> As Ceiling: 0.002 mg/m <sup>3</sup> 15 min Ceiling: 0.002 mg/m <sup>3</sup> As 15 min	TWA: 0.01 mg/m <sup>3</sup>	-

Chemical Name	Latvia	France	Finland	Germany	Italy
Manganese dioxide (CAS #: 1313-13-9)	TWA: 0.3 mg/m <sup>3</sup>	-	TWA: 0.2 mg/m <sup>3</sup> TWA: 0.1 mg/m <sup>3</sup>	TWA: 0.2 mg/m <sup>3</sup> TWA: 0.02 mg/m <sup>3</sup> Ceiling / Peak: 1.6 mg/m <sup>3</sup> Ceiling / Peak: 0.16 mg/m <sup>3</sup> TWA: 0.5 mg/m <sup>3</sup>	-
Zinc (CAS #: 7440-66-6)		-	-	TWA: 0.1 mg/m <sup>3</sup> TWA: 2 mg/m <sup>3</sup> Ceiling / Peak: 0.4 mg/m <sup>3</sup> Ceiling / Peak: 4 mg/m <sup>3</sup>	-
Potassium hydroxide (CAS #: 1310-58-3)	-	STEL: 2 mg/m <sup>3</sup>	STEL: 2 mg/m <sup>3</sup> Ceiling: 2 mg/m <sup>3</sup>	-	-
Nickel (CAS #: 7440-02-0)	TWA: 0.05 mg/m <sup>3</sup>	TWA: 1 mg/m <sup>3</sup>	TWA: 1 mg/m <sup>3</sup> TWA: 0.1 mg/m <sup>3</sup>	Skin	-
Cadmium and compounds (as Cd) (CAS #: 7440-43-9)	TWA: 0.01 mg/m <sup>3</sup> STEL: 0.05 mg/m <sup>3</sup>	TWA: 0.05 mg/m <sup>3</sup>	TWA: 0.02 mg/m <sup>3</sup> Skin	Skin	-
Mercury (CAS #: 7439-97-6)	TWA: 0.02 mg/m <sup>3</sup>	TWA: 0.02 mg/m <sup>3</sup>	TWA: 0.02 mg/m <sup>3</sup> Skin	TWA: 0.02 mg/m <sup>3</sup> Ceiling / Peak: 0.16 mg/m <sup>3</sup> Skin	-
Arsenic (CAS #: 7440-38-2)	TWA: 0.01 mg/m <sup>3</sup> STEL: 0.04 mg/m <sup>3</sup>	-	TWA: 0.01 ppm	Skin	-

Chemical Name	Poland	Portugal	Spain	Switzerland	Netherlands
Manganese dioxide (CAS #: 1313-13-9)	TWA: 0.3 mg/m <sup>3</sup>	TWA: 0.2 mg/m <sup>3</sup>	TWA: 0.2 mg/m <sup>3</sup>	TWA: 0.5 mg/m <sup>3</sup>	-
Potassium hydroxide (CAS #: 1310-58-3)	STEL: 1 mg/m <sup>3</sup> TWA: 0.5 mg/m <sup>3</sup>	Ceiling: 2 mg/m <sup>3</sup>	STEL: 2 mg/m <sup>3</sup>	TWA: 2 mg/m <sup>3</sup>	-
Nickel (CAS #: 7440-02-0)	TWA: 0.25 mg/m <sup>3</sup>	TWA: 1.5 mg/m <sup>3</sup>	TWA: 1 mg/m <sup>3</sup>	TWA: 0.5 mg/m <sup>3</sup>	-
Cadmium and compounds (as Cd) (CAS #: 7440-43-9)	TWA: 0.01 mg/m <sup>3</sup> TWA: 0.002 mg/m <sup>3</sup>	TWA: 0.01 mg/m <sup>3</sup> TWA: 0.002 mg/m <sup>3</sup>	TWA: 0.01 mg/m <sup>3</sup> TWA: 0.002 mg/m <sup>3</sup>	Skin TWA: 0.015 mg/m <sup>3</sup>	-
Mercury (CAS #: 7439-97-6)	TWA: 0.02 mg/m <sup>3</sup>	TWA: 0.025 mg/m <sup>3</sup>	TWA: 0.02 mg/m <sup>3</sup>	Skin STEL: 0.04 ppm STEL: 0.4 mg/m <sup>3</sup> STEL: 0.16 mg/m <sup>3</sup> TWA: 0.005 ppm TWA: 0.05 mg/m <sup>3</sup> TWA: 0.02 mg/m <sup>3</sup>	TWA: 0.02 mg/m <sup>3</sup>
Arsenic (CAS #: 7440-38-2)	TWA: 0.01 mg/m <sup>3</sup>	TWA: 0.01 mg/m <sup>3</sup>	TWA: 0.01 mg/m <sup>3</sup>	-	-

Chemical Name	Norway	United Kingdom	Australia	Austria	Belgium
Manganese dioxide (CAS #: 1313-13-9)	TWA: 1 mg/m <sup>3</sup> TWA: 0.1 mg/m <sup>3</sup> STEL: 3 ppm STEL: 0.3 mg/m <sup>3</sup>	TWA: 0.5 mg/m <sup>3</sup>	1 mg/m <sup>3</sup>	STEL 2 mg/m <sup>3</sup> TWA: 0.5 mg/m <sup>3</sup>	-
Potassium hydroxide (CAS #: 1310-58-3)	Ceiling: 2 mg/m <sup>3</sup>	STEL: 2 mg/m <sup>3</sup>	2 mg/m <sup>3</sup> Peak	TWA: 2 mg/m <sup>3</sup>	-
Graphite (CAS #: 7782-42-5)	-	-	3 mg/m <sup>3</sup>	STEL 10 mg/m <sup>3</sup> TWA: 5 mg/m <sup>3</sup>	-

Nickel (CAS #: 7440-02-0)	TWA: 0.05 mg/m <sup>3</sup> STEL: 0.15 mg/m <sup>3</sup>	STEL: 1.5 mg/m <sup>3</sup> TWA: 0.5 mg/m <sup>3</sup>	1 mg/m <sup>3</sup>	-	-
Copper (CAS #: 7440-50-8)	-	-	1 mg/m <sup>3</sup> 0.2 mg/m <sup>3</sup>	STEL 4 mg/m <sup>3</sup> STEL 0.4 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> TWA: 0.1 mg/m <sup>3</sup>	-
Lead (CAS #: 7439-92-1)	-	-	0.15 mg/m <sup>3</sup>	STEL 0.4 mg/m <sup>3</sup> TWA: 0.1 mg/m <sup>3</sup>	-
Cadmium and compounds (as Cd) (CAS #: 7440-43-9)	TWA: 0.05 mg/m <sup>3</sup> STEL: 0.15 mg/m <sup>3</sup>	STEL: 0.075 mg/m <sup>3</sup> TWA: 0.025 mg/m <sup>3</sup>	0.01 mg/m <sup>3</sup>	-	-
Mercury (CAS #: 7439-97-6)	TWA: 0.02 mg/m <sup>3</sup> STEL: 0.06 mg/m <sup>3</sup>	TWA: 0.02 mg/m <sup>3</sup>	0.003 ppm 0.025 mg/m <sup>3</sup>	Skin STEL 0.08 mg/m <sup>3</sup> TWA: 0.02 mg/m <sup>3</sup>	-
Arsenic (CAS #: 7440-38-2)	TWA: 0.01 mg/m <sup>3</sup> STEL: 0.03 mg/m <sup>3</sup>	STEL: 0.3 mg/m <sup>3</sup> TWA: 0.1 mg/m <sup>3</sup>	0.05 mg/m <sup>3</sup>	-	-

**Appropriate engineering controls**

Ensure adequate ventilation, especially in confined areas

**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 No special technical protective measures are necessary.

Skin and body protection Wear suitable protective clothing.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

**Information on basic physical and chemical properties**

Appearance	Solid
Color	Metallic
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, gas)	Not determined
Flammability Limit in Air	Not determined
Vapor Pressure	Not applicable
Vapor density	Not determined
Density	Not determined
Relative density	Not determined
Bulk density	Not determined
Specific gravity	Not determined
Water solubility	Not determined
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

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

### Chemical stability

Stable under normal conditions

### Possibility of Hazardous Reactions

None under normal processing

### Conditions to avoid

Strong heating. Incompatible materials

### Incompatible materials

Strong acids Strong bases Strong oxidizing agents

### Hazardous Decomposition Products

None known based on information supplied

## 11. TOXICOLOGICAL INFORMATION

### Information on likely routes of exposure

Inhalation	Not an expected route of exposure
Eye contact	Not an expected route of exposure
Skin Contact	Non-irritating to the skin
Ingestion	No known effect based on information supplied

### Information on toxicological effects

#### **Acute toxicity**

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Iron (CAS #: 7439-89-6)	98.6 g/kg bw (rat)	-	-
Manganese dioxide (CAS #: 1313-13-9)	= 9000 mg/kg (Rat)	-	-
Potassium hydroxide (CAS #: 1310-58-3)	= 333 mg/kg (Rat)	-	-
Nickel (CAS #: 7440-02-0)	> 9000 mg/kg (Rat)	-	-
Copper (CAS #: 7440-50-8)	> 2500 mg/kg bw(rat)	> 2000 mg/kg bw(rat)	=1.03 mg/L/4 h(rat)
Cadmium and compounds (as Cd) (CAS #: 7440-43-9)	= 2330 mg/kg (Rat)	-	= 25 mg/m <sup>3</sup> (Rat) 30 min

#### **Skin corrosion/irritation**

Non-irritating to the skin

#### **Serious eye damage/eye irritation**

No eye 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	Known Reasonably Anticipated	X

Lead (CAS #: 7439-92-1)	A3	-	-	-
Cadmium and compounds (as Cd) (CAS #: 7440-43-9)	A2	Group 1	Known	X
Mercury (CAS #: 7439-97-6)	-	Group 3	-	-
Arsenic (CAS #: 7440-38-2)	A1	Group 1	Known	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
Iron (CAS #: 7439-89-6)	-	-	> 100 mg/L/48h (Daphnia magna)
Zinc (CAS #: 7440-66-6)	0.11 - 0.271 mg/L/96h Pseudokirchneriella subcapitata static 0.09 - 0.125 mg/L/72h Pseudokirchneriella subcapitata static	2.16 - 3.05 mg/L/96h Pimephales promelas flow-through 0.211 - 0.269 mg/L/96h Pimephales promelas semi-static 2.66: mg/L/96h Pimephales promelas static 30 mg/L/96h Cyprinus carpio 0.45 mg/L/96h Cyprinus carpio semi-static 7.8 mg/L/96h Cyprinus carpio static 3.5 mg/L/96h Lepomis macrochirus static 0.24 mg/L/96h Oncorhynchus mykiss flow-through 0.59 mg/L/96h Oncorhynchus mykiss semi-static 0.41 mg/L/96h Oncorhynchus mykiss static	0.139 - 0.908 mg/L/48h Daphnia magna Static
Potassium hydroxide (CAS #: 1310-58-3)	-	80mg/L/96h Gambusia affinis static	-
Nickel (CAS #: 7440-02-0)	0.18 mg/L/72h Pseudokirchneriella subcapitata 0.174 - 0.311 mg/L/96h Pseudokirchneriella subcapitata static	100 mg/L/96h Brachydanio rerio 1.3 mg/L/96h Cyprinus carpio semi-static 10.4 mg/L/96h Cyprinus carpio static	100 mg/L/48h Daphnia magna 1 mg/L/48h Daphnia magna Static
Copper (CAS #: 7440-50-8)	0.031 - 0.054 mg/L/96h Pseudokirchneriella subcapitata static 0.0426 - 0.0535 mg/L/72h Pseudokirchneriella subcapitata static	-	-

Cadmium and compounds (as Cd) (CAS #: 7440-43-9)	-	0.003: 96 h Oncorhynchus mykiss mg/L LC50 flow-through 0.006: 96 h Oncorhynchus mykiss mg/L LC50 static 0.002: 96 h Cyprinus carpio mg/L LC50 4.26: 96 h Cyprinus carpio mg/L LC50 semi-static 0.24: 96 h Cyprinus carpio mg/L LC50 static 21.1: 96 h Lepomis macrochirus mg/L LC50 flow-through 0.016: 96 h Oryzias latipes mg/L LC50 0.0004 - 0.003: 96 h Pimephales promelas mg/L LC50	0.0244: 48 h Daphnia magna mg/L EC50 Static
Mercury (CAS #: 7439-97-6)	-	0.5: 96 h Cyprinus carpio mg/L LC50 0.16: 96 h Cyprinus carpio mg/L LC50 semi-static 0.18: 96 h Cyprinus carpio mg/L LC50 static 0.9: 96 h Oryzias latipes mg/L LC50 flow-through	5.0: 96 h water flea µg/L EC50

**Persistence and degradability**

No information available

**Bioaccumulative potential**

Chemical Name	Partition coefficient (LogPow)
Manganese dioxide (CAS #: 1313-13-9)	<0

**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	-	-
Cadmium and compounds (as Cd) 7440-43-9	-	Included in waste streams: F006, F039, K061, K069, K100	1.0 mg/L regulatory level	-
Arsenic 7440-38-2	-	Included in waste streams: F032, F034, F035, F039, K031, K060, K084, K101, K102, K161, K171, K172, K176	5.0 mg/L regulatory level	-
Mercury 7439-97-6	U151	Included in waste streams: F039, K071, K106, K175	0.2 mg/L regulatory level	U151
Chemical Name	California Hazardous Waste Status			
Zinc 7440-66-6	Ignitable powder Toxic			
Potassium hydroxide 1310-58-3	Toxic Corrosive			
Nickel 7440-02-0	Toxic powder Ignitable powder			
Copper 7440-50-8	Toxic			



Lead 7439-92-1	Toxic
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**14. TRANSPORT INFORMATION**

**DOT**

<b>UN/ID No.</b>	Not regulated
<b>Proper shipping name</b>	Not regulated
<b>Hazard Class</b>	Not regulated
<b>Packing Group</b>	Not regulated
<b>Special precautions</b>	No information available
<b>Marine pollutant</b>	Not applicable
<b>UN/ID No.</b>	Not Regulated
<b>UN/ID No.</b>	Not Regulated
<b>UN/ID No.</b>	Not Regulated

**15. REGULATORY INFORMATION**

**International Inventories**

Component	AICS	DSL/NDL	EINECS/ELI NCS	ENCS	IECSC	KECL	PICCS	TSCA
Iron 7439-89-6 ( 30 - 60 )	X	X	X	-	X	X	X	X
Manganese dioxide 1313-13-9 ( 10 - 30 )	X	X	X	X	X	X	X	X
Zinc 7440-66-6 ( 7 - 13 )	X	X	X	-	X	X	X	X
Water 7732-18-5 ( 3 - 7 )	X	X	X	-	X	X	X	X
Potassium hydroxide 1310-58-3 ( 1 - 5 )	X	X	X	X	X	X	X	X
Graphite 7782-42-5 ( 1 - 5 )	X	X	X	-	X	X	X	X
Nickel 7440-02-0 ( 1 - 5 )	X	X	X	-	X	X	X	X
Nylon-66 32131-17-2 ( 1 - 5 )	X	X	-	X	X	X	X	X
Copper 7440-50-8 ( 1 - 5 )	X	X	X	-	X	X	X	X
Lead 7439-92-1 ( <0.1 )	X	X	X	-	X	X	X	X
Cadmium and compounds (as Cd) 7440-43-9 ( <0.1 )	X	X	X	-	X	X	X	X
Mercury 7439-97-6 ( <0.1 )	X	X	X	-	X	X	X	X
Arsenic 7440-38-2 ( <0.1 )	X	X	X	-	X	X	X	X

"-" Not Listed

"X" Listed

**US Federal Regulations**

**SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	SARA 313 - Threshold Values %
Manganese dioxide - 1313-13-9	1.0
Zinc - 7440-66-6	1.0
Nickel - 7440-02-0	0.1
Cadmium and compounds (as Cd) - 7440-43-9	0.1
Mercury - 7439-97-6	1.0
Arsenic - 7440-38-2	0.1

**SARA 311/312 Hazard Categories**

Does not apply

**CWA (Clean Water Act)**

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Zinc 7440-66-6	-	X	X	-
Potassium hydroxide 1310-58-3	1000 lb	-	-	X
Nickel 7440-02-0	-	X	X	-
Copper 7440-50-8	-	X	X	-
Lead 7439-92-1	-	X	X	-
Cadmium and compounds (as Cd) 7440-43-9	-	X	X	-
Mercury 7439-97-6	-	X	X	-
Arsenic 7440-38-2	-	X	X	-

**CERCLA**

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Zinc 7440-66-6	1000 lb	-	RQ 454 kg final RQ RQ 1000 lb final RQ
Potassium hydroxide 1310-58-3	1000 lb	-	RQ 1000 lb final RQ RQ 454 kg final RQ
Nickel 7440-02-0	100 lb	-	RQ 100 lb final RQ RQ 45.4 kg final RQ
Cadmium and compounds (as Cd) 7440-43-9	10 lb	-	RQ 10 lb final RQ RQ 4.54 kg final RQ
Mercury 7439-97-6	1 lb	-	RQ 1 lb final RQ RQ 0.454 kg final RQ
Arsenic 7440-38-2	1 lb	-	RQ 1 lb final RQ RQ 0.454 kg final RQ

**US State Regulations**

**California Proposition 65**

This product contains the following Proposition 65 chemicals

Chemical Name	California Proposition 65
Nickel - 7440-02-0	Carcinogen
Lead - 7439-92-1	Carcinogen Developmental Female Reproductive Male Reproductive
Cadmium and compounds (as Cd) - 7440-43-9	Carcinogen Developmental Male Reproductive

Arsenic - 7440-38-2	Carcinogen
Mercury - 7439-97-6	Developmental

**U.S. State Right-to-Know Regulations**

This product may contain substances regulated by state right-to-know regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Manganese dioxide 1313-13-9	X	-	X
Zinc 7440-66-6	X	X	X
Potassium hydroxide 1310-58-3	X	X	X
Nickel 7440-02-0	X	X	X
Cadmium and compounds (as Cd) 7440-43-9	X	X	X
Arsenic 7440-38-2	X	X	X
Mercury 7439-97-6	X	X	X

**16. OTHER INFORMATION**

**Revision Note**

Issue Date	07-May-2015
Revision date	07-May-2015
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** - United States Toxic Substances Control Act Section 8(b) Inventory
- DSL/NDL** - Canadian Domestic Substances List/Non-Domestic Substances List
- EINECS/ELINCS** - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
- ENCS** - Japan Existing and New Chemical Substances
- IECSC** - China Inventory of Existing Chemical Substances
- KECL** - Korean Existing and Evaluated Chemical Substances
- PICCS** - Philippines Inventory of Chemicals and Chemical Substances
- AICS** - Australian Inventory of Chemical Substances

**Disclaimer**

The information provided in this Material 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 -----