MATERIAL DATA SHEET

STEEL GRADE

Last revised: Thu, 16 Jan 2025 14:17:49 GMT

OVAKO

18CrNi8 All

General Information

Ovako 248Q is a high cleanliness case hardening steel suitable for demanding powertrain applications. The variant Ovako 248Q is produced in the highest cleanliness level, isotropic quality (IQ), to ensure a minimum of oxidic and sulphidic inclusions. Ovako 248Q is used in diesel injection nozzles.

IQ-Steel®

IQ-Steel® is an isotropic quality ultra clean steel optimized for high fatigue strength under multi axial loading.

Similar designations

17CrNi7-7

Chemical composition

Variant	Cast	Weldability		C %	Si %	Mn %	P %	S %	Cr %	Ni %	Mo %	V %
248Q	IC	CEV 0.92_{max}	Min	0.15	0.15	0.40	-	-	1.80	1.80	-	-
		Pcm 0.42_{max}	Max	0.20	0.40	0.60	0.025	0.002	2.10	2.10	0.10	0.100

Mechanical Properties

Variant	Condition	Format	Dimension [mm]	Hardness
248Q	+A	Round bar	< 55	180 HB typical

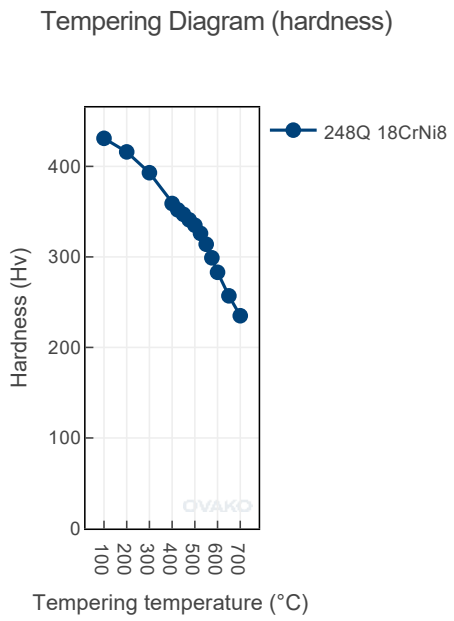
*$Rp_{0.2}$ * R_{eh}, ** R_{el}*

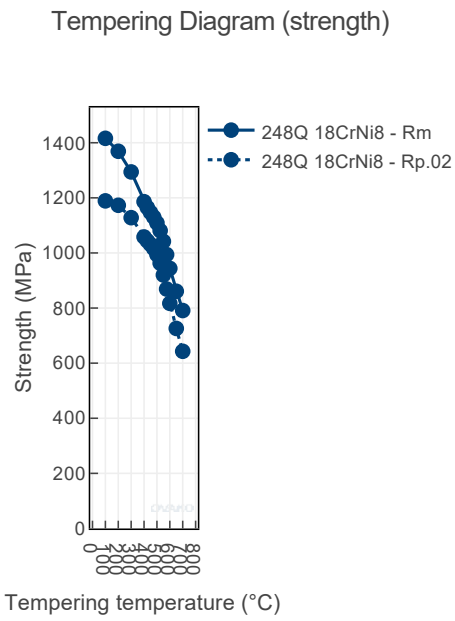
Transformation temperatures

	Temperature °C
MS	396
AC1	725
AC3	820

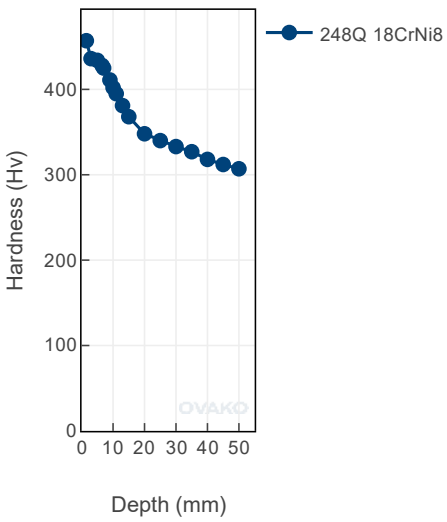
Heat Treatment Guide generated Graphs

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.





Jominy


248Q 18CrNi8
Hardness (Hv)
400
300
200
100
0
0 10 20 30 40 50
Depth (mm)

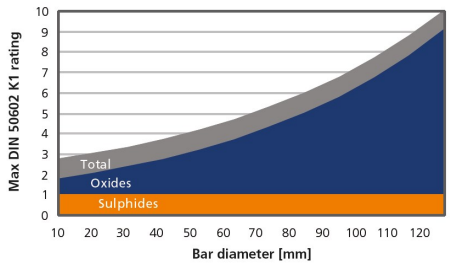
Steel cleanliness

Micro inclusions - 248Q	
Applied standard	DIN 50602 K1
Sampling	Six random samples from final product dimension
Limits	The limit is dimension dependent. The average rating of six samples should not exceed the limits given in the graph.

Macro inclusions - 248Q	
Applied standard	10 M Hz UST (Ovako internal standard)
Sampling	Statistical testing on billets
Limits	< 10 defects/dm3 > 0,2 mm FBH

IQ

Inclusion limits IQ-processed steel



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)
248Q	Round bar	+AR	928	529
248Q	Round bar	+SA	935	534

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:

Via e-mail: info@ovako.com

Via telephone: +46 8 622 1300

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