Material for Micro-Tec scalpel blades

The material used for manufacturing the Micro-Tec scalpel blades is a selected grade of C1095 carbon steel.

It is used for the following products:

#52-004210 Micro-Tec scalpel blade #10
#52-004211 Micro-Tec scalpel blade #11
#52-004212 Micro-Tec scalpel blade #12
#52-004215 Micro-Tec scalpel blade #15
#52-004221 Micro-Tec scalpel blade #21
#52-004223 Micro-Tec scalpel blade #23

General remarks:

- AISI C1095 (DIN 1.1274) is a brittle high carbon steel with high hardness and great strength
- Contains 0.9 – 1.03 wt% Carbon, can contain traces of Cr, Si or Mo as non-alloy elements
- Magnetic, hardened carbon steel
- Can be hardened by induction heating and quenching
- Properties can be varied by different heat treatments
- Can be used wear corrosion is not an issue
- Generally used where high strength and hardness for cutting tools are required
- Typical applications include cutting blades, knifes, flat spring, scraper blades and mower blades

General composition of C1095

Element	**Wt. %**
Fe	98.38 – 98.8
C	0.9 – 1.03
Mn	03 – 0.5
P	≤0.04
S	≤0.05

Properties of AISI C1095

Mechanical Properties	
State	Hardened, stress relieved
Density	7.87 g/cm^3
Hardness Rockwell B	99
Hardness Rockwell C	31
Hardness Vickers	309
Tensile strength, ultimate	1015 MPa
Tensile strength, yield	495 MPa
Elongation until break	9.5%
Modulus of Elasticity	200 GPa

Vof Micro to Nano
Wateringweg 79
2031EK Haarlem
The Netherlands

T +31-85-2013155
E info@microtonano.com
W www.microtonano.com
Kvk AMS: # 62301959

Bulk Modulus	160 GPa
Poisson's ratio	0.29
Thermal Properties	
Coefficient of thermal expansion	11.0 x 10^{-6} /°C (20-100°C)
Coefficient of linear expansion	12.4 x 10^{-6}/°C (20-300°C)
Specific heat capacity	0.46 J/(g.K)
Thermal conductivity	51.9W/(m.K)
Continuous use (service) temperature	120°C
Maximum service temperature (short)	250°C
Electrical Properties	
Resistivity	0.18 x 10^{-4} Ohm.cm

Micro to Nano
Innovative Microscopy Supplies

Vof Micro to Nano
Wateringweg 79
2031EK Haarlem
The Netherlands

T +31-85-2013155
E info@microtonano.com
W www.microtonano.com
Kvk AMS: # 62301959