BÖHLER

BÖHLER K890 MICROCLEAN®

ACIERS POUR TRAVAIL À FROID

Variantes de produits disponibles

Produit long* | Tôle

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

Description du produit

BÖHLER K890 MICROCLEAN - Cet acier pour travail à froid produit par la métallurgie des poudres se caractérise par sa bonne ténacité, une très bonne résistance à la compression et une excellente résistance à la fatigue.

Procédé d'élaboration

Métallurgie des poudres

Propriétés

- Ténacité et ductilité : très élevé
- Résistance à l'usure : bien
- Résistance à la compression : élevé
- Stabilité dimensionnelle : très élevé

Applications

- Cisaillages / couteaux pour machines
- Frappe à froid (ex. monnaie)
- Composants pour la mécanique générale
- Découpage et emboutissage fins
- Laminage
- Compactage de poudre
- Composants pour l'industrie du recyclage
- Formage à froid
- Pièces d'usure
- Poinçons pour le compactage de poudre

Composition chimique

C	Si	Mn	Cr	Mo	V	W	Co
0,85	0,55	0,40	4,35	2,80	2,10	2,55	4,50

Comparaison des caractéristiques

	Résistance à la compression	Stabilité dimensionnelle lors du traitement thermique	Ténacité	Résistance à l'usure abrasive	Résistance à l'usure adhésive
BÖHLER K890 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 K490 MICROCLEAN®	★★★★	★★★★★	★★★★	★★★★	★★★★
BÖHLER K497 MICROCLEAN®	★★★★★	★★★★★	★★★	★★★★★	★★★★★
BÖHLER K888 MATRIX	★★★★	★★★★★	★★★★★	★★	★★

Condition de livraison

Recuit

Dureté (HB)	max. 280

Traitement thermique

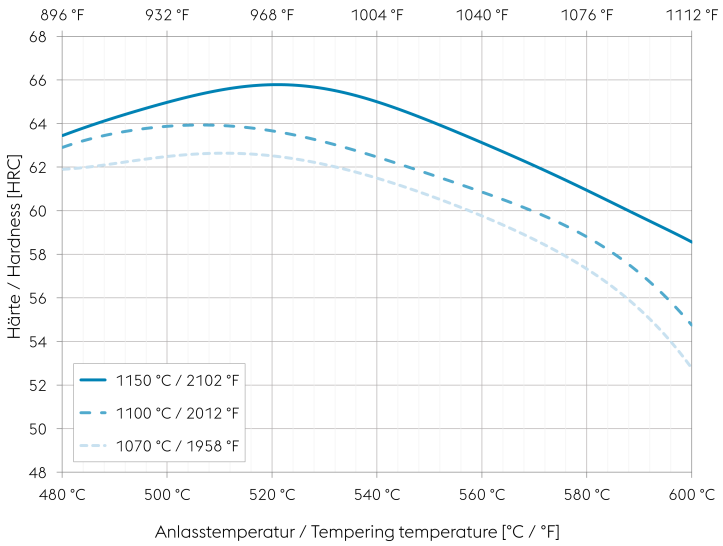
Recuit de détente

Température	650 jusqu'à 700 °C	After through heating, hold in neutral atmosphere for 1-2 hours. || Slow cooling in furnace || Intended to relieve stresses caused by extensive machining or in complex shapes.

Trempe et revenu

Température	1 070 jusqu'à 1 150 °C	Quenching: Oil, gas (N_2) || Holding time after temperature equalization: 20-30 minutes (hardening temperature 1070 to 1100 °C | 1958 to 2012 °F) or 6 minutes (hardening temperature 1150 °C (2102 °F) || After hardening, tempering to the desired working hardness according to the tempering chart.

Tempering chart



Specimen size: square 20 mm (0,787 inch)

Slow heating to tempering temperature immediately after hardening.

Time in furnace 1 hour for each 20 mm (0,787 inch) of workpiece thickness but at least 2 hours.

Please refer to the tempering chart for guide values for the achievable hardness after tempering.

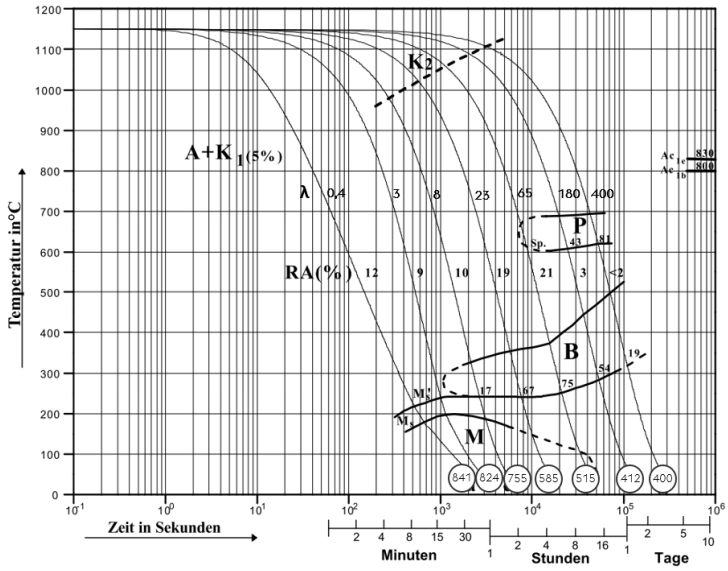
It is recommended to temper at least three times above the secondary hardness maximum.

Cooling in air to room temperature after each tempering step is recommended.

Tempering for stress relieving 30 to 50 °C (86 to 122 °F) below the highest tempering temperature.

Recommended tempering temperature range is indicated by the grey area in the chart.

Continuous cooling CCT curves



Austenitising temperature: 1150 °C (2102 °F)
Holding time: 30 minutes

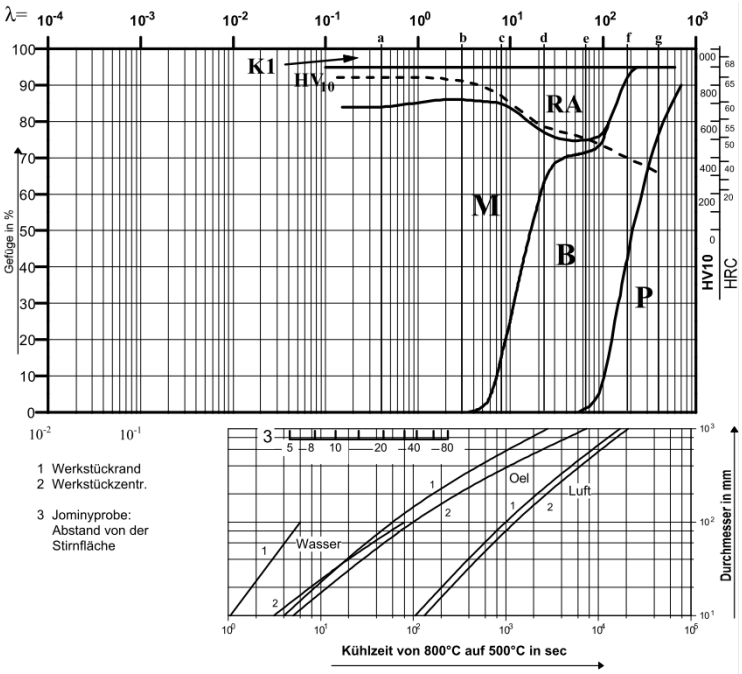
O Vickers hardness

17...81 phase percentages

0.4...400 cooling parameter λ, i.e. duration of cooling from 800 to 500 °C (1472 to 932 °F) in s x 10^{-2}

A... Austenite
K... Carbide
P... Perlite
B...Bainite
M... Martensite
Ms... Martensite starting temperature

Quantitative phase diagram



HV10... Vickers Hardness
K... Carbide
RA... Residual austenite
M... Martensite
B... Bainite
P... Perlite

1... Edge or face
2... Core
3... Jominy test: distance from quenched face

Propriétés physiques

Température (°C)	20
Densité (kg/dm³)	7,85
Conductivité thermique (W/(m.K))	22,5
Chaleur spécifique (kJ/kg K)	0,45
Résistivité électrique (Ohm.mm²/m)	0,5
Module d'élasticité (10³N/mm²)	218

Dilatation thermique

Température (°C)	100	200	300	400	500	600	700
Dilatation thermique (10^{-6} m/(m.K))	10,5	11	11,3	11,7	12,1	12,4	12,9

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

Sheet & Plates: Product Variant may differ in terms of melting process, technical data, delivery, and surface condition as well as available product dimensions. Please contact voestalpine BÖHLER Bleche GmbH & Co KG.

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