

ACEROS PARA TRABAJO EN FRÍO

Formatos disponibles

Productos largos*

Chapas

Forja de matriz abierta

*) Presented data refer exclusively to long products. Please observe the detailed explanations at the end of the data sheet (pdf).

Descripción

BÖHLER K490 MICROCLEAN es un acero pulvimetalúrgico para herramientas de trabajo en frío que combina un alto nivel de resistencia al desgaste y tenacidad. ¡Aumente la vida útil de su utillaje y mejore su productividad!

Método de obtención

Pulvimetalurgia

Propiedades

- > Dureza y Ductilidad : alto
- > Resistencia al desgaste : alto
- > Resistencia a la compresión : alto
- > Estabilidad dimensional : muy alta

Aplicaciones

- > Cuchillas de máquinas (fabricantes)
- > Acuñado
- > Tornillos y cilindros
- > Rodillos
- > Glasfibre reinforced plastics
- > Laminación
- > Corte fino / Troquelado / Estampado
- > Componentes de desgaste
- > Componentes para la industria del reciclaje
- > Conformado en frío
- > Compactación de polvo
- > Componentes generales de ingeniería mecánica
- > Pill punching dies

Composición Química

C	Cr	Mo	V	W	Nb
1,40	6,40	1,50	3,70	3,50	+

Características

	Resistencia a la compresión	Estabilidad dimensional durante el tratamiento térmico	Tenacidad	Resistencia al desgaste abrasivo	Resistencia al desgaste adhesivo
BÖHLER K490 MICROCLEAN®	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
BÖHLER K100	★★	★★	★	★★★	★★
BÖHLER K105	★★	★★	★	★★	★★
BÖHLER K107	★★	★★	★	★★★	★★
BÖHLER K110	★★	★★★	★	★★★	★★
BÖHLER K190 MICROCLEAN®	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
BÖHLER K294 MICROCLEAN®	★★★★★	★★★★★	★★★	★★★★★	★★★★★
BÖHLER K340 ECOSTAR®	★★★	★★★	★★	★★	★★
BÖHLER K340 ISODUR®	★★★	★★★★★	★★★	★★★	★★★★★
BÖHLER K346	★★★	★★★	★★★	★★★★★	★★
BÖHLER K353	★★	★★★	★★	★★	★★
BÖHLER K360 ISODUR®	★★★	★★★★★	★★★	★★★★★	★★★★★
BÖHLER K390 MICROCLEAN®	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
BÖHLER K497 MICROCLEAN®	★★★★★	★★★★★	★★★	★★★★★	★★★★★
BÖHLER K888 MATRIX	★★★★★	★★★★★	★★★★★	★★	★★
BÖHLER K890 MICROCLEAN®	★★★★★	★★★★★	★★★★★	★★★	★★★

Estado de suministro

recocido

Dureza (HB)	máx. 280
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Tratamiento térmico

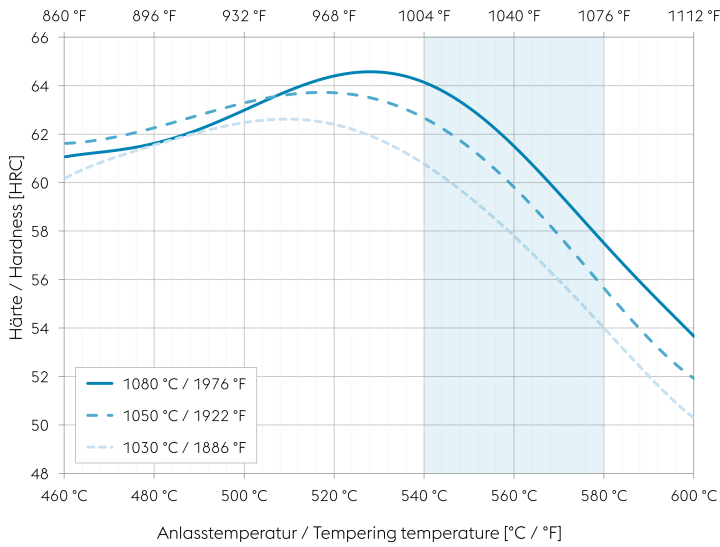
Alivio de tensiones

Temperatura	650 a 700 °C	After through-heating, soak for 1 to 2 hours in a neutral atmosphere. Cool slowly in furnace.
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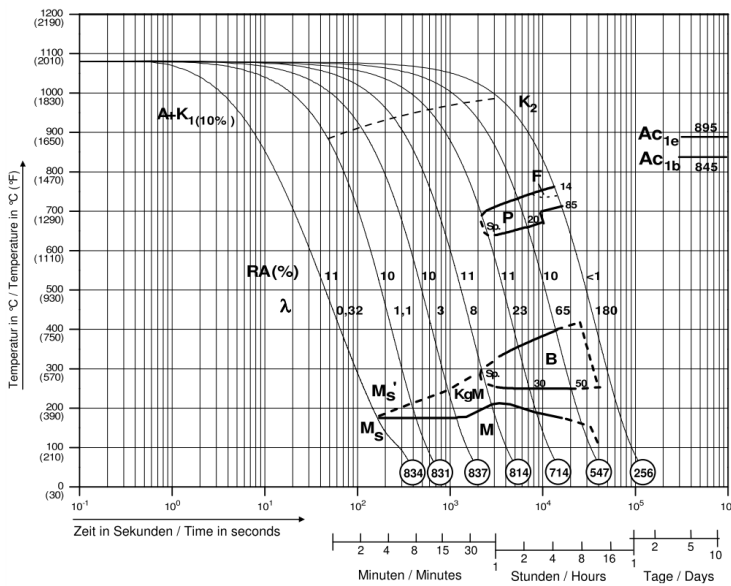
Temple y revenido

Temperatura	1.030 a 1.080 °C	Oil, N ₂ . Following temperature equalisation: 20 - 30 minutes for a hardening temperature of 1030 - 1080 °C (1885 - 1980 °F). After hardening, tempering to the desired working hardness, see tempering chart.
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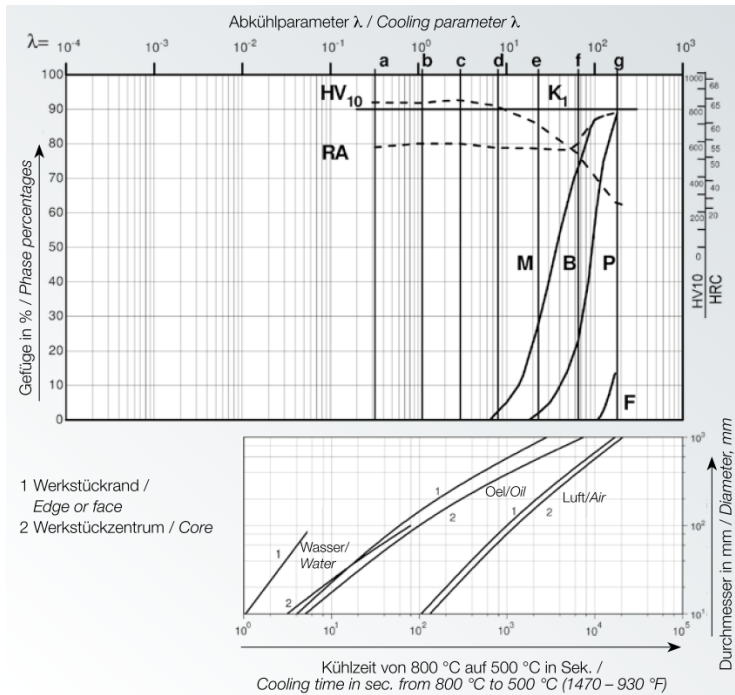
Tempering chart



Continuous cooling CCT curves



Quantitative phase diagram



Propiedades físicas

Temperatura (°C)	20
Densidad (kg/dm ³)	7,79
Conductividad térmica (W/(m.K))	19,6
Calor específico (kJ/kg K)	0,45
Resistencia eléctrica específica (Ohm.mm ² /m)	0,55
Módulo de elasticidad (10 ³ N/mm ²)	223

Expansión térmica

Temperatura (°C)	100	200	300	400	500	600	700
Expansión térmica (10 ⁻⁶ m/(m.K))	10,6	11,1	11,6	11,9	12,3	12,6	12,8

Long Products: For additional specifications and technical requirements, please contact our regional voestalpine BÖHLER sales companies.

Open Die Forgings: Product Variant may differ in terms of melting process, technical data, delivery, and surface condition as well as available product dimensions. Please contact the business unit Open Die Forgings of voestalpine BÖHLER Edelstahl GmbH & Co KG.

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The data contained in this brochure is merely for general information and therefore shall not be binding on the company. We may be bound only through a contract explicitly stipulating such data as binding. Measurement data are laboratory values and can deviate from practical analyses. The manufacture of our products does not involve the use of substances detrimental to health or to the ozone layer.

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voestalpine
ONE STEP AHEAD.