Combilium BSM 3, 4, 5

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Cobalt-chrome-molybdenum model casting alloy (nickel and beryllium free in accordance with EN ISO 22674)

ONLY FOR DENTAL USE BY QUALIFIED PERSONNEL

CE 0482

MADE IN GERMANY

Instructions for use

1. Indication

Combilium BSM 3, 4, 5 are cobalt-chrome-molybdenum model casting alloys (nickel and beryllium free in accordance with EN ISO 22674) with outstanding biocompatibility and oral durability. As a result of the ideal values of E modulus and elongation limit, no permanent deformations arise on the base and the brackets due to masticatory load. The excellent breaking elongation ensures good activation of the brackets. The reduced carbon content of **Combilium BSM 4 and 5** is ideal for lasering with **Combibond® laser welding wires**.

2. Technical data

BSM 3	Co ~63	Mo ~5	Cr ~30	C ~0.5	Mn, Si, Fe <2
BSM 4	Co ~64	Mo ~6	Cr ~29	C ~0.25	Mn, Si, Fe <2
BSM 5	Co ~64	Mo ~5	Cr ~28.5	C ~0.35	Mn, Si, Fe <2

	BSM 3	**BSM 4**	**BSM 5**
EN ISO 22674	Type 5	Type 5	Type 5
Rp 0.2 [N/mm2]*	600	550	600
Tensile strength [N/mm2]*	>830	>750	880
Elongation [A5 %]*	>5	>7	6.3
Vickers hardness HV 10	>350	>300	350
E modulus [kN/mm2]*	230	230	215
Density [g/cm3]	8.3	8.4	8.2
Melting range [°C]	1210-1380	1210-1380	1320-1350
CTE (20-600°C) [µ/K]	15	16	15
Supply form	cylinder	cylinder	cylinder

3. Safety instructions

⚠ Inhalation of metal dust and vapour is harmful to health. Alloys must therefore only be processed at workplaces with extraction hoods and using respiratory protection masks of type FFP3-EN149!

4. Modelling / Casting channels

Modelling: Model casting prostheses are modelled according to the common rules of constructing dental prosthetics. We recommend our dental adhesives Bio-Präp liquid (REF 2135) and Bio-Präp Spray (REF 2130) for bonding prefabricated wax patterns.

Casting channels: It is recommended to always attach casting channels to the thickest parts, thinner areas or those hard to access can be provided with an additional casting channel (Ø 3 mm). The casting channels are configured such that changes of direction are over wide arcs and are attached to the base from the dorsal side.

5. Investing / Preheating

For investing, we recommend our phosphate-bonded model casting investment materials C 130 MO (REF 2102), MO SPEED 20 (REF 2170) and FEGURAVEST® M (2202).

See the instructions for the preheating and holding times at intermediate temperatures and at the end temperature. The end temperature is 850 - 900℃.

Note

Combilium BSM 3, 4, 5 is intended for single use only! Multiple melting can significantly change the composition and therefore also the material properties.

6. Melting / Casting

Combilium BSM 3, 4, 5 can be melted with the following techniques:
Vacuum pressure casting with induction heating, centrifugal casting with induction heating, flame centrifugal casting

Important: Use a separate clean crucible for each alloy. We recommend using ceramic crucibles.

7. Time of casting

Casting should be started immediately after melting the last metal cylinder in order to avoid overheating the melt. When melting with an open flame, the casting skin must not be damaged. Melting powder is not necessary.

8. Devesting and finishing

We recommend using Alumix 250 µm (REF 7042) or Alumix 120 µm (REF 7041) for blasting the metal framework.

Prostheses made of Combilium BSM 3, 4, 5 have a light and shiny surface after polishing, e.g. with Fegupol 8059 (REF 8059) polishing paste.

9. Laser welding

Laser welding of non-ferrous dental alloys is generally preferable to soldering.
We recommend our Combibond® laser welding wires based on cobalt-chrome-molybdenum (Ø 0.35 mm, REF 4085 and Ø 0.50 mm, REF 4090).

10. Soldering

If soldering cannot be avoided, we recommend our special flux Combiflux BrP (REF 4043) Combibond® Lot 7 containing nickel (melting temperature approx. 930°C, REF 1000029).

11. Contraindications

In cases of known hypersensitivity to one of the components of the alloy, the alloy should not be used or the restorations must be replaced by other materials.
Electrochemically induced paraesthesia may occur due to galvanic effects arising from approximal or antagonistic contact to dental prostheses made of different alloys. Also in this case, the restorations have to be replaced.

Sales unit

REF 2191	BSM 3	1000 g
REF 2190	BSM 4	1000 g
REF 2192	BSM 5	1000 g

Guarantee
As a result of a certified quality management system, Feguramed guarantees perfect quality for its products. The processing recommendations are based on reference values determined in our test laboratory. These reference values can only be assured if the processing recommendations are precisely followed. The user assumes responsibility for processing the products. Feguramed is not liable for poor results, as Feguramed has no influence on processing. Should claims for damages still arise, these are exclusively related to the value of the products.