ZARE

Material Data Sheet

DMLS/SLM technology

remanium® star CL

remanium® star CL is a CoCrW alloy for the production of metallic restaurations by means of the metal laser melting process. remanium® star CL is approved for use on laser melting machines from the company Concept Laser GmbH.

remanium® star CL is particularly suitable for crowns and bridges, frames for metal ceramic veneering, cast partials, primary – and secondary parts for combined restorations.

Mechanical Properties			
	Test Method	As Built	Heat Treated
Tensile Strength	ISO 6892-1:2009(B) Annex D	1170 ± 20 MPa	1030 MPa
Yield Strength (R_p 0.2%)	ISO 6892-1:2009(B) Annex D	840 ± 20 MPa	635 MPa
Elongation at Break	ISO 6892-1:2009(B) Annex D	12 ± 2%	10%
Young's Modulus	---------	230 GPa	230 GPa
Melting range	---------	1320 - 1420°C	1320 - 1420°C
Thermal Properties			
Coefficient of thermal expansion TEC (25-500°C)	ASTM E1461-13	14,1 x $10^{-6}K^{-1}$	---------
Other Properties			
Metal- ceramic bond strength acc. to EN ISO 9693, 3-Pt.- bending test (min. 25 MPa acc. to EN ISO 9693)		40 MPa (Carmen CCS, Dentaurum)	
Biocompatibility, L 929-Proliferation acc. to EN ISO 10993-5, -12, ISO 9363-1, LM SOP 4-06-01		No deliberation of cell toxic active substances	
Corrosion resistance, static immersion test acc. to EN ISO 10271 (max. 200 µg/cm^2 x 7d acc. to EN ISO 22674)		Ion release 3,5 µg/cm^2 x 7d	

Chemical Composition	
Co	60,5%
Cr	28%
W	9%
Si	1,5%
Other elements <1 %: Mn, N, Nb, Fe. free from nickel, beryllium and gallium	

Heat Treatment		
Stress Relief		
Temperature	Time	Atmosphere
RT - 1150°C	3h	Argon
1150°C	1h	Argon
1150°C - RT	---------	Argon

Physical Properties	
Relative Density	Approx. 99,99 %
Density	8,60 g/cm^3

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