BÖHLER

BÖHLER K340 ECOSTAR®

COLD WORK STEELS

Available Product Variants

Long Products | Plates | Open Die Forgings

Product Description

The BÖHLER K340 ECOSTAR is a conventionally melted, oil- and air-hardened 8% chromium steel with improved matrix structure and with good dimensional stability. This results in material properties that are particularly well suited to working with combined loading.

Properties

- Compressive strength: good
- Dimensional stability: good

Applications

- Machine knife (for producers)
- Coining
- Screws and Barrels
- Thread rolling
- Rolling
- Fine Blanking, Stamping, Blanking
- Wear parts
- Cold Forming
- Powder Pressing
- General Components for Mechanical Engineering

Chemical composition (wt. %)

C	Si	Mn	Cr	Mo	V
1.1	0.7	0.4	8.2	2.1	0.5

Material characteristics

	Compressive strength	Dimensional stability during heat treatment	Toughness	Wear resistance abrasive	Wear resistance adhesive
BÖHLER K340 ECOSTAR®	★★★	★★★	★★	★★	★★
BÖHLER K100	★★	★★	★	★★★	★★
BÖHLER K105	★★	★★	★	★★	★★
BÖHLER K107	★★	★★	★	★★★	★★
BÖHLER K110	★★	★★★	★	★★★	★★
BÖHLER K190 MICROCLEAN®	★★★★	★★★★★	★★★★	★★★★	★★★★
BÖHLER K294 MICROCLEAN®	★★★★★	★★★★★	★★★	★★★★★	★★★★★
BÖHLER K340 ISODUR®	★★★	★★★★	★★★	★★★	★★★★
BÖHLER K360 ISODUR®	★★★	★★★★	★★★	★★★★	★★★★
BÖHLER K346	★★★	★★★	★★★	★★★★	★★
BÖHLER K353	★★	★★★	★★	★★	★★
BÖHLER K390 MICROCLEAN®	★★★★★	★★★★★	★★★★	★★★★★	★★★★★
BÖHLER K890 MICROCLEAN®	★★★★	★★★★★	★★★★★	★★★	★★★
BÖHLER K490 MICROCLEAN®	★★★★	★★★★★	★★★★	★★★★	★★★★
BÖHLER K497 MICROCLEAN®	★★★★★	★★★★★	★★★	★★★★★	★★★★★

Delivery condition

Annealed

Hardness	max. 235 HB

Heat treatment

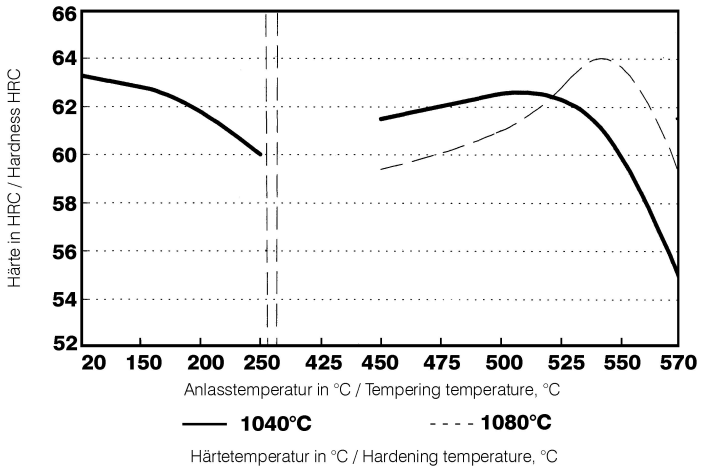
Stress relieving

Temperature (°C | °F)	650 | 1202	After through-heating, hold in neutral atmosphere for 1 - 2 hours. Slow cooling in furnace; intended to relieve stresses set up by extensive machining, or in complex shapes.

Hardening and Tempering

Temperature (°C | °F)	1020 | 1868 to 1060 | 1940	Oil, salt bath, compressed air, air, vacuum After through-heating, hold for 15 to 30 minutes. After hardening, tempering to the desired working hardness, see tempering chart.

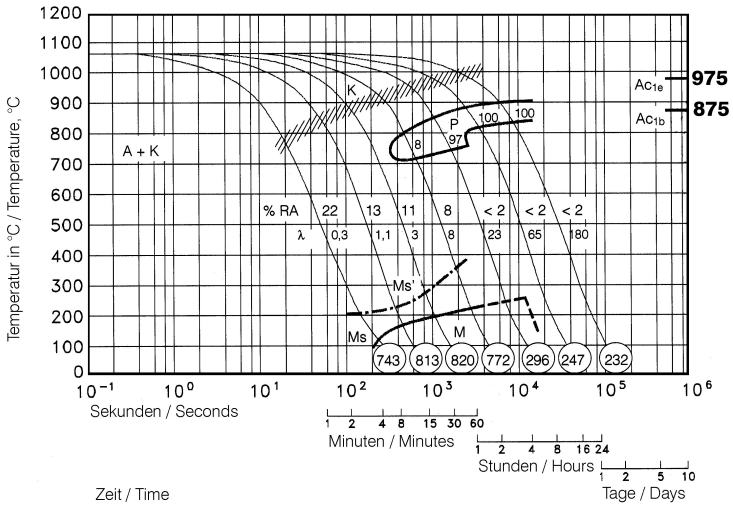
Tempering chart



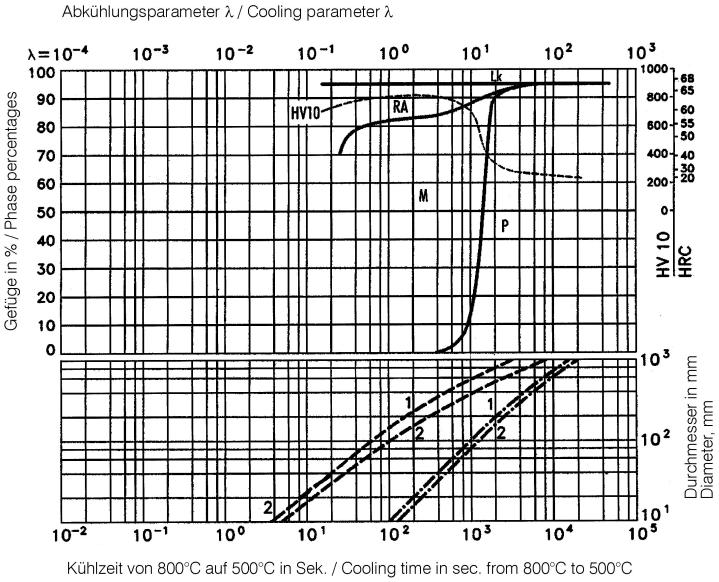
Tempering:

Hardening temperature:
——— 1020°C/1868°F
- - - - - - 1060°C/1940°F
Specimen size: square 20 mm

Continuous cooling CCT curves



Quantitative phase diagram



LK... Ledeburitic carbides
RA... Retained austenite
M... Martensite
P... Perlite

Physical Properties

Temperature (°C | °F)	20 | 68
Density (kg/dm³ | lb/in³)	7.68 | 0.28
Thermal conductivity (W/(m.K) | BTU (IT) ft/hr/ft²/F)	17.8 | 10.28
Specific heat (J/(kg.K) | BTU (IT) lb/F)	490 | 117.03
Spec. electrical resistance (Ohm.mm²/m | 10⁻⁴ Ohm.inch²/ft)	0.64 | 3.02
Modulus of elasticity (10³N/mm² | 10³ksi)	206 | 29.88

Thermal Expansions

Temperature (°C | °F)	100 | 212	200 | 392	300 | 572	400 | 752	500 | 932	600 | 1112	700 | 1292
Thermal expansion (10⁻⁶ m/(m.K) | 10⁻⁶ inch/(inch.F))	11.2 | 6.222	11.8 | 6.556	12.3 | 6.833	12.7 | 7.056	12.9 | 7.167	13.1 | 7.278	13.1 | 7.278

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.

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ONE STEP AHEAD.