MATERIAL DATA SHEET

STEEL GRADE

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OVAKO

42MnV5* All

General Information

SB690 is a micro-alloyed steel for general purposes where high yield strength is needed without impact requirements. The bars are delivered as rolled. The properties will change if the bars are heat-treated.

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

Chemical composition

Variant	Cast	Weldability		C %	Si %	Mn %	P %	S %	Cr %	Ni %	Mo %	V %	Cu %	Al %	N %
SB690	CC	CEV 0.79_{max}	Min	0.40	0.30	1.30	-	0.010	0.25	0.15	-	0.130	-	-	0.0180
		Pcm 0.55_{max}	Max	0.43	0.50	1.50	0.035	0.035	0.35	0.30	0.10	0.180	0.30	0.010	0.0260

Mechanical Properties

Variant	Condition	Format	Dimension [mm]	Yield strength min [MPa]	Tensile strength [MPa]	Elongation A_5 [%]	Hardness
SB690	+AR	Round bar	45 < 95	690*	950-1100	10	285-330 HB

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

Transformation temperatures

	Temperature °C
MS	310
AC1	721
AC3	778

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)
SB690	Round bar	+AR	439	206

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/