CONTACT : LEONID CHEMICALS
Leonid Chemicals Pvt Ltd
62/A-2 1st Stage,Yeshwanthpur Industrial Suburb
Ashokpuram School Road
Bangalore-560 022, Karnataka, INDIA
Ph: +91-80-2337 8354, Fax: +91-80-2357 4827

MATERIAL SAFETY DATA SHEET

Nickelous Sulfate Hexahydrate 16410

SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

MSDS Name: Nickelous Sulfate Hexahydrate
Catalog Numbers:
N/2000, N/2055
Synonyms:
Nickel Sulfate Crystal, Single Nickel Salt, Sulfuric Acid Nickel (II) Salt.
Company Identification: Fisher Scientific UK
Bishop Meadow Road
Loughborough, Leicestershire
LE11 5RG, UK
For information, call: 01509 231166
For emergencies, call: 01509 231166

SECTION 2 - COMPOSITION, INFORMATION ON INGREDIENTS

CAS#	:	10101-97-0
Chemical Name	:	NICKEL(II) SULFATE HEXAHYDRATE (1:1:6)
%	:	>98%
EINECS#	:	unlisted
Haz Symbols	:	XN
Risk Phrases	:	22 33

SECTION 3 - HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Harmful if swallowed. Danger of cumulative effects.

Potential Health Effects

Eye:
May cause eye irritation.

Skin:
Causes skin irritation.

Ingestion:
May cause gastrointestinal irritation with nausea, vomiting and diarrhea.

Inhalation:
Dust is irritating to the respiratory tract. Inhalation of vapor may cause respiratory tract irritation.

Chronic:
Prolonged or repeated skin contact may cause sensitization dermatitis and possible destruction and/or ulceration. May cause

respiratory tract cancer.

SECTION 4 - FIRST AID MEASURES

Eyes:
Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately. Do NOT allow victim to rub eyes or keep eyes closed.

Skin:
Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid if irritation develops or persists.

Ingestion:
If victim is conscious and alert, give 2-4 cupfuls of milk or water. Get medical aid immediately.

Inhalation:
Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

Notes to Physician:

SECTION 5 - FIRE FIGHTING MEASURES

General Information:
As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Water runoff can cause environmental damage. Dike and collect water used to fight fire.

Extinguishing Media:
Substance is noncombustible; use agent most appropriate to extinguish surrounding fire.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks:
Wash area with soap and water. Wear a self contained breathing apparatus and appropriate personal protection. (See Exposure Controls, Personal Protection section). Carefully scoop up and place into appropriate disposal container.

SECTION 7 - HANDLING and STORAGE

Handling:
Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use with adequate ventilation. Minimize dust generation and accumulation. Do not get on skin or in eyes. Do not ingest or inhale.

Storage:
Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Keep away

from strong acids.

SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION

Engineering Controls:

Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

Personal Protective Equipment

Eyes:

Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin:

Wear appropriate protective gloves to prevent skin exposure.

Clothing:

Wear appropriate protective clothing to prevent skin exposure.

Respirators:

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Solid
Color: Blue-green crystals
Odor: Not available.
pH: 4.5 in solution.
Vapor Pressure: Negligible
Viscosity: Not available.
Boiling Point: 217 deg F
Freezing/Melting Point: 127 deg F
Autoignition Temperature: Noncombustible
Flash Point: Noncombustible
Explosion Limits, lower: Not available.
Explosion Limits, upper: Not available.
Decomposition Temperature: 280 C
Solubility in water: 625g/L @20C in water.
Specific Gravity/Density: 2.07 (water=1)
Molecular Formula: $NiSO_4.6H_2O$
Molecular Weight: 262.828

SECTION 10 - STABILITY AND REACTIVITY

Chemical Stability:

Stable at room temperature in closed containers under normal storage and handling conditions.

Conditions to Avoid:

Ignition sources, excess heat, strong acids.

Incompatibilities with Other Materials:
Strong acids, strong oxidizing agents.
Hazardous Decomposition Products:
Oxides of sulfur, nickel oxide.
Hazardous Polymerization: Has not been reported.

SECTION 11 - TOXICOLOGICAL INFORMATION

RTECS#:
CAS# 10101-97-0: QR9600000
LD50/LC50:
CAS# 10101-97-0: Oral, rat: LD50 = 264 mg/kg.
Carcinogenicity:
NICKEL(II) SULFATE HEXAHYDRATE (1:1:6) -
Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.
Other:
See actual entry in RTECS for complete information.

SECTION 12 - ECOLOGICAL INFORMATION

Ecotoxicity:
Prawn (salt water) LC50=13.9ppm/48H Rainbow trout (fresh water)
TLm=160ppm/48H

SECTION 13 - DISPOSAL CONSIDERATIONS

Products which are considered hazardous for supply are classified as Special Waste and the disposal of such chemicals is covered by regulations which may vary according to location. Contact a specialist disposal company or the local waste regulator for advice. Empty containers must be decontaminated before returning for recycling.

SECTION 14 - TRANSPORT INFORMATION

IATA
Not regulated as a hazardous material.
IMO
Not regulated as a hazardous material.
RID/ADR
Not regulated as a hazardous material.

SECTION 15 - REGULATORY INFORMATION

European/International Regulations
European Labeling in Accordance with EC Directives
Hazard Symbols: XN
Risk Phrases:
R 22 Harmful if swallowed.
R 33 Danger of cumulative effects.
Safety Phrases:
S 24/25 Avoid contact with skin and eyes.
WGK (Water Danger/Protection)

CAS# 10101-97-0: 2

United Kingdom Occupational Exposure Limits

United Kingdom Maximum Exposure Limits

CAS# 10101-97-0: MEL-United Kingdom, TWA (listed as ** undefined **): 0.1 mg/m3 TWA (as Ni)

Canada

None of the chemicals in this product are listed on the DSL/NDSL list.
CAS# 10101-97-0 is not listed on Canada's Ingredient Disclosure List.

Exposure Limits

CAS# 10101-97-0: OEL-ARAB Republic of Egypt:TWA 0.1 mg(Ni)/m3
OEL-AUSTRALIA:TWA 1 mg(Ni)/m3
OEL-BELGIUM:TWA 1 mg(Ni)/m3 (insoluble compounds)
OEL-BELGIUM:TWA 1 mg(Ni)/m3
OEL-CZECHOSLOVAKIA:TWA 0.05 mg(Ni)/m3;STEL 0.25 mg(Ni)/m3
OEL-DENMARK:TWA 0.05 mg(Ni)/m3;Carcinogen
OEL-DENMARK:TWA 1 mg(Ni)/m3 (insoluble compounds)
OEL-FINLAND:TWA 0.1 mg(Ni)/m3;Carcinogen
OEL-FINLAND:TWA 0.1 mg(Ni)/m3;Skin;CAR (insoluble compounds)
OEL-FRANCE:TWA 1 mg(Ni)/m3
OEL-GERMANY;Carcinogen
OEL-HUNGARY:STEL 0.005 mg(Ni)/m3;CAR (insoluble compounds)
OEL-HUNGARY:STEL 0.005 mg(Ni)/m3;Carcinogen
OEL-JAPAN:TWA 1 mg(Ni)/m3;Carcinogen
OEL-THE NETHERLANDS:TWA 0.1 mg(Ni)/m3
OEL-THE NETHERLANDS:TWA 1 mg(Ni)/m3 (insoluble compounds)
OEL-THE PHILIPPINES:TWA 1 mg(Ni)/m3
OEL-RUSSIA:STEL 0.05 mg(Ni)/m3
OEL-SWEDEN:TWA 0.5 mg(Ni)/m3
OEL-SWITZERLAND:TWA 0.5 mg(Ni)/m3 (insoluble compounds)
OEL-SWITZERLAND:TWA 0.5 mg(Ni)/m3;Carcinogen JAN9
OEL-THAILAND:TWA 1 mg(Ni)/m3
OEL-UNITED KINGDOM:TWA 0.5 mg(Ni)/m3 (insoluble compounds)
OEL-UNITED KINGDOM:TWA 1 mg(Ni)/m3
OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA check ACGIH TLV
OEL IN NEW ZEALAND, SINGAPORE, VIETNAM check ACGI TLV

US FEDERAL

TSCA

CAS# 10101-97-0 is not on the TSCA Inventory because it is a hydrate.
It is considered to be listed if the CAS number for the anhydrous form is on the inventory (40CFR720.3(u)(2)).

SECTION 16 - ADDITIONAL INFORMATION

MSDS Creation Date: 3/02/1995 Revision #0 Date: Original.

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no way shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if the company has been advised of the possibility of such damages.