

# HEAT TREATABLE STEELS AND PRECIPITATION HARDENING STEELS

## Application Segments

Aerospace
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## Available Product Variants

Long Products
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## Product Description

BÖHLER V118S1 is a premium aircraft-quality, low-alloy Ni-Cr-Mo steel in the form of bars, forgings and forging stock requiring high tensile and toughness values, particular in large cross sections in the hardened and tempered condition. The molybdenum addition prevents the steel from being susceptible to temper brittleness.

These products have been used typically for parts requiring a through-hardening capability up to 6 inches (152,4 mm) in nominal thickness at time of heat treatment but usage is not limited to such applications.

## Process Melting

Airmelted
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## Applications

> Structural parts (Aerosp)

## Technical data

Material designation		Standards	
S98	Market grade	S98	BS
1.6745	SEL	S99	
40NiMoCr10-5	EN		

## Chemical composition (wt. %)

C	Si	Mn	P	S	Cr	Mo	Al
0.36 to 0.44	0.10 to 0.35	0.45 to 0.7	max. 0.025	max. 0.015	0.5 to 0.8	0.45 to 0.65	0.015 to 0.050

Related to BS S98

## Delivery condition

### Hardened and Tempered

Hardness (HB)	341 to 388   S98D, bright bars up to 152.4mm diameter
Tensile Strength (MPa   ksi)	1,158 to 1,313   168 to 191
Yield Strength (MPa   ksi)	min. 1,004   146

### Hardened and Tempered

Hardness (Unit)	341 to 388   S98B, black bars up to 152.4mm diameter
Tensile Strength (MPa   ksi)	1,158 to 1,313   168 to 191
Yield Strength (MPa   ksi)	min. 1,004   146

### Round Bars and Wire Rod (if any)

Diameter					MOQ ex mill		Length				Tolerance			
mm		inch			kg	lbs	m		ft					
<b>ROLLED</b>														
5.01	-	12.49	0.197	-	0.492	750	1,653	3.00	-	4.00	9.84	-	13.12	IT h/k 11
12.50	-	55.00	0.492	-	2.165	900	1,984	3.00	-	4.00	9.84	-	13.12	IT h/k 11
55.01	-	69.00	2.166	-	2.717	1,200	2,646	3.00	-	4.00	9.84	-	13.12	IT h/k 11
69.01	-	72.00	2.717	-	2.835	1,000	2,205	3.00	-	4.00	9.84	-	13.12	IT h/k 11
72.01	-	82.00	2.835	-	3.228	1,150	2,535	3.00	-	4.00	9.84	-	13.12	IT h/k 11
82.01	-	120.01	3.229	-	4.725	1,400	3,086	3.00	-	4.00	9.84	-	13.12	IT h/k 11
120.01	-	145.00	4.725	-	5.709	1,400	3,086	3.00	-	5.00	9.84	-	16.40	IT h/k 14

For additional specifications and other sizes please contact BÖHLER Edelstahl - Special Materials Aerospace & Land Based Turbine

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/>

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ONE STEP AHEAD.