

This page is mainly introduced the 17-4PH Datasheet, including 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.

Datasheet for Steel Grades Specialsteel 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			
C	Si	Mn	P	S	Cr	Ni	Mo	V	Ta	

W	N	Cu	Co	Pb	B	Nb	Al	Ti	Other

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)

Used typically for parts requiring good corrosion resistance and strength up to 315°C.

17-4PH 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	-

17-4PH 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	-

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	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

We can produce Specialsteel the specifications follows: