

Nickel powder



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IDENTIFICATION

Nickel powder

ZVG No: 8230
CAS No: 7440-02-0
EC No: 231-111-4
INDEX No: 028-002-00-7
028-002-01-4

CHARACTERISATION

SUBSTANCE GROUP CODE

134000 Metals

STATE OF AGGREGATION

The substance is solid.

PROPERTIES

metal powder
silver bright

CHEMICAL CHARACTERISATION

Flammable solid.

Can be ignited by the brief effects of exposure to sources of ignition and continues to burn when these are no longer present. The risk of ignition is greater the more finely the substance is spread.

The metal is non-flammable in compact form.

Practically insoluble in water.

Not volatile.

Sensitive to light.

Acute or chronic health hazards result from the substance.

The substance is hazardous to the aquatic environment.

(see: chapter REGULATIONS).

[Substance information in Wikipedia](#)

DUST EXPLOSIVENESS

There is a risk of a dust explosion if the following conditions are met:

- The substance is given in very finely distributed form (powder, dust).
- The substance is whirled up in sufficient quantity in the air.
- An ignition source is present (flame, spark, electrostatic discharge, etc.)

Quelle: [01211](#)

FORMULA

Ni

Molar mass: 58,69 g/mol

PHYSICAL AND CHEMICAL PROPERTIES

[Melting point](#) | [Boiling point](#) | [Density](#) | [Solubility](#) | [Hazardous reactions](#)

MELTING POINT

Melting point: 1453 °C

Reference: [01211](#)

BOILING POINT

Boiling Point: 2832 °C

Reference: [01211](#)

DENSITY

DENSITY

Value: 8,908 g/cm³

Temperature: 25 °C

Reference: [00131](#)

SOLUBILITY IN WATER

practically insoluble in water

Temperature: 20 °C

Reference: [01211](#)

HAZARDOUS REACTIONS

Thermal decomposition

Self igniting when finely dispersed. Risk of explosion when heated.

Hazardous chemical reactions

Risk of explosion in contact with:
ammonium nitrate
bromine pentafluoride (powder)
organic solvents (powder)/heat

The substance can react dangerously with:
combustible substances
chlorine
fluorine
acetone
alcohols/air
benzene
ethanol
hydrazine
potassium perchlorate
air --> self-ignition
nitryl fluoride (powder)/heat
oxidizing agents (powder)
performic acid (powder)
sulfur (powder)
selenium (powder)
titan/potassium chlorate
hydrogen/dioxane

In addition when raney nickel is used:

Risk of explosion in contact with:
alkali metals
azo compounds
halogenated hydrocarbons

The substance can react dangerously with:
strong acids
oxygen
nitric acid
carbon monoxide

When used for hydrogenations, the hydrogen contained in catalyst residues can ignite or explode in the presence of air.

TOXICOLOGY / ECOTOXICOLOGY

ECOTOXICOLOGICAL DATA

LC50 Fish (96 hours)

Minimum: 0,0000475 mg/l
Maximum: 350 mg/l
Median: 40 mg/l
Study number: 33

Reference for median:

Denton, G.R.W., and C. Burdon-Jones 1986. Environmental Effects on Toxicity of Heavy Metals to Two Species of Tropical Marine Fish from Northern Australia. Chem.Ecol. 2(3):233-249

LC50 Crustaceans (48 hours)

Minimum: 1,28 mg/l
Maximum: 9,28 mg/l
Median: 8,85 mg/l

Study number: 3

Reference for median:

Wong, C.K., K.H. Chu, K.W. Tang, T.W. Tam, and L.J. Wong 1993. Effects of Chromium, Copper and Nickel on Survival and Feeding Behaviour of *Metapenaeus ensis* Larvae and Postlarvae (Decapoda: Penaeidae). *Mar. Environ. Res.* 36(2):63-78

EC50 Crustaceans (48 hours)

Minimum: 1 mg/l

Maximum: 1 mg/l

Median: 1 mg/l

Study number: 1

Reference for median:

Haley, M.V., and C.W. Kurnas 1993. Aquatic Toxicity and Fate of Nickel Coated Graphite Fibers, with Comparisons to Iron and Aluminum Coated Glass Fibers. Rep.No.ERDEC-TR-090, Edgewood Res.Dev.Eng.Center, Aberdeen Proving Ground, MD:19 p.(U.S.NTIS AD-A270/411/2)

Reference: 02072

OCCUPATIONAL HEALTH AND FIRST AID

[Routes of exposure](#) | [Toxic effects](#) | [First Aid](#) | [Occupational health check](#)

ROUTES OF EXPOSURE

Main routes of exposure

The main route of exposure for nickel metallic powder (NMP) is via the respiratory tract.[99997] Under real conditions 'nickel fumes' chiefly consist of nickel monoxide. They are therefore (as far as possible) not considered in the following remarks.[99999]

Respiratory tract

Exposure to metallic Ni dusts is to be expected chiefly during the mechanical processing and the melting and casting of alloys with Ni contents of up to approx. 80%.

In the case of alloys with a high Ni content that undergo the appropriate treatment processes, it is assumed that dusts/aerosols no longer contain purely metallic Ni, but a considerable amount of nickel oxide.

Likewise it is estimated that aerosols released during welding, thermal cutting and metal spraying of Ni alloys containing an Ni content of more than 5% possess different amounts of oxidated Ni. [05335]

Depending on the particle size, inhaled NP is deposited in the respiratory system.

At a given aerodynamic diameter < 10 µm, a larger portion enters the alveoli.

Larger particles are deposited in the respiratory tract and then forwarded to the digestive tract via the mucociliary clearance mechanism.

Particles that have not been deposited are exhaled.

The speed of the resorption in the lungs depends chiefly on the particle form and size as well as on the surface charge of the dust particles.

Due to the water-insolubility of nickel, dust resorption generally occurs slowly and incompletely and results in the accumulation in the area of the respiratory tract (see also metabolism and elimination). [07620]

Skin

Metallic nickel, e.g. in the form of nickel dust, is for all practical purposes not resorbed by the skin. [07619]

Gastrointestinal tract

Resorption of metallic Ni via the gastric mucosa after oral intake is negligible.[07619]

TOXIC EFFECTS

Main toxic effects

Acute effects:

Irritation of the respiratory tract, sensitising potential;

Chronic effects:

Allergic skin damage.[99983]

Acute toxicity

Substance-specific information on the acute toxicity of NP is scarcely available, not even from animal experiments.[99983]

In the event of massive direct contact an eye-irritating effect is, depending on the grain size, to be expected chiefly from mechanical effects.[99999]

A primary skin-irritating potential was not explicitly described.[99983]

However, the ionisation of a (minor) dose portion can occur via perspiration after skin contact, which includes the risk of sensitisation.[07934]

If a sensitisation already exists from non-industrial contact (e.g., with nickel-containing jewellery, particularly in young women), 'acute' industrial contact can cause allergic skin damage (see also 'Chronic toxicity').[99997]

Additional exposure to other substances with an irritative potential stimulates the skin damage.

The sensitising potential of nickel is estimated to amount to 10%-50%.[07619]

Information on acute inhalation toxicity of NP is scarce and contradictory [99983].

Long-term exposure to an average value of 0.13 mg/m³ (range < 0.1 to 566 mg/m³) has apparently not caused any significant health disorders in workers.[99997]

This finding indicates that even acute exposure to this concentration range does not cause any damage.[99999]

On the other hand, inflammatory and asthma-like lung diseases allegedly occurred after acute exposure to the inhalation of NP (details were not reported).

Currently, a report has been published on a fatal inhalation toxicity (no detailed information in the report) from 'nickel particles' (presumably nickel oxide, resulting from an electrothermal nickel treatment).[99997]

It is obviously to be assumed that NP causes sensitising effects on the respiratory tract.[99983]

The amount of 15 mg NP/m³ (no information on the exposure period) caused irritations to the mucosae of the respiratory tract of rats.[07934]

According to the available reports, systemic toxic effects following the inhalation of monofactorial NP have so far been evidenced neither in animal experiments nor in humans.[99983]

According to only one available experiment on rats (LD₅₀ > 9,000 mg per kg of body weight), oral toxicity is very minor.[07934]

A particular case of an acute risk exists when the skin or the mucosae come into contact with very finely distributed activated nickel (e.g. 'Raney nickel').

The pyrophoric characteristics of this material might trigger serious thermal loads up to and including burns.[07729]

Chronic toxicity

The major consequence after repeated industrial exposure to NP is the allergic potential, whereas contact dermatitis is regarded as the most frequent damage (in most cases beginning with papular erythema on the hands that develops into eczema).

The chronic eczematous form can result in 'lichen formation' (lichenification).[99997]

Cases of contact urticaria occur less often.[07619]

A Ni-eczema can also be induced in the sense of a cross sensitisation of cobalt, chromate and copper.[99996]

Prolonged substantial inhalation of nickel dust and aerosols of soluble nickel compounds entailed chronic damage of the upper respiratory tract (hypertrophic rhinitis, nasal sinusitis, nasal polyps, perforation of the nasal septum) and less frequently of the lower respiratory tract (bronchitis, lung fibrosis).[99997]

Asthmatic diseases (Löffler's syndrome) are rare.[07620]

A NOAEL for NP amounting to 0.3 mg/m³ was derived from a chronic inhalation study on rabbits. [07748]

Reproductive toxicity, mutagenicity, carcinogenicity

For classifying the reproductive toxicity and mutagenic and carcinogenic potential see list in Annex VI of the CLP regulation / TRGS 905 / List of MAK values (see section REGULATIONS).

Reproductive toxicity:

Substance-specific information is not available.[99983]

Mutagenicity:

NP did not produce any chromosomal changes in human lymphocyte cultures.[00083]

The potential to transform cells was very weak in embryonic hamster cell cultures.[99997]

Carcinogenic potential:

There are grounds for suspecting carcinogenic potential.

[07510]

Biotransformation and excretion

The nickel dust that has been accumulated in the bronchopulmonary system is subject to very slow elimination.

Industrial exposure to poorly soluble Ni compounds involved nickel elimination half-lives up to several years.

The nickel level in the lungs of persons not subject to industrial exposure clearly increases with age.

Resorbed nickel is chiefly transported in the blood plasma and is essentially equally distributed in the entire organism.

Besides the considerable accumulation in the lungs, slightly increased values are found in the thyroid gland and the suprarenal gland.[07620]

The poor solubility of nickel entails a long-term burden of the organism with this heavy metal at a simultaneously high bioavailability.

After industrial exposure nickel is chiefly excreted with the urine, and minor parts are eliminated via the gall bladder.[99996]

Workers at heated workplaces are expected to excrete an increased amount of nickel with the perspiration.[07783]

However, after oral intake of nickel the substance is almost completely eliminated with the faeces. [99996]

Exposure can be monitored by means of an analysis of the Ni level in the urine or the plasma. [07620]

Annotation

This occupational health information was compiled on 02.07.1998.

It will be updated if necessary.

This information was translated from German into English by Übersetzungsbüro Branco.

FIRST AID

Eyes

Rinse the affected eye with widely spread lids for 10 minutes under running water whilst protecting the unimpaired eye.

Arrange medical treatment.

[07750]

Skin

Remove contaminated clothing while protecting yourself.

Cleanse the affected skin areas thoroughly with soap under running water.

In case of subjectively or objectively visible irritations:

Arrange for medical treatment.

Care should be taken with clothes that are contaminated with Raney-Ni:

Self-ignition is possible!

[00022, 07729, 99999]

Respiratory tract

Whilst protecting yourself remove the casualty from the hazardous area and take him to the fresh air.
Lay the casualty down in a quiet place and protect him against hypothermia.
If irritations are perceivable in the area of the respiratory tract (oppressive feeling in the chest, coughing):
In the case of breathing difficulties have the casualty inhale oxygen.
As soon as possible repeatedly have the casualty deeply breathe a glucocorticoid inhalation spray in.
Arrange medical treatment.
[07729, 99999]

Swallowing

Rinse the mouth and spit the fluids out.
If the casualty is conscious have him drink 1 glass of water (ca 200 ml).
Arrange medical treatment.
[07729, 99999]

Information for physicians

Acute toxicities caused by NP have been observed only in rare cases, if at all.
The severity of a corresponding potential depends substantially on a prior sensitisation (or cross sensitisation), which occurs relatively often after non-industrial influences.[99983]
It must be mentioned that 'nickel vapours' chiefly contain nickel oxide that must undergo a toxicological assessment that is different from the assessment of NP.

- Probable symptoms of acute toxicity:
Eyes: Irritations depending on the grain size, due to mechanical impacts;[99999]
Skin: Eczematous reactions only following prior sensitisation, beginning after approx. 12 hours, complete development after 48-72 hours, the symptoms then subsiding;[07784]
Skin contact with pyrophoric Ni-powder (e.g., Raney-Ni) can cause burns after drying;[07729]
Inhalation: Irritations, inflammatory changes of the mucosae and asthmatic complaints (seldom and only after prior sensitisation);[99997]
Ingestion: Effects must only be expected in extreme cases (no definite information);
Resorption: Substance-specific experience reports;[99999] due to considerably limited resorbability of the substance, the systemic effects are minor (but not in sensitised persons who might suffer from skin reactions also after oral intake).[07784]

- First medical assistance:
No substance-specific information available.[99983]
Effective decontamination measures are crucial for a successful treatment of symptoms possibly occurring after direct contact.
Further therapy depends on the symptoms.[99999]
Following the inhalation of NMP, cough suppressants, possibly together with topic and i.v. application of glucocorticoids, are recommended.
Perform gastric irrigation in cases of oral toxicities.[07718]
An antidote therapy (2.3-dimercaptosuccinic acid or N-benzyl-D-glucamine dithiocarbamate) is possible.[99997]
However, due to the poor resorption this antidote therapy should only be considered when increased Ni concentrations were confirmed in the plasma and the urine.[99999]

Recommendations

Provide the physician information about the substance/product and treatment already administered.
Dimercapto propane sulfonate (DMPS) can be used as an antidote.[07906]
Treatment with D-penicillamine was also successful.
However, disulfiram should not be applied since the lipophilicity of the developing complex might facilitate a redistribution of the Ni into the brain and other tissues.[07647]

Annotation

This first aid information was compiled on 02.07.1998.
It will be updated if necessary.
This information was translated from German into English by Übersetzungsbüro Branco.

OCCUPATIONAL HEALTH CHECK

Prophylaxis offer: Occupational medical prevention has to be offered when, conducting activities with this substance, an exposure cannot be excluded.

Obligatory prophylaxis: The employer shall arrange occupational medical prophylaxis if, exerting activities with this substance, the occupational exposure limit value is exceeded or skin contact cannot be excluded.

Deadlines: Employees may exert activities with this substance only after participation in obligatory prophylaxis. Prophylaxis offer has to be made prior to taking up work. Deadlines for the inducement or proposal of regularly recurrent occupational medical prevention are to gather from the Occupational Health Rule (Arbeitsmedizinische Regel) "[AMR Nummer 2.1](#)".

SAFE HANDLING

[Handling](#) | [Storage](#) | [Fire and explosion protection](#) | [Organisational measures](#) | [Personal protection](#) | [Disposal considerations](#) | [Accidental release measures](#) | [Fire fighting measures](#)

TECHNICAL MEASURES - HANDLING

Workplace

Work areas should be physically separated if possible.

Provision of very good ventilation in the working area.

The floor should not have a floor drain.

Washing facility at the workplace required.

Equipment

Use only closed apparatus.

If release of the substance cannot be prevented, then it should be suctioned off at the point of exit.

Consider emission limit values, a purification of waste gases if necessary.

Label containers and pipelines clearly.

Advice on safer handling

Take care to maintain clean working place.

The substance must not be present at workplaces in quantities above that required for work to be progressed.

Do not leave container open.

Use leak-proof equipment with exhaust for refilling or transfer.

Avoid spillage.

Fill only into labelled container.

Avoid any contact when handling the substance.

Avoid rising dust.

Cleaning and maintenance

All rooms and equipment have to be cleaned regularly.

Use protective equipment while cleaning if necessary.

Avoid dust formation. Dust formation that cannot be avoided must be collected regularly.

Use tested explosion-proof industrial vacuum cleaners of class H.

Do not raise dust while cleaning.

Use of a blower for cleaning is not permitted.

A device that has become dirty may only be used in other work areas after it has been cleaned.

Only conduct maintenance and other work on or in the vessel or closed spaces after obtaining written permission.

TECHNICAL MEASURES - STORAGE

Storage

Keep in locked storage or only make accessible to specialists or their authorised assistants.

Do not use any food containers - risk of mistake.

Containers have to be labelled clearly and permanently.

Store in the original container as much as possible.

Keep container tightly closed.

Storage temperature: Without any limitation.

Store in a dry place.

Protect from overheating/heating up.

Substance is sensitive to air, protect from air/oxygen.

Keep contents under inert gas.

Conditions of collocated storage

Storage class 4.1 B (Flammable solid or desensitized substances)

Only substances of the same storage class should be stored together.

Collocated storage with the following substances is prohibited:

- Pharmaceuticals, foods, and animal feeds including additives.
- Infectious, radioactive und explosive substances.
- Gases.
- Aerosols (spray bottles).
- Flammable liquids of storage class 3.
- Strongly oxidizing substances of storage class 5.1A.
- Ammonium nitrate and preparations containing ammonium nitrate.
- Non combustible acutely toxic substances of storage class 6.1B.

Under certain conditions the collocated storage with the following sub-stances is permitted (For more details see [TRGS 510](#)):

- Other explosive substances of storage class 4.1A.
- Pyrophoric substances.
- Substances liberating flammable gases in contact with water.
- Oxidizing substances of storage class 5.1B.
- Organic peroxides and self reactive substances.
- Combustible acutely toxic substances.
- Noncombustible toxic or chronically acting substances of storage class 6.1D.

The substance should not be stored with substances with which hazardous chemical reactions are possible.

TECHNICAL MEASURES - FIRE AND EXPLOSION PROTECTION

Technical, constructive measures

Substance is combustible.

Fire fighting equipment must be available.

If there is a risk of a dust explosion due to the dust-like distribution and the quantities used, measures according to [TRGS 722](#) (prevention of formation), 723 (prevention of ignition) and [TRGS 724](#) (constructive explosion protection) may become necessary.

Precaution on handling

Areas in which the substance can arise as a dust in such quantities that a dust explosion could occur are to be considered as at a risk of explosion.

Keep away from sources of ignition (e.g. open flames, heat sources and sparks).

ORGANISATIONAL MEASURES

Instruction on the hazards and the protective measures using instruction manual ([TRGS 555](#)) are required with signature if just more than one minor hazard was detected.

Instruction must be provided before employment and then at a minimum of once per annum thereafter.

The MAK commission's carcinogenic rating for this substance must be clearly indicated.

It must be assured that the workplace limit values are being maintained. If the limit values are exceeded, additional protection measures are necessary.

The measurements must be recorded and kept on file.

The number of employees who work with the hazardous substance must be kept to a minimum.

Observe the restrictions on juvenile employment as defined in the "Jugendarbeitsschutzgesetz".

Only employees are permitted to enter the work areas. Signposting to this effect must be displayed.

PERSONAL PROTECTION

Body protection

Depending on the risk, wear a suitable protective clothing or a suitable chemical protection suit.

Respiratory protection

In an emergency (e.g.: unintentional release of the substance, exceeding the occupational exposure limit value) respiratory protection must be worn. Consider the maximum period for wear.

Respiratory protection: Particle filter P3, colour code white.

Use insulating device for concentrations above the usage limits for filter devices, for oxygen concentrations below 17% volume, or in circumstances which are unclear.

Eye protection

Sufficient eye protection should be worn.

Wear glasses with side protection.

Hand protection

Use protective gloves. The glove material must be sufficiently impermeable and resistant to the substance. Check the tightness before wear. Gloves should be well cleaned before being removed, then stored in a well ventilated location. Pay attention to skin care.

Skin protection cremes do not protect sufficiently against the substance.

Textile or leather gloves are completely unsuitable.

Currently there is no information available regarding suitable glove materials.

Ask the manufacturer for suitable materials.

Occupational hygiene

Foods, beverages and other articles of consumption must not be consumed at the work areas.

Suitable areas are to be designated for these purposes.

Avoid contact with skin. In case of contact wash skin.

Avoid inhalation of dust.

Avoid contact with clothing. Contaminated clothes must be exchanged and cleaned carefully.

Before a break it might be necessary to change clothes.

Provide washrooms with showers and if possible rooms with separate storage for street clothing and work clothing.

The skin must be washed with soap and water before breaks and at the end of work. Apply fatty skin-care products after washing.

Take care of personal hygiene.

DISPOSAL CONSIDERATIONS

Hazardous waste according to Waste Catalogue Ordinance (AVV).

If there is no way of recycling it must be disposed of in compliance with the respective national and local regulations.

Collection of small amounts of substance:

Collect in container for toxic, inorganic residues and heavy metal salts and their solutions.

Collection vessels must be clearly labelled with a systematic description of their contents. Store the vessels in a well-ventilated location. Entrust them to the appropriate authorities for disposal.

ACCIDENTAL RELEASE MEASURES

Wear personal protective equipment (see chapter Personal Protection).

Pick up without creating dust.

Afterwards ventilate area and wash spill site.

Endangerment of watert:

Distinct hazard to waters. Prevent penetration into water, drainage, sewer, or the ground. Inform the responsible authorities about penetration of larger quantities.

FIRE FIGHTING MEASURES**Suitable extinguishing media**

Water (spray - not splash)

Foam

Sand

Instructions

Seek immediate cover in case of sudden release and raising of large quantities of dust.

If possible, take container out of dangerous zone.

Shut off sources of ignition.

Special protective equipment

Wear self-contained breathing apparatus and special tightly sealed suit.

REGULATIONS

[GHS Classification/Labelling](#) | [Workplace labelling](#) | [Water hazard class](#) | [Air quality control](#) | [Transport Regulations](#) | [Threshold limit values](#) | [MAK recommendations](#) | [Restriction of use](#) | [Technical rules](#) | [Regulations of accident insurers](#) | [Occupational health check](#)

EUROPEAN GHS CLASSIFICATION AND LABELLING**Classification**

Flammable solids, Category 2; H228

Skin sensitisation, Category 1; H317

Carcinogenicity, Category 2; H351

Specific Target Organ Toxicity (repeated exposure), Category 1; H372

Hazardous to the aquatic environment, Chronic Category 3; H412



Signal Word "Danger"

Hazard Statement - H-phrases

H228: Flammable solid.

H317: May cause an allergic skin reaction.

H351: Suspected of causing cancer.

H372: Causes damage to organs through prolonged or repeated exposure.

H412: Harmful to aquatic life with long lasting effects.

Precautionary Statement - P-phrases

P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P302+P352: IF ON SKIN: Wash with plenty of soap and water.

P201: Obtain special instructions before use.

P280: Wear protective gloves/protective clothing/eye protection/face protection.

P308+P313: IF exposed or concerned: Get medical advice/attention.

Manufacturer's specification by Thermo Fisher Scientific
Scope: Nickel powder (particle diameter < 1 mm)

GESTIS advice:

for particle diameters > 1 mm eliminates the pollutive classification H412

The flammability of nickel metal powder is highly dependent on the physical form, the production process and the particle size/surface area of the respective sample. No clear cut-off value for the particle size/flammability properties can be given.

If applicable, "H228: Flammable solid" may be omitted.

Reference: [01231](#)

State: 2021

Checked: 2021

The substance is listed in appendix VI, table 3 of CLP regulation.

The given classification can deviate from the listed classification, since this classification is to be complemented concerning missing or divergent danger classes and categories for the respective substance.

Reference: [99999](#)

GHS-CLASSIFICATION OF MIXTURES

The classification of mixtures containing this substance results from Annex 1 of Regulation (EC) 1272/2008.

Note 7

Alloys containing nickel are classified for skin sensitisation when the release rate of 0,5 microgramm Ni/cm²/week, as measured by the European Standard reference test method EN 1811, is exceeded.

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Alloys containing nickel are classified for skin sensitisation when the release rate of 0,5 microgramm Ni/cm²/week, as measured by the European Standard reference test method EN 1811, is exceeded.

Special rules for supplemental label elements according to Regulation (EC) No 1272/2008 Annex II, No 2.8: The label on the packaging of mixtures containing at least one substance classified as sensitising and present in a concentration equal to or greater than 0,1 % or in a concentration equal to or greater than that specified under a specific note for the substance in part 3 of Annex VI shall bear the statement:

EUH208 - 'Contains (name of sensitising substance). May produce an allergic reaction'

Reference: [07501](#)

WORKPLACE LABELLING ACCORDING TO GERMAN [ASR A1.3](#)

Prohibition label



No open flame; fire, open ignition sources and smoking prohibited



No admittance for unauthorized persons



No eating and
drinking

Warning label



Caution - inflammable
material

Precept label



Use safety goggles



Wear safety
gloves

GERMAN WATER HAZARD CLASS

Substance No: 7182

WGK 1 - low hazard to waters

Nickel, particle size $\geq 0,1$ mm

Classification according to the announcement of the list of substances hazardous to water in the Federal Register of 10.08.2017, last update 24.11.2023

Substance No: 7616

WGK 2 - distinct hazard to waters

Nickel, particle size $< 0,1$ mm

Classification according to the announcement of the list of substances hazardous to water in the Federal Register of 10.08.2017, last update 24.11.2023

TECHNICAL INSTRUCTIONS ON AIR QUALITY CONTROL (TA LUFT)

Chapter 5.2.2 Inorganic dusts

Class II

Also with the presence of several substances of the same class, the following values are in all not allowed to be exceeded in the exhaust gas:

Mass flow: 2,5 g/hr

or

Mass conc.: 0,5 mg/m³

Specified as Ni.

TRANSPORT REGULATIONS

UN Number: 3089
Shipping name: Metal powder, flammable,
n.o.s.
Hazard Identification Number: 40
Class: 4.1 (Flammable solids)
Packing Group: II (medium danger)
Danger Label: 4.1



Reference: [01231](#)

TRGS 900 - GERMAN OCCUPATIONAL EXPOSURE LIMIT VALUES

0,006 mg/m³
with reference to the respirable fraction

0,030 mg/m³
with reference to the inhalable fraction

Peak limitation: Excursion factor 8

Duration 15 min, mean; 4 times per shift; interval 1 hour
Category II - Substances with systemic effects

Risk of sensitization of skin

There is no reason to fear a risk of damage to the developing embryo or foetus when AGW and BGW are adhered to.

Source: AGS

The occupational health-toxicological derivation of the value for the E-dust is based on a plausibility examination.

RECOMMENDATIONS OF MAK-COMMISSION

This data is recommended by scientific experience and is not established law.

Risk of sensitization of respiratory tract and skin

Carcinogenic: Category 1
Substances which cause cancer and make a considerable contribution to the risk of cancer

scope: inhalable fraction
Does also apply to nickel alloys, from which nickel is bioavailable.

RESTRICTIONS OF USE / BANS OF USE

REACH Regulation (EC) No 1907/2006 Annex XVII

Annex XVII, Point 27

Nickel and nickel compounds are not permitted in:

- the first ear studs that are put into pierced ears or other pierced body parts
- products that will come into direct contact with skin for any length of time (e.g. earrings, necklaces, rings)

Further information on prohibitions and exceptions can be taken from the regulation.

Annex XVII, Point 40

Shall not be used, as substance or as mixtures in aerosol dispensers where these aerosol dispensers are intended for supply to the general public for entertainment and decorative purposes such as the following:

- metallic glitter intended mainly for decoration,
- artificial snow and frost,
- “whoopie” cushions,
- silly string aerosols,
- imitation excrement,
- horns for parties,
- decorative flakes and foams,
- artificial cobwebs,
- stink bombs.

Further information on prohibitions and exceptions can be taken from the regulation.

Annex XVII, Point 75

Mixtures containing certain hazardous substances shall no longer be placed on the market for tattooing purposes. Mixtures containing such substances in specified concentrations shall no longer be used for tattooing purposes after 04.01.2022. Substances falling within one or more of the following points:

- carcinogenic or reproductive toxic substances according to Part 3 of Annex VI to CLP Regulation (excluding the classification due to effects only following exposure by inhalation),
- skin-sensitising, skin-corrosive, skin-irritant, serious eye-damaging or eye-irritant substances according to Annex VI Part 3 of the CLP Regulation,
- substances listed with specified conditions in Annex II or IV to Regulation (EC) No 1223/2009 [Cosmetics Regulation], and
- substances listed in Appendix 13 to Annex XVII (point 75) of the REACH Regulation.

In general, mixtures placed on the market for use for tattooing purposes must be labelled "Mixture for use in tattoos or permanent make-up." from 04.01.2022 on and may not be used for tattooing purposes without this labelling. Further safety information shall be provided on the packaging or in the instructions for use. Before using a mixture for tattooing purposes, the person using the mixture shall provide this information to the person undergoing the procedure.

Further information on the restrictions, concentration limits and exemptions can be taken from the Regulation.

Annex XVII to Regulation (EC) No 1907/2006, [consolidated version](#) (BAUA) (only in German)

Consumer Goods Ordinance

Annex 5a to § 6 Point 4

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Angabe des Bearbeiters

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