

This page is mainly introduced the W18Cr4V Datasheet, including chemical information, mechanical properties, physical properties, mechanical properties, heat treatment, and Micro structure, etc. It also contains the use of W18Cr4V, such as it is commonly used in bars, sheet, plates, steel coils, steel pipes, forged and other materials application.

Datasheet for Steel Grades Tool Steel And Hard Alloy W18Cr4V

W18Cr4V Standard Number:

ITEM	Standard Number	Descriptions
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W18Cr4V Chemical composition (mass fraction) (wt.%)

Chemical			Min.(%)				Max.(%)			
C	Si	Mn	P	S	Cr	Ni	Mo	V	Ta	
0.70~0.80	0.20~0.40	0.10~0.40	≤0.030	≤0.030	3.80~4.40	≤0.30	~0.30(4)	1.00~1.40		
W	N	Cu	Co	Pb	B	Nb	Al	Ti	Other	
17.5~19.0 0		≤0.25								

The performance characteristics of high-speed tool steel with purpose

- (1) use of steel DianZhaLu smelting, the silicon content not specified limit.
- (2) in order to improve steel cutting machining, the buyer's request, can be provisions for sulfur ω (S) 0.60% ~ 0.15%.
- (3) of residual elements in steel (mass fraction) : 0.30% or Ni; Cu 0.25% or less.
- (4) is the high tungsten molybdenum content allowed ω (Mo) more than 1.00%. Steel tungsten molybdenum and the relationship is: when molybdenum content more than ω (Mo) 0.30%, tungsten content reduced correspondingly, in molybdenum content more than ω (Mo) 0.30% of the part, each ω (Mo) 1% can replace ω (W) 2%, if meet this kind of case, in this GangHao add after "Mo".
- (5) W6Mo5Cr4V2 steel according to both the supply and the demand agreement, adjust the content of vanadium ω (V) 1.60% ~ 2.20%.

W18Cr4V Physical Properties

Tensile strength	115-234	σ_b /MPa
Yield Strength	23	$\sigma_{0.2} \geq$ /MPa
Elongation	65	$\delta_5 \geq$ (%)
ψ	-	$\psi \geq$ (%)
Akv	-	Akv \geq /J
HBS	123-321	-
HRC	30	-

W18Cr4V Mechanical Properties

Tensile strength	231-231	σ_b /MPa
Yield Strength	154	$\sigma_{0.2} \geq$ /MPa
Elongation	56	$\delta_5 \geq$ (%)
ψ	-	$\psi \geq$ (%)
Akv	-	Akv \geq /J
HBS	235-268	-
HRC	30	-

W18Cr4V Heat Treatment Regime

Annealing	Quenching	Tempering	Normalizing	Q & T
√	√	√	√	√

W18Cr4V Range of products

Product type	Products	Dimension	Processes	Deliver Status
Plates / Sheets	Plates / Sheets	0.08-200mm(T)*W*L	Forging, hot rolling and cold rolling	Annealed, Solution and Aging, Q+T, ACID-WASHED, Shot Blasting
Steel Bar	Round Bar, Flat Bar, Square Bar	Φ8-1200mm*L	Forging, hot rolling and cold rolling, Cast	Black, Rough Turning, Shot Blasting,
Coil / Strip	Steel Coil /Steel Strip	0.03-16.0x1200mm	Cold-Rolled & Hot-Rolled	Annealed, Solution and Aging, Q+T, ACID-WASHED, Shot Blasting
Pipes / Tubes	Seamless Pipes/Tubes, Welded Pipes/Tubes	OD:6-219mm x WT:0.5-20.0mm	Hot extrusion, Cold Drawn, Welded	Annealed, Solution and Aging, Q+T, ACID-WASHED

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