SAFETY DATA SHEET

JSC “Uralelectromed”

1. IDENTIFICATION OF THE SUBSTANCE\PREPARATION AND OF THE COMPANY\UNDERTAKING

Identification of the substance/preparation	Nickel sulfate –**min. 97.0%**
Trade name	Nickel (II) sulfate heptahydrate (nickel sulfate)
Use of the substance/preparation	Nickel (II) sulfate – heptahydrate is a chemical agent. It is used for manufacturing of batteries, in fungicide mixtures, for production of catalysts, in fat and oil industry, and in perfumery industry.
Version No.	01/2
Revision date	13-January-2010
SDS Number	PB-00194429-004-2010
Manufacturer/Supplier	JSC “Uralelectromed” 1, Lenin Str., Verkhnyaya Pyshma, 624091 Sverdlovsk region, Russia Tel. +7 34368 47199, +7 34368 46193; fax: +7 34368 46039 Contact person: Elena Kapustina Email: reach@ugmk.com; e.kapustina@ugmk.com http: www.elem.ru
Emergency	Emergency phone (Access code): +7 34368 47199
Only representative	Halma Export & Import GmbH Reichstratsstrasse 11/3A A-1010 Vienna Austria Contact: Dr. Bernhard Goetsch Phone: +43 (0) 1 533 56 80 Fax: +43 (0) 1 533 56 80 30 e-mail: bernhard.goetsch@halma.co.at

2. HAZARDS IDENTIFICATION

This substance is classified as dangerous according to Directive 67/548/EEC

Physical hazards	Not classified as a physical hazard.
Health hazards	Classified as a health hazard if inhalated or swallowed or skin and eyes contact
Environmental hazards	Classified as an environment hazard if improperly stored, handled, disposed and recycled or in the result of emergency
Specific hazards	This product (nickel sulfate) is considered to present high human exposure. Allergic agent. Carcinogenic. Toxic. It may penetrate through uninjured skin.
Main symptoms	Coughing, tickling in throat, atony, breath rhythm disorder, allergic dermatitis, lacrimation and eye redness, dizziness, headache, sickness, vomiting, diarrhea.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS #	Percent	EC-No.	Classification
$NiSO_4$	7786-81-4	minimum 97.0	232-104-9	Carc.Cat. 3; R40 X_n; R22 R42/43 N; R50-53

All concentrations are in percent by weight . For more detailed chemical composition, refer to the certificate of analysis.

*) Decoding of hazard symbols is given in Section 16.

4. FIRST-AID MEASURES

Inhalation	Move to fresh air. Ensure rest, warmth, clean clothes. Get medical attention if discomfort persists.
Skin contact	Get off dirty clothes. Wash skin with soap and water. Get medical attention if irritation develops or persists.
Eye contact	Flush eyes thoroughly with running water. If discomfort continues, consult a physician.
Ingestion	Rinse mouth thoroughly. Get medical attention if any discomfort continues.
General advice	Get medical attention if any discomfort develops. Show this safety data sheet to the doctor in attendance.
Notes to physician	Treat symptomatically. The effects might be delayed

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	Depending on the main source of ignition.
Extinguishing media which must not be used for safety reasons	Depending on the main source of ignition.
Unusual fire & explosion hazards	Nickel (II) sulfate heptahydrate is fire- and explosion proof.
Specific hazards	Package can be involved into fire that may lead to the product heating and crystallization water loss and generation of nickel oxide and sulfur trioxide. Further decomposition is possible if high temperatures.
Special protective equipment for fire-fighters	Personal protection equipment depending on the main source of ignition.
Fire fighting equipment/instructions	Move container from fire area if it can be done without risk. Use a special-purpose equipment

6. ACCIDENTAL RELEASE MEASURES

Personal precautions	Ensure adequate ventilation. Avoid inhalation of dust and spray and contact with skin and eyes. Wear protective clothing as described in Section 8 of this safety data sheet.
Environmental precautions	Avoid release to the environment. Must never be put to drain.
Methods for cleaning up	Scrape up spilled material into a suitable container for recycle or disposal. Collect dust or particulates using a vacuum cleaner with a HEPA filter.

7. HANDLING AND STORAGE

Handling	Provide adequate ventilation. Use sealed equipment and package materials. Avoid spillage, generation and spreading of dust. Avoid inhalation of dust and contact with skin and eyes. Wear appropriate personal protective equipment.
Storage	Keep dry in supplier’s package and away from incompatible materials. Avoid direct sunbeams, wetness, dirtiness and package damage.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure limit values

United Kingdom

Components	Type	Value	Comments
Nickel sulfate 7786-81-4	TWA	0.1 mg/m^3	Sen.

Exposure controls Use local exhaust ventilation, sealed equipment and package or other exposure level control devices to maintain concentration in air below recommended exposure limits.

Occupational exposure controls

Respiratory protection In case of inadequate ventilation or risk of inhalation of dust, use suitable respiratory equipment with particle filter (type P2). Seek advice from local supervisor.

Hand protection Wear suitable protective gloves to prevent cuts and abrasions; against fine dust use protective hydrophobic ointment, paste and cream. Apply cleansers and personal towels to remove ointment. Suitable gloves can be recommended by the glove supplier.

Eye protection Wear dust-resistant safety goggles where there is danger of eye contact.

Skin and body protection Wear suitable protective clothing.

General Use personal protective equipment when required. Select personal protective equipment according to the CEN standards; discuss protective equipment with the supplier.

Environmental exposure controls Contain spills and prevent releases. Observe national regulations on emissions.

Hygiene measures Store and handle in accordance with good industrial hygiene and safety practices. Wash hands after handling. Routinely wash work clothing and protective equipment to remove contaminants. Observe any medical surveillance requirements.

9. PHYSICAL NAD CHEMICAL PROPERTIES

Appearance	Crystalline powder
Physical state	Solid
Form	Rhombic crystal
Colour	Emerald green
Odour	Odourless.
pH	Not applicable
Boiling point	Not applicable
Dehydration point	280° C
Flash point	Not available.
Flammability	Not available.
Vapour pressure	Not available.
Apparent density	(1.948-1.949) g/cm^3
Specific area of particles	Not available
Solubility (water)	101 g is solved into 100 g of water at 20° C Soluble in ethanol
Partition coefficient (n-octano/water	Not available.
Viscosity	Not available.
Vapour density	Not available.
Evaporation rate	Not available
Melting point	31.5° C
Freezing point	Not available.
Auto-ignition temperature	Not available
VOC	Not available
Bulk density	Not available.
Percent volatile	Not available.

10. STABILITY AND REACTIVITY

Conditions to avoid	Contact with incompatible materials.
Hazardous decomposition products	At temperature over 700° C it is decomposed into nickel oxide and sulfur trioxide
Stability	Stable under normal conditions of use, storage and transportation.
Materials to avoid	Acids. Alkalis. When interacting with carbon oxide, nickel carbonoxide (a highly dangerous volatile) is generated.
Hazardous polymerisation	Not applicable.

11. TOXICOLOGICAL INFORMATION

Acute toxicity	Inhalation of dust may cause acute and chronic poisoning with various clinical symptoms.
Routes of exposure	Inhalation. Skin contact. Eye contact. Ingestion.
Chronic toxicity	Prolonged inhalation may irritate upper airways, eyes and skin. Skin permeated (percutaneous action)
Sensitization	Sensitizing
Carcinogenicity	Listed as carcinogenic in IARC. Nickel compounds are referred to Car. Cat. 3. Most carcinogenic hazard if inhalated.
Mutagenicity	Mutagenic
Reproductivity	Reproductive hazard.
Epidemiology	Based on epidemiological studies, main exposure on the central nervous system, respiratory system, cardiovascular system, gastrointestinal tract, liver, kidneys, spleen, red blood system, skin, eyes and upper respiratory tract.
Local effects	May cause irritation on skin, upper respiratory tract and eye mucous membrane.
Further information	Prolonged contact may affect hematosis, carbohydrate metabolism and result into cancer tumor.

12. ECOLOGICAL INFORMATION

Ecotoxicity	Pollutant for various environmental media. If it presents in water basins, it may change organoleptic properties of water, and destructively affect their dwellers. Accumulation in soil leads to flora demise and change of soil composition.
Ecotoxicity factors:	Acute toxicity: 48 hr LC_{50} (for fish) ≥ 100 mg/l 64 hr EC_{50} (for Daphnia) ≤ 1 mg/l
Environmental effects	An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Persistence and degradability	The product is not degradable if stored correctly.

Bioaccumulation	The product is not bioaccumulating.
Aquatic toxicity	If nickel (II) sulfate heptahydrate presents in water basins, it destructively affects fish, plankton and water weed; changes organoleptic properties of water; is cumulated by soil and plants and stops their growth.
Mobility	Is not altered in the environment and highly stable within abiotic environment.

13. DISPOSAL CONSIDERATIONS

Disposal instructions	Dispose in accordance with applicable regulations. EWC code 06 04 05.

14. TRANSPORT INFORMATION

ADR	No. UN-3077- environment hazard, Emergency card w\o No. if transported by road or by river
IATA	Not regulated as dangerous goods.
IMDG	Nickel (II) sulfate heptahydrate is sea pollutant. Emergency cards F-A S-F is transported by sea.
SMGS(Agreement on International Goods Transport by Road)	Hazard code-90-other dangerous and hazardous substances Emergency card No. 906 if transported by rail.

15. REGULATORY INFORMATION

Labeling

X_n; N
R: 22-40-42/43-50/53
S: 22-36/37-60-61
Signal word: “Dangerous”

Contains	Nickel (II) sulfate heptahydrate , pure
EC Number	231-104-9
Regulatory information	This Safety Data Sheet complies with the requirements of Regulation (EC) № 1907/2006 and Directive 67/548-EEC.

16. OTHER INFORMATION

Disclaimer	This Safety Data Sheet is specifically designed to comply with the requirements of the EU Regulation called REACH – Registration, Evaluation and Authorization of Chemicals (EC № 1907/2006 of the European Parliament and of the Council of 18 December 2006) and the corresponding country law, and may not comply with the requirements of any other regulations for safe product handling.
Risk and safety codes and phrases	X_n – hazardous and dangerous substance N- environment hazard substance R: 22-40-42/43-50-53 – harmful if swallowed; limited evidence of a carcinogenic effect; may cause sensitization by inhalation and skin contact; very toxic to aquatic organisms; may cause long-term adverse effects in the aquatic environment S: 22-36/37-60-61 –wear suitable protective clothing and suitable gloves; this material and its container must be disposed of as a hazardous waste; avoid release to the environment; refer to special instructions (Safety Data Sheet)
Issue date	18-January-2010