Material data sheet
Steel grade

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OVAKO

20Cr2* All

General Information

20Cr2* is a carburizing steel with good toughness and high fatigue strength. Equivalent to the US Standard grade 4118.

126H is a Bearing Steel Quality (BQ) variant.

** Designation followed by "*" is not an official EN standard grade but named according to the rules in EN 10027.*

BQ-Steel®
BQ-Steel® is a bearing quality clean steel optimized for fatigue strength and is also ideal for new design solutions outside the bearing industry.

Similar designations

4118H

Chemical composition

Variant	Cast	Weldability		C %	Si %	Mn %	P %	S %	Cr %	Ni %	Mo %	V %
126H	IC	CEV 0.59_{max}	Min	0.18	0.20	0.70	-	-	0.40	-	0.08	-
		Pcm 0.36_{max}	Max	0.23	0.35	0.90	0.025	0.015	0.60	0.25	0.15	0.100

Mechanical Properties

Variant	Condition	Format	Dimension [mm]	Hardness
126H	+AR	Tube,wall	7 < 23	190 HB typical

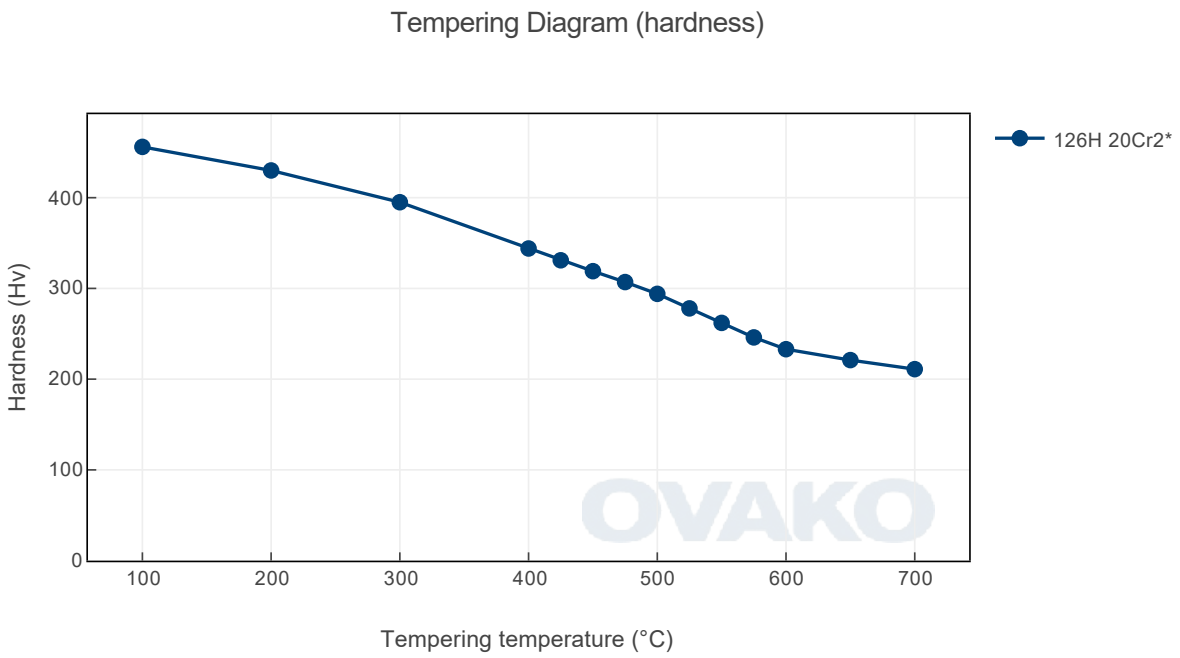
$Rp_{0.2}$ * R_{eh}, ** R_{el}

Transformation temperatures

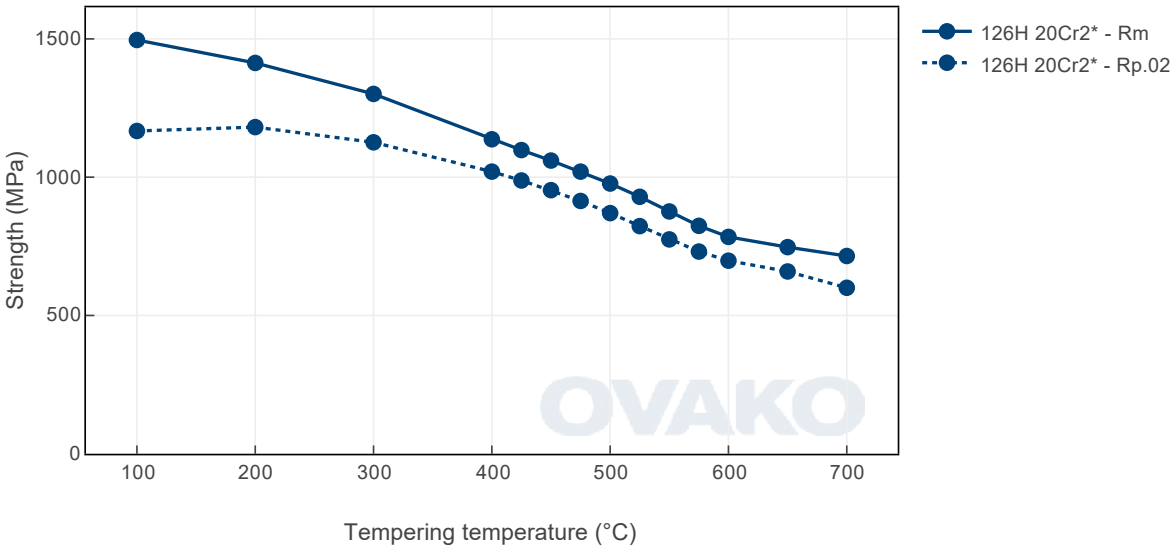
	Temperature °C
MS	421
AC1	730
AC3	818

Heat Treatment Guide generated Graphs

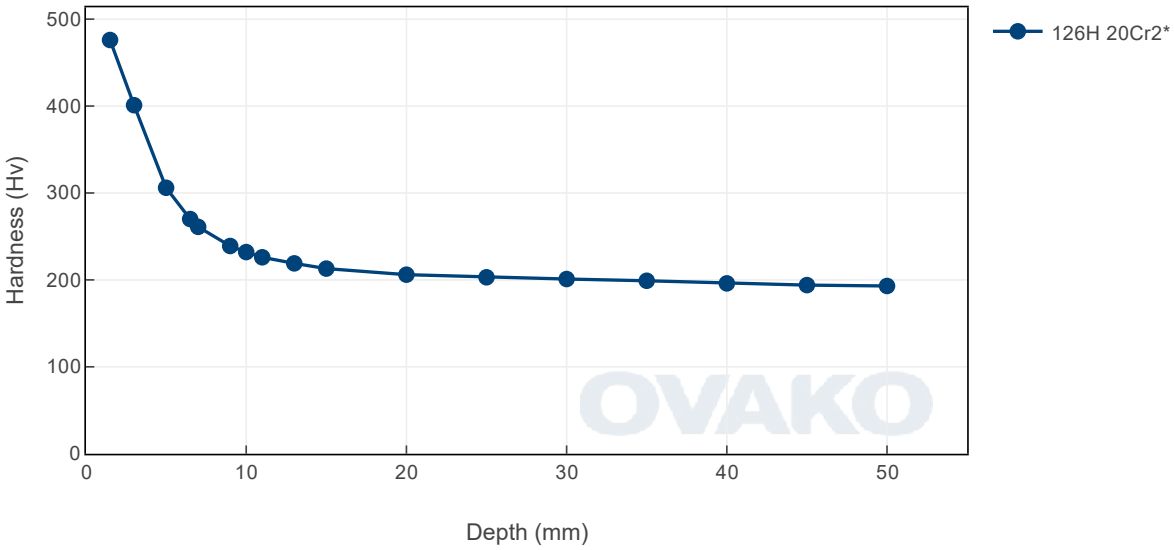
The following graphs are generated from a theoretical model. For further info see the Heat treatment guide module. Select a specific grade version for individual display.



Tempering Diagram (strength)



Jominy


Hardness (Hv)
500
400
300
200
100
0
0
10
20
30
40
50
Depth (mm)
126H 20Cr2*

Steel cleanliness

Micro inclusions									Macro inclusions	
Applied standard	ASTM E45								Applied standard	ISO 3763 (Blue fracture)
Sampling	ASTM A295								Sampling	Statistical testing on billets
Maximum average limits	A		B		C		D		Limits	< 2,5 mm/dm^2
	Th	He	Th	He	Th	He	Th	He		
	2,0	1,5	0,8	0,1	0	0	0,5	0,4		

SUSTAINABILITY-ENVIRONMENTAL IMPACT DATA

At Ovako sustainability and reduction of our environmental impact is a major focus in everything we do.
Further information is found here.

In many international comparisons the crude steel Scope 1-2 emission is a key parameter, ie. the CO_2 emission from the steel works itself.
As of 1 January 2022 we carbon offset all our scope 1 and 2 volume shown below.

Steel works	Hofors	Smedjebacken	Imatra
CO2e/kg	120	62	76

To get the full picture of our products environmental impact we have to look at all of our CO_2 emission sources.
Not only the steel work Scope 1-2 itself, but all operations downstream in our production, heating and heat treatment furnaces etc (full scope 1-2) as well as all the emission from input material, eg. alloys, scope 3.

Steel Grade	Format	Condition	Scope 1-3 (CO2e kg /1000 kg steel)	Climate compensated Net emission = Scope 3 (CO2e kg /1000 kg steel) Scope 1 - 2 = 0 (compensated)
126H	Round bar	+AR	596	203
126H	Round bar	+SA	601	204
126H	Tube,wall	+AR	622	221
126H	Tube,wall	+SA	623	221

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Other properties (typical values)

Youngs module (GPa)	Poisson´s ratio (-)	Shear module (GPa)	Density (kg/m3)
210	0.3	80	7800
Average CTE 20-300°C (µm/m°K)	Specific heat capacity 50/100°C (J/kg °K)	Thermal conductivity Ambient temperature (W/m°K)	Electrical resistivityAmbient temperature (µΩm)
12	460 - 480	40 - 45	0.20 - 0.25

Contact us

Would you like to know more about our offers? Don´t hesitate to contact us:

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For more detailed information please visit http://www.ovako.com/en/Contact-Ovako/

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