

voestalpine HIGH PERFORMANCE METALS

AISI 4140 / 1.7225 / G41400

DESCRIPTION

Chromium Molybdenum steel for applications requiring high tensile strength and toughness, in particular in medium and large cross sections in the quenched and tempered condition. The addition of Molybdenum prevents the steel from being susceptible to temper brittleness.

NEAREST STANDARDS

AISI	DIN	BS	UNS
4140	1.7225 / 41CrMo4	EN19A	G41400

CHEMICAL ANALYSIS (MAX %)

C	Si	Mn	Ni	Cr	Mo	S	P
0.40	0.40	1.00	-	1.10	0.30	0.035	0.035

HEAT TREATMENT (RECOMMENDED)

Forge	850-1050c. Cool in furnace.
Normalise	840-880c. Air cool.
Anneal	680-720c. Cool slowly in controlled furnace.
Harden	830-860c Oil quench.
Temper	540-680c hold for 1 hour min. at temperature. Air cool.
Nitride	Suitable for both liquid and gas nitriding.
Stress Relieve	In the quenched and tempered condition, about 30-50c. Stress relieve below the tempering temperature. Air cool. In the annealed condition, 600-650c. Air cool.

MECHANICAL PROPERTIES (HEAT TREATED)

	10-100mm	101-250mm	251 above (Aim)
Yield Strength (Rp 0.2)	Min 740 N/mm ²	Min 665 N/mm ²	665 N/mm ²
Tensile (Rm)	930-1080 N/mm ²	850-1000 N/mm ²	850-1000 N/mm ²
Elongation (A5 %)	Min 12	Min 13	Not Recorded
Charpy Impact (J)	Min 42	Min 50	Not Recorded
Hardness (HB)	269-331 HB	248-302 HB	Not Recorded

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SUPPLY CONDITION

Quench & Tempered to condition U or T/U

SURFACE TREATMENT

Black
Peeled & Polished (H10/H11)
Rough Machined (K12)
Ground (H8)
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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