

This page is mainly introduced the V820 Datasheet, including chemical information, mechanical properties, physical properties, mechanical properties, heat treatment, and Micro structure, etc. It also contains the use of V820, such as it is commonly used in bars, sheet, plates, steel coils, steel pipes, forged and other materials application.

Datasheet for Steel Grades Specialsteel V820

V820 Standard Number:		
ITEM	Standard Number	Descriptions
1	DIN EN 10085	Al-alloyed nitriding steel grade for large cross-sections. Suitable for piston rods, extruders, cylinders, gear wheels,

V820 Chemical composition (mass fraction) (wt.%)										
Chemical				Min.(%)			Max.(%)			
C				0.30			0.37			
Si							0.40			
Mn				0.40			0.70			
P							0.025			
S							0.035			
Al				0.80			1.20			
Cr				1.50			1.80			
Mo				0.15			0.25			
Ni				0.85			1.15			
C	Si	Mn	P	S	Cr	Ni	Mo	V	Ta	
W	N	Cu	Co	Pb	B	Nb	Al	Ti	Other	

V820 Nitriding steel

DESCRIPTION

Chromium, Nickel, Aluminium steel for applications requiring very high surface hardness and wear resistance, in particular in large cross

sections, in the hardened and tempered condition

APPLICATIONS

Cam discs, Cams, Pinion shafts, Measuring tools. Injection pump parts, Valve spools and Gudgeon pins.

V820 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	-

V820 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	-

V820 Heat Treatment Regime

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

V820 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: