

Material Safety Data Sheet

According to 91/155 EEC

Printing date 29.03.2006

Reviewed on 17.03.2006

1 Identification of the substance/preparation and of the company/undertaking

- **Product details**
- **Trade name:** Brealloy C+B 270, Brealloy F 400
- **Article number:**
500 CB 050, 500 CB 000, 500 ML 500, 500 CB 200, 500 ML 000, 500 CB 500, 500 ML 100
- **Application of the substance / the preparation** biocompatible cobalt-chromium-molybdenum alloy
- **Manufacturer/Supplier:**
Bredent
Weißenhorner Straße 2
D-89250 Senden
Tel.: +49 (0) 7309/872-0
Fax: +49 (0) 7309/872-24
- **Further information obtainable from:** R & D
- **Information in case of emergency:** Tel.: +49 (0) 6132-84436 (24 h)

2 Composition/information on ingredients

- **Chemical characterization**
- **Description:** cobalt-chromium-molybdenum alloy

- **Dangerous components:**

CAS: 7440-48-4 EINECS: 231-158-0	cobalt	Xn; R 42/43-53	50-100%
CAS: 7440-47-3 EINECS: 231-157-5	chromium		10-25%
CAS: 7440-33-7 EINECS: 231-143-9	tungsten		2.5-10%

- **Additional information:** For the wording of the listed risk phrases refer to section 16.

3 Hazards identification

- **Hazard description:**
Dusts and vapours:
Possible sensitization due to inhalation.
Possible sensitization due to skin contact.
Dusts and vapours:
Do not inhale
May release metallic vapors when melted.
- **Information concerning particular hazards for human and environment:**
The product does not have to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.
- **Classification system:**
The classification is according to the latest editions of the EU-lists, and extended by company and literature data.

4 First aid measures

- **General information:** No special measures required.
- **After inhalation:** Dust and vapours: ensure fresh air supply
- **After skin contact:** Dust and vapours: Before breaks and the end of work wash hands and/or face
- **After eye contact:**
Dusts and vapours: Rinse eye under running water for several minutes lid being opened. If irritation persists, seek medical attention.

(Contd. on page 2)

GB

Material Safety Data Sheet

According to 91/155 EEC

Printing date 29.03.2006

Reviewed on 17.03.2006

Trade name: Brealloy C+B 270, Brealloy F 400

(Contd. of page 1)

- **After swallowing:** If symptoms persist consult doctor.

5 Fire-fighting measures

- **Suitable extinguishing agents:** CO₂, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Protective equipment:** No special measures required.

6 Accidental release measures

- **Person-related safety precautions:** Not required.
- **Measures for environmental protection:** Do not allow to enter sewers/ surface or ground water. Dusts and water-soluble forms of the alloy: Product must not reach soil, water and sewage system.
- **Measures for cleaning/collecting:** Pick up mechanically.
- **Additional information:** No dangerous substances are released.

7 Handling and storage

- **Handling:**
- **Information for safe handling:**
No special precautions are necessary if used correctly.
Extractors are required on all machines used for thermal processing or splinter removal processes.
- **Information about fire - and explosion protection:** No special measures required.
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** None.

8 Exposure controls/personal protection

- **Additional information about design of technical facilities:** No further data; see item 7.

- **Ingredients with limit values that require monitoring at the workplace: 7440-48-4 cobalt**

MEL	Long-term value: 0.1 mg/m ³
-----	--

7440-47-3 chromium

OES	Long-term value: 0.5 mg/m ³
-----	--

7440-33-7 tungsten

OES	Short-term value: 3 mg/m ³
	Long-term value: 1 mg/m ³

- **Additional information:** The lists valid during the making were used as basis.
- **Personal protective equipment:**
- **General protective and hygienic measures:** Do not eat, drink, smoke or sniff while working. Be sure to clean skin thoroughly after work and before breaks.
- **Respiratory protection:**

Not required when smelting, soldering and welding

(Contd. on page 3)

GB

Material Safety Data Sheet

According to 91/155 EEC

Printing date 29.03.2006

Reviewed on 17.03.2006

Trade name: Brealloy C+B 270, Brealloy F 400

(Contd. of page 2)

- **Protection of hands:**
- **Material of gloves**
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.
- **Penetration time of glove material**
The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **Eye protection:** Not required.
- **Body protection:** If cobalt steam occurs: Immediately remove all soiled and contaminated clothing.

9 Physical and chemical properties

· General Information

Form:	Solid
Colour:	White
Odour:	Characteristic

· Change in condition

Melting point/Melting range: 1280-1350°C
Boiling point/Boiling range: Undetermined.

· **Flash point:** Not applicable.

· **Self-igniting:** Product is not self-igniting.

· **Danger of explosion:** Product does not present an explosion hazard.

· **Density at 20°C:** 8.400 g/cm³

· **Solubility in / Miscibility with water:** Insoluble.

· Solvent content:

Organic solvents:	0.0 %
VOC (EC)	0.00 %

· **Solids content:** 100.0 %

10 Stability and reactivity

- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Dangerous reactions** No dangerous reactions known.
- **Dangerous decomposition products:**
No dangerous decomposition products known.
May release metallic vapours during melting.

11 Toxicological information

· Acute toxicity:

· LD/LC50 values relevant for

classification: 7440-48-4 cobalt

Oral LD50 6170 mg/kg (rat)

· Primary irritant effect:

- **on the skin:** No irritant effect.
- **on the eye:** No irritating effect.
- **Sensitization:** No sensitizing effects known.

(Contd. on page 4)

GB

Material Safety Data Sheet

According to 91/155 EEC

Printing date 29.03.2006

Reviewed on 17.03.2006

Trade name: Brealloy C+B 270, Brealloy F 400

(Contd. of page 3)

· **Subacute to chronic toxicity:**

Cobalt dust and vapours:

Possible evidence of cancerogenic effect in the animal experiment.

· **Additional toxicological information:**

The product is not subject to classification according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version.

When used and handled according to specifications, the product does not have any harmful effects to our experience and the information provided to us.

12 Ecological information

· **General notes:**

Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

Dusts and water-soluble forms of the alloy: Avoid penetrating into soil, water and sewage system.

13 Disposal considerations

· **Product:**

· **Recommendation** Smaller quantities can be disposed of with household waste.

· **Uncleaned packaging:**

· **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

· **Land transport ADR/RID (cross-border)**

· **ADR/RID class:** -

· **Maritime transport IMDG:**

· **Marine pollutant:** No

15 Regulatory information

· **Labelling according to EU guidelines:**

Observe the general safety regulations when handling chemicals.

The product is not subject to identification regulations under EU Directives and the Ordinance on Hazardous Materials (German GefStoffV).

· **Hazard-determining components of labelling:** cobalt

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Relevant R-phrases**

42/43 May cause sensitisation by inhalation and skin contact. 53 May cause long-term adverse effects in the aquatic environment.

· **Department issuing MSDS:** R & D

· **Contact:** R & D

GB