

This page is mainly introduced the Udimet 500 Datasheet, including chemical information, mechanical properties, physical properties, mechanical properties, heat treatment, and Micro structure, etc. It also contains the use of Udimet 500, such as it is commonly used in bars, sheet, plates, steel coils, steel pipes, forged and other materials application.

Datasheet for Steel Grades Specialsteel Udimet 500

Udimet 500 Standard Number:

ITEM	Standard Number	Descriptions
1	SAE AMS 5751E (1982)	Alloy Bars, Forgings, and Rings, Corrosion and Heat Resistant 54Ni - 17.5Cr - 16.5Co - 4.0Mo - 2.9Ti - 2.9Al - 0.006B Solution, Stabilization, and Precipitation Heat Treated Consumable Electrode or Vacuum Induction Melted

Udimet 500 Chemical composition (mass fraction) (wt.%)

Chemical	Min.(%)	Max.(%)							
C	0.05	0.10							
Si		0.10							
Mn		0.10							
Cr		19.00							
Ni		remaining							
Mo		4.00							
Co		19.00							
W									
Al		3.00							
Cu									
Ti		3.00							
Fe									
Zr		0.06							
B		0.005							
C	Si	Mn	P	S	Cr	Ni	Mo	V	Ta
W	N	Cu	Co	Pb	B	Nb	Al	Ti	Other

Alloy Bars, Forgings, and Rings, Corrosion and Heat Resistant 54Ni - 17.5Cr - 16.5Co - 4.0Mo -

2.9Ti - 2.9Al - 0.006B Solution, Stabilization, and Precipitation Heat Treated Consumable

Electrode or Vacuum Induction Melted

Udimet 500 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	-

Udimet 500 Mechanical Properties

Tensile strength	231-231	σ_b /MPa

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

Udimet 500 Heat Treatment Regime

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

Udimet 500 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	$\Phi 8$ -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

We can produce Specialsteel the specifications follows: