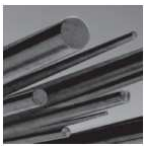


Steel grade

Material No. / Werkstoff-Nr.	PREMIUM 1.6587
Description	18CrNiMo7-6
BS	820 A 16
AISI/SAE	4820
Search for alternatives in the ABRAMS STEEL GUIDE®	www.steel-guide.co.uk/alternatives/820A16

Specifications



Round steel [RS]
black
L: 500 mm
L: 1,000 mm

Chemical composition BS 820 A 16 (reference value %)

C	Si	Mn	P	S	Cr	Mo	Ni
0.15 – 0.21	0 – 0.4	0.5 – 0.9	0 – 0.025	0 – 0.035	1.5 – 1.8	0.25 – 0.35	1.4 – 1.7

Physical properties

Hardness (delivery condition)	max. 229 HB, annealed			
Tensile strength R_m (as received condition)	approx. 770 N/mm ²			
Working hardness	max. 60 HRC (surface hardness)			
Thermal expansion coefficient $10^{-6}m/(m \cdot K)$	20 - 100°C	20 - 200°C	20 - 300°C	20 - 400°C
	11.5	12.5	13.3	13.9
Thermal conductivity $W/(m \cdot K)$	20°C			
	39.8			

Physical properties

CrNiMo alloyed case-hardening steel for highly stressed components with high core strength and toughness. This steel is used for gear parts such as ring gears or drive pinions and gear wheels. The AISI / SAE 4820 is usually difficult to weld.

Applications

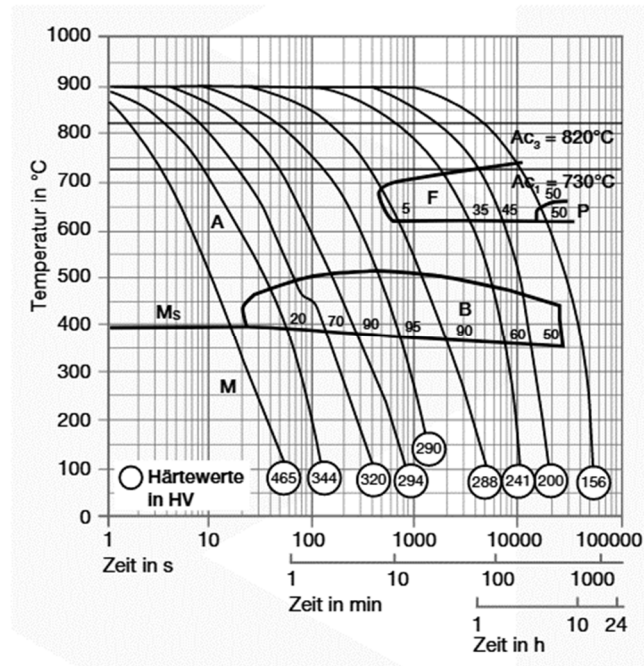
Shafts, gear parts, gears, bevel gears, driving pinion.

Heat treatment

	Temperature	Cooling	Hardness
Normal annealing	650 - 700°C	Oil, Polymer	max. 229 HB
Core hardening	Temperature	Cooling	
	830 - 870°C	Oil, Polymer	
Surface hardening	Temperature	Quenching in	
	780 - 820°C	Oil, Polymer	



Continuous ZTU-diagrams



Hardenability scatter band

