

MATERIAL DATA SHEET

STEEL GRADE

OVAKO

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56Si7 All

General Information

Grade 56Si7 is a silicon spring steel suitable for quenched and hardened springs and different type of knives.

Similar designations

1.5026, 55S7, 251A58, 55Si2Mn, AISI9255, 55Si8

Chemical composition

Variant	Cast	Weldability		C %	Si %	Mn %	P %	S %	Cr %
SB 9084	CC	CEV 0.73 _{max}	Min	0.53	1.60	0.70	-	-	-
		Pcm 0.66 _{max}	Max	0.55	1.80	0.80	0.025	0.015	0.30
56Si7 EN10089:2002	Std	CEV 0.7 _{max}	Min	0.52	1.60	0.60	-	-	-
		Pcm 0.67 _{max}	Max	0.60	2.00	0.90	0.025	0.025	-

Mechanical Properties

Variant	Condition	Dimension [mm]	Yield strength min [MPa]	Tensile strength [MPa]	Elongation A ₅ [%]	Hardness
SB 9084	+AR	< 45	-	-	-	280-340 HB
		> 45	-	-	-	260-300 HB
	+SH	-	480*	710-925	15	215-280 HB
	+SA	-	-	-	-	< 248 HB

*R_{p0.2} * R_{eh}, ** R_{el}*

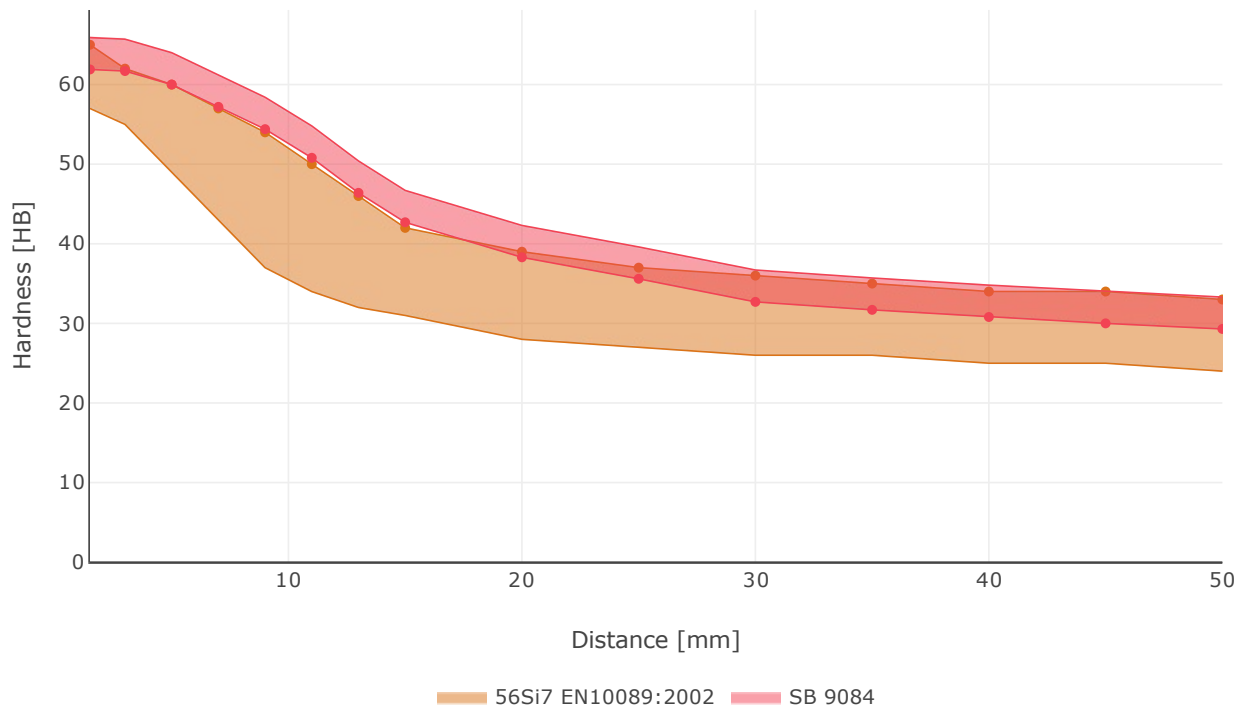
Transformation temperatures

	Temperature °C
MS	266
AC1	767
AC3	820

Heat treatment recommendations

Treatment	Condition	Temperature cycle	Cooling/quenching
Hot forging	+AR	Soaking between 850- 1050°C	In air slow
Normalizing	+AR	Soaking between 850 - 880°C	In air
Soft annealing	+AR	Annealing at 650 - 690°C	Coolin in air
Hardening	+AR	Soaking at 840 - 870°C	Quenching in oil

Hardenability



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
CO ₂ e/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 (CO ₂ e kg /1000 kg steel)	Climate compensated Net emission = Scope 3 (CO ₂ e kg /1000 kg steel) Scope 1 - 2 = 0 (compensated)
56Si7	Flat bar	+AR	425	188

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 ³)
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:

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Via telephone: +46 8 622 1300

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

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