

## Nickel Powder

Date of issue: 20/03/2011 Supersedes issue of: -- Version: 1 page 1 of 9

**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1. Product identifier**

Nickel powder

Registration Number: not available, registration envisaged for a later deadline

**1.2. Relevant identified uses of the substance or mixture and uses advised against**

Cookware Coatings, Hard Metal Binder. High temperature anti-seize lubricants. Powder Coatings, Water-borne coatings. Printing Inks.

**1.3. Details of the supplier of the safety data sheet**

Novamet Specialty Products Corporation

681 Lawlins Road  
Wyckoff, NJ 07481  
United States

Phone : +1 201-891-7676

Fax : +1 201 891 9467

Responsible person:

Mr. David Croan

E-Mail (competent person):

konrad.stoeber@ra-services.de

**1.4. Emergency phone No.:**

800-424-9300 - CHEMTREC

**SECTION 2: Hazards identification****2.1. Classification of the substance or mixture**

Acc. Regulation (EC) Nr. 1272/2008

Carc. (inhal)	Cat.2	H351	(inhalable particles only)
STOT RE (inhal.)	Cat.1	H372**	(particles <0.1 mm diameter)
Skin Sens.	Cat.1	H317	
Aquatic chronic	Cat.3	H412	

**Acc. Directive 67/548/EEEC**Carc. Cat. 3; R40  
T; R48/23  
R 43  
R52-53

for the full text of R-Phrases refer to section 16

**2.2. Label elements****Danger****Hazard statements:**

H351	Suspected of causing cancer by inhalation
H372	Causes damage to organs through prolonged or repeated exposure by inhalation
H317	May cause an allergic skin reaction
H412	Harmful to aquatic life with long lasting effects

## Nickel Powder

Date of issue: 20/03/2011 Supersedes issue of: -- Version: 1 page 2 of 9

**Precautionary statements:**

P201	Obtain special instructions before use.
P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P273	Avoid release to the environment.
P281	Use personal protective equipment as required.
P308 + P313	IF exposed or concerned: Get medical advice/attention.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P333 + P313	If skin irritation or rash occurs: Get medical advice/attention.

**SECTION 3: Composition/information on ingredients****3.1. Substances**

<i>Name of Product:</i>	Nickel Powder
<i>IUPAC-Name:</i>	Nickel (2+)
<i>CAS-No. :</i>	7440-02-0
<i>EC-No.:</i>	231-111-4
<i>INDEX-No.:</i>	028-002-01-4 (+ Nickel powder; [particle diameter < 1 mm])
<i>Purity:</i>	typically 99,8%
<i>Synonym(s):</i>	
<i>MW,</i>	58,69
<i>Formula:</i>	Ni

**SECTION 4: First aid measures****4.1. Description of first aid measures***General information:*

In all cases of doubt call in a physician.

*In case of inhalation:*

Remove person to fresh air. If not breathing, give artificial respiration. Oxygen may be administered if breathing is difficult. Seek immediate medical attention.

*In case of skin contact:*

Wash with plenty of water and soap and rinse thoroughly. Remove contaminated clothing and shoes. Seek immediate medical attention. If skin irritation or rash occurs: Get medical advice/attention.

*In case of eye contact:*

Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses.

*In case of ingestion:*

Rinse mouth. Never give anything by mouth to an unconscious person. Call a physician.

*Self protection at first aid:*

Avoid substance contact

## Nickel Powder

Date of issue: 20/03/2011 Supersedes issue of: -- Version: 1 page 3 of 9

**4.2. Most important symptoms and effects, both acute and delayed**

skin contact: itching, ekzema

**4.3. Indication of any immediate medical attention and special treatment needed**

not available

**SECTION 5: Firefighting measures****5.1. Extinguishing media**

*Suitable extinguishing media:*

Use water spray, foam, dry chemical or carbon dioxide.

*Unsuitable extinguishing media:*

No information available

**5.2. Special hazards arising from the substance or mixture**

Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard. May oxidize to nickel oxide if exposed to high temperatures within a fire. Under special conditions nickel can react with carbon monoxide in reducing atmospheres to form Nickel Carbonyl, Ni(CO)<sub>4</sub>, a toxic gas. Metal powders when heated in reducing atmospheres may become pyrophoric.

Combustion products: Nickel oxide fume, carbon dioxide and carbon monoxide

**5.3. Advice for firefighters**

LARGE FIRES: Do not scatter spilled material with high pressure water streams.

Self contained breathing apparatus and suitable protective clothing required. Use water spray to keep the fire-exposed container cool.

**SECTION 6: Accidental release measures****6.1. Personal precautions, protective equipment and emergency procedures**

*For non-emergency responders*

Avoid substance contact. Avoid inhalation of dust Provide of sufficient ventilation

*For emergency responders*

For suitable protective equipment refer to Section 8.

**6.2. Environmental precautions**

Do not let enter drains, prevent release to the environment.

**6.3. Methods and material for containment and cleaning up**

Collect spills by wet sweeping or vacuuming with the vacuum exhaust passing through a high efficiency particulate arresting (HEPA) filter if exhaust is discharged into the work place. Wear appropriate nationally approved respirators if collection and disposal of spills is likely to cause the concentration limits of airborne nickel to exceed the locally prescribed exposure limits. Nickel containing material is normally collected to recover nickel values.

## Nickel Powder

Date of issue: 20/03/2011 Supersedes issue of: -- Version: 1 page 4 of 9

## 6.4. Reference to other sections

Refer to Sections 8 and 13

## SECTION 7: Handling and storage

## 7.1. Precautions for safe handling

Avoid substance contact. Do not breathe dust. Provide appropriate ventilation or local exhaust system if dusts are generated. Any unavoidable deposit of dust must be regularly removed. Wear appropriate respirator if handling is likely to cause the concentration of airborne nickel. Refer to Section 8.2

## 7.2. Conditions for safe storage, including any incompatibilities

Store locked up.  
Keep container tightly closed and sealed until ready for use.  
Store away from acids or reactive substances.

## 7.3. Specific end use(s)

refer to Section 1.2

## SECTION 8: Exposure controls/personal protection

## 8.1. Control parameters

An indicative, inhalable Nickel Occupational exposure Limit of 0.05 mg/m<sup>3</sup> for workers is given and justified by the CSR - instead of a DNEL-DMEL in the long term - local and systemic effects - inhalation risk characterisation for Nickel-substances. Current nickel OELs in the EU are given as follows:

Country/Body	Status of Standard	Values of Standards <sup>1</sup> (mg Ni/m <sup>3</sup> )	
		Metallic Nickel and Insoluble Nickel species	Soluble Nickel Species
Austria	current	0.05 <sup>2</sup>	0.05
Belgium	current	1.0	0.1
Denmark	current	0.05	0.01
Finland	current	1.0	0.1
France	current	1 (VME) <sup>3</sup>	0.1 (VME)
Germany	current	0.5 (TRK) <sup>4</sup>	0.05 (TRK)
Ireland	current	1.0	0.1
Italy	current	1.0	0.1
Luxembourg	current	1.0	0.1
Netherlands	current	0.1	0.1
Norway	current	0.05	0.05
Portugal	current	1.0	0.1
Spain	current	1.0	0.1
Sweden	current	0.5 (metallic nickel) 0.1 (nickel oxide, carbonate) 0.01 (nickel subsulphide)	0.1
United Kingdom	current	0.5 (MEL) <sup>5,6</sup>	0.1 (MEL) <sup>6</sup>

1 8-hour TWA (Time-Weighted Average) unless otherwise noted. All values refer to 'total' nickel unless otherwise noted.

2 This TLV applies to nickel metal and alloys, nickel sulfide, sulfidic ores, oxidic nickel, and nickel carbonate in inhalable dust, as well as any nickel compound in the form of inhalable droplets.

3 VME = Valeur Moyenne d'Exposition. The value of 1 mg/m<sup>3</sup> applies to Ni carbonate, dihydroxide, subsulphide, monoxide, sulfide, trioxide and for other chemical forms non-otherwise specified such as 'insoluble Ni compounds' and Ni sulfide roasting fume and dust.

4 TRK = Technische Richtkonzentrationen.

5 MEL = Maximum Exposure Limit.

6 This value is based on "total inhalable" aerosol as measured with the 7-hole sampler.

## Nickel Powder

Date of issue: 20/03/2011 Supersedes issue of: -- Version: 1 page 5 of 9

## 8.2. Exposure controls

### *Appropriate engineering controls*

Provide exhaust ventilation or local exhaustion to keep the airborne concentrations of vapours below their respective threshold limit value. See. Section 7.1

### *Individual protection measures:*

#### Eye/face protections

Safety goggles/face shield

#### Skin protection

Protective gloves. Chemical resistant protective clothing

#### Respiratory protection

If exposed to dust concentrations above the exposure limit, use appropriate, certified respiration protective equipment. Respiratory Protective equipment (FFP2) {approved with regard to EN 149} is required for unenclosed processes involving powders.

Respiratory cartridges or canisters must be changed following the recommendations of the supplier.

### *Environmental exposure controls:*

Avoid release to the environment

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Appearance::	solid, powder - silvery flake
Odour:	odorless
Odour threshold:	n/a
pH:	not available
Melting point/freezing point;	1453 °C
Initial boiling point	2732 °C
Flash point;	not applicable
Evaporation rate;	not applicable
Flammability;	non flammable
Upper/lower flammability or explosive limits;	non explosive
Vapour pressure;	negligible
Vapour density;	not applicable
Relative density;	8.9 g/cm <sup>3</sup>
Solubility(ies); in water	insoluble
Partition coefficient: n-octanol/water;	not applicable
Auto-ignition temperature;	Very fine divided metal can smoulder in the presence of oxygen or air
Decomposition temperature;	not applicable
Viscosity	not applicable
Explosive properties;	non explosive
Oxidising properties.	non oxidising

## Nickel Powder

Date of issue: 20/03/2011 Supersedes issue of: -- Version: 1 page 6 of 9

9.2. Other information none

**SECTION 10: Stability and reactivity****10.1. Reactivity**

Stable under normal temperatures and pressures. Material does not pose a dust explosion hazard.

**10.2. Chemical stability**

The product is stable under normal conditions (room temperature)

**10.3. Possibility of hazardous reactions**

This product can react vigorously with acids to liberate hydrogen, which can form explosive mixtures with air. Under special conditions nickel can react with carbon monoxide in reducing atmospheres to form nickel carbonyl, Ni(CO)<sub>4</sub>, a toxic gas.

**10.4. Conditions to avoid**

Metal powders when heated in reducing atmospheres may become pyrophoric.

**10.5. Incompatible materials**

Violent reactions possible with strong acids, strong oxidizing agents, acid anhydrides, In contact with nitrous acids and its salts nitrosamines may be released.

**10.6. Hazardous decomposition products**

please refer to chapter 5

**11. SECTION 11: Toxicological information****11.1. Information on toxicological effects**

(a) acute toxicity;

	Value	Unit	Species
LD50 (oral.)	9000	mg/kg bw	rat
LD50 (dermal)	not available		
NOAEC (inhal)	10.2	mg/L air (66 min.)	observed 14 days after exposure

b) skin corrosion/irritation;

slight irritation

c) serious eye damage/irritation;

not classified

d) respiratory or skin sensitisation;

sufficient data from human studies: May cause allergic skin reactions

e) germ cell mutagenicity;

not classified, test with mammalian cells - negative

## Nickel Powder

Date of issue:	20/03/2011	Supersedes issue of:	--	Version:	1	page	7	of	9
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*f) carcinogenicity;*

suspected of causing cancer by inhalation

*g) reproductive toxicity;*

not classified as toxic to reproduction

*h) STOT-single exposure;*

not classified

*i) STOT-repeated exposure;*

Causes damage to organs through prolonged or repeated exposure by inhalation

*j) aspiration hazard.*

not classified

*Other information*

Further hazardous properties cannot be excluded. The product should be handled with the care usual when dealing with chemicals.

**SECTION 12: Ecological information****12.1. Toxicity**

<i>short term toxicity</i>	<i>Value (range)</i>	<i>Duration</i>	<i>Species</i>
LC50 - Fish	0.23 to 320 mg/L	96 h	Pimephales promelas - Danio rerio
LC50 - Invertebrates	0.013 to 4970 mg/L.	48 h	Ceriodaphnia dubia - Daphnia magna
IC50 - algae	12,6 - 424 µg/L	72 h	Selenastrum capricornutum (OECD 201)
EC50 (bacteria)	33 mg/L	48 h	activated sludge (STP)
<i>long term toxicity</i>			
Fish - NOEC / L(E)C10	40 - 1379 µg/L	--	Danio rerio - oncorhynchus mykiss
Invertebrates NOEC / L(E)C10	1.4 - 1193.3 µg/L	--	Lymnea stagnalis - chironimus tentans
Algae: NOEC / EC10	12,6 - 425 µg/L	--	Scenedesmus accumunatus - Pseudokirchnerella subcapitata

**12.2. Persistence and degradability**

Abiotic degradation - not applicable

Biodegradation - not applicable

**12.3. Bioaccumulative potential**

Bioaccumulation in aquatic environment is low

**12.4. Mobility in soil**

not applicable endpoint

**12.5. Results of PBT and vPvB assessment**

does not apply to inorganic substances

**Nickel Powder**

Date of issue: 20/03/2011 Supersedes issue of: -- Version: 1 page 8 of 9

**12.6. Other adverse effects** not known

**SECTION 13: Disposal considerations**

**13.1. Waste treatment methods**

Chemicals and packages as waste must be disposed of in accordance with the respective national and local regulations. Containers should be cleaned of residual product before disposal. Consult your local or regional authorities.

Do not contaminate ground or surface waters via drainage, by cleaning of equipment or disposal of wastes

**SECTION 14: Transport information**

	ADR/RID	AND/ADNR	IMDG	IATA
<b>14.1. UN number</b>	not classified as dangerous good			
<b>14.2. UN proper shipping name</b>				
<b>14.3. Transport hazard class(es)</b>				
<b>14.4. Packing group</b>				
<b>14.5. Environmental hazards</b>				
<b>14.6. Special precautions for user</b>				

**14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**

not applicable

**SECTION 15: Regulatory information**

**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**

*EU regulations:*

refer to Directive on Major accident hazard 96/82/EC: 9.a Dangerous for the environment - 50t/200t  
refer to Directive 94/33/EC on the protection of young people at work

Authorisations and/or restrictions on use:

refer to Regulation 552/2009/EC amending Regulation 1907/2006/EC: Annex XVII point 27

National regulations: (Germany)

refer to regulations on occupational restrictions as:  
to adolescent persons according to § 22 JArbSchG

Water Hazard Class: WGK: 2 Reg. no.: 7616

Status: V: KBwS-Decision

## Nickel Powder

Date of issue: 20/03/2011 Supersedes issue of: -- Version: 1 page 9 of 9

**15.2. Chemical safety assessment**

available

**SECTION 16: Other information**

Changes: Version 1

Main sources for data:

*Relevant**R-Phrases*

- R40 Limited evidence of a carcinogenic effect.  
R48/23 Toxic: danger of serious damage to health by prolonged exposure through inhalation.  
R 43 May cause sensitisation by skin contact.  
R52-53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

*Hazard Statements*

- H351 Suspected of causing cancer by inhalation  
H372 Causes damage to organs through prolonged or repeated exposure by inhalation  
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## Precautionary statements

- P201 Obtain special instructions before use.  
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P302 + P352 IF ON SKIN: Wash with plenty of soap and water.  
P333 + P313 If skin irritation or rash occurs: Get medical advice/attention.

Training: Operators should be trained regularly on safe handling and emergency response.

*Further information:**MSDS issued by:*

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Date of issue: **28.02. 2011**

These data are based on our present knowledge. However, they shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.