

MATERIAL DATA SHEET

STEEL GRADE

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40CrMoV4-6

All

General Information

Similar designations

ASTM A 193 B16

Chemical composition

Variant	Cast		C %	Si %	Mn %	P %	S %	Cr %	Mo %	V %	Al %
6098	CC	Min	0.36	0.15	0.45	-	-	0.80	0.50	0.250	-
		Max	0.44	0.35	0.70	0.025	0.025	1.15	0.65	0.350	0.020

Mechanical Properties

Variant	Condition	Format	Dimension [mm]	Yield strength min [MPa]	Tensile strength [MPa]	Elongation A <sub>5</sub> [%]	Reduction of area Z <sub>min</sub> [%]	Hardness	Impact (ISO-V) strength <sub>min</sub>
6098	+AR	Round bar	25 < 160	-	-	-	-	< 330 HB	-
	+A		25 < 160	-	-	-	-	< 255 HB	-
	+QT	Round bar	25 < 65	725	860-1000	14	50	250-300 HB	20 °C 30 J (long)
			65 < 100	700	850-1000	14	45	250-300 HB	20 °C 30 J (long)
		Round bar	100 < 160	640	850-1000	14	45	250-300 HB	20 °C 25 J (long)

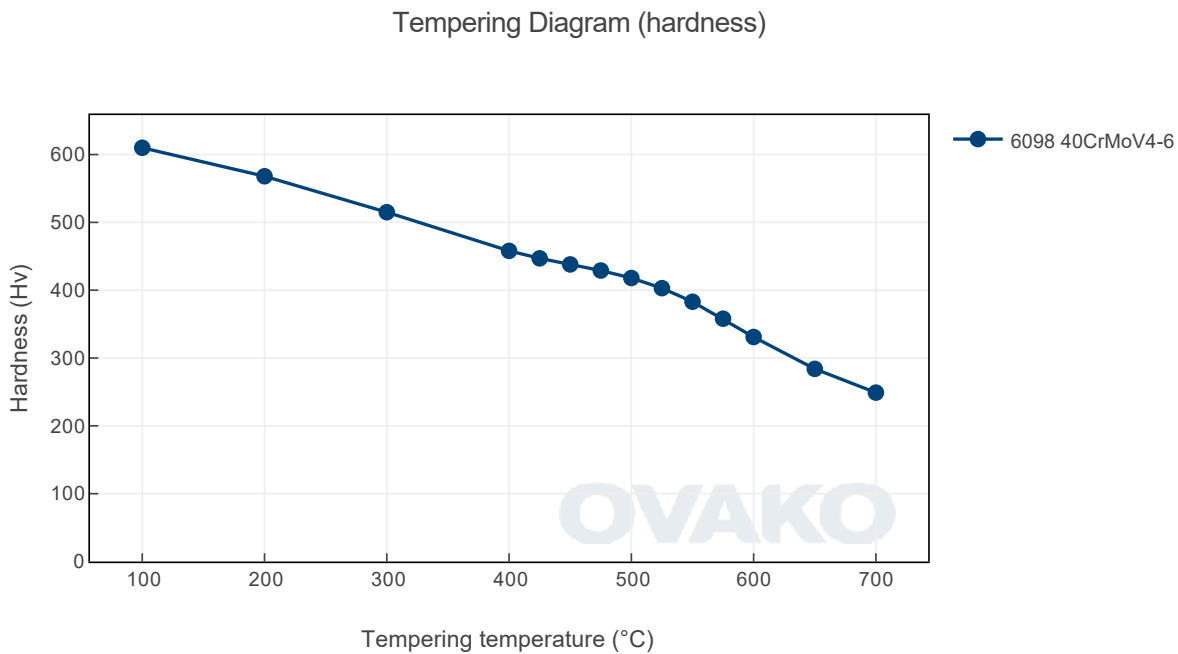
*R<sub>p0.2</sub>* \* *R<sub>eh</sub>*, \*\* *R<sub>el</sub>*

Transformation temperatures

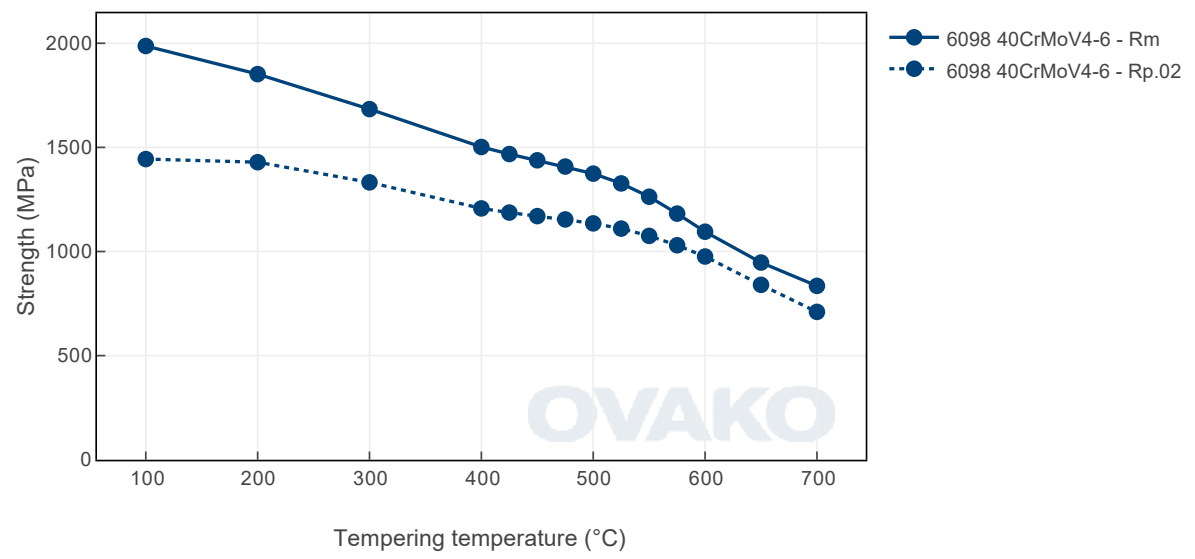
	Temperature °C
MS	323
AC1	739
AC3	804

Heat Treatment Guide generated Graphs

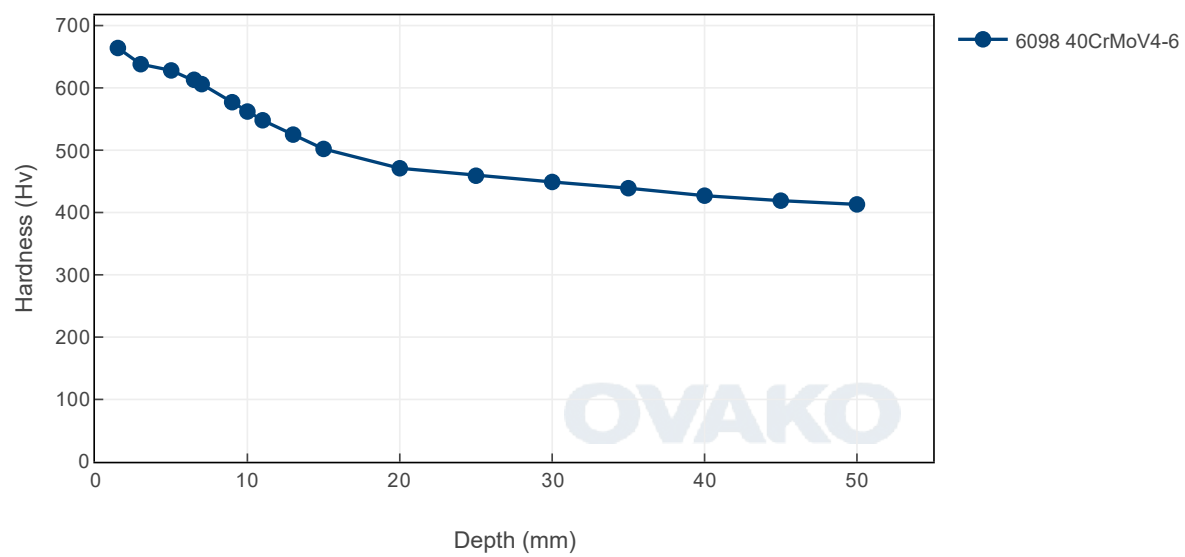
The following graphs are generated from a theoretical model. For further info see the Heat treatment guide module. Select a specific grade version for individual display.



Tempering Diagram (strength)



# Jominy





## 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](#).

Steel works	Hofors	Smedjebacken	Imatra
CO <sub>2</sub> e/kg	120	62	76

To get the full picture of our products environmental impact we have to look at all of our CO<sub>2</sub> 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 (CO <sub>2</sub> e kg /1000 kg steel)	Climate compensated Net emission = Scope 3 (CO <sub>2</sub> e kg /1000 kg steel) Scope 1 - 2 = 0 (compensated)
6098	Round bar	+AR	544	263
6098	Round bar	+QT	801	314

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/m <sup>3</sup> )
210	0.3	80	7800
Average CTE 20-300°C (µm/m°C)	Specific heat capacity 50/100°C (J/kg °K)	Thermal conductivity Ambient temperature (W/m°C)	Electrical resistivity Ambient 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:

Via e-mail: [info@ovako.com](mailto:info@ovako.com)

Via telephone: +46 8 622 1300

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

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