ZENITH

MATERIAL SAFETY DATA SHEET

1. Identification of the substance/preparation and of the company/undertaking

Identification of the product Product name: Nickel Sulphate EN grade
Manufacturer／Supplier Identification Company：Zenith Chemical Corporation
Emergency telephone No.：Tel. 886-4-26811521

2. Hazards identification

Inhalation of nickel chloride dust or mist can cause irritation of the upper respiratory tract. Skin contact may be irritating and can cause allergic dermatitis ("nickel itch") characterized by itching, erythematic, and skin eruption. Eye contact with dust pr solutions may cause irritation. Ingestion of nickel salts can cause nausea, vomiting, and giddiness. The NTP and IARC list "nickel and certain nickel compounds" as suspected carcinogens. This is based in part on epidemiological evidence of excess incidences of nasal and lung cancer in populations of workers exposed to nickel or nickel compounds. The specific nickel compounds responsible have not been identified.

**********N.F.P.A.**********

Degree of hazard	Emergency hazard rating	
4=extreme	Health	< 3 >
3=High	Fire	< 0 >
2=Moderate	Reactivity	< 0 >
1=Slight	Specific hazard	< >
0=insignificant		

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Hazard Label

3. Composition/information on ingredients

CAS No.：7786-81-4

Molar mass：262.86

Molecular formula：$NiSO_4 \cdot 6H_2O$, Typical composition:99.5%

Synonyms：Nickel sulfate ; Nickel salt ; Nickel (II) Sulphate hexahydrate.

4. First aid measures

After inhalation : fresh air. Summon doctor.
After skin contact : wash off with plenty of water. Remove contaminated clothing.
After eye contact : rinse out with plenty of water for at least 10 minutes with the eyelid held wide open.
After swallowing : make victim drink plenty of water, induce vomiting. Immediately summon doctor.
Raw eggs mixed into milk.

5. Fire-fighting measures

Nickel Sulphate is nonflammable. Use extinguishing agents that are appropriate for the surrounding fire.
If water is use, minimize runoff to sewers and waterways. No unusual fire or explosion hazards are associated with this material.
Fire fighters should wear self-contained breathing apparatus and fully protective gear for protection against dust, mist, and fumes generated during fire-fighting activities.
Special risks: none

6. Accidental release measures

Procedures for cleaning / absorption :
Take up dry. Forward for disposal. Clean up affected area. Avoid generation of dusts.

7. Handling and storage

Handling : No further requirements.
Storage : tightly closed. Dry. In a well-ventilated place. Accessible only for authorized person.

8. Exposure controls/personal protection

Personal protective equipment :
Respiratory protection : required when dusts are generated.
Eye protection : required
Hand protection : required
Industrial hygiene : Immediately change contaminated clothing. Apply skin-protective barrier cream.
Wash hands and face after working with subatance.

9. Physical and chemical properties

Form：tetragonal crystals
Colour：blue to blue-green
Odour：No
PH value：3.0-5.0 in 5% solution
Melting temperature：53.3 ℃(transition point); 100℃(dehydrate); 848℃(decomposes)
Boiling temperature：NA
Ignition temperature：NA
flash point：NA
Explosion limits lower：NA
upper：NA
Relative vapour density：NA
Density：2.07g/cc
Bulk density：
Solubility in water (0 ℃)---62.52g/100cc ; (100 ℃)---340.7g/100cc

10. Stability and reactivity

Conditions to be avoided：No information available
Substances to be avoided：Strong acids.
Hazardous decomposition products：No information available
Nickel sulfate is stable at room temperature. Nickel sulfate does not polymerize. It loses water of hydration at 100℃and decomposes at 848℃ with the evolution of oxides of sulfur(toxic)

11. Toxicological information

Actual toxicity: LD50 (oral, rat)：105mg/kg (anhydrous substance)
Further toxicological information：
The following applies to soluble nickel compounds in general: inorganic nickel has an astringent effect on mucous membranes. Sensitization with allergic manifestations is possible in predisposed persons. In some cases nickel dermatitis may manifast itself. Depending on the water-solubility, nickel and its compounds display a more or less distinct carcinogenicity, with the readily soluble nickel compounds obviously entailing the lesser risk.

12. Ecological information

Ecotoxic effects：
the following applies to nickel salts in general: Biological effects: dissolved Ni toxic for aquatic organisms. Fish: L. idus L50: 570mg/l; lethal concentration for fish 1mg/l in soft water; in hard water

P. promelas LD50 27mg/l; bacteria: Ps. Putida toxic from 0.0025 mg/l up; algae: Sc. quadricauda toxic from 1.3mg/l up;M. aeruginosa toxic from 0.005mg/l up; E. sulcatum toxic from 0.14mg/l up; U. pardcczi toxic from 0.042 mg/l up; arthropods: D. magna LC50: 11mg/l (all values referring to dissolved Ni)

Further ecologic data: Do not allow to enter waters, waste water, or soil.

13. Disposal considerations

Product :

Chemical residues generally count as special waste. The disposal of the latter is regulated in the country through corresponding laws and regulations. We recommend that you contact either the authorities in charge or approved waste disposal companies which will advise you on how to dispose of special waste.

Packaging :

Disposal **in compliance with** official regulations. Handle contaminated packaging in the same way as the substance itself. If not officially specified differently, non-contaminated packaging may be treated like household waste or recycled.

14. Transport information

Transport over land ADR/RID and GGVS/GGVE (Germany)

River transport
Sea transport
Air transport
UN / ID NO. : UN3288

15. Regulatory information

Labeling according to directives

symbol: :	T	Toxic
R-phrases :	25-43	Toxic if swallowed. May cause sensitization by skin contact.
S-phrases :	24-37-45	Avoid contact with skin. Wear suitable gloves. On case of accident or if you feel unwell, seek medical advice immediately.(show the label where possible)

16. Other information

Produced by : Zenith Chemical Corporation

Issued date : Oct., 29, 2010
Reference :

The information contained herein is based on the present state of our knowledge. It characterizes the product with regard to the appropriate safety precautions. It does not represent a guarantee of the properties of the product.