

MATERIAL IDENTIFICATION AND USE Material Name: STAINLESS STEEL COMPONENTS, MEDICAL GRADE Synonyms: Coil, Wire, Tubes, etc.	Safety Data Sheet 	Supplier: JBC and Company Address: 10484 Ranch Road 965 Fredericksburg, TX 78624 Tel: 830-685-3700 Fax: 830-685-3703 email: info@jbcandcompany.com
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SECTION 1: Identification

Product identifier:	JBC's Medical Grade Stainless Steel Components
Other Means of Identification:	Coil, Wire, Tubes, etc.
Supplier's details	JBC and Company, 10484 Ranch Road 965, Fredericksburg, TX 78624
Phone & Emergency phone number:	Phone: 830-685-3700 CHEMTRAC: 800-424-9300

SECTION 2: Hazard identification

General hazard statement

Solid metallic products are classified as "articles" and are not hazardous materials in their solid form under the definitions of the OSHA Hazard Communication Standard (29 CFR 1910.1200). Articles manufactured from these solid products are generally considered non-hazardous as well. However, such as but not limited to: burning, melting, cutting, brazing, grinding, machining, milling, and welding.

Classification of the substance or mixture

GHS classification in accordance with OSHA (29 CFR 1910.1200)

- Carcinogenicity (chapter 3.6), Cat. 2
- Sensitization, respiratory (chapter 3.4), Cat. 1
- Sensitization, skin (chapter 3.4), Cat. 1

GHS label elements, including precautionary statements

Pictogram



Signal word

Danger

Hazard statement(s)

H317	May cause an allergic skin reaction
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled
H351	Suspected of causing cancer

Precautionary statement(s)

P202	Do not handle until all safety precautions have been read and understood.
P261	Avoid breathing dust/fume/gas/mist/vapors/spray.
P272	Contaminated work clothing should not be allowed out of the workplace.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P284	[In case of inadequate ventilation] wear respiratory protection.

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P302+P352	IF ON SKIN: Wash with plenty of water/...
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P308+P313	IF exposed or concerned: Get medical advice/attention.
P333+P313	If skin irritation or a rash occurs: Get medical advice/attention.
P342+P311	If experiencing respiratory symptoms: Call a POISON CENTER/doctor/...
P362+P364	Take off contaminated clothing and wash it before reuse.
P501	Dispose of contents/container to ...

SECTION 3: Composition/information on ingredients

Substances and Hazardous Components

1. NICKEL	Concentration	30 - 99 % (Weight)
	EC no.	231-111-4
	CAS no.	7440-02-0
	Index no.	028-002-00-7
2. Iron (III) oxide	Concentration	<= 84 % (Weight)
	CAS no.	1309-37-1
3. Copper powder	Concentration	<= 68 % (Weight)
	CAS no.	7440-50-8
4. CHROMIUM	Concentration	<= 48 % (Weight)
	CAS no.	7440-47-3
5. COBALT	Concentration	<= 15 % (Weight)
	EC no.	231-158-0
	CAS no.	7440-48-4
	Index no.	027-001-00-9
6. Manganese	Concentration	<= 11 % (Weight)
	CAS no.	7439-96-5
7. Molybdenum	Concentration	<= 9 % (Weight)
	CAS no.	7439-98-7
8. Niobium	Concentration	<= 5 % (Weight)
	CAS no.	7440-03-1
9. Aluminum	Concentration	<= 5 % (Weight)
	EC no.	231-072-3
	CAS no.	7429-90-5
	Index no.	013-002-00-1
10. Titanium	Concentration	<= 4 % (Weight)
	CAS no.	7440-32-6
11. Tungsten	Concentration	<= 4 % (Weight)
	CAS no.	7440-33-7
12. Tantalum	Concentration	<= 2 % (Weight)
	CAS no.	7440-25-7
13. Yttrium	Concentration	<= 1 % (Weight)
	CAS no.	7440-65-5

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14. Silicon	Concentration	<= 1 % (Weight)
	CAS no.	7440-21-3

SECTION 4: First-aid measures

Description of necessary first-aid measures

General advice	Solid metallic products are classified as “articles” and are not hazardous materials in their solid form under the definitions of the OSHA Hazard Communication Standard (29 CFR 1910.1200). Articles manufactured from these solid products are generally considered non-hazardous as well. However, such as but not limited to: burning, melting, cutting, brazing, grinding, machining, milling, and welding.
If inhaled	In case of accidental inhalation of dust or fumes, remove to fresh air. Seek medical advice if discomfort persists.
In case of skin contact	If irritation occurs, wash skin thoroughly with soap and water. Cool melted product on skin with ample amounts of cool water. Do not remove solidified product. Seek medical attention if necessary.
In case of eye contact	In case of contact, flush eyes with copious amounts of water for 15 minutes to ensure that nothing remains in eye. Seek medical advice if irritation persists.
If swallowed	Seek medical attention.

SECTION 5: Fire-fighting measures

Suitable extinguishing media

Non-flammable. Will not support combustion. Not applicable for solid product. Use extinguishers for surrounding material. A fire involving finely divided alloy should be treated as a Class D Combustible metal fire.

Special protective actions for fire-fighters Do not use water on molten metal.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Not applicable if in solid state. Avoid dust formation. Ensure adequate ventilation. Clean-up personnel should be protected against inhalation and eye/skin contact should be avoided.

Environmental precautions

Not applicable if in solid state.

Methods and materials for containment and cleaning up

If molten, allow material to cool and place into an appropriate marked container for disposal. Shovel into suitable containers for disposal.

SECTION 7: Handling and storage

Precautions for safe handling

Not applicable if in solid state. Operations with the potential for generating large concentrations of airborne particles should be evaluated and controlled as necessary. Handle in accordance with good industrial hygiene and safety practices. If not gloved, wash hands thoroughly after handling.

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Conditions for safe storage, including any incompatibilities

Maximum temperature for storage: 49 °C (120.2 °F)

Store away from acids and incompatible materials.

SECTION 8: Exposure controls/personal protection

Control parameters - Not applicable if in solid state.

CAS: 1309-37-1

Iron oxide

Cal/OSHA: 5 mg/m³ (fume) PEL inhalation; NIOSH: 5 mg/m³ (dust and fume) REL inhalation; OSHA: 10 (fume) mg/m³ PEL inhalation

CAS: 7440-02-0

Nickel, soluble compounds (as Ni)

Cal/OSHA: 0.05 mg/m³ PEL inhalation; NIOSH: Ca 0.015 mg/m³ REL inhalation; OSHA: 1 mg/m³ PEL inhalation

CAS: 7440-25-7

Tantalum, metal and oxide dust

Cal/OSHA: 5 mg/m³ PEL inhalation; NIOSH: 5 mg/m³, (ST) 10 mg/m³ REL inhalation; OSHA: 5 mg/m³ PEL inhalation

CAS: 7440-47-3

Chromium metal and insol. salts (as Cr)

Cal/OSHA: 0.5 mg/m³ PEL inhalation; NIOSH: 0.5 mg/m³, See Appendix C REL inhalation; OSHA: 1 mg/m³ PEL inhalation

CAS: 7440-48-4

Cobalt metal, dust, and fume (as Co)

Cal/OSHA: 0.02 mg/m³ PEL inhalation; NIOSH: 0.05 mg/m³ REL inhalation; OSHA: 0.1 mg/m³ PEL inhalation

CAS: 7440-50-8

Copper, Dusts and mists (as Cu)

Cal/OSHA: 1 mg/m³ PEL inhalation; NIOSH: 1 mg/m³ REL inhalation; OSHA: 1 mg/m³ PEL inhalation

CAS: 7440-65-5

Yttrium

Cal/OSHA: 1 mg/m³ PEL inhalation; NIOSH: 1 mg/m³ REL inhalation; OSHA: 1 mg/m³ PEL inhalation

Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection

Safety glasses with side shields.

Skin protection

No protection requirements during normal handling and use.

Respiratory protection

In the case of dust or aerosol formation use respirator with an approved filter.

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

Appearance/form	Solid silver-grey metallic
Odor	Odorless
Melting point/freezing point	2500 °F - 2800 °F
Flammability (solid, gas)	Not Flammable

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SECTION 10: Stability and reactivity

Reactivity

Not applicable for product in solid form.

Chemical stability

Stable under normal conditions of transport, storage, and use for solid formed product.

Possibility of hazardous reactions

Hazardous polymerization will not occur.

Conditions to avoid

Contact with mineral acids, including but not limited to hydrochloric acid, nitric acid, sulfuric acid, phosphoric acid, boric acid, and hydrofluoric acid, will release flammable hydrogen gas. Dust formation.

Incompatible materials

Oxidizers; Reacts with strong acids to form explosive hydrogen gas.

Hazardous decomposition products

During certain such as welding, burning, melting or hot rolling, metal fumes may be generated. Hexavalent chromium, which is a suspect carcinogen, may result from pickling stainless steel.

SECTION 11: Toxicological information

Information on toxicological effects - Not applicable if in solid state.

Acute toxicity

Iron (III) oxide

LD50 Oral - Rat - 30,000 mg/kg

NICKEL POWDER

LD50 Oral - Rat - >9,000 mg/kg

Manganese (powder)

LD50 Oral - Rat - 9,000 mg/kg

Silicon (powder)

LC50 Oral - Rat - 3,160 mg/kg

COBALT (powder)

LD50 Oral - Rat - 6,171 mg/kg

Serious eye damage/irritation

High concentrations of dust may cause eye irritation.

Respiratory or skin sensitization

Inhalation of metal particulate or elemental oxide fumes generated during welding, burning, grinding or machining may pose acute or chronic health effects. Prolonged skin contact with dust may cause skin irritation to sensitive individuals.

Carcinogenicity

CHROMIUM: IARC lists certain hexavalent chromium compounds under its Group 1 category - "confirmed carcinogenicity to humans." And metallic chromium under its Group 3 category - "not classifiable as to the carcinogenicity to humans." Chromium metal is classified as a carcinogenic by NTP. Dermatitis may result from exposure to chromium fumes.

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NICKEL: IARC lists metallic nickel under its Group 2B category - "possibly carcinogenic to humans." Nickel may cause skin sensitivity.

COBALT: IARC lists metallic cobalt under its Group 2B category - "possibly carcinogenic to humans." Cobalt dust may result in an asthma-like condition (cough, shortness of breath).

COPPER: Copper fumes may result in Wilson's Disease (characterized by hepatic cirrhosis, brain damage, demyelination, renal disease, and copper deposition in the cornea).

IRON: Inhalation overexposures may cause a benign pneumoconiosis (siderosis) with few or no symptoms.

MANGANESE: Existing studies are inadequate to assess its carcinogenicity. Susceptible to Parkinson's disease, metal fume fever and kidney damage.

Summary of evaluation of the CMR properties

CHROMIUM: IARC lists certain hexavalent chromium compounds under its Group 1 category - "confirmed carcinogenicity to humans." And metallic chromium under its Group 3 category - "not classifiable as to the carcinogenicity to humans." Chromium metal is classified as a carcinogenic by NTP.

NICKEL: IARC lists metallic nickel under its Group 2B category - "possibly carcinogenic to humans."

COBALT: IARC lists metallic cobalt under its Group 2B category - "possibly carcinogenic to humans."

STOT-single exposure

No data.

STOT-repeated exposure

Respiratory system. Allergic skin reactions.

Aspiration hazard

No Data

SECTION 12: Ecological information

Toxicity - No data available for stainless steel in its solid state. However, individual components of the material have been found to be toxic to the environment.

Iron (III) oxide: LC50 - Cyprinus carpio (Carp) - 0.56 mg/l - 96 hr.

CHROMIUM: LC50 - Pimephales promelas (fathead minnow) - 10-100 mg/l - 96 hr.

NICKEL POWDER: EC50 - Daphnia magna (water flea) - 1.0 mg/l - 48 hr.

EC50 - Pseudokirchneriella subcapitata (green algae) - 0.18 mg/l - 72 hr.

LC50 - Cyprinus carpio (Carp) - 1.3 mg/l - 96 hr.

Persistence and degradability

No data available.

Bioaccumulative potential

No data available.

Mobility in soil

No data available for stainless steel in its solid state. Individual metal dusts may migrate into soil and groundwater and be absorbed by plants.

Other adverse effects

None known.

SECTION 13: Disposal considerations

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Disposal of the product

Steel scrap should be recycled whenever possible.

Disposal of contaminated packaging

Dispose in accordance with applicable federal, provincial/state and/or local governments.

SECTION 14: Transport information

DOT (US)

Non-regulated

IMDG

Non-regulated

IATA

Non-regulated

SECTION 15: Regulatory information

Safety, health and environmental regulations specific for the product in question

California Prop. 65 components

Chemical name: COBALT (powder)

CAS number: 7440-48-4

07/01/1992 - Cancer

Chemical name: NICKEL POWDER

CAS number: 7440-02-0

10/01/1989 - Cancer

Massachusetts Right To Know Components

Chemical name: Chromium

CAS number: 7440-47-3

Chemical name: Cobalt

CAS number: 7440-48-4

Chemical name: Manganese

CAS number: 7439-96-5

Chemical name: Nickel

CAS number: 7440-02-0

Chemical name: Aluminum (fume or dust)

CAS number: 7429-90-5

Chemical name: Copper

CAS number: 7440-50-8

New Jersey Right To Know Components

Common name: CHROMIUM

CAS number: 7440-47-3

Common name: COBALT

CAS number: 7440-48-4

Common name: IRON OXIDE

CAS number: 1309-37-1

Common name: MANGANESE

CAS number: 7439-96-5

Common name: MOLYBDENUM

CAS number: 7439-98-7

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Common name: NICKEL
CAS number: 7440-02-0

Common name: TANTALUM
CAS number: 7440-25-7

Common name: TITANIUM
CAS number: 7440-32-6

Common name: TUNGSTEN
CAS number: 7440-33-7

Common name: YTTRIUM
CAS number: 7440-65-5

Common name: ALUMINUM
CAS number: 7429-90-5

Common name: COPPER
CAS number: 7440-50-8

Common name: SILICON
CAS number: 7440-21-3

Pennsylvania Right To Know Components

Chemical name: Chromium
CAS number: 7440-47-3

Chemical name: Cobalt
CAS number: 7440-48-4
Chemical name: Iron oxide
CAS number: 1309-37-1

Chemical name: Manganese
CAS number: 7439-96-5

Chemical name: Molybdenum
CAS number: 7439-98-7

Chemical name: Nickel
CAS number: 7440-02-0

Chemical name: Tantalum
CAS number: 7440-25-7

Chemical name: Tungsten
CAS number: 7440-33-7

Chemical name: Yttrium
CAS number: 7440-65-5

Chemical name: Aluminum
CAS number: 7429-90-5

Chemical name: Copper
CAS number: 7440-50-8

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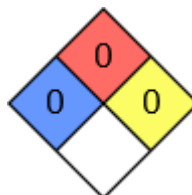
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Chemical name: Silicon
CAS number: 7440-21-3

HMIS Rating

JBC's Stainless Steel Orthodontic Clasps	
HEALTH	1
FLAMMABILITY	0
PHYSICAL HAZARD	0
PERSONAL PROTECTION	

NFPA Rating



SECTION 16: Other information

Prepared by: JBC and Company in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200.

Revision Indicator: New SDS

Disclaimer: The information contained herein is accurate to the best of our knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. JBC and Company makes no warranty of any kind, express or implied, concerning the safe use of this material in your process or in combination with other substances.