

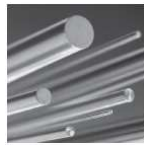
## Steel grade

Material No. / Werkstoff-Nr.	PREMIUM 1.4305
Description	X8CrNiS18-9
BS	303 S 31
AISI/SAE	303; S30300
Search for alternatives in the ABRAMS STEEL GUIDE®	<a href="http://www.steel-guide.co.uk/alternatives/303S31">www.steel-guide.co.uk/alternatives/303S31</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 303 S 21 (reference value %)

C	Si	Mn	P	S	Cr	Ni	Cu	N
0 - 0.1	0 - 1.0	0 - 2.0	0 - 0.045	0.15 - 0.35	17.0 - 19.0	8.0 - 10.0	0 - 1.0	0 - 0.11

## Physical properties

Hardness (delivery condition)	max. 250 HB, annealed				
Tensile strength $R_m$ (as received condition)	approx. 800 N/mm <sup>2</sup>				
Working hardness	max. 20 HRC				
Thermal expansion coefficient $10^{-6}m/(m \cdot K)$	20 - 100°C	20 - 200°C	20 - 300°C	20 - 400°C	20 - 500°C
	16.0	16.5	17.0	17.5	18.0
Thermal conductivity $W/(m \cdot K)$	20°C				
	15.0				

## Technical properties

Corrosion resistant austenitic stainless chrome-nickel-steel with additional sulphur content that allows excellent milling, however, not forgeable, non-weldable (cracking), limited polishing properties. Average mechanical properties, non-magnetisable and conditionally acid resistant.

## Applications

Food industry, photographic industry, paint industry, oil industry, soap industry, paper industry, textile industry, mechanical engineering, turned parts, fittings construction, kitchen equipment, decoration.

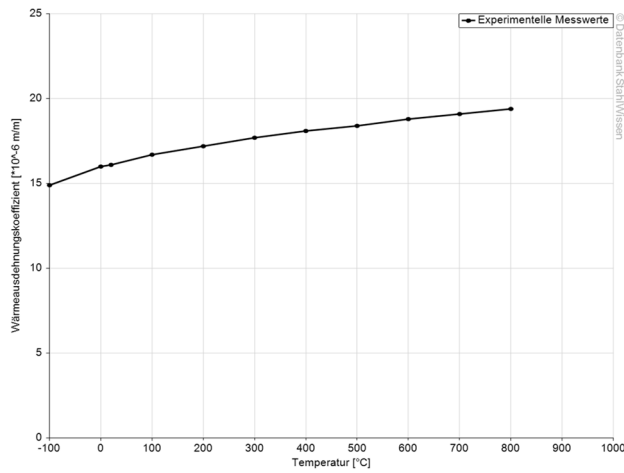
## Heat treatment

	Temperature	Cooling	Hardness
Soft annealing	1000 - 1080°C	Air	max. 250 HB



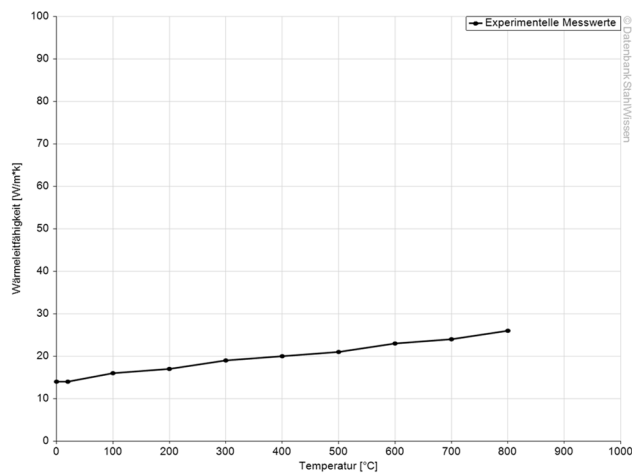
## Thermal expansion coefficient diagram

Werkstoff: X8CrNiS18-9, 1.4305



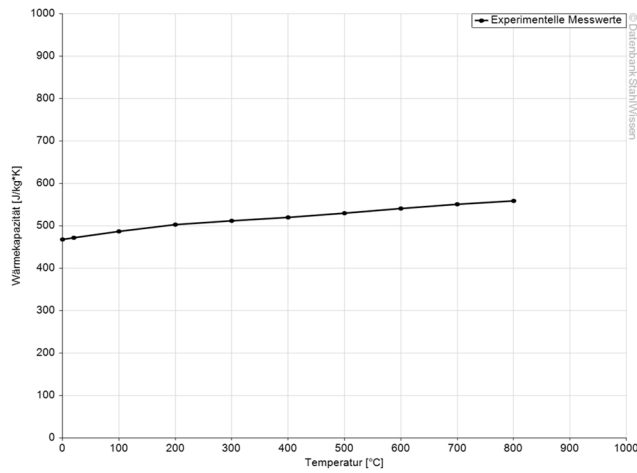
## Thermal conductivity diagram

Werkstoff: X8CrNiS18-9, 1.4305



## Thermal capacity diagram

Werkstoff: X8CrNiS18-9, 1.4305



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

