Material data sheet
Steel grade

Last revised: Wed, 04 Dec 2024 16:02:43 GMT

14NiCrMo13-4* All

General Information

14NiCrMo13-4 or AISI 9315 as also named in US standards is a case hardening steel used in forgings to eg rock drilling tools.

Similar designations

1.6657, AMS 6263, SAE 9315, En36c

Chemical composition

Variant	Cast	Weldability		C %	Si %	Mn %	P %	S %	Cr %	Ni %	Mo %	Cu %	DI %
253C	IC	CEV $_{max}$	Min	0.14	-	0.50	0.000	0.025	0.95	3.20	0.25	-	-
		Pcm $_{max}$	Max	0.17	0.10	0.70	0.015	0.045	1.05	3.35	0.35	-	-
253D	IC	CEV 0.87_{max}	Min	0.12	0.15	0.40	-	-	1.00	2.95	0.08	-	2.40
		Pcm 0.38_{max}	Max	0.17	0.35	0.70	0.035	0.040	1.45	3.35	0.15	-	7.20
254S	IC	CEV $_{max}$	Min	0.14	0.20	0.55	0.000	0.010	1.20	2.75	0.22	0.00	-
		Pcm $_{max}$	Max	0.17	0.35	0.75	0.020	0.025	1.40	3.15	0.27	0.20	-

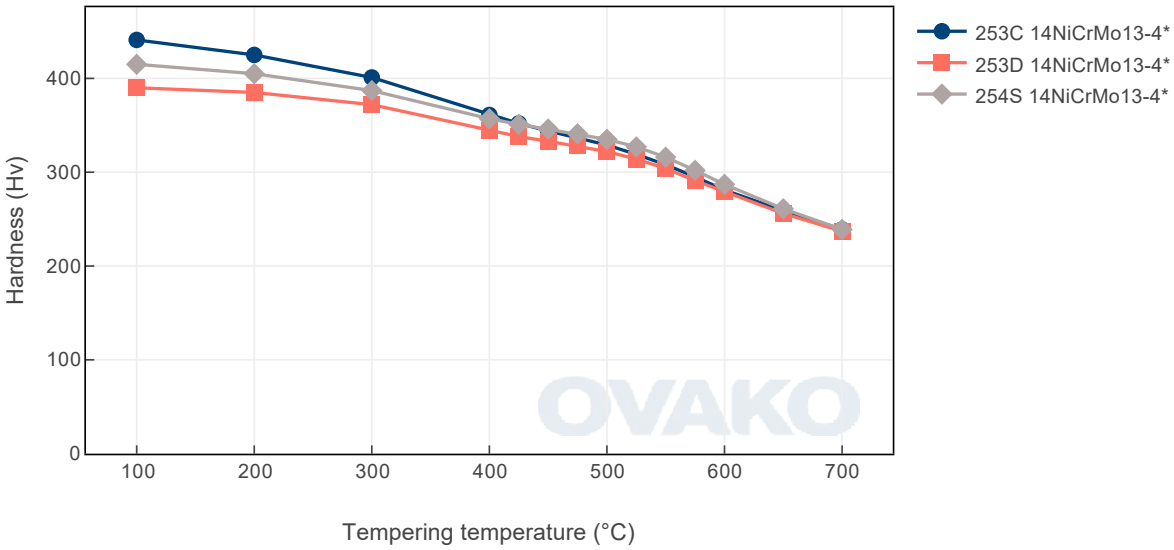
Transformation temperatures

	Temperature °C
AC1	692
AC3	805

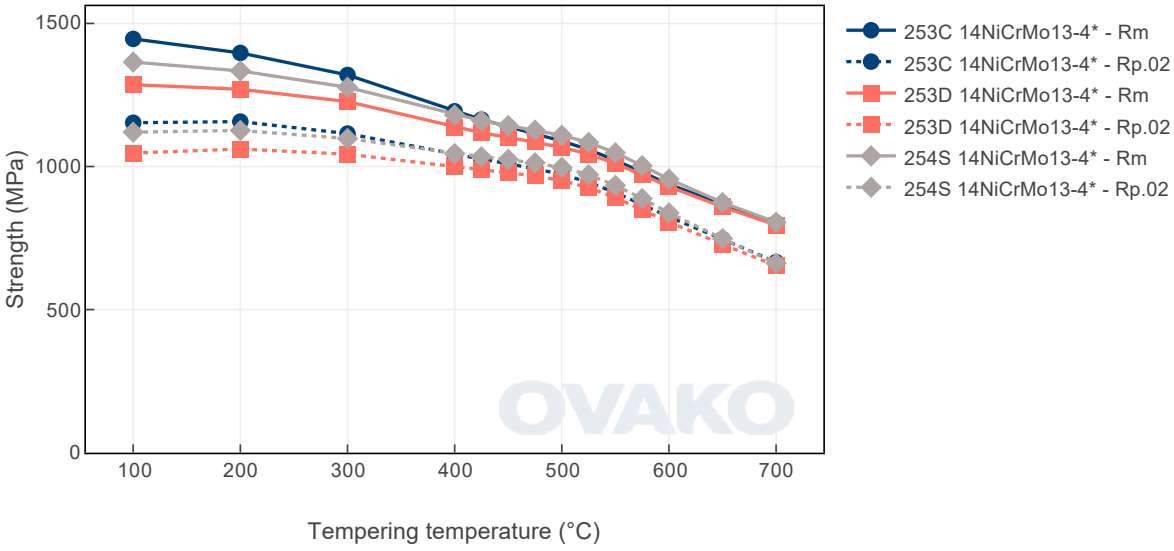
Heat Treatment Guide generated Graphs

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.

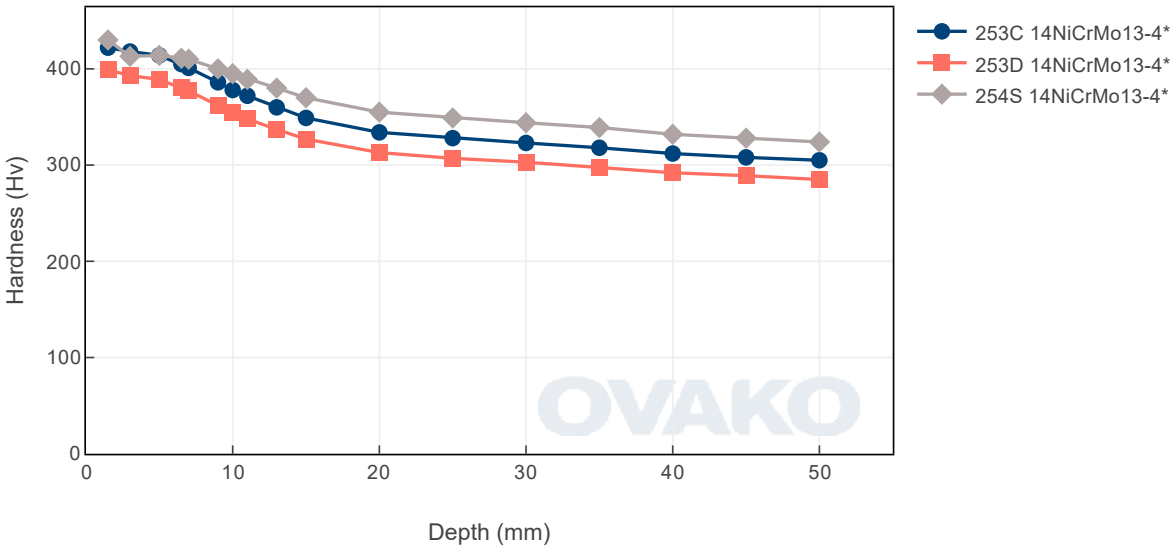
Tempering Diagram (hardness)



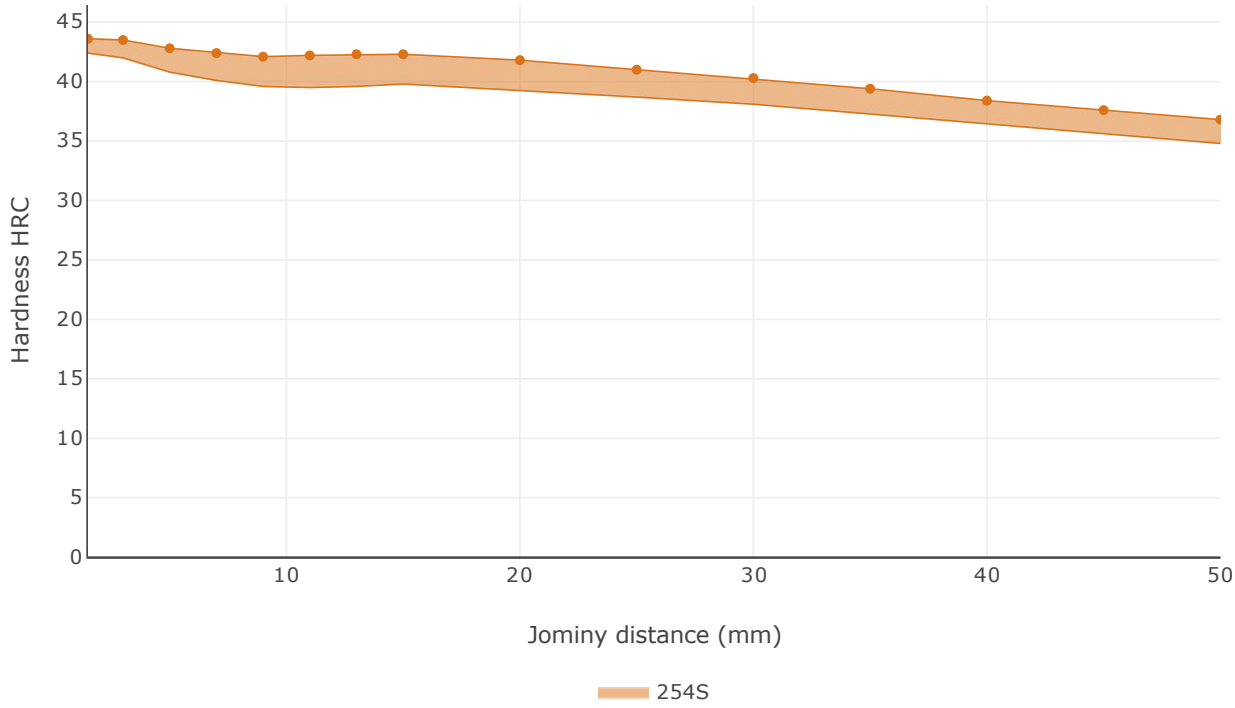
Tempering Diagram (strength)



Jominy


Hardness (Hv)
400
300
200
100
0
0
10
20
30
40
50
Depth (mm)
253C 14NiCrMo13-4*
253D 14NiCrMo13-4*
254S 14NiCrMo13-4*
OVAKO

Hardenability



Jominy hardenability of Ovako 254S. Average value with +/-standard deviation.

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)
253	Round bar	+AR	1112	713
253	Round bar	+A	1119	718
253	Tube,wall	+AR	1178	781
253	Tube,wall	+A	1181	783

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/