BÖHLER

BÖHLER S630

HIGH SPEED STEELS

Available Product Variants

Long Products | Plates

Product Description

BÖHLER S630 – "The economical one"
Tungsten-molybdenum high-speed steel with aluminum alloy for great toughness and good machinability. Universally usable for taps and twist drills, reamers, metal saws, mills of all types, and woodworking tools.

Process Melting

Airmelted

Properties

- Toughness & Ductility: high
- Wear Resistance: high
- Compressive strength: high
- Edge Stability: very high
- Grindability: good
- Hot Hardness (red hardness): high

Applications

- Cold Forming / Coining
- Rolling
- Standard Parts (Molds, Plates, Pins, Punches)
- Fine Blanking, Stamping, Blanking
- Shearing / Machine Knives
- Twist Drills and Taps
- Powder Pressing
- Special Cutting Tools
- Wear parts

Technical data

Material designation	
1.3330	SEL
HS 4-4-2 Al	EN

Chemical composition (wt. %)

C	Cr	Mo	V	W	Al
0,95	4,00	4,00	2,00	4,00	0,50

Material characteristics

	Compressive strength	Grindability	Red hardness	Toughness	Wear resistance	Edge Stability
BÖHLER S630	★★★	★★★	★★★	★★	★★	★★★
BÖHLER S200	★★★	★★	★★★	★★	★★★	★★
BÖHLER S400	★★★	★★★	★★★	★★★	★★	★★
BÖHLER S401	★★	★★★	★★	★★★	★★	★★★
BÖHLER S404	★★	★★★	★★	★★★	★★	★★
BÖHLER S500	★★★★	★★★	★★★★	★★	★★★	★★★
BÖHLER S600	★★★	★★★	★★★	★★	★★	★★★
BÖHLER S705	★★★	★★★	★★★★	★★	★★	★★★★
BÖHLER S730	★★★	★★★	★★★★	★★	★★	★★★★

Delivery condition

Annealed

Hardness (HB)	max. 280
Tensile Strength (MPa | ksi)	950 | 138

Heat treatment

Annealing

Temperature	770 to 840 °C | 1418 to 1544 °F	Controlled slow cooling in furnace (10 - 20°C / h / (50 - 68°F 7 h) to approx. 600°C (1110°F), air cooling.

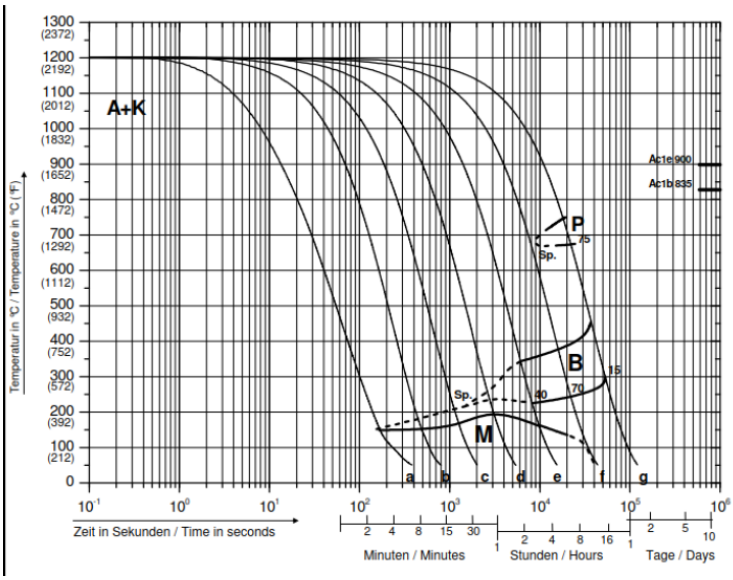
Stress relieving

Temperature	600 to 650 °C | 1112 to 1202 °F	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.

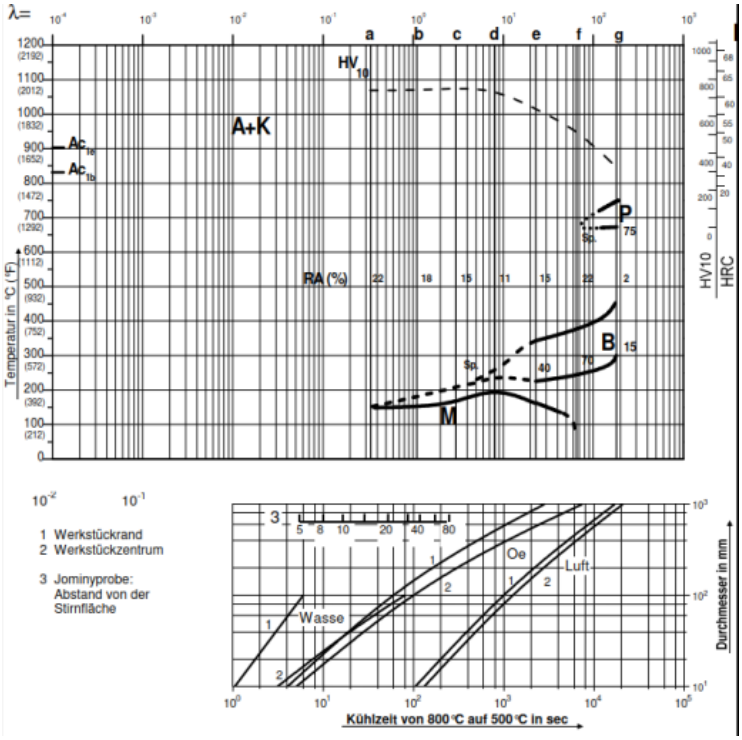
Hardening and Tempering

Temperature	1180 to 1200 °C | 2156 to 2192 °F	Oil, air, salt bath (500 - 550°C (930 - 1020°F)), gas - recommended for cutting applications.
Temperature	1050 to 1100 °C | 1922 to 2012 °F	Oil, air, salt bath (500 - 550°C (930 - 1020°F)), gas - recommended for coldwork applications.

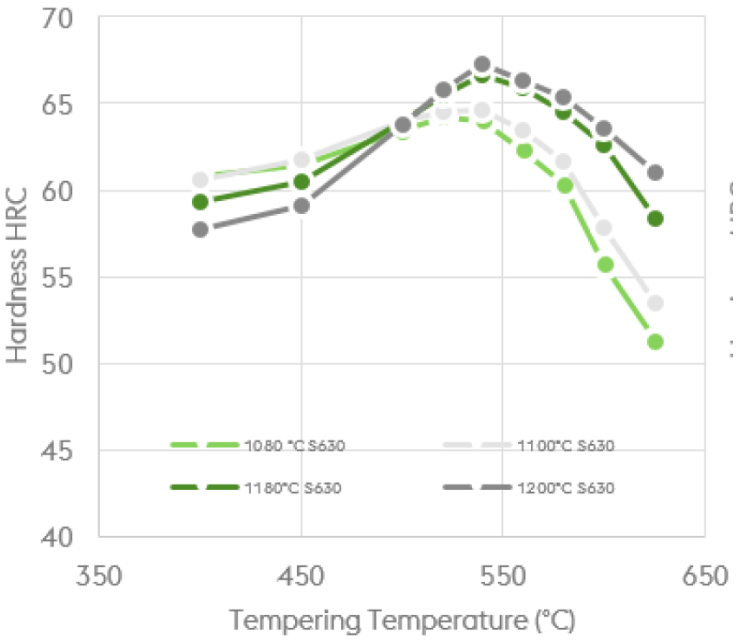
Continuous cooling CCT curves



Quantitative phase diagram



Tempering Chart



Physical Properties

Temperature (°C | °F)	20 | 68
Density (kg/dm^3 | lb/in^3)	7.88 | 0.28
Thermal conductivity (W/(m.K) | BTU (IT) ft/hr/ft^2/F)	18.8 | 10.86
Specific heat (J/(kg.K) | BTU (IT) lb/F)	432 | 103.18
Spec. electrical resistance (Ohm.mm^2/m | 10^{-4} Ohm.inch^2/ft)	0.54 | 2.55
Modulus of elasticity (10^{3}N/mm^2 | 10^{3}ksi)	217 | 31.47

For more information see https://www.voestalpine.com/bohler-edelstahl/de/

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/

voestalpine
ONE STEP AHEAD.