MATERIAL DATA SHEET

STEEL GRADE

Last revised: Thu, 30 Jan 2025 10:37:59 GMT

OVAKO

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_5 [%]	Reduction of area Z_{min} [%]	Hardness	Impact (ISO-V) $strength_{min}$
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)

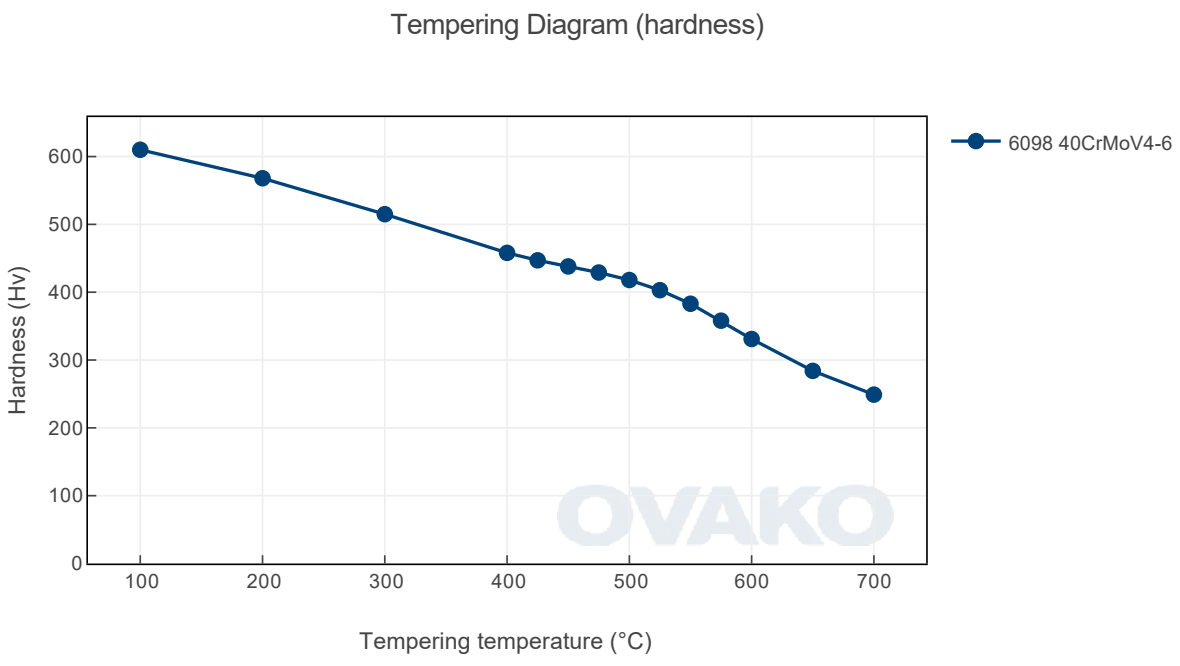
*$Rp_{0.2}$ * R_{eh}, ** R_{el}*

Transformation temperatures

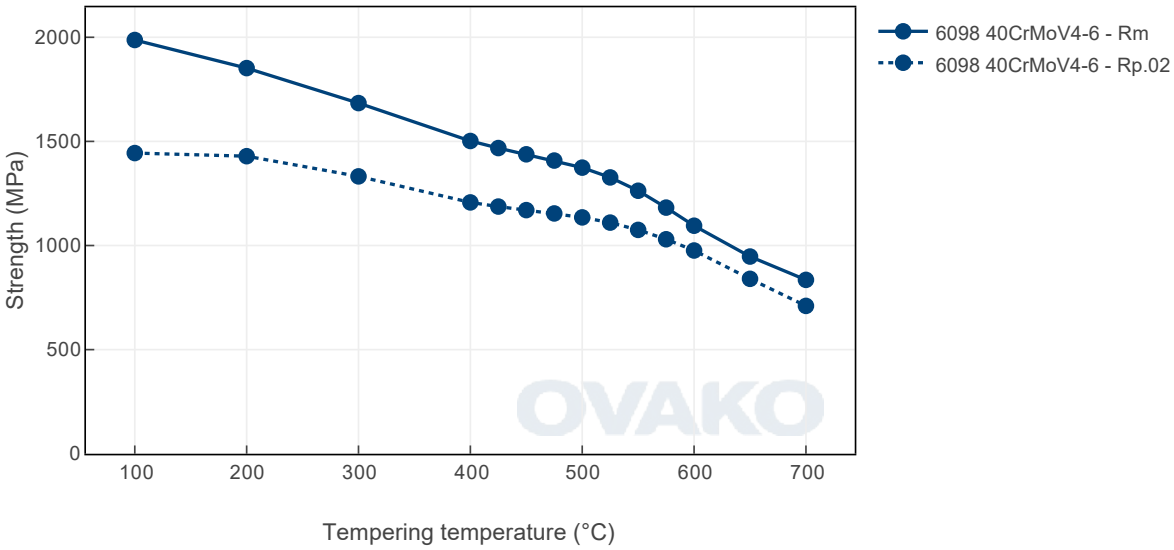
	Temperature °C
MS	323
AC1	739
AC3	804

Heat Treatment Guide generated Graphs

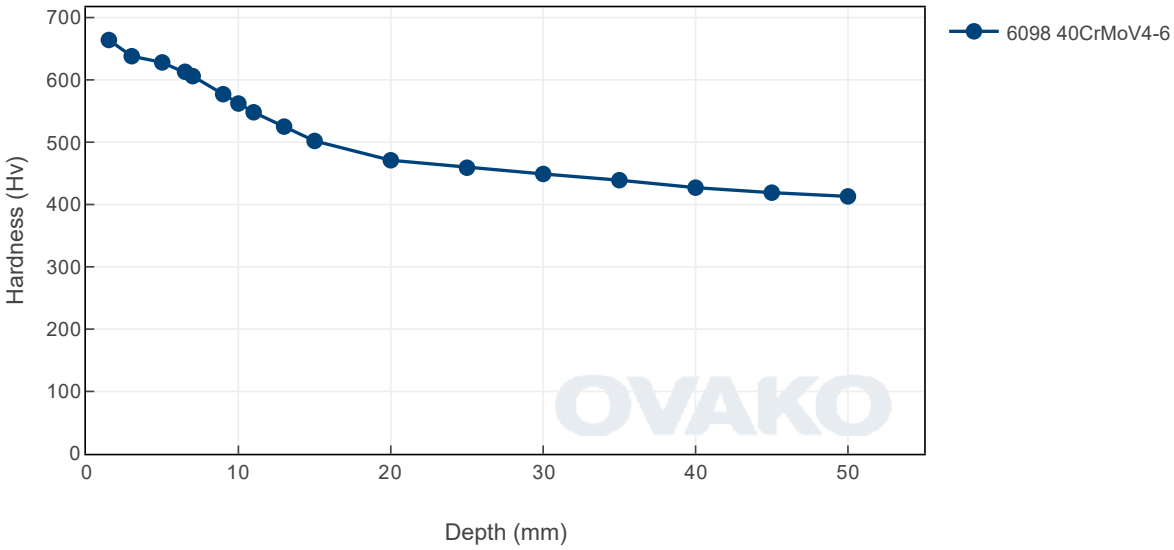
The following graphs are generated from a theoretical model. For further info see the Heat treatment guide module. Select a specific grade version for individual display.



Tempering Diagram (strength)



Jominy


Hardness (Hv)
700
600
500
400
300
200
100
0
0
10
20
30
40
50
Depth (mm)
6098 40CrMoV4-6

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
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)
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/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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Via telephone: +46 8 622 1300

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