

This page is mainly introduced the MIL S 861 Datasheet, including chemical information, mechanical properties, physical properties, mechanical properties, heat treatment, and Micro structure, etc. It also contains the use of MIL S 861, 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 MIL S 861

MIL S 861 Standard Number:

ITEM	Standard Number	Descriptions
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MIL S 861 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;

MIL S 861 is a hardenable stainless steel designed for use at temperatures of up to 1200°F (649°C). **MIL S 861** has good resistance to scaling and oxidation. Through heat treatment, high mechanical properties can be developed. **MIL S 861** 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

MIL S 861 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	-

MIL S 861 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	-

MIL S 861 Heat Treatment Regime

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

MIL S 861 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: