BÖHLER

BÖHLER S590 MICROCLEAN®

ACEROS RÁPIDOS

Formatos disponibles

Productos largos* | Chapas

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

Descripción

BÖHLER S590 MICROCLEAN - "El experto"

Acero rápido pulvimetalúrgico con buena dureza en caliente, resistencia a la compresión y resistencia al desgaste. La tecnología pulvimetalúrgica le aporta buena tenacidad y excelente aptitud de trabajo, así como la mejor aptitud para mecanizado.

Método de obtención

Pulvimetalurgia

Propiedades

- Dureza y Ductilidad : alto
- Resistencia al desgaste : buena
- Resistencia a la compresión : alto
- Estabilidad de los bordes : alto
- Afilabilidad : alto
- Dureza en caliente (dureza roja) : alto

Aplicaciones

- Hojas para sierras
- Corte fino / Troquelado / Estampado
- Laminación
- Broches y escariadores
- Talladura de engranajes, herramientas de rasurado y perfiladoras
- Cizallas / Cuchillas
- Puntas de brocas
- Compactación de polvo
- Brocas helicoidales y grifos

Datos técnicos

Designación	
1.3244	SEL
HS6-5-3-8	EN

Estándares	
4957	EN ISO

Composición Química

C	Cr	Mo	V	W	Co
1,29	4,2	5	3	6,3	8,4

Características

	Resistencia a la compresión	Aptitud para el rectificado	Dureza en caliente	Tenacidad	Resistencia al desgaste	Retención del filo de la navaja
BÖHLER S590 MICROCLEAN®	★★★★	★★★	★★★★	★★★	★★★	★★★
BÖHLER S290 MICROCLEAN®	★★★★★	★	★★★★	★★	★★★★★	★★★★
BÖHLER S390 MICROCLEAN®	★★★★	★★★	★★★★	★★★★	★★★★	★★★★
BÖHLER S393 MICROCLEAN®	★★★★	★★★	★★★★	★★★★	★★★★	★★★★
BÖHLER S592 MICROCLEAN®	★★★★	★★★	★★★★	★★★	★★★	★★★
BÖHLER S690 MICROCLEAN®	★★★	★★★	★★	★★★★★	★★★	★★
BÖHLER S692 MICROCLEAN®	★★★	★★★	★★	★★★★★	★★★	★★
BÖHLER S790 MICROCLEAN®	★★★	★★★	★★	★★★★	★★	★★★
BÖHLER S792 MICROCLEAN®	★★★	★★★	★★	★★★★	★★	★★★
BÖHLER S793 MICROCLEAN®	★★★	★★★	★★★★	★★★	★★★	★★★

Estado de suministro

recocido

Dureza (HB)	máx. 300

Tratamiento térmico

Recocido

Temperatura	870 a 900 °C	The steel needs to be protected against decarburization. || Through heating of the material is followed by controlled, slow furnace cooling at a maximum cooling rate of 10°C (50°F) per hour, down to approx. 700°C (1292°F). || Final cooling in air.

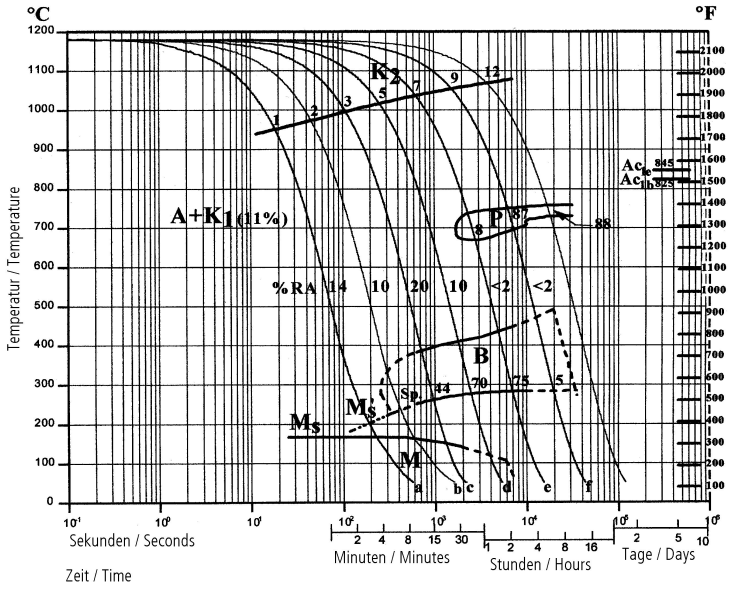
Alivio de tensiones

Temperatura	600 a 650 °C	Slow cooling furnace. || To relieve stresses set up by extensive machining or in tools of intricate shape. || After through heating, hold in neutral atmosphere for 1 to 2 hours.

Temple y revenido

Temperatura	1.075 a 1.180 °C	Salt bath, vacuum || Preheating: 1st stage ~ 500 °C, 2nd stage ~ 850 °C, 3rd stage ~1050 °C (for higher austenitising temperature) || Austenitising: for cutting applications at higher austenitising temperatures (>1100 °C), holding time after complete heating 80 seconds, maximum 150 seconds, to avoid material damage due to overtime. || Austenitising: for cold work applications at lower austenitising temperatures (<1100°C). Holding time after complete heating 15 to 30 min || Quenching: oil, warm bath (500 - 550 °C), gas.
Temperatura	540 a 570 °C	Slow heating to tempering temperature immediately after austenitising. || Dwell time in the furnace 1 hour per 20 mm material thickness (at least 1 hour) || Slow cooling to room temperature || 3 tempering cycles recommended || Hardness see tempering chart

Continuous cooling CCT curves

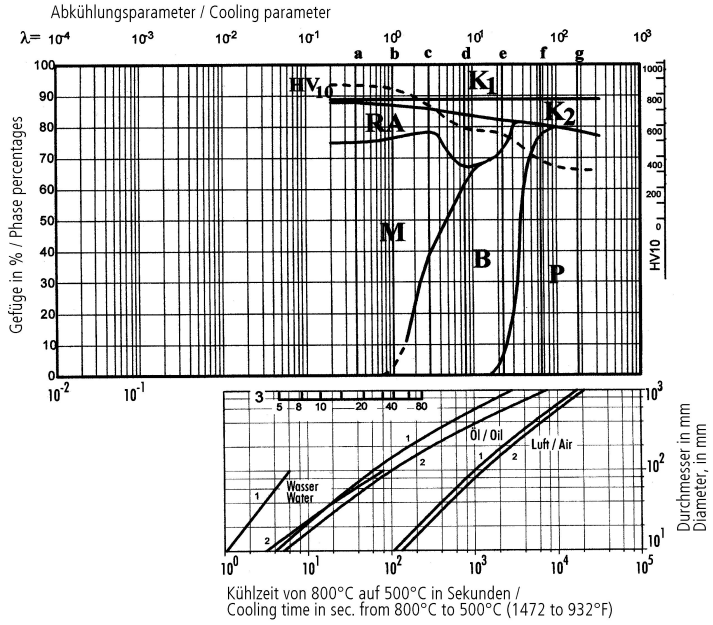


Austenitising temperature: 1180°C (2156°F)
Holding time: 180 seconds

A....Austenite
B....Bainite
K....Carbide
P....Perlite
M....Martensite
RA...Retained Austenite

Sample	λ	HV10	Sample	λ	HV10
a	0,4	870	e	23,0	549
b	1,1	845	f	65,0	384
c	3,0	740	g	180,0	325
d	8,0	592			

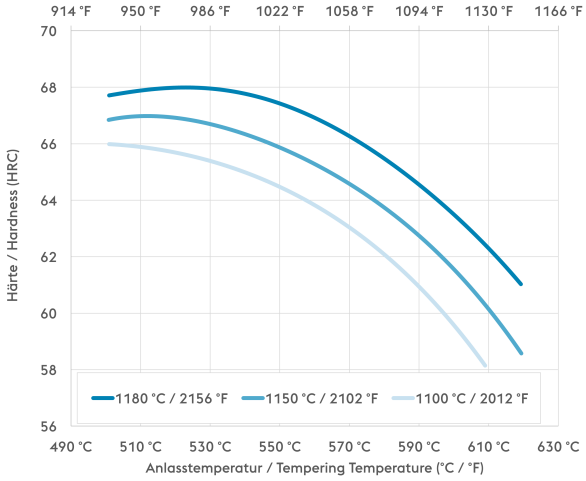
Quantitative phase diagram



A....Austenite
B....Bainite
K....Carbide
P....Perlite
M....Martensite
RA...Retained Austenite

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

Tempering Chart



Holding time 3 x 2 hours
Specimen size: square 25 mm

Propiedades físicas

Temperatura (°C)	20
Densidad (kg/dm^3)	8,05
Conductividad térmica (W/(m.K))	22
Calor específico (kJ/kg K)	0,42
Resistencia eléctrica específica (Ohm.mm^2/m)	0,61
Módulo de elasticidad (10^{3}N/mm^2)	240

Expansión térmica

Temperatura (°C)	100	200	300	400	500	600	700
Expansión térmica (10^{-6} m/(m.K))	10	10,5	10,8	11,2	11,3	11,4	11,6

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.

voestalpine BÖHLER Edelstahl GmbH & Co KG
Mariazeller Straße 25
8605 Kapfenberg, AT
T. +43/50304/20-0
E. info@bohler-edelstahl.at
https://www.voestalpine.com/bohler-edelstahl/de/

voestalpine
ONE STEP AHEAD.