

**This page is mainly introduced the HR403 Datasheet, including chemical information, mechanical properties, physical properties, mechanical properties, heat treatment, and Micro structure, etc. It also contains the use of HR403, such as it is commonly used in bars, sheet, plates, steel coils, steel pipes, forged and other materials application.**

## Datasheet for Steel Grades Specialsteel HR403

HR403 Standard Number:		
ITEM	Standard Number	Descriptions
1	BS HR 403 (1973)	Specification for nickel-chromium-titanium heat-resisting alloy cold-worked and softened seamless tubes (nickel base, Cr 19.5, Ti 0.4)
2	BS 2HR 403 (2011)	Specification for nickel-chromium-titanium heat-resisting alloy cold-worked and softened seamless tubes (nickel base, Cr 19.5, Ti 0.4)

HR403 Chemical composition (mass fraction) (wt.%)									
Chemical		Min.(%)				Max.(%)			
C		0.08				0.15			
Si						1.00			
Mn						1.00			
P									
S						0.020			
Cr		18.00				21.00			
Ni						remaining			
Mo									
Co						5.00			
Ti		0.20				0.60			
Fe						5.00			
Cu						0.50			
Pb						0.005			
C	Si	Mn	P	S	Cr	Ni	Mo	V	Ta
W	N	Cu	Co	Pb	B	Nb	Al	Ti	Other

Specification for nickel-chromium-titanium heat-resisting alloy cold-worked and softened

seamless tubes (nickel base, Cr 19.5, Ti 0.4)

### HR403 Physical Properties

Tensile strength	115-234	$\sigma_b$ /MPa
Yield Strength	23	$\sigma_{0.2} \geq$ /MPa
Elongation	65	$\delta_5 \geq$ (%)
$\psi$	-	$\psi \geq$ (%)
Akv	-	Akv $\geq$ /J
HBS	123-321	-
HRC	30	-

### HR403 Mechanical Properties

Tensile strength	231-231	$\sigma_b$ /MPa
Yield Strength	154	$\sigma_{0.2} \geq$ /MPa
Elongation	56	$\delta_5 \geq$ (%)
$\psi$	-	$\psi \geq$ (%)
Akv	-	Akv $\geq$ /J
HBS	235-268	-
HRC	30	-

### HR403 Heat Treatment Regime

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

HR403 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:**