BÖHLER

BÖHLER S790
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 S790 MICROCLEAN - «El primer MICROCLEAN"

Acero rápido pulvimetalúrgico con buena dureza en caliente, resistencia a la compresión y resistencia al desgaste. El proceso pulvimetalúrgico le aporta buena tenacidad y excelente aptitud para el mecanizado.

Método de obtención

Pulvimetalurgia

Propiedades

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

Aplicaciones

- Carreras automovilísticas
- Compactación de polvo
- Herramientas de corte especiales
- Broches y escariadores
- Laminación
- Componentes de desgaste
- Conformado en frío / acuñado
- Cizallas / Cuchillas

Datos técnicos

Designación	
1.3345	SEL
HS6-5-3C	EN

Estándares	
4957	EN ISO

Composición Química

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

Características

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

Estado de suministro

recocido

Dureza (HB)	máx. 280 | drawn max. 300 HB
Resistencia a la cesión (N/mm²)	máx. 1.020

Tratamiento térmico

Recocido

Temperatura	870 a 900 °C	870 to 900°C (1598 to 1652°F) || 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.

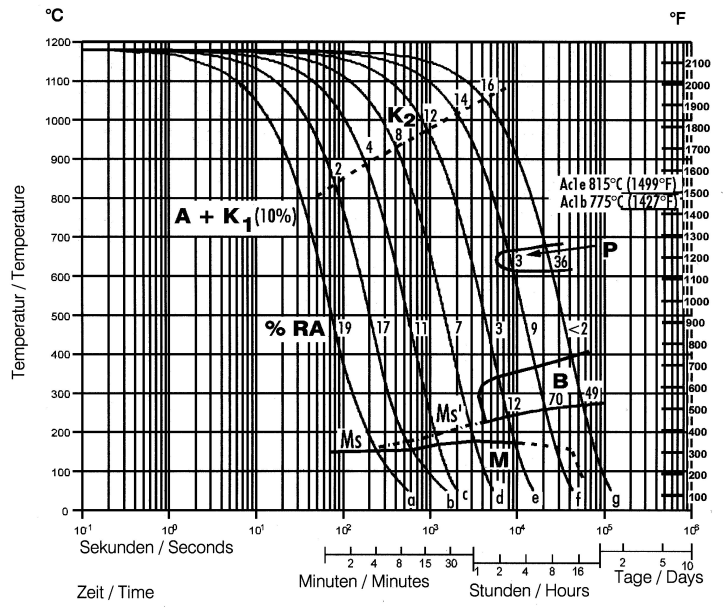
Alivio de tensiones

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	1.050 a 1.200 °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 (>1130 °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	560 a 580 °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 between each tempering step || 3 tempering cycles recommended || Hardness see tempering chart

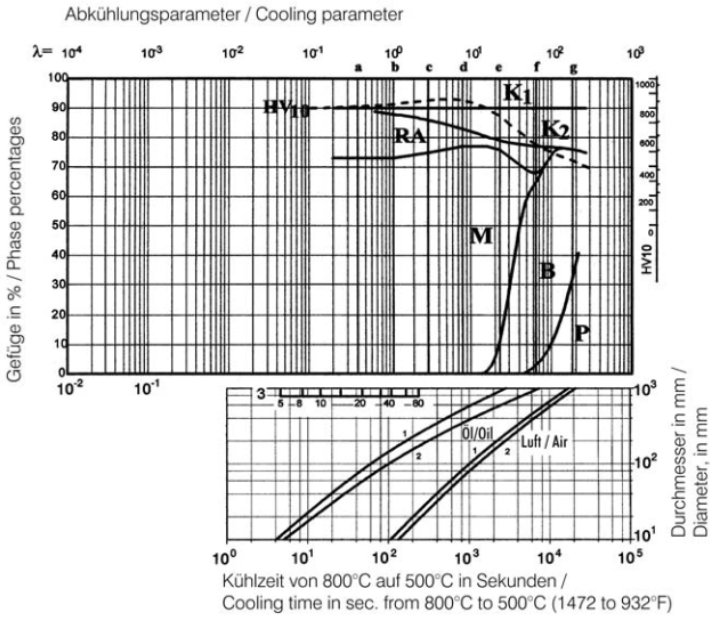
Continuous cooling CCT curves



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

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

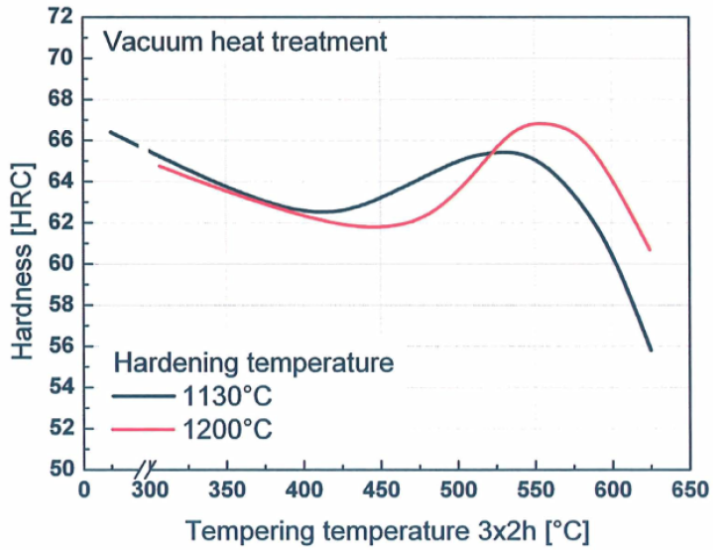
Quantitative phase diagram



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/dm³)	8
Conductividad térmica (W/(m.K))	24
Calor específico (kJ/kg K)	0,42
Resistencia eléctrica específica (Ohm.mm²/m)	0,54
Módulo de elasticidad (10³N/mm²)	230

Expansión térmica

Temperatura (°C)	100	200	300	400	500	600	700
Expansión térmica (10⁻⁶ m/(m.K))	11,5	11,7	12,2	12,4	12,7	13	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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voestalpine
ONE STEP AHEAD.