

ACIERS POUR TRAVAIL À FROID

Variantes de produits disponibles

 Produit long*

 Tôle

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

Description du produit

Outils de coupe (matrices et poinçons), outils de découpage, outils de taille des filets, outils de menuiserie, lames de machine dans l'industrie du bois, du papier et du métal, instruments de mesure, moules pour matière plastique.

Procédé d'élaboration

 Airmelted

Propriétés

Acier à outils trempable à l'huile, à faibles variations dimensionnelles.

Applications

- > Formage à froid
- > Composants pour la mécanique générale
- > Découpage et emboutissage fins
- > Eléments standards (carcasses, ejecteurs, bagues...)

Données techniques

Désignation normalisée		Normes	
1.2842	SEL	4957	EN ISO
~T31502	UNS		
90MnCrV8	EN		
~O2	AISI		

Composition chimique

C	Si	Mn	Cr	V
0,90	0,25	2,00	0,35	0,10

Comparaison des caractéristiques

	Résistance à la compression	Stabilité dimensionnelle lors du traitement thermique	Ténacité	Résistance à l'usure abrasive
BÖHLER K720	★★	★	★★★★★	★
BÖHLER K245	★★	★	★★★★★	★
BÖHLER K455	★★★	★	★★★★★	★
BÖHLER K460	★★★★★	★	★★★★★	★★

Condition de livraison

Recuit

Dureté (HB)	max. 229
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Traitement thermique

Recuit

Température	680 jusqu'à 720 °C	Slow controlled cooling in furnace at a rate of 50 to 68°F/hr (10 to 20°C/hr) down to approx. 1112°F (600°C), further cooling in air.
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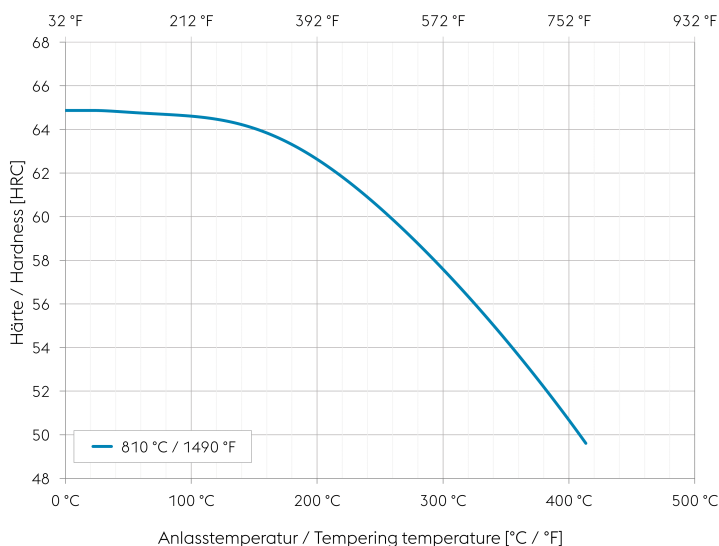
Recuit de détente

Température	650 °C	Slow cooling in furnace Intended to relieve stresses set up by extensive machining, or in complex shapes. After through heating, hold in neutral atmosphere for 1-2 hours.
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Trempe et revenu

Température	790 jusqu'à 820 °C	Oil, salt bath 392 - 482°F (200 to 250°C) up to 0,787 inch (20 mm) thickness. Holding time after temperature equalization: 15 to 30 minutes. After hardening, tempering to the desired working hardness, see tempering chart.
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Tempering chart



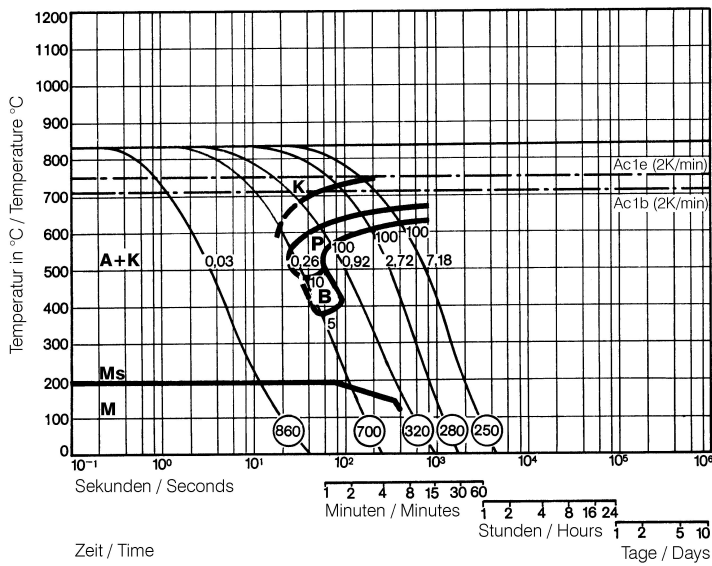
Tempering:

Hardening temperature:

810°C / 1490°F

Specimen size: square 20 mm

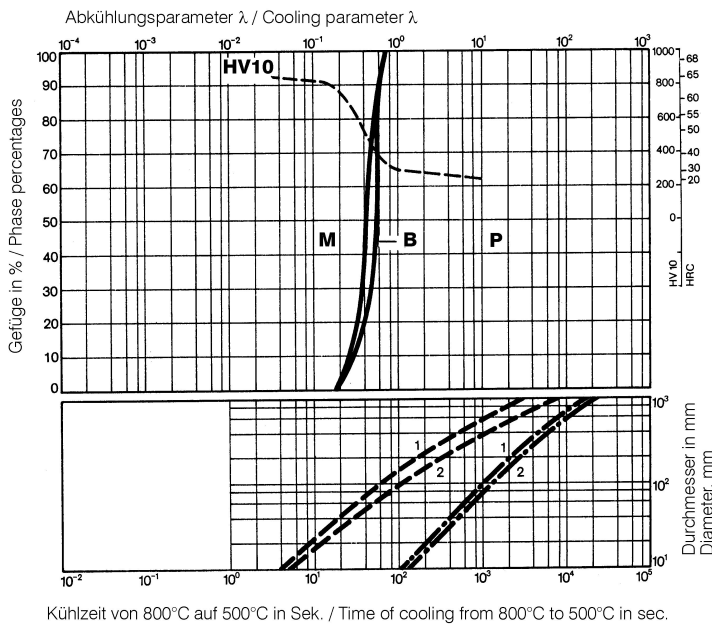
Continuous cooling CCT curves



Austenitising temperature: 1508°F (820°C)
Holding time: 15 minutes

O Vickers hardness
5...100 phase percentages
0.03...7.18 cooling parameter, i.e. duration of cooling from 1472 to 932°F (800 to 500°C) in $s \times 10^{-2}$
35,6°F/min (2 K/min)... cooling rate in °F/min (K/min) in the 1472 to 932°F (800 to 500°C) range

Quantitative phase diagram

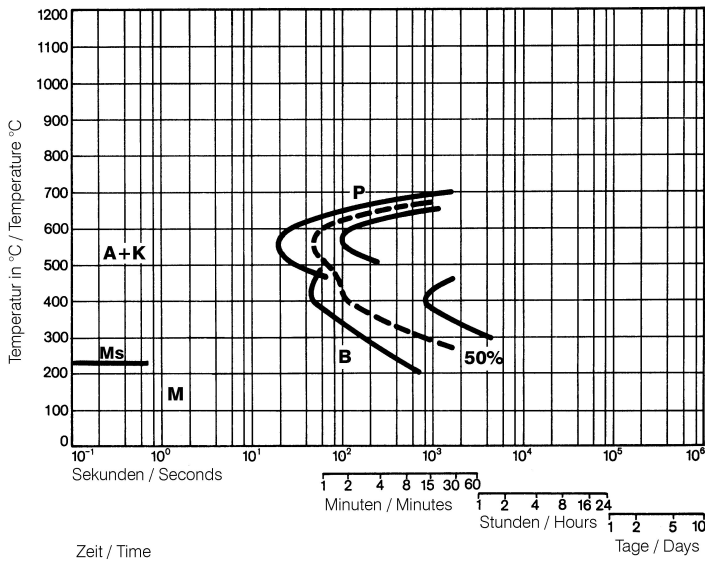


A... Austenite
B... Bainite
K... Carbide
M... Martensite
P... Pearlite

----- Oil cooling
- · - Air cooling

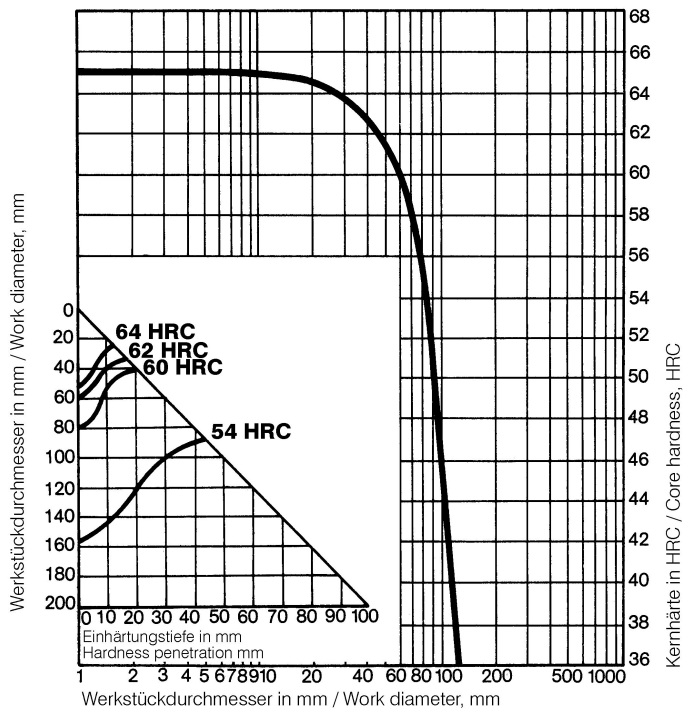
1... Edge or face
2... Core

Isothermal TTT curves



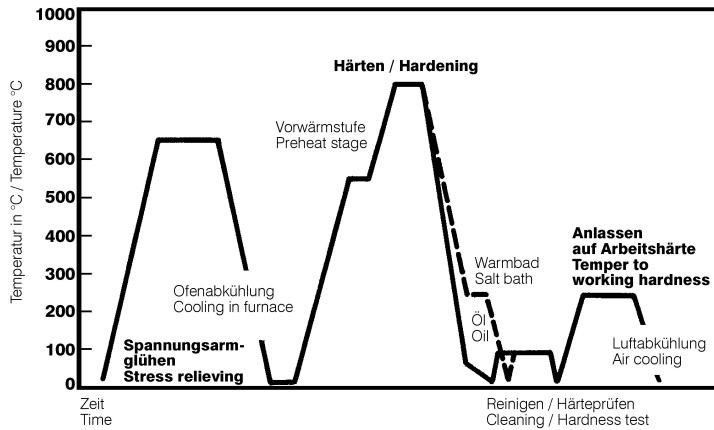
Austenitising temperature: 820°C / 1508°F
Holding time: 15 minutes

Influence of work diameter on core hardness and hardness penetration



Quenched from: 820°C / 1508°F
Agent: Oil

Heat treatment sequence



Propriétés physiques

Température (°C)	20
Densité (kg/dm ³)	7,85
Conductivité thermique (W/(m.K))	30
Chaleur spécifique (kJ/kg K)	0,46
Résistivité électrique (Ohm.mm ² /m)	0,35
Module d'élasticité (10 ³ N/mm ²)	210

Dilatation thermique

Température (°C)	100	200	300	400	500
Dilatation thermique (10 ⁻⁶ m/(m.K))	11,5	12	12,2	12,5	12,8

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.

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.