SAFETY DATA SHEET
HCS-2012 APPENDIX D TO §1910.1200

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

Product identifier

Product Name: ALKALINE BATTERY - LR03
Chemical Name: ALKALINE BATTERY

Other means of identification

Product Code: LR03 1.5V 1000mAh

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: SUZHOU XINLVZHOU ELECTRONICS CO., LTD
Address: Yangcheng Lake West Road, No777, Xiangcheng District, SuZhou City, Jiangsu Province, China.
Postal Code:
Phone: +86-512-68702665
FAX: +86-512-68669435
E-mail: qky006@lvzhoudianzi.com.cn

Emergency telephone number

+86-512-68702665

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

Unknown acute toxicity: 0% of the mixture consists of ingredient(s) of unknown toxicity

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Chemical nature</th>
<th>Mixture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical Name</td>
<td>CAS No</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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
Exposure Limits

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>NIOSH IDLH</th>
<th>Denmark</th>
<th>European Union</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manganese dioxide (CAS #: 1313-13-9)</td>
<td>TWA: 0.02 mg/m³ Mn TWA: 0.1 mg/m³ Mn (vacated) Ceiling: 5 mg/m³ Ceiling: 5 mg/m³ Mn IDLH: 500 mg/m³ Mn TWA: 1 mg/m³ Mn STEL: 3 mg/m³ Mn</td>
<td>TWA: 0.2 mg/m³</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zinc oxide (CAS #: 1314-13-2)</td>
<td>STEL: 10 mg/m³ respirable fraction TWA: 2 mg/m³ respirable fraction TWA: 5 mg/m³ fume TWA: 15 mg/m³ total dust TWA: 5 mg/m³ respirable fraction (vacated) TWA: 10 mg/m³ total dust (vacated) TWA: 5 mg/m³ respirable fraction (vacated) STEL: 10 mg/m³ fume IDLH: 500 mg/m³ dust TWA: 5 mg/m³ dust and fume STEL: 10 mg/m³ fume</td>
<td>TWA: 2 mg/m³</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graphite (CAS #: 7782-42-5)</td>
<td>TWA: 2 mg/m³ respirable fraction all forms except graphite fibers</td>
<td>-</td>
<td>-</td>
<td>TWA: 2.5 mg/m³</td>
<td>-</td>
</tr>
<tr>
<td>Copper (CAS #: 7440-50-8)</td>
<td>TWA: 0.2 mg/m³ fume TWA: 1 mg/m³ Cu dust and mist</td>
<td>-</td>
<td>-</td>
<td>TWA: 1.0 mg/m³ TWA: 0.1 mg/m³</td>
<td>-</td>
</tr>
<tr>
<td>Potassium hydroxide (CAS #: 1310-58-3)</td>
<td>Ceiling: 2 mg/m³ (vacated) Ceiling: 2 mg/m³</td>
<td>Ceiling: 2 mg/m³ Ceiling: 2 mg/m³</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Calcium stearate (CAS #: 1592-23-0)</td>
<td>TWA: 10 mg/m³ except stearates of toxic metals</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Indium hydroxide (In(OH)₃) (CAS #: 20661-21-6)</td>
<td>TWA: 0.1 mg/m³ In</td>
<td>-</td>
<td>-</td>
<td>TWA: 0.1 mg/m³</td>
<td>-</td>
</tr>
<tr>
<td>Manganese dioxide (CAS #: 1313-13-9)</td>
<td>TWA: 0.3 mg/m³</td>
<td>-</td>
<td>TWA: 0.2 mg/m³ TWA: 0.1 mg/m³</td>
<td>TWA: 0.2 mg/m³ TWA: 0.02 mg/m³ Ceiling / Peak: 1.6 mg/m³ TWA: 0.5 mg/m³</td>
<td>-</td>
</tr>
</tbody>
</table>
### 9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Poland</th>
<th>Portugal</th>
<th>Spain</th>
<th>Switzerland</th>
<th>Netherlands</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zinc (CAS #: 7440-66-6)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>TWA: 0.1 mg/m³ TWA: 2 mg/m³ Ceiling / Peak: 0.4 mg/m³ Ceiling / Peak: 4 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Zinc oxide (CAS #: 1314-13-2)</td>
<td>TWA: 0.5 mg/m³ TWA: 5 mg/m³ TWA: 10 mg/m³ STEL: 2 mg/m³ STEL: 10 mg/m³</td>
<td>TWA: 2 mg/m³ TWA: 10 mg/m³</td>
<td>TWA: 2 mg/m³ Ceiling / Peak: 1 mg/m³ Ceiling / Peak: 0.4 mg/m³ Ceiling / Peak: 4 mg/m³</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Potassium hydroxide (CAS #: 1310-58-3)</td>
<td>-</td>
<td>STEL: 2 mg/m³ Ceiling: 2 mg/m³</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Norway</th>
<th>United Kingdom</th>
<th>Australia</th>
<th>Austria</th>
<th>Belgium</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manganese dioxide (CAS #: 1313-13-9)</td>
<td>TWA: 0.3 mg/m³ TWA: 0.1 mg/m³ TWA: 1 mg/m³ STEL: 3 ppm STEL: 0.3 mg/m³</td>
<td>TWA: 0.5 mg/m³</td>
<td>1 mg/m³</td>
<td>STEL 2 mg/m³ TWA: 0.5 mg/m³</td>
<td>-</td>
</tr>
<tr>
<td>Zinc oxide (CAS #: 1314-13-2)</td>
<td>TWA: 5 mg/m³ STEL: 10 mg/m³</td>
<td>-</td>
<td>-</td>
<td>10 mg/m³ 5 mg/m³ 10 mg/m³ STEL TWA: 5 mg/m³</td>
<td>-</td>
</tr>
<tr>
<td>Graphite (CAS #: 7782-42-5)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>3 mg/m³ STEL 10 mg/m³ TWA: 5 mg/m³</td>
<td>-</td>
</tr>
<tr>
<td>Copper (CAS #: 7440-50-8)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1 mg/m³ 0.2 mg/m³ STEL 4 mg/m³ STEL 0.4 mg/m³ TWA: 1 mg/m³ TWA: 0.1 mg/m³</td>
<td>-</td>
</tr>
<tr>
<td>Potassium hydroxide (CAS #: 1310-58-3)</td>
<td>Ceiling: 2 mg/m³ STEL: 2 mg/m³</td>
<td>2 mg/m³ Peak</td>
<td>-</td>
<td>TWA: 2 mg/m³</td>
<td>-</td>
</tr>
<tr>
<td>Calcium stearate (CAS #: 1592-23-0)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>10 mg/m³</td>
<td>-</td>
</tr>
<tr>
<td>Indium hydroxide (In(OH)3) (CAS #: 20661-21-6)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0.1 mg/m³ STEL 0.2 mg/m³ TWA: 0.1 mg/m³</td>
<td>-</td>
</tr>
</tbody>
</table>

**Appropriate engineering controls**
- Showers
- Eyewash stations
- Ventilation systems

**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.
Appearance: Solid  
Color: metallic  
Odor: Odorless  
Odor Threshold: Not determined  
\textit{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

\textbf{Other information}: No information available

\section*{10. STABILITY AND REACTIVITY}

\textbf{Reactivity}: Stable under recommended storage and handling conditions (see \textit{SECTION 7, handling and storage}).  

\textbf{Chemical stability}: Stable under normal conditions  

\textbf{Possibility of Hazardous Reactions}: None under normal processing  

\textbf{Conditions to avoid}: Strong heating. Incompatible materials  

\textbf{Incompatible materials}: Strong acids, Strong bases, Strong oxidizing agents

\textbf{Hazardous Decomposition Products}: None known based on information supplied

\section*{11. TOXICOLOGICAL INFORMATION}

\textbf{Information on likely routes of exposure}:  
\begin{itemize}
  \item \textbf{Inhalation}: Inhalation of vapors in high concentration may cause irritation of respiratory system  
  \item \textbf{Eye contact}: Contact with eyes may cause irritation  
  \item \textbf{Skin Contact}: Substance may cause slight skin irritation. Ingestion may cause irritation to mucous membranes
\end{itemize}
### Information on toxicological effects

#### Acute toxicity

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Oral LD50</th>
<th>Dermal LD50</th>
<th>Inhalation LC50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manganese dioxide (CAS #: 1313-13-9)</td>
<td>9000 mg/kg (rat)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Zinc oxide (CAS #: 1314-13-2)</td>
<td>&gt; 5000 mg/kg (rat)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Copper (CAS #: 7440-50-8)</td>
<td>&gt; 2500 mg/kg bw(rat)</td>
<td>&gt; 2000 mg/kg bw(rat)</td>
<td>1.03 mg/L/4 h(rat)</td>
</tr>
<tr>
<td>Acrylic resin (CAS #: 9003-01-4)</td>
<td>10250 mg/kg (rat, carbomer 910)</td>
<td>3 g/kg (rat, carbomer 910)</td>
<td>1.71 mg/L (rat)</td>
</tr>
<tr>
<td>Potassium hydroxide (CAS #: 1310-58-3)</td>
<td>333 mg/kg (rat)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Calcium stearate (CAS #: 1592-23-0)</td>
<td>&gt; 10 g/kg (rat)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Polypropylene (CAS #: 9003-07-0)</td>
<td>&gt; 5 g/kg</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

#### 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

No information available

#### 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

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Algae/aquatic plants EC50</th>
<th>Fish LC50</th>
<th>Crustacea EC50</th>
</tr>
</thead>
</table>

---
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 semi-static  
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

Zinc oxide (CAS #: 1314-13-2)  
-  
1.1 mg/L/96h  
0.098 mg/L/48h Daphnia magna

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  
-  
-

Potassium hydroxide (CAS #: 1310-58-3)  
-  
80mg/L/96h Gambusia affinis static  
-  
-

### Persistence and degradability
No information available

### Bioaccumulative potential

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Partition coefficient (LogPow)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manganese dioxide (CAS #: 1313-13-9)</td>
<td>&lt;0</td>
</tr>
</tbody>
</table>

### 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.

This product contains one or more substances that are listed with the State of California as a hazardous waste.

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>California Hazardous Waste Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zinc 7440-66-6</td>
<td>Ignitable powder Toxic</td>
</tr>
<tr>
<td>Zinc oxide 1314-13-2</td>
<td>Toxic</td>
</tr>
<tr>
<td>Copper 7440-50-8</td>
<td>Toxic</td>
</tr>
<tr>
<td>Potassium hydroxide 1310-58-3</td>
<td>Toxic</td>
</tr>
<tr>
<td>Potassium hydroxide 1310-58-3</td>
<td>Corrosive</td>
</tr>
</tbody>
</table>
### 14. TRANSPORT INFORMATION

The batteries are considered to be "Dry cell" batteries and are unregulated for purpose of transportation by the U.S. DOT, ICAO, IATA and IMDG. The only DOT requirement for shipping these batteries is special provision 130 which states: "Batteries, dry are not subject to the requirements of this subchapter only when they are offered for transportation in a manner that prevents the dangerous evolution of heat (For example, by the effective insulation of exposed terminals). The only requirement for shipping these batteries by ICAO and IATA is Special Provision A123 which states: "An electrical battery or battery powered device having the potential of dangerous evolutions of heat that is not prepared so as to prevent a short-circuit (e.g. in the case of batteries, by the effective insulation of exposed terminals; or in the case of equipment, by disconnection of the battery and protection of exposed terminals) is forbidden from transportation." The International Maritime Dangerous Goods Code (IMDG) regulate them for ocean transportation under Special Provision 304 which says: Batteries, dry, containing corrosive electrolyte which will not flow out of the battery if the battery case is cracked are not subject to the provision of this Code provided the batteries are securely packed and protected against short-circuits. Example of such batteries are: alkali-manganese, zinc carbon, nickel metal hydride and nickel-cadmium batteries. Such battery have been packed in inner packaging in such a manner as to effectively prevent short circuit and movement that could lead to short-circuit.

#### DOT / IMDG / IATA

<table>
<thead>
<tr>
<th>Component</th>
<th>DOT</th>
<th>IMDG</th>
<th>IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>UN/ID No.</strong></td>
<td>Not regulated</td>
<td>Not regulated</td>
<td>Not regulated</td>
</tr>
<tr>
<td><strong>Proper shipping name</strong></td>
<td>Not regulated</td>
<td>Not regulated</td>
<td>Not regulated</td>
</tr>
<tr>
<td><strong>Hazard Class</strong></td>
<td>Not regulated</td>
<td>Not regulated</td>
<td>Not regulated</td>
</tr>
<tr>
<td><strong>Packing Group</strong></td>
<td>Not regulated</td>
<td>Not regulated</td>
<td>Not regulated</td>
</tr>
<tr>
<td><strong>Special precautions</strong></td>
<td>No information available</td>
<td>Not applicable</td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>Marine pollutant</strong></td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

### 15. REGULATORY INFORMATION

#### International Inventories

<table>
<thead>
<tr>
<th>Component</th>
<th>AICS</th>
<th>DSL/NDSL</th>
<th>EINECS/ELINCS</th>
<th>ENCS</th>
<th>IECSC</th>
<th>KECL</th>
<th>PICCS</th>
<th>TSCA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manganese dioxide 1313-13-9 (15 - 40)</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Zinc 7440-66-6 (15 - 40)</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>-</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Zinc oxide 1314-13-2 (3 - 7)</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Graphite 7782-42-5 (1 - 5)</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>-</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Copper 7440-50-8 (1 - 5)</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>-</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Acrylic resin 9003-01-4 (0.1 - 1)</td>
<td>X</td>
<td>X</td>
<td>-</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Water 7732-18-5 (0.1 - 1)</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>-</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Potassium hydroxide 1310-58-3 (0.1 - 1)</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>
Polypropylene 9003-07-0 (0.1 - 1) | X | X | - | X | X | X | X | X
Calcium stearate 1592-23-0 (0.1 - 1) | X | X | X | X | X | X | X | X
Indium hydroxide (In(OH)3) 20661-21-6 (0.1 - 1) | 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

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>SARA 313 - Threshold Values %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manganese dioxide - 1313-13-9</td>
<td>1.0</td>
</tr>
<tr>
<td>Zinc - 7440-66-6</td>
<td>1.0</td>
</tr>
<tr>
<td>Zinc oxide - 1314-13-2</td>
<td>1.0</td>
</tr>
</tbody>
</table>

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)

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CWA - Reportable Quantities</th>
<th>CWA - Toxic Pollutants</th>
<th>CWA - Priority Pollutants</th>
<th>CWA - Hazardous Substances</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zinc 7440-66-6</td>
<td>-</td>
<td>X</td>
<td>X</td>
<td>-</td>
</tr>
<tr>
<td>Zinc oxide 1314-13-2</td>
<td>-</td>
<td>X</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Copper 7440-50-8</td>
<td>-</td>
<td>X</td>
<td>X</td>
<td>-</td>
</tr>
<tr>
<td>Potassium hydroxide 1310-58-3</td>
<td>1000 lb</td>
<td>-</td>
<td>-</td>
<td>X</td>
</tr>
</tbody>
</table>

CERCLA
This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Hazardous Substances RQs</th>
<th>CERCLA/SARA RQ</th>
<th>Reportable Quantity (RQ)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zinc 7440-66-6</td>
<td>1000 lb</td>
<td>-</td>
<td>RG 454 kg final RQ</td>
</tr>
<tr>
<td>Potassium hydroxide 1310-58-3</td>
<td>1000 lb</td>
<td>-</td>
<td>RG 1000 lb final RQ</td>
</tr>
</tbody>
</table>

US State Regulations

California Proposition 65
This product does not contain any Proposition 65 chemicals

U.S. State Right-to-Know Regulations
This product may contain substances regulated by state right-to-know regulations

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>New Jersey</th>
<th>Massachusetts</th>
<th>Pennsylvania</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manganese dioxide 1313-13-9</td>
<td>X</td>
<td>-</td>
<td>X</td>
</tr>
<tr>
<td>Zinc 7440-66-6</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>
Zinc oxide  
1314-13-2  
X  
X  
X  
Potassium hydroxide  
1310-58-3  
X  
X  
X

16. OTHER INFORMATION

Revision Note
Issue Date  10-Mar-2015  
Revision date  10-Mar-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/NDSL  - 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 -------