SECTION 1: Name of the substance or mixture and the company

1.1 **Product identifier**

Nickel Base Alloy:
GS-Alloy 5010 N+ Powder

1.2 **Relevant identified uses of the substance or mixture and uses, which are discouraged**

General use: Manufacture of dentures by the SLM procedure.

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

Adress:
Realloy e.K.
Moerser Str. 232
47803 Krefeld
Germany
Telefon-Nr.: +49 (0)2151 486 49 75
E-Mail: info@realloy.net
Web: www.realloy.net

Manufacturer:
German Special Alloys GmbH
Carl-Friedrich-Benz-Straße 1b
47877 Willich
Germany
Phone number: +49 2154 8809 180
Email: info@gs-alloys.de

Information area:
Phone number: +49 2154 8809 180
Email: info@gs-alloys.de

1.4 **Emergency number**

For medical information *(in German and English):*
+49 551 192 40 (Poison Information Center North)

SECTION 2: Possible dangers

2.1 **Classification of the substance or mixture**

Classification according to EC Regulation 1272/2008 (CLP)

Flam. Sol. 2; H228	Flammable solids
Skin Sens. 1; H317	May cause allergic skin reactions.
Carc. 2; H351	Can probably cause cancer.
STOT RE 1; H372	Damages organs with prolonged or repeated exposure.
Aquatic Chronic 3; H412	Harmful to aquatic organisms, with long-term effects.

2.2 **Marking elements**

Marking according to EC Regulation 1272/2008 (CLP)

Hazard pictograms


GHS02


GHS07


GHS08

Signal word: **Danger**

Warnings

H228	Flammable solid.
H317	May cause allergic skin reactions.
H351	Can probably cause cancer.
H372	Damages organs with prolonged or repeated exposure.
H412	Harmful to aquatic organisms, with long-term effects

Safety

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
P260	Do not inhale dust/smoke/gas/mist/vapour/aerosol.
P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
P302+P352	IN CONTACT WITH SKIN: Wash with plenty of soap and water
P308+P313	In case of exposure or if affected: Seek medical advice/medical attention.
P333+P313	In case of skin irritation or rash: Seek medical advice/medical help.
P405	Store under lock and key.
P501	Disposal in accordance with official regulations.

Special marking
Note text for labels: Contains: Nickel.
As an alloy, the product is not subject to labelling if it meets the criteria of Annex I Section 1.3.4.1 of the CLP Regulation.

2.3 **Other hazards**

During the processing of the product, dusts can form an explosive mixture with air.
Particles and dusts can be produced during mechanical processing.
Contact with dust can cause mechanical irritation of the eyes. After inhalation dust can cause irritation of the respiratory tract.

PBT and vPvB assessment:
These alloys are not considered persistent, bioaccumulative, or toxic.

SECTION 3: Composition / Ingredient Information

3.1 **Substances:** Not applicable. The product is not a fabric.

3.2 **Farragoes:**
Chemical characterization: Mixture of the following substances with non-hazardous admixtures.
Hazard-determining component: Nickel

Ingredients:

No.	Name of the substance CAS / EG / Index	Einstufung (EG) 1272/2008 (CLP) or other registrations	Concentration
1	**Nickel**		
	EG-Nr. 231-111-4	CLP: Resp. Sens. 1; H334	62,4 %
	CAS-Nr. 7440-02-0	CLP: Skin Sens. 1; H317	
		CLP: Carc 2, H351	
		CLP: Aquatic Chronic 3, H412	
		CLP: Flam. Sol. 2; H228	
2	**Chromium**		
	EG-Nr. 231-157-5	CLP: Not classified	25 %
	CAS-Nr. 7440-47-3		

4	**Molybdenum**		
	EG-Nr. 231-107-2	CLP: Not classified	11 %
	CAS-Nr. 7439-98-7		
5	**Silicon**		
	EC No. 231-130-8	CLP: Not classified	1,6 %
	CAS No. 7440-21-3		

Full text of the H-phrases: See section 16.
Additional Notes: The maximum occupational exposure limits are set out in Section 8 where necessary.

SECTION 4: First aid measures

4.1 Description of first aid measures

General information: If medical advice is required, have packaging or labelling ready.
Remove all contaminated garments immediately and wash before wearing again.
First aiders: Pay attention to self-protection!

After inhalation: In the case of breathing difficulties, take the affected person out into the fresh air and stay in a

immobilize position that makes breathing easier. In case of breathing difficulties or Respiratory arrest Initiate artificial respiration. In case of risk of unconsciousness Storage and transport in a stable lateral position. Consult a doctor immediately.

After skin contact: Wash off immediately with soap and water and rinse thoroughly. In case of skin reactions Doctor.

After eye contact: Rinse immediately with the eyelid gap open for 10 to 15 minutes with running water.
Remove any contact lenses if possible. Continue to rinse.
Then consult an ophthalmologist.

After swallowing: Rinse your mouth immediately and drink plenty of water. You must never be unconscious people should be given something by mouth. Do not induce vomiting.
Caution in case of vomiting: risk of aspiration!
If swallowed followed by vomiting, aspiration can enter the lungs which can lead to chemical pneumonia or suffocation. Doctor immediately
.

4.2 Main acute and delayed symptoms and effects

May cause allergy, asthma-like symptoms or breathing difficulties if inhaled.
May cause allergic skin reactions.

4.3 Indications of immediate medical assistance or special treatment

Symptomatic treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing agent

Suitable extinguishing agents:
firefighting measures adapted to local conditions and the environment.
Water (spray jet), carbon dioxide (CO2), dry extinguishing agent, alcohol-resistant foam.
Foam, dry extinguishing powder, carbon dioxide.
Extinguishing agents that are unsuitable for safety reasons:
Full water jet.

5.2 Special hazards posed by the substance or mixture

In the event of a fire, dangerous fire gases and vapours can be produced.
Furthermore, toxic metal oxide smoke can be produced.

5.3 **Instructions for firefighting**

Special protective equipment for firefighting:
Wear ambient air-independent respirator and chemical protective suit.
Additional Notes: --
Avoid the ingress of extinguishing water into surface waters or groundwater.
Fire residues and contaminated extinguishing water must be discharged in accordance with the local official regulations.

SECTION 6: Measures in the event of accidental release

6.1 **Personal precautions, protective equipment and procedures to be followed in emergencies**

Avoid exposure. Avoid inhaling dust.
Provide adequate ventilation. Wear appropriate protective equipment. Unprotected
Keep people away. Evacuate the environment.
If possible, eliminate leaks. All contaminated garments immediately
and wash before wearing again.

6.2 **Environmental protection**

Do not allow to enter groundwater, water bodies or sewers.
If necessary, notify the competent authorities.

6.3 **Methods and material for retention and purification**

Pick up mechanically and dispose of in suitable containers. Avoid dust generation. Dispose of the absorbed material dust-free.

Additional notes: During the processing of the product, dusts can form an explosive mixture with air.

6.4 **Reference to other sections**

See sections 8 and 13 for additional references.

SECTION 7: Handling and storage

7.1 **Protective measures for safe handling**

Notes on safe handling
Obtain special instructions before use.
Do not get into the eyes, skin or clothing. For good care and
ventilation of the warehouse and workplace. Avoid inhaling dust.
Wear appropriate protective equipment. Do not eat, drink or smoke when in use.
Wash hands thoroughly after use. All contaminated garments immediately
and wash before wearing again. workplace with an eyewash and
a body shower (emergency shower).

7.2 **Conditions for safe storage taking into account incompatibilities**

Requirements for storage rooms and containers:
Store container tightly closed in a well-ventilated place.
Keep container dry. Store only in the original container.
Protect from heat and direct sunlight.
Store the container upright.
Summary storage notes:
Keep away from food, drink and feed.
Do not contain oxidizing and self-igniting substances as well as highly flammable substances solids together.
Do not store together with acids/alkalis and oxidizing agents.
Storage class:
Technical Rules for Hazardous Substances TRGS 510:
LGK 6.1C - Flammable, acutely toxic Cat. 3 / Toxic or chronic hazardous substances.

7.3 **Specific End Applications**

Production of dentures in dental laboratories using the SLM procedure.

SECTION 8: Limitation of Exposure / Personal Protective Equipment

8.1 **Parameters to monitor**

Occupational exposure limits:

CAS No.	Designation	Type	Limit
7440-02-0	Nickel	Germany: TRGS 900	0.006 mg/m3 (Occupational exposure limit; respirable fraction)
		Germany: TRGS 900	0.03 mg/m3 (Occupational exposure limit; Inhalable fraction)
7440-48-4	Cobalt	Germany: TRGS 910	0.5 µg/m3 (Acceptance concentration; respirable fraction)
		Germany: TRGS 910	5 µg/m3 (Tolerance concentration; respirable fraction)
7440-47-3	Chromium	Germany: TRGS 900	2 mg/m3 (Occupational exposure limit; Inhalable fraction)

8.2 **Limiting and monitoring exposure**

Provide good ventilation or fume hood or work with completely closed equipment.

Personal protective equipment

Respiratory

In case of insufficient ventilation, wear respiratory protection. If the occupational exposure limit values (OEL) are exceeded, a breathing apparatus must be worn.
In case of dust formation: P3 particulate filter according to EN 143.

Eye/Face Protection

Tight-fitting safety goggles in accordance with EN 166.

Guard

Protective gloves in accordance with EN 374.
The information provided by the manufacturer of the protective gloves on permeability and breakthrough times must be observed.

Body Armor

Wear dustproof protective clothing.

Protective and hygiene measures

Obtain special instructions before use. Avoid inhaling dust. Do not get into the eyes, skin or clothing.
Remove all contaminated garments immediately and wash before wearing again.
Do not wear contaminated work clothes outside the workplace.
Do not eat, drink or smoke when in use. Wash hands thoroughly after use.
workplace with an eye wash and a body shower (emergency shower).

Limiting and monitoring environmental exposure

See Section 6.2 Environmental Protection Measures.

SECTION 9: Physical and chemical properties

9.1 **Information on basic physical and chemical properties**

Shape / Colour / Smell	-	Physical state at 20 °C and 101.3 kPa: solid, Powder/ grey/ odourless

pH	-	not applicable
Melting Point / Freezing Point	-	1280-1350 °C (melting range)
Boiling start/range	-	no data available
Flash Point/Range	-	no data available
Evaporation speed	-	no data available
Inflammability	-	no data available
Explosion limits	-	no data available
Vapor pressure	-	no data available
Vapor Density	-	no data available
Density	-	at 20 °C: 8.2 g/cm3
Solubility in water	-	insoluble
Distribution coefficient n-Octanol / Wasser	-	no data available
Autoignition temperature	-	no data available
Decomposition temperature	-	no data available
Viscosity, kinematic	-	no data available
Explosive properties	-	During the processing of the product, dusts can be form an explosive mixture with air.
Oxidizing properties	-	no data available

9.2 **Other information**
No data available.

SECTION 10: Stability and reactivity

10.1 **Reactivity**
See 10.3

10.2 **Chemical stability**
Stable under specified storage conditions.

10.3 **Possibility of dangerous reactions**
Avoid contact with acids. May lead to the release of: Hydrogen.

10.4 **Conditions to avoid**
Avoid dust formation.

10.5 **Incompatible materials**
Acids, alkalis, strong oxidizing agents.

10.6 **Dangerous decomposition products**
No hazardous decomposition products if the regulations for storage and handling.
Thermal decomposition: No data available.

SECTION 11: Toxicological information

11.1 **Information on toxicological effects**

Toxicological effects
The statements are derived from the properties of the individual components. For the Product as such, there are no toxicological data.

Acute toxicity:
No data available.
Corrosive/irritating effect on the skin:
No data available.

Severe eye damage/irritation:
No data available.
Sensitization of the respiratory tract/skin:
Resp. Sens. 1; H334 = May cause allergy, asthma-like symptoms or
Cause breathing difficulties.
Germ cell mutagenicity:
No data available.
Carcinogenicity:
Carc. 2; H351= Can probably cause cancer.
Reproductive toxicity:
No data available.
Specific target organ toxicity with single exposure:
No data available.
Specific target organ toxicity with repeated exposure:
STOT RE 1; H372 = Damages organs with prolonged or repeated exposure.
Aspiration hazard:
No data available.

Other information: Information on nickel

Endocrine-disrupting properties:
No data available.
Other information:
No data available.

Symptoms

Particles and dusts can be produced during mechanical processing.
Contact with dust can cause mechanical irritation of the eyes. After inhalation dust can cause irritation of the respiratory tract.

SECTION 12: Environmental Claims

12.1 **Toxicity**

Aquatic toxicity

Can be harmful to aquatic organisms, with long-term effects.
Information on nickel:

LC50 Fish, 96 hours:	Minimum:	0.0000475 mg/l
	Maximum:	350 mg/l
	Median:	40 mg/l
LC50 Crustaceans, 48 hours:	Minimum:	1.28 mg/l
	Maximum:	0.28 mg/l
	Median:	8.58 mg/l
EC50 Crustaceans, 48 hours:	Minimum:	1 mg/l
	Maximum:	1 mg/l
	Median:	1 mg/l

Water hazard class

WGK 2, clearly hazardous to water.

12.2 **Persistence and degradability**

No data available.

12.3 **Bioaccumulation potential**

No data available.

12.4 **Mobility in the ground**

No data available.

12.5 **PBT and vPvB assessment results**
These alloys are not considered persistent, bioaccumulative, or toxic.

12.6 **Endocrine-disrupting properties**
No data available.

12.7 **Other adverse effects and other claims**
Do not allow to enter groundwater, water bodies or sewers.

SECTION 13: Disposal Notes

13.1 **Waste treatment processes**

Product
Waste code number: 06 04 05* = Waste containing other heavy metals
* = Proof of disposal is required.
Recommendation: Disposal in accordance with official regulations.
Must not be disposed of together with household waste.

Packaging
Recommendation: Disposal in accordance with official regulations.
Contaminated packaging must be treated like the substance.

SECTION 14: Transport details

14.1 **UN Number**
ADR/RID, ADN, IMDG, IATA-DGR:
Not applicable.

14.2 **Proper UN shipping designation**
ADR/RID, ADN, IMDG, IATA-DGR:
Not restricted.

14.3 **Transport hazard classes**
ADR/RID, ADN, IMDG, IATA-DGR:
Not applicable.

14.4 **Packaging group**
ADR/RID, ADN, IMDG, IATA-DGR:
Not applicable.

14.5 **Environmental hazards**
Marine pollutant - IMDG: no

14.6 **Special precautions for the user**
Not dangerous goods within the meaning of these transport regulations.

14.7 **Bulk cargo transport according to MARPOL and IBC**
No data available.

SECTION 15: Legislation

15.1 **Safety, health and environmental protection rules/specific legislation for the substance or mixture**

National Regulations - Germany
Storage class:
LGK 6.1C = Flammable, acutely toxic Cat. 3 / Toxic or chronic hazardous substances.
Water hazard class:
WGK 2, clearly hazardous to water.

Hazardous Incident Ordinance:
The product is subject to the Chemicals Prohibition Ordinance (ChemVerbotsV).
Notes on employment restrictions:
Observe employment restrictions for young people.
Observe employment restrictions for expectant and breastfeeding mothers.

National rules - EC Member States
Other Rules, Restrictions, and Ordinances:
Restriction of use according to REACH Annex XVII No.: 27, Nickel

15.2 **Chemical safety assessment:** No chemical safety assessment is required for this mixture.

SECTION 16: Other information

Learn more
Wording of the H and P phrases under Sections 2 and 3:

Warnings

H228	Flammable solid.
H317	May cause allergic skin reactions.
H351	Can probably cause cancer.
H372	Damages organs with prolonged or repeated exposure.
H412	Harmful to aquatic organisms, with long-term effects

Safety

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
P260	Do not inhale dust/smoke/gas/mist/vapour/aerosol.
P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
P302+P352	IN CONTACT WITH SKIN: Wash with plenty of soap and water
P308+P313	In case of exposure or if affected: Seek medical advice/medical attention.
P333+P313	In case of skin irritation or rash: Seek medical advice/medical help.
P405	Store under lock and key.
P501	Disposal in accordance with official regulations.

Abbreviations and acronyms:
ADN: European Agreement concerning the International Carriage of Dangerous Goods Goods on inland waterways
ADR: European Agreement concerning the International Carriage of Dangerous Goods Goods on the road
OEL: Occupational exposure limit value
AS/NZS: Australian/New Zealand Standard
CAS: Chemical Abstracts Service
CFR: Code of Federal Regulations
CLP: classification, labeling and packaging
DMEL: Derived Exposure Altitude with Minimal Impairment
DNEL: Inferred Non-Effect Concentration
EC50: Effective concentration 50%
EC: European Community
EN: European Standard
EU: European Union
IATA: Association for International Air Transport
IBC code: International code for the construction and equipment of ships for the Transport of hazardous chemicals in bulk
IMDG Code: Dangerous Goods Regulations for International Sea Transport
LC50: Median lethal concentration
LD50: Lethal Dose 50%
MARPOL: International Convention for the Prevention of Marine Pollution by ships

OSHA: Occupational Health and Safety Administration, America
PBT: Persistent, bioaccumulative and toxic
PNEC: Estimated Non-Effect Concentration
REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals
RID: Regulations for the International Carriage of Dangerous Goods by Rail
MAK: Maximum workplace concentration
vPvB: Very persistent and very bioaccumulative
OEL: Occupational exposure limit value

Literature: BG RCI:
- Leaflet M004 'Acids and alkalis'
- Leaflet M039 'Crop Damage 'Protection at the Workplace'
- Leaflet M050 'Activities with hazardous substances'
- Leaflet M053 'Occupational health and safety measures for activities involving hazardous substances'
- Leaflet M056 'ODIN Key List - Carcinogenic Hazardous Substances'

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Changes from the previous version: Header, 1.3, 1.4

Data sheet exhibiting area
Contact: See Section 1.3 Information Area

The information in this data sheet is compiled to the best of our knowledge and corresponds to the state of knowledge at the revision date. However, they do not guarantee compliance with certain characteristics in the sense of legally binding.