BÖHLER

BÖHLER K294 MICROCLEAN®

COLD WORK STEELS

Available Product Variants

Long Products | Plates

Product Description

BÖHLER K294 MICROCLEAN is a cold work tool steel manufactured using powder metallurgy and belongs to the group of 10% vanadium steels. The high content of vanadium carbides makes this steel highly resistant to wear. The toughness is at the same level as conventional 12% chromium steels. BÖHLER K294 MICROCLEAN is used in situations where wear resistance is the decisive factor and toughness is of secondary importance.

Process Melting

Powder metallurgy

Properties

- Toughness & Ductility : good
- Wear Resistance : very high
- Compressive strength : very high
- Dimensional stability : very high

Applications

- Machine knife (for producers)
- Screws and Barrels
- Cold Forming
- General Components for Mechanical Engineering
- Fine Blanking, Stamping, Blanking

Technical data

Material designation	
1.2395	SEL
T30111	UNS
PM A11	AISI

Chemical composition (wt. %)

C	Si	Mn	Cr	Mo	V
2.45	0.90	0.50	5.20	1.30	9.70

voestalpine BÖHLER Edelstahl GmbH & Co KG
https://www.voestalpine.com/bohler-edelstahl/de/

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ONE STEP AHEAD.

Material characteristics

	Compressive strength	Dimensional stability during heat treatment	Toughness	Wear resistance abrasive	Wear resistance adhesive
BÖHLER K294 MICROCLEAN®	★★★★★	★★★★★	★★★	★★★★★	★★★★★
BÖHLER K100	★★	★★	★	★★★	★★
BÖHLER K105	★★	★★	★	★★	★★
BÖHLER K107	★★	★★	★	★★★	★★
BÖHLER K110	★★	★★★	★	★★★	★★
BÖHLER K190 MICROCLEAN®	★★★★	★★★★★	★★★★	★★★★	★★★★
BÖHLER K340 ECOSTAR®	★★★	★★★	★★	★★	★★
BÖHLER K340 ISODUR®	★★★	★★★★	★★★	★★★	★★★★
BÖHLER K346	★★★	★★★	★★★	★★★★	★★
BÖHLER K353	★★	★★★	★★	★★	★★
BÖHLER K360 ISODUR®	★★★	★★★★	★★★	★★★★	★★★★
BÖHLER K390 MICROCLEAN®	★★★★★	★★★★★	★★★★	★★★★★	★★★★★
BÖHLER K490 MICROCLEAN®	★★★★	★★★★★	★★★★	★★★★	★★★★
BÖHLER K497 MICROCLEAN®	★★★★★	★★★★★	★★★	★★★★★	★★★★★
BÖHLER K890 MICROCLEAN®	★★★★	★★★★★	★★★★★	★★★	★★★

Delivery condition

Annealed

Hardness (HB)	max. 277

Heat treatment

Annealing

Temperature	870 to 540 °C | 1,598 to 1,004 °F	Protect steel from scaling and/or decarburization. Heat through to 1600°F (870°C). Control cool at 30°F (15°C) maximum per hour to 1000°F (540°C), then furnace or ait cool to room temperature.

Stress relieving

Temperature	700 to 540 °C | 1,292 to 1,004 °F	If required after Rough machining to minimize distortion during final heat treatment, heat to 1100-1300°F (595-700°C) and hold for 2 hrs followed by furnace. Cool slowly to 930°F (500°C), then air cool.

Physical Properties

Temperature (°C | °F)	20 | 68
Density (kg/dm^3 | lb/in^3)	7.42 | 0.27
Thermal conductivity (W/(m.K) | BTU (IT) ft/hr/ft^2/F)	20.39 | 11.78
Specific heat (J/(kg.K) | BTU (IT) lb/F)	460 | 109.87
Spec. electrical resistance (Ohm.mm^2/m | 10^{-4} Ohm.inch^2/ft)	-
Modulus of elasticity (10^{3}N/mm^2 | 10^{3}ksi)	221 | 32.05

Thermal Expansions between 20°C | 68°F and ...

Temperature (°C | °F)	93 | 199.4	260 | 500	427 | 800.6	593 | 1,099.4
Thermal expansion (10^{-6} m/(m.K) | 10^{-6} inch/(inch.F))	10.7 | 5.9	11.1 | 6.2	11.8 | 6.6	12.3 | 6.8

For more information see https://www.voestalpine.com/bohler-edelstahl/de/

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