

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

BÖHLER K455 corresponds approximately to the material 1.2550 (~60WCrV7, ~S1) in terms of the alloy concept. This classic matrix steel is characterized by high toughness, good machinability, and polishability. BÖHLER K455 offers the advantage of simple heat treatment with low hardening temperatures and single tempering. BÖHLER K455 is widely used in the field of punching and cutting tools as well as in the field of embossing tools.

Procédé d'élaboration

 Airmelted

Propriétés

- > Ténacité et ductilité : très élevé
- > Résistance à la compression : élevé
- > Stabilité dimensionnelle : bien

Applications

- > Formage à froid
- > Eléments standards (carcasses, ejecteurs, bagues...)
- > Compactage de poudre

Données techniques

Désignation normalisée	
~1.2550	SEL
~60WCrV7	EN
~60WCrV8	
~S1	AISI

Composition chimique

C	Si	Mn	Cr	V	W
0,63	0,60	0,30	1,10	0,18	2,00

Comparaison des caractéristiques

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

Condition de livraison

Recuit

Dureté (HB)	max. 225
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Traitement thermique

Recuit

Température	710 jusqu'à 750 °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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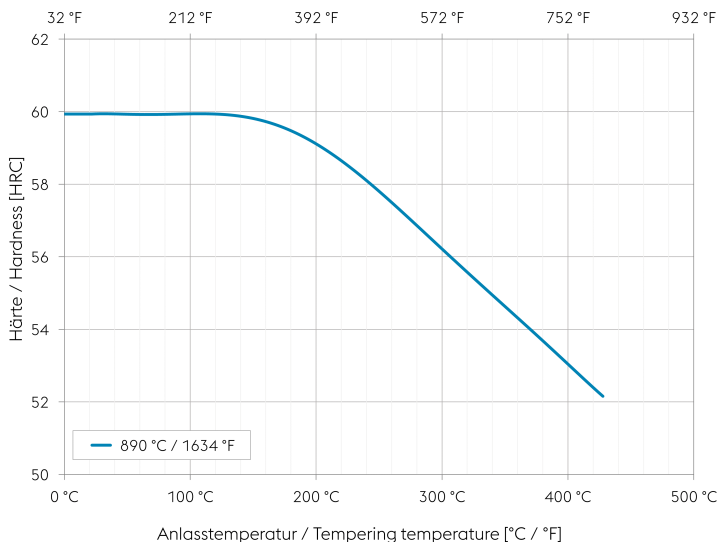
Recuit de détente

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	870 jusqu'à 900 °C	Oil, Holding time after temperature equalization: 15 to 30 minutes. After hardening, tempering to the desired working hardness, see tempering chart.
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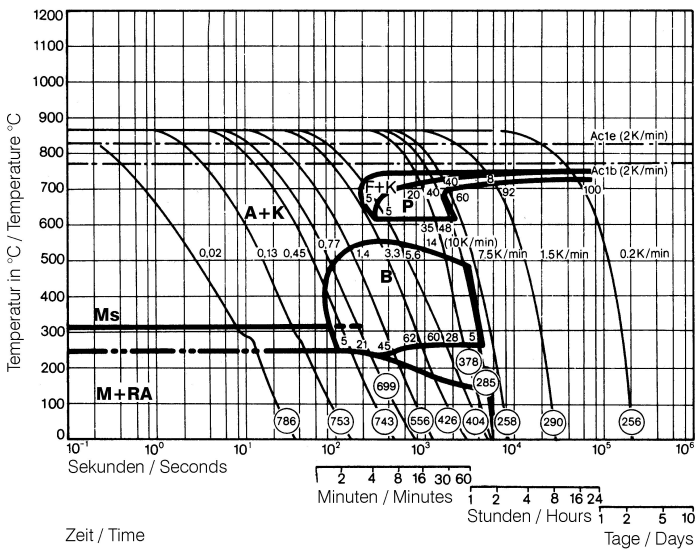
Tempering chart



Tempering:

Hardening temperature:
 — 890°C / 1634°F
 Specimen size: square 20mm

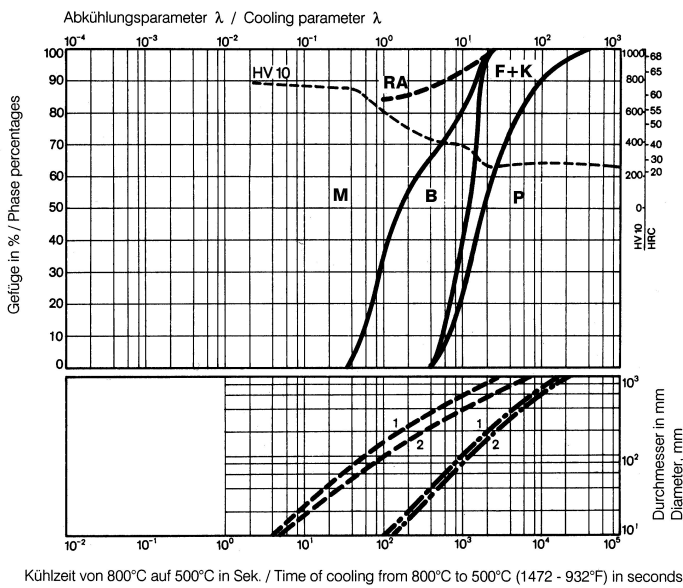
Continuous cooling CCT curves



Austenitising temperature: 880°C / 1616°F
Holding time: 15 minutes

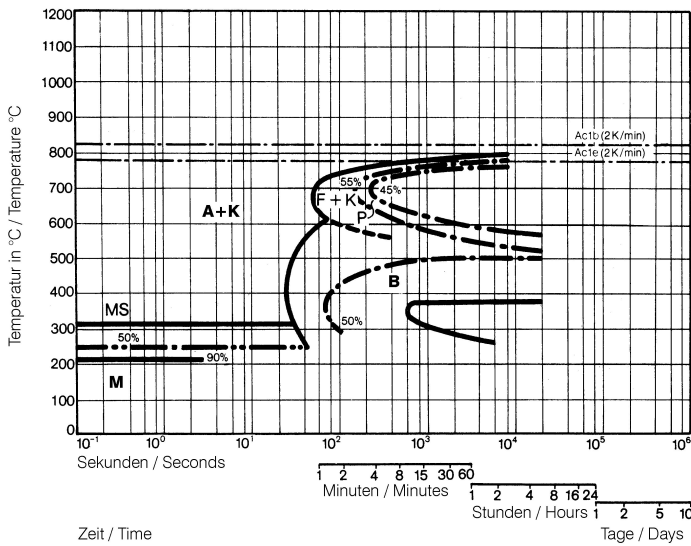
O Vickers hardness
5...35 phase percentages
0.02...14 cooling parameter, i.e. duration of cooling from 800°C to 500°C (1472°F to 932°F) in $s \times 10^{-2}$
10...0.2K/min cooling rate in K/min in the 800°C to 500°C (1472°F to 932°F) range

Quantitative phase diagram



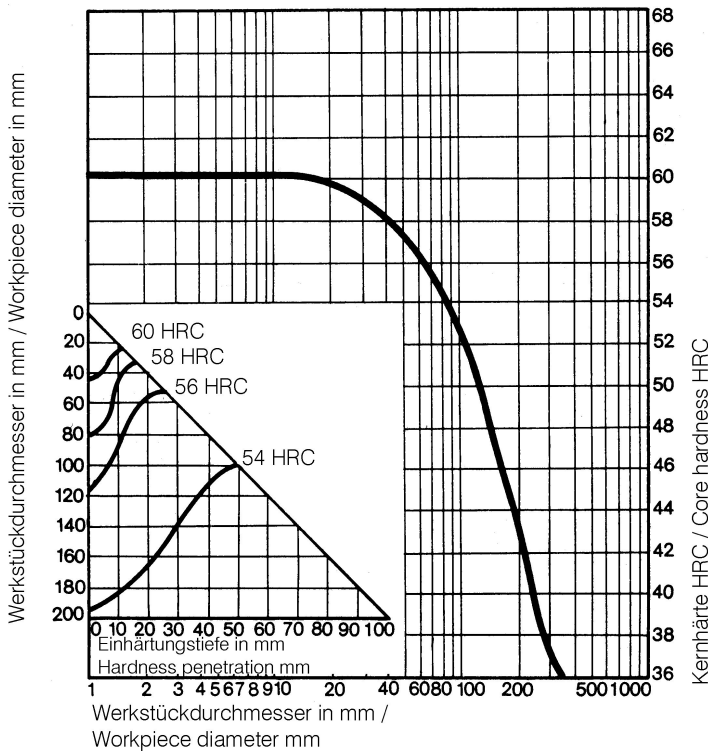
A... Austenite
B... Bainite
K... Carbide
M... Martensite
P... Pearlite
RA... Retained austenite
- - - - Oil cooling
- · - Air cooling
1... Edge or face
2... Core

Isothermal TTT curves



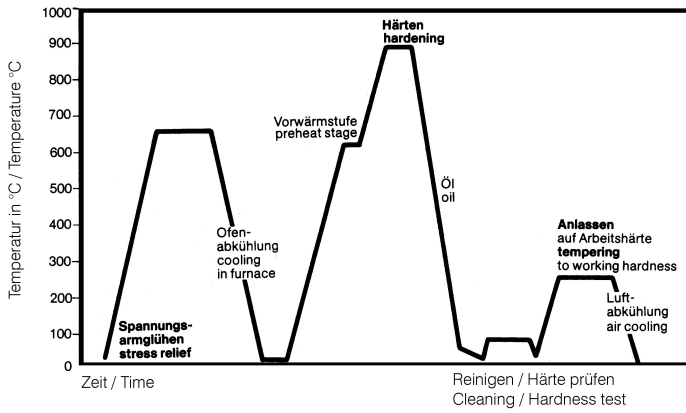
Austenitising temperature: 880°C / 1616°F
Holding time: 15 minutes

Influence of work diameter on core hardness and hardness penetration



Quenched from: 890°C / 1634°F
Agent: Oil

Heat treatment sequence



Propriétés physiques

Température (°C)	20
Densité (kg/dm ³)	8
Conductivité thermique (W/(m.K))	25
Chaleur spécifique (kJ/kg K)	0,46
Résistivité électrique (Ohm.mm ² /m)	0,3
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	12,5	13	13,5	14

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.