

This page is mainly introduced the 442S19 Datasheet, including chemical information, mechanical properties, physical properties, mechanical properties, heat treatment, and Micro structure, etc. It also contains the use of 442S19, such as it is commonly used in bars, sheet, plates, steel coils, steel pipes, forged and other materials application.

Datasheet for Steel Grades Special Steel 442S19

442S19 Standard Number:

ITEM	Standard Number	Descriptions
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442S19 Chemical composition (mass fraction) (wt.%)

Chemical			Min.(%)				Max.(%)		
C	Si	Mn	P	S	Cr	Ni	Mo	V	Ta
0.20-0.25	0.20-0.60	1.0	0.040	0.030	11.0-13.5	0.50-1.0	0.75-1.25	0.17-0.30	
W	N	Cu	Co	Pb	B	Nb	Al	Ti	Other
0.75-1.25		0.50							Fe: Balance;

442S19 is a hardenable stainless steel designed for use at temperatures of up to 1200°F (649°C). **442S19** has good resistance to scaling and oxidation. Through heat treatment, high mechanical properties can be developed. **442S19** is used in applications such as compressors or steam turbines and also in aircraft parts, valves, high temperature bolting etc.

UNS S42200

AISI 616

AMS 5655 Bars / wire/ forging H&T

ASTM A 565 GRD 616

DOD F 24669/7

MIL S 861

B50A125 (Cap of)

B50A951A1 (Cap of)

BS 970; 442S19

EN61

442S19 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	-

442S19 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	-

442S19 Heat Treatment Regime

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

442S19 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 Special Steel the specifications follows: