

42CrMo6* All

General Information

The chemical composition of 42CrMo6*, conforms to the requirements in ISO 898-1:2013 for fasteners to 8.8 or 10.9 properties.

The material is suitable for quenching and tempering to 8.8 or 10.9 properties. Required 90% martensite in the core area of the material is achieved up to 64 mm diameter by oil quenching.

For additional Heat Treatment Data, please visit the Heat Treatment Guide.

** Designation followed by "*" is not an official EN standard grade but named according to the rules in EN 10027.*

Chemical composition

Variant	Cast	Di	Weldability		C %	Si %	Mn %	P %	S %	Cr %	Mo %
6116	CC	8.44	CEV 0.94 _{max}	Min	0.40	0.15	0.75	-	-	1.40	0.15
			Pcm 0.58 _{max}	Max	0.45	0.35	0.90	0.025	0.025	1.60	0.30

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}
6116	+QT	Round bar	< 80	940	1040-1200	9	48	304-361 HB	-40 °C 27 J (long)

*Rp0.2 * Reh, ** Rel*

Transformation temperatures

	Temperature °C
MS	311
AC1	747
AC3	793

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 CO₂ 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)
Cromobolt, 6116	Round bar	+AR	530	245
Cromobolt, 6116	Round bar	+AR	783	295
42CrMnMo6-3, Cromobolt	Round bar	+AR	530	245
42CrMnMo6-3, Cromobolt	Round bar	+QT	783	295

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 resistivity Ambient temperature (µΩm)
12	460 - 480	40 - 45	0.20 - 0.25

Contact us

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

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