

This page is mainly introduced the X45CrSi9-3 Datasheet, including chemical information, mechanical properties, physical properties, mechanical properties, heat treatment, and Micro structure, etc. It also contains the use of X45CrSi9-3, such as it is commonly used in bars, sheet, plates, steel coils, steel pipes, forged and other materials application.

Datasheet for Steel Grades Specialsteel X45CrSi9-3

X45CrSi9-3 Standard Number:

ITEM	Standard Number	Descriptions
1	ISO 683-15 (1992)	Heat-treatable steels, alloy steels and free-cutting steels -- Part 15: Valve steels for internal combustion engines

X45CrSi9-3 Chemical composition (mass fraction) (wt.%)

Chemical										Min.(%)			Max.(%)		
C			0.40			0.50									
Si			2.70			3.30									
Mn						0.80									
P						0.040									
S						0.030									
Cr			8.00			10.00									
Mo															
Ni						0.60									
C	Si	Mn	P	S	Cr	Ni	Mo	V	Ta						
W	N	Cu	Co	Pb	B	Nb	Al	Ti	Other						

Heat-treatable steels, alloy steels and free-cutting steels -- Part 15: Valve steels for internal

combustion engines

X45CrSi9-3 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	-

X45CrSi9-3 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	-

X45CrSi9-3 Heat Treatment Regime

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

X45CrSi9-3 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: