

STEEL GRADE

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20NiCrMoS2-2 All**General Information**

Alloyed case hardening steel for very high strained parts and good toughness at core tensile strength of 700 - 900 MPa. Driving bevel gears, crown wheels, gears, shafts, bolts for automotive and gear components. Suitable for direct hardening.

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

20NiCrMo2-2, MoCN206 M, SAE 8620, BS 805H22, 20NCD2, SS2506

Chemical composition

Variant	Cast	Weldability		C %	Si %	Mn %	P %	S %	Cr %	Ni %	Mo %
4548, MoCN 206 M	CC	CEV 0.581 _{max}	Min	0.17	-	0.65	0.000	0.025	0.35	0.40	0.15
		Pcm 0.36 _{max}	Max	0.23	0.40	0.95	0.025	0.035	0.70	0.70	0.25

Mechanical Properties

Variant	Condition ⁱ	Format	Dimension [mm]	Hardness
4548, MoCN 206 M	+A	Round bar	< 160	< 212 HB
	+U	Round bar	< 160	< 230 HB

$RP_{0.2}$ * R_{eh} ** R_{el}

Transformation temperatures

	Temperature °C
MS	400
AC1	723
AC3	827

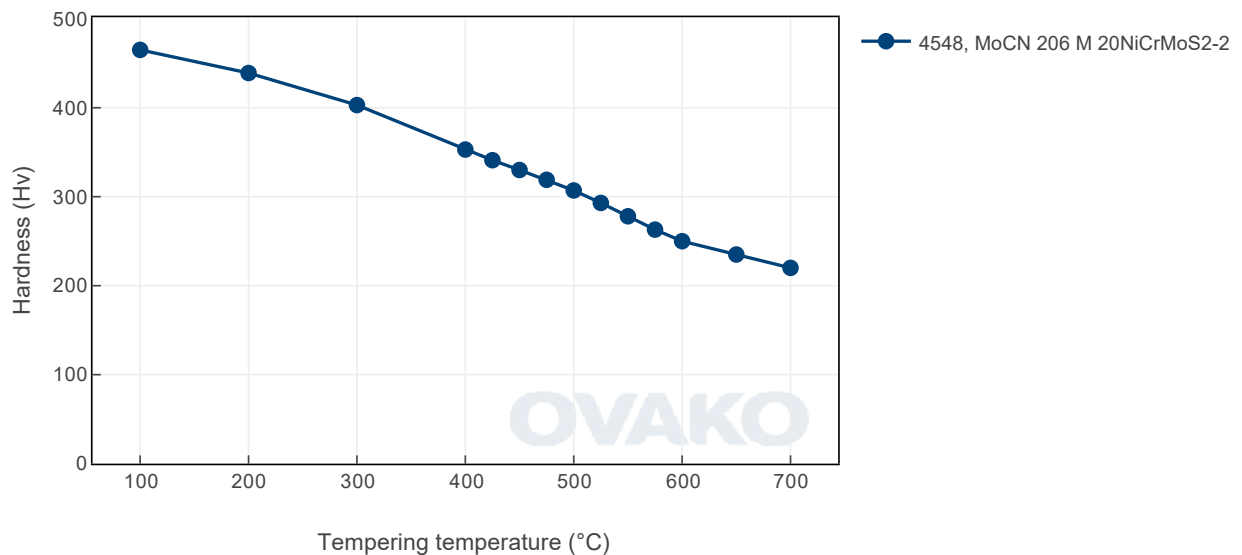
Heat treatment recommendations

Treatment	Condition ⁱ	Temperature cycle	Cooling/quenching
Hot forging	+U	800-1200°C	In air
Normalizing	+N	860-890	In Air
Soft annealing	+SA	600-670 °C 2h	In Air
Carburizing	+C	850-900°C	

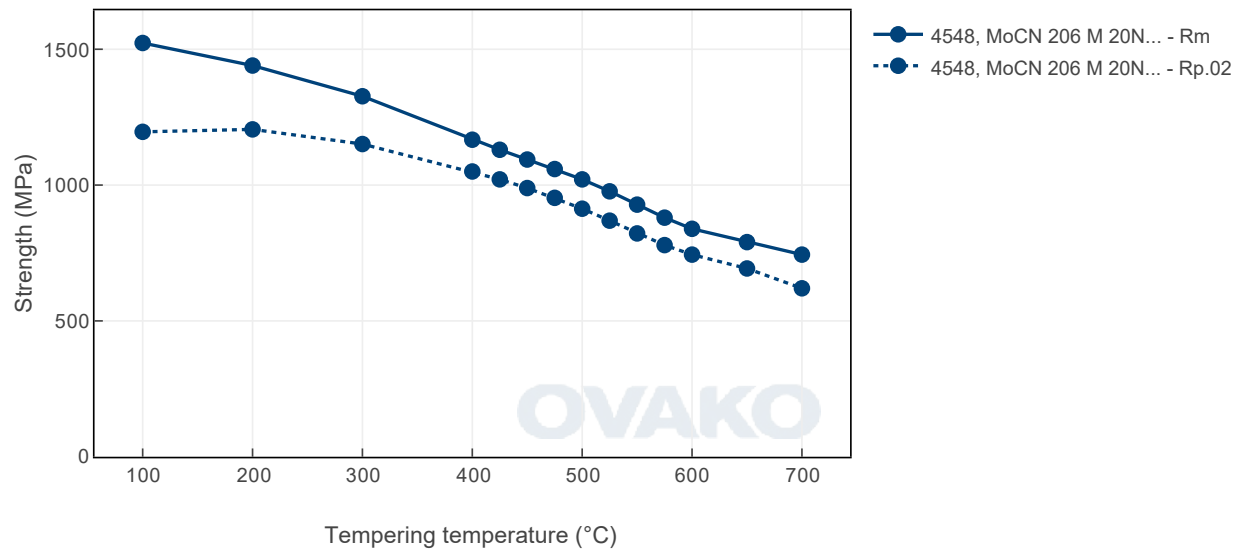
Heat Treatment Guide generated Graphs

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.

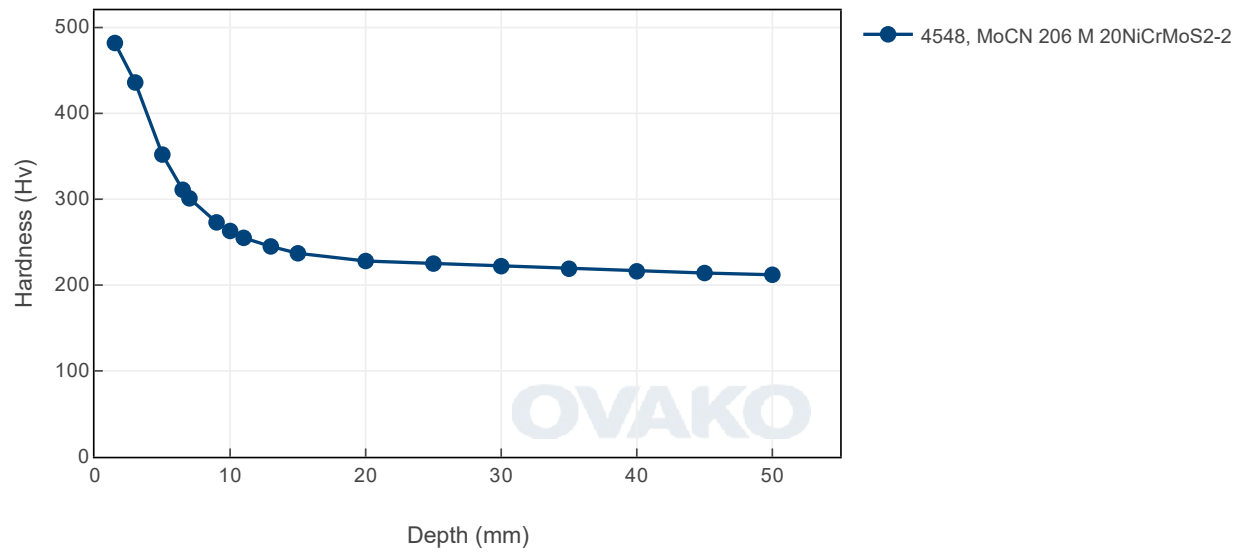
Tempering Diagram (hardness)



Tempering Diagram (strength)



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Other properties (typical values)

Youngs module (GPa)	Poisson´s ratio (-)	Shear module (GPa)	Density (kg/m ³)
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 resistivity Ambient temperature (µΩm)
12	460 - 480	40 - 45	0.20 - 0.25

Contact us

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

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