



Fisher Scientific

Part of Thermo Fisher Scientific

Material Safety Data Sheet

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Revision Number 1

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name	Nickel sulfate hexahydrate
Cat No.	N72-3; N73-100; N73-500
Synonyms	Nickel(II) sulfate hexahydrate (Crystalline/Technical/Certified ACS)
Recommended Use	Laboratory chemicals
Company	Emergency Telephone Number
Fisher Scientific	CHEMTREC®, Inside the USA: 800-424-9300
One Reagent Lane	CHEMTREC®, Outside the USA: 703-527-3887
Fair Lawn, NJ 07410	
Tel: (201) 796-7100	

2. HAZARDS IDENTIFICATION

WARNING!

Emergency Overview

Cancer hazard. May cause cancer by inhalation. Harmful by inhalation and if swallowed. Irritating to eyes and skin. May cause allergic respiratory and skin reaction. May cause irritation of respiratory tract. May cause harm to the unborn child. Possible risks of irreversible effects. Danger of serious damage to health by prolonged exposure. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Appearance Blue green

Physical State Solid

odor odorless

Target Organs Skin, Eyes, Lungs

Potential Health Effects

Acute Effects

Principle Routes of Exposure

Eyes	Irritating to eyes.
Skin	Irritating to skin. May be harmful in contact with skin. May produce an allergic reaction.
Inhalation	Harmful by inhalation. May cause irritation of respiratory tract. May cause allergic respiratory reaction.
Ingestion	Harmful if swallowed. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Chronic Effects May cause cancer. May cause harm to the unborn child. Possible risks of irreversible effects. Danger of serious damage to health by prolonged exposure. Repeated contact may cause allergic reactions in very susceptible persons.

See Section 11 for additional Toxicological information.

Aggravated Medical Conditions No information available.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Haz/Non-haz

Component	CAS-No	Weight %
Nickel(II) sulfate hexahydrate (1:1:6)	10101-97-0	>95
Nickel sulfate	7786-81-4	-

4. FIRST AID MEASURES

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.

Skin Contact Wash off immediately with plenty of water for at least 15 minutes. Obtain medical attention.

Inhalation Move to fresh air. If breathing is difficult, give oxygen. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with a respiratory medical device. Immediate medical attention is required.

Ingestion Do not induce vomiting. Call a physician or Poison Control Center immediately.

Notes to Physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Flash Point No information available.
Method No information available.

Autoignition Temperature No information available.

Explosion Limits
Upper No data available
Lower No data available

Suitable Extinguishing Media Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Unsuitable Extinguishing Media No information available.

Hazardous Combustion Products No information available.

Sensitivity to mechanical impact No information available.
Sensitivity to static discharge No information available.

Specific Hazards Arising from the Chemical
 Keep product and empty container away from heat and sources of ignition

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

NFPA Health 2 Flammability 1 Instability 0 Physical hazards N/A

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions Use personal protective equipment. Ensure adequate ventilation. Avoid dust formation.

Environmental Precautions Should not be released into the environment.

Methods for Containment and Clean Up Sweep up or vacuum up spillage and collect in suitable container for disposal. Avoid dust formation.

7. HANDLING AND STORAGE

Handling Use only under a chemical fume hood. Wear personal protective equipment. Avoid dust formation. Do not breathe dust. Do not get in eyes, on skin, or on clothing. Do not ingest.

Storage Keep containers tightly closed in a dry, cool and well-ventilated place.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Measures Use only under a chemical fume hood. Ensure that eyewash stations and safety showers are close to the workstation location.

Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH
Nickel(II) sulfate hexahydrate (1:1:6)	TWA: 0.1 mg/m ³		
Nickel sulfate	TWA: 0.1 mg/m ³		

NIOSH IDLH: Immediately Dangerous to Life or Health

Personal Protective Equipment**Eye/face Protection**

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 and body protection

Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory Protection

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State
Appearance
odor
Odor Threshold
pH
Vapor Pressure
Vapor Density
Viscosity

Solid
 Blue green
 odorless
 No information available.
 4-6 5% aq. sol.
 No information available.
 No information available.
 No information available.

9. PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point/Range	No information available.°C
Melting Point/Range	53°C / 127.4°F
Decomposition temperature	> 280°C
Flash Point	No information available.
Evaporation Rate	No information available.
Specific Gravity	No information available.
Solubility	Soluble in water
log Pow	No data available
Molecular Weight	262.85
Molecular Formula	Ni O4 S . 6 H2 O

10. STABILITY AND REACTIVITY

Stability	Stable under normal conditions.
Conditions to Avoid	Incompatible products. Excess heat. Avoid dust formation.
Incompatible Materials	Strong oxidizing agents
Hazardous Decomposition Products	Sulfur oxides
Hazardous Polymerization	Hazardous polymerization does not occur.
Hazardous Reactions .	None under normal processing..

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Product Information See actual entry in RTECS for complete information.

Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Nickel(II) sulfate hexahydrate (1:1:6)	264 mg/kg (Rat)	Not listed	Not listed
Nickel sulfate	275 mg/kg (Rat)	Not listed	Not listed

Irritation Irritating to eyes and skin

Toxicologically Synergistic Products No information available.

Chronic Toxicity

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	ACGIH	IARC	NTP	OSHA	Mexico
Nickel(II) sulfate hexahydrate (1:1:6)	Not listed	Group 1	Not listed	X	Not listed
Nickel sulfate	Not listed	Group 1	Not listed	X	Not listed

IARC: (International Agency for Research on Cancer)

IARC: (International Agency for Research on Cancer)

Group 1 - Carcinogenic to Humans

Group 2A - Probably Carcinogenic to Humans

Group 2B - Possibly Carcinogenic to Humans

Sensitization	May cause sensitization by inhalation and skin contact
Mutagenic Effects	Possible risk of irreversible effects
Reproductive Effects	May cause harm to the unborn child.
Developmental Effects	No information available.
Teratogenicity	No information available.
Other Adverse Effects	See actual entry in RTECS for complete information.
Endocrine Disruptor Information	No information available

12. ECOLOGICAL INFORMATION

Ecotoxicity

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Do not empty into drains.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Nickel sulfate	0.75 mg/L EC50 = 72 h	Brachydanio rerio: LC50>100 mg/L 24h Oncorhynchus mykiss: LC50=1.28 mg/L 96h	Not listed	1 mg/L EC50 = 48 h

Persistence and Degradability	No information available
Bioaccumulation/ Accumulation	No information available
Mobility	No information available

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods	Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.
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14. TRANSPORT INFORMATION

DOT

UN-No	UN3288
Proper Shipping Name	TOXIC SOLID, INORGANIC, N.O.S.
Proper technical name	Nickel(II) sulfate hexahydrate (1:1:6)
Hazard Class	6.1

14. TRANSPORT INFORMATION

Packing Group III

TDG

UN-No UN3288
Proper Shipping Name TOXIC SOLID, INORGANIC, N.O.S.
Hazard Class 6.1
Packing Group III

IATA

UN-No UN3288
Proper Shipping Name Toxic solid, inorganic, n.o.s
Hazard Class 6.1
Packing Group III

IMDG/IMO

UN-No UN3288
Proper Shipping Name Toxic solid, inorganic, n.o.s
Hazard Class 6.1
Packing Group III

15. REGULATORY INFORMATION

International Inventories

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	CHINA	KECL
Nickel(II) sulfate hexahydrate (1:1:6)	-	-	-	-	-		X	X	-	X	-
Nickel sulfate	X	X	-	232-104-9	-		X	X	X	X	KE-25867 X

Legend:

X - Listed

E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.

F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.

N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.

P - Indicates a commenced PMN substance

R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.

S - Indicates a substance that is identified in a proposed or final Significant New Use Rule

T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.

XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B)).

Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.

Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

U.S. Federal Regulations

TSCA 12(b) Not applicable

SARA 313

SARA 311/312 Hazardous Categorization

Acute Health Hazard	Yes
Chronic Health Hazard	Yes
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Water Act

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants
Nickel sulfate	X	100 lb	-	-

Clean Air Act

Not applicable

OSHA

Not applicable

CERCLA

Component	Hazardous Substances RQs	CERCLA EHS RQs
Nickel sulfate	100 lb	-

California Proposition 65

This product does not contain any Proposition 65 chemicals.

State Right-to-Know

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Nickel(II) sulfate hexahydrate (1:1:6)	-	X	-	-	-
Nickel sulfate	X	X	X	-	-

U.S. Department of Transportation

Reportable Quantity (RQ):	N
DOT Marine Pollutant	N
DOT Severe Marine Pollutant	N

U.S. Department of Homeland Security

This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade No information available

Canada

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

WHMIS Hazard Class

D1B Toxic materials

D2A Very toxic materials

D2B Toxic materials

**16. OTHER INFORMATION**

Prepared By Regulatory Affairs
Thermo Fisher Scientific
Tel: (412) 490-8929

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Disclaimer

The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of MSDS