

## Steel grade

Material No. / Werkstoff-Nr.	PREMIUM 1.4571
Description	X6CrNiMoTi17-12-2
BS	320 S 31
AISI/SAE	316Ti; S31635
Search for alternatives in the ABRAMS STEEL GUIDE®	<a href="http://www.steel-guide.co.uk/alternatives/320S31">www.steel-guide.co.uk/alternatives/320S31</a>

## Specifications



€co-Präz\* [€co]  
L: 500 mm



Precision round steel  
without machining allowance [PRS]  
bright drawn / ground, ISO h9  
L: 1,000 mm

## Chemical composition BS 320 S 31 (reference value %)

C	Si	Mn	P	S	Cr	Mo	Ni	Ti
0 – 0.08	0 – 1.0	0 – 2.0	0 – 0.045	0 – 0.015	16.5 – 18.5	2.0 – 2.5	10.5 – 13.5	0 – 0.7

## Physical properties

Hardness (delivery condition)	max. 215 HB, annealed				
Tensile strength R <sub>m</sub> (as received condition)	approx. 690 N/mm <sup>2</sup>				
Working hardness	max. <20 HRC				
Thermal expansion coefficient 10 <sup>-6</sup> m/(m • K)	20 - 100°C	20 - 200°C	20 - 300°C	20 - 400°C	20 - 500°C
	16.5	17.5	18.0	18.5	19.0
Thermal conductivity W/(m • K)	20°C				
	15.0				

## Technical properties

Stainless austenitic chrome-nickel-molybdenum steel, stabilized with titanium. Resistant to seawater, diluted sulphuric and hydrochloric acids, and to intergranular corrosion following welding processes. Has excellent cold working properties, very good weldability and temperature resistance up to 600 degrees Celsius, non-magnetisable.

## Applications

Chemical industry, textile industry, oil industry, building industry, food industry, soap industry, paper industry, photographic industry, paint industry, rubber industry, mechanical engineering, apparatus engineering, pump construction, compressor construction, pipeline construction, shipbuilding, medical technology, pharmaceutical industry, nuclear engineering.

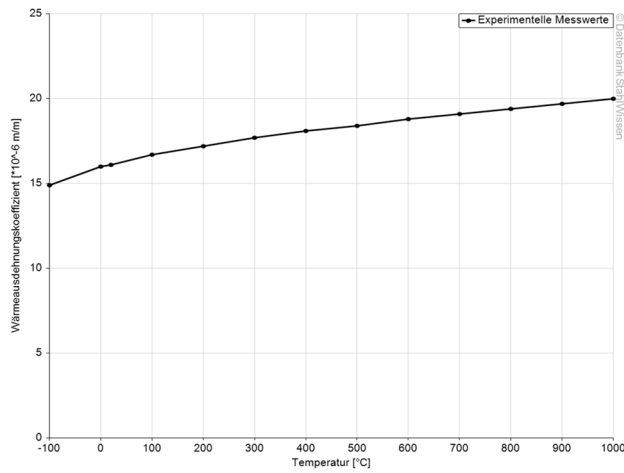
## Heat treatment

Soft annealing	Temperature	Cooling	Hardness
	1020 - 1120°C	Air	max. 215 HB



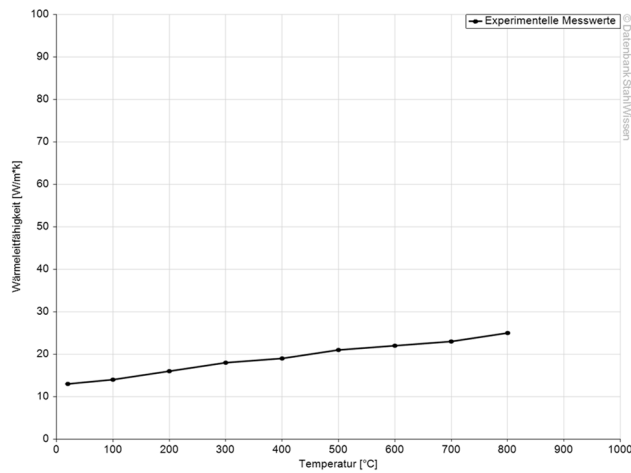
## Thermal expansion coefficient diagram

Werkstoff: X8CrNiMoTi17-12-2, 1.4571



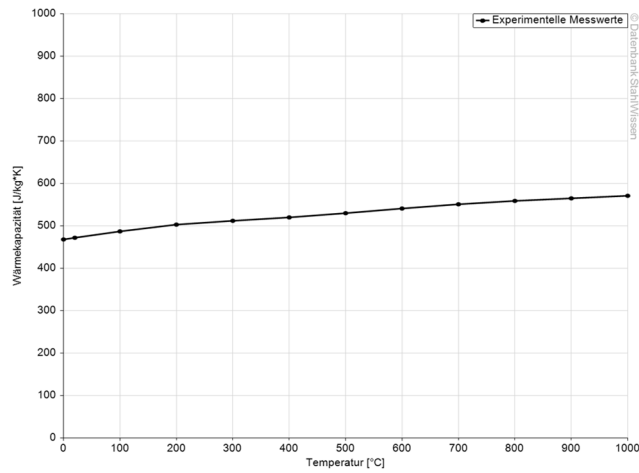
## Thermal conductivity diagram

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## Thermal capacity diagram

Werkstoff: X6CrNiMoTi17-12-2, 1.4571



The data shown here is to be used only as an indication of the statistics, thus we accept no liability.  
Diagrams are taken from Datenbank StahlWissen Dr. Sommer Werkstofftechnik  
Issued: 2012

