

Paslode - STOCKade Nickel Cadmium Battery

Paslode - STOCKade

Chemwatch: 4793-91

Version No: 5.1.1.1

Safety Data Sheet according to WHS and ADG requirements

Chemwatch Hazard Alert Code: 0

Issue Date: 17/08/2016

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S.GHS.AUS.EN

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

Product Identifier

| | |
|-------------------------------|---|
| Product name | Paslode - STOCKade Nickel Cadmium Battery |
| Synonyms | Product Code: B20544E, B20542, B30150, A12910 |
| Other means of identification | Not Available |

Relevant identified uses of the substance or mixture and uses advised against

| | |
|--------------------------|--|
| Relevant identified uses | For the battery cell, chemical materials are stored in a hermetically sealed metal case, designed to withstand temperatures and pressures encountered during normal use. Sealed battery is Nonhazardous. |
|--------------------------|--|

Details of the supplier of the safety data sheet

| | |
|-------------------------|--|
| Registered company name | Paslode - STOCKade |
| Address | 47-55 Williamson Road Ingleburn NSW 2565 Australia |
| Telephone | +61 2 9829 4000 |
| Fax | +61 2 9829 7788 |
| Website | www.paslode.com.au |
| Email | cust.sales.au@paslodeanz.com |

Emergency telephone number

| | |
|-----------------------------------|---------------------------------|
| Association / Organisation | Poisons Information Centre (AU) |
| Emergency telephone numbers | 13 11 26 |
| Other emergency telephone numbers | Not Available |

SECTION 2 HAZARDS IDENTIFICATION

Classification of the substance or mixture

NON-HAZARDOUS CHEMICAL. NON-DANGEROUS GOODS. According to the WHS Regulations and the ADG Code.

| | |
|------------------|----------------|
| Poisons Schedule | Not Applicable |
| Classification | Not Applicable |

Label elements

| | |
|--------------------|-----------------------|
| GHS label elements | Not Applicable |
| SIGNAL WORD | NOT APPLICABLE |

Hazard statement(s)

Not Applicable

Precautionary statement(s) Prevention

Not Applicable

Precautionary statement(s) Response

Continued...

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Not Applicable

Precautionary statement(s) Storage

Not Applicable

Precautionary statement(s) Disposal

Not Applicable

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

Substances

See section below for composition of Mixtures

Mixtures

| CAS No | %[weight] | Name |
|-----------|-----------|--------------------------------------|
| | | hermetically sealed case containing: |
| 7439-89-6 | 20-65 | <u>iron</u> |
| 7440-02-0 | 15-40 | <u>nickel</u> |
| 7440-43-9 | 10-40 | <u>cadmium</u> |
| 7440-48-4 | 0-3 | <u>cobalt</u> |
| 1333-86-4 | 0-1 | <u>carbon black</u> |
| 1310-73-2 | | <u>sodium hydroxide</u> |
| 1310-66-3 | | <u>lithium hydroxide</u> |
| 1310-58-3 | <5 | <u>potassium hydroxide</u> |

SECTION 4 FIRST AID MEASURES

Description of first aid measures

| | |
|---------------------|---|
| Eye Contact | If this product comes in contact with the eyes: <ul style="list-style-type: none">▶ Wash out immediately with fresh running water.▶ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.▶ Seek medical attention without delay; if pain persists or recurs seek medical attention.▶ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel. |
| Skin Contact | If skin or hair contact occurs: <ul style="list-style-type: none">▶ Flush skin and hair with running water (and soap if available).▶ Seek medical attention in event of irritation. |
| Inhalation | <ul style="list-style-type: none">▶ If fumes, aerosols or combustion products are inhaled remove from contaminated area.▶ Other measures are usually unnecessary. |
| Ingestion | Not considered a normal route of entry. For advice, contact a Poisons Information Centre or a doctor at once. Urgent hospital treatment is likely to be needed. |

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5 FIREFIGHTING MEASURES

Extinguishing media

- ▶ Water spray or fog.
- ▶ Foam.
- ▶ Dry chemical powder.
- ▶ BCF (where regulations permit).
- ▶ Carbon dioxide.

Special hazards arising from the substrate or mixture

| | |
|-----------------------------|-------------|
| Fire Incompatibility | None known. |
|-----------------------------|-------------|

Advice for firefighters

| | |
|----------------------|---|
| Fire Fighting | <ul style="list-style-type: none">▶ Alert Fire Brigade and tell them location and nature of hazard.▶ Wear breathing apparatus plus protective gloves in the event of a fire. |
|----------------------|---|

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| | |
|------------------------------|---|
| | <ul style="list-style-type: none"> ▶ Prevent, by any means available, spillage from entering drains or water courses. ▶ Use fire fighting procedures suitable for surrounding area. ▶ DO NOT approach containers suspected to be hot. ▶ Cool fire exposed containers with water spray from a protected location. ▶ If safe to do so, remove containers from path of fire. |
| Fire/Explosion Hazard | <ul style="list-style-type: none"> ▶ Non combustible. ▶ Not considered a significant fire risk, however containers may burn. <p>May emit corrosive fumes.</p> |

SECTION 6 ACCIDENTAL RELEASE MEASURES**Personal precautions, protective equipment and emergency procedures**

See section 8

Environmental precautions

See section 12

Methods and material for containment and cleaning up

| | |
|---------------------|--|
| Minor Spills | <ul style="list-style-type: none"> ▶ Clean up all spills immediately. ▶ Secure load if safe to do so. ▶ Bundle/collect recoverable product. ▶ Collect remaining material in containers with covers for disposal. <p> Dilute the leaked electrolyte with water and neutralize with diluted sulfuric acid [Mfr]. Collect and keep loose batteries electrically isolated from each other.</p> |
| Major Spills | <ul style="list-style-type: none"> ▶ Clean up all spills immediately. ▶ Secure load if safe to do so. ▶ Bundle/collect recoverable product. ▶ Collect remaining material in containers with covers for disposal. <p> Dilute the leaked electrolyte with water and neutralize with diluted sulfuric acid [Mfr].</p> |

Personal Protective Equipment advice is contained in Section 8 of the SDS.

SECTION 7 HANDLING AND STORAGE**Precautions for safe handling**

| | |
|--------------------------|---|
| Safe handling | <p>Use good occupational work practice. Observe manufacturer's storage and handling recommendations contained within this SDS.</p> <p>Avoid physical damage to containers.</p> <p> Avoid short circuiting the cell. Avoid mechanical damage of the cell. Do not open or disassemble. Do not connect the positive terminal to the negative terminal with electrical wire or chain. Avoid polarity reverse connection when installing the battery to an instrument. Do not wet the battery with water, seawater or acid; or expose to strong oxidizer. Keep the battery away from heat and fire. Do not disassemble or reconstruct the battery; or solder the battery directly. Do not give a mechanical shock or deform.</p> |
| Other information | <ul style="list-style-type: none"> ▶ Keep dry. ▶ Store under cover. ▶ Protect containers against physical damage. ▶ Observe manufacturer's storage and handling recommendations contained within this SDS. |

Conditions for safe storage, including any incompatibilities

| | |
|--------------------------------|---|
| Suitable container | <p>Store in original containers.</p> <p> Carton. Insulative and tear-proof materials.</p> |
| Storage incompatibility | <ul style="list-style-type: none"> ▶ Avoid strong acids, acid chlorides, acid anhydrides and chloroformates. <p> Conductive materials and water. Do not store cells loose.</p> |

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION**Control parameters****OCCUPATIONAL EXPOSURE LIMITS (OEL)****INGREDIENT DATA**

| Source | Ingredient | Material name | TWA | STEL | Peak | Notes |
|------------------------------|------------|---|---------|---------------|---------------|---------------|
| Australia Exposure Standards | iron | Fume (thermally generated) (respirable dust) | 2 mg/m3 | Not Available | Not Available | Not Available |

Continued...

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| | | | | | | |
|------------------------------|---------------------|-----------------------------------|---------------|---------------|---------------|---------------|
| Australia Exposure Standards | nickel | Nickel, metal | 1 mg/m3 | Not Available | Not Available | Sen |
| Australia Exposure Standards | cadmium | Cadmium and compounds (as Cd) | 0.01 mg/m3 | Not Available | Not Available | Not Available |
| Australia Exposure Standards | cobalt | Cobalt, metal dust & fume (as Co) | 0.05 mg/m3 | Not Available | Not Available | Sen |
| Australia Exposure Standards | carbon black | Carbon black | 3 mg/m3 | Not Available | Not Available | Not Available |
| Australia Exposure Standards | sodium hydroxide | Sodium hydroxide | Not Available | Not Available | 2 mg/m3 | Not Available |
| Australia Exposure Standards | potassium hydroxide | Potassium hydroxide | Not Available | Not Available | 2 mg/m3 | Not Available |

EMERGENCY LIMITS

| Ingredient | Material name | TEEL-1 | TEEL-2 | TEEL-3 |
|---------------------|-------------------------------|---------------|---------------|---------------|
| iron | Iron | 1 mg/m3 | 11 mg/m3 | 110 mg/m3 |
| nickel | Nickel | 4.5 mg/m3 | 50 mg/m3 | 99 mg/m3 |
| cadmium | Cadmium | Not Available | Not Available | Not Available |
| cobalt | Cobalt | 0.18 mg/m3 | 2 mg/m3 | 20 mg/m3 |
| carbon black | Carbon black | 9 mg/m3 | 99 mg/m3 | 590 mg/m3 |
| sodium hydroxide | Sodium hydroxide | Not Available | Not Available | Not Available |
| lithium hydroxide | Lithium hydroxide | 0.091 mg/m3 | 1 mg/m3 | 42 mg/m3 |
| lithium hydroxide | Lithium hydroxide monohydrate | 0.091 mg/m3 | 1 mg/m3 | 42 mg/m3 |
| potassium hydroxide | Potassium hydroxide | 0.18 mg/m3 | 2 mg/m3 | 54 mg/m3 |

| Ingredient | Original IDLH | Revised IDLH |
|---------------------|-----------------------|--------------------------|
| iron | Not Available | Not Available |
| nickel | N.E. mg/m3 / N.E. ppm | 10 mg/m3 |
| cadmium | 50 mg/m3 / 9 mg/m3 | 9 mg/m3 / 9 [Unch] mg/m3 |
| cobalt | 20 mg/m3 | 20 [Unch] mg/m3 |
| carbon black | N.E. mg/m3 / N.E. ppm | 1,750 mg/m3 |
| sodium hydroxide | 250 mg/m3 | 10 mg/m3 |
| lithium hydroxide | Not Available | Not Available |
| potassium hydroxide | Not Available | Not Available |

Exposure controls

| | |
|---|--|
| Appropriate engineering controls | General exhaust is adequate under normal operating conditions. |
| Personal protection |  |
| Eye and face protection | None under normal operating conditions. OTHERWISE: ▶ Safety glasses. |
| Skin protection | See Hand protection below |
| Hands/feet protection | ▶ Wear chemical protective gloves, e.g. PVC. ▶ Wear safety footwear or safety gumboots, e.g. Rubber |
| Body protection | See Other protection below |
| Other protection | None under normal operating conditions. If exposure to workplace dust is not controlled, respiratory protection is required; wear SAA approved dust respirator. |
| Thermal hazards | Not Available |

Respiratory protection

None under normal operating conditions.

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SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

| | | | |
|---|--|--|----------------|
| Appearance | Hermetically sealed cylindrical battery. | | |
| Physical state | Manufactured | Relative density (Water = 1) | 2.4-4.0 |
| Odour | Not Available | Partition coefficient n-octanol / water | Not Available |
| Odour threshold | Not Available | Auto-ignition temperature (°C) | Not Applicable |
| pH (as supplied) | Not Applicable | Decomposition temperature | Not Available |
| Melting point / freezing point (°C) | Not Available | Viscosity (cSt) | Not Applicable |
| Initial boiling point and boiling range (°C) | Not Applicable | Molecular weight (g/mol) | Not Applicable |
| Flash point (°C) | Not Applicable | Taste | Not Available |
| Evaporation rate | Not Applicable | Explosive properties | Not Available |
| Flammability | Not Applicable | Oxidising properties | Not Available |
| Upper Explosive Limit (%) | Not Applicable | Surface Tension (dyn/cm or mN/m) | Not Applicable |
| Lower Explosive Limit (%) | Not Applicable | Volatile Component (%vol) | Not Available |
| Vapour pressure (kPa) | Not Applicable | Gas group | Not Available |
| Solubility in water (g/L) | Immiscible | pH as a solution (1%) | Not Applicable |
| Vapour density (Air = 1) | Not Applicable | VOC g/L | Not Available |

SECTION 10 STABILITY AND REACTIVITY

| | |
|---|---|
| Reactivity | See section 7 |
| Chemical stability | Product is considered stable and hazardous polymerisation will not occur. |
| Possibility of hazardous reactions | See section 7 |
| Conditions to avoid | See section 7 |
| Incompatible materials | See section 7 |
| Hazardous decomposition products | See section 5 |

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects

| | | |
|--|---|------------------------------------|
| Inhaled | Not normally a hazard due to non-volatile nature of product | |
| Ingestion | Not normally a hazard due to physical form of product. The material can produce chemical burns within the oral cavity and gastrointestinal tract following ingestion. | |
| Skin Contact | Overexposure is unlikely in this form. The material can produce chemical burns following direct contact with the skin. | |
| Eye | Not normally a hazard due to physical form of product. The material can produce chemical burns to the eye following direct contact. Vapours or mists may be extremely irritating. | |
| Chronic | No toxic effects from unit packages. Small capacity cells may be swallowed in non-industrial situations. Cadmium compounds are present in the active electrochemical materials if liberated on deliberate destructive disassembly. | |
| Paslode - STOCKade Nickel Cadmium Battery | TOXICITY Not Available | IRRITATION Not Available |

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| | | |
|--|--|-------------------------------------|
| iron | TOXICITY | IRRITATION |
| | Oral (rat) LD50: 7500 mg/kg ^[1] | Nil reported [Patty] |
| nickel | TOXICITY | IRRITATION |
| | Oral (rat) LD50: 5000 mg/kg ^[2] | Not Available |
| cadmium | TOXICITY | IRRITATION |
| | Inhalation (monkey) LC50: 0.03 mg/L15 min ^[1] | Nil reported |
| | Inhalation (monkey) LC50: 0.0467 mg/L15 min ^[1] | |
| | Inhalation (monkey) LC50: 0.204 mg/L15 min ^[1] | |
| | Inhalation (monkey) LC50: 0.23 mg/L15 min ^[1] | |
| | Inhalation (monkey) LC50: 0.94 mg/L15 min ^[1] | |
| | Inhalation (mouse) LC50: >0.00902 mg/L15 min ^[1] | |
| | Inhalation (rabbit) LC50: >0.0224 mg/L15 min ^[1] | |
| | Inhalation (rat) LC50: 0.025 mg/L/30m ^[2] | |
| Oral (rat) LD50: >63-<259 mg/kg ^[1] | | |
| cobalt | TOXICITY | IRRITATION |
| | dermal (rat) LD50: >2000 mg/kg ^[1] | Nil Reported |
| | Oral (rat) LD50: 6170 mg/kg ^[2] | |
| carbon black | TOXICITY | IRRITATION |
| | Dermal (rabbit) LD50: >3000 mg/kg ^[2] | Not Available |
| | Oral (rat) LD50: >8000 mg/kg ^[1] | |
| sodium hydroxide | TOXICITY | IRRITATION |
| | Oral (rabbit) LD50: 325 mg/kg ^[1] | Eye (rabbit): 0.05 mg/24h SEVERE |
| | | Eye (rabbit):1 mg/24h SEVERE |
| | | Eye (rabbit):1 mg/30s rinsed-SEVERE |
| | | Skin (rabbit): 500 mg/24h SEVERE |
| lithium hydroxide | TOXICITY | IRRITATION |
| | Inhalation (rat) LC50: 0.96 mg/L/4hr ^[2] | Nil reported |
| | Oral (rat) LD50: 210 mg/kg ^[2] | |
| potassium hydroxide | TOXICITY | IRRITATION |
| | Oral (rat) LD50: 273 mg/kg ^[2] | Eye (rabbit):1mg/24h rinse-moderate |
| | | Skin (human): 50 mg/24h SEVERE |
| | | Skin (rabbit): 50 mg/24h SEVERE |
| Legend: | 1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2.* Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances | |

| | |
|---------------|---|
| NICKEL | Tenth Annual Report on Carcinogens: Substance anticipated to be Carcinogen [National Toxicology Program: U.S. Dep. of Health & Human Services 2002] Oral (rat) TDL0: 500 mg/kg/5D-I Inhalation (rat) TCL0: 0.1 mg/m3/24H/17W-C |
| COBALT | Allergic reactions involving the respiratory tract are usually due to interactions between IgE antibodies and allergens and occur rapidly. Allergic potential of the allergen and period of exposure often determine the severity of symptoms. Some people may be genetically more prone than others, and exposure to other irritants may aggravate symptoms. Allergy causing activity is due to interactions with proteins. Attention should be paid to atopic diathesis, characterised by increased susceptibility to nasal inflammation, asthma and eczema. Exogenous allergic alveolitis is induced essentially by allergen specific immune-complexes of the IgG type; cell-mediated reactions (T lymphocytes) may be involved. Such allergy is of the delayed type with onset up to four hours following exposure. |

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| | |
|---|--|
| CARBON BLACK | No significant acute toxicological data identified in literature search. Inhalation (rat) TCLo: 50 mg/m3/6h/90D-I Nil reported |
| SODIUM HYDROXIDE | The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis. |
| LITHIUM HYDROXIDE | The material may cause skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin. |
| NICKEL & COBALT | The following information refers to contact allergens as a group and may not be specific to this product. Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. The pathogenesis of contact eczema involves a cell-mediated (T lymphocytes) immune reaction of the delayed type. Other allergic skin reactions, e.g. contact urticaria, involve antibody-mediated immune reactions. The significance of the contact allergen is not simply determined by its sensitisation potential: the distribution of the substance and the opportunities for contact with it are equally important. A weakly sensitising substance which is widely distributed can be a more important allergen than one with stronger sensitising potential with which few individuals come into contact. From a clinical point of view, substances are noteworthy if they produce an allergic test reaction in more than 1% of the persons tested. |
| NICKEL & COBALT & CARBON BLACK | WARNING: This substance has been classified by the IARC as Group 2B: Possibly Carcinogenic to Humans. |
| SODIUM HYDROXIDE & POTASSIUM HYDROXIDE | The material may cause severe skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin. Repeated exposures may produce severe ulceration. |
| SODIUM HYDROXIDE & LITHIUM HYDROXIDE & POTASSIUM HYDROXIDE | Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyperreactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS. RADS (or asthma) following an irritating inhalation is an infrequent disorder with rates related to the concentration of and duration of exposure to the irritating substance. Industrial bronchitis, on the other hand, is a disorder that occurs as result of exposure due to high concentrations of irritating substance (often particulate in nature) and is completely reversible after exposure ceases. The disorder is characterised by dyspnea, cough and mucus production. |
| LITHIUM HYDROXIDE & POTASSIUM HYDROXIDE | The material may produce moderate eye irritation leading to inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis. |

| | | | |
|--|---|---------------------------------|---|
| Acute Toxicity | ☐ | Carcinogenicity | ☐ |
| Skin Irritation/Corrosion | ☐ | Reproductivity | ☐ |
| Serious Eye Damage/Irritation | ☐ | STOT - Single Exposure | ☐ |
| Respiratory or Skin sensitisation | ☐ | STOT - Repeated Exposure | ☐ |
| Mutagenicity | ☐ | Aspiration Hazard | ☐ |

Legend: ✗ – Data available but does not fill the criteria for classification
✔ – Data required to make classification available
☐ – Data Not Available to make classification

SECTION 12 ECOLOGICAL INFORMATION

Toxicity

| Ingredient | Endpoint | Test Duration (hr) | Species | Value | Source |
|------------|----------|--------------------|-------------------------------|--------------|--------|
| iron | BCF | 24 | Crustacea | 0.000002mg/L | 4 |
| iron | EC50 | 96 | Algae or other aquatic plants | 3.7mg/L | 4 |
| iron | LC50 | 96 | Fish | 0.05mg/L | 2 |
| iron | NOEC | 504 | Fish | 0.52mg/L | 2 |
| iron | EC50 | 48 | Crustacea | 5.11mg/L | 2 |
| iron | EC50 | 504 | Crustacea | 4.49mg/L | 2 |
| nickel | BCF | 1440 | Algae or other aquatic plants | 0.47mg/L | 4 |
| nickel | LC50 | 96 | Fish | 0.000475mg/L | 4 |
| nickel | EC50 | 48 | Crustacea | 0.013mg/L | 5 |
| nickel | EC50 | 72 | Crustacea | 0.00513mg/L | 2 |

Continued...

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| | | | | | |
|---------------------|------|------|-------------------------------|----------------|---|
| nickel | EC50 | 72 | Algae or other aquatic plants | 0.0407mg/L | 2 |
| nickel | NOEC | 72 | Algae or other aquatic plants | 0.0035mg/L | 2 |
| cadmium | BCF | 960 | Fish | 500mg/L | 4 |
| cadmium | LC50 | 96 | Fish | 0.001mg/L | 4 |
| cadmium | NOEC | 168 | Fish | 0.00001821mg/L | 4 |
| cadmium | EC50 | 336 | Crustacea | 0.00065mg/L | 5 |
| cadmium | EC50 | 48 | Crustacea | 0.0033mg/L | 5 |
| cadmium | EC50 | 72 | Algae or other aquatic plants | 0.018mg/L | 2 |
| cobalt | BCF | 1344 | Fish | 0.99mg/L | 4 |
| cobalt | LC50 | 96 | Fish | 1.406mg/L | 2 |
| cobalt | EC50 | 48 | Crustacea | >0.89mg/L | 2 |
| cobalt | EC50 | 504 | Crustacea | 0.012mg/L | 2 |
| cobalt | EC50 | 72 | Algae or other aquatic plants | 0.144mg/L | 2 |
| cobalt | NOEC | 168 | Algae or other aquatic plants | 0.0018mg/L | 2 |
| carbon black | LC50 | 96 | Fish | >100mg/L | 2 |
| carbon black | NOEC | 720 | Fish | 17mg/L | 2 |
| carbon black | EC50 | 48 | Crustacea | >100mg/L | 2 |
| carbon black | EC50 | 384 | Crustacea | 4.9mg/L | 2 |
| carbon black | EC50 | 96 | Algae or other aquatic plants | 95mg/L | 2 |
| sodium hydroxide | EC50 | 384 | Crustacea | 27901.643mg/L | 3 |
| sodium hydroxide | EC50 | 96 | Algae or other aquatic plants | 1034.10043mg/L | 3 |
| sodium hydroxide | LC50 | 96 | Fish | 4.16158mg/L | 3 |
| sodium hydroxide | NOEC | 96 | Fish | 56mg/L | 4 |
| sodium hydroxide | EC50 | 48 | Crustacea | 40.4mg/L | 2 |
| lithium hydroxide | LC50 | 96 | Fish | 62.2mg/L | 2 |
| lithium hydroxide | EC50 | 48 | Crustacea | 19.1mg/L | 2 |
| lithium hydroxide | EC50 | 72 | Algae or other aquatic plants | 1.88mg/L | 2 |
| lithium hydroxide | EC50 | 72 | Algae or other aquatic plants | 3.29mg/L | 2 |
| lithium hydroxide | NOEC | 72 | Algae or other aquatic plants | 0.31mg/L | 2 |
| potassium hydroxide | LC50 | 96 | Fish | 80mg/L | 2 |
| potassium hydroxide | NOEC | 24 | Fish | 28mg/L | 2 |

Legend:

Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 - Aquatic Toxicity Data (Estimated) 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data

DO NOT discharge into sewer or waterways.

Persistence and degradability

| Ingredient | Persistence: Water/Soil | Persistence: Air |
|------------------|-------------------------|------------------|
| sodium hydroxide | LOW | LOW |

Bioaccumulative potential

| Ingredient | Bioaccumulation |
|------------------|------------------------|
| sodium hydroxide | LOW (LogKOW = -3.8796) |

Mobility in soil

| Ingredient | Mobility |
|------------------|------------------|
| sodium hydroxide | LOW (KOC = 14.3) |

SECTION 13 DISPOSAL CONSIDERATIONS

Waste treatment methods

| | |
|-------------------------------------|--|
| Product / Packaging disposal | Recycle wherever possible. Consult manufacturer for recycling options. Consult State Land Waste Management Authority for disposal. |
|-------------------------------------|--|

SECTION 14 TRANSPORT INFORMATION**Labels Required**

| | |
|-------------------------|----------------|
| Marine Pollutant | NO |
| HAZCHEM | Not Applicable |

Land transport (ADG): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS****Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS****Transport in bulk according to Annex II of MARPOL and the IBC code**

Not Applicable

SECTION 15 REGULATORY INFORMATION**Safety, health and environmental regulations / legislation specific for the substance or mixture****IRON(7439-89-6) IS FOUND ON THE FOLLOWING REGULATORY LISTS**

| | |
|---|---|
| Australia Exposure Standards | International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs |
| Australia Inventory of Chemical Substances (AICS) | |

NICKEL(7440-02-0) IS FOUND ON THE FOLLOWING REGULATORY LISTS

| | |
|--|---|
| Australia Exposure Standards | Australia Inventory of Chemical Substances (AICS) |
| Australia Hazardous Substances Information System - Consolidated Lists | |

CADMIUM(7440-43-9) IS FOUND ON THE FOLLOWING REGULATORY LISTS

| | |
|--|---|
| Australia Exposure Standards | Australia Work Health and Safety Regulations 2011 - Hazardous chemicals (other than lead) requiring health monitoring |
| Australia Hazardous Substances Information System - Consolidated Lists | International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs |
| Australia Inventory of Chemical Substances (AICS) | |

COBALT(7440-48-4) IS FOUND ON THE FOLLOWING REGULATORY LISTS

| | |
|--|---|
| Australia Exposure Standards | Australia Inventory of Chemical Substances (AICS) |
| Australia Hazardous Substances Information System - Consolidated Lists | International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs |

CARBON BLACK(1333-86-4) IS FOUND ON THE FOLLOWING REGULATORY LISTS

| | |
|--|---|
| Australia Exposure Standards | Australia Inventory of Chemical Substances (AICS) |
| Australia Hazardous Substances Information System - Consolidated Lists | International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs |

SODIUM HYDROXIDE(1310-73-2) IS FOUND ON THE FOLLOWING REGULATORY LISTS

| | |
|--|---|
| Australia Exposure Standards | Australia Inventory of Chemical Substances (AICS) |
| Australia Hazardous Substances Information System - Consolidated Lists | |

LITHIUM HYDROXIDE(1310-66-3) IS FOUND ON THE FOLLOWING REGULATORY LISTS

| | |
|---|--|
| Australia Inventory of Chemical Substances (AICS) | |
|---|--|

POTASSIUM HYDROXIDE(1310-58-3) IS FOUND ON THE FOLLOWING REGULATORY LISTS

| | |
|--|---|
| Australia Exposure Standards | Australia Inventory of Chemical Substances (AICS) |
| Australia Hazardous Substances Information System - Consolidated Lists | |

| National Inventory | Status |
|--------------------|---|
| Australia - AICS | Y |
| Canada - DSL | Y |
| Canada - NDSL | N (nickel; cobalt; potassium hydroxide; iron; carbon black; lithium hydroxide; sodium hydroxide; cadmium) |

Paslode - STOCKade Nickel Cadmium Battery

| | |
|-------------------------------|--|
| China - IECSC | Y |
| Europe - EINEC / ELINCS / NLP | Y |
| Japan - ENCS | N (nickel; cobalt; iron; cadmium) |
| Korea - KECI | Y |
| New Zealand - NZIoC | Y |
| Philippines - PICCS | Y |
| USA - TSCA | Y |
| Legend: | Y = All ingredients are on the inventory N = Not determined or one or more ingredients are not on the inventory and are not exempt from listing(see specific ingredients in brackets) |

SECTION 16 OTHER INFORMATION

Other information

Ingredients with multiple cas numbers

| Name | CAS No |
|-------------------|-----------------------|
| sodium hydroxide | 1310-73-2, 12200-64-5 |
| lithium hydroxide | 1310-66-3, 1310-65-2 |

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

A list of reference resources used to assist the committee may be found at:

www.chemwatch.net

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

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