NICKEL HYDROXIDE
HEALTH AND SAFETY DATA SHEET

1. Identification of the Substance / Preparation and the Company / Undertaking

Product Name
Nickel Hydroxide

Chemical name/synonyms
Nickel Hydroxide/Inorganic Salt

Use of the substance / preparation
The product is used in industrial manufacturing, in particular in:
- Ceramics
- Coatings

Supplier
MK Import/Export Inc.

2. Composition / Information on Ingredients

Chemical Nature of the Substance / Preparation
%>99%

Components Nickel Hydroxide
CAS- N° 12054-48-7

Nickel is considered a carcinogen under the OSHA Hazard Communication Standard 29 CFR 1910.1200 (a, b, c) Appendix A(1) & Appendix B (1)

3. Hazards Identification

Emergency overview
Nickel dust or fume can cause sensitization dermatitis and may cause cancer of the paranasal sinuses and the lungs. Nickel fumes are respiratory irritants and may cause pneumonitis. Skin contact may cause allergic reaction, skin rash. Material may cause eye irritation. Avoid contact with eyes, skin and clothing. Dust from handling may cause irritation of the nose and throat. Prolonged exposure can cause serious respiratory illness and lung damage. Sensitized persons may develop wheezing and shortness of breath. Avoid breathing dust. Wash thoroughly after handling. Keep container closed. Use with adequate ventilation.

POTENTIAL HEALTH EFFECTS

Tel.: 440-808-1000 • Fax: 440-808-3500 • Email: bloom@mk-usa-inc.com
Primary Routes of Entry:
Absorption, Inhalation, Ingestion. Prolonged exposure may cause skin irritation. Contact may cause burn to skin or eyes. Exposure to Nickel can cause allergic dermatitis (nickel itch) in people sensitive to nickel. Inhalation can cause upper respiratory tract irritation. Ingestion may produce gastro-intestinal disorders.

Inhalation
Nickel can cause irritation of the mucous membranes of the upper respiratory tract. Individuals hypersensitive to Nickel may develop asthma, bronchitis, and shortness of breath or wheezing.

Eye contact
Will cause redness and irritation of the eye.

Skin contact
Causes irritation, sensitization, or allergic reactions resulting in "Nickel Itch" or chronic eczema. This is accentuated by heat or humidity.

Ingestion
Nickel is harmful and can cause gastro-intestinal disorders.

Reproductive/Developmental
Material may cause heritable genetic damage.

Cancer
NIOSH has concluded that certain nickel compounds are suspected carcinogens. The National Toxicology Program (NTP) and the International Agency list nickel and certain nickel compounds including nickel powder, nickel carbonyl, nickel oxide, and nickel carbonate, as carcinogens for Research on Cancer (IARC). The Occupational Health and Safety Commission (OSHA) regulate nickel and certain nickel compounds as carcinogens.

Signs and symptoms of exposure
Symptoms of accidental over-exposure to Nickel are: burning or irritation of skin, eyes or mucous membranes, and dermatitis (nickel itch)

Hazardous Material Information (HMIS)
Health-2 Flammability-0 Reactivity-0 PPE: E

4. First aid measures

Skin contact
Immediately flush with plenty of water for at least 15 minutes. Remove contaminated clothing.

Eye contact
Immediately flush eyes with plenty of water for at least 15 minutes, lifting upper and lower eyelids occasionally. Call a physician.

Inhalation
If affected remove to fresh air. If not breathing give artificial respiration. If breathing is difficult give oxygen. Call a physician.

Ingestion
If accidental ingestion occurs, and the victim is conscious, induce vomiting. Call a physician.

5. Fire-fighting measures

General hazard
Nickel is not flammable, combustible or explosive. In extremely high temperatures hazardous decomposition may occur and form toxic fumes and metal oxides. Nickel is not a fire hazard. Wear self-contained breathing apparatus when large quantities are involved.

Extinguishing media
Not applicable, product does not burn.

Special Fire Fighting Procedures:
Fire fighters should be equipped with self-contained breathing apparatus and personal protective clothing.

Unusual Fire and Explosion Hazards:
High concentration of dust may present a dust explosion hazard.

National Fire Protection Association Hazard Classification (NFPA)
Health 2 Flammability 0 Reactivity 0

6. Accidental Release Measures
The spill should be contained and the area should be cleaned by wet sweeping or vacuum cleaning (HEPA filter) to minimize the creation of dust. Approved NIOSH respirator should be worn.

7. Handling and Storage

Safe Handling
Avoid inhaling mist or fumes. Wash thoroughly after use. Avoid prolonged and repeated skin contact. Keep container tightly closed. Always wear safety glasses and gloves when opening/emptying containers or processing the material.

Storage Conditions
Material should be stored in sealed containers to avoid dampness and dust. Partly used containers should be sealed.

Storage Pressure: Atmospheric
Incompatibilities: None expected.

8. Exposure controls / Personal protection

Exposure controls

A. OCCUPATIONAL EXPOSURE CONTROLS
Use local exhaust ventilation to keep airborne concentrations of nickel dust below permissible exposure levels.

- Respiratory protection
  Where airborne concentrations are expected to exceed exposure limits, a NIOSH/MSHA jointly approved self-contained respirators should be used full face piece in pressure demand or other positive mode.

- Eye protection
  Chemical Splash Goggles and face shield in compliance with OSHA regulations are advised. OSHA regulations also permit other types of safety glasses. Do not wear contact lenses.
  An eyewash and emergency shower should be readily available. Remove contaminated clothing and launder before re-use. To prevent repeated or prolonged skin contact wear chemical resistant apron or other impervious clothing and boots to avoid contamination of regular clothing.

B. ENVIRONMENTAL EXPOSURE GUIDELINES
Nickel soluable compounds are listed/regulated by OSHA, cal OSHA and ACGIH. The Tennessee Permissible Exposure Limit (PEL) is 1.0 mg/m³. The Tennessee Time Weighted Average (TWA) is 0.1 mg/m³ check in your particular states listing by checking with ch Dept of Labor.

9. Physical and chemical properties

General information
Appearance Light green powder
10. Stability and Reactivity

**General**
Nickel Hydroxide is a stable product.

**Condition of Avoid.**
None known

**Incompatible Materials**
None known

**Hazardous Polymerization**
Not expected to occur

**Hazardous Decomposition Under Fire Conditions**
Toxic fumes of Nickel oxides

11. Toxicological information

IARC has classified nickel hydroxide as carcinogenic to humans with sufficient evidence of carcinogenicity. NTP has classified nickel hydroxide as NTP 1 and NTP 2, indicates a casual relationship between human cancer and the chemical and a chemical anticipated to be carcinogenic, respectively.

Acute Oral LD50: No data at this time
Acute Dermal LD 50: No data at this time

12. Ecological information

Ecotoxicological Information: No data at this time
Chemical Fate Information: No data at this time

13. Disposal considerations

**Disposal guidance**
This product is not regulated as a RCRA hazardous waste by the Federal EPA but may be regulated in certain states. Dispose according to federal, state and local regulations.

14. Transport information

**D.O.T. Shipping Classification**
“RQ Environmentally hazardous substances solid n.o.s. (Contains nickel hydroxide) 9, UN 3077, PG III”

**Reportable Quantity**
“RQ 49 CFR Appendix to 172.101 table lists the reportable quantity for Nickel Hydroxide to be 10 LBS/4.5 KGS

**Air Freight**
“RQ Environmentally hazardous substances solid n.o.s. (Contains nickel hydroxide) 9, UN 3077, PG III”

**Ocean Transport**
“RQ Environmentally hazardous substances solid n.o.s. (Contains nickel hydroxide) 9, UN 3077, PG III”

**Hazard Classification:** Nickel Hydroxide is considered a class 9 (Miscellaneous) material and as such needs no
placarding until October 1, 2001. 49 CFR 171.14 © (2) However when shipped in bulk packaging the truck is required to be marked with identification numbers 3077 with orange panels or on a plain white square-on-point display configuration having the same outside dimensions as a placard. 49 CFR 172.326 © (2) and 49 CFR 172.336 (b)

15. Regulatory information

US FEDERAL REGULATIONS
OSHA CLASSIFICATION: Nickel is considered a carcinogen under the OSHA Hazard Communication Standard 29 CFR 1910.1200 Appendix A (1) (a, b, c) & Appendix B (1), because Nickel and certain nickel compounds are considered by IARC as Group 2B, “possibly carcinogenic to humans” and NTP considers them to be Group 2 “which may be reasonably anticipated to be carcinogenic”.

T.S.C.A. STATUS
Toxic Substances Control Act the ingredients of this product are on the TSCA inventory.

CERCLA NOTIFICATION
Comprehensive Environmental Response Compensation and Liability Act of 1980 (CERCLA) requires notification of the National Response Center (NRC) of the release quantities of hazardous substances equal to or greater than the reportable quantities (RQ’s) in 40 CFR 302.4.

SARA (Title III) REPORTING
Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires emergency planning based on Threshold Planning Quantities (TPQ’s) and release reporting based on (RQ’s) in 40 CFR 355 (used for SARA 302,304,311, and 312).

SARA (Title III) REPORTING
The product does not contain greater than 1.0% of any chemical substance on the SARA extremely hazardous substance list. Nickel Hydroxide is a chronic health hazard.

California Proposition 65:

Canadian Inventory
All components are on the Domestic Substance List.

EINECS Regulations
All components are on the European Inventory of Existing Chemical Substances.

JAPAN
Unknown at this time

All information presented herein is given in good faith and is based on sources and tests considered to be reliable, but cannot be guaranteed, it is the user’s full responsibility to accept risk for the safety, toxicity, handling, storage as well as to determine the suitability of the product for a specific purpose. We make no warranty as to the results to be obtained in using this product; therefore all risks must be assumed by the user.