

This page is mainly introduced the 17-4PH chemical information, mechanical properties, physical properties, mechanical properties, heat treatment, and Micro structure, etc. It also contains the use of 17-4PH, such as it is commonly used in bars, sheet, plates, steel coils, steel pipes, forged and other materials application.

Data Table for Grades Stainless Steels 17-4PH

17-4PH Standard Number:		
ITEM	Standard Number	Descriptions
1	SAE AMS 5342E (2006)	Steel, Corrosion-Resistant, Investment Castings 16Cr - 4.1Ni - 0.28Cb (Nb) - 3.2Cu Homogenization, Solution, and Precipitation Heat Treated (H1100) 130 ksi (896 MPa) Tensile Strength (17-4)
2	SAE AMS 5343E (2006)	Steel, Corrosion-Resistant, Investment Castings 16Cr - 4.1Ni - 0.28Cb (Nb) - 3.2Cu Homogenization, Solution, and Precipitation Heat Treated (H1000) 150 ksi (1034 MPa) Tensile Strength (17-4)
3	SAE AMS 5344F (2007)	Steel, Corrosion-Resistant, Investment Castings 16Cr - 4.1Ni - 0.28Cb - 3.2Cu Homogenization, Solution, and Precipitation Heat Treated (H900) 180 ksi (1241 MPa) Tensile Strength (17-4)
4	SAE AMS 5604G (2013)	Steel, Corrosion Resistant, Sheet, Strip, and Plate 16.5Cr - 4.0Ni - 4.0Cu - 0.30Cb Solution Heat Treated, Precipitation Hardenable
5	SAE AMS 5622F (2013)	Steel, Corrosion-Resistant, Bars, Wire, Forgings, Tubing, and Rings 16Cr - 4.0Ni - 0.30Cb - 4.0Cu Solution Heat Treated, Precipitation Hardenable Consumable Electrode Remelted
6	SAE AMS 5643/H1150 (2013)	Steel, Corrosion-Resistant, Bars, Wire, Forgings, Tubing and Rings 16Cr - 4.0Ni - 0.30Cb (Nb) - 4.0Cu Solution and Precipitation Heat Treated (H1150)
7	SAE AMS 5643S (2013)	Steel, Corrosion-Resistant, Bars, Wire, Forgings, Tubing, and Rings 16Cr - 4.0Ni - 0.30Cb - 4.0Cu Solution Heat Treated, Precipitation Hardenable
8	SAE J 467 (1968)	Special Purpose Alloys ("Superalloys")

17-4PH Chemical composition(mass fraction)(wt.%)		
Chemical	Min.(%)	Max.(%)
C		0.07
Si		1.00
Mn		1.00
Cr	15.00	17.50
Ni	3.00	5.00
Cu	3.00	5.00
Nb	0.15	1.45

17-4PH Physical Properties		
Tensile strength	115-234	σb/MPa

Yield Strength	23	$\sigma_{0.2} \geq \text{MPa}$
Elongation	65	$\delta 5 \geq (\%)$
ψ	-	$\psi \geq (\%)$
Akv	-	$Akv \geq \text{J}$
HBS	123-321	-
HRC	30	-

17-4PH 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	-

17-4PH Heat Treatment Regime

Annealing	Quenching	Tempering	Normalizing	Q & T
✓	✓	✓	✓	✓

17-4PH 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	$\Phi 8-1200\text{mm} \times L$	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 Stainless Steels the specifications follows:

Note:

- (1) listed in the table apex diameter (d), to steel thickness (a) multiples said.
- (2) in the ASTM A6 standard specified scope can meet any additional conditions.

(3) from the standard for 50 mm (2 in).

Mechanical properties

Mechanische Eigenschaften

Caracteristiques mecaniques

ReH Minimum yield strength / Mindestwert der oberen Streckgrenze / Limite d'élasticité minimale

Rm Tensile strength / Zugfestigkeit / Resistance a la traction

A Minimum elongation / Mindestwert der Bruchdehnung / Allongement minimal

J Notch impact test / Kerbschlagbiegeversuch / Essai de flexion par choc

Round bar:

Diameter : 1mm-2000mm

Square bar:

Size: 50mm * 50mm-600mm *600mm

Plate steel/flat bar:

Size: Thickness: 0.1mm-800mm Width: 10mm to 1500mm

Tube/pipe:

Size: OD: 6-219mm WT: 1-35 mm.

Cold-rolled sheet: Thickness: 2-5mm Width:1000mm Length: 2000mm

Hot-rolled sheet: Thickness:6-80mm Width: 210-610mm

Length: We can supply any length based on the customer's requirement.

Forging/hot rolling/ extrusion of steel.

Forging: Shafts with flanks/pipes/tubes/slugs/donuts/cubes/other shapes

Finished goods condition: hot forging/hot rolling + annealing/normalizing + tempering/quenching + tempering/any conditions based on the customer's requirement

Surface conditions: scaled (hot working finish)/ground/rough machining/fine machining/based on the customer's requirement

Furnaces for metallurgical processing: electrode arc + LF/VD/VOD/ESR/Vacuum consumable electrode.

Ultrasonic inspection: 100% ultrasonic inspection for any imperfections or based on the customer's requirement.

UTS according to SEP 1921 C/c,D/d,E/e;A388 or GB/T 6402

Excellent service for all kinds of industries, with advantages of technologies, equipment and price.

We serve you with our honesty, integrity, and professionalism.