

# ACIERS À COUPE RAPIDE

## Variantes de produits disponibles

Produit long

## Description du produit

High-speed steel manufactured in a powder metallurgy process, with good hot hardness, compressive strength, and wear resistance. PM technology gives it good toughness and excellent workability, including the best machinability.

## Procédé d'élaboration

Métallurgie des poudres

## Propriétés

- > Ténacité et ductilité : élevé
- > Résistance à l'usure : bien
- > Résistance à la compression : bien
- > Stabilité des bords : bien
- > Aptitude au meulage : élevé
- > Dureté à chaud (dureté rouge) : bien

## Applications

- > Taillage d'engrenage, rabots

## Composition chimique

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

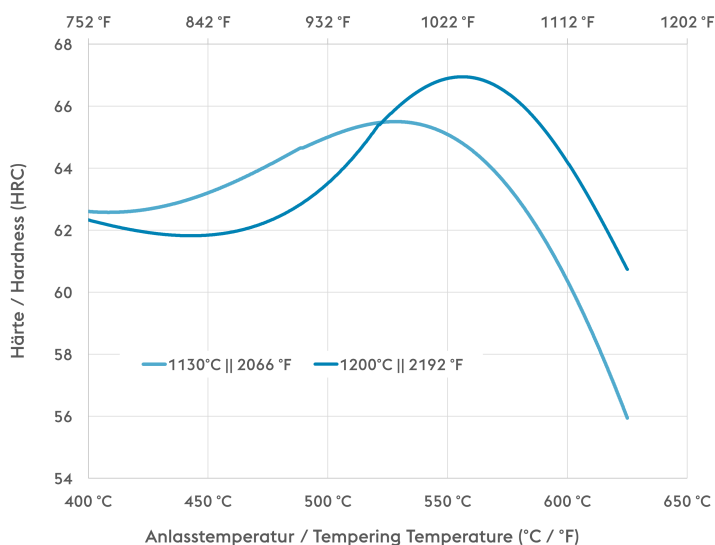
## Comparaison des caractéristiques

	Résistance à la compression	Capacité à être meulé	Dureté à chaud	Ténacité	Résistance à l'usure abrasive	Stabilité du tranchant
<b>BÖHLER S792</b> <b>MICROCLEAN</b>	★★★	★★★	★★	★★★★	★★	★★★
<b>BÖHLER S290</b> <b>MICROCLEAN</b>	★★★★★	★	★★★★	★★	★★★★★	★★★★
<b>BÖHLER S390</b> <b>MICROCLEAN</b>	★★★★	★★★	★★★★	★★★★	★★★★	★★★★
<b>BÖHLER S393</b> <b>MICROCLEAN</b>	★★★★	★★★	★★★★	★★★★	★★★★	★★★★
<b>BÖHLER S590</b> <b>MICROCLEAN</b>	★★★★	★★★	★★★★	★★★	★★★	★★★
<b>BÖHLER S592</b> <b>MICROCLEAN</b>	★★★★	★★★	★★★★	★★★	★★★	★★★
<b>BÖHLER S690</b> <b>MICROCLEAN</b>	★★★	★★★	★★	★★★★★	★★★	★★
<b>BÖHLER S692</b> <b>MICROCLEAN</b>	★★★	★★★	★★	★★★★★	★★★	★★
<b>BÖHLER S790</b> <b>MICROCLEAN</b>	★★★	★★★	★★	★★★★	★★	★★★
<b>BÖHLER S793</b> <b>MICROCLEAN</b>	★★★	★★★	★★★★	★★★	★★★	★★★

## Traitement thermique

<b>Recuit</b>		
Température	870 jusqu'à 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.
<b>Recuit de détente</b>		
Température	600 jusqu'à 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.
<b>Trempe et revenu</b>		
Température	1 050 jusqu'à 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 (> 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.
Température	550 jusqu'à 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

## Tempering Chart



## Propriétés physiques

Température (°C)	20
Densité (kg/dm <sup>3</sup> )	8
Conductivité thermique (W/(m.K))	24
Chaleur spécifique (kJ/kg K)	0,42
Résistivité électrique (Ohm.mm <sup>2</sup> /m)	0,54
Module d'élasticité (10 <sup>3</sup> N/mm <sup>2</sup> )	230

## Dilatation thermique

Température (°C)	100	200	300	400	500	600	700
Dilatation thermique (10 <sup>-6</sup> m/(m.K))	11,5	11,7	12,2	12,4	12,7	13	12,9

For additional specifications and technical requirements, 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.*

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

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