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

Product identifier

Product Name
Ni-Cad Batteries and Battery Packs

Other means of identification

Synonyms
None

Recommended use of the chemical and restrictions on use

Recommended Use
Nickel-cadmium battery

Uses advised against
No information available

Details of the supplier of the safety data sheet

Supplier Name
Stanley Black & Decker

Supplier Address
2501 SW Aviation Drive
Bentonville
AR
72712
US

Supplier Phone Number
Phone: 479-271-8812
Fax: 479-271-9798

Supplier Email
mellody.fletcher@bdk.com

Emergency telephone number

Company Emergency Phone Number
479-254-3404

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.

<table>
<thead>
<tr>
<th>Acute toxicity - Oral</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Category 4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Acute toxicity - Inhalation (Vapors)</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Category 2</td>
</tr>
</tbody>
</table>
Acute toxicity - Inhalation (Dusts/Mists) Category 2
Skin corrosion/irritation Category 1 Sub-category A
Serious eye damage/eye irritation Category 1
Respiratory sensitization Category 1
Skin sensitization Category 1
Germ cell mutagenicity Category 2
Carcinogenicity Category 1A
Reproductive Toxicity Category 2
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 allergy or asthma symptoms or breathing difficulties if inhaled
May cause an allergic skin reaction
Suspected of causing genetic defects
May cause cancer
Suspected of damaging fertility or the unborn child
Causes damage to organs through prolonged or repeated exposure

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 Multiple Colors 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
In case of inadequate ventilation 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 supplemental first aid instructions 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

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
1 % of the mixture consists of ingredient(s) of unknown toxicity

Other information
May be harmful in contact with skin
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>Iron</td>
<td>7439-89-6</td>
<td>40 - 70</td>
<td>*</td>
</tr>
<tr>
<td>Nickel</td>
<td>7440-02-0</td>
<td>30 - 60</td>
<td>*</td>
</tr>
<tr>
<td>Cadmium and compounds (as Cd)</td>
<td>7440-43-9</td>
<td>30 - 60</td>
<td>*</td>
</tr>
<tr>
<td>Sodium hydroxide</td>
<td>1310-73-2</td>
<td>3 - 7</td>
<td>*</td>
</tr>
<tr>
<td>Potassium hydroxide</td>
<td>1310-58-3</td>
<td>3 - 7</td>
<td>*</td>
</tr>
<tr>
<td>Lithium hydroxide</td>
<td>1310-65-2</td>
<td>3 - 7</td>
<td>*</td>
</tr>
<tr>
<td>Cobalt</td>
<td>7440-48-4</td>
<td>1 - 5</td>
<td>*</td>
</tr>
<tr>
<td>Carbon black</td>
<td>1333-86-4</td>
<td>1 - 5</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
First aid is upon rupture of sealed battery.

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. May cause an allergic skin reaction. Seek immediate medical attention/advice.

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. May cause allergic respiratory reaction. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation.

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. May produce an allergic reaction. If an allergic reaction occurs, stop use and seek medical help right away.

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
Burning sensation. Coughing and/ or wheezing. Difficulty in breathing. Itching. Rashes. Hives. May cause allergy or asthma symptoms or breathing difficulties if inhaled.

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. Product is or contains a sensitizer. May cause sensitization by skin contact. May cause sensitization by inhalation and 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. Cover powder spill with plastic sheet or tarp to minimize spreading. Dike far ahead of liquid spill for later disposal.

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. In case of insufficient ventilation, wear suitable respiratory equipment. Use only with adequate ventilation and in closed systems. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse.

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

The following ingredients are the only ingredients of the product above the cut-off level (or level that contributes to the hazard classification of the mixture) which have an exposure limit applicable in the region for which this safety data sheet is intended or other recommended limit. At this time, the other relevant constituents have no known exposure limits from the sources listed here.

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>NIOSH IDLH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nickel</td>
<td>TWA: 1.5 mg/m³</td>
<td>TWA: 1 mg/m³</td>
<td>IDLH: 10 mg/m³</td>
</tr>
<tr>
<td></td>
<td>(vacated) TWA: 1 mg/m³</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cadmium and compounds</td>
<td>TWA: 0.01 mg/m³</td>
<td>TWA: 0.1 mg/m³</td>
<td>IDLH: 9 mg/m³ dust</td>
</tr>
<tr>
<td>(as Cd)</td>
<td>TWA: 0.002 mg/m³</td>
<td>fume applies to any</td>
<td></td>
</tr>
<tr>
<td></td>
<td>particulate matter</td>
<td>operations or sectors for which the</td>
<td></td>
</tr>
<tr>
<td></td>
<td>TWA: 0.002 mg/m³</td>
<td>Cadmium standard is stayed or</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cd</td>
<td>otherwise not in effect</td>
<td></td>
</tr>
<tr>
<td></td>
<td>particulate matter</td>
<td>TWA: 0.2 mg/m³ dust applies to any</td>
<td></td>
</tr>
<tr>
<td></td>
<td>TWA: 0.05 mg/m³</td>
<td>operations or sectors for which the</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(vacated) STEL: 0.3 ppm fume applies to any</td>
<td>Cadmium standard is stayed or</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cd</td>
<td>operations or sectors for which the</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cd respirable</td>
<td>Cadmium standard is stayed or</td>
<td></td>
</tr>
<tr>
<td></td>
<td>particulate matter</td>
<td>otherwise not in effect</td>
<td></td>
</tr>
<tr>
<td>Sodium hydroxide</td>
<td>Ceiling: 2 mg/m³</td>
<td>TWA: 2 mg/m³</td>
<td>IDLH: 10 mg/m³</td>
</tr>
<tr>
<td>1310-73-2</td>
<td>(vacated) Ceiling: 2 mg/m³</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Potassium hydroxide</td>
<td>Ceiling: 2 mg/m³</td>
<td>Ceiling: 2 mg/m³</td>
<td></td>
</tr>
<tr>
<td>1310-58-3</td>
<td>(vacated) Ceiling: 2 mg/m³</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cobalt</td>
<td>TWA: 0.02 mg/m³</td>
<td>TWA: 0.1 mg/m³ dust and fume</td>
<td>IDLH: 20 mg/m³ dust and fume</td>
</tr>
<tr>
<td>7440-48-4</td>
<td>(vacated) TWA: 0.05 mg/m³ dust and fume</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carbon black</td>
<td>TWA: 3 mg/m³</td>
<td>TWA: 3.5 mg/m³</td>
<td>IDLH: 1750 mg/m³</td>
</tr>
<tr>
<td>TWA: 3 mg/m³ inhalable particulate</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
1333-86-4  matter  (vacated) TWA: 3.5 mg/m³  TWA: 3.5 mg/m³
TWA: 0.1 mg/m³ Carbon black in presence of Polycyclic aromatic hydrocarbons PAH

ACGIH TLV: American Conference of Governmental Industrial Hygienists - Threshold Limit Value
OSHA PEL: Occupational Safety and Health Administration - Permissible Exposure Limits
NIOSH IDLH: Immediately Dangerous to Life or Health

Other Exposure Guidelines
Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992)

Appropriate engineering controls

Engineering Measures
Showers
Eyewash stations
Ventilation systems

Individual protection measures, such as personal protective equipment

Eye/face protection
Face protection shield.

Skin and body protection
Wear protective gloves and protective clothing. Long sleeved clothing. Chemical resistant apron. Impervious gloves.

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.

Hygiene Measures
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product. Take off contaminated clothing and wash before reuse. For environmental protection, remove and wash all contaminated protective equipment before re-use.

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>Physical state</td>
<td>Solid</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Appearance</td>
<td>Multiple Colors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Color</td>
<td>No information available</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Odor</td>
<td>None</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>No information available</td>
<td></td>
<td></td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
<td>None known</td>
<td></td>
</tr>
<tr>
<td>Melting / freezing point</td>
<td>No data available</td>
<td>None known</td>
<td></td>
</tr>
<tr>
<td>Boiling point / boiling range</td>
<td>No data available</td>
<td>None known</td>
<td></td>
</tr>
<tr>
<td>Flash Point</td>
<td>No data available</td>
<td>None known</td>
<td></td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>No data available</td>
<td>None known</td>
<td></td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>No data available</td>
<td>None known</td>
<td></td>
</tr>
<tr>
<td>Flammability Limit in Air</td>
<td>No data available</td>
<td>None known</td>
<td></td>
</tr>
<tr>
<td>Upper flammability limit</td>
<td>No data available</td>
<td>None known</td>
<td></td>
</tr>
<tr>
<td>Lower flammability limit</td>
<td>No data available</td>
<td>None known</td>
<td></td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>No data available</td>
<td>None known</td>
<td></td>
</tr>
<tr>
<td>Vapor density</td>
<td>No data available</td>
<td>None known</td>
<td></td>
</tr>
</tbody>
</table>

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Specific Gravity
Water Solubility
Solubility in other solvents
Partition coefficient: n-octanol/water
Autoignition temperature
Decomposition temperature
Kinematic viscosity
Dynamic viscosity
Explosive properties
Oxidizing properties

Other Information
Softening Point
VOC Content (%)
Particle Size
Particle Size Distribution

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. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause sensitization in susceptible persons.
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. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons.

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. May cause additional affects as listed under "Inhalation".

Component Information

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Oral LD50 (mg/kg)</th>
<th>Dermal LD50</th>
<th>Inhalation LC50 (mg/m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iron 7439-89-6</td>
<td>= 984 (Rat)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Nickel 7440-02-0</td>
<td>&gt; 9000 (Rat)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Cadmium and compounds (as Cd) 7440-43-9</td>
<td>= 1140 (Rat)</td>
<td>-</td>
<td>= 25 (Rat) 30 min</td>
</tr>
<tr>
<td>Sodium hydroxide 1310-73-2</td>
<td>-</td>
<td>= 1350 (Rabbit)</td>
<td>-</td>
</tr>
<tr>
<td>Potassium hydroxide 1310-58-3</td>
<td>= 284 (Rat)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Lithium hydroxide 1310-65-2</td>
<td>= 210 (Rat)</td>
<td>-</td>
<td>= 960 (Rat) 4 h</td>
</tr>
<tr>
<td>Cobalt 7440-48-4</td>
<td>= 6171 (Rat)</td>
<td>-</td>
<td>&gt; 10 (Rat) 1 h</td>
</tr>
<tr>
<td>Carbon black 1333-86-4</td>
<td>&gt; 15400 (Rat)</td>
<td>&gt; 3 (Rabbit)</td>
<td>-</td>
</tr>
</tbody>
</table>

Information on toxicological effects

Symptoms
Erythema (skin redness). Burning. May cause blindness. Coughing and/or wheezing. Difficulty in breathing. Itching. Rashes. Hives. Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain, or flushing.

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. May cause sensitization by inhalation.

Mutagenic Effects
Contains a known or suspected mutagen.

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>Nickel 7440-02-0</td>
<td></td>
<td>Group 2B</td>
<td>Reasonably Anticipated</td>
<td>X</td>
</tr>
</tbody>
</table>
Cadmium and compounds (as Cd) | A2 | Group 1 | Known | X
---|---|---|---|---
Cobalt | A3 | Group 2B | Reasonably Anticipated | X
Carbon black | A3 | Group 2B | | X

**AGIHI (American Conference of Governmental Industrial Hygienists)**
- A2 - Suspected Human Carcinogen
- A3 - Animal Carcinogen

**IARC (International Agency for Research on Cancer)**
- Group 1 - Carcinogenic to Humans
- Group 2B - Possibly Carcinogenic to Humans

**NTP (National Toxicology Program)**
- Known - Known Carcinogen
- Reasonably Anticipated - Reasonably Anticipated to be a Human Carcinogen

**OSHA (Occupational Safety and Health Administration of the US Department of Labor)**
- X - Present

**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. Prolonged exposure may cause chronic effects. Repeated contact may cause allergic reactions in very susceptible persons. Contains a known or suspected mutagen. Possible risk of irreversible effects. Contains a known or suspected carcinogen. Contains a known or suspected reproductive toxin. Avoid repeated exposure. May cause adverse effects on the bone marrow and blood-forming system.

**Target Organ Effects**

**Aspiration Hazard**
No information available.

**Numerical measures of toxicity**

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

| ATEmix (oral) | 822.00 mg/kg |
| ATEmix (dermal) | 2,496.00 mg/kg |
| ATEmix (inhalation-gas) | 250.02 ppm |
| ATEmix (inhalation-dust/mist) | 0.12 mg/l |
| ATEmix (inhalation-vapor) | 1.25 ATEmix |
12. ECOLOGICAL INFORMATION

This product contains a chemical which is listed as a severe marine pollutant according to DOT

Ecotoxicity
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>Iron 7439-89-6</td>
<td></td>
<td>96h LC50: = 13.6 mg/L (Morone saxatilis)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nickel 7440-02-0</td>
<td>72h EC50: = 0.18 mg/L (Pseudokirchneriella subcapitata) 96h EC50: 0.174 - 0.311 mg/L (Pseudokirchneriella subcapitata)</td>
<td>96h LC50: &gt; 100 mg/L (Brachydanio rerio) 96h LC50: = 1.3 mg/L (Cyprinus carpio) 96h LC50: = 10.4 mg/L (Cyprinus carpio)</td>
<td>48h EC50: &gt; 100 mg/L 48h EC50: = 1 mg/L</td>
<td></td>
</tr>
<tr>
<td>Cadmium and compounds (as Cd) 7440-43-9</td>
<td>96h LC50: = 0.003 mg/L (Oncorhynchus mykiss) 96h LC50: = 0.006 mg/L (Oncorhynchus mykiss) 96h LC50: = 0.002 mg/L (Cyprinus carpio) 96h LC50: = 4.26 mg/L (Cyprinus carpio) 96h LC50: = 0.24 mg/L (Cyprinus carpio) 96h LC50: = 0.016 mg/L (Oryzias latipes) 96h LC50: = 21.1 mg/L (Lepomis macrochirus) 96h LC50: 0.0004 - 0.003 mg/L (Pimephales promelas)</td>
<td></td>
<td>48h EC50: = 0.0244 mg/L</td>
<td></td>
</tr>
<tr>
<td>Sodium hydroxide 1310-73-2</td>
<td>96h LC50: = 45.4 mg/L (Oncorhynchus mykiss)</td>
<td></td>
<td></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>
<tr>
<td>Cobalt 7440-48-4</td>
<td>96h LC50: &gt; 100 mg/L (Brachydanio rerio)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carbon black 1333-86-4</td>
<td></td>
<td></td>
<td>24h EC50: &gt; 5600 mg/L</td>
<td></td>
</tr>
</tbody>
</table>

Persistence and Degradability
No information available.

Bioaccumulation

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Log Pow</th>
</tr>
</thead>
<tbody>
<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 a hazardous waste according to federal regulations (40 CFR 261).

Contaminated Packaging
Do not reuse empty containers.

US EPA Waste Number
D006

California Hazardous Waste Codes
141

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>Nickel</td>
<td>Toxic powder</td>
</tr>
<tr>
<td>7440-02-0</td>
<td>Ignitable powder</td>
</tr>
<tr>
<td>Sodium hydroxide</td>
<td>Toxic</td>
</tr>
<tr>
<td>1310-73-2</td>
<td>Corrosive</td>
</tr>
<tr>
<td>Potassium hydroxide</td>
<td>Toxic</td>
</tr>
<tr>
<td>1310-58-3</td>
<td>Corrosive</td>
</tr>
<tr>
<td>Cobalt</td>
<td>Toxic powder</td>
</tr>
<tr>
<td>7440-48-4</td>
<td>Ignitable powder</td>
</tr>
</tbody>
</table>

14. TRANSPORT INFORMATION

DOT

Proper Shipping Name
NON REGULATED

Hazard Class
N/A

Marine Pollutant
This product contains a chemical which is listed as a severe marine pollutant according to DOT

TDG

Marine Pollutant
Not regulated

MEX
Not regulated

ICAO
Not regulated

IATA

Proper Shipping Name
Not regulated

Hazard Class
NON REGULATED
N/A

IMDG/IMO

Hazard Class
N/A

Marine Pollutant
Product is a marine pollutant according to the criteria set by IMDG/IMO

RID
Not regulated

ADR
Not regulated

ADN
Not regulated
15. REGULATORY INFORMATION

International Inventories

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 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>CAS No</th>
<th>Weight-%</th>
<th>SARA 313 - Threshold Values %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nickel - 7440-02-0</td>
<td>7440-02-0</td>
<td>30 - 60</td>
<td>0.1</td>
</tr>
<tr>
<td>Cadmium and compounds (as Cd) - 7440-43-9</td>
<td>7440-43-9</td>
<td>30 - 60</td>
<td>0.1</td>
</tr>
<tr>
<td>Cobalt - 7440-48-4</td>
<td>7440-48-4</td>
<td>1 - 5</td>
<td>0.1</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>Nickel - 7440-02-0</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cadmium and compounds (as Cd) - 7440-43-9</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sodium hydroxide - 1310-73-2</td>
<td>1000 lb</td>
<td></td>
<td></td>
<td>X</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>Extremely Hazardous Substances RQs</th>
<th>RQ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nickel - 7440-02-0</td>
<td>100 lb</td>
<td></td>
<td>RQ 100 lb final RQ</td>
</tr>
<tr>
<td>Cadmium and compounds (as Cd) - 7440-43-9</td>
<td>10 lb</td>
<td></td>
<td>RQ 10 lb final RQ</td>
</tr>
<tr>
<td>Sodium hydroxide - 1310-73-2</td>
<td>1000 lb</td>
<td></td>
<td>RQ 1000 lb final RQ</td>
</tr>
<tr>
<td>Potassium hydroxide - 1310-58-3</td>
<td>1000 lb</td>
<td></td>
<td>RQ 1000 lb final RQ</td>
</tr>
</tbody>
</table>

US State Regulations

California Proposition 65
This product contains the following Proposition 65 chemicals.
Chemical name | California Proposition 65
---|---
Cadmium hydroxide (Cd(OH)₂) - 21041-95-2 | Carcinogen
Cadmium and compounds (as Cd) - 7440-43-9 | Carcinogen
| | Developmental
| | Male Reproductive
Nickel - 7440-02-0 | Carcinogen
Nickel hydroxide - 12054-48-7 | Carcinogen

U.S. State Right-to-Know Regulations

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>New Jersey</th>
<th>Massachusetts</th>
<th>Pennsylvania</th>
<th>Rhode Island</th>
<th>Illinois</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cadmium hydroxide (Cd(OH)₂) 21041-95-2</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cadmium and compounds (as Cd) 7440-43-9</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Nickel 7440-02-0</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Nickel hydroxide 12054-48-7</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Potassium hydroxide 1310-58-3</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

International Regulations

Mexico
National occupational exposure limits

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Carcinogen Status</th>
<th>Exposure Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nickel</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cadmium and compounds (as Cd)</td>
<td>A2</td>
<td>Mexico: TWA 1 mg/m³</td>
</tr>
<tr>
<td>Sodium hydroxide</td>
<td></td>
<td>Mexico: TWA 0.01 mg/m³</td>
</tr>
<tr>
<td>Cobalt</td>
<td>A3</td>
<td>Mexico: TWA= 0.1 mg/m³</td>
</tr>
<tr>
<td>Carbon black</td>
<td></td>
<td>Mexico: Ceiling 2 mg/m³</td>
</tr>
</tbody>
</table>

Mexico - Occupational Exposure Limits - Carcinogens

Canada
WHMIS Hazard Class
Non-controlled

16. OTHER INFORMATION

<table>
<thead>
<tr>
<th>NFPA</th>
<th>Health Hazards</th>
<th>Flammability</th>
<th>Instability</th>
<th>Physical and Chemical Hazards</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HMIS</th>
<th>Health Hazards</th>
<th>Flammability</th>
<th>Physical Hazard</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

Prepared By
Product Stewardship
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Latham, NY 12110
1-800-572-6501

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Revision Note No information available

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End of Safety Data Sheet