



XI'AN FUNCTION MATERIAL GROUP CO., LTD  
Material Safety Data Sheet  
Nickel (II) hydroxide

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1. Product and Company Identification

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Trade Name:	Nickel (II) hydroxide
Chemical Formula:	Ni(OH) <sub>2</sub>
Manufacturer/Supplier:	XI'AN FUNCTION MATERIAL GROUP CO., LTD
Street:	No. 69, Gazelle Valley, High-Tech Zone
City:	XI'AN
State:	Shaanxi
Zip Code:	710077
Country:	China
Tel #:	+86-29-88993870/+86-13519132051

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2. Hazards Identification

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Signal Word: Danger



Hazard Statements:

H302+H332: Harmful if swallowed or if inhaled  
H315: Causes skin irritation.  
H317: May cause an allergic skin reaction.  
H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
H341: Suspected of causing genetic defects.  
H350: May cause cancer.  
H360: May damage fertility or the unborn child.  
H372: Causes damage to the lung, the kidneys and the liver through prolonged or repeated exposure. Route of exposure: Inhalative.  
H410: Very toxic to aquatic life with long lasting effects.

Precautionary Statements:

P260: Do not breathe dust/ fume/ gas/ mist/ vapors/spray.  
P264: Wash skin thoroughly after handling.  
P270: Do not eat, drink or smoke when using this product.  
P271: Use only outdoors or in a well-ventilated area.  
P272: Contaminated work clothing should not be allowed out of the workplace.  
P273: Avoid release to the environment.  
P280: Wear protective gloves.  
P281: Use personal protective equipment as required.  
P285: In case of inadequate ventilation wear respiratory protection.  
P301+P312+P330: IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.  
P302+P352: IF ON SKIN: Wash with plenty of soap and water.  
P304+P340+P312: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell.  
P308+P313: IF exposed or concerned: Get medical advice/ attention.  
P333+P313: If skin irritation or rash occurs: Get medical advice/ attention.  
P362: Take off contaminated clothing and wash before reuse.  
P391: Collect spillage.

P405: Store locked up  
P501: Dispose of contents/container in accordance with  
local/regional/national/international regulations.

HMIS Health Ratings (0-4):

Health:	2
Flammability:	0
Physical:	1

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3. Composition

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Chemical Family:	Salt
Additional Names:	Nickel dihydroxide

Nickel (II) hydroxide (Ni(OH)<sub>2</sub>):

Percentage:	100 wt%
CAS #:	12054-48-7
EC #:	235-008-5

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#### 4. First Aid Procedures

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General Treatment:	Seek medical attention if symptoms persist.
Special Treatment:	None
Important Symptoms:	None
Inhalation:	Remove victim to fresh air. Supply oxygen if breathing is difficult. Keep patient warm. Seek immediate medical attention.
Ingestion:	Seek immediate medical attention.
Skin:	Immediately wash affected area with mild soap and water. Remove any contaminated clothing. Seek immediate medical attention.
Eyes:	Flush eyes with water, blinking often for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. Seek immediate medical attention.

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#### 5. Firefighting Measures

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Flammability:	Non-flammable
Extinguishing Media:	No special restrictions – use suitable extinguishing agent for surrounding material and type of fire.
Spec. Fire Fighting Procedure:	Use full-face, self-contained breathing apparatus with full protective clothing to prevent contact with skin and eyes. See section 10 for decomposition products.

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#### 6. Accidental Release Measures

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If Material Is Released/Spilled:	Wear appropriate respiratory and protective equipment specified in special protection information. Keep unprotected persons away. Isolate spill area and provide ventilation. Vacuum up spill using a high efficiency particulate absolute (HEPA) air filter and place in a closed container for disposal. Take care not to raise dust.
Environmental Precautions:	Isolate runoff to prevent environmental pollution.

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#### 7. Handling and Storage

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Handling Conditions:	Avoid contact with skin and eyes. Wash thoroughly after handling.
Storage Conditions:	Store in a cool dry place in a tightly sealed container. Store away from oxidizing agents. Store apart from materials and conditions listed in section 10.
Work/Hygienic Maintenance:	Do not use tobacco or food in work area. Wash thoroughly before eating and smoking. Do not blow dust off clothing or skin with compressed air.
Ventilation:	Provide sufficient ventilation to maintain concentration at or below threshold limit.

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#### 8. Exposure Controls and Personal Protection

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Permissible Exposure Limits:	1 mg/m <sup>3</sup> as Ni, long-term value
Threshold Limit Value:	1.5 mg/m <sup>3</sup> as Ni, inhalable fraction, long-term value
Special Equipment:	Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.
Respiratory Protection:	Dust Respirator
Protective Gloves:	Rubber gloves
Eye Protection:	Safety glasses or goggles
Body Protection:	Protective work clothing. Wear close-toed shoes and long sleeves/pants.

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## 9. Physical and Chemical Characteristics

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Color	Light green
Form:	Powder, Granules, Pellets, Sputtering target, Custom parts
Odor:	Odorless
Water Solubility:	Insoluble
Boiling Point:	N/A
Melting Point:	230 °C
Flash Point:	N/A
Autoignition Temperature:	N/A
Density:	4.1 g/cc
Molecular weight:	92.70 g/mol

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## 10. Reactivity

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Stability:	Stable under recommended storage conditions
Reacts With:	Strong acids, strong oxidizing agents
Incompatible Conditions:	None
Hazardous Decomposition Products:	Metal oxide fume, nickel/nickel oxides

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## 11. Toxicological Information

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Potential Health Effects:	
Eyes:	May cause irritation
Skin:	Causes skin irritation. May cause an allergic skin reaction.
Ingestion:	Harmful if swallowed
Inhalation:	Harmful if inhaled. May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Chronic:	May cause cancer. May damage fertility or the unborn child. Causes damage to the lung, the kidneys and the liver through prolonged or repeated exposure. Route of exposure: Inhalative.
Signs & Symptoms:	Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin. Cough, shortness of breath, headache, nausea
Aggravated Medical Conditions:	N/A
Median Lethal Dose:	1,515 mg/kg for rat by mouth
Carcinogen:	IARC: 1 - Group 1: Carcinogenic to humans (Nickel dihydroxide) NTP: Known to be human carcinogen (Nickel dihydroxide) OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

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## 12. Ecological Information

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Aquatic Toxicity:	N/A
Persistent Bioaccumulation Toxicity:	N/A
Very Persistent, Very Bioaccumulative:	N/A
Notes:	Do not allow product to reach ground water, water course or sewage system, even in small quantities. Danger to drinking water if even extremely small quantities leak into the ground. Avoid transfer into the environment. Also poisonous for fish and plankton in water bodies. May cause long lasting harmful effects to aquatic life. Very toxic for aquatic organisms.

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### 13. Disposal Considerations

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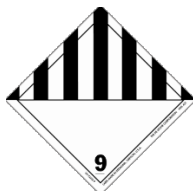
Dispose of in accordance with local, state, national, and international regulations.

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### 14. Transportation Data

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Hazardous: Hazardous as powder only.



Hazard Class: 9 Miscellaneous dangerous substances and articles  
Packing Group: III  
UN Number: UN3077  
Proper Shipping Name: Environmentally hazardous substances, solid, n.o.s. (Nickel dihydroxide)

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### 15. Regulatory Information

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Sec 302 Extremely Hazardous: No  
Sec 304 Reportable Quantities: 10 lbs  
Sec 313 Toxic Chemicals: Yes

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### 16. Other Information

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This safety data sheet should be used in conjunction with technical sheets. It does not replace them. The information given is based on our knowledge of this product, at the time of publication. It is given in good faith. The attention of the user is drawn to the possible risks incurred by using the product for any other purpose other than that for which it was intended. This does not in any way excuse the user from knowing and applying all the regulations governing his activity. It is the sole responsibility of the user to take all precautions required in handling the product. The aim of the mandatory regulations mentioned is to help the user to fulfill his obligations regarding the use of hazardous products.

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