

**Trade name:** Non-precious solders (REF 52622)**Current version :** 3.3.0, issued: 19.08.2021**Replaced version:** 3.2.0, issued: 09.08.2021**Region:** GB**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1 Product identifier**

Trade name

**Non-precious solders (REF 52622)****Wirobond solder****Wiron solder****Cobalt chrome solder****1.2 Relevant identified uses of the substance or mixture and uses advised against****Relevant identified uses of the substance or mixture**

Manufacturing of dental prosthesis in a dental laboratory

**Uses advised against**

No data available.

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

BEGO Bremer Goldschlägerei

Wilh. Herbst GmbH &amp; Co. KG

Wilhelm-Herbst-Str. 1

28359 Bremen

Telephone no. +49/ 421/ 2028 – 0

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**Information provided by / telephone**

Research &amp; Development Department - Materials, alloys and ceramics; +49/ 421/ 2028 – 130 (Chief Development Officer alloys)

**Advice on Safety Data Sheet**

msds@bego.com

**1.4 Emergency telephone number**

For medical advice (in German and English):

+49 (0)551 192 40 (Giftinformationszentrum Nord)

**SECTION 2: Hazards identification****2.1 Classification of the substance or mixture****Classification in accordance with Regulation (EC) No 1272/2008 (CLP)**

Aquatic Chronic 4; H413

Carc. 1B; H350

Muta. 2; H341

Repr. 1B; H360

Resp. Sens. 1; H334

Skin Sens. 1; H317

STOT RE 1; H372i

**Classification information**

This product is assessed and classified using the methods and criteria below referred to in Article 9 of Regulation (EC) n° 1272/2008:

Physical hazards: determined through assessment data based on the methods or standards referred to in part 2 of Annex I to CLP

Health hazards and environmental hazards: determined through toxicological and ecotoxicological assessment data based on the methods or standards referred to in Part 3, 4 and 5 of Annex I to CLP.

**2.2 Label elements**

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**Labelling according to Regulation (EC) No 1272/2008 (CLP Regulation)****Hazard pictograms**

GHS08

**Signal word**

Danger

**Hazardous component(s) to be indicated on label:**nickel  
cobalt**Hazard statement(s)**

H317 May cause an allergic skin reaction.  
 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
 H341 Suspected of causing genetic defects  
 H350 May cause cancer.  
 H360 May damage fertility or the unborn child  
 H372i Causes damage to organs through prolonged or repeated exposure if inhaled.  
 H413 May cause long lasting harmful effects to aquatic life.

**Precautionary statement(s)**

P201 Obtain special instructions before use.  
 P280 Wear protective gloves/protective clothing/eye protection.  
 P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
 P308+P313 IF exposed or concerned: Get medical advice/attention.  
 P342+P311 If experiencing respiratory symptoms: Call a POISON CENTER/doctor.  
 P501 Dispose of contents/container to a facility in accordance with local and national regulations.

**Supplemental label elements**

"Restricted to professional users"

**Labelling information**

In the form in which it is marketed, the product causes no danger to health for humans through inhalation, swallowing or contact with the skin. There is therefore no obligation to label the product in accordance with:

- regulation 1272/2008 (CLP: annex I; 1.3.4.: "Metals in massive form, alloys, mixtures containing polymers, mixtures containing elastomers).

**2.3 Other hazards**

If the product form in the as-supplied state is changed through further processing (e.g. through grinding, polishing, electrical discharge machining, welding or melting) and dust or vapours are produced, there may be danger from hazardous components in the product (see information in chapter 3).

PBT assessment  
No data available.  
  
vPvB assessment  
No data available.

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

Not applicable. The product is not a substance.

**3.2 Mixtures****Hazardous ingredients**

No	Substance name		Additional information	
	CAS / EC / Index / REACH no	Classification (EC) 1272/2008 (CLP)	Concentration	%
1	nickel			

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	7440-02-0 231-111-4 028-002-00-7 -	Carc. 2; H351 Skin Sens. 1; H317 STOT RE 1; H372**	>= 25.00 - < 50.00	wt%
2	<b>cobalt</b>			
	7440-48-4 231-158-0 027-001-00-9 -	Skin Sens. 1; H317 Resp. Sens. 1; H334 Muta. 2; H341 Carc. 1B; H350 Repr. 1B; H360F Aquatic Chronic 4; H413	>= 25.00 - < 50.00	wt%
3	<b>chromium</b>			
	7440-47-3 231-157-5 - -	-	>= 25.00 - < 50.00	wt%
4	<b>Silicon</b>			
	7440-21-3 231-130-8 - -	-	< 5.00	wt%

Full Text for all H-phrases and EUH-phrases: pls. see section 16

(\*, \*\*, \*\*\*, \*\*\*\*) Detailed explanation pls. refer to CLP regulation No. 1272/2008, annex VI, 1.2

No	Note	Specific concentration limits	M-factor (acute)	M-factor (chronic)
1	S, 7	-	-	-

Full text for the notes: pls. see section 16 "Notes relating to the identification, classification and labelling of substances ((EC) No 1272/2008, Annex VI)".

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

#### General information

In case of allergic symptoms, especially respiratory tract related, seek medical help immediately.

#### After inhalation

Ensure supply of fresh air. Remove affected person from the immediate area. When vapours are intensively inhaled, seek medical help immediately.

#### After skin contact

Wash off immediately with soap and water.

#### After eye contact

Remove contact lenses, irrigate copiously with clean, fresh water for at least 15 minutes, holding the eyelids apart and seek medical advice.

#### After ingestion

Call a doctor immediately.

### 4.2 Most important symptoms and effects, both acute and delayed

No data available.

### 4.3 Indication of any immediate medical attention and special treatment needed

No data available.

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

#### Suitable extinguishing media

Metal fire powders; Sand

#### Unsuitable extinguishing media

Water; Foam; Carbon dioxide; Dry chemicals

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

No data available.

**5.3 Advice for firefighters**

Use self-contained breathing apparatus. Adapt extinguisher and fire-fighting measures to fire in the environment.  
Wear protective clothing.

**SECTION 6: Accidental release measures****6.1 Personal precautions, protective equipment and emergency procedures****For non-emergency personnel**

Ensure adequate ventilation. Do not inhale vapours. Avoid dust formation. Refer to protective measures listed in sections 7 and 8.

**For emergency responders**

No data available. Personal protective equipment (PPE) - see Section 8.

**6.2 Environmental precautions**

Collect contaminated water / firefighting water separately. Do not discharge into the drains/surface waters/groundwater. Do not discharge into the subsoil/soil.

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

Collect mechanically. Avoid raising dust. When collected, handle material as described under the section heading "Disposal considerations".

**6.4 Reference to other sections**

No data available.

**SECTION 7: Handling and storage****7.1 Precautions for safe handling****Advice on safe handling**

Provide good ventilation at the work area (local exhaust ventilation, if necessary).

**General protective and hygiene measures**

Wash hands before breaks and after work. Do not eat, drink or smoke during work time. Remove soiled or soaked clothing immediately. Keep away from foodstuffs and beverages. Do not inhale vapours or dust.

**Advice on protection against fire and explosion**

Dust can form an explosive mixture with air. Take precautionary measures against static charges. Keep away from sources of ignition.

**7.2 Conditions for safe storage, including any incompatibilities****Technical measures and storage conditions**

Keep container tightly closed in a well-ventilated place.

**Requirements for storage rooms and vessels**

No special measures required.

**Incompatible products**

Do not store together with: explosive substances

**7.3 Specific end use(s)**

No data available.

**SECTION 8: Exposure controls/personal protection****8.1 Control parameters****Occupational exposure limit values**

No	Substance name	CAS no.	EC no.
1	nickel	7440-02-0	231-111-4
List of approved workplace exposure limits (WELs) / EH40			

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	Nickel & its inorganic compounds (except nickel tetracarbonyl): water soluble nickel compounds (as Ni)	
	WEL long-term (8-hr TWA reference period)	0.1 mg/m <sup>3</sup>
	Comments	Sk, Carc (nickel oxides and sulphides) Sen (nickel sulphate)
	<b>List of approved workplace exposure limits (WELs) / EH40</b>	
	Nickel & water insoluble compounds nickel compounds (as Ni)	
	WEL long-term (8-hr TWA reference period)	0.5 mg/m <sup>3</sup>
	Comments	Sk, Carc (nickel oxides and sulphides) Sen (nickel sulphate)
<b>2</b>	<b>cobalt</b>	<b>7440-48-4 231-158-0</b>
	<b>List of approved workplace exposure limits (WELs) / EH40</b>	
	Cobalt & cobalt compounds (as Co)	
	WEL long-term (8-hr TWA reference period)	0.1 mg/m <sup>3</sup>
	Comments	Carc (cobalt dichloride and sulphate), Sen
<b>3</b>	<b>chromium</b>	<b>7440-47-3 231-157-5</b>
	<b>List of approved workplace exposure limits (WELs) / EH40</b>	
	Chromium	
	WEL long-term (8-hr TWA reference period)	0.5 mg/m <sup>3</sup>
	<b>2006/15/EC</b>	
	Chromium Metal, Inorganic Chromium (II) Compounds and Inorganic Chromium (III) Compounds (insoluble)	
	WEL long-term (8-hr TWA reference period)	2 mg/m <sup>3</sup>
<b>4</b>	<b>Silicon</b>	<b>7440-21-3 231-130-8</b>
	<b>List of approved workplace exposure limits (WELs) / EH40</b>	
	Silicon	
	total inhalable dust	
	WEL long-term (8-hr TWA reference period)	10 mg/m <sup>3</sup>
	<b>List of approved workplace exposure limits (WELs) / EH40</b>	
	Silicon	
	respirable dust	
	WEL long-term (8-hr TWA reference period)	4 mg/m <sup>3</sup>

## 8.2 Exposure controls

### Appropriate engineering controls

No data available.

### Personal protective equipment

#### Respiratory protection

If workplace exposure limits are exceeded, a respiration protection approved for this particular job must be worn. In case of dust formation, take appropriate measures for breathing protection in the event that workplace threshold values are not specified.

#### Eye / face protection

Safety glasses with side protection shield (EN 166)

#### Hand protection

In case of thermal processing, thermally insulating protective gloves are to be used. Before use, the protective gloves should be tested in any case for its specific work-station suitability (i.e. mechanical resistance, product compatibility and antistatic properties). Adhere to the manufacturer's instructions and information relating to the use, storage, care and replacement of protective gloves. Protective gloves shall be replaced immediately when physically damaged or worn. Design operations thus to avoid permanent use of protective gloves.

#### Other

Normal chemical work clothing.

#### Environmental exposure controls

No data available.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

#### State of aggregation

solid

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<b>Form/Colour</b>	
solid	
white	
<b>Odour</b>	
odourless	
<b>pH value</b>	
No data available	
<b>Boiling point / boiling range</b>	
No data available	
<b>Melting point/freezing point</b>	
Value	1020 - 1150 °C
Comments	The various products have different melting intervals within the indicated melting range.
<b>Decomposition temperature</b>	
No data available	
<b>Flash point</b>	
No data available	
<b>Ignition temperature</b>	
No data available	
<b>Flammability</b>	
No data available	
<b>Lower explosion limit</b>	
No data available	
<b>Upper explosion limit</b>	
No data available	
<b>Vapour pressure</b>	
No data available	
<b>Relative vapour density</b>	
No data available	
<b>Relative density</b>	
No data available	
<b>Density</b>	
Value	8.2 - 8.5 g/cm <sup>3</sup>
<b>Solubility in water</b>	
Comments	insoluble
<b>Solubility</b>	
No data available	
<b>Partition coefficient n-octanol/water (log value)</b>	
No data available	
<b>Viscosity</b>	
No data available	
<b>Particle characteristics</b>	
No data available	

## 9.2 Other information

<b>Other information</b>
No data available.

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## SECTION 10: Stability and reactivity

### 10.1 Reactivity

Dangerous reactions are not expected if the product is handled according to its intended use.

### 10.2 Chemical stability

Stable under recommended storage and handling conditions (See section 7).

### 10.3 Possibility of hazardous reactions

Possible hydrogen formation upon contact with acids.

### 10.4 Conditions to avoid

None, if handled according to intended use.

### 10.5 Incompatible materials

Acids

### 10.6 Hazardous decomposition products

No hazardous decomposition products known.

## SECTION 11: Toxicological information

### 11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

<b>Acute oral toxicity</b>
No data available

<b>Acute dermal toxicity</b>
No data available

<b>Acute inhalational toxicity</b>
No data available

<b>Skin corrosion/irritation</b>
No data available

<b>Serious eye damage/irritation</b>
No data available

<b>Respiratory or skin sensitisation</b>
No data available

<b>Germ cell mutagenicity</b>
No data available

<b>Reproduction toxicity</b>
No data available

<b>Carcinogenicity</b>
No data available

<b>STOT - single exposure</b>
No data available

<b>STOT - repeated exposure</b>
No data available

<b>Aspiration hazard</b>
No data available

<b>Delayed and immediate effects as well as chronic effects from short and long-term exposure</b>
Inhalation of vapours in high concentration may cause metal fume fever and may cause damage of the central nervous system in case of repeated and prolonged exposure. Repeated and prolonged exposure to high dust concentrations may lead to irritation of the respiratory tract. Inhalation of metal-containing dusts may cause acute poisoning, leading to nausea, vomiting and abdominal pain. Extended exposition through inhalation of nickel dust and flue gas may lead to lesions, incl. fibrosis. Nickel contaminated dust that is transferred by the ambient air is considered cancer-causing when entering the depths of the respiratory tract. Metallic nickel and all its compounds

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may have a sensitising effect, in particular with persons with general proneness to allergies.

## 11.2 Information on other hazards

### Endocrine disrupting properties

No data available.

### Other information

No data available.

## SECTION 12: Ecological information

### 12.1 Toxicity

#### Toxicity to fish (acute)

No data available

#### Toxicity to fish (chronic)

No data available

#### Toxicity to Daphnia (acute)

No data available

#### Toxicity to Daphnia (chronic)

No data available

#### Toxicity to algae (acute)

No data available

#### Toxicity to algae (chronic)

No data available

#### Bacteria toxicity

No data available

### 12.2 Persistence and degradability

No data available.

### 12.3 Bioaccumulative potential

No data available.

### 12.4 Mobility in soil

No data available.

### 12.5 Results of PBT and vPvB assessment

#### Results of PBT and vPvB assessment

PBT assessment	No data available.
vPvB assessment	No data available.

### 12.6 Endocrine disrupting properties

No data available.

### 12.7 Other adverse effects

No data available.

### 12.8 Other information

#### Other information

Do not discharge product unmonitored into the environment.

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

#### Product

Allocation of a waste code number, according to the European Waste Catalogue, should be carried out in agreement with the regional waste disposal company.

#### Packaging



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Residues must be removed from packaging and when emptied completely disposed of in accordance with the regulations for waste removal. Incompletely emptied packaging must be disposed of in the form of disposal specified by the regional disposer.

## SECTION 14: Transport information

### 14.1 Transport ADR/RID/ADN

The product is not subject to ADR/RID/ADN regulations.

### 14.2 Transport IMDG

The product is not subject to IMDG regulations.

### 14.3 Transport ICAO-TI / IATA

The product is not subject to ICAO-TI / IATA regulations.

### 14.4 Other information

No data available.

### 14.5 Environmental hazards

Information on environmental hazards, if relevant, please see 14.1 - 14.3.

### 14.6 Special precautions for user

No data available.

### 14.7 Maritime transport in bulk according to IMO instruments

Not relevant

## SECTION 15: Regulatory information

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

#### EU regulations

#### Regulation (EC) No 1907/2006 (REACH) Annex XIV (List of substances subject to authorisation)

According to the data available and/or specifications supplied by upstream suppliers, this product does not contain any substances considered as substances requiring authorisation as listed on Annex XIV of the REACH regulation (EC) 1907/2006.

#### REACH candidate list of substances of very high concern (SVHC) for authorisation

According to available data and the information provided by preliminary suppliers, the product does not contain substances that are considered substances meeting the criteria for inclusion in annex XIV (List of Substances Subject to Authorisation) as laid down in Article 57 and article 59 of REACH (EC) 1907/2006.

#### Regulation (EC) No 1907/2006 (REACH) Annex XVII: RESTRICTIONS ON THE MANUFACTURE, PLACING ON THE MARKET AND USE OF CERTAIN DANGEROUS SUBSTANCES, MIXTURES AND ARTICLES

The product contains following substance(s) that are considered being subject to REACH regulation (EC) 1907/2006 annex XVII.

No	Substance name	CAS no.	EC no.	No
1	cobalt	7440-48-4	231-158-0	28, 30
2	nickel	7440-02-0	231-111-4	27

#### Directive 2012/18/EU on the control of major-accident hazards involving dangerous substances

This product is not subject to Part 1 or 2 of Annex I.

#### Other regulations

Adhere to the national sanitary and occupational safety regulations when using this product.

### 15.2 Chemical safety assessment

No data available.

## SECTION 16: Other information

#### Sources of key data used to compile the data sheet:

Regulation (EC) No 1907/2006 (REACH), 1272/2008 (CLP) as amended in each case.

Directives 2000/39/EC, 2006/15/EC, 2009/161/EU, (EU) 2017/164.

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National Threshold Limit Values of the corresponding countries as amended in each case.  
Transport regulations according to ADR, RID, IMDG, IATA as amended in each case.  
The data sources used to determine physical, toxic and ecotoxic data, are indicated directly in the corresponding section.

**Full text of the H- and EUH- phrases drawn up in sections 2 and 3 (provided not already drawn up in these sections)**

H351	Suspected of causing cancer.
H360F	May damage fertility.
H372	Causes damage to organs through prolonged or repeated exposure.

**Notes relating to the identification, classification and labelling of substances and mixtures ((EC) No 1272/2008, Annex VI)**

S	This substance may not require a label according to Article 17 (see section 1.3 of Annex I) (Table 3.1). This substance may not require a label according to Article 23 of Directive 67/548/EEC (see section 8 of Annex VI to that Directive) (Table 3.2).
7	Alloys containing nickel are classified for skin sensitisation when the release rate of 0.5 µg Ni/cm <sup>2</sup> /week, as measured by the European Standard reference test method EN 1811, is exceeded.

**Creation of the safety data sheet**

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This information is based on our present knowledge and experience.  
The safety data sheet describes products with a view to safety requirements.  
It does not however, constitute a guarantee for any specific product properties and shall not establish a legally valid contractual relationship.

**Alterations/supplements:**

Alterations to the previous edition are marked in the left-hand margin.

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