

Instructions for use & technical data

CopraSintec K

technical data	date of issue: 19.08.15
manufacturer:	Whitepeaks Dental Solutions GmbH & Co. KG Langeheide 9 - 45239 Essen - Germany
product / product type:	sintering alloy blank for manufacturing dental restorations
product shape:	discs and blocks in different, partly with frames or holders
material type:	cobalt / chrome alloy in pressed powder compound (type 4 alloy)
CE-mark:	0483
users:	educated users who manufacture dental restorations with CAD/CAM milling systems
veneering porcelain:	co/cr veneering porcelain (e.g. Vita*, Ivoclar*, DeTrey Dentsply*, Wieland*, Noritake* Wohlwend*, Ducera*, Ceramco*, etc.) the names marked with a * are registered names or trademarks of the respective manufacturers,
contra indikation:	do not use proven allergy or hypersensitivity against the alloy or its components.

composition		technical data (data after final sintering with specified sintering parameters)			
cobalt	balance	0,2% yield strengths	480MPa	density	7,59g/cm ³
Chrome	26,5 – 30%	tensile strengths	864MPa	corrosion stability	< 200 µg/cm ²
molybdenum	4,5 – 7%	fracture elongation	22%	thermal coefficient rate	14,26x10 ⁻⁶ K ⁻¹
silicium	0 – 1%	contraction at fracture	16%	vickers hardness HV1	224
manganese	0 – 1%	modulus of elasticity	178GPa	tarnish proofness	
iron	0 – 1%				
carbon	0 – 0,35%				
other	<1%				

description and intended use

CopraSintec K Blanks are isostatically pressed blanks made from biocompatible co/cr alloy for dental restorations. The alloy is mixed with a binder, which burns out without residue in the sintering process. After sintering, the restorations are adjusted, polished as usual and can be veneered with porcelain or over pressed.

CopraSintec K Blanks can be milled wet or dry.

The material does not absorb any water, it is not necessary to dry the milled restoration after milling in a long drying process. CopraSintec K is a medical product class IIa.

Indications

- anatomical reduced copings and pontics in anterior and posterior area
- full anatomical crowns and bridges in anterior and posterior area
- bridges up to 14 units or bridges with small diameters
- free end bridge constructions with maximum 1 end pontic
- primary and secondary telescopic crowns
- removable prosthesis
- clasps, bars and retention constructions
- supra constructions for implant cases
- restorations with small diameters which are exposed to high forces

CopraSintec K is a type 4 co/cr alloy and therefore has no limitation of indications compared to hard milled or cast cr/co alloys.

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instructions for use

manufacturing of framework: CopraSintec K blanks can be milled with most customary milling systems. The resulting milling dust is very fine. Please make sure your milling system is capable of milling this material before you start milling. If in doubt, please consult the manufacturer of your milling system. (See item safety advice)

The material is of soft, but extremely edge stable and therefore very good mill able. You can use burs for zirconium, PMMA or wax, together with the corresponding milling strategy. The sintering shrink is coded on the blank as the enlargement factor. Your milling system has to be adjusted accordingly.

After the milling process is completed, the restorations are cut out of the blanks. Bigger restorations should not be removed from the surrounding material completely for sintering. Use your experience from zirconium sintering. It is recommended to cut out some surrounding material from the blank to use this part as support during sintering. Connect the end parts of big constructions with a bar or similar connection. The restoration is cleaned from milling dust by brushing it off dry or brushing in water and are placed in the sintering tray. They must not touch each other or the walls or bottom of the sintering tray, as they would melt together during sintering. For an optimum sintering result the restorations should be encased up to the margins. There should be nothing inside of objects. Pontics, bar constructions etc must not be covered but have to be in the open to avoid heat accumulation.

The heating- sinter- and cooling process in the Calidia argon sintering furnace is automated and takes between 4-6 hours, depending on the furnace model. Please follow the instructions for use of your sintering furnace. After down to 50°C, the restorations can be removed from the furnace.

- ▶ heat up speed - 10°C per min.
- ▶ vacuum extraction until 300°C.
- ▶ final temperature ca. 1280°C
- ▶ hold time at final temperature 1 hour
- ▶ cooling is done in the closed furnace with pressured air

If you want to use a sintering furnace from another manufacturer, please get advice for the sintering cycle from Whitepeaks.

veneering with porcelain: All veneering porcelains with a thermal expansion coefficient of 13,9 – 14,9 can be used.

An oxidation firing is not necessary, if desired, please fire for 10 minutes at 980 °C without vacuum.

Sandblast the frameworks with 110µ aluminium oxide and steam clean them afterwards. Surfaces can be rubber polished and final polished without sandblasting them before.

Please follow the instructions for use of your chosen veneering porcelain manufacturer

Soldering: We recommend a chrome cobalt soldering metal for soldering. CopraSintec K frames should not be soldered with gold or palladium solders. CopraBond K is easy to weld with a dental laser.

safety advice: CopraSintec K blanks are isostatically compacted blank, made from a biocompatible cobalt / chrome alloy. The dust originating from milling these blanks is extremely fine. Do not inhale this dust. Always wear your protective equipment, containing protective gloves and goggles and a dust mask class FFP3. All suction or extraction devices must have a filter class HEPA H. Avoid pressured air to clean dust from restorations or equipment as a filtered suction is not longer ensured.

Storage: keep away from heat sources and direct sunlight!

Disposal: please refer to the safety data sheet - SDS