

OȚELURI DE MARE VITEZĂ

Application Segments

Unelte de tăiere

Available Product Variants

Long Products*

Plates

* Datele prezentate se referă exclusiv la produsele lungi. Vă rugăm să respectați explicațiile detaliate de la sfârșitul fișei tehnice (pdf).

Product Description

BÖHLER S393 MICROCLEAN – "Standardized"

This grade complies with the ASTM A600 AISI T15 material standard with higher carbon content. With MICROCLEAN technology, this material shows excellent reliability in many cutting and cold-work applications.

Process Melting

Metalurgia pulberilor

Properties

- > Rezistență și ductilitate : high
- > Rezistență la uzură : high
- > Rezistența la compresiune : very high
- > Stabilitatea marginilor : very high
- > Măcinabilitate : high
- > Duritate la cald (duritate roșie) : very high

Applications

- > Răzuitoare și alezoare
- > Blanking fin, ștanțare, blanking
- > Laminare
- > Burghie cu răsucire și tarod
- > Cold Forming / Coining
- > Unelte de tăiat, rindeluit și modelat angrenaje
- > Cuțite industriale
- > Roll Forming
- > End Mills
- > Pulbere de presare
- > Piese de uzură

Technical data

Material designation	Standards
~ T15 AISI	A600 ASTM

Chemical composition (wt. %)

C	Cr	Mo	V	W	Co
1.63	4.0	0.5	4.75	12.10	5.0

Material characteristics

	Compressive strength	Grindability	Red hardness	Toughness	Wear resistance	Edge Stability
BÖHLER S393 MICROCLEAN	★★★★	★★★	★★★★	★★★★	★★★★	★★★★
BÖHLER S290 MICROCLEAN	★★★★★	★	★★★★	★★	★★★★★	★★★★
BÖHLER S390 MICROCLEAN	★★★★	★★★	★★★★	★★★★	★★★★	★★★★
BÖHLER S590 MICROCLEAN	★★★★	★★★	★★★★	★★★	★★★	★★★
BÖHLER S690 MICROCLEAN	★★★	★★★	★★	★★★★★	★★★	★★
BÖHLER S790 MICROCLEAN	★★★	★★★	★★	★★★★	★★	★★★
BÖHLER S793 MICROCLEAN	★★★	★★★	★★★★	★★★	★★★	★★★

Delivery condition

Recoaptă

Hardness (HB)	max. 300 drawn execution max. 320 HB
Tensile Strength (MPa)	max. 1,080

Heat treatment

Recoacere

Temperature	770 to 840 °C	4 h controlled slow cooling in furnace (10 - 20°C / (50 - 68°F) to 550°C / 2 h (1022°F / 2 h) cooling in furnace.
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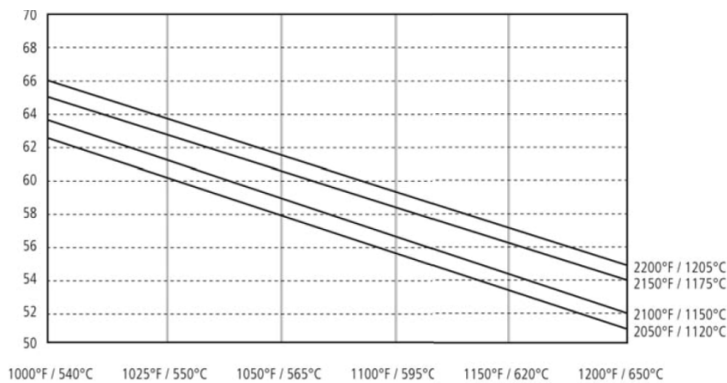
Eliminarea stresului

Temperature	600 to 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.
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Călire și revenire

Temperature	1,180 to 1,240 °C	Salt bath, vacuum Preheating: 1st stage ~ 500 °C, 2nd stage ~ 850 °C, 3rd stage ~1050 °C Austenitising: 1180 - 1240 °C, holding time after complete heating 80 seconds, maximum 150 seconds, to avoid material damage due to overheating. Quenching: oil, warm bath (500 - 550 °C), gas
Temperature	540 to 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 between each tempering step 3 tempering cycles recommended Hardness see tempering chart

Tempering Chart



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

Physical Properties

Temperature (°C)	20
Density (kg/dm ³)	8.19
Thermal conductivity (W/(m.K))	-
Specific heat (kJ/kg K)	-
Spec. electrical resistance (Ohm.mm ² /m)	-
Modulus of elasticity (10 ³ N/mm ²)	218

If other available product variants are listed in addition to long products, please note that these may differ in terms of melting process, technical data, delivery and surface condition as well as available product dimensions. For mandatory technical specifications, other requirements and dimensions, please contact our regional voestalpine BÖHLER sales companies. 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.

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