

voestalpine HIGH PERFORMANCE METALS

AISI 1045 / 1.1191 / G10430

DESCRIPTION

A fully-killed medium carbon steel suitable for medium stressed parts in machinery and industrial tools. Components of small cross section requiring strength and wear properties better than low carbon unalloyed steel. Heavy forgings in the normalised condition is suitable for automotive and general engineering, such as axles, clutch members, and shafts.

NEAREST STANDARDS

AISI	DIN	JIS	UNS
1045	1.1191 (CK45) / 1.0501 (C45)	S45C	G10450

CHEMICAL ANALYSIS (MAX %)

C	Si	Mn	Ni	Cr	Mo	S	P
0.50	0.35	0.90	-	0.30	-	0.035	0.035

HEAT TREATMENT (RECOMMENDED)

Forge	800-1100c. Cool in furnace.
Normalise	850c. Air cool.
Anneal	680-710c. Cool slowly in controlled furnace.
Harden	800-830c Water quench.
Harden (Flame or Induction)	820-880c. Water or Oil quench.
Temper	150-200c. Air cool.
Stress Relieve	600-650c. Furnace or Air cool.

MECHANICAL PROPERTIES (REFERENCE)

	Cold Drawn			Rolled	Forged / RMC / Normalised
	<16	16-38	38-63	<250	>250
Size Range (mm)	<16	16-38	38-63	<250	>250
Yield Strength (Mpa)	Min 540	Min 510	Min 500	Min 300	Min 350
Tensile Strength (Mpa)	Min 690	Min 650	Min 640	570-700	620-720
Elongation (A5 %)	Min 8	Min 8	Min 9	Min 14	Min 15
Hardness (HB)	-	-	-	170-210	170-210

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SUPPLY CONDITION

Hot Rolled
Normalised

SURFACE TREATMENT

Black
Bright (H10/H11)
Rough Machined (K12)
Chrome Finish

SIZE RANGES

For stocked sizes and to view availability at your local branch, visit the [vHPM Australia Webshop](#)

PERFORMANCE IS IN OUR DNA

voestalpine High Performance Metals is the global market leader in the production of tool steels and one of the world's leading suppliers of high-speed steels, valve steels, special steels, powder metallurgy steels, and nickel-based alloys. We also manufacture die-forged components and large castings from nickel-based alloys and high, medium and low alloy steels.

Customers rely on our key brands of Bohler, Uddeholm and Villares, to set the highest standards of innovation, quality and service across a wide range of industries including automotive, aerospace, consumer electronics and oil & gas. We are fully integrated from steel production through to local customer sales, ensuring we keep our customers One Step Ahead.

EXPLORE WHAT IS POSSIBLE.



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ONE STEP AHEAD.