

## 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 <sub>max</sub>	Min	0.40	0.15	0.75	-	-	1.40	0.15
			Pcm 0.58 <sub>max</sub>	Max	0.45	0.35	0.90	0.025	0.025	1.60	0.30

Mechanical Properties

Variant	<div><div></div><div>Condition</div></div>	Format	Dimension [mm]	Yield strength min [MPa]	Tensile strength [MPa]	Elongation A <sub>5</sub> [%]	Reduction of area Z <sub>min</sub> [%]	Hardness	Impact (ISO-V) strength <sub>min</sub>
6116	+QT	Round bar	< 80	940	1040-1200	9	48	304-361 HB	-40 °C 27 J (long)

*R<sub>p0.2</sub> \* R<sub>eh</sub>, \*\* R<sub>el</sub>*

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](#).

In many international comparisons the crude steel Scope 1-2 emission is a key parameter, ie. the CO<sub>2</sub> emission from the steel works itself.

As of 1 January 2022 we carbon offset all our scope 1 and 2 volume shown below.

Steel works	Hofors	Smedjebacken	Imatra
CO <sub>2</sub> e/kg	120	62	76

To get the full picture of our products environmental impact we have to look at all of our CO<sub>2</sub> 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 (CO <sub>2</sub> e kg /1000 kg steel)	Climate compensated Net emission = Scope 3 (CO <sub>2</sub> e 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

As of 1 January 2022 we use carbon offset for all our scope 1- 2 emissions, so in practice the climate compensated data is the same as the full Scope 3 level.

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/m <sup>3</sup> )
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

Would you like to know more about our offers? Don't hesitate to contact us:

Via e-mail: [info@ovako.com](mailto:info@ovako.com)

Via telephone: +46 8 622 1300

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

## Disclaimer

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