

SNELDRAAISTAAL

Beschikbare uitvoeringen

Stafstaal*

Plaat

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

Product omschrijving

BÖHLER S590 MICROCLEAN – "Het handige"

Poedermetallurgisch geproduceerd snelstaal met zeer goede warmhardheid, drukbelastbaarheid en slijtvastheid. Dankzij de PM-technologie goede taaiheid en uitstekende verwerkbaarheid, bijv. zeer goede slijpbaarheid.

Smeltroute

Powder metallurgy

Eigenschappen

- > Taaiheid & Vervormbaarheid : hoog
- > Slijtageweerstand : goed
- > Samenpersende sterkte : hoog
- > Randstabiliteit : hoog
- > Slijpbaarheid : hoog
- > Hete hardheid (rode hardheid) : hoog

Toepassingen

- > Bladen voor zaagmachines
- > Fijn stanswerk / ponsen / stampen
- > Walsen
- > Trekfrezen en ruimers
- > Gereedschap voor snijden, schrappen en steken van tandwielen
- > Knippen / machinale messen
- > Kopfrezen
- > Persen van poeders
- > Spiraalboren en tappen

Technische gegevens

Materiaal aanduiding		Normen	
1.3244	SEL	4957	EN ISO
HS6-5-3-8	EN		

Chemische samenstelling

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

Materiaaleigenschappen

	Drukbelastingcapaciteit	Verdraaibaarheid	Hete hardheid	Taaheid	Slijtvastheid	Behoud van snijkant
BÖHLER S590 MICROCLEAN®	★★★★	★★★	★★★★	★★★	★★★	★★★
BÖHLER S290 MICROCLEAN®	★★★★★	★	★★★★	★★	★★★★★	★★★★★
BÖHLER S390 MICROCLEAN®	★★★★	★★★	★★★★	★★★★	★★★★	★★★★
BÖHLER S393 MICROCLEAN®	★★★★	★★★	★★★★	★★★★	★★★★	★★★★
BÖHLER S690 MICROCLEAN®	★★★	★★★	★★	★★★★★	★★★	★★
BÖHLER S790 MICROCLEAN®	★★★	★★★	★★	★★★★	★★	★★★
BÖHLER S793 MICROCLEAN®	★★★	★★★	★★★★	★★★	★★★	★★★

Leveringsconditie

gegloeid

Hardheid (HB)	max. 300
---------------	----------

Warmtebehandeling

Annealing

Temperatuur	770 naar 840 °C	Controlled slow cooling in furnace (10 to 20°C / h) to approx. 600°C (1110°F), air cooling.
-------------	-----------------	---

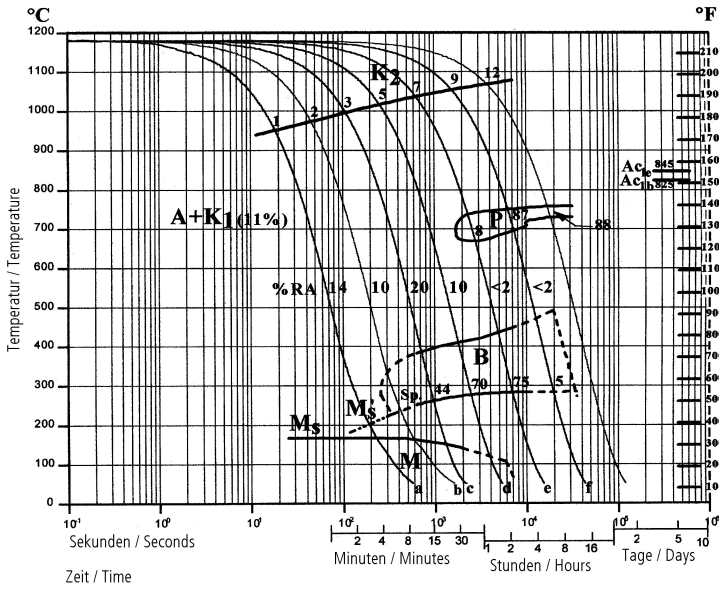
Stress relieving

Temperatuur	600 naar 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.
-------------	-----------------	---

Harden en ontlaten

Temperatuur	1.075 naar 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.
Temperatuur	540 naar 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

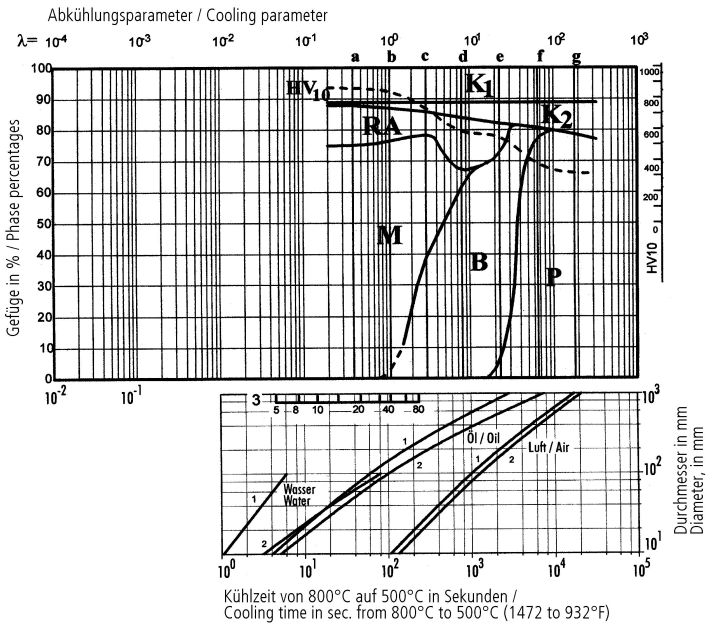
Continuous cooling CCT curves



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

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

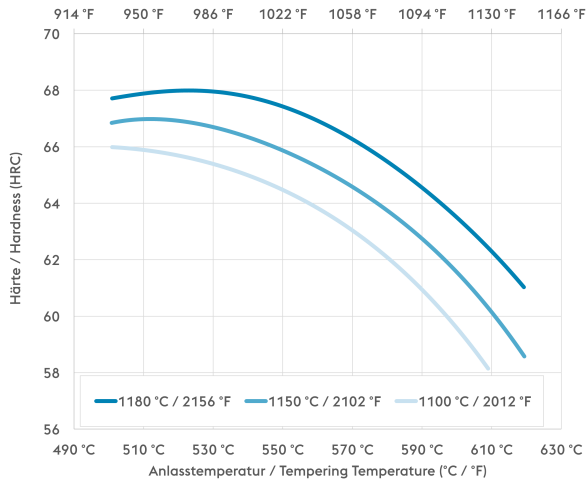
Quantitative phase diagram



- A....Austenite
- B....Bainite
- K....Carbide
- P....Pearlite
- 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

Fysische eigenschappen

Temperatuur (°C)	20
Soortelijk gewicht (kg/dm ³)	8,05
Thermische conductiviteit (W/(m.K))	22
Soortelijke warmte (kJ/kg K)	0,42
Specifieke elektrische weerstand (Ohm.mm ² /m)	0,61
Elasticiteitsmodus (10 ³ N/mm ²)	240

Thermische expansie

Temperatuur (°C)	100	200	300	400	500	600	700
Thermische expansie (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@boehler-edelstahl.at
<https://www.voestalpine.com/boehler-edelstahl/de/>

ONE STEP AHEAD.