# SAFETY DATA SHEET

**Issuing Date** 15-Jun-2015  
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**Revision Number** 2

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

**Product identifier**

**Product Name** E91BP-4, E91BP-4UP, E91BP-8, E91BP-12, E91BP-20W

**Other means of identification**

**Synonyms** None

**Recommended use of the chemical and restrictions on use**

**Recommended Use** Alkaline battery

**Uses advised against** No information available

**Details of the supplier of the safety data sheet**

**Supplier Name** Energizer Battery

**Supplier Address** 533 Maryville University Drive  
St. Louis  
MO  
63141  
US

**Supplier Phone Number** Phone:314-985-2000

**Supplier Email** travisr.stevener@energizer.com

**Emergency telephone number**

**Company Emergency Phone Number** 314-985-1500

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## 2. HAZARDS IDENTIFICATION

**Classification**

This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200). This product is an article which is a sealed battery and as such does not require an MSDS per the OSHA hazard communication standard unless ruptured. The hazards indicated are for a ruptured battery.
Acute toxicity - Oral  Category 4
Acute toxicity - Inhalation (Gases)  Category 2
Acute toxicity - Inhalation (Vapors)  Category 2
Acute toxicity - Inhalation (Dusts/Mists)  Category 2
Skin corrosion/irritation  Category 1 Sub-category A
Serious eye damage/eye irritation  Category 1
Skin sensitization  Category 1
Carcinogenicity  Category 1A
Reproductive Toxicity  Category 1A
Specific target organ toxicity (single exposure)  Category 3
Specific target organ toxicity (repeated exposure)  Category 1

GHS Label elements, including precautionary statements

Emergency Overview

Signal word  Danger

Hazard Statements
Harmful if swallowed
Fatal if inhaled
Causes severe skin burns and eye damage
May cause an allergic skin reaction
May cause cancer
May damage fertility or the unborn child
May cause respiratory irritation. May cause drowsiness or dizziness

This product is an article which contains a chemical substance. Safety information is given for exposure to the article as sold. Intended use of the product should not result in exposure to the chemical substance. This is a battery. In case of rupture: the above hazards exist.

Appearance  Silver  Physical state  Solid  Odor  None

Precautionary Statements - Prevention
Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Use personal protective equipment as required
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Do not breathe dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area
Wear respiratory protection
Contaminated work clothing should not be allowed out of the workplace
Wear protective gloves

Precautionary Statements - Response
Specific treatment is urgent (see .? on this label)
Immediately call a POISON CENTER or doctor/physician
Specific treatment (see supplemental first aid instructions on this label)

**Eyes**
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing immediately call a POISON CENTER or doctor/physician

**Skin**
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
Wash contaminated clothing before reuse
If skin irritation or rash occurs: Get medical advice/attention

**Inhalation**
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Immediately call a POISON CENTER or doctor/physician
Call a POISON CENTER or doctor/physician if you feel unwell

**Ingestion**
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
Rinse mouth
Do NOT induce vomiting

**Precautionary Statements - Storage**
Store locked up
Store in a well-ventilated place. Keep container tightly closed

**Precautionary Statements - Disposal**
Dispose of contents/container to an approved waste disposal plant

**Hazards not otherwise classified (HNOC)**
Not applicable

**Unknown Toxicity**
6 % of the mixture consists of ingredient(s) of unknown toxicity

**Other information**
Very toxic to aquatic life with long lasting effects
Repeated or prolonged skin contact may cause allergic reactions with susceptible persons

**Interactions with Other Chemicals**
No information available.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS No</th>
<th>Weight-%</th>
<th>Trade Secret</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manganese dioxide</td>
<td>1313-13-9</td>
<td>30 - 60</td>
<td>*</td>
</tr>
<tr>
<td>Zinc</td>
<td>7440-66-6</td>
<td>10 - 30</td>
<td>*</td>
</tr>
<tr>
<td>Steel manufacture, chemicals</td>
<td>65997-19-5</td>
<td>10 - 30</td>
<td>*</td>
</tr>
<tr>
<td>Potassium hydroxide</td>
<td>1310-58-3</td>
<td>5 - 10</td>
<td>*</td>
</tr>
<tr>
<td>Graphite</td>
<td>7782-42-5</td>
<td>3 - 7</td>
<td>*</td>
</tr>
</tbody>
</table>

*The exact percentage (concentration) of composition has been withheld as a trade secret

### 4. FIRST AID MEASURES
First aid measures

General Advice
This is a battery. In case of rupture: Immediate medical attention is required. Show this safety data sheet to the doctor in attendance.

Eye contact
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area. Remove contact lenses, if present and easy to do. Continue rinsing. Seek immediate medical attention/advice.

Skin contact
Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Seek immediate medical attention and advice. May cause an allergic skin reaction.

Inhalation
Remove to fresh air. If breathing has stopped, give artificial respiration. Get medical attention immediately. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If breathing is difficult, (trained personnel should) give oxygen. Delayed pulmonary edema may occur. Get medical attention immediately if symptoms occur. Do not breathe dust.

Ingestion
Do NOT induce vomiting. Rinse mouth immediately and drink plenty of water. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately.

Self-protection of the first aider
Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Avoid contact with skin, eyes or clothing. Use personal protective equipment as required. Wear personal protective clothing (see section 8). Do not breathe dust. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

Most important symptoms and effects, both acute and delayed

Most Important Symptoms and Effects

Indication of any immediate medical attention and special treatment needed

Notes to Physician
Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure. May cause sensitization in susceptible persons. Treat symptomatically.
5. FIRE-FIGHTING MEASURES

**Suitable Extinguishing Media**
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Unsuitable extinguishing media**
CAUTION: Use of water spray when fighting fire may be inefficient.

**Specific hazards arising from the chemical**
The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating gases and vapors. In the event of fire and/or explosion do not breathe fumes. Product is or contains a sensitizer. May cause sensitization by skin contact.

**Explosion Data**
- **Sensitivity to Mechanical Impact**: None.
- **Sensitivity to Static Discharge**: None.

**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**

**Personal precautions**
Attention! Corrosive material. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Avoid generation of dust. Do not breathe dust.

**Other Information**
Refer to protective measures listed in Sections 7 and 8.

**Environmental precautions**

**Environmental precautions**
Prevent further leakage or spillage if safe to do so. Should not be released into the environment. Do not allow to enter into soil/subsoil. Prevent product from entering drains.

**Methods and material for containment and cleaning up**

**Methods for containment**
Prevent further leakage or spillage if safe to do so.

**Methods for cleaning up**
Pick up and transfer to properly labeled containers.
7. HANDLING AND STORAGE

Precautions for safe handling

Handling
In case of rupture. Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Use personal protection equipment.

Conditions for safe storage, including any incompatibilities

Storage
Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from moisture. Store locked up. Keep out of the reach of children. Store away from other materials.

Incompatible Products

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>NIOSH IDLH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manganese dioxide, 1313-13-9</td>
<td>TWA: 0.02 mg/m³ Mn</td>
<td>(vacated) Ceiling: 5 mg/m³</td>
<td>IDLH: 500 mg/m³ Mn</td>
</tr>
<tr>
<td></td>
<td>TWA: 0.1 mg/m³ Mn</td>
<td>Ceiling: 5 mg/m³ Mn</td>
<td>TWA: 1 mg/m³ Mn</td>
</tr>
<tr>
<td>Zinc, 7440-66-6</td>
<td>STEL: 10 mg/m³ respirable fraction</td>
<td>TWA: 5 mg/m³ fume</td>
<td>Ceiling: 3 mg/m³ Mn</td>
</tr>
<tr>
<td></td>
<td>TWA: 2 mg/m³ respirable fraction</td>
<td>TWA: 15 mg/m³ total dust</td>
<td>STEL: 3 mg/m³ Mn</td>
</tr>
<tr>
<td>Steel manufacture, chemicals, 65997-19-5</td>
<td>STEL: 10 mg/m³ Zr</td>
<td>TWA: 5 mg/m³ respirable fraction</td>
<td>IDLH: 500 mg/m³ dust</td>
</tr>
<tr>
<td></td>
<td>TWA: 0.05 mg/m³ Pb TWA: 0.00005 mg/m³ Be inhalable fraction TWA: 1 mg/m³ Cu dust and mist TWA: 0.2 mg/m³ Se TWA: 1 mg/m³ Y TWA: 5 mg/m³ Zr TWA: 0.02 mg/m³ Mn TWA: 0.1 mg/m³ Mn TWA: 0.5 mg/m³ Hf S*</td>
<td>(vacated) TWA: 2 µg/m³ Be (vacated) TWA: 2 µg/m³ Se TWA: 5 µg/m³ Zr Action Level: 30 µg/m³ Pb Poison, See 29 CFR 1910.1025 (vacated) TWA: 2 µg/m³ Be (vacated) TWA: 0.2 mg/m³ Se (vacated) TWA: 5 mg/m³ Zr (vacated) STEL: 25 µg/m³ 30 min (vacated) STEL: 10 mg/m³ Zr (vacated) Ceiling: 5 µg/m³ (vacated) Ceiling: 5 µg/m³ Be Ceiling: 5 mg/m³ Mn</td>
<td>IDLH: 4 mg/m³ Be IDLH: 100 mg/m³ Cu dust and mist IDLH: 500 mg/m³ Mn IDLH: 1 mg/m³ Se IDLH: 500 mg/m³ Y IDLH: 25 mg/m³ Zr IDLH: 100 mg/m³ Pb IDLH: 10 mg/m³ Ni IDLH: 50 mg/m³ Hf Ceiling: 0.0005 mg/m³ V dust and fume 15 min Ceiling: 0.0005 mg/m³ Be TWA: 1 mg/m³ Cu dust and mist TWA: 1 mg/m³ Mn TWA: 0.2 mg/m³ except Selenium hexafluoride Se TWA: 1 mg/m³ Y TWA: 5 mg/m³ except Zirconium tetrachloride Zr TWA: 0.050 mg/m³ Pb TWA: 0.015 mg/m³ except Nickel carbonyl Ni TWA: 0.5 mg/m³ Hf STEL: 3 mg/m³ Mn STEL: 10 mg/m³ Zr</td>
</tr>
<tr>
<td>Potassium hydroxide, 1310-58-3</td>
<td>Ceiling: 2 mg/m³</td>
<td>(vacated) Ceiling: 2 mg/m³</td>
<td>Ceiling: 2 mg/m³</td>
</tr>
<tr>
<td>Graphite, 7782-42-5</td>
<td>TWA: 2 mg/m³ respirable fraction all forms except graphite fibers TWA: 15 mg/m³ total dust synthetic TWA: 5 mg/m³ respirable fraction synthetic</td>
<td>TWA: 2.5 mg/m³ respirable dust</td>
<td>IDLH: 1250 mg/m³</td>
</tr>
</tbody>
</table>
### 9. PHYSICAL AND CHEMICAL PROPERTIES

#### Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Values</th>
<th>Remarks</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Physical state</strong></td>
<td>Solid</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Appearance</strong></td>
<td>Silver</td>
<td>Odor</td>
<td>None</td>
</tr>
<tr>
<td><strong>Color</strong></td>
<td>No information available</td>
<td>Odor Threshold</td>
<td>No information available</td>
</tr>
<tr>
<td><strong>pH</strong></td>
<td>No data available</td>
<td></td>
<td>None known</td>
</tr>
<tr>
<td><strong>Melting / freezing point</strong></td>
<td>No data available</td>
<td></td>
<td>None known</td>
</tr>
<tr>
<td><strong>Boiling point / boiling range</strong></td>
<td>No data available</td>
<td></td>
<td>None known</td>
</tr>
<tr>
<td><strong>Flash Point</strong></td>
<td>No data available</td>
<td></td>
<td>None known</td>
</tr>
<tr>
<td><strong>Evaporation Rate</strong></td>
<td>No data available</td>
<td></td>
<td>None known</td>
</tr>
<tr>
<td><strong>Flammability (solid, gas)</strong></td>
<td>No data available</td>
<td></td>
<td>None known</td>
</tr>
<tr>
<td><strong>Flammability Limit in Air</strong></td>
<td>No data available</td>
<td></td>
<td>None known</td>
</tr>
<tr>
<td><strong>Upper flammability limit</strong></td>
<td>No data available</td>
<td></td>
<td>None known</td>
</tr>
</tbody>
</table>
10. STABILITY AND REACTIVITY

Reactivity
No data available.

Chemical stability
Stable under recommended storage conditions.

Possibility of Hazardous Reactions
None under normal processing.

Conditions to avoid
Exposure to air or moisture over prolonged periods. Excessive heat.

Incompatible materials

Hazardous Decomposition Products
None known based on information supplied.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information
Product does not present an acute toxicity hazard based on known or supplied information. In case of rupture:

Inhalation
Specific test data for the substance or mixture is not available. Corrosive by inhalation. (based on components). Inhalation of corrosive fumes/gases may cause coughing, choking, headache, dizziness, and weakness for several hours. Pulmonary edema may occur with tightness in the chest, shortness of breath, bluish skin, decreased blood pressure, and increased heart rate. Inhaled corrosive substances can lead to a toxic edema of the lungs. Pulmonary edema can be fatal. May cause irritation of respiratory tract. Fatal if inhaled.
Eye contact
Specific test data for the substance or mixture is not available. Causes burns. (based on components). Corrosive to the eyes and may cause severe damage including blindness. Causes serious eye damage. May cause irreversible damage to eyes.

Skin contact
Specific test data for the substance or mixture is not available. Corrosive. (based on components). Causes burns.

Ingestion
Specific test data for the substance or mixture is not available. Causes burns. (based on components). Ingestion causes burns of the upper digestive and respiratory tracts. May cause severe burning pain in the mouth and stomach with vomiting and diarrhea of dark blood. Blood pressure may decrease. Brownish or yellowish stains may be seen around the mouth. Swelling of the throat may cause shortness of breath and choking. May cause lung damage if swallowed. May be fatal if swallowed and enters airways. Ingestion may cause irritation to mucous membranes. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Harmful if swallowed.

Component Information

<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</td>
<td>= 9000 mg/kg (Rat)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1313-13-9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Potassium hydroxide</td>
<td>= 284 mg/kg (Rat)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1310-58-3</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Information on toxicological effects

Symptoms

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization
May cause sensitization in susceptible persons. May cause sensitization by skin contact.

Mutagenic Effects
No information available.

Carcinogenicity
The table below indicates whether each agency has listed any ingredient as a carcinogen.

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>ACGIH</th>
<th>IARC</th>
<th>NTP</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steel manufacture, chemicals</td>
<td>A1</td>
<td>Group 1</td>
<td>Known</td>
<td>X</td>
</tr>
<tr>
<td>65997-19-5</td>
<td>A3</td>
<td>Group 2A</td>
<td>Reasonably Anticipated</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Group 2B</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Group 3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Reproductive toxicity
Contains a known or suspected reproductive toxin.

STOT - single exposure
No information available.

STOT - repeated exposure
Causes damage to organs through prolonged or repeated exposure. Based on classification criteria from the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200), this product has been determined to cause systemic target organ toxicity from chronic or repeated exposure. (STOT RE).

Chronic Toxicity
Chronic exposure to corrosive fumes/gases may cause erosion of the teeth followed by jaw necrosis. Bronchial irritation with chronic cough and frequent attacks of pneumonia are common. Gastrointestinal disturbances may also be seen. Effects from this product caused by acute exposure may cause permanent damage to target organs and/or may
cause chronic conditions. Contains a known or suspected carcinogen. Contains a known or suspected reproductive toxin. Possible risk of irreversible effects. Avoid repeated exposure. Prolonged exposure may cause chronic effects.

**Target Organ Effects**


**Aspiration Hazard**

No information available.

**Numerical measures of toxicity**

_**Product Information**_

The following values are calculated based on chapter 3.1 of the GHS document

- ATEmix (oral) 307.00 mg/kg
- ATEmix (inhalation-gas) 435.00 ppm (4 hr)
- ATEmix (inhalation-dust/mist) 0.21 mg/l
- ATEmix (inhalation-vapor) 2.00 ATEmix
## 12. ECOLOGICAL INFORMATION

### Ecotoxicity
Harmful to aquatic life. Very toxic to aquatic life with long lasting effects.

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Toxicity to Algae</th>
<th>Toxicity to Fish</th>
<th>Toxicity to Microorganisms</th>
<th>Daphnia Magna (Water Flea)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zinc 7440-66-6</td>
<td>96h EC50: 0.11 - 0.271 mg/L (Pseudokirchneriella subcapitata) 72h EC50: 0.09 - 0.125 mg/L (Pseudokirchneriella subcapitata)</td>
<td>96h LC50: 3.5 mg/L (Lepomis macrochirus) 96h LC50: 7.8 mg/L (Cyprinus carpio) 96h LC50: 0.24 mg/L (Oncorhynchus mykiss) 96h LC50: 0.41 mg/L (Oncorhynchus mykiss) 96h LC50: 2.11 - 0.269 mg/L (Pimephales promelas) 96h LC50: 2.66 mg/L (Pimephales promelas)</td>
<td>48h EC50: 0.139 - 0.908 mg/L</td>
<td></td>
</tr>
<tr>
<td>Potassium hydroxide 1310-58-3</td>
<td>96h LC50: 80 mg/L (Gambusia affinis)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Persistence and Degradability
No information available.

### Bioaccumulation
No information available.

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Log Pow</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manganese dioxide 1313-13-9</td>
<td>&lt;0</td>
</tr>
<tr>
<td>Potassium hydroxide 1310-58-3</td>
<td>0.83</td>
</tr>
</tbody>
</table>

### Other adverse effects
No information available.
13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal methods

This material, as supplied, is not a hazardous waste according to Federal regulations (40 CFR 261). This material could become a hazardous waste if it is mixed with or otherwise comes in contact with a hazardous waste, if chemical additions are made to this material, or if the material is processed or otherwise altered. Consult 40 CFR 261 to determine whether the altered material is a hazardous waste. Consult the appropriate state, regional, or local regulations for additional requirements.

Contaminated Packaging

Do not reuse empty containers.

California Hazardous Waste Codes

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</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zinc 7440-66-6</td>
<td>Ignitable powder Toxic</td>
</tr>
<tr>
<td>Steel manufacture, chemicals</td>
<td>Toxic</td>
</tr>
<tr>
<td>65997-19-5</td>
<td></td>
</tr>
<tr>
<td>Potassium hydroxide 1310-58-3</td>
<td>Toxic Corrosive</td>
</tr>
</tbody>
</table>

14. TRANSPORT INFORMATION

<table>
<thead>
<tr>
<th>DOT</th>
<th>Proper Shipping Name</th>
<th>Hazard Class</th>
<th>TDG</th>
<th>MEX</th>
<th>ICAO</th>
<th>IATA</th>
<th>IMDG/IMO</th>
<th>RID</th>
<th>ADR</th>
<th>ADN</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NON REGULATED</td>
<td>N/A</td>
<td>Not regulated</td>
<td>Not regulated</td>
<td>Not regulated</td>
<td>Not regulated</td>
<td>Not regulated</td>
<td>Not regulated</td>
<td>Not regulated</td>
<td></td>
</tr>
<tr>
<td></td>
<td>NON REGULATED</td>
<td>N/A</td>
<td>Not regulated</td>
<td>Not regulated</td>
<td>Not regulated</td>
<td>Not regulated</td>
<td>Not regulated</td>
<td>Not regulated</td>
<td>Not regulated</td>
<td></td>
</tr>
<tr>
<td></td>
<td>NON REGULATED</td>
<td>N/A</td>
<td>Not regulated</td>
<td>Not regulated</td>
<td>Not regulated</td>
<td>Not regulated</td>
<td>Not regulated</td>
<td>Not regulated</td>
<td>Not regulated</td>
<td></td>
</tr>
<tr>
<td></td>
<td>NON REGULATED</td>
<td>N/A</td>
<td>Not regulated</td>
<td>Not regulated</td>
<td>Not regulated</td>
<td>Not regulated</td>
<td>Not regulated</td>
<td>Not regulated</td>
<td>Not regulated</td>
<td></td>
</tr>
</tbody>
</table>
TSCA Complies
DSL All components are listed either on the DSL or NDSL.

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

US Federal Regulations

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any 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>CAS No</th>
<th>Weight-%</th>
<th>SARA 313 - Threshold Values %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manganese dioxide - 1313-13-9</td>
<td>1313-13-9</td>
<td>30 - 60</td>
<td>1.0</td>
</tr>
<tr>
<td>Zinc - 7440-66-6</td>
<td>7440-66-6</td>
<td>10 - 30</td>
<td>1.0</td>
</tr>
<tr>
<td>Steel manufacture, chemicals - 65997-19-5</td>
<td>65997-19-5</td>
<td>10 - 30</td>
<td>1.0</td>
</tr>
</tbody>
</table>

SARA 311/312 Hazard Categories
Acute Health Hazard No
Chronic Health Hazard No
Fire Hazard No
Sudden release of pressure hazard No
Reactive Hazard No

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>X</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Steel manufacture, chemicals - 65997-19-5</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Potassium hydroxide - 1310-58-3</td>
<td>1000 lb</td>
<td>X</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>Extremely Hazardous Substances RQs</th>
<th>RQ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zinc - 7440-66-6</td>
<td>1000 lb</td>
<td>RQ 454 kg final RQ</td>
<td></td>
</tr>
<tr>
<td>Potassium hydroxide - 1310-58-3</td>
<td>1000 lb</td>
<td>RQ 1000 lb final RQ</td>
<td></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 does not contain any substances regulated by state right-to-know regulations.
<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Carcinogen Status</th>
<th>Exposure Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zinc</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>7440-66-6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Potassium hydroxide</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>1310-58-3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manganese dioxide</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>1313-13-9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graphite</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>7782-42-5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**International Regulations**

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Carcinogen Status</th>
<th>Exposure Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manganese dioxide</td>
<td>A3, A2</td>
<td>Mexico: TWA = 0.2 mg/m³</td>
</tr>
<tr>
<td>Steel manufacture, chemicals</td>
<td></td>
<td>Mexico: TWA = 0.15 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mexico: TWA = 0.002 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mexico: TWA = 0.2 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mexico: TWA = 5 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mexico: STEL = 10 mg/m³</td>
</tr>
<tr>
<td>Graphite</td>
<td></td>
<td>Mexico: TWA = 2 mg/m³</td>
</tr>
</tbody>
</table>

**Canada**

WHMIS Hazard Class

Not determined

**16. OTHER INFORMATION**

**NFPA**

Health Hazards 1

Flammability 0

Instability 0

**HMIS**

Health Hazards 0

Flammability 0

Physical Hazard 0

Physical and Chemical Hazards -

Personal Hazards -

Personal Protection -

X

Prepared By

Product Stewardship

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Latham, NY 12110

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Revision Note No information available

Disclaimer

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End of Safety Data Sheet