



Non-Precious Metal Milling Discs



Cobalt base and titanium base milling discs

Material palette made of non-precious alloys Made in Germany for all known indications, from a single source.

In addition to the Starbond CoS milling disc, produced in a casting process, the sintered metal milling disc, Starbond CoS Soft Disc is made from CoCrWmo-alloy Starbond CoS, for dry and wet milling, is now available for the milling centre/ milling dental laboratory.

Starbond CoS Soft Disc is therefore the only milling disc of this type that is based on proven dental material. The material is characterised by maximum strength values, a high density and excellent veneering characteristics.

In addition to the milling blanks based on CoCrWMo-alloy Starbond CoS, the Scheftner range also includes Starbond Easy Disc, which is developed from a cobalt-chromium-tungsten ceramic alloy, and MoguCera C Disc, which is developed from a cobalt-chromium-molybdenum ceramic alloy. These add to the portfolio of the milling centre/ milling dental laboratory and give dental technicians/ milling centres the opportunity to select an alloy that matches the composition of the non-precious ceramic alloy already applied by the dental technician and dentist in a conventional casting process.

The further development of non-precious metal milling discs and proprietary manufacturing processes ensures maximum uniformity without cavities, as well as a surprisingly low hardness and good machinability. All the alloys have excellent technical characteristics, which have been tested and confirmed by independent test institutes pursuant to ISO 22674 – Metallic materials for fixed and removable dental prostheses and appliances for dentistry customers.

Two titanium milling discs also supplement the Scheftner range. The material Starbond Ti4, made from grade 4 titanium with increased oxygen content, is characterised by high strength and good machinability. Manufactured pursuant to ISO 5832-2 – Metallic materials for fixed and removable dental prostheses and appliances for dentistry customers.

Starbond Ti5 made from a grade 5 titanium alloy with very small amounts of interstitially dissolved elements (extra-low-interstitial „ELI“). The material is characterised by good toughness, excellent machinability and very good biocompatibility. Manufactured pursuant to DIN EN ISO 5832-3 – Metallic materials for surgical implants made from titanium-aluminium-6 vanadium-4 wrought alloy. Particularly suitable for the production of dental implants, bridges, abutments, suprastructures and titanium frameworks for veneering with titanium ceramic.

This provides milling centres, dental laboratories and private label partners with a complete material palette of non-precious metal (NPM) alloys for all known indications from a single source, Made in Germany.



Starbond CoS Disc basic

CoCrWMo milling disc, free of nickel, beryllium, lead and cadmium. Type 4 pursuant to DIN EN ISO 22674. Excellent for the production of crowns, bridges, crown and bridge frameworks for metal ceramics, milled telescopes, bars, attachments, implant-supported suprastructures and abutments.

Starbond CoS Disc is based on the proven conventional bonding dental alloy Starbond CoS. This non-precious metal milling disc has been designed for industrial milling units. The material is made bisc by disc in a special casting process. This enables the achievement of a high degree of homogeneity and the alloy properties are equally distributed throughout the material (edge, centre, core).

Advantages for dental technicians:

- A CTE pf 14.2 ensures flexibility regarding the selection of ceramics
- Excellent metal-ceramic composite
- No cooling phase required, depending on the ceramics
- Very biocompatible
- Laser weldable
- Dry and wet milling
- Very easy to polish



Composition in mass %:

Co	Cr	W	Mo	Si	C, Fe, Mn, N
59 %	25 %	9.5 %	3.5 %	1 %	< 1 %

Technical Properties:

Proof stress (Rp 0.2)	441 MPa
Ultimate tensile strength	639 MPa
Elongation	14 %
Elastic modulus	235 GPa
Vickers hardness	281 HV 10
Density	8.8 g/cm ³
CTE (25 - 500 °C)	13.9 x 10 ⁻⁶ K ⁻¹
CTE (25 - 600 °C)	14.2 x 10 ⁻⁶ K ⁻¹
Laser weldable	Yes
Typ (DIN EN ISO 22674)	4

		Ref.
8 mm x 99.5 mm	without edge	133504
10 mm x 99.5 mm		133506
12 mm x 99.5 mm		133503
14 mm x 99.5 mm		133501
15 mm x 99.5 mm		133507
16 mm x 99.5 mm		133508
18 mm x 99.5 mm		133502
25 mm x 99.5 mm		133509
30 mm x 99.5 mm		133510
8 mm x 98.3 mm	with edge	133514
10 mm x 98.3 mm		133516
12 mm x 98.3 mm		133513
13.5 mm x 98.3 mm		133511
15 mm x 98.3 mm		133517
16 mm x 98.3 mm		133518
18 mm x 98.3 mm		133512
25 mm x 98.3 mm		133525
30 mm x 98.3 mm		133530

Starbond CoS Soft Disc **NEW**

Binder-based, powder-pressed milling disc from a CoCrMo sintered alloy – free of nickel, beryllium, lead and cadmium – type 5 pursuant to DIN EN ISO 22674.

Starbond CoS Soft Disc is based on the dental ceramic alloy Starbond CoS, which has proved its worth over many years, and has a very high bonding strength with conventional (high-melting, low-expanding) ceramics.

Advantages for dental technicians:

- The material can be sintered in all conventional sintering furnaces
- Easy working with milling strategies and tools optimised for PMMA
- High-strength type 5 alloy with a wide range of uses
- Very biocompatible



Composition in mass %:

Co	Cr	W	Mo	Si	C, Fe, Mn, N
59 %	25 %	9.5 %	3.5 %	1 %	< 1 %

Technical Properties (after sintering):

Proof stress (Rp 0.2)	585 MPa
Ultimate tensile strength	800 MPa
Elongation	4 %
Elastic modulus	220 GPa
Vickers hardness	325 HV 10
Density	8.5 g/cm ³
CTE (25 - 500 °C)	14.4 x 10 ⁻⁶ K ⁻¹
CTE (25 - 600 °C)	14.7 x 10 ⁻⁶ K ⁻¹
Laser weldable	Yes
Typ (DIN EN ISO 22674)	5

		Ref.
10 mm x 98 mm	with edge	133610
12 mm x 98 mm		133612
14 mm x 98 mm		133614
18 mm x 98 mm		133618
20 mm x 98 mm		133620
25 mm x 98 mm		133625

Starbond Easy Disc

CoCrW non-precious metal milling disc, free of nickel, beryllium, lead and cadmium. Type 4 pursuant to DIN EN ISO 22674. Excellent for the production of crowns, bridges, crown and bridge frameworks for metal ceramics, milled telescopes, bars, attachments, implant-supported superstructures and abutments.

Starbond Easy Disc is based on a ceramic alloy already used in conventional dental casting technology, the composition of which is now also being used successfully in dental CNC milling. The material is made disc by disc in a special casting process. This enables the achievement of a high degree of homogeneity and the alloy properties are equally distributed throughout the material (edge, centre, core).

Advantages for dental technicians:

- medium hardness of 289 HV 10
- excellent metal-ceramic bonding
- very biocompatible
- no cooling phase required, depending on the ceramics
- suitable for dry and wet milling
- very easy to polish
- laser weldable



Composition in mass %:

Co	Cr	W	Si	C, Mn, Fe
61 %	27.5 %	8.5 %	1.6 %	< 1 %

Technical Properties:

Proof stress (Rp 0.2)	416 MPa
Ultimate tensile strength	663 MPa
Elongation	18 %
Elastic modulus	191 GPa
Vickers hardness	289 HV 10
Density	8.6 g/cm ³
CTE (25 - 500 °C)	14.3 x 10 ⁻⁶ K ⁻¹
CTE (25 - 600 °C)	14.6 x 10 ⁻⁶ K ⁻¹
Laser weldable	Yes
Typ (DIN EN ISO 22674)	4

		Ref.
8 mm ø 99.5 mm	without edge	140008
10 mm ø 99.5 mm		140010
12 mm ø 99.5 mm		140012
14 mm ø 99.5 mm		140013
15 mm ø 99.5 mm		140015
16 mm ø 99.5 mm		140016
18 mm ø 99.5 mm		140018
25 mm ø 99.5 mm		140025
30 mm ø 99.5 mm		140030
8 mm ø 98.3 mm	with edge	140508
10 mm ø 98.3 mm		140510
12 mm ø 98.3 mm		140512
13.5 mm ø 98.3 mm		140513
15 mm ø 98.3 mm		140515
16 mm ø 98.3 mm		140516
18 mm ø 98.3 mm		140518
25 mm ø 98.3 mm		140525
30 mm ø 98.3 mm		140530

MoguCera C Disc

CoCrM non-precious metal milling disc, free of nickel, beryllium, lead and cadmium. Type 4 pursuant to DIN EN ISO 22674. Excellent for the production of crowns, bridges, crown and bridge frameworks for metal ceramics, milled telescopes, bars, attachments, implant-supported superstructures and abutments.

Mogucera C is based on a ceramic alloy already used in conventional dental casting technology, the composition of which is now also being used successfully in dental CNC milling. Mogucera C is made disc by disc in a special casting process, thus enabling the achievement of a high degree of homogeneity, and the hardness is very equally distributed throughout the material (edge, centre, core). Mogucera C is very patient-friendly due to its low thermal conductivity.

Advantages for dental technicians:

- type 4 with a very wide range of indications
- excellent metal-ceramic bonding
- easy to work with and very easy to polish
- medium hardness of 288 HV 10
- suitable for dry and wet milling
- laser weldable



Composition in mass %:

Co	Cr	Mo	C, Si, Nb, Mn, Fe
65 %	28 %	5 %	< 1 %

Technical Properties:

Proof stress (Rp 0.2)	413 MPa
Ultimate tensile strength	597 MPa
Elongation	12 %
Elastic modulus	206 GPa
Vickers hardness	288 HV 10
Density	8.3 g/cm ³
CTE (25 - 500 °C)	14.3 x 10 ⁻⁶ K ⁻¹
CTE (25 - 600 °C)	14.6 x 10 ⁻⁶ K ⁻¹
Laser weldable	Yes
Typ (DIN EN ISO 22674)	4

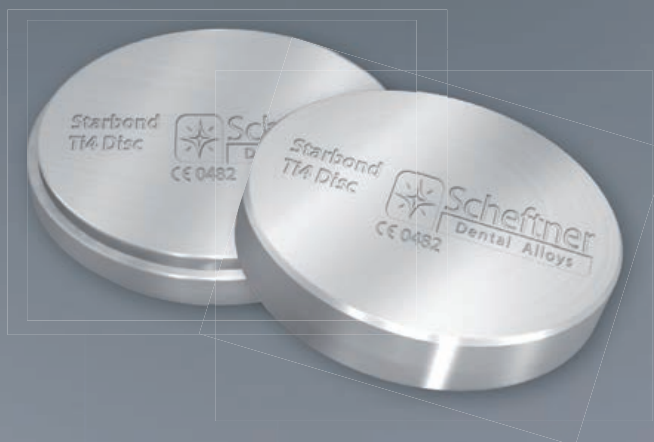
		Ref.
8 mm ø 99.5 mm	without edge	138008
10 mm ø 99.5 mm		138010
12 mm ø 99.5 mm		138012
14 mm ø 99.5 mm		138013
15 mm ø 99.5 mm		138015
16 mm ø 99.5 mm		138016
18 mm ø 99.5 mm		138018
25 mm ø 99.5 mm		138025
30 mm ø 99.5 mm		138030
8 mm ø 98.3 mm	with edge	138108
10 mm ø 98.3 mm		138110
12 mm ø 98.3 mm		138112
13.5 mm ø 98.3 mm		138113
15 mm ø 98.3 mm		138115
16 mm ø 98.3 mm		138116
18 mm ø 98.3 mm		138118
25 mm ø 98.3 mm		138125
30 mm ø 98.3 mm		138130

Starbond Ti4 Disc

Milling disc made from pure titanium (grade 4) with increased oxygen content.

The production of superstructures, bars, abutments and partial dentures

- Perfect milling results
- Excellent metal-ceramic bonding
- Extremely corrosion resistant
- Very biocompatible
- Very patient-friendly due to its low thermal conductivity
- Manufactured pursuant to ISO 5832-2

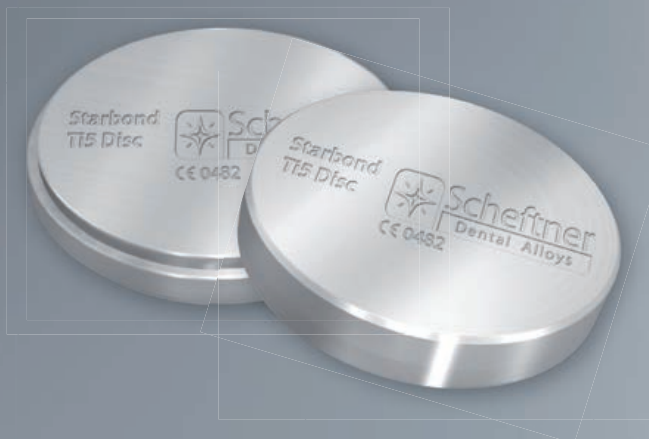


Starbond Ti5 Disc

Milling disc made from grade 5 "ELI" (extra low interstitial) titanium alloy TiAl6V4.

Ideal mechanical properties, manufactured pursuant to ISO 5832-3

- Excellent metal-ceramic bonding with all commercially available veneering ceramics for titanium alloys
- Very biocompatible
- Extremely corrosion resistant
- Very patient-friendly due to its low thermal conductivity
- Extremely suitable for implant-supported restorations, superstructures, bars, abutments, crowns and bridges



Composition in mass %:

Ti	N, C, H, Fe, O
> 99 %	< 1 %

Composition in mass %:

Ti	Al	V	N, C, H, Fe, O
89.4 %	6.2 %	4 %	< 0.4 %

Technical Properties:

Proof stress (Rp 0.2)	504 MPa
Ultimate tensile strength	599 MPa
Elongation	23.5 %
Vickers hardness	> 200 HV 5/30
Density	4.5 g/cm ³
Schmelzpunkt	1660 °C
CTE (25 - 600 °C)	9.7 x 10 ⁻⁶ K ⁻¹
Typ (DIN EN ISO 22674)	4

Technical Properties:

Proof stress (Rp 0.2)	837 MPa
Ultimate tensile strength	921 MPa
Elongation	15 %
Vickers hardness	330 HV 5/30
Density	4.4 g/cm ³
Schmelzpunkt	1650 °C
CTE (25 - 600 °C)	10.3 x 10 ⁻⁶ K ⁻¹
Typ (DIN EN ISO 22674)	4

		Ref.
8 mm x 99.5 mm	without edge	135008
10 mm x 99.5 mm		135010
12mm x 99.5 mm		135012
14 mm x 99.5 mm		135014
15mm x 99.5 mm		135015
16 mm x 99.5 mm		135016
18 mm x 99.5 mm		135018
25 mm x 99.5 mm		135025
30 mm x 99.5 mm		135030
8 mm x 98.3 mm	with edge	135508
10 mm x 98.3 mm		135510
12 mm x 98.3 mm		135512
13.5 mm x 98.3 mm		135513
15mm x 98.3 mm		135515
16 mm x 98.3 mm		135516
18 mm x 98.3 mm		135518
25 mm x 98.3 mm		135525
30 mm x 98.3 mm		135530

		Ref.
8 mm x 99.5 mm	without edge	136008
10 mm x 99.5 mm		136010
12mm x 99.5 mm		136012
14 mm x 99.5 mm		136014
15mm x 99.5 mm		136015
16 mm x 99.5 mm		136016
18 mm x 99.5 mm		136018
25 mm x 99.5 mm		136025
30 mm x 99.5 mm		136030
8 mm x 98.3 mm	with edge	136508
10 mm x 98.3 mm		136510
12 mm x 98.3 mm		136512
13.5 mm x 98.3 mm		136513
15mm x 98.3 mm		136515
16 mm x 98.3 mm		136516
18 mm x 98.3 mm		136518
25 mm x 98.3 mm		136525
30 mm x 98.3 mm		136530



Starbond CoS

Starbond CoS Disc

Starbond CoS Soft Disc

Starbond CoS Powder

High end alloy for casting, milling, laser melting

The non-precious metal alloy Starbond CoS has really proven itself as a cast alloy in practical dental applications and has already been used millions of times. Even in an age of digital production technologies, many dental technicians still want to be able to keep working in systems with the same alloy components and the same composition and thus with the same positive processing properties. Starbond CoS is thus also suitable as dental CNC milling optimised milling blanks and sintered metal milling blanks, and is now also available as an alloy powder for laser melting.



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Quality Assurance

EN ISO 13485
Annex V, Directive 93/42/EEC
Annex II, Directive 93/42/EEC