Material data sheet
Steel grade

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OVAKO

21CrMoV5-7 All

General Information

21CrMoV5-7 is a steel for fasteners with specified elevated and/or low temperature properties. 6132, also known as Imanite, has been designed for nitriding, giving similar hardness distribution as case hardening. When using nitriding the distortion due to quenching after carburising can be avoided. 6132 is a M-steel version of 21CrMoV5-7 . M-treatment is very beneficial when the machining is done in Q&T condition and the hardness is about 300 HBW.

M-Steel®

The basis for the concept is that non-metallic inclusions are modified and controlled with calcium treatment in a way to minimize tool wear and to maximize chip control in machining operations. Our M-Steel treatment can be applied to any steel grade.

Similar designations

EN 10269

Chemical composition

Variant	Cast		C%	Si%	Mn%	P%	S%	Cr%	Mo%	V%	Ca%
6130	CC	Min	0.17	0.15	0.40	-	-	1.20	0.55	0.250	-
		Max	0.25	0.40	0.80	0.030	0.030	1.50	0.80	0.350	-
6132	CC	Min	0.17	0.15	0.35	-	0.025	1.20	0.65	0.250	0.0020
		Max	0.25	0.35	0.85	0.030	0.040	1.50	0.80	0.350	-

Mechanical Properties

Variant	Condition	Format	Dimension [mm]	Yield strength min [MPa]	Tensile strength [MPa]	Elongation A_5 [%]	Reduction of area Z_{min} [%]	Hardness	Impact (ISO-V) $strength_{min}$
6130	+QT		25 < 160	550	700-850	16	60	205-250 HB	20 °C 63 J (long)
6132	+QT	Round bar	25 < 160	800	900-1100	14	60	280-345 HB	20 °C 35 J (long)

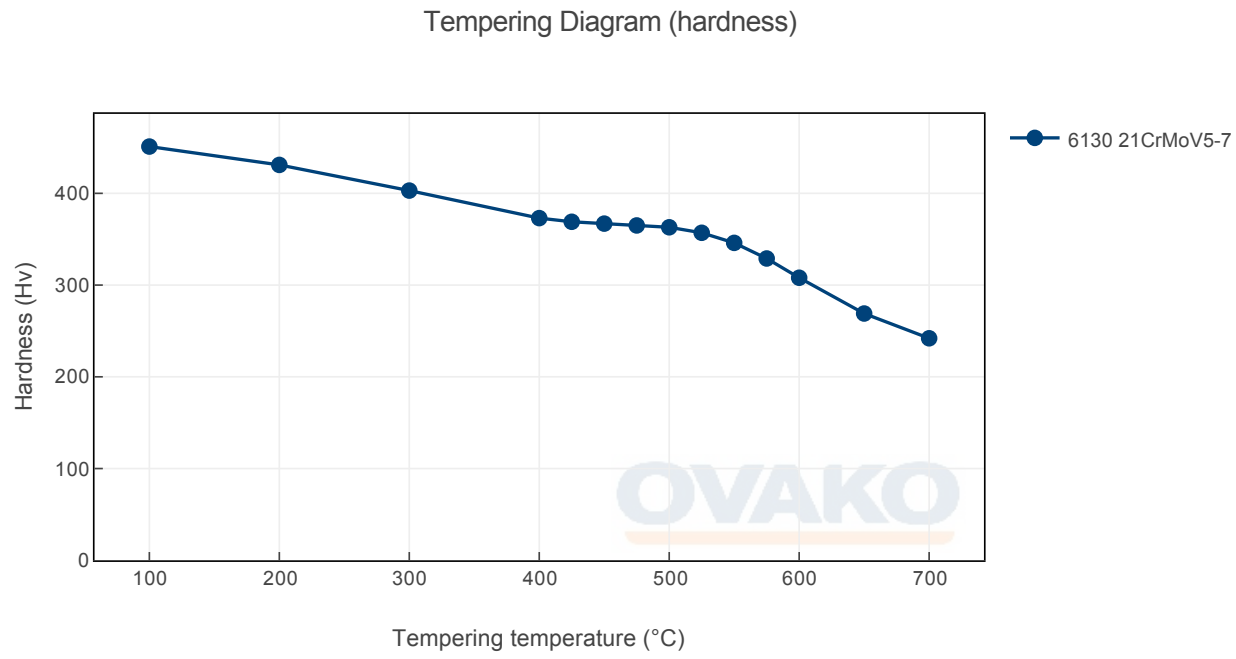
$Rp_{0.2}$ * R_{eh}, ** R_{el}

Transformation temperatures

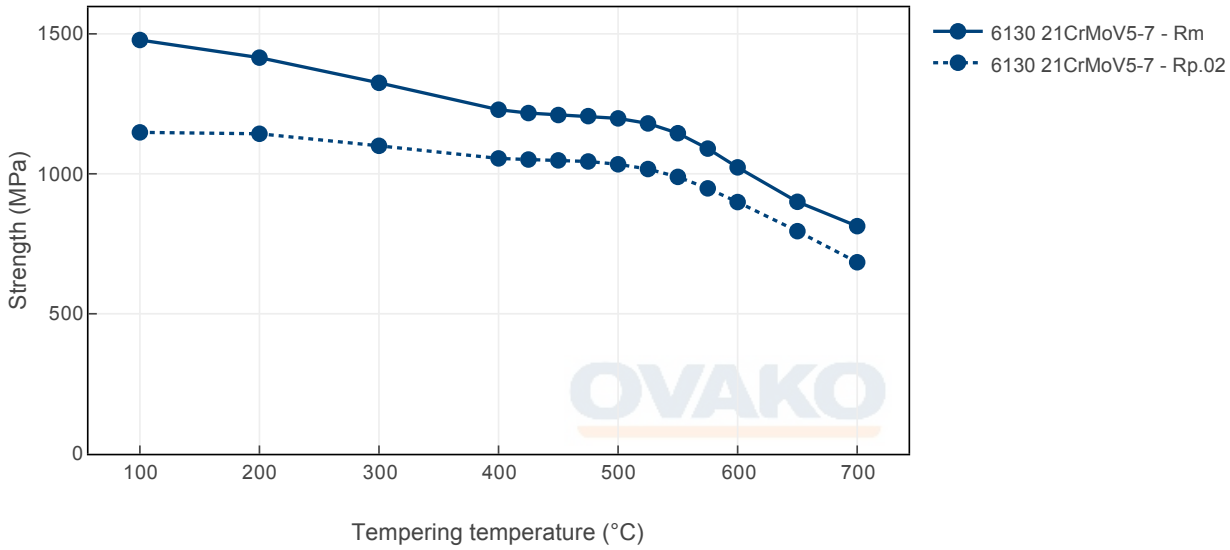
	Temperature °C
MS	405
AC1	745
AC3	853

Heat Treatment Guide generated Graphs

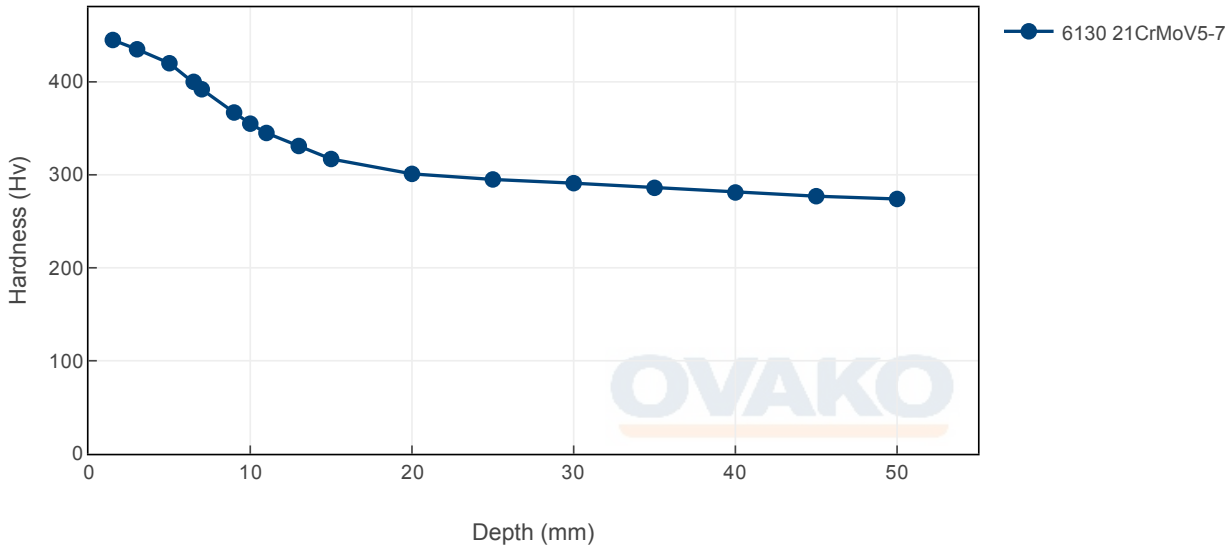
The following graphs are generated from a theoretical model. For further info see the Heat treatment guide module. Select a specific grade version for individual display.



Tempering Diagram (strength)



Jominy


Hardness (Hv)
400
300
200
100
0
0
10
20
30
40
50
Depth (mm)
6130 21CrMoV5-7
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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)
Imanite (6132)	Round bar	+AR	579	298
Imanite (6132)	Round bar	+QT	844	357
6130	Round bar	+AR	568	287
6130	Round bar	+QT	831	344

As of 1 January 2022 we use carbon offset for all our scope 1- 2 emissions, so in practice the climate compensated data is the same as the full Scope 3 level.
All above data are to be seen as typical values for the specified format and condition. Detailed information about your specific product please contact your sales contact.

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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