Material data sheet
Steel grade

Last revised: Wed, 04 Dec 2024 16:11:38 GMT

34CrMo4 All

General Information

SAE4130m is a low alloyed steel used in quenched and tempered condition. The nearest equivalents are 34CrMo4 in EN10083-3 or 4130 in ASTM A29 with some deviations. The material is delivered as rolled or annealed.

Chemical composition

Variant	Cast	Weldability		C %	Si %	Mn %	P %	S %	Cr %	Ni %	Mo %	Cu %
4130 ASTM A29	CC	CEV 0.65_{max}	Min	0.28	0.15	0.40	-	-	0.80	-	0.15	-
		Pcm 0.42_{max}	Max	0.33	0.35	0.60	0.035	0.040	1.10	0.25	0.30	0.35
SAE4130m	CC	CEV 0.66_{max}	Min	0.27	0.15	0.60	-	-	0.60	-	0.15	-
		Pcm 0.41_{max}	Max	0.33	0.35	0.90	0.030	0.035	1.00	0.30	0.25	0.35
34CrMo4 EN10083-3:2006	CC	CEV 0.73_{max}	Min	0.30	-	0.60	-	-	0.90	-	0.15	-
		Pcm 0.46_{max}	Max	0.37	0.40	0.90	0.025	0.035	1.20	-	0.30	-
34CrMo4 EN ISO 683-2	Std	CEV $_{max}$	Min	0.30	0.10	0.60	0.000	0.000	0.90	-	0.15	-
		Pcm $_{max}$	Max	0.37	0.40	0.90	0.025	0.035	1.20	-	0.30	-

Mechanical Properties

Variant	Condition	Format	Dimension [mm]	Hardness
SAE4130m	+AR	Round bar	14 < 70	< 260 HB
	+A	Round bar	14 < 70	< 223 HB

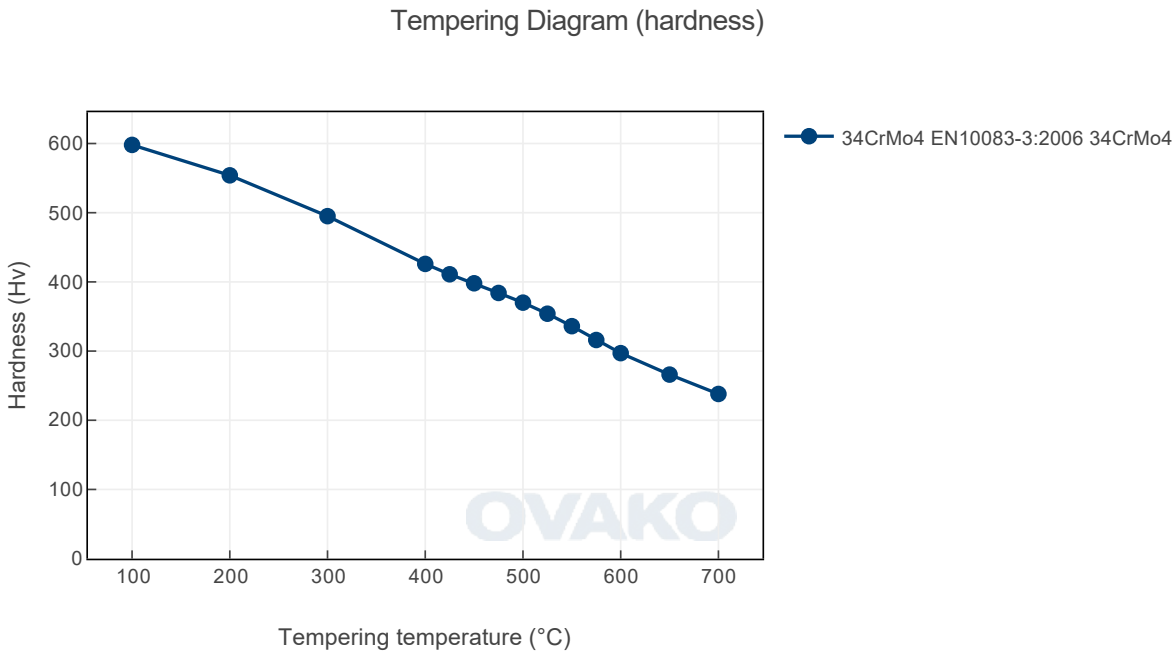
*$Rp_{0.2}$ * R_{eh}, ** R_{el}*

Transformation temperatures

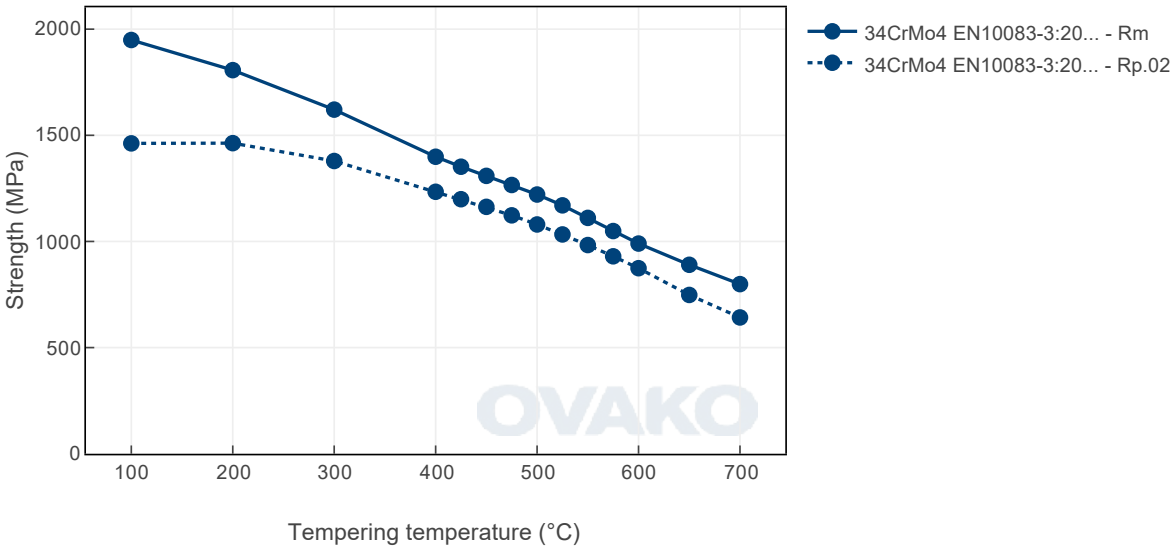
	Temperature °C
MS	552
AC1	737
AC3	808

Heat Treatment Guide generated Graphs

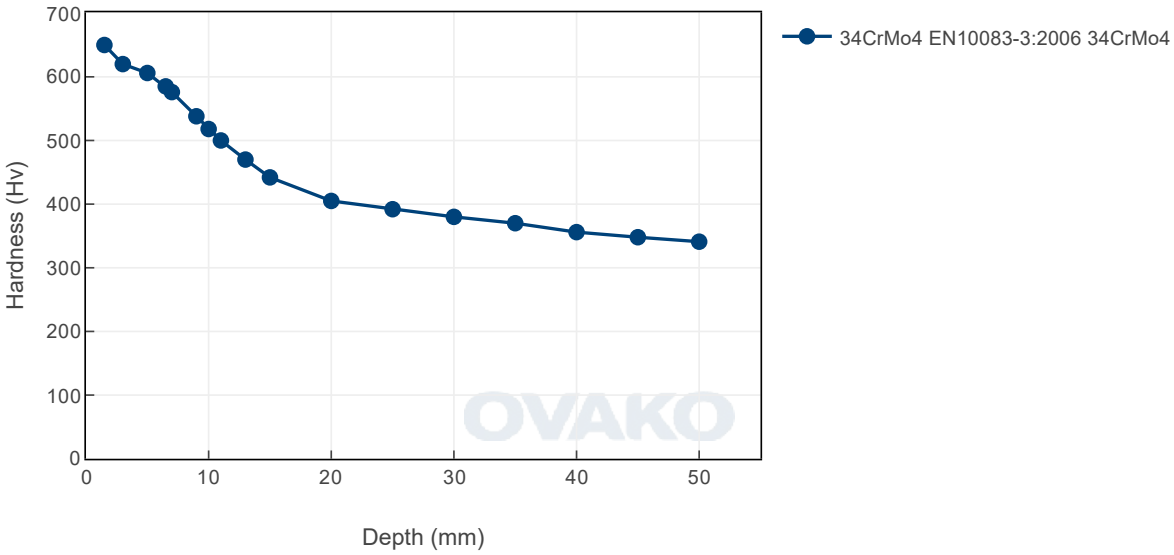
The following graphs are generated from a theoretical model. For further info see the Heat treatment guide module. Select a specific grade version for individual display.



Tempering Diagram (strength)



Jominy


Hardness (Hv)
700
600
500
400
300
200
100
0
0
10
20
30
40
50
Depth (mm)
34CrMo4 EN10083-3:2006 34CrMo4

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)
4130 ASTM A29	Flat bar	+AR	421	201
SAE4130m	Flat bar	+AR	421	201

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/